Lexington Quarry

RECLAMATION PLAN

Effective June 21, 2010

Modified per Conditions of Approval
By Santa Clara County Planning Commission
July 15, 2010

Prepared By:

LSA

LSA Associates, Inc.
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Modified per Conditions of Approval
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July 15, 2010

WEST COAST AGGREGATES, INC.
LEXINGTON QUARRY
Los Gatos, California
CA Mine ID# 91-43-0006

Prepared by:
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1.000 INTRODUCTION

1.100 AUTHORITY AND PURPOSE

This Reclamation Plan has been prepared pursuant to the State Surface Mining and Reclamation Act of 1975, as amended, the Santa Clara County General Plan Mineral Resources Element, and Section 36-4 of the Santa Clara County Zoning Ordinance; the Santa Clara County Use Permit (3690-30-48-00P) and Conditions of Approval of June 2010; the 2010 Mitigation Monitoring and Reporting Program; and the Final Environmental Impact Report of May 2010. This document describes the continued mining of graywacke sandstone in accordance with mining plans developed by Ruth & Going Engineers[1]. Aggregate material is extracted from a hillside deposit in steep terrain about 2.2 miles southeast of Highway 17 and 1.5 miles west of the Town of Los Gatos. The Project, totaling a 68-acre lease, lot line adjustment and permit area, consists of the following:

- renewing an existing permit covering 54.3 acres;
- expanding the lease and permit area by adding 12.9 acres immediately to the south in order to reclaim an oversteepened slope and area of basins (5.50 acres) west of the main quarry entry;
- creating a more natural appearing slope (7.40 acres) east of the main quarry entry; and,
- procuring an lot line adjustment to accommodate grading of the over-steepened slope (about .888 acres).

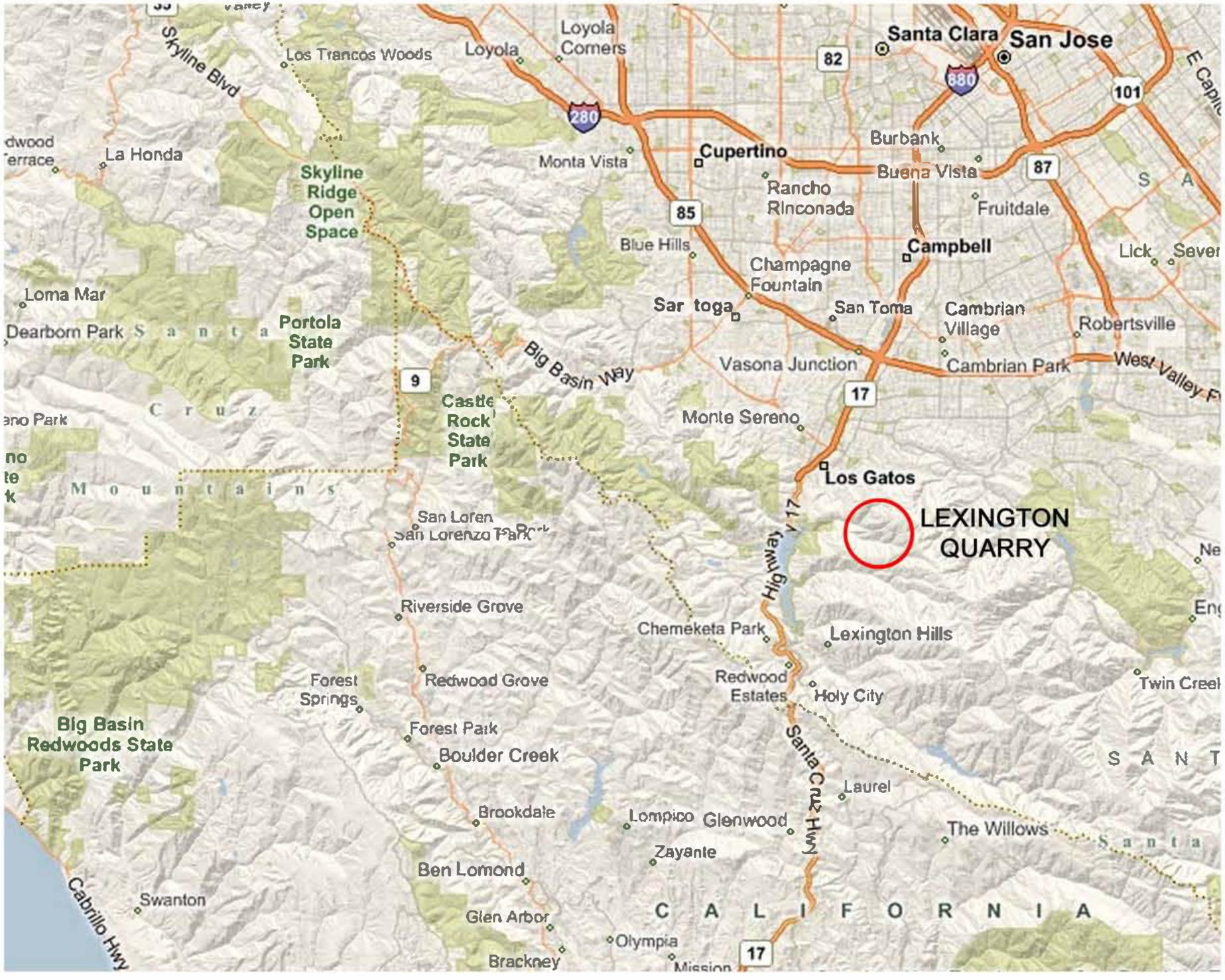
This Reclamation Plan consists of graphics and text descriptions of the mining method, and the procedures necessary for revegetation and return of the affected area to open space.

This Plan includes the information needed for the final reclamation of the quarry property, including revegetation of the east side slopes and benches, the lower portion of the west side slopes and benches, the oversteepened slope on the west side, and the quarry floor. Reclamation of the quarry floor includes removal of all equipment, restoring an open creek corridor through the canyon floor, and filling basins that will not be retained in the future. Figure 3, the Site and Work Area Map, shows the various benches and basins discussed in the Plan and Figure 4 delineates the areas subject to mining and reclamation.

1.200 QUARRY SITE LOCATION

This Plan describes the reclamation of an area referred to as the Lexington Quarry located at 18500 Limekiln Canyon Road northeast of the Lexington Reservoir in Santa Clara County as shown on Figures 1 and 2. The quarry is located in a narrow canyon generally oriented with its upper end to the north and its lower end to the south. In this Plan the mining areas are referred to as the "west side", being the slopes west of the quarry floor, the "over-steepened slopes", being the cut slope above the West Basins, the quarry floor itself, and the "east side", being the slopes east of the quarry floor.

[1] Ruth & Going, Inc. map sheet numbers: "0 to 3", "6", and "7 to 15" dated August 2006; Map sheets "4 and 5" dated May 13, 2008; and Map sheet "7" dated January 14, 2004.



REGIONAL LOCATION

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

1
FIGURE

N

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AUGUST 2009

VICINITY MAP

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

2
FIGURE

N

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1.300 PROJECT DESCRIPTION AND SUMMARY OF THE RECLAMATION PLAN

1.310 History. Lexington Quarry has been in continuous operation by various lessees since 1968. The current Permitee, West Coast Aggregates, Inc., took over the quarry operation in October 1989.

The mining operation, known as the Lexington Quarry, consisted of a lease area measuring approximately 54.3 acres containing areas that have been mined under two separate permits issued by Santa Clara County. A 12.9-acre expansion area to the south of the original lease and a .888 acre lot line adjustment on the west side, increased the permit area by about 13.79 acres, so that the total lease and permit area is approximately 68 acres. The original County Use Permit (# 11 P 68.5) covered about 26 acres including the west slopes and the quarry floor. Most of the west side slopes, about 16 acres, were accepted by the County, in 1995, as having been successfully reclaimed[2]. A second Use Permit (#3690-30-48-88P) was approved in 1991 expanding the original permit to about 54.3 acres by including the east side slopes. An application was filed in November 2000 to renew the 1991 Use Permit and to expand the area permitted for mining. Figure 3, the Site and Work Area Map, shows the boundaries of the lease area, the 1991 permit area, the expansion area and the lot line adjustment. Mining has proceeded continuously since 1991, beginning at the top of the east side slopes.

1.320 Area and Extent of Operations. The Lexington Quarry Lease Area is a 68-acre portion of a larger parcel measuring approximately 102.0 acres. The property is contained within the USGS 7.5-Minute Los Gatos Quadrangle and is further identified as Santa Clara County Assessor's parcel 537-07-024. It lies at 37° latitude and 122° longitude within Township 8S and Range 1W, Mount Diablo Meridian. Table 1 lists all acreage subject to mining and reclamation.

1.330 Level of Production. Extraction rate is influenced by market demand. Maximum production is regulated by the capacity of equipment and permit conditions. At the present time, the production target is about 425,000 tons per year.

1.340 Types of Materials Being Mined. The Lexington Quarry is located over a deposit of Franciscan complex bedrock. Greywacke sandstone is being mined for construction aggregate, road base and general fill.

1.350 Extraction Quantity and Estimated Life of the Quarry. The saleable resource to be removed pursuant to the proposed Plan is estimated at 4.5 million tons. Using an average extraction rate of 375,000 tons per year, the mining is expected to take approximately 12 years[3]. Mining operations should be completed on or before December 31, 2027.

[2] A portion of this area, approximately 7.83 acres, will be regarded as part of the regrading required for the over-steepened slope above the West Basin per Appendix G.

[3] This Reclamation Plan is expected to be completed twelve years from the date that this Plan is approved with an additional 5 year post reclamation period.

TABLE 1: SUMMARY OF MINING AND RECLAMATION							
LOCATION	**AREAS SUBJECT TO MINING AND RECLAMATION**		**AREAS SUBJECT TO RECLAMATION ONLY**		**AREAS NOT AFFECTED**		**TOTAL (in acres)**
Existing Use Permit and Lease Area	-East Slope (Central) -East Slope (North) -New West Slope -Main Quarry Floor -Existing Process Basin	16.46 1.55 7.83 4.34 1.46	-Upper East Slope -Ex. North end of Bench . # 8 on west -Ex. South end of Bench . # 4 & # 6 on west	1.28 0.6 0.48	-Existing West Slope(Completed) -West Perimeter -East Perimeter	11.83 2.89 5.58	
	Subtotal	31.64	Subtotal	2.36	Subtotal	20.3	54.3
Proposed Expansion Area West of Office and Scales	-Quarry Floor/Ex. . Stilling Basin -Over-steepened Slope -West Basins	0.58 2.70 0.74	-Quarry Floor/Access Rd.	0.89	-West Perimeter	0.72	
	Subtotal	4.02	Subtotal	0.89	Subtotal	0.72	5.63
Proposed Lot Line Adj. Area on West Side	Oversteepened Slope in the Lot Line Adj. Area	0.60			-West Perimeter	0.29	
	Subtotal	0.60	Subtotal		Subtotal	.29	0.89
Proposed Expansion Area East of Office and Scales	- Quarry Floor -Reworked Slope - Restoration Basin	0.27 1.81 0.60		0.0	-East Perimeter -Riparian Setback	3.91 0.69	
	Subtotal	2.68	Subtotal	0.0	Subtotal	4.60	7.32
TOTAL		**39.08**		**3.25**		**25.77**	**68.1**

EXCAVATION SUMMARY	**CUBIC YARDS**
Topsoil Salvage from East Slope (North)	3,400
Topsoil Salvage from Lot Line Adjustment Area (West)	970
Overburden Removal – Estimated 1.0 % of harvested rock (see Aggregates below, minus topsoil)	22,930
Aggregate product for Backfill (process basin, partial fill of Restoration Basin; buttress slopes; creek slopes; quarry floor)	59,750
Aggregate	2,642,950
	TOTAL 2,730,000
USE OF PRODUCT AS BACKFILL	**CUBIC YARDS**
Back Fill used for earth buttresses on west side slope	46,690
Back Fill Material used for creek bank fill	4,125
Back Fill Material used for basin fill (process basin & part of Restoration Basin)	9,625
	TOTAL 59,750
USE OF TOPSOIL AND OVERBURDEN	**CUBIC YARDS**
• **Use of Topsoil**	
Topsoil used on quarry floor (2-3")	1,900
Topsoil used on creek slopes (5-6")	1,420
Topsoil used at fill slopes on lower west side slopes(6") (buttresses, lower west side fill slopes, & part of process basin area)	3,300
	SUB-TOTAL 6,620
• **Use of Overburden**	**Cubic Yards**
Overburden used as planting material	27,300
	TOTAL 38,290
REVEGETATION	**ACRES**
Revegetation of West Slope area to be regarded (Ex. Benches transition into over-steepened slope:; Fill buttresses; Bench # 8- north end; Process Basin)	9.81
Revegetation of East Slope & Reworked Slope	18.27
Revegetation of Quarry Floor	4.69
Revegetation of Oversteepened Slope & new 2006 Lot Line Adjustment Area (over-steepened slope)	3.30
Revegetation of Creek Side Slopes	2.89
	TOTAL **38.96**

1. All areas are given in acres; acreage is based on the Final Grading Configuration.
2. The final quarry floor measures approximately 8.80 acres, including the 4.11-acre restored open creek but excluding the areas of the permanent basins (Restoration Basin and West Basins). Creek side slopes measure 2.89 acres

1.360 Phasing of Mining and Reclamation. Reclamation will be performed concurrent with mining to the maximum extent practical. Revegetation will begin on those benches and slopes that are located above the active mining area as soon as the final slope configuration is reached. A separation of at least one bench and intervening slope will be maintained between the active mining area and the reclamation area for safety purposes.

1.370 Method of Aggregate Transport. Topsoil and overburden is extracted using bulldozers and excavators. Material is typically pushed downslope. Front-end loaders transport topsoil to stockpiles for later reuse, and transport rock from the harvest area to the process plant. Topsoil and overburden are separated from the rock and stockpiled into separate stockpiles. The rock is crushed and screened for size classification and conveyed to stockpiles. Until the spring of 2003 a wet wash system, integrated with the screens, was employed to clean fine particles from the rock. In June 2003, an electric "all wash plant" was installed. The "all wash plant" crushes moistened native rock, washes and scrubs the newly crushed rock, then processes and screens the product while submerged in water. Finally, the completely soaked and wet rock product is placed onto conveyors, sorted by size, and placed into the appropriate stockpiles. The final quarry products are loaded directly from stockpiles onto highway-legal haul trucks. The loaded trucks are weighed to measure the material being sold and to avoid overloads. Travel beyond the quarry site is limited to approved truck routes.

1.380 Location of Mining and Reclamation Work. Mining and Reclamation Activities are summarized in Table 2. The mining site will be reclaimed as open space. Figure 3 names the various parts of the site and includes number references for the benches and existing basins (East Basins, West Basins, Northeast Basin, and Process Basin).

1.390 Mineral Resource Designation. The Lexington Quarry is a State designated site of significant mineral resource (Sector II).

1.400 GENERAL PLAN POLICY AND ZONING REGULATIONS

1.410 General Plan. The Santa Clara County General Plan designates the quarry property as "Hillside Use" which allows mineral extraction. The mining property is specifically regulated by the County Mineral Resource Element. The policies in this Element support the extraction of resources from State-designated mineral deposits. The Element also calls for mitigation measures to address the concerns for environmental impacts. The existing Use Permit No. 3690-30-48-00P includes mitigation measures with the Conditions of Approval.

1.420 Zoning. The mining site is currently zoned Hillside with Design Review (HS-d). The Santa Clara County Zoning Code allows surface mining operations in this zoning district with a Use Permit pursuant to Article 36-4. Use Permits are not issued to surface mining operations until the Planning Commission has approved a Reclamation Plan.

2.000 OWNER, OPERATOR AND AGENT OF PROCESS

2.100 Relationship Between Property Owner and Mine Operator

Mary Ann Shirhall owns the mining property including the surface and mineral rights. The property is leased to West Coast Aggregates, Inc. for quarry operations.

2.200 Mineral Property and State Mine I.D. Number:

Lexington Quarry (91430006)

2.300 Owner of Property and Surface and Mining Rights:

Mary Ann Shirhall
4527 Mountain Gate Drive
Rocklin, CA 95765
Phone: (916) 624-1528

2.400 Operator and Lessee:

West Coast Aggregates, Inc.
37350 South Bird Road
Tracy, CA 95376
Phone: (209) 835-5020

2.500 Applicant:

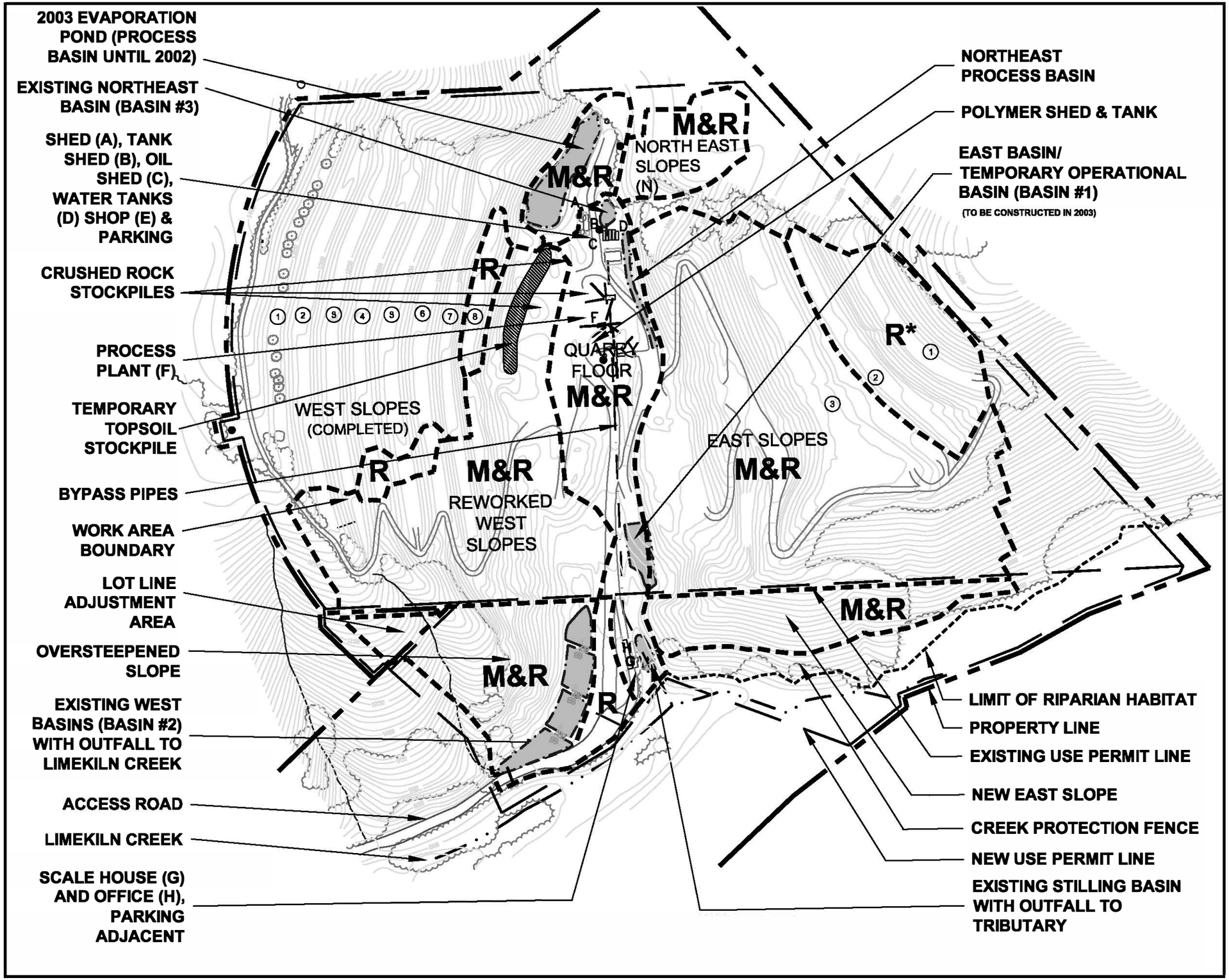
West Coast Aggregates, Inc.

2.600 Agent for Plan Process:

Mignone Wood, AICP
LSA Associates, Inc.
395 Oyster Point Boulevard, Suite 307
South San Francisco, CA 94080
Phone: (650) 985-2590
E-mail: Mignone.Wood@lsa-assoc.com

2.700 Local Agency Jurisdiction:

Santa Clara County



SITE PLAN AND WORK AREA MAP

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

LEGEND

③	BENCH REFERENCE #
M&R	MINING & RECLAMATION
R	RECLAMATION ONLY
	ACTIVE WORK & MINE AREA
•	WATER WELL
	BASINS
	TEMPORARY TOPSOIL STORAGE
R*	AREA PLANTED FOR RECLAMATION IN 2006

0 250

SCALE IN FEET

3

FIGURE

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southsanfrancisco@lsa-assoc.com

JULY 2010

3.000 DESCRIPTION OF THE MINING PROPERTY AND ENVIRONS

3.010 SITE AREA AND AREA SUBJECT TO MINING

The quarry property is contained in the USGS 7.5' Los Gatos Quadrangle and is further identified as Santa Clara County Assessor's Parcel 537-07-024. The quarry operator leases approximately 68.0 acres of a larger parcel measuring approximately 102.0 acres. The Quarry Lease Area, expansion area, lot line adjustment area, and the areas subject to mining and reclamation are shown on Figures 3 and 4. The total lease area is broken into four separate areas for purposes of this Reclamation Plan (see Table 1); the existing Use Permit and Lease Area, the Proposed Western Expansion, the Lot Line Adjustment Area, and the Eastern Expansion Area. The Existing Use Permit and Lease Area (3690-30-48-88P) contain the majority of the site consisting of 54.3 acres, which makes up the North and Central Eastern Slopes, the reworked western slopes and the main quarry floor. The Proposed Western Expansion area consists of 5.63 acres, which will be mainly utilized to rework slopes that are acceptable under County standards. The 0.89-acre Lot Line Adjustment Area was added to the lease area to gain use of land in order to rework an existing over-steepened slope. The Eastern Expansion Area is made up of 7.32 acres which incorporates the Limekiln Creek buffer and areas needed during final reclamation of the site.

3.011 Legal Description: Lexington Quarry Lease Area. Figure 3 shows the delineation of the lease area, lot line adjustment area, and the proposed expansion area. See Appendix E for the legal descriptions of the Lexington Quarry Lease Area and the lot line adjustment area.

3.020 TOPOGRAPHY

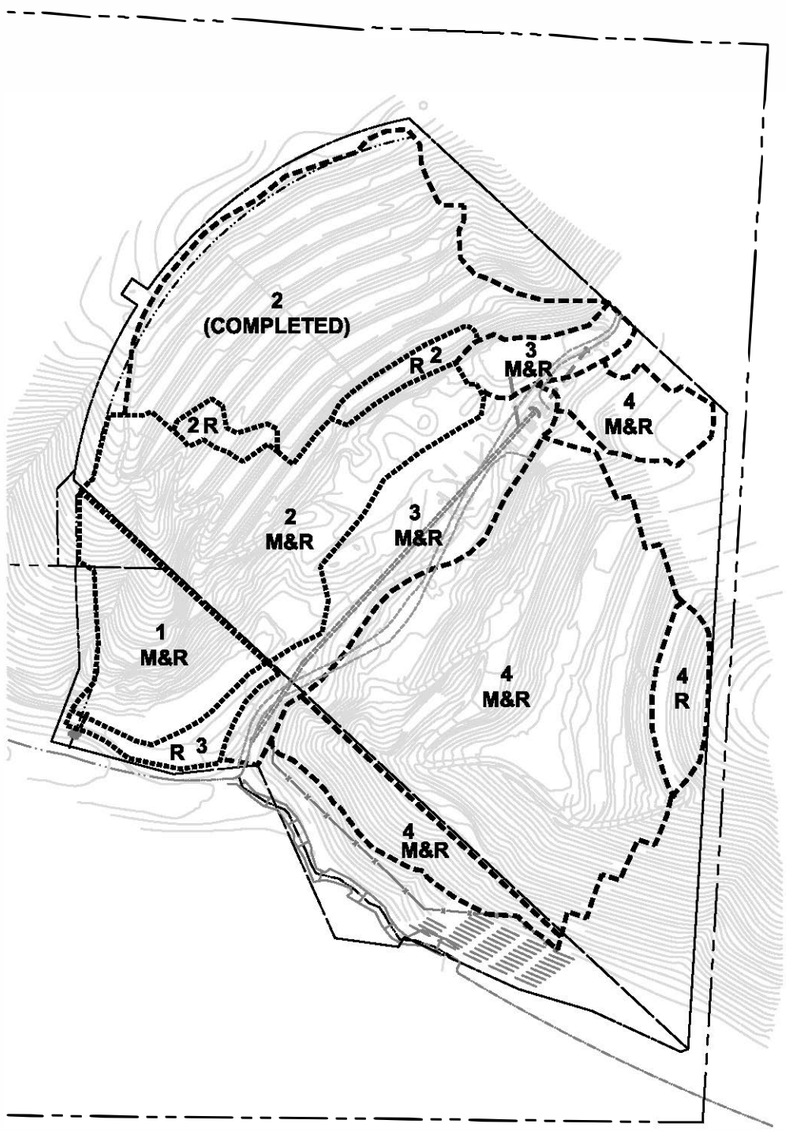
Lexington Quarry is located in a side canyon that is a tributary to Limekiln Canyon in the Santa Cruz Mountain range. The side canyon containing the quarry runs in a north-south direction and is bisected by an unnamed creek. The unnamed creek flowing through the quarry site is currently culverted. When water is flowing during the rainy season, the creek is fed from the north end of the canyon and by water from a small side canyon located towards the north end of the east side slope of the quarry.

The topography of the quarry property is typical of that found in the surrounding area; steep canyons rising up from drainage ways. The terrain is best described as steep canyons with Oaks and Chaparral vegetation and drainage ways with riparian vegetation. Existing slopes in the area range from very steep (one foot vertical to one foot horizontal) to moderately steep (one foot vertical to two feet horizontal). The east and west side slopes of the quarry rise up steeply from the canyon floor. Existing quarried slopes on the west side of the canyon have very steep intervening slopes (one-foot vertical to one-half foot horizontal) and 30-foot wide benches every 100 feet of vertical rise. Work underway will result in a similar configuration for the east side slopes. The existing quarry floor is at about elevation 900 and the highest point of the east side slope is about elevation 1,400 feet.

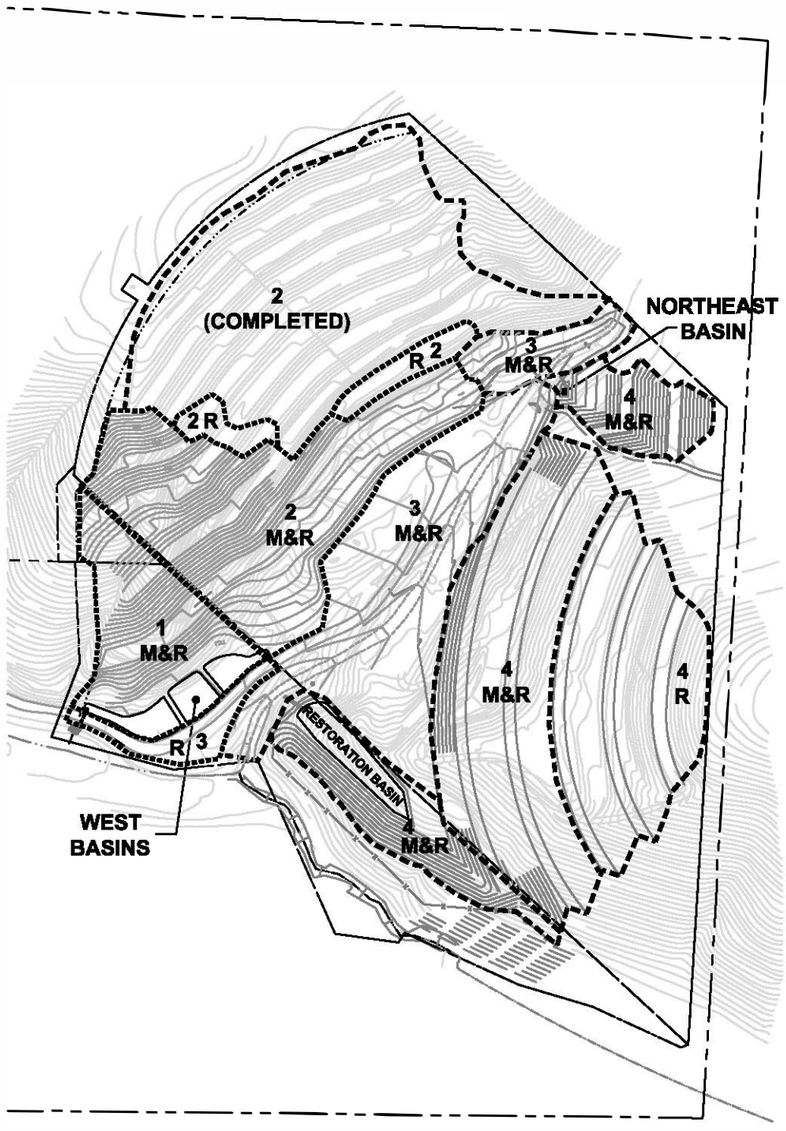
Other pertinent features on the quarry property include several basins (See Figure 3) and various aggregate stockpiles. A paved access road enters the site from the south and various temporary, unpaved access roads within the site provide access for mining equipment.

3.030 PATTERN OF OWNERSHIP ON AND SURROUNDING THE MINING SITE

The quarry property has a Los Gatos address but is in a remote location about 1.5 miles southeast of the Town. The quarry is bordered on the north by large residential parcels with estate homes, on the east by three large residential properties and on the west and south by public open space and undeveloped private lands. The parcels, immediately adjacent to the quarry lease area, are shown on Figure 5, and their ownership is shown on Table 2.



EXISTING
CONDITION 2002



FINAL
CONDITION

AREAS SUBJECT TO MINING & RECLAMATION

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

LEGEND:

1	SLOPE STABILIZATION
2	WEST SLOPE
3	QUARRY FLOOR
4	EAST SLOPE
M&R	MINING & RECLAMATION
R	RECLAMATION ONLY

0 400 800

SCALE IN FEET

4

FIGURE

N

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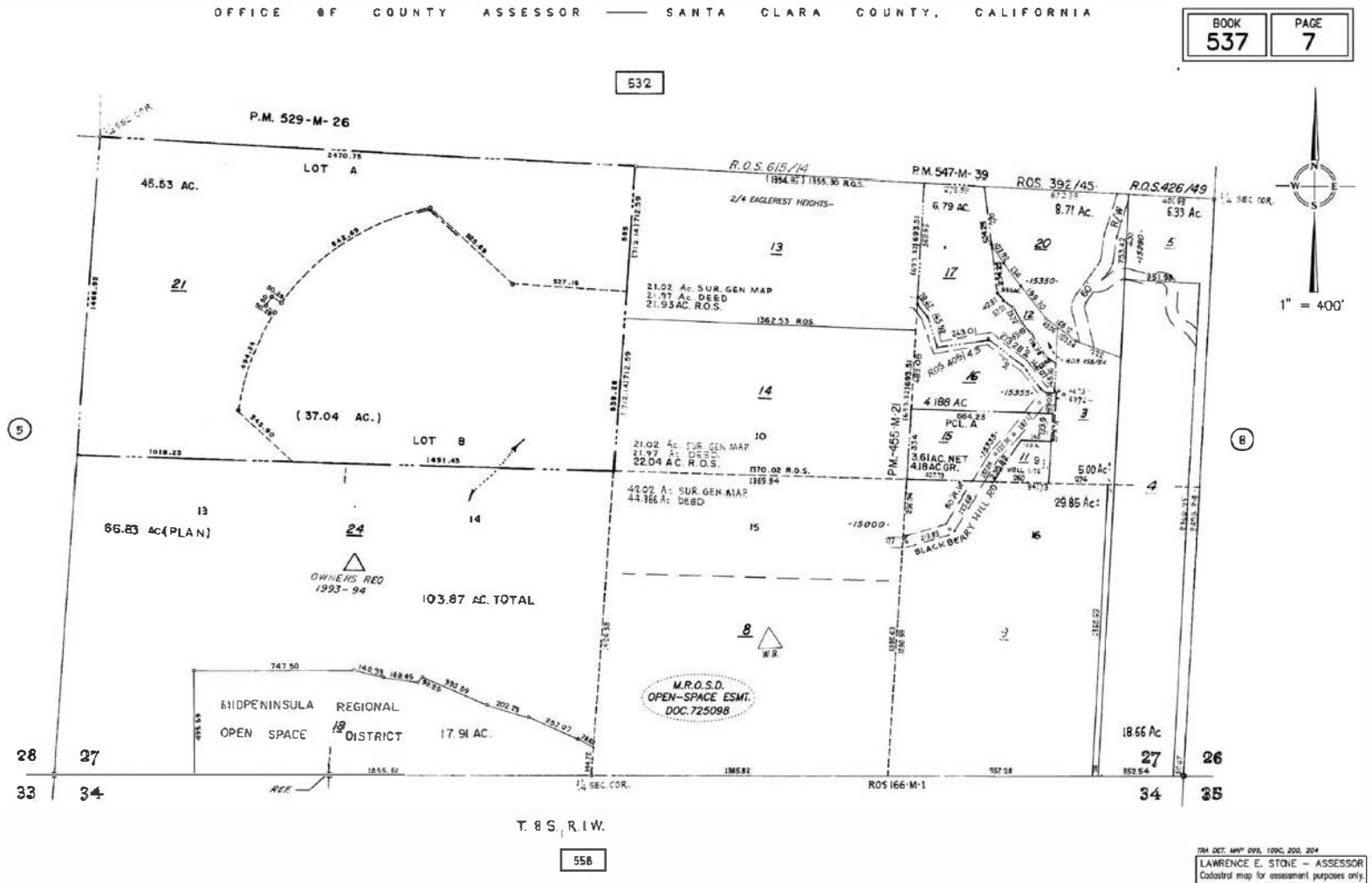
AUGUST 2009

OWNERSHIP MAP

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.



5

FIGURE

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JULY 2010

TABLE 2: LIST OF PROPERTY OWNERS IMMEDIATELY ADJACENT TO LEXINGTON QUARRY LEASE AREA

ASSESSOR'S PARCEL NUMBER	LISTED OWNER
537-07-024 (Quarry located within this larger parcel)	Edward C. & Maryann H. Shirhall 4527 Mountain Gate Drive Rocklin, CA 95765
537-07-008	Janette L. & Thomas A. Rudkin 15000 Blackberry Hill Road Los Gatos, CA 95030
537-07-014	David L. Sinofsky Lynn M. Waters 15340 Blackberry Hill Road Los Gatos, CA 95030
537-07-021 (includes lot line adjustment area)	Farzaneh & Jamal Modir 16450 Aztec Ridge Road Los Gatos, CA 95030

3.040 GEOLOGY, SEISMICITY AND SOILS

3.041. Geology. The Lexington Quarry property is included on a map titled "Regionally Significant Construction Aggregate Resource Areas in the South San Francisco Bay Production – Consumption Region" (State Mining's Geology Board, September 1985). The Limekiln Canyon area is described as rugged terrain dominated by Franciscan Complex bedrock. Within the quarry site, the Franciscan bedrock is predominantly graywacke sandstone.

3.042. Seismicity. The quarry is located in a seismically active region of California. The closest active fault line to the quarry is the San Andreas Fault, which is located about two and one half miles southwest of the quarry. A major earthquake on the Hayward and Calaveras faults may also subject the quarry to strong shaking. There is a possible fault trace of the Limekiln Fault just southwest of the quarry; however, it is considered inactive. The expected severity of seismic ground shaking at the quarry is very strong. Bank lurching could occur during a seismic event. To ensure slope stability and a suitable gradient for revegetation, the Reclamation Plan provides for 30-foot wide benches every 100 vertical feet and final cut slopes with a maximum 1:1 slope gradient; however, the over-steepened slopes on the west side will have final cut slopes with a gradient of 1:1 to 1.5:1 with 30-foot wide benches approximately every 100 vertical feet; and the fill buttress slopes on the west side will have slopes with a 2:1 gradient with 12-foot wide benches every 10 to 15 feet in vertical feet as indicated shown on detail K/6 on Figure 7a, and described in Appendix G: Slope Stability Analyses Report by Cleary Consultants, July 2006, May 2008, and other reports from January and February 2009.

3.043 Soils. The existing topsoil, most of which has been removed from the mining area, created a thin layer over the bedrock. The topsoil depth varied from less than 12 inches on the steep slopes to a maximum of 6 feet in the canyon bottom. Soil analysis was performed prior to revegetation of the west site slopes. The weathered Greywacke Sandstone was found to be slightly alkaline and low in Nitrogen and Phosphorus.

3.044 Geology, Seismicity and Soils Mitigation. Seismic hazards are mitigated by normal operation of processing equipment on flat ground away from excavated slopes. Stability of final graded slopes is addressed in the Slope Stability Analyses Report by Cleary Consultants, July 2006,May 2008, and January/February 2009 Appendix G. These reports recommended gradients no steeper than 1:1 with vertical cut slopes no more than 50 feet high and benches that are 25 feet wide at the "as built" west side benches; and 100 feet high cut slopes with 30-foot wide benches at the "as built" east benches, and future slopes and benches on the east side; and then at the over-steepened slope on the west side the maximum gradient is 1:1 to 1.5:1, as indicated on the sections, with 30-foot wide benches about every 100 vertical feet; and at the fill buttress slopes on the west side the slope gradient is 2:1 with 12 foot wide benches every 10 to 15 vertical feet as indicated on detail K/6 on Figure 7a, and in Appendix G-4. Additional recommendations for oversteepened toe areas on benches 1 and 2 on east slope include the removal of hanging overburden soil over hard rock on bench 1, and at the toe of the slope with the reverse cut at the south end of bench 2 the placement of large-sized rock (12 to 18 inches minimum diameter) at a 1:1 gradient as detailed on Figure 6c. Benches are installed to facilitate stability, to direct drainage and to catch loose rock. Soil erosion is minimized by constructing the bench surface with a minimum back slope of four percent (4%), using interceptor ditches to collect runoff, using energy dissipaters to moderate runoff velocity, and using vegetation to stabilize the soil surface. Sediment is removed from runoff by use of basins, which allow sediments to settle to the bottom of the basin before the runoff leaves the mining site. Remaining topsoil at the northeast corner of the site and from the lot line adjustment area will be salvaged, and together with settling basin fines, will be used as soil medium for site revegetation. Amendments are added to salvaged soil and sediment during revegetation. Fill will be compacted to ninety percent (90%) density up to five feet below the surface to minimize settlement.

3.050 Access. Lexington Quarry is reached from State Route 17 by taking the Alma Bridge turnoff, traveling east about 1.1 miles on Alma Bridge Road to Limekiln Canyon Road and then east on Limekiln Canyon Road for about 1.1 miles to the quarry property. The road is paved all the way from State Route 17 up to the scale house at the quarry. The access route is shown on the Regional Location Map, Figure 1 and Vicinity Map, Figure 2. State Route 17 is currently a four-lane facility. Traffic speed on State Route 17 is 50 mph. Limekiln Canyon Road is a private road with one lane in each direction. Traffic speed is 25 mph or less. The quarry enjoys an easement for access over the private road.

3.060 CLIMATE AND AIR QUALITY

3.061 Climate. Climatic data was obtained from reports by the Western Region Climate Center and air quality data from the Bay Area Air Quality Management District for Santa Clara Valley. The area experiences prevailing winds from the north and northwest. Wind speeds vary during the day but the average wind speed is about 10 miles per hour. In January, wind speeds increase to an average of about 16 miles per hour. Average annual rainfall in the vicinity of the Lexington Reservoir is about 37.04 inches. Rains occur between November to March with the highest amount falling during the month of January. Mean air temperatures vary throughout the year with lows in the range of 50 degrees in winter and highs in the range of 71 degrees in summer.

3.062 Air Quality. Air quality for the region in which the quarry operates is measured by two monitoring stations, one in Los Gatos that only measures Ozone and one complete monitoring station at Moorpark in San Jose. Measurements from these two monitoring stations indicate that Carbon Monoxide and Ozone are the two major air quality problems in the Santa Clara Valley. The quarry is downwind of the Greater Bay Area and San Jose; consequently, the winds bring gaseous pollutants from these urban areas to the area of the quarry. The primary pollutant generated by quarry operations is dust from grading, harvesting and processing the extracted rock. Some carbon monoxide, hydrocarbons and nitrogen oxides are emitted by excavation equipment and by haul trucks. The rock processing plant is electrically powered.

3.063 Air Quality Mitigation. Dust is controlled by water spray on work areas and by the use of spray nozzles at conveyor transfer points on the processing equipment. The minor emissions of pollutants in exhaust from excavation equipment are dispersed by prevailing winds. Pollutants from haul trucks are emitted along travel corridors and similarly dispersed by prevailing winds.

3.070 DRAINAGE AND SEDIMENT CONTROL

3.071 Drainage. Off-site runoff originally flowed through an unnamed creek along the bottom of the canyon which is now the quarry floor. The offsite runoff is now carried in two bypass pipes buried beneath the quarry floor. Runoff from the existing quarry slopes and sheet flow from the quarry floor is directed into drainage ditches and conveyed to existing basins as shown on Figure 6a, Existing Drainage Conditions in 2002 and Figure 6b, Interim Drainage Conditions (as of 2009). In 2002, there were existing basins on the east and west side of the quarry floor. On the west side, as shown on Figure 6a, there was a four-cell basin across from the office called the West Basins, and a Process Basin in the northwest. On the east side, there was a small basin behind the office, a small Operation Basin and a Northeast Basin. Since 2002, several of the basins have changed, including: a) the Operation Basin was enlarged; b) the West Basins across from the office were reconstructed from a four-cell to a three cell basin; c) the existing Process Basin on the west side is no longer used as a basin and instead it functions as an evaporation pond; and d) the Eastside Process Basin was installed to hold well water that is used in the electric “all wash plant”. Before the summer of 2003, the northwest Process Basin was used to hold sediments from the wash process at the rock plant until the “all wash plant” was installed. Since 2003, storm water is not directed into this basin and it does not discharge; whatever water accumulates in this low area either percolates or evaporates. Since 2003 the sediments from the all wash plant are processed through a Belt press and made into concentrated clay-like “cakes” that are temporarily stockpiled before being placed

into planting trenches on the benches. The wash plant substantially reduces the amount of sediments entering the drainage system.

The existing interim basins as of 2009 are shown on Figure 6b, Interim Drainage Plan. The basins on the east side include the East Basin (Operational Basin), the Eastside Process Basin, the Northeast Basin and the small basin located behind the office building. The West Basin is made up of three cells and is located to the west to the Quarry Road. These basins allow sediments to settle out before run-off leaves the site. Quarry personnel monitor the amount of sediments in the runoff as it leaves the site as part of a monitoring program in the Storm Water Pollution Prevention Plan (SWPPP), Appendix M. The State Water Resources Control Board annually reviews the SWPPP monitoring program.

The on-site drainage system will be modified as the quarry operation continues. Appendix F-3 describes the basins, which are shown on Figures 6a-c, 8a and 10. The West and East Basins are operating basins. The East Basins discharge into a culvert that parallels the existing buried bypass pipes under the quarry floor. The bypass pipes and culvert daylight just behind the quarry office. During the rainy season, surface water is directed away from the East Basins and directed into the West Basins; thereby reducing the amount of discharge from East Basins (Appendix F-3). The West Basins discharge into an existing culvert beneath the entry road that drains to Limekiln Creek. The existing Northeast Basin currently discharges into the mouth of the bypass pipes.

During the Reclamation process, as shown on Figure 6c, Final Grading and Drainage Plan, the basins on the east side will be relocated, removed or incorporated into the restored open creek channel. The final Northeast Basin will be situated at the base of the Northeast Slopes; water from the upstream no-name tributary will not flow into this basin. The East Basin (Operational Basin) will be replaced by the Restoration Basin; both of these basins have been designed to discharge through a culvert into the restored open creek. The West Basins will be slightly reconfigured to meet the final reclamation standards and the depths per Appendix F-3. No runoff will be allowed to flow uncontrolled from disturbed areas of the quarry into the creek (refer to Section 5.052.2).

Both the U. S. Army Corps of Engineers and the California Department of Fish and Game have jurisdiction over modifications to Lexington Reservoir, Limekiln Creek and the unnamed tributary that flows under the quarry floor. All are considered to be waters of the United States. Reclamation includes removal of the drainage bypass pipe under the quarry floor and restoration of an open creek channel.

3.072 Drainage and Sediment Mitigation. Best Management Practices are employed in conjunction with the mining operation. The quarry operator monitors runoff from the site to ensure that it conforms to the objectives of the State Water Resources Control Board's National Pollution Discharge Elimination System (NPDES) program and the quarry's Storm Water Pollution Prevention Plan (SWPPP), Appendix M. All storm water runoff is collected in ditches and directed into basins where the water is retained long enough to allow the sediment to settle. Some of the runoff that collects in the basins is used for dust control. The capacity of the basins is maintained by removing accumulated sediment and putting it in the planting trenches described in Section 4.065.4.

Final reclamation includes removing the bypass pipes from the quarry floor and restoring the unnamed creek. Specific control measures to be used in conjunction with reclamation of the creek channel include the use of jute matting to cover and protect the newly established upper slopes, coir wattles placed above the high water level on the creek banks to stop sediments from entering the stream channel, and live willow clusters and riprap to dissipate water energy at locations where side ravines and basins discharge into the creek corridor. Best Management Practices will be implemented during the construction of the creek channel to route sediment and other debris away from aquatic habitat such as Limekiln Creek as described in Section 5.053.2.

Other control measures to be used on the quarried benches, slopes and quarry floor, including; a) installation of rock lining where ditches are constructed in loose, weathered rock material; b) installation of riprap and energy dissipaters at the base of drainage collector ditches; c) routing runoff through basins to capture sediments; and d) installation of drop inlets with overside drains on some of the benches on the over-steepened slope and the fill buttresses on the west side to capture runoff and funnel it through culverts down to a low point where riprap energy dissipaters will be installed. This storm water will then flow into the West Basins where the sediments can filter out. The three cells that make up the West Basins will be altered slightly after mining ceases. The West Basins, Northeast Basin and the Restoration Basin which are part of the final reclamation plan were designed to accommodate storms producing a 100-year peak flow and to store 37, 30 and 97 years, respectively, of average silt load under reclaimed conditions, Appendix F-3 and Figures 6c, 8a and 10.

3.080 BIOTIC RESOURCES

3.081 Vegetation. Existing vegetation in the quarry environs includes Riparian Woodlands along the creek channels, Oak Woodlands on the lower canyon slopes and Chaparral on the upper slopes, ridges and south facing slopes. The most dominant vegetation in these different areas are the trees and shrubs.

The plants found in the Mixed Chaparral zones include; Chamise (Adenostoma fasciculatum), Manzanita (Arctostaphylos spp.), Pickeringina (Pickeringia montana), and Poison Oak (Toxicodendron diversiloba) California Sage (Artemisia californica), Toyon (Heteromeles arbutifolia), Stickey Monkey Flower (Diplacus aurantiacus), Spike Moss (Selaginella bigelovii), Coast Live Oak (Quercus agrifolia), Scrub Oak (Quercus dumosa), Deerweed (Lotus scoparius), Buckwheat (Eriogonium sp.), Silk tassel bush (Garrya elliptica) and Holly-leaf cherry (Prunus ilicifolia). Other plant species that may be found in this area are; Foxtail Fescue (Festuca megalura), Blue Dicks (Brodiaea pulchella), Blow-wives (Achyrachaena mollis), Melica (Melica sp.), and Mountain Mahogany (Cercocarpus betuloides).

Plants found in the Oak Woodlands include; California Bay (Umbellularia californica), Coast Live Oak (Quercus agrifolia) and Buckeye (Aesculus californica). The middle canopy is composed of shrubs including; Toyon (Heteromeles arbutifolia), Poison Oak (Toxidendron diversiloba), Coffeeberry (Rhamnus californica), Snowberry (Symphoricarpos sp.), Ceanothus (Ceanothus sp.), Goldenback Fern (Pityrogramma triangularis), Maidenhair Fern (Adiantum pedatum), Vetch (Vinca sp.), and Bedstraw (Gallium sp.).

Some other plants found in open areas between the Woodland and adjacent plant communities include; Shooting Stars (Dodecatheon sp.), Buttercup (Ranunculus sp.), Sticky Monkey Flower (Diplacus aurantiacus), Fremont's Star Lily (Zygadenus fremontii), Holly-leaf Cherry (Prunus ilicifolia), Coyote Mint (Monardella villosa), and Mountain Mahogany (Cercocarpus betuloides).

The vegetation in the Riparian California Bay Woodland includes; California Bay (Umbellularia californica), Big-leaf Maple (Acer macropyllum), Elk Clover (Aralia californica), Snowberry (Symphoricarpos albus var. laevigatus), Coastal Wood Fern (Dryopteris arguta), Giant Chain Fern (Woodwardia fimbriata) and Western Chain Fern (Woodwardia fimbriata). Plants that were found at the lower end of the tributary on the property, near Limekiln Creek, were; White Alder (Alnus rhombilfolia), Western Sycamore (Platanus racemosa), Poison Oak (Toxidendron divesiloba), Blackberry (Rubus discolor), and California Mugwort (Artemisia douglasiana). Other plants seen in this area are: Coast Live Oak (Quercus agrifolia), Miner's Lettuce (Montia perfoliata), Bedstraw (Gallium sp.), Chickweed (Stellaria sp.), Maidenhair Fern (Adiantum pedatum).

A search of the California Natural Diversity Data Base (CNDBB 2001) of the California Department of Fish and Game did not identify any special status plant species that are state or federally listed as threatened or endangered. This was corroborated by reconnaissance-level field surveys conducted in

October 2001 and in 1990. The plants identified on the property during these surveys are included in Appendix D. The special status-plant survey conducted by H.T. Harvey in 2003 did not find any special status plants at the site.

3.082 Wildlife. The wildlife species found in the vicinity are typical of the Central Coastal Range of California. There are a large number of animals found in the area because the numerous plant communities create different habitats, which support different animal types. In the habitat created by the California Bay forest along the upper portion of the creek, a variety of animals can be found including; Slender Salamander (Batrachoseps attenuatus), Arboreal Salamander (Aneides lugubris), Ensatina (Ensatina eschscholtzi), California Newt (Taricha torosa), Western Fence Lizard (Sceloporus occidentalis), Western Skink (Eumeces skiltonianus), Ringneck Snake (Diadophus punctatus), and the common Kingsnake (Lampropeltis getulus). Mammals which might be found here include; the Ornate Shrew (Sorex ornatus), Broad-footed mole (Scapanus latimanus), San Francisco dusky-footed wood rat (Neotoma fuscipes annectens), Western gray squirrel (Sciurus griseus), Botta's pocket gopher (Thomomys bottae), Ringtail (Bassariscus astutus), Bobcat (Lynx rufus), and Gray fox (Urocyon cinereoargenteus). In the habitat of the stream channel, there may be the California newt (Taricha torosa), Pacific treefrog (Hyla regilla), and Rainbow trout (Oncorhynchus mykiss). The Yuma bat (Myotis yumanensis) may also be found in this area. Animals from adjacent habitats come to the riparian area to find water, to drink and to rest in the shelter provided by the trees and plants.

Several birds species may be found at the site including the Western Screech-Owl (Otus kennicottii), Northern Pygmy-Owl (Glaucidium gnoma), and Great Horned Owl (Bubo virginianus). Numerous other bird species might be found in the habitat, such as cavities in the trees or in the lower understory vegetation.

In the Mixed Chaparral are animals which thrive in hot and dry conditions including; California quail (Lophortyx californicus), Wrentits (Chamaea fasciata), Spotted Towhee (Pipilo maculatus), and California Thrasher (Toxostoma redivivum). Animals will include: the brush rabbit (Sylvilagus bachmani), San Francisco dusky-footed wood rat (Neotoma fuscipes annectens), California mouse (Peromyscus californicus), Gray fox (Urocyon cinereoargenteus), Bobcat (Lynx rufous) and Coyote (Canis latrans). Reptiles in this area may include: the Western Fence Lizard (Sceloporus occientalis), Southern Alligator Lizard (Elgaria multicarinata), Pacific rattlesnake (Crotalus viridis) and Striped Rracer Lizards (Masticophis laterallis).

A list of special-status animal species that may potentially occur at the site as determined during field surveys in October 2001 and in 1990 is provided in Appendix D. These animals are those that are predicted to occur on-site in one of the numerous habitats. Only two animals were observed during the 2001 field survey; the Rainbow trout and the dusky-footed wood rat. A search of the California Natural Diversity Data Base (CNDDB 2001) did not report any species at the mining site that are state or federally listed as threatened or endangered.

3.083 Biotic Resources Mitigation. Removal of the different plant communities (Chaparral, Oak Woodland and Riparian Woodland) will be mitigated by revegetating the areas disturbed by mining activities. The concepts utilized in the revegetation plan include resoiling, hydroseeding the entire disturbed area and planting of native trees and shrubs in clusters to facilitate the blending of man-made with conditions. Restoration of the creek corridor will include planting riparian species. The revegetation plan is designed to restore the different plant communities and to recreate the different wildlife habitats.

3.090 VISUAL RESOURCES

3.091 Views Within the Site. Views within the quarry floor are limited by the surrounding slopes. The physical characteristics of the area include steep canyon hillsides covered with either

Chaparral (low dense shrubs) or Oak Woodlands (trees, shrubs and grasses), which provide limited views down the canyon and of hilltops.

3.092 Views From Off-Site. Visibility of the existing quarry work area from adjacent public roads is minimal due to the existing terrain. The quarry floor area is concealed from general public view but can be seen from a limited number of homes located on hilltops north and east of the quarry site. The upper slopes surrounding the quarry floor are also visible from the homes. The quarried slopes and benches are most visible at the residences to the north. Over time, after the new vegetation on the upper-quarried benches has matured, the plants will cover the bare slopes and the trees and shrubs will help to screen views of the man-made hillside.

3.093 Visual Mitigation. The upper slopes on the east side of the quarry have been excavated and are most visible at the residences to the north. Final graded slopes are designed to leave rounded contours rather than abrupt angles where mined slopes intersect the remaining natural slopes. Reclamation activities include hydroseeding and the planting of trees, shrubs and grasses on the completed slopes. These plantings will serve to control erosion, and will help to blend the disturbed slopes with the existing vegetation on the surrounding hillsides.

4.000 MINING PLAN

4.010 AREA AFFECTED BY MINING

The quarry operator leases approximately 68 acres of a larger parcel that measures approximately 102 acres. The property is contained in the USGS 7.5' Los Gatos Quadrangle and is further identified as Santa Clara County Assessor Parcel 537-07-024. A legal description of the Lexington Quarry lease area is provided in Appendix E. Of the 68-acre lease area, about 39.08 acres will be subject to mining and reclamation, about 3.25 acres will be subject to only reclamation and about 25.77 acres will be unaffected. The lease area, lot line adjustment area, and the areas subject to mining are shown on Figures 3 and 4.

4.020 ACCESS TO THE MINING AREA

Lexington Quarry is reached from State Route 17 by traveling about 1.1 miles on Alma Bridge Road, and about 1.1 miles on Limekiln Canyon Road to the quarry property. The driveway into the quarry is paved up to the scale house. The access route is shown on the Regional Location Map, Figure 1 and Vicinity Map, Figure 2. Internal site access is provided on temporary unpaved roads.

4.030 STARTING DATE, ESTIMATED LIFE AND DURATION

4.031 Starting Date. This is an ongoing operation. Quarrying activity at this location has been continuous since 1968. The current operator, West Coast Aggregates, Inc., has operated the quarry since October 1989.

4.032 Estimated Life of the Operation. The life of the mineral resource pursuant to the Mining Plan described herein is twelve years from the time that this Reclamation Plan is approved by the County, with an additional five years for maintenance activities. All mining operations shall be completed by or before December 31, 2027.

4.040 OPERATION SCHEDULE AND STATE OF READINESS

4.041 Operating Schedule. Lexington Quarry is active throughout the year. The level of activity is highest during the construction season between April and October each year and the lowest during the rainy season. The Quarry operation is closed on most Saturdays and on all Sundays and holidays except for special projects as approved in writing, by the County. Maintenance of equipment may be conducted on any day of the week.

HOURS OF OPERATION

Weekdays:	6:30 a.m. – 5:00 p.m.	Truck stacking
	6:30 a.m. – 5:00 p.m.	Truck loading
	6:30 a.m. – 5:00 p.m.	Truck travel on Road (Loaded)
	6:30 a.m. – 8:00 p.m.	Quarry Yard maintenance[2]
	7:00 a.m. – 6:00 p.m.	Excavation on Benches
	7:00 a.m. – 6:00 p.m.	Quarry Operations – Crushing and excavation
Saturdays: (Up to 15 per year; only 7 Saturdays between June 1 and Sept. 1)	8:00 a.m. – 6:00 p.m.	Quarry Yard maintenance[2] (Including Revegetation activities on Benches)
	9:00 a.m. – 4:00 p.m. (With Notification of County Planning Office Staff)	Excavation on benches, crushing, truck loading, and truck travel on Road (Loaded),
Sundays:	8:00 a.m. – 6:00 p.m.	Equipment maintenance and moving piles of rock/aggregate on quarry floor. No heavy equipment is allowed on the benches.

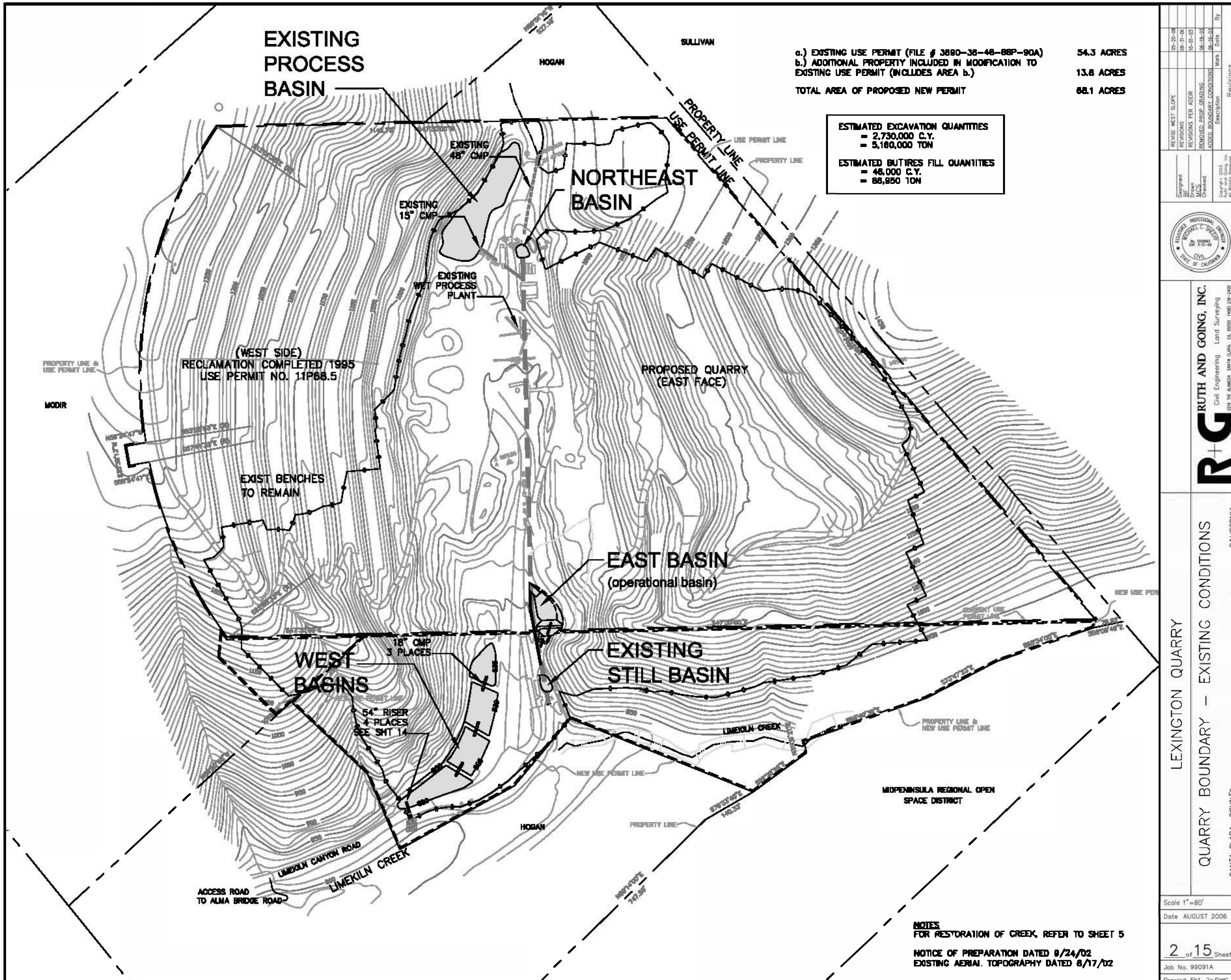
Notes:

1. Per County Surface Mining Standards, no commercial excavation is allowed on New Years Day, Independence Day, Labor Day, Thanksgiving or Christmas.

2. Quarry Yard Maintenance activities are defined as: (1) moving piles of rock/aggregate; (2) equipment maintenance; and (3) revegetation activities. Quarry Yard Maintenance does not include harvesting or excavation of rock or aggregate or excavation on the benches with heavy equipment.

3. Loading and hauling of material off-site in haul trucks will be allowed on up to 15 days per year. Saturday work days will be tracked by the County Planning Office which will receive notification prior to Saturday work.

4.042 Quarry Floor Activities. Figure 3 identifies existing uses including; the rock processing plant, shop and maintenance buildings, vehicle parking areas, boneyard (miscellaneous equipment and materials), office/scale house, stockpiles (product and topsoil) and basins. The rock processing plant, maintenance buildings and shop areas are at the upper (north) end of the quarry floor. There is one well adjacent to the water tanks by the shop, one by the scale house, one by the wash plant, one north of the shop near an employee parking area, and another one at the top of the quarried slopes on the west side. The vehicles used for mining move among the slopes, the rock processing plant and the stockpiles. Aggregate stockpiles are located across the haul road from the rock plant at the base of the west side slopes. The boneyard is located north of the tank shed. The office/scale house is located near the entrance to the quarry. Locations of the basins are shown on the quarry floor on Figures 6a-c, 8 and 10.



EXISTING DRAINAGE CONDITION IN 2002

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- PROPERTY LINE
- USE PERMIT LINE
- EXISTING CONTOURS
- LIMIT OF GRADING
- EXISTING CREEK
- RIP RAP SPILLWAY
- CMP CULVERT W/RISER
- BYPASS PIPES
- CULVERT
- BASINS

0 250 500

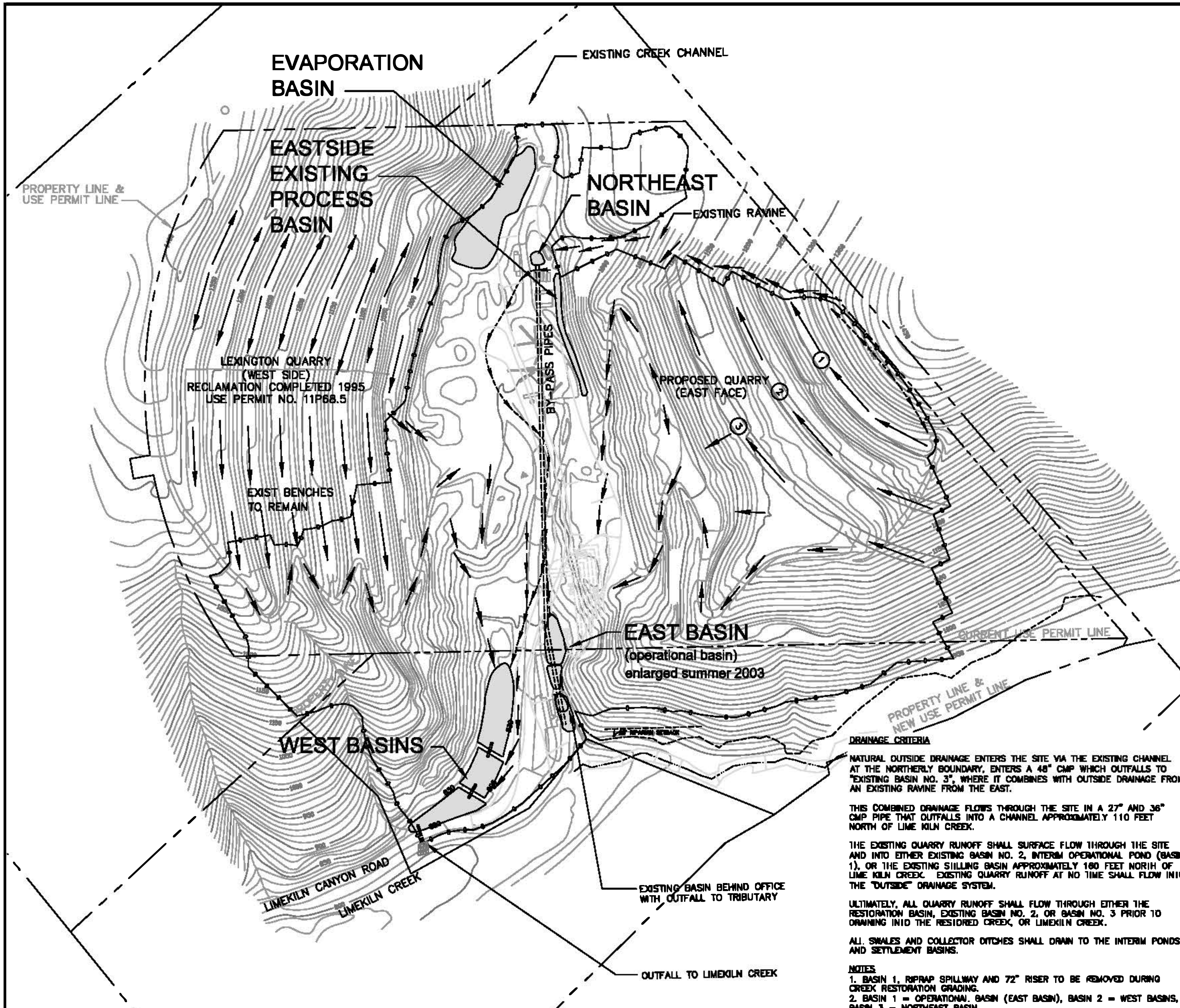
SCALE IN FEET

6a

FIGURE

Plan Prepared By: LSA Associates, Inc., 601 Gateway Blvd. Suite 1270, South San Francisco, CA 94080, (650) 985-2590, Info.Colma@LSA-assoc.com

AUGUST 2006



DRAINAGE CRITERIA

NATURAL OUTSIDE DRAINAGE ENTERS THE SITE VIA THE EXISTING CHANNEL AT THE NORTHERLY BOUNDARY, ENTERS A 48" CMP WHICH OUTFALLS TO "EXISTING BASIN NO. 3", WHERE IT COMBINES WITH OUTSIDE DRAINAGE FROM AN EXISTING RAVINE FROM THE EAST.

THIS COMBINED DRAINAGE FLOWS THROUGH THE SITE IN A 27" AND 36" CMP PIPE THAT OUTFALLS INTO A CHANNEL APPROXIMATELY 110 FEET NORTH OF LIME KILN CREEK.

THE EXISTING QUARRY RUNOFF SHALL SURFACE FLOW THROUGH THE SITE AND INTO EITHER EXISTING BASIN NO. 2, INTERIM OPERATIONAL POND (BASIN 1), OR THE EXISTING STILLING BASIN APPROXIMATELY 160 FEET NORTH OF LIME KILN CREEK. EXISTING QUARRY RUNOFF AT NO TIME SHALL FLOW INTO THE "OUTSIDE" DRAINAGE SYSTEM.

ULTIMATELY, ALL QUARRY RUNOFF SHALL FLOW THROUGH EITHER THE RESTORATION BASIN, EXISTING BASIN NO. 2, OR BASIN NO. 3 PRIOR TO DRAINING INTO THE RESTORED CREEK, OR LIMEKILN CREEK.

ALL SWALES AND COLLECTOR DITCHES SHALL DRAIN TO THE INTERIM PONDS AND SETTLEMENT BASINS.

NOTES

1. BASIN 1, RIPRAP SPILLWAY AND 72" RISER TO BE REMOVED DURING CREEK RESTORATION GRADING.
2. BASIN 1 = OPERATIONAL BASIN (EAST BASIN), BASIN 2 = WEST BASINS, BASIN 3 = NORTHEAST BASIN.

Description	Mark	Date	By
REVISE BASIN INFO		08-01-08	
REVISE WEST SLOPE		05-20-08	
REVISIONS		02-07-07	
REVISIONS		02-07-07	
REVISIONS		08-31-06	
REVISIONS PER ADEIR		10-01-03	
ADDED SHEET 3		06-18-03	

Revisions

Designed
Drawn MCS
Checked

REGISTERED PROFESSIONAL ENGINEER MICHAEL C. SHEEHY No. C029893 EXP. 3-31-09 CIVIL STATE OF CALIFORNIA

R+G RUTH AND GOING, INC.
Civil Engineering Land Surveying
2216 THE ALAMEDA SANTA CLARA, CA 95050 (408) 236-2400

LEXINGTON QUARRY
INTERIM DRAINAGE CONDITIONS
SANTA CLARA COUNTY CALIFORNIA

Scale 1"=80'
Date AUGUST 2006
3 of 15 Sheets
Job No. 99891A
Drawing Sht-3a.DWG

INTERIM DRAINAGE PLAN

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- DRAINAGE SWALE
- SIDE COLLECTOR DITCH
- BENCH INTERCEPTOR DITCH
- EXISTING CONTOURS
- LIMIT OF GRADING
- EXISTING CREEK
- (3) BENCH NUMBER
- RIP RAP SPILLWAY
- RISER CMP CULVERT W/RISER
- BYPASS PIPES
- CULVERT
- BASINS

NOTE:
1. SEE FIGURES 7a & 7b FOR GRADING SECTIONS & DRAINAGE DETAILS
2. SEE FIGURE 10 FOR GRADING OF CREEK, QUARRY FLOOR, AND ACCESS ROAD.
3. DURING RAINING SEASON RUN OFF FROM THE EAST SIDE IS DIVERTED TO THE WEST SIDE BASINS BY PLACING K RAILS ACROSS THE ACCESS ROAD
4. REFER TO APPENDIX F FOR HYDROLOGIC REPORTS.
5. THIS PLAN IS BASED ON CURRENT SITE CONDITIONS.

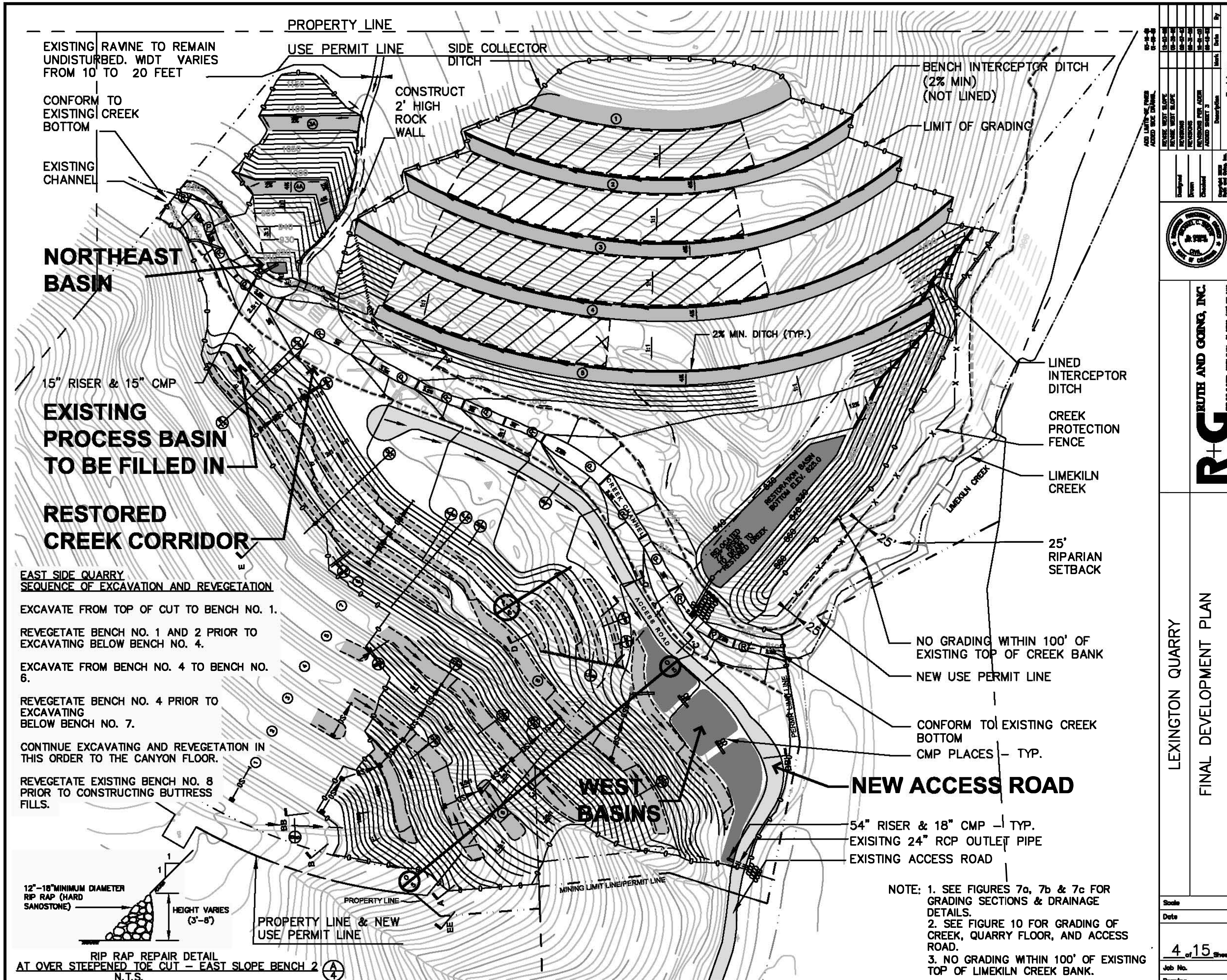
0 250 500
SCALE IN FEET

N

6b
FIGURE

Plan Prepared By: LSA Associates, Inc., 601 Gateway Blvd. Suite 1270, South San Francisco, CA 94080, (650) 885-2590, Info.Colma@LSA-assoc.com

AUGUST 2008


PROPERTY LINE
USE PERMIT LINE
EXISTING RAVINE TO REMAIN UNDISTURBED. WIDT VARIES FROM 10 TO 20 FEET
CONFORM TO EXISTING CREEK BOTTOM
EXISTING CHANNEL
SIDE COLLECTOR DITCH
CONSTRUCT 2' HIGH ROCK WALL
BENCH INTERCEPTOR DITCH (2% MIN) (NOT LINED)
LIMIT OF GRADING
NORTHEAST BASIN
2% MIN. DITCH (TYP.)
15" RISER & 15" CMP
EXISTING PROCESS BASIN TO BE FILLED IN
RESTORED CREEK CORRIDOR
LINED INTERCEPTOR DITCH
CREEK PROTECTION FENCE
LIMEKILN CREEK
25' RIPARIAN SETBACK
RESTORATION BASIN BOTTOM ELEV. 825.0
CREEK CHANNEL
ACCESS ROAD
EAST SIDE QUARRY SEQUENCE OF EXCAVATION AND REVEGETATION
EXCAVATE FROM TOP OF CUT TO BENCH NO. 1.
REVEGETATE BENCH NO. 1 AND 2 PRIOR TO EXCAVATING BELOW BENCH NO. 4.
EXCAVATE FROM BENCH NO. 4 TO BENCH NO. 6.
REVEGETATE BENCH NO. 4 PRIOR TO EXCAVATING BELOW BENCH NO. 7.
CONTINUE EXCAVATING AND REVEGETATION IN THIS ORDER TO THE CANYON FLOOR.
REVEGETATE EXISTING BENCH NO. 8 PRIOR TO CONSTRUCTING BUTTRESS FILLS.
NO GRADING WITHIN 100' OF EXISTING TOP OF CREEK BANK
NEW USE PERMIT LINE
CONFORM TO EXISTING CREEK BOTTOM
CMP PLACES – TYP.
NEW ACCESS ROAD
WEST BASINS
54" RISER & 18" CMP – TYP.
EXISITNG 24" RCP OUTLET PIPE
EXISTING ACCESS ROAD
MINING LIMIT LINE/PERMIT LINE
PROPERTY LINE
PROPERTY LINE & NEW USE PERMIT LINE
12"–18" MINIMUM DIAMETER RIP RAP (HARD SANDSTONE)
HEIGHT VARIES (3'–8')
RIP RAP REPAIR DETAIL AT OVER STEEPENED TOE CUT – EAST SLOPE BENCH 2
N.T.S.
NOTE: 1. SEE FIGURES 7a, 7b & 7c FOR GRADING SECTIONS & DRAINAGE DETAILS.
2. SEE FIGURE 10 FOR GRADING OF CREEK, QUARRY FLOOR, AND ACCESS ROAD.
3. NO GRADING WITHIN 100' OF EXISTING TOP OF LIMEKILN CREEK BANK.
R+G RUTH AND GOING, INC.
LEXINGTON QUARRY
FINAL DEVELOPMENT PLAN
SANTA CLARA COUNTY CALIFORNIA
4 of 15 Sheets

FINAL GRADING AND DRAINAGE

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- LINED INTERCEPTOR DITCH
- SIDE COLLECTOR DITCH
- BENCH INTERCEPTOR DITCH
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMIT OF GRADING
- LIMIT OF RIPARIAN HABITAT
- CREEK PROTECTION FENCE
- RESTORED CREEK CORRIDOR
- CREEK CHANNEL
- EXISTING CREEK
- BENCH NUMBER
- RIP RAP/SPILLWAY
- CMP CULVERT W/RISER
- LINED INTERCEPTOR DITCH
- BASINS
- DROP INLET
- OVERSIDE DRAIN
- CROSS-SECTION
- GENERAL LIMIT OF ORIGINAL FINE MATERIAL PLACED ON SLOPE
- LINED DITCH

0 200 400

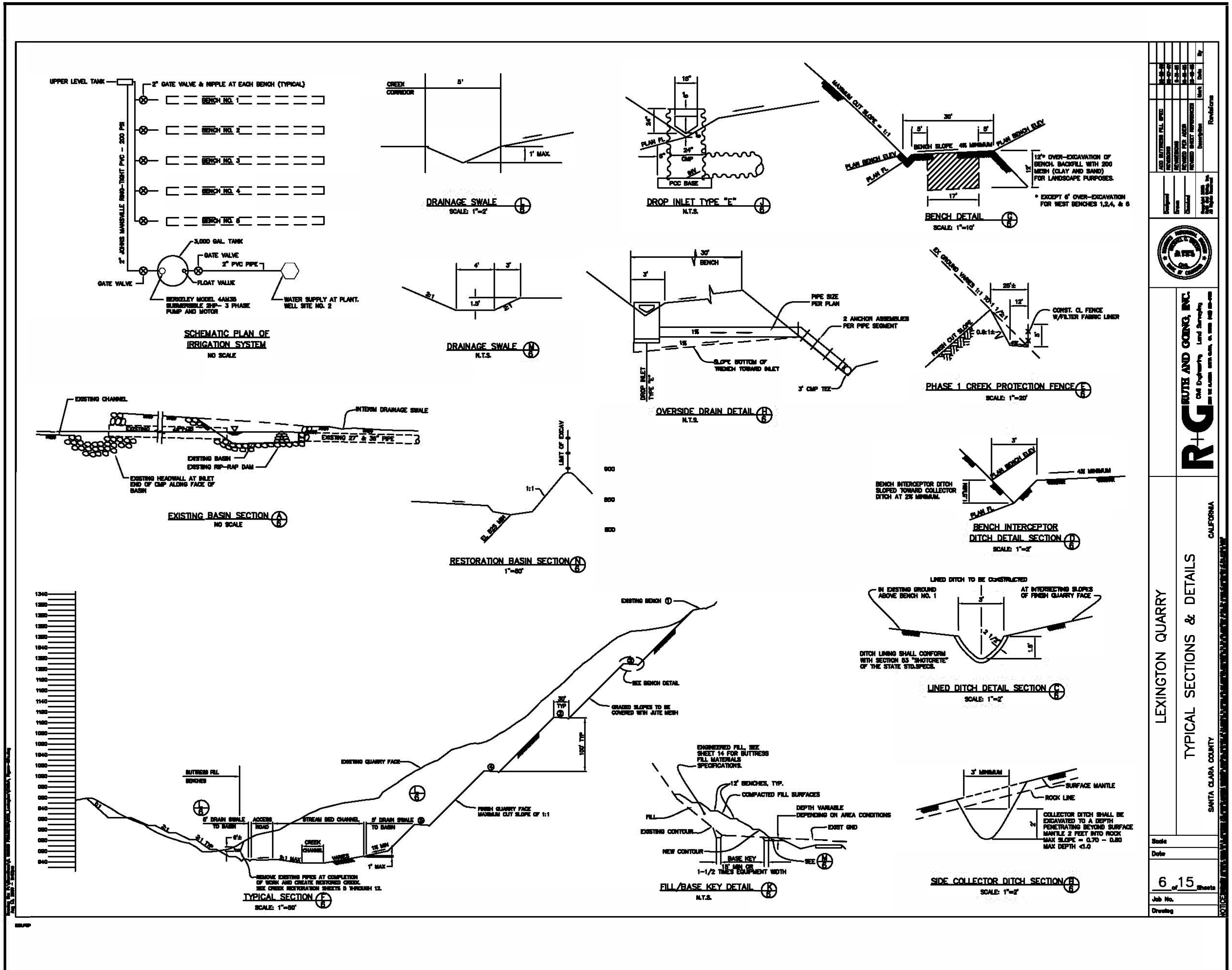
Scale in Feet

6c

FIGURE

Plan Prepared By: LSA Associates, Inc., 601 Gateway Blvd. Suite 1270, South San Francisco, CA 94080, (650) 985-2590, Info.Colma@LSA-assoc.com

AUGUST 2009



GRADING & DRAINAGE DETAILS & CROSS SECTIONS

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

7a

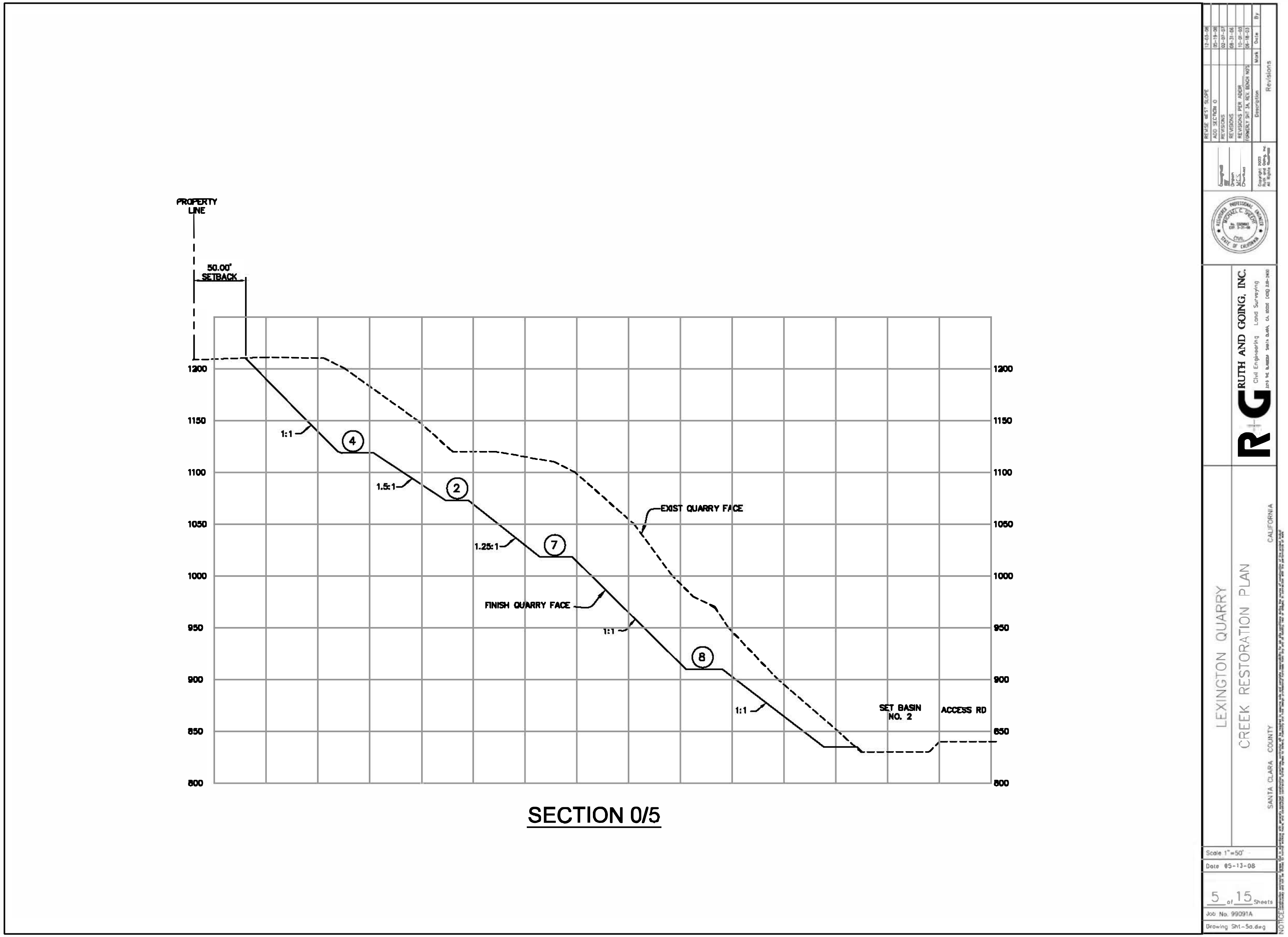
FIGURE

Plan Prepared By: LSA Associates, Inc., 601 Gateway Blvd. Suite 1270, South San Francisco, CA 94080, (650) 985-2590, Info.Colma@LSA-assoc.com

AUGUST 2009

GRADING CROSS-SECTION

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.



Note:
See Figure 6b for location of Section 0/5.

7b

FIGURE

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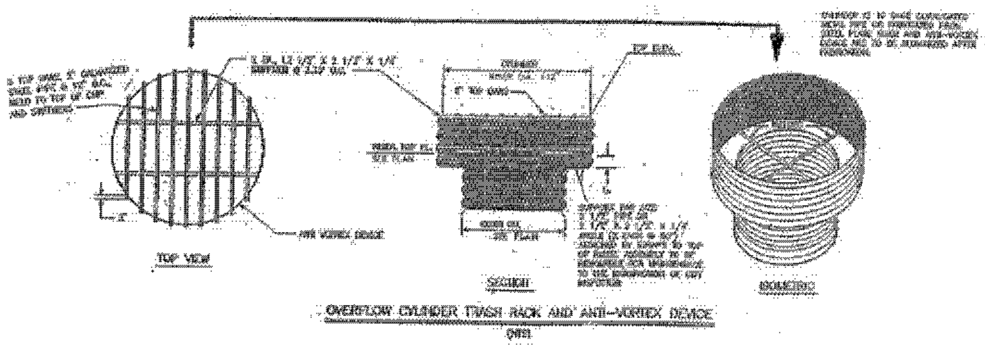
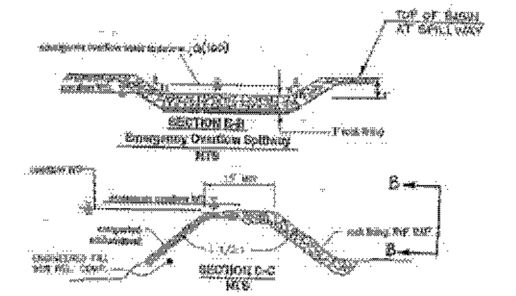
AUGUST 2009

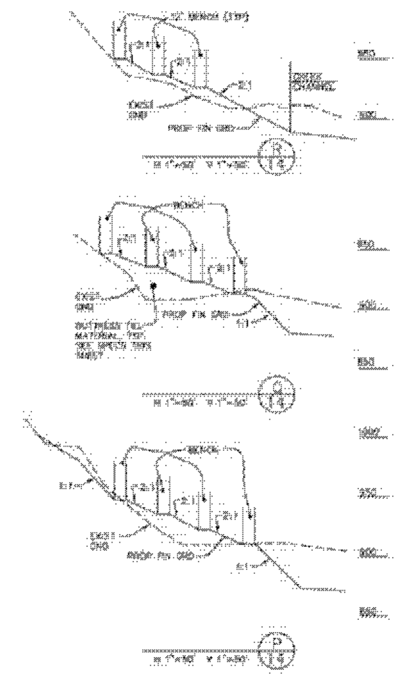
GRADING & DRAINAGE DETAILS

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.





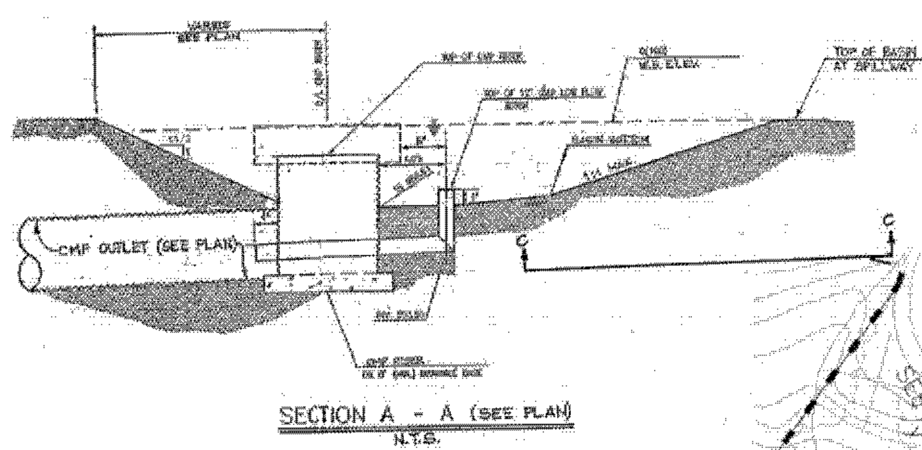
LEXINGTON QUARRY

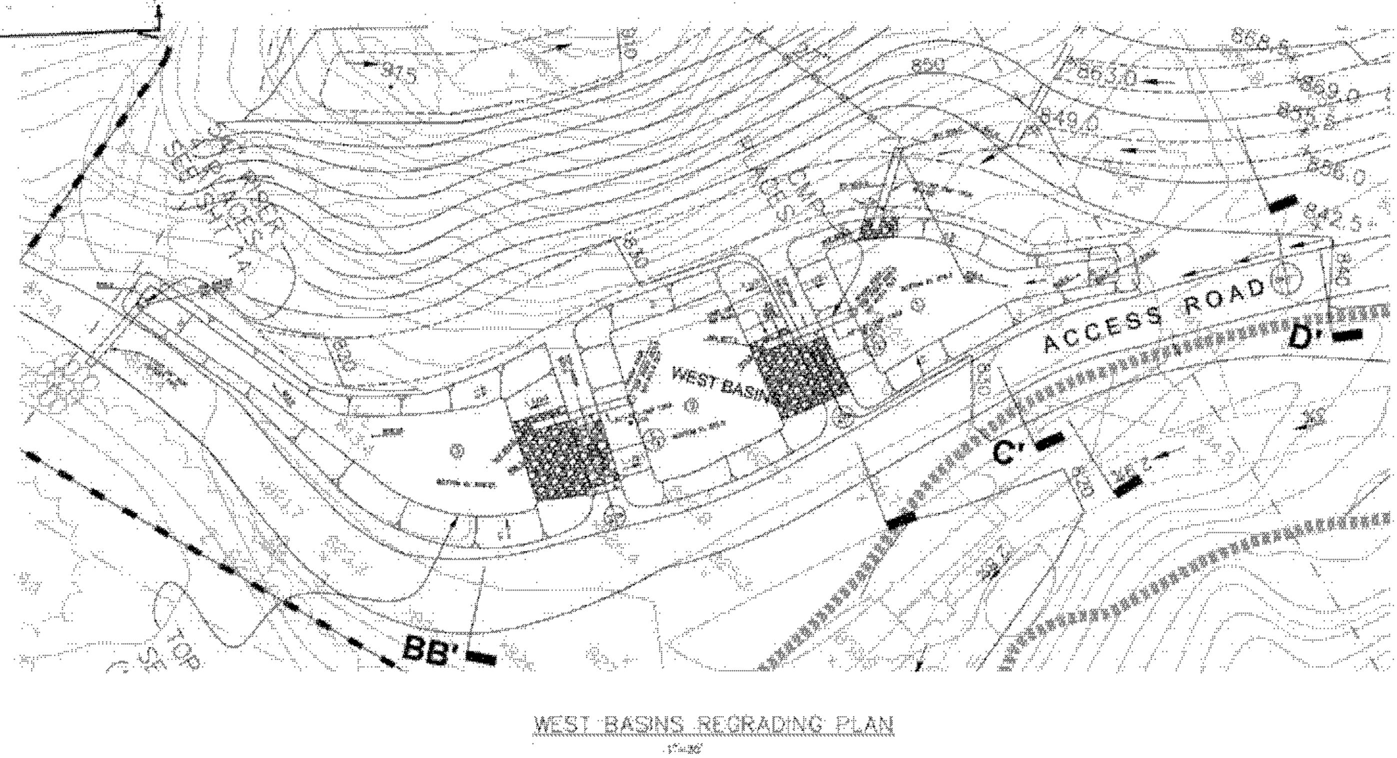


Buttress Fill Material Specifications: Engineered fill for the buttress should be predominantly granular with a plasticity index of 12 or less, and should be compacted to at least 95 percent relative compaction, as determined by ASTM Test Designation D1557. Fill material should not contain rocks or lumps greater than six inches in greatest dimension with not more than 15 percent larger than 2.5 inches. The material should not have more than 30 percent passing the No. 200 sieve.

Fill material should be spread and compacted in lifts not exceeding 12 inches in uncompacted thickness. The moisture content of on-site soils utilized as fill should be adjusted to at least their laboratory established optimum moisture content prior to compaction. Compaction should be performed using heavy compaction equipment such as a self-propelled vibratory sheepsfoot compactor.

The grading operations should be observed and tested by our representative for conformance with our recommendations. This work includes site preparation, selection of satisfactory fill materials, and placement and compaction of the fill. Sufficient notification prior to commencement of earthwork operations is essential to make certain that the work will be properly observed and tested.





RUTH AND GOING, INC.

LEXINGTON QUARRY

BASIN DETAILS

SANTA CLARA COUNTY CALIFORNIA

Scale AS SHOWN

Date AUGUST 2008

14 of 15 Sheets

7c

FIGURE

Plan Prepared By: LSA Associates, Inc., 601 Gateway Blvd. Suite 1270, South San Francisco, CA 94080, (650) 985-2590, Info.Colma@LSA-assoc.com

AUGUST 2009

4.050 DESCRIPTION OF QUARRIED MATERIAL AND LEVEL OF PRODUCTION

4.051 Geology of the Site. The Lexington Quarry is located in an area shown as “Sector II” on the map titled "Regionally Significant Construction Aggregate Resource Area In The South San Francisco Bay Production – Consumption Region", prepared by the State Mining and Geology Board (September 1985). The mapped area is described as Franciscan complex bedrock. The mining site contains predominantly graywacke sandstone.

4.052 Mineral Commodity Being Mined. Greywacke Sandstone is being mined for use as construction aggregate.

4.053 Composition of Mined Material. The Greywacke sandstone is hard but highly fractured. The rock can be harvested by bulldozers and excavators.

4.054 Anticipated Quantity of Materials to be Mined. The quarry is expected to yield a total of 4.5 million tons of saleable aggregate. Final grading contours are shown on the Final Grading and Drainage Plan, Figure 6c and on the Creek Restoration Plan, Figure 10.

4.055 Production Level. Rock products are excavated and processed on a daily basis to build up reserves. At the present time, the production target is about 425,000 tons per year and the average about 375,000 tons per year. Production is increased to meet market demand.

4.056 Anticipated Quantity of Topsoil and Overburden. There is no overburden waste. About one percent (1%) of the total material excavated for this project, 2,730,000 cubic yards (cy) will consist of topsoil, shale and weathered rock resulting in approximately 27,300 cubic yards. Of this amount, approximately 4,370cy will be topsoil and the remaining 22,930cy will be overburden. Both topsoil and the overburden are used to resoil the areas that are planted. In the past, topsoil had been temporarily stockpiled and then sold due to the lack of storage space and generally poor quality of topsoil. Presently, there is a stockpile of topsoil amounting to approximately 1,100 cubic yards. Overburden is amended and used as planting material in the planting trenches on the quarry benches and slopes. When the northeast corner of the site and the lot line adjustment area are cleared of vegetation, the topsoil and weathered overburden will be removed. The approximately 4,370cy of topsoil salvaged from the northeast corner of the site and the lot line adjustment area will be stockpiled on the lowermost west side bench for later reuse during reclamation planting. In addition, sediments salvaged from the basins will be stockpiled on the lowermost west side bench for later reuse during reclamation planting. The location of the topsoil storage is shown on Figure 3. Another ongoing source of planting material comes from the soil fines removed from the crushed rock while being processed through the wet process at the rock plant. These soil fines are routinely placed into the planting trenches and on the benches of the newly excavated areas to provide soil material for future planting.

4.060 DESCRIPTION OF MINING METHODS AND ON-SITE PROCESSING

4.061 Description of the Mining Plan. The primary focus of the mining plan is to; mine the east side slopes of the quarry lying between elevation 1,400 and elevation 900, stabilize the over-steepened slopes above the West Basins between elevation 820 and 1290, construct two fill buttresses, one below the completed quarried slopes on the west side between elevation 840 and 908, and the second buttress on the west side between elevation 870 and 955, lower the quarry floor to create a sloping terrain with an elevation range of about 890 to 820, remove the fines embankment north of the tank house during construction of cut and fill slopes at the base of the west slopes, and to excavate material out of the area where the future creek channel will be. The upper portion of the west side slope has already been completed between benches 1 down to the northern end of bench 8. However, the southwestern ends of benches 2 through 8 will be modified to transition into the regrading of the over-steepened slope above the existing West Basins. In addition, the fill buttress at the northeast end of the west slope below bench 8

will extend northward to stabilize a slipout above the old Process Basin (now used as an evaporation basin). The benched fill buttresses will be constructed, as specified in Appendix G-4, at the base of the west side slope with a slope gradient of 2:1 and 12-foot wide benches every 10 to 15 vertical feet as shown in the cross-sections on Figure 7c and on the Final Grading and Drainage Plan, Figure 6c. The West Basins were reconfigured in 2007 so they will accommodate the regrading of the over-steepened slopes above it. The east side slope and oversteepened west side slope will be left with 30-foot wide benches with 100 feet of vertical rise, while the "as-built" cut west side slopes will be left with 25-foot wide benches with 50 feet of vertical rise. These areas are left with intervening slopes having a 1:1 or flatter gradient per the cross-section on Figure 7a. However, the over-steepened slopes above the West Basins that will have a gradient of 1:1 to 1.5:1, as indicated and detailed in a cross-section on Figure 7b and as described in Appendix G-4. Benches will be constructed with a four percent (4%) back slope to prevent runoff from flowing over the face of the slope. Ditches at the back of the benches will be constructed with a minimum of a two percent (2%) lateral slope and a maximum of five percent (5%) lateral slope to drain and will have check dams every 100 linear feet.

The criteria for the proposed reconfiguration of the oversteepened slopes above the West Basins and the fill buttresses on the west side are described in more detail in the Geologic Mapping and Slope Stability Analysis Report, by Cleary Consultants, Inc, July 2006, and May 2008 and other reports prepared in January and February 2009; all are attached as Appendix G. The maintenance of accumulated fines and the correction of oversteepened toe areas on the east slopes are described in letters prepared by Cleary Consultants, Inc. in January and February 2009, Appendix G-4. Two oversteepened toe areas on the east slope will be stabilized by removing overhanging materials from a portion of the intermediate slope above Bench 1, and by correcting the reverse slope condition at the south end of Bench 2 by placing large-sized rock at the toe of the slope at a 1:1 gradient as detailed on Figure 6c. An evaluation of the existing east and west quarried slopes is also in the Cleary report, which states that these slopes "meet the required minimum safety factors of 1.5 for static and 1.15 for pseudo-static condition."[4]

Runoff in the ditches on the east side benches will be directed to flow in a northward direction to a side collector ditch that flows into a lined ditch that will take the water to the base of the slope where a drainage ditch will carry the runoff to the Restoration Basin. On the existing west side, runoff on benches and new benches on the two west side fill buttresses and on the oversteepened slope above the West Basin will be collected in interceptor ditches. The ditches, with one exception, will direct the water to drop inlets that will flow into overside drains that will carry the water down to the base of the west slopes. Drainage ditches will then collect the water and discharge into the West Basins, except at the south end of the southernmost fill buttress. There, runoff will be collected on the benches in ditches, directing runoff to a lined ditch that will flow downslope to a lower ditch on the bench at the base of the oversteepened slope, which will discharge into a culvert into the West Basins. As indicated on Figure 6c, Final Grading and Drainage Plan. Accumulated soil fines at the base of the slope on benches 2 through 5 on the east slope will be removed by hand if the fines interfere with drainage on the benches as described in Section 4.071. The future creek channel will have a trapezoidal shape that will have 2:1 side slopes and rock drop structure in the stream channel to maintain an approximate slope of 3.3 percent, Figure 12a.

4.062 Mining Method. Lexington Quarry is an existing hillside quarry. Most of the areas to be graded on the west and east side slopes have already been cleared of vegetation, and topsoil has been removed and stockpiled for future replanting. However, vegetative matter and topsoil will be removed from both the north east corner area and the lot line adjustment area shown on Figure 3. Initial grading of any area should, when feasible, be conducted during the dry season from approximately April 15 through October. Should grading occur during the wet season appropriate Best Management Practices will be utilized, including the use of coir wattles, silt fences, sediment traps and stilling basins.

[4] Cleary Consultants, Inc., Geologic Mapping and Slope Stability Analysis Report, by Cleary Consultants, Inc, July 2006; Response Letter and Review of Quarry Plan, May 2008; Use Permit EIR Geotechnical Issues, January 2009; and Supplemental Submittal Requested by Santa Clara County: Use Permit EIR Geotechnical Review Issues, February 2009, Appendix G.

The mineral resources are removed using bulldozers, excavators and front-end loaders. No blasting is required on the quarry slopes and benches. Slope areas are constructed with a final gradient of 1:1 or flatter and 30-foot wide benches are installed every 100 vertical feet (except the "as-built" final west side slopes which were constructed with 25-foot wide benches every 50 vertical feet), or the 1:1 and 1.5:1 gradients, as indicated, on the west side over-steepened slope above the West Basins. The fill buttresses will have 12-foot wide benches every 10 to 15 feet in vertical elevation and a longitudinal grade of not less than four percent (4%) and no more than twelve percent (12%). More detailed descriptions of the specifications for the buttress fill material are in Appendix G-4. The mining operation involves boundary staking, vegetation removal, topsoil salvage during the last phase of mining, harvesting and shipping as described below. The quarry floor will be lowered and graded to have a cross slope of about six to seven percent (6-7%). The creek channel will be constructed to vary in width from 80 to 120 feet between the top of banks, to be 11 to 15 feet deep, and the stream channel will vary from 10 to 30 feet in width as illustrated on Figures 12a and 12b.

4.063 Grading Control. Most of the upper slopes of the active mining area have been cleared and excavation is underway. On the east side slopes benches 1, 2, and 3 are completed and planted, bench 4 is nearly completed, and bench 5 is yet to be excavated. The boundaries of the mining area will be staked prior to beginning of excavation in new areas. Staking identifies the top edge and lateral limits of the excavation. Staking also identifies areas for topsoil salvage.

4.064 Topsoil Salvage. Topsoil removal is done at the outset of each mining increment. Most of the vegetation and topsoil has been removed from the east side slopes and the topsoil stockpiled. Recently, approximately 1,100 cubic yards (cy) of soil has been stockpiled. As mining proceeds into the northeast corner of the site and into the lot line adjustment area on the west side, topsoil will be removed and temporarily stockpiled on the lowermost west side bench, Figure 3, for later use in resoiling the final benches, quarry floor, fill buttresses and upper slopes of the restored creek corridor. About 4,370 cy of topsoil will be salvaged. The soil fines removed during the wet process at the rock plant also are an ongoing source of planting material.. These soil materials are routinely amended and placed into the planting trenches and benches on the newly excavated areas to provide soil material for future planting.[5] The stockpiles of overburden, topsoil and soil fines shall be managed to prevent erosion and will be clearly identified with signs.

4.065 Harvesting. Bulldozers, excavators and front-end loaders are used to excavate the rock deposits.

4.065.1 Contour Grading. This will be achieved through verbal instructions from the applicant's Project Supervisor to equipment operators. The final contours will have rounded edges rather than abrupt, engineered transitions at the outer edges of graded slopes.

4.065.2 Excavation Equipment and Technique. Topsoil and overburden will be removed by bulldozers and pushed downslope. Topsoil will be stockpiled for later reuse. Overburden and rock will be removed by bulldozers and excavators. Overburden will be temporarily stockpiled for use as on-site fill in the basins that will be partially or completely filled in, in the fill buttresses at the base of the west slopes, along the side slopes of the creek corridor and for planting. Loaders will be used to transport topsoil, overburden and rock from the harvest areas using temporary access roads.

4.065.3 Mid-Slope Benches. Runoff from the quarry slopes on the east side will be directed into interceptor ditches on the benches and then into side collector ditches or a lined ditch that takes the water to collector ditches on the quarry floor. Runoff from the quarry slopes on the west side will be directed

[5] At the time of planting, the soil used in the planting holes will be amended and fertilizer will be use in the planting holes and place in the planting trenches.

into interceptor ditches on the benches and then into drop inlets that flow into overside drain culverts. However, at the south end of the buttress by the West Basins the water is carried downslope in a lined ditch that carries the water to a low point that flows into a culvert and drains into the West Basins as shown on Figure 6c and detailed on Figure 7c. Ditches at the toe of the quarry slopes will carry storm water to the basins. Each bench will be constructed with a minimum four percent (4%) back slope to prevent runoff from flowing over the quarried slopes. The benches will also have a minimum of two percent (2%) cross slope and a maximum of five percent (5%) cross slope to facilitate positive drainage on the benches. The collector, interceptor ditches, drop inlets and over-the-side drain culverts will be constructed after the final grading configuration of each bench has been achieved. The drainage ditches on the benches shall have check dams every 100 linear feet and may be notched to reduce flow and prevent ponding on the benches. All of the benches will be a minimum of 30 feet wide. The benches will intercept loose rock that may come off the slope. The benches will minimize the chance of slope erosion or weakening of the slope resulting from runoff saturation.

4.065.4 Fill Buttresses. At the base of the west side, Figures 6c and 7a, are two areas with fill buttresses slopes. The fill buttresses shall consist of compacted crushed rock material, six inches in maximum size, placed in 8-12 inch lifts and compacted using a large self-propelled compactor to at least 95 percent relative compaction in accordance with ASTM D1557 Test Standard as described in Appendix G-4. The upper 12 inches may be granular soil material suitable to support plant growth, including a layer of topsoil as described in Section 5.053.1. The slopes of the fill buttresses will be constructed with 12-foot wide benches every 10 to 15 vertical feet and a longitudinal grade of not less than four percent (4%) and no more than twelve percent (12%).

4.065.5 Planting Trenches. A trench 17 feet wide and 6 or 12 feet deep, as indicated, will be excavated into each bench during mining. The planting trenches will be 12 feet deep on the benches on the east side and the on extension of some of the existing benches on the west side including bench 7 and the south end of bench 8. The planting trenches will be 6 feet deep on most of the new benches on the over-steepened slopes including benches 1, 2, 4, and 6 and the south end of bench 8 as shown on detail G/6 on Figure 7a. Soil fines from the aggregate washing system and sediments from the basins is deposited in the trenches and will later form the basis of the planting medium for bench revegetation.

4.065.6 Drainage from the Quarry Floor. The existing quarry floor is graded to achieve positive drainage. Storm water falling on the quarry floor is directed into drainage ditches, and swales and conveyed to the existing basins, Figures 3, 6a, Existing Drainage Conditions 2002, and 6b, Interim Drainage Plan. These ditches will be maintained during mining and relocated as mining moves into new areas. Runoff from the quarried slopes and benches will always be directed down to the quarry floor in drainage ditches with energy dissipaters at the base of the slope where the runoff will then flow into ditches that drain into one of the sediment basins. Some basins will be enlarged or modified and new ones constructed as the quarry expands as shown in Figure 6b-Interim Drainage Plan. Runoff from the quarry slopes joins runoff from the quarry floor in the basins. The basins remove sediments from the storm water before the water leaves the site. The final number and configuration of the permanent sediment basins is shown on Figure 6c, Final Grading and Drainage Plan. The interim and final basins have been designed per the hydrology reports in Appendix F-3 to have enough detention capacity to keep peak discharge in Limekiln Creek at or less than the pre-mining condition for peak charge.

4.065.7 Erosion Control. Erosion is controlled by the combination of planned drainage, revegetation improvements and management of stockpiles. Construction of benches, check dams, interceptor and collector ditches with energy dissipaters at the base of slopes, installation of culverts, drop inlets, and over-the-side drain pipes, and the use of sediment basins shown in the Final Grading and Drainage Plan, Figure 6c, will minimize the opportunity for runoff to concentrate and cause erosion. Check dams will be installed every 100 linear feet in the ditches on the quarry benches, and may be notched, as needed, to slow flows while limiting the ponding of water on the benches. Revegetation with grassland, herbaceous species, trees and shrubs will bind the soil particles together and break up the

erosion energy of raindrops. Temporary erosion control measures to be implemented in conjunction with revegetation efforts include; use of jute mats on the upper creek banks, coir wattles strategically placed at the front of the east benches 1, 2, 3 and 4 as detailed on Figure 9a, coir wattles placed at the high water line along the creek channel as detailed on Figures 9c and 12a. In addition, riprap and live willow clusters, as detailed on Figures 9c, 11 and 12 and Appendix H will be installed at the average high water level at locations where side streams, basins or culverts drain into the restored creek, and at locations where the creek drops in elevation using a riprap drop as detailed on Figures 10-12. This treatment will dissipate energy and help to protect and stabilize the side slopes and streambed of the creek. Stockpiles will be managed for wind and erosion to prevent erosion that may contribute to silt disposition in Limekiln Creek and Lexington Reservoir. Temporary erosion control measures to be used on the stockpiles during the rainy season may include; covering the piles before a rain event, using erosion control mats, surrounding the stockpiles with devices such as coir wattles or silt fences. Other measures may include constructing drainage ditches that collect storm water from the stockpiles and direct the storm water into one of the sediment basins. Topsoil stockpiles that are not going to be used in the near term could be hydroseeded.

4.065.8 Final Grading and Final Drainage Plan. The final grading configuration is shown on the Final Grading and Drainage Plan, Figure 6c and the Creek Restoration Plan, Figure 10; drainage ditches and basins are also shown. Figures 7a, b and c contain representative sections through the site showing both existing and final grades, and drainage details. Figures 11 and 12 show sections and details related to the creek channel.

4.066 Shipping: Front-end loaders are used for loading the rock material directly into haul vehicles. Haul trucks typically have a tonnage capacity of 20 to 25 tons (average 23 tons per load).

4.067 Detailed Description of Mining Phases in Relation to Reclamation. The mining and reclamation operation can be viewed as having three phases:

1) Quarry Slopes and Benches on the East Side;
2) Cut and Fill Slopes and Benches on the West Side; Quarry Floor and Creek Corridor; and
3) Completion of Grading Activities and Installation of Drainage Facilities, and Equipment removal.

Mining phases are described below and shown on the Final Grading and Drainage Plan, Figure 6c, the Creek Restoration Plan, Figure 10, and the Mining Sequence of Creek Corridor and Lowering of Quarry Floor on Figure 13a, and on the Sequential Removal of Bypass Pipe, Figure 13b. Reclamation is illustrated on Figure 8a, and 11; and detailed on Figures 9 and 12. Some operations will be scheduled concurrently.

4.067.1 Phase I - Detailed Description. The first phase of mining work typically starts with stripping away surface vegetation and removing the topsoil. However, most of the vegetation and topsoil has already been removed from the east side slopes under the existing permit issued in 1991. The uppermost benches on the east side, Benches 1, 2, 3 and 4 are completed; however, the oversteepened toe areas on Benches 1 and 2 will be corrected as described in Appendix G-4. Three of these benches, 1, 2 and 3, have been graded to their final configuration with drainage ditches and a planting trench, an irrigation system has been installed and the areas were revegetated. Bench 4 on the east side has been formed; although revegetation planting and installation of the irrigation system has not been done as of June 2010. The temporary East Basin (operational basin and process basin) has been installed.

The first phase of mining work also includes stripping away surface vegetation and removing and stockpiling topsoil from the northeast slope, constructing the creek protection fence, and excavating the east side bench 5, and the northeast slope benches 1 and 2, and relocating the Northeast Basin to the base

of the newly excavated northeast slope. The new Northeast Basin will be above the elevation of the existing tributary and no water from the tributary will flow into or be stored in this new basin.

As rock material on the north east slope is loosened, it will be pushed down the quarry face. The slopes, benches and planting trenches will be constructed as part of mining. The final drainage ditches on the benches will be installed as the slopes and benches are completed, and the planting trenches will be filled using concentrated silt cakes from the new (2003) all wash rock process plant and accumulated sediments from the basins. Final reclamation work on east slope benches 4 and 5 and on the northeast slope benches 3A and 4A includes installing the irrigation system to these areas, hydroseeding the quarried slopes and benches, and planting tree and shrub masses in clusters on the benches. The revegetation program is shown on the Revegetation Plan, Figure 8, and the plants and hydroseed mixes are described on Tables 4 to 8. All of the basins, as shown on Figures 3 and 6b, will remain in place during mining to provide sediment control.

4.067.2 Phase II – Detailed Description. The second phase of mining work involves the following; lowering the quarry floor to create a level and gently sloping terrain, constructing the northernmost fill buttress at the base of the existing west side slopes and benches as shown on Figures 6c and 7c, removing vegetative matter and stockpiling topsoil from the lot line adjustment area, and excavating the over-steepened slope above the West Basins as shown on Figures 6c and 7b. In addition, the second phase will include slightly reconfiguring the West Basins, constructing the Restoration Basin, and excavating the center and southerly ends of the restored creek corridor. The existing bypass pipes will be kept in place as long as possible. Removal of the pipe and construction of the creek channel will be sequenced so that creek waters are not exposed to the construction activity. Work will proceed from the south to the north so that the rock processing plant can remain in place as long as possible. This sequence is illustrated in Figures 13a and b, and described in more detail in Section 5.052.1. Construction of the creek corridor is a mining activity and is described in more detail in Section 4.068.

Towards the end of Phase II, the evaporation pond at the northwest end of the quarry, Existing Process Basin (northeast), the East Basin (operational basin) and the basin behind the office/scale house will no longer be required and therefore will either be filled in or incorporated into the creek corridor. The permanent basins (The West Basins, the Northeast Basin, and the Restoration Basin) will remain and continue to provide ongoing sediment control after mining and reclamation has been completed. The West Basins are planned as permanent basins.

4.067.3 Phase III – Detailed Description. The third phase involves completion of the creek corridor. Related reclamation work includes removal of quarry equipment and related structures. The process plant occupies areas where the new creek corridor and site access road is proposed. Related reclamation tasks include removal of final segments of the bypass pipes, and constructing the new access road on the canyon floor. Phase III also includes the final excavation of the creek corridor, construction of the southernmost fill buttress on the west side, alteration of the west edge of the Restoration Basin, and filling in of the Existing Process Basin to accommodate construction of the creek corridor and access road as shown on Figures 6c, 8a and 10. The final contours, drainage ditches, basins and access road on the quarry floor are shown in Figure 10, Creek Restoration Plan.

Final reclamation work in this phase includes; installing drainage ditches on the quarry floor to link drainage ditches on the quarried slopes and along the access road to the basins, installing temporary erosion control devices, resoiling the quarry floor and upper creek banks, and extending the irrigation systems to the newly graded and fill slopes on the west side to the creek corridor and the clusters of trees on the quarry floor. The areas to be revegetated include; the quarry floor, upper creek banks, and the over-steepened slope and fill buttress slopes on the west side. The revegetation program for the creek, quarry floor and west side slopes are shown on the Revegetation Plan, Figure 8a and Creek Restoration Plans, Figures 10 to 12. The plants and hydroseed mixes are described on Tables 3 to 7.

4.068 Construction of the Creek Corridor. The restoration of the open creek corridor involves the construction of a streambed and side slopes with a natural configuration. Since the existing terrain has a 9.4 percent drop from one end of the restored creek to the other, the new creek channel has been designed to reduce the velocity of the water in the creek by constructing a stream bed with a maximum slope of 3.3 percent and occasional four-foot drop structures to accommodate the change in elevation as diagrammed on Figure 12b. The width of the creek corridor will vary from eighty (80') to one hundred and twenty feet (120') wide and have 2:1 sideslopes. The stream bed, which will be about 10 feet wide, will be widened in designated locations to 30 feet in order to slow down the velocity of the water.

The creek corridor, as shown on Figure 10, duplicates the characteristic forms and patterns typically found in stream channels including the following elements: 1) the centerline of the streambed gently meanders from side to side, and 2) alternating bed forms – riffles and pools are incorporated. The pools and riffles alternate along the length of the corridor as shown on the Creek Restoration Plan, Figure 10, and Creek Restoration Details, Figure 12. The pools and riffles are spaced on the average of five to seven times the width of the streambed. The width of the active streambed varies from ten (10') to thirty (30') feet; thus, the pools and riffles alternate every 150 to 200 feet along the length of the channel. A riffle is where the streambed is raised due to the accumulation of relatively coarse-grained materials; and a pool is where the streambed contains a shallow pool abutting a slightly elevated sand bar, onthe concave side of the stream resulting from an accumulation of both coarse-grained and finer materials[6]. The basic configuration of the pools and riffles will be constructed. However, sand and coarse-grained materials will not be added; instead, it will be left up to the natural stream process to provide these materials.

The creek corridor and streambed are wider at two points: 1) one where water from the adjacent ravine enters the mainstream, and 2) where the Restoration Basin drains into the creek corridor. Riprap and extra live willow clusters will be used at these two locations to help strengthen and stabilize the sideslopes and streambed in these areas by dissipating the energy of the water. Detailed plans of these conditions are provided on Figure 11.

4.069 Depth of Maximum Excavation. The final benched cut face on the east side will extend from elevation 1315 down to the quarry floor which varies from elevation 900 to 820, an average vertical distance of 495 feet. The final benched cut face on the over-steepened slope on the west side above the West Basins will extend from elevation 1290 down to the West Basins at elevation 820, an average vertical distance of 470 as shown in Figures 6 and 7. The maximum depth of cut perpendicular to the face of the slopes is 495 feet.

4.070 On-Site Processing. All excavated rock will be crushed and screened at the existing rock processing plant. Crushed rock will be washed to remove fines.

4.071 Routine Maintenance Procedures. An integral part of the mining operation is the routine removal of debris from benches, removal of accumulated sediment from drainage ditches and basins, and regrading of the haul roads. A loader, bulldozer or bobcat may be used to remove debris from the benches if it will not impact the revegetation program on the benches; otherwise debris will need to be removed by hand. A backhoe or an excavator is used to clean out drainage ditches and basins annually before the winter rains come and when it is observed that a ditch is impacted by accumulated debris. A road grader is used to smooth unpaved access roads. Spilled rock or soil is cleaned up by hand or by using a loader.

While quarrying is still active, routine maintenance will include monitoring the condition of the fines placed on the intermediate slopes on the east side below benches 1, 2, 3 and a portion of bench 4 as shown on Figure 6c. These monitoring inspections will occur quarterly between April 15th and October

[6] Riparian Forests in California – Their Ecology and Conservation, Institute of Ecology, University of California, Davis, May 1977, Institute of Ecology Publication No. 15.

15th, and monthly during the rainy season between October 15th and April 15th, and recorded on Figure 17. The inspections will look for accumulated fines on benches 2, 3, 4 and 5 (being the benches below the slopes on which the fines were placed) and arrange for removal of accumulated topsoil/fines that slid down the slope which interfere with drainage on the benches. Accumulated soil fines on the east side benches 2 through 5 will be removed annually before October 1 each year. However, debris flows impeding the drainage system on the benches during the rainy season shall be removed as soon as possible.

By October 15th of every year, a map shall be submitted to the Planning Office showing the extent of fines remaining on the slopes (with an estimation of total quantity). Every five years, commencing June 2010, the total amount of fines remaining on the cut slopes will be evaluated by the County Geologist and Planning Office to determine if manual removal of the soil fines on the cut slopes on the east side is necessary. This decision will be based on the amount of fines remaining on the cut slope and the potential for these fines to create debris flows or impair long-term establishment of vegetation.

The soil fines, if required to be removed, may be removed with mechanical equipment if the equipment will not impact the reclamation vegetation on the benches; otherwise the fines will have to be removed by hand to avoid impacting the revegetation of the benches. To reduce erosion and concentration of surface water flowing down the slopes, coir wattles will be strategically placed at the front of the benches as detailed on Figure 9a.

4.080 OPERATING CONDITIONS

4.080.1 Off-Street Parking. Parking for all customer and employee vehicles is available within the quarry floor. Parking is available by the office/scale house and by the maintenance shop as shown in Figure 3.

4.080.2 Access Roads. The quarry property is entered from the existing, paved driveway off of Limekiln Canyon Road. Access within the quarry floor and the quarry work area is on temporary unpaved, compacted roads.

4.080.3 Dust Control. Water for dust control is obtained from two sources: 1) an existing well located between the creek and water tank by the shop, and 2) from the basins on the quarry floor. A 2,000-gallon water truck is used for wetting internal roads and active mining areas to minimize dust. Spray nozzles on the process plant minimize dust by wetting the aggregate at conveyor transfer points.

4.080.4 Grading. The Final Grading and Drainage Plan, Figure 6c, and the Creek Restoration Plan, Figure 10 is based on the recommended bench configuration set forth in the quarry geologic reports prepared by Wahler Associates between 1988 and 1989 (Appendix G). The stability of this configuration is addressed in the *Slope Stability Analyses Report*, July 2006, May 2008, and reports from January and February 2009 by Cleary Consultants, Inc. (Appendix G). Steepest average slope inclinations between benches is one foot horizontal to one foot vertical and benches are 30 feet wide for most areas; however, the "as-built" benches on the west side are 25 feet wide between 50 vertical feet slopes; and on the over-steepened slopes on the west side the slope inclination varies between 1.25:1 and 1.5:1, as indicated. The height of each slope between the benches is 100 feet or less as indicate on the western slopes. The fill buttress slopes on the west side will have slopes with a 2:1 gradient with 12-foot wide benches every 10 to 15 feet in vertical feet. All of these criteria are shown on the cross-sections in Figures 7a-c and described in Cleary's reports in Appendix G. The final bench configuration is designed to result in safe, stable slopes, facilitating drainage and revegetation.

4.080.5 Drainage and Sediment Control. The Final Grading and Drainage Plan and Grading Cross Section and Details, Figures 6c, 7a-c, 11a-b and 12a-b show drainage ditches or culverts channeling all runoff to basins. Basins are cleaned regularly to maintain proper functioning. Open drainage ditches, over loose, erodible soil, will be lined with crushed rock. Drainage ditches on the benches shall have check dams every 100 linear feet that may be notched to reduce flow and limit ponding. Energy dissipaters will be placed in the creek channel where drainage ditches and basins flow into the new creek. Energy dissipaters will be placed in appropriate locations when collector ditches flow down slope. The new creek corridor will be constructed with jute matting, willow clusters, riprap and coir wattles. Unpaved areas, subject to vehicular traffic within the operations area, are compacted for positive drainage.

At the conclusion of mining, four of the East Basins will be incorporated into the creek corridor; including the small basin behind the office, the East Basin (Operational Basin), the Northeast Process Basin and the existing Northeast Basin at the mouth of the bypass pipe. The existing Northeast Basin will be relocated to the base of the northeast slope, above the elevation of the adjacent tributary. A new, permanent basin called the Restoration Basin will replace the two lower operational and office basins on the east side. On the west side of the quarry floor the Evaporation Basin will be filled-in; and the West Basins will be reconfigured to represent their final positions to accommodate the access road and the re-grading of the over-steepened slope above the West Basins. The West Basins, as shown on the Final Grading and Drainage Plan, Figure 6c, and Creek Restoration Plan, Figure 10, have been sized so that they can accommodate a one hundred year peak flow event as described by Schaaf & Wheeler in the Hydrology Report (Appendix F-3) and to store many years of sediment accumulation as show in Table 3. In addition, these basins have been designed to have sufficient volume to discharge at a rate equal to or less than the pre-mining condition peak charge.

TABLE 3 HYDROLOGIC FACTORS				
FINAL BASINS	**DRAINAGE AREA CONTRIBUTING SEDIMENT**	**ACTIVE STORAGE AVAILABLE**	**BASIN SIZE (L x W x H)**	**Number of years Final Basin can accumulate sediments before requiring removal of sediments**
Restoration Basin	20.8 acres	1.9 ac. ft.	400' x 100' x 15'	97 years
West Basins	30.3 acres	1.30 ac. ft.	370' x 60' x 10.5'	37 years
Northeast Basin	1.7 acres	0.031 ac. ft.	60' x 40' x 10'	30 years

Source: Schaaf & Wheeler – Lexington Quarry Basin Sizing, April 2002, October 2003, August 14, 2006, May 25, 2008, and September 2008– Appendix F

4.080.6 Fencing, Posting and Security. Access to the mining site is restricted by a five-strand barbed wire fence located at the top of the quarry slopes. A lockable gate exists at the entrance to the quarry. Signs are posted at the entry driveways to identify the site as private property and warn unauthorized persons to keep out. A creek protection fence will be placed on the slopes above Limekiln Creek in the vicinity of the southern grading limit line and the riparian setback zone. This creek protection fence on the east side of the quarry above Limekiln Creek will remain in place until the planting success criteria in Section 6.030 have been achieved and approved by the County and the State Office of Mine Reclamation.

4.080.7 Use of Explosives. No Blasting will be used. However, if in the future a need for blasting arises, the operator will apply for a Use Permit amendment and be subject to all environmental review.

5.000 RECLAMATION PLAN

5.010 AREAS COVERED BY RECLAMATION

Reclamation work involves the quarry benches and slopes on the east side of the quarry floor, two fill buttresses on the west side, the quarry floor and creek corridor, the over-steepened slope above the West Basins, the reworked slopes above Limekiln Creek, and the basins to be eliminated or reconfigured, as well as correcting the reverse cut on east side bench 2.. Hydroseeding and/or the planting of native trees and shrubs will be used to revegetate these areas. The final slopes on the east side of the quarry varies from elevations 1400 to 850, the two fill buttresses on the west side varies from elevation 907 to 842 and 943 to 880, the over-steepened slope above the West Basins varies from elevation 1290 to 820, and the re-worked slopes at the south end of the east side of the quarry floor varies from elevations 940 to 830. The existing driveway from Limekiln Canyon Road and the new access road west of the restored creek corridor will be retained for continued general access to the site.

5.020 ULTIMATE SITE CONDITION

The final grading configuration of the quarry site is shown on the Final Grading and Drainage Plan, Figure 6c; on the Creek Restoration Plan, Figure 10; and on the Creek Planting Plans Figures 11a and 11b, and is explained further by the cross-sections, shown on Figures 7a-c and 12a-b. Final revegetation is shown on Figures 8a and 11a-b. The restoration of the creek corridor is shown on Figures 10 through 12.

When mining work is completed, the quarry cut slopes will have been excavated to achieve a 1:1 slope or flatter with mid-slope benches, except at the oversteepened slope were the gradients will vary from 1:1 to 1.5:1. Mid-slope benches, with drainage ditches and in some locations drop inlets with overside drains, will be a minimum of 30 feet wide and constructed at approximately 100-foot intervals (every 100 feet of vertical distance), as indicated on the cross-sections. The fill buttress slopes will have a 2:1 gradient with 12-foot wide benches every 10 to 15 vertical feet. The new creek channel will have side slopes with a maximum 2:1 gradient, and the maximum slope of the streambed with the rock drop structures will be 3.3 percent (3.3%).

When reclamation work has been completed, all filled areas, except the two fill buttresses on the west side, will have been compacted to 90 percent relative compaction up to five feet below the ground surface; the upper five feet will be filled with predominately granular material which is conducive to plant growth. The engineered fill for the two fill buttresses should be compacted to at least 95 percent relative compaction and other specified criteria as described in Appendix G-4. The upper 12 inches of the fill buttress will be granular soil material suitable to support plant growth, including a layer of topsoil. Topsoil will be spread on the quarry floor and creek side slopes. The final slopes, and quarry floor, measuring about 29.28 acres, will have been revegetated with a combination of hydroseeding and/or planting of tree and shrubs. The restored creek channel will have been hydroseeded and planted with riparian trees and shrubs. Existing water wells, the paved driveway up to the Use Permit line and the unpaved access road west of the creek corridor will be retained.

5.030 ALTERNATIVE FUTURE USES OF THE RECLAIMED LANDS

5.031 Possible Future Uses. All of the quarry lease area, measuring about 68 acres, will be suitable as private open space without private recreational use.

5.032 Preferred End Use. The preferred end use as private open space, could possibly be an addition to Mid Peninsula Regional Open Space District.

5.040 EVIDENCE THAT PROPERTY OWNERS ACKNOWLEDGE POTENTIAL FUTURE USES FOR THE RECLAIMED MINING SITE

The property owner acknowledges the potential future use of the site in a letter provided in Appendix C.

5.050 RECLAMATION PROCEDURES AND SEQUENCE

Reclamation work can be divided roughly into five categories having to do with equipment and building removal, re-grading, resoiling, drainage and revegetation. Work in the various categories will occur simultaneously. For instance, the installation of an irrigation system and the resoiling and revegetation of quarried slopes and benches can be done when mining of the slopes has been completed. Equipment removal involves disassembling fixed structures, demolishing buildings and removing movable structures, vehicles and supplies (oil and fuel). Grading includes filling the Evaporation Basin (the former Existing Process Basin in the northwest), and partially filling in a portion of the Restoration Basin, installing an unpaved, compacted access road west of the creek corridor, and ripping the quarry floor. Resoiling work involves spreading topsoil over the quarry floor and the upper creek banks. Drainage work includes construction of drainage ditches at the base of the quarry slopes and adjacent to the access road to direct drainage into the three permanent basins, and stabilization of the new creek streambed per Figures 10 to 12. Revegetation work includes the installation of an irrigation system, the installation of erosion control measures (jute matting, riprap, boulders, live willow clusters, and coir wattles), and hydroseeding and planting of shrubs and trees.

5.051 Reclaiming the Quarry Slopes and Quarry Benches

5.051.1 Resoiling the Quarry Slopes and Quarry Benches. Soil fines from the wash processing plant will be used to resoil the completed quarry benches and fill the planting trenches. This activity will be done when mining of the slope has moved at least one bench below the area to be reclaimed. A loader with a 6 cubic yard bucket will be used to place a three- to four-foot layer of moist soil onto the benches and to fill the trenches. In the past, the soil fines from the wash processing plant were also applied to the slopes below benches 1, 2, 3 and 4 on the east slopes. Following a SMARA inspection in November 2007, when the inspection team noted that certain areas of topsoil on the cut slopes had eroded, this practice was stopped. During the active quarrying phase, these east side slopes and benches will be inspected and maintained as described in Section 4.071.

During the last year of quarrying, the Operator shall address the areas where soil fines had been placed on some of the slopes on the east side to facilitate plant growth. The anticipated options will be to either:

a) remove from the intervening slopes below benches 1 through 4 on the east side all soil fines placed on those slopes by the Operator; or

b) obtain from a State-licensed engineer a Report, in form and content satisfactory to the County Geologist, analyzing the stability of all remaining soil on the intervening slopes below benches 1, 2, 3 and 4 on the east side which was placed there by the Operator. The Report will include recommendations for any actions which should be taken regarding the soil remaining on the intervening slopes. The Operator shall, after approval by the County, implement the approved recommendations at the beginning of the five-year post mining and maintenance period. The recommendations may include: removal of the soils on the intervening slopes below benches 1-4 on the east side which will require replacement of any required vegetation destroyed in the soil removal process.

c) After the County's approval has been implemented, and at the beginning of the five-year post-mining maintenance and monitoring period, the haul road used to access the east slope benches shall remain in place until the Operator no longer requires access to these benches or the intervening slopes for reclamation/monitoring purposes. After the haul road is removed

and the area is contour graded, the area will be hydroseeded, and the five-year monitoring period will commence for this location.

5.052 Equipment and Building Removal. The equipment at the quarry includes the rock processing plant, the excavation and loading vehicles, boneyard debris, the scale, water tanks, fueling tank, and office trailers. The rock plant will be disassembled and the movable items will be removed so they can be sold or taken to another West Coast Aggregates, Inc. facility. The tanks and drums will be sold to recyclers, returned to the distributor, or taken to another West Coast Aggregates, Inc. facility. The boneyard debris will be recycled.

The four buildings at the quarry that will be demolished include the shop, fuel tank shed, oil shed, and waste oil shed. These buildings will be demolished by a bulldozer. An excavator with a bucket will collect the debris and load it into semi-end dump trucks for transport to the Guadalupe Landfill in San Jose.

5.053 Reclaiming the Quarry Floor and Creek Corridor.

5.053.1 Ripping the Quarry Floor. After all of the equipment and buildings have been removed work can begin to prepare the quarry floor for reclamation. The Evaporation Basin (former Northwest Existing Process Basin), and a portion of the Restoration Basin, will be back-filled and compacted and the entire quarry floor will be ripped to leave a rough surface to hold the topsoil that will be added.

5.053.2 Creek Corridor Bypass Pipes Removal. The restoration of the creek channel and removal of the bypass pipes must be coordinated so that the water in the creek (un-named tributary) is not disturbed. Accordingly, the work should begin at the commencement of the dry season (after April 15) and be completed before the rainy season (before October 15). Construction of the new creek channel is considered to be part of mining but removal of the pipe is a reclamation activity. Thus, portions of the creek corridor can be excavated while the bypass pipes remains in place. Best Management Practices to be implemented during the removal of the bypass pipe and construction of the creek channel include: 1) not operating equipment in the active stream channel; 2) not allowing any debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen materials that is not used as part of the reconstruction of the creek channel to be placed where it could be directly washed by rainfall or runoff into an aquatic habitat such as Limekiln Creek; and 3) utilizing, where necessary, erosion control devices such as coir wattles, silt fencing, sediment trap, and stilling basins to route sediment and other debris away from aquatic habitat such as Limekiln Creek.

The sequence of removing the bypass pipes, and constructing the creek banks and channel is influenced by the fact that most of the new creek corridor overlays the existing alignment of the bypass pipes. Since the middle section of the new creek corridor is located to the east of the bypass pipe, this section should be constructed first (Figure 13, sequence no. 1). This way, the two parallel bypass pipes will continue to function while the middle portion of the new creek corridor is constructed. After the middle section of the creek is completed, the lower section of the bypass pipes will be removed. If water is running in the creek, a temporary flexible pipe will be used to move the creek water around the construction zone. Once the lower and middle sections of the creek corridor are in place, the middle section of the bypass pipes can be removed. The uppermost section of the creek corridor will be constructed and the final section of the bypass pipes will be removed last in the sequence. A temporary flexible pipe will be used to move the creek water around the construction zone if water is running in the creek. Resoiling of the side slopes, the placement of riprap, boulders, live willow clusters, jute matting, coir wattles in the creek corridor and side slope revegetation will be done after the creek stops flowing in the late spring. A Vegetation Report (Appendix K) was prepared for the revegetation of the lower portion of the creek channel. The report documents the vegetation type which currently exists near the convergence of the unnamed tributary and Limekiln Creek just south of the office. This vegetation type and planting scheme will be copied when revegetation of the lower portion of the creek channel is prepared.

The channel and banks of the creek corridor will be constructed as shown in the Creek Restoration Plans, Figures 10 to 12. The new creek corridor will vary between eighty to one hundred and twenty feet in width; have side slopes with a maximum gradient of 2:1 and a stream channel that varies between ten feet to thirty feet in width. The newly restored creek corridor will have a natural appearance with a meandering alignment and a streambed having alternating pools and riffles as found in existing undisturbed streambeds. Drop structures are included in the stream channel design to slow the water and compensate for the existing 9.4 percent slope. The creek plan allows for a maximum gradient of 3.3 percent between drops.

5.053.3 Resoiling of Quarry Floor and Upper Creek Banks. Stockpiled topsoil from the last phase of mining will be tested and amended for use in resoiling the quarry floor and the upper creek banks. Additional topsoil will be imported if necessary, and it also will be tested to determine what amendments are needed to support native plant growth. A bulldozer will be used to spread topsoil. Topsoil will be laid over the ripped quarry floor to a depth of 2 – 3 inches and to a depth of 5 - 6 inches on the upper creek banks as diagrammed on Figure 12. Resoiling will be completed while there is no water in the channel.

5.053.4 Grade New Access Road and Drainage Ditches. A bulldozer and grader will be used to construct a 25-foot wide unpaved access road on the quarry floor. A roller will be used to compact six inches of base rock to form the road surface. Drainage ditches will be constructed with a backhoe to direct runoff from the road and quarry floor into the basins.

5.054 Reclamation of Drainage Facilities

5.054.1 Filling and Compaction of Temporary Basins. When mining operations are complete and the quarry benches and slopes are revegetated, reclamation of the quarry floor will begin. Portions of two basins on the quarry floor will be filled; including the Evaporation Basin (former northwest Existing Process Basin), and the Restoration Basin. Crushed rock and soil will be used to backfill these basins. The fill will be compacted to ninety percent (90%) density up to five feet below the surface and the upper five feet will be granular material with a layer of topsoil (the ground surface will be ripped prior to receiving the topsoil layer). Loaders will be used for transporting fill material to the basins, and bulldozers will place fill. A sheep's foot compactor will be used for compacting. A motor grader will be used to shape the final surface area and to spread the topsoil layer as part of establishing the final quarry floor contours.

5.054.2 Interim Erosion Control in the Creek Corridor and Quarry Floor. Jute matting, live willow clusters, riprap and coir wattles will be installed on the newly restored creek side slopes to catch sediment and to control erosion until vegetation is established. The coir wattles will be placed about one foot above the high water line (about seven feet above the flow line). Jute matting will be placed over the topsoil on the upper creek banks to help stabilize the soil and minimize erosion.

Live willow clusters and riprap will be used on the side slopes of the creek channel at the locations where drainage ditches and basins flow into the creek corridor, as shown in Figures 11a and b. Riprap and boulders will occasionally be placed along the creek banks and the stream bed to duplicate what is found in undisturbed stream channels and to help protect the stream banks. Placement will be determined in the field by the project supervisor. Riprap will also be used in the stream channel at the drop locations where the elevation of the creek steps down so the 3.3 percent maximum gradient of the stream channel can be maintained. These erosion control measures are diagrammed on Figures 11 and 12.

5.054.3 Noxious Weed Removal Program. Various noxious weeds are disbursed by wind and birds and readily reinvade disturbed areas such as the quarry where they compete with the newly planted native species. A few Scotch Broom *(Cytisus scoparius) and* yellow starthistle (*Centaurea solstitialis*) have been observed at the quarry. The "Noxious Weed Removal Program" will eradicate these two plant

species and other noxious weeds identified by the California Department of Food and Agriculture per SMARA, in Appendix L.

During the first planting phase of the new mining permit, the noxious weed program will begin. The two targeted weed species will be systematically removed from the quarry property, by the quarry's revegetation expert. Work will begin at the top of the west side and work down the existing benches and slopes to the quarry floor; then commence at the top of the east side and work down the new benches and slopes to the quarry floor; then remove noxious weeds from the quarry floor and adjacent graded slopes until all targeted weed species have been removed from the mining permit area. This program will continue until the planting success criteria have been satisfied.

Depending on the location of the noxious weed species, the quarry's revegetation expert will either remove the weed by hand or use a defoliant in accordance with the manufacturer's specifications. Chemical control (i.e. Roundup or Garlon) should be used in the spring, after flowers have formed on the weed. If there are ever any large stands of Scotch Broom, the plant bio-mass will be cut-off just above the ground in late summer or fall and left to dry out on the ground.

5.055 Revegetation of Disturbed Areas

5.055.1 Revegetation Procedure. Disturbed areas will be revegetated using two treatments: 1) hydroseeding and 2) installing woody plants. The initial treatment involves hydroseeding the quarried slopes and benches, quarry floor, creek side slopes, the reworked slopes above Limekiln Creek, the fill buttresses on the west slopes, and the over-steepened slope above the West Basins. Since these locations have diverse conditions, three different hydroseed mixes have been designed as shown in Tables 6 to 8. The basic ingredients in all three hydroseed mixes will include: native plant seed, fertilizer, fiber, straw, and tackifier (binder)[7]. The fiber, straw and binder will create a layer on top of the seed to protect the seed from being scorched by the sun, being washed away by rain, or blown away by wind. The layer of straw also helps to decrease raindrop impact on the ground surface, prevents runoff concentration, and slows the velocity of runoff so that moisture can be retained in the soil. Hydroseeding will be done during the months of October and November when the first winter rains are expected. However, the creek corridor will be hydroseeded in the late spring after the creek stops flowing.

The fiber/straw layer will be varied in response to the site conditions: a) rice or clean grain straw will be used at dry locations; while, b) in the stream corridor barley or wheat will be substituted for the straw. The streambed and lower creek side slopes will not be hydroseeded because the hydroseed in these locations would wash away.

A Trial Planting program was implemented between 2006 and 2007 on the upper benches and intervening slopes on the east slope. Bench numbers 1, 2, 3 and 4 and the intervening slopes below these benches were resoiled with a three to four foot layer of soil fines. These soils fines were placed onto the face of the excavated slope to add soil medium to the slope, cracks and crevices on the slope. It has been established that the trees, shrubs, grasses and herbaceous plants planted in this soil medium in the planting trenches on the west side quarry benches have flourished and thrived; hence it was anticipated that this technique would also be successful on the east side benches and intervening slopes. Since the test program was initially implemented, it was determined that there was a risk that the soil material placed onto some of the east slopes could slide down the slopes, resulting in the accumulation of soil on the bench below; hence this part of the program (soil material being placed on the intervening slopes) has been discontinued. The existing soil fines remaining on the east side slopes below benches 1, 2, 3, and 4, and any accumulation of fines on benches 2, 3, 4 and 5 will be monitored as described in Section 4.071 and

[7] Except straw will not be used when hydroseeding on benches on the east side and future cut and fill slopes on the west side as discussed in Section 4.061.

either removed and the area revegetated as needed, or allowed to remain with County approved conditions based on a new geotechnical report as described in Section 5.051.1 and Appendix G-4.

The second revegetation treatment involves the planting of shrubs and trees in clusters on the benches and on the upper side slopes of the creek corridor. Selected areas of the quarry floor will also be planted with trees and tree/shrubs. Planting will be done between October and February (preferably between October and December); however, the creek corridor will be planted in the late spring after the creek stops flowing. Specific attention will be given to the planting on the benches. Massing of vegetation is planned to accomplish two objectives. One objective is to plant masses of trees and shrubs to blend with the existing vegetation on adjacent hillsides. The second objective is to screen the exposed man-made slopes. The plants will be one-gallon or tube stock size when planted. The small sized plant materials are used because they have a better record of rooting, adjusting to climatic conditions, and surviving.

5.055.2 Soil Amendments. Soil was taken from five representative locations and analyzed: a) Creek, b) Existing Process Basin, c) Bench #2 on east side, d) East toe, and e) Bench #4 on the east side. All samples were found to be low in organic content and nutrients, Appendix I. Amendments recommended in the soil analysis, Appendix I, includes ripping or loosening the soil and incorporating organic matter into the top six inches of the soil at the rate of 130 cy/acre, triple superphosphate (0-48-0) at the rate of 175 lbs./acre and potassium sulfate (0-0-50) at the rate of 175 lbs./acre. Soil material with high clay content should also receive gypsum at the rate of 1,300 lbs./acre. At the time plants are installed a top dressing of sulfur-coated urea (32-0-0) at the rate of 215 lbs/acre is recommended. Other soils, such as the soil fines from the rock processing plant, stockpiles of overburden and topsoil, and any other soils to be used for revegetation shall be analyzed for appropriate amendments to support native plants. These samples shall be randomly collected and analyzed by a qualified laboratory prior to planting. The recommended amendments shall be used when planting the plants on the reclamation planting lists in Section 5.055.3.

5.055.3 Plant Selection. Plant materials were selected to match the native plants found in the surrounding hillsides, ridges and creek as described in Section 5.055.4. A separate planting list for each area to be reclaimed has been prepared. The plants selected for the newly restored creek corridor are found in the riparian corridors of the undisturbed creeks near the property, Table 4. The plants selected for the reclaimed slopes and benches are found on the surrounding hot, dry and exposed hillsides and ridges, Table 5, and Appendix D. The quarry floor will be reclaimed by using a hydroseed mix containing native grasses and herbaceous plants and by planting some clusters of trees at the toe of the quarried slopes.

TABLE 4 WEST COAST AGGREGATES - LEXINGTON QUARRY CREEK CORRIDOR RECLAMATION PLANTING LIST				
	Latin Name	**Common Name**	**Plant Spacing**	**Planting Zone[8]**
TREES				
	Acer macrophyllum	Big-Leaf Maple	60’ o.c.	2
	Acer negundo var. californica	California Box Elder	20’ 0.c.	2
	Aesculus californica	California Buckeye	30’ o.c.	3
	Alnus rhombifolia	White Alder	5 - 15’ o.c.	lower 2
	Myrica californica	California Wax Myrtle	20’ o.c.	2
	Platanus racemosa	Western Sycamore	60’ o.c.	2 & 3
	Quercus agrifolia	Coast Live Oak	80’ o.c.	3
	Salix lasiolepis	Arroyo Willow	8-15” o.c.	2
	Umbellularia californica	California Bay	40-60’ o.c.	2
SHRUBS				
	Artemisia californica	California Sagebrush	6-8’ o.c.	2 & 3
	Baccharis pilularis consanquinea	Coyote Brush	10–15’ o.c.	lower 2 & 3
	Diplacus californica	Sticky Monkey Flower	10-12’ o.c	3
	Heteromeles arbutifolia	Toyon	15-20’ o.c.	3
	Prunus ilicifolia	Hollyleaf Cherry	30’ o.c.	3
	Rhamnus californica	California Coffeeberry	10 -12’ o.c.	3
	Rosa californica	California Rose	6 - 8’ o.c	3
	Rubus parviflorus	Thimbleberry	6 - 8’ o.c	2
	Rubus ursinus	California Wild Blackberry	6 - 8’ o.c	upper 2 & 3
	Salix lucida ssp. lasiandra	Pacific Willow	10’ o.c	lower 2
	Sambucus mexicana	Mexican Elderberry	15’ o.c.	3
	Symphoricarpos rivularis	Snowberry	6 - 8’ o.c	2
HERBACEOUS PLANTS & VINES				
	Erigeron glaucus	Seaside Daisy	Small cluster 0f 2 – 4 every 50’	3
	Iris Douglasiana	Douglas Iris	Small cluster 0f 2 – 4 every 250’	3
	Polypodium californicum	California Polypody	Small cluster 0f 2 – 4 every 200’	2
	Scrophularia californica	Bee Plant	Small cluster 0f 2 – 4 every 100’	3
	Woodwardia fimbriata	Giant Chain Fern	Small cluster 0f 2 – 4 every 200’	2
	Lonicera hispidula	Hairy Honeysuckle	One plant every 200 feet	2, 3

[8] Planting Zones: 1: STREAM CHANNEL ZONE; 2: CREEK SIDE-SLOPE ZONE; 3: TOP OF BANK ZONE. (Refer to Figures 10 - 12)

TABLE 5 WEST COAST AGGREGATES - LEXINGTON QUARRY RECLAMATION PLANTING LIST for QUARRY BENCHES				
	Latin Name	**Common Name**	**Plant Spacing**	**Planting Zone[9]**
TREES				
	Quercus agrifolia	Coast Live Oak	20' o.c.	3
	Pinus attenuata	Knobcone Pine	20' o.c	1
TREE/SHRUB				
	Cercocarpus betuloides	Mountain Mahogany	12' o.c.	1,3
	Heteromeles arbutifolia	Toyon	*	1-3
	Prunus ilicifolia	Hollyleaf Cherry	*	1-3
	Rhamnus californica	California Coffeeberry	*	1-3
	Sambucus mexicana	Mexican Elderberry	12' o.c.	1,3
SHRUBS				
	Adenostoma fasiculatum	Chamise	*	2,3
	Arctostaphylos glauca	Big Berry Manzanita	*	3
	Artemisia californica	California Sagebrush	6-8' o.c.	1
	Baccharis pilularis consanquinea	Coyote Brush	10–15' o.c.	1,2
	Diplacus aurantiacus	Sticky Monkey Flower	10-12' o.c	2
	Quercus dumosa	California Scrub Oak	*	2
	Rosa californica	California Wildrose	*	3
	Salvia Californica	California Sage	*	2
VINES				
	Lonicera hispidula	Hairy Honeysuckle	15'	1,3

***** Will be planted in clusters approximately 2 – 5 feet apart as shown on Figure 9a

5.055.4 Tree and Shrub Planting Specifications. One gallon and tube stock sized native trees and shrubs will be acquired from nursery stock and, when possible, the trees and shrubs will be propagated from local stock. Planting locations are shown on the Revegetation Plan, Figures 10 and 11. All tree and shrub plantings will be conducted between the months of October and February, preferably between October and December. Since hydroseeding will occur first, a lot of the preparation for planting will be done before hydroseeding to avoid degradation of the hydroseeded surface. Planting holes will be dug in the planting trenches, irrigation will be installed and a marker stake posted in each planting hole before hydroseeding. The trees and shrubs will be planted in clusters according to the spacing shown in Table 5 above and as detailed on Figure 9a.

On the benches, trees and shrubs will be planted into planting holes dug in the planting trenches as shown in detail G/6 on Figure 7a. The planting trenches will be constructed during mining to a width of about seventeen feet and a depth of about twelve feet then filled with amended soil fines and accumulated basin fines. This procedure was successfully used on benches 6 and 7 on the west side where the plants have survived and have flourished. Therefore, this procedure will continue to be used as part of the reclamation program for the benches on the east side of the quarry floor. The planting holes will be dug with a shovel or similar tool to create a hole with sides and bottom approximately twelve inches greater in diameter and twelve to eighteen inches deeper than the container as detailed on Figure 9b. Plants will be set plumb in the middle of the planting holes.

Soil samples from the mining site were collected and analyzed in 2002 to determine which supplemental nutrients should be added to the soil used in the planting holes and trenches Appendix I. For future

[9] Planting Zones: 1: Front of bench 2: Middle of bench 3: Back of bench. (Refer to Plans and Sections)

plantings, additional soil samples will be taken from stockpiles of topsoil, accumulated fines and any other new soil source to determine the appropriate nutrients that are needed to support native plants as described in Section 5.055.2. The effectiveness of the soils and amendments will be documented in the Revegetation Monitoring Program described in Section 6.030. The inspections will be included in the Mining Operation Annual Inspection (MRRC-2) reports to the Office of Mine Reclamation, and the County.

Each planting hole will be backfilled using local soil or potting soil (one part), mulch (one part), and soil amendments (one part). Fertilizer tablets will be placed in each planting hole about six inches from the bottom of the planting hole – two tablets for trees and one tablet for shrubs. Fertilizer tablets (Agriform or equivalent) will also be placed into the planting trench at a depth of twelve inches, six feet on-center, starting four feet from the center of the planting groups and again at a distance of 8 to 10 feet away from the grouping. This will provide nutrient supplies into the future. The planting medium will be tamped down around the plant so that the crown of the plant is at ground surface, and a shallow water basin will be formed around each tree and shrub. A three-inch layer of mulch will be placed in each watering basin to help conserve moisture. Plants will be thoroughly watered after planting, according to the schedule described in Section 5.055.7.

5.055.5 Hydroseeding Locations and Specifications. The three different hydroseed mixes recommended by Pacific Coast Seed, Inc. contain native grasses, herbaceous and woody plant materials. The different hydroseed mixes will be used for the different site conditions found at the quarry including the creek corridor, the flat canyon bottom (former quarry floor), quarried and fill slopes and benches. The hydroseed mix for the creek channel contains plants commonly found in moist riparian habitats. Plants that are more commonly found on the surrounding hot and dry slopes are included in the hydroseed mix for the quarried benches and slopes and oversteepened slope. lants found in a grassland valley floor are included in the hydroseed mix for the reclaimed quarry floor. The locations where these different hydroseed mixes will be applied are shown on the Reclamation Plan, and Creek Restoration Plan, Figures 8 and 10, respectively. The hydroseed mixes are described in Tables 6 and 8.

Hydroseeding is the most practical method to revegetate the oversteepened slope above the West Basins, the graded slope above Limekiln Creek, the quarried benches and slopes, and the quarry floor while also providing erosion control for these areas. The rough surface of the cut slopes will help to catch and hold the seed; extra tackifier will be added to the hydroseed mixture to help the mixture stick to the steep slopes. Typically hydroseeding will be done in the fall immediately before the rains begin; except in the creek corridor. The creek corridor will be hydroseeded during the late spring to keep the hydroseed mix from entering the creek water course when there is water in it. Hydroseeding in the fall months will ensure adequate moisture and will minimize the potential for hot summer temperatures to damage the seeds.

The Three Step Straw Treatment described in Tables 6 and 8 will be used on the upper slopes of the creek and on the quarry floor. This treatment includes seeds, fertilizer, fiber, soil amendment (Mycorrhizal inoculants), straw and tackifier. Each of these ingredients facilitates the growth of the seed. The fertilizer and soil amendment provide the seeds with nourishment while the fiber, straw and tackifier help to protect the seed from the elements, to minimize erosion from the impact of rain drops on the exposed soil surface, and to reduce the concentration of run-off. The Three Step Straw Treatment on Table 7 indicates that the quarry benches and slopes will receive a layer of straw as part of the hydroseeding process.

However, at the “Trial Planting Area” on benches 1, 2 and 3, the Three Step Treatment was not used. Instead, a two step method was used that will use soil fines and additional fiber in place of straw (refer to the notes in Table 7). This method is considered to be successful; hence it will be used on the remainder of the quarry benches. This two-step process is shown in the specifications on Table 7.

TABLE 6 LEXINGTON QUARRY – RECLAMATION PLAN HYDROSEED MIX FOR UPPER SLOPES IN CREEK CORRIDOR		
Lbs/Acre	**LATIN NAME[10]**	**COMMON NAME**
0.1 lbs/ac	Artemesia Douglasiana	Mugwort
0.5 lbs/ac	Amsinckia intermedia	Fiddleneck
10.0 lbs/ac	Elymus glaucus	Blue Wild Rye
8.0 lbs/ac	Hordeum brachyantherum	Meadow Barley
4.0 lbs/ac	Lotus scoparius	Deerweed
3.0 lbs/ac	Lupinus arboreus	Bush Lupine
1.5 lbs/ac	Lupinus bicolor	Dove Lupin
2.0 lbs/ac	Melica imperfecta	Coast Melic
0.15	Mimulus gutatus	Seep Spring Monkeyflower
4.0 lbs/ac	Nassella pulchra	Purple Needlegrass
2.0	Trifolium obtuoiflorum	Creek Clover
HYDROSEED SPECIFICATIONS:		
Step One:		
500 lbs/ac	7-2-3 Bisol Fertilizer Mix	
500 lbs/ac	Enviro Fiber	
	Seed Mix (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM 120/3	
Step Two:		
4,000 lbs/ac	Barley or Clean Wheat Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro Fiber	

NOTE: Hydroseed mix based on Pure Live Seeds (PLS). Hydroseed process to be the Three-Step Straw Treatment as recommended by the Water Quality Control Board.

[10] The seeds are to be "Pure Live Seed", and the pounds per acre reflects this.

TABLE 7
LEXINGTON QUARRY – RECLAMATION PLAN
HYDROSEED MIX FOR CUT & FILL SLOPES & BENCHES & REWORKED SLOPE

Lbs/Acre	LATIN NAME[11]	COMMON NAME
2.0 lbs/ac	Vulpia microstachys	Six-week Fescue
6.0 lbs/ac	Bromus carinatus	California Brome
4.0 lbs/ac	Elymus glaucus	Blue Wild Rye - Santa Clara source
15.0 lbs/ac	Elymus X triticum	Regreen Hybrid Wheatgrass
3.0 lbs/ac	Lotus scoparius	Deerweed
0.75 lbs/ac	Eschscholzia californica	California Poppy
0.25lbs/ac	Erogonium fasciculatum	Buckwheat
0.25 lbs/ac	Adenostoma fasiculatum	Chamise*
0.50 lbs/ac	Artemisia californica	California Sagebrush
1.0 lbs/ac	Lotus purshianus	Spanish Lotus
0.05 lbs/ac	Mimulus auranticus	Sticky Monkeyflower
HYDROSEED SPECIFICATIONS FOR STEEP 1:1 SLOPES & BENCHES[12]		
Step One:		
1,000 lbs/ac	Enviro Fiber	800 lbs/ac to be used in the Trial Planting Area
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	40 lbs/ac to be used in the Trial Planting Area
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	Not to be used on the east side or remaining benches and slopes to be constructed after 2009 on the west side
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	1500 lbs/ac to be used in the Trial Planting Area

NOTES:

1. Hydroseed mix based on Pure Live Seeds (PLS).
2. * Smoke treatment" to be added to facilitate germination of the Chamise seed.

[11] The seeds are to be "Pure Live Seed", and the pounds per acre reflects this.
[12] The Two Step process has been used on the Test plots in the Trial Planting Area, and will continue to be used on all remaining quarry slopes and benches to be revegetated.

TABLE 8 LEXINGTON QUARRY – RECLAMATION PLAN HYDROSEED MIX FOR QUARRY FLOOR		
Lbs/Acre	**LATIN NAME[13]**	**COMMON NAME**
15.0 lbs/ac	Elymus X triticum	Regreen Hybrid Wheatgrass
6.0 lbs/ac	Nassella pulchra	Purple Needlegrass
6.0 lbs/ac	Nassella cernua	Nodding Needlegrass
4.0 lbs/ac	Melica californica	California Melic
2.0 lbs/ac	Poa secunda	California Native Pine Bluegrass
2.0 lbs/ac	Lotus purshianus	Purshings Lotus
1.5 lbs/ac	Lotus purshianus	Spanish Lotus
3.0 lbs/ac	Lotus scoparius	Deerweed
2.5 lbs/ac	Lupinus arboreus	Tree Lupine
2.0 lbs/ac	Lupinus bicolor	Dove Lupine
1.0 lbs/ac	Eriogonum fasciculatum	Buckwheat
HYDROSEED SPECIFICATIONS:		
Step One:		
1,000 lbs/ac	7-2-3 Bisol Fertilizer Mix	
1,000 lbs/ac	Enviro Fiber	
	Seed Mixture (above)	
100 lbs/ac	M- Binder	
60 lbs/ac	Mycorrhizal Inoculant-AM – 120/3	
Step Two:		
4,000 lbs/ac	Rice or Clean Cereal Grain Straw	
Step Three:		
150 lbs/ac	M-Binder	
500 lbs/ac	Enviro-Fiber	

NOTE: Hydroseed mix based on Pure Live Seed (PLS). Hydroseed process to be the Three-Step Straw Treatment.

5.055.6 Review of Past Plant Selections and Modifications. Landscape architect Jeffery Heid prepared various status reports regarding the success of previous revegetation programs at the quarry during the 1980's and 1990's. The reports included recommendations to modify the planting list based upon the success or failure of specific plant species to grow and become established. The quarry revegetation staff will continue to use this adaptive management approach for final reclamation of the site. Native plant species that are successfully surviving and self-regenerating will continue to be planted while those plant species, which are failing, will be dropped from the Master Plant List, Tables 4 and 5. For example, it was found that Toyon was not growing well because of severe over-grazing by deer, while Coyote Brush was growing well and regenerating elsewhere on the quarry benches. The insights of the successes and failures of specific plants at the quarry are shown on Table 9.

[13] The seeds are to be "Pure Live Seed", and the pounds per acre reflects this.

TABLE 9 CHRONOLOGY OF PAST PLANT SELECTION AND DELETIONS [14]			
COMMON NAME	**LATIN NAME**	**COMMENTS**	**SUBSTITUTION**
Ceanothus	Ceanothus thyrisflorus	Substitutes were suggested	Dendromecon rigida; Eriogonum fasiculatum; Lotus scoparius
Coast Live Oak	Quercus agrifolia	Generally successful, continue to use along with alternate	Alternate: Quercus dumosa
Common Manazita	Arctostaphlos	Very successful	
Flannel Bush	Fremontodendron x 'Calif. Glory'	Substitutes suggested	Dendromecon rigida; Eriogonum fasiculatum; Lotus scoparius
Madrone	Arbutus menziesii	Discontinued as severely overgrazed by deer	
Matilija Poppy	Romneya coulteri	Substitutes suggested	Dendromecon rigida; Eriogonum fasiculatum; Lotus scoparius
Monterey Pine	Pinus radiata	Successful, but not a native so discontinued; although optional to continue use to provide shelter, etc. for new native plants	Quercus dumosa
Coyote Brush	Baccharis pilularis	Very successful	
HYDROSEED MIX			
Crimson Clover		Park of original hydroseed mix; growing well	
Blando Brome	Bromus mollis 'Blando'	Part of original hydroseed mix; grasses growing well	
Buckwheat	Eriogonum fasiculatum	Part of original hydroseed mix; grasses growing well	
Deer Vetch	Lotus californicum	Part of original hydroseed mix	
California Poppy	Eschscholia californica	Part of original hydroseed mix	

5.055.7 Irrigation. The trees and shrubs to be planted as part of the final reclamation program will be watered using an overhead rainbird and drip irrigation system. Water will be supplied to the west side of the site and the north east slopes by well no. 1 located at the top of the west side slopes. Water for the east side will be supplied by well no. 2 located near the water tanks by the process plant. During the final phase of the reclamation program, water for the east side may also be provided by well no. 1. The west side system will water the following; plants on the cut and fill slopes and benches on the west side, clusters of trees to be planted on the quarry floor at the toe of the slopes on the west side, plants on the west side slopes of the creek corridor, and the quarried slopes and benches at the north east area. The east side well system will water plants on the east side cut slopes and benches, and the east side slopes of the creek corridor. Well water will be directed to various storage tanks including an existing 3,000-gallon holding tank located on the quarry floor, two 2,500-gallon holding tanks located at the top of the east side slopes, and three 5,000-gallon holding tanks located at the top of the west side slopes. Supply lines will be extended from the holding tanks and PVC pipes will be installed to each bench to supply the overhead sprayers and the drip lines for each individual shrub and tree. Water will be delivered to plants early in the morning to avoid plant damage that could occur later in the day from hot water in the pipes and tubing heated by the sun. The irrigation system will not be used to water the hydroseeded quarry floor and the reworked slopes above Limekiln Creek; these areas will rely on natural rainfall.

[14] J. Heid, Landscape Report For Revegetation of Lexington Quarry, October 1984 and May 1988; and Report of Progress and Current Status for the Revegetation Program for Lexington Quarry, August 1990; and Report of current Observations and Recommendations – Lexington Quarry, April 1991.

The soil moisture level at each planting plot and slope area will be checked periodically throughout the first three years, after planting by quarry personnel. Routine inspections will ensure that the plants are not over watered or under-watered thereby improving their survival rate. The first two years are critical for the survival of newly planted materials. During the first year the soil moisture in the planting plots and slope areas will be checked once each month during the rainy season and twice a month during the dry season and extended dry periods in the winter. During the second and third year the soil moisture will be checked once every 6 weeks during the rainy season and once every 4 weeks during the dry season and extended periods of drought. These inspections and moisture levels will be recorded on a Watering Program Inspection Form, Figure 16. The irrigation system will continue to operate for three years after the initial planting. At that time, the plants should be sufficiently established to survive on their own.

5.055.8 Monitoring Plots, Monitoring and Inspections. Monitoring plots will be used to monitor the success of the reclamation program. Monitoring plots will be sited in each plant community and located on the quarried benches, quarried/graded slopes, fill slopes and benches, quarry floor and creek corridor for a total of fourteen monitoring plots. There also are six test plots in the Trial Planting Area on the east side; four test plots on the quarry slopes and two plots on the benches: one on bench #1 and one on bench #2. The location of the monitoring plots and test plots are shown on Figure 8b. Each plot on the benches and quarry floor will measure ½ meter by 150 meters; the vertical plots on the cut or fill slopes will measure ½ meter by 17 meters, and the horizontal plots on the cut or fill slopes will measure ½ meter by 33 meters. The criteria used to monitor the plants are described in Section 5.070.3, Revegetation Monitoring, and in Section 6.030, Revegetation Criteria. The success of revegetating the Trial Planting Area at benches 1, 2 and 3 will be evaluated using the test plots to determine if the success criteria described in Section 5.070.3 and in Section 6.030 has been achieved.

5.056 The Sequence of Reclamation Activities Reclamation work is organized so that the most exposed man-made slopes are revegetated earliest. The sequence of each reclamation activity described below is designed so that previous work is not damaged.

1. Install irrigation system on east side so it can be expanded to include each new area as it is reclaimed. Irrigation has been installed on benches 1, 2 and 3.

2. Hydroseeding and revegetation of east side benches 1 and 2 and intervening quarried slopes on the east side of the quarry floor was completed in 2007. Hydroseeding and revegetation of bench 3 on the east side was completed in 2008.

3. Hydroseed and revegetate bench 4 and intervening quarried slope on the east side maybe completed in by the winter of 2010/2011.

4. Hydroseed and revegetate bench 5 and the intervening quarried slope on the east side.

5. Hydroseed and revegetate the graded and fill slopes on the west side of the quarry floor, and the reworked slopes above Limekiln Creek at the south end of the east side of the quarry floor.

6. Expand irrigation system serving the west side to provide water to the cut slopes and some of the fill slopes on the west side.

7. Remove bypass pipes from middle and lower portion of creek channel.

8. Remove equipment and buildings
9. Remove bypass pipes from upper portion of creek channel.

10. Fill, compact, and resoil basins.

11. Add soil, riprap, and boulders to the creek corridor.

12. Rip the quarry floor.

13. Hydroseed and revegetate the graded slopes, oversteepened slope and fill slopes on the west side of the quarry floor.

14. Expand irrigation system serving the west side to provide water to the graded slopes, oversteepened slopes and fill slopes on the west side,

15. Hydroseed, add jute mat, live willow clusters, coir wattles, and revegetate the upper banks of the creek corridor.

16. Construct the new unpaved access road and drainage ditches on the quarry floor.

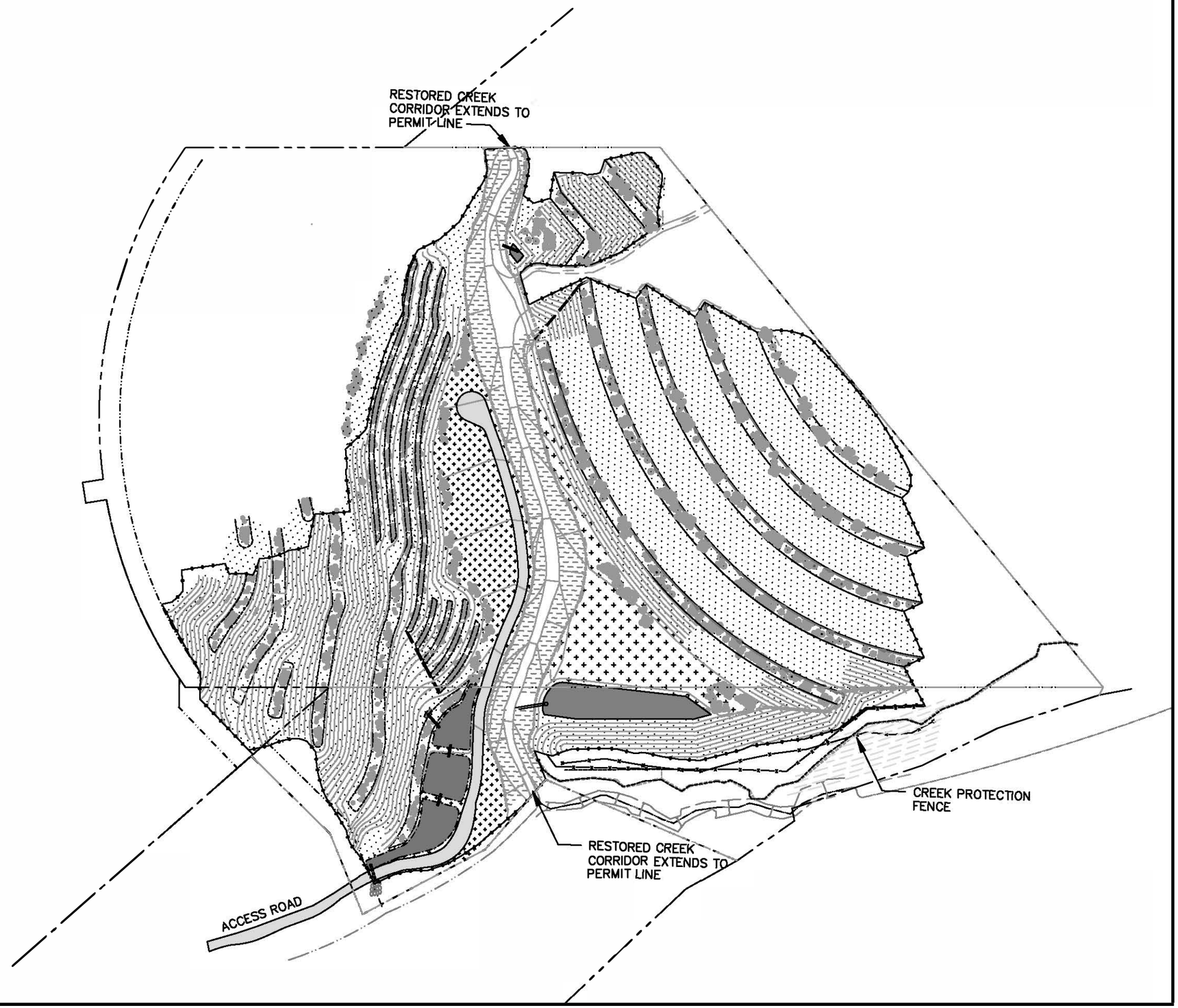
17. Resoil the quarry floor.

18. Expand irrigation system serving the east side to provide water to the trees and shrubs on the creek side slopes and tree clusters on the quarry floor.

19. Expand irrigation system serving the west side to provide water to the trees and shrubs on the creek side slopes and tree clusters on the quarry floor.

20. Hydroseed the quarry floor and plant trees in clusters in selected locations at base of quarried slopes.

21. Inspect and monitor plant growth and watering program.



REVEGETATION PLAN

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

LEGEND

- QUARRY FLOOR– HYDROSEED MIX
- CREEK CORRIDOR–HYDROSEED AND PLANT UPPER BANKS ONLY SEE NOTE 5
- QUARRIED & OVERSTEEPENED SLOPES, & BENCHES– HYDROSEED MIX. SEE NOTES 3 & 4.
- TREES ON BENCHES
- BASINS
- ACCESS ROAD

NOTES:
1. FOR PLANTING LISTS REFER TO TABLES 4 AND 5.
2. FOR HYDROSEED MIXTURES REFER TO TABLES 6, 7 AND 8.
3. SOME TREES AND LARGE SHRUBS WILL BE PLANTED IN CLUSTERS ON THE QUARRY FLOOR AT THE BASE OF THE CUT SLOPES.
4. TREES, SHRUBS, AND VINES WILL BE PLANTED ON THE HYDROSEEDED BENCHES.
5. TREES, SHRUBS AND HERBACIOUS PLANTS WILL BE PLANTED ON THE UPPER BANKS OF THE CREEK.
6. REFER TO REVEGETATION DETAILS, FIG. 9a, 9b and 9c.
7. REFER TO FIGURES 11 AND 12 FOR TYPICAL PLANTING TREATMENT IN CREEK CORRIDOR.

0 250 500

Scale in Feet

8a

FIGURE

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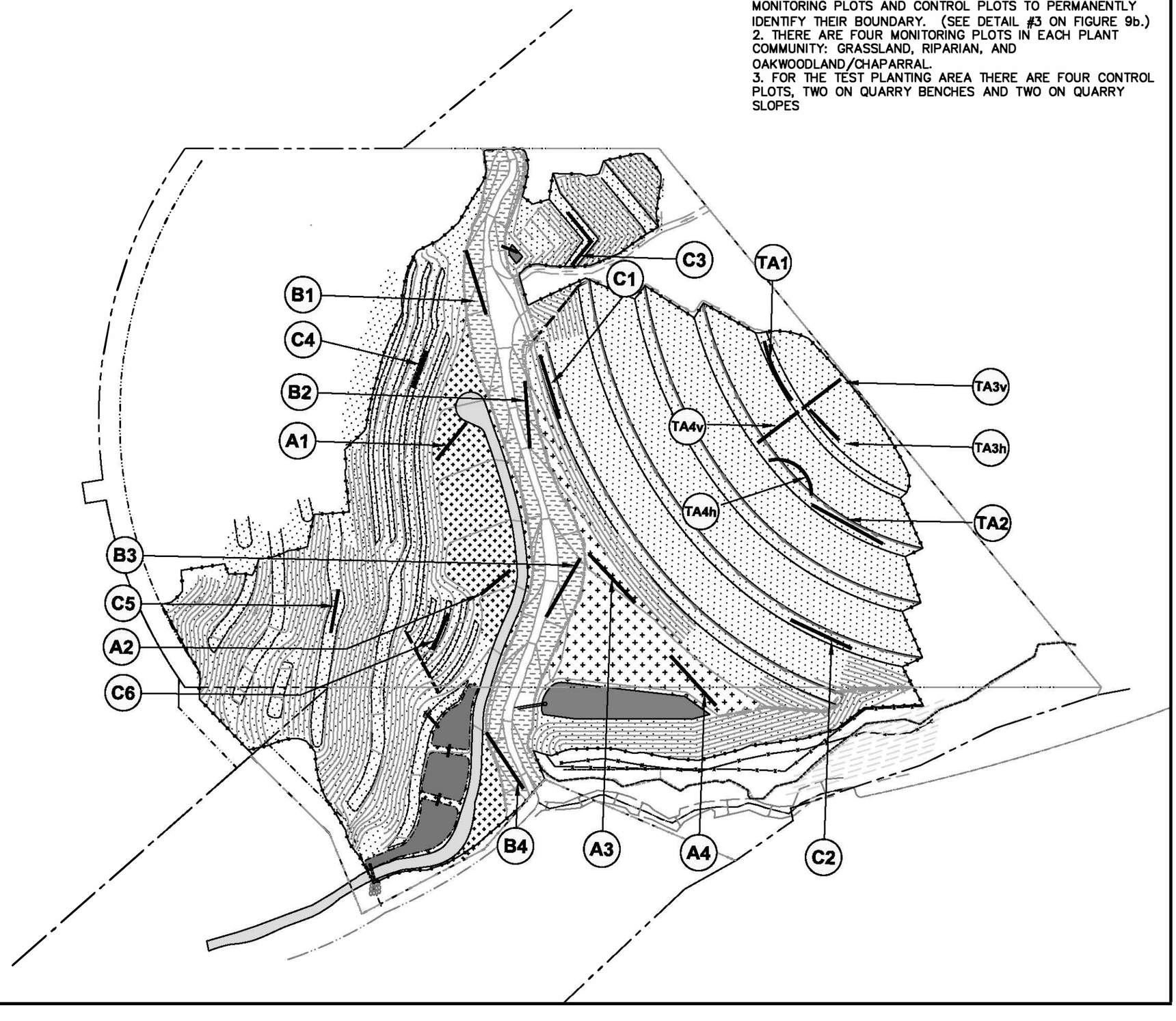
AUGUST 2009

NOTES:
1. REBAR STAKES WILL BE PLACED AT EACH CORNER OF THE MONITORING PLOTS AND CONTROL PLOTS TO PERMANENTLY IDENTIFY THEIR BOUNDARY. (SEE DETAIL #3 ON FIGURE 9b.)
2. THERE ARE FOUR MONITORING PLOTS IN EACH PLANT COMMUNITY: GRASSLAND, RIPARIAN, AND OAKWOODLAND/CHAPARRAL.
3. FOR THE TEST PLANTING AREA THERE ARE FOUR CONTROL PLOTS, TWO ON QUARRY BENCHES AND TWO ON QUARRY SLOPES



MONITORING PLOT LOCATION MAP

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

LEGEND

MONITORING OR CONTROL PLOT (1/2M. x 50M.)

A1 — PLANT COMMUNITY / MONITORING PLOT IDENTIFICATION NUMBER

TA1 — PLANT COMMUNITY TEST PLOT / IDENTIFICATION NUMBER

BASINS

ACCESS ROAD

PLANT COMMUNITIES:

A GRASSLAND (Quarry floor)

B RIPARIAN (Creek corridor)

C OAKWOODLAND/CHAPARRAL (Quarried slopes, benches, oversteepened & reworked slopes

0 250 500
Scale in Feet

8b
FIGURE

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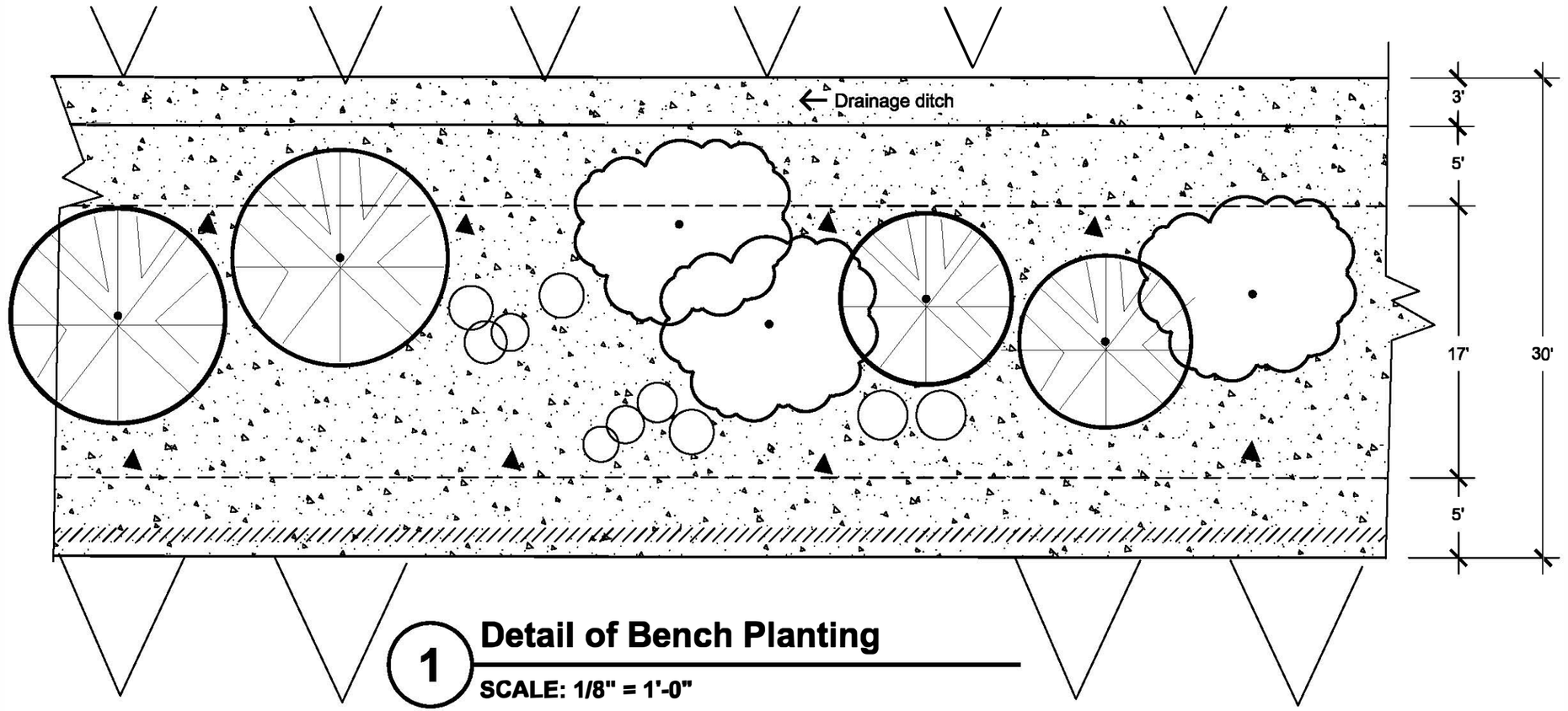

1 **Detail of Bench Planting**

SCALE: 1/8" = 1'-0"

REVEGETATION DETAIL: BENCH

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

LEGEND:

- Oak Tree
- Pine Tree
- Shrub
- Vine
- Planting Trench
- Hydroseed
- Coir wattle

NOTES:

1. Tree Clusters vary from 2 to 5 trees.
2. There shall be 10 shrubs between each tree cluster.
3. Vines shall be planted at each edge of the planting trench to grow up or cascade over quarried slopes.
4. Planting trench is 17-ft. wide & 12-ft. deep. See detail on Figure 7a.
5. Monitoring plot locations are shown on Figure 8b.
6. Coir wattle will be strategically placed at the face of the cut bench, as needed, to reduce erosion and concentration of surface water flowing down the slope.

9a

FIGURE

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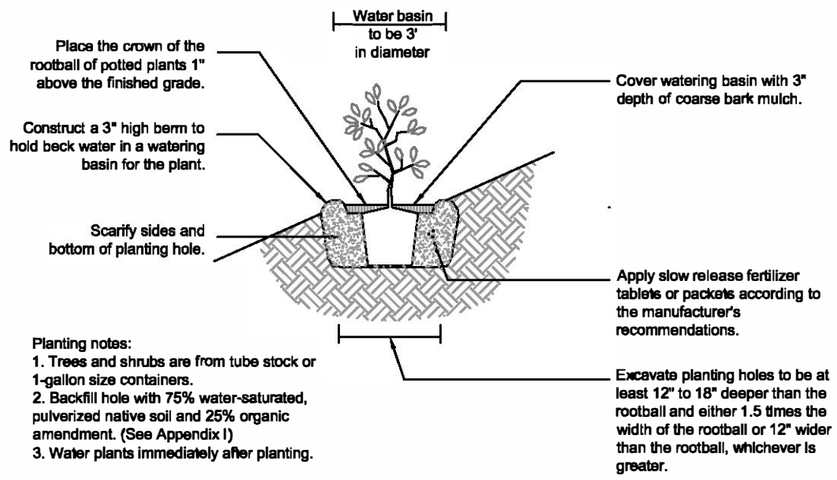
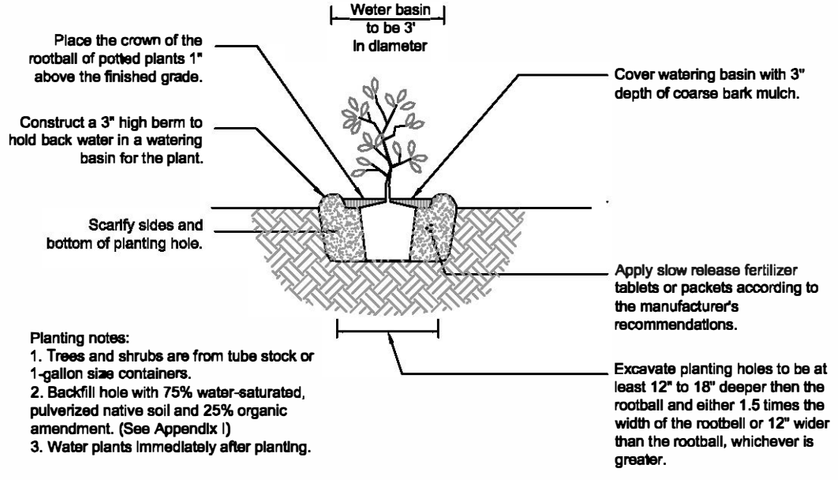


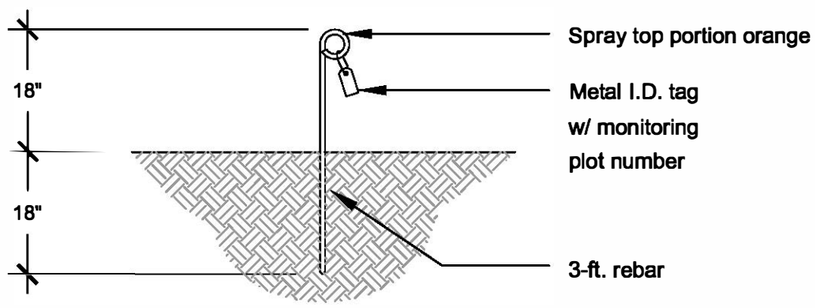
1 Planting Detail for Slope

Not to Scale



2 Planting Detail for Slope

Not to Scale



3 Rebar Staking at Corners of Monitoring Plots

Not to Scale

REVEGETATION PLANTING DETAILS

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

9b
FIGURE

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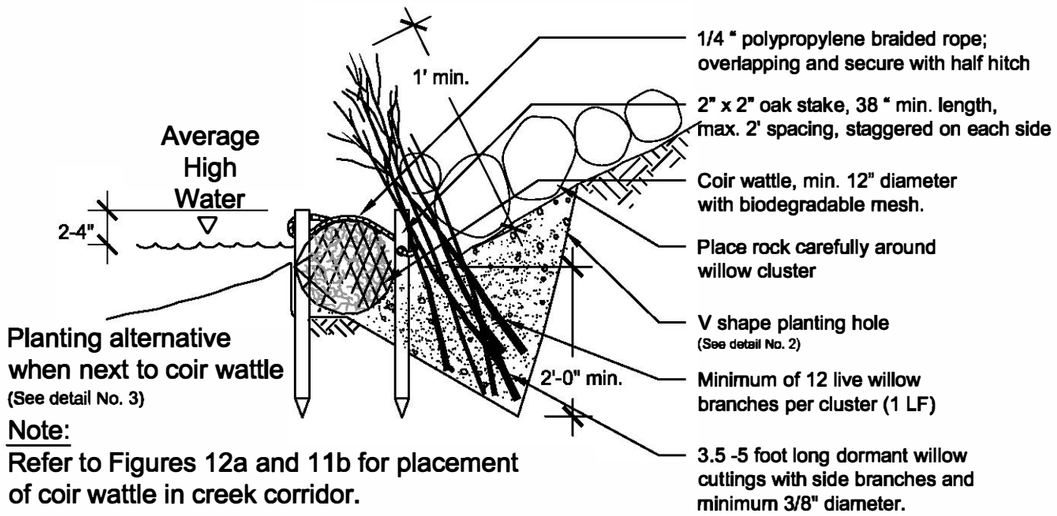
AUGUST 2009

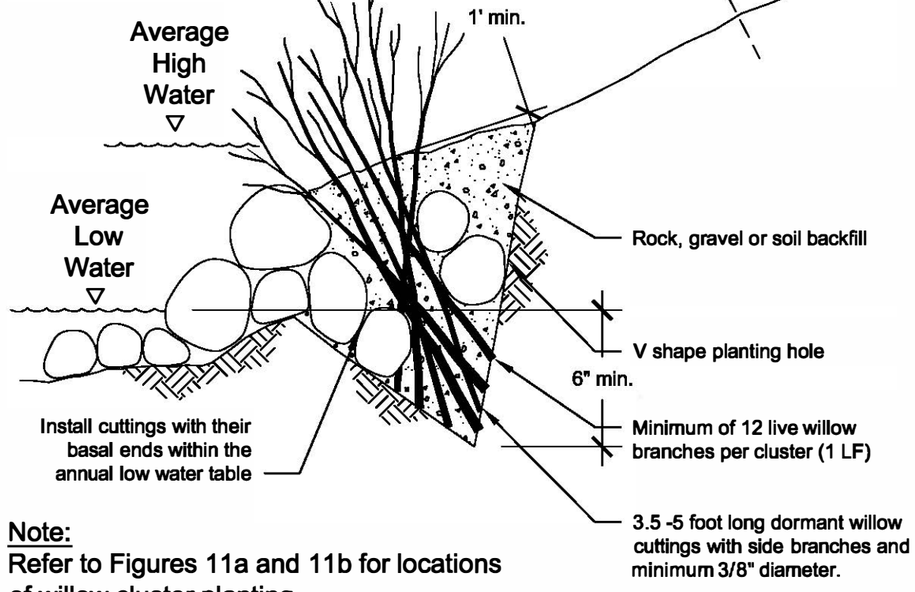


Planting alternative
when next to coir wattle
(See detail No. 3)

Note:
Refer to Figures 12a and 11b for placement of coir wattle in creek corridor.

1 Coir Wattle and Live Willow Cluster at Water's Edge

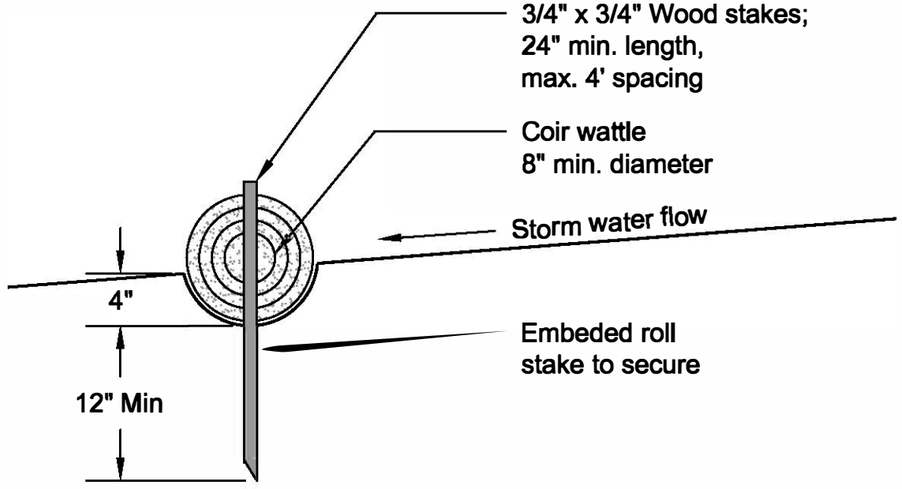
Not to Scale



Note:
Refer to Figures 11a and 11b for locations of willow cluster planting.

2 Live Willow Cluster

Not to Scale



3 Coir Wattle Silt Barrier

Not to Scale

REVEGETATION PLANTING DETAILS

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

NOTE:
1. Coir wattle on streambank to be placed parallel to creek channel per Figures 11a and 11b.
2. Live willow clusters to be saturated with water after planting.
3. Wooden stakes used for coir wattle in creek channel shall be notched about 5" from the top. Rope to tie from notched stake on one side of coir wattle to stake on opposite side. The top of the stake shall be flush with the top of the coir wattle.
4. All willow stakes should be dormant.

9c

FIGURE

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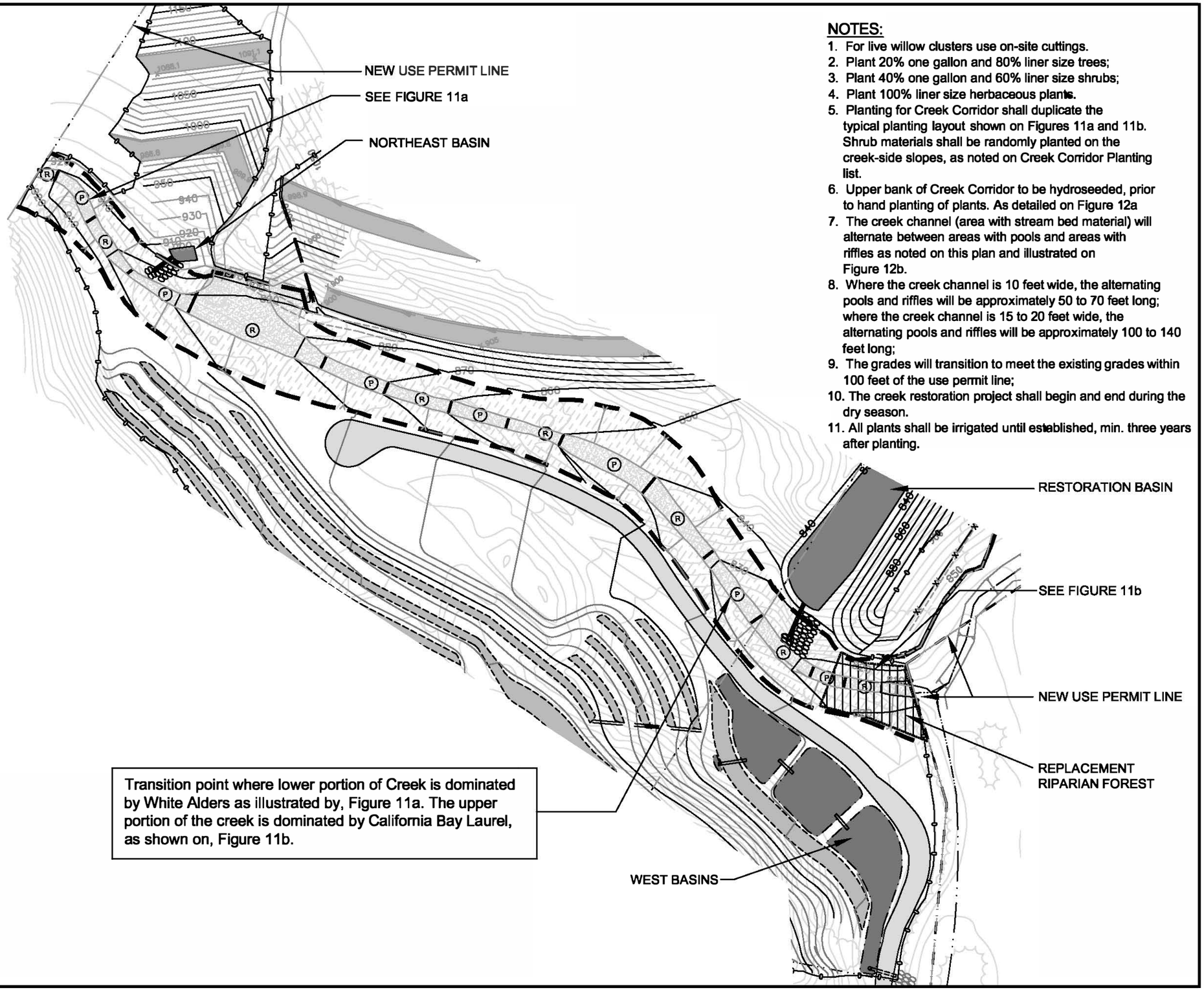

NOTES:

1. For live willow clusters use on-site cuttings.
2. Plant 20% one gallon and 80% liner size trees;
3. Plant 40% one gallon and 60% liner size shrubs;
4. Plant 100% liner size herbaceous plants.
5. Planting for Creek Corridor shall duplicate the typical planting layout shown on Figures 11a and 11b. Shrub materials shall be randomly planted on the creek-side slopes, as noted on Creek Corridor Planting list.
6. Upper bank of Creek Corridor to be hydroseeded, prior to hand planting of plants. As detailed on Figure 12a
7. The creek channel (area with stream bed material) will alternate between areas with pools and areas with riffles as noted on this plan and illustrated on Figure 12b.
8. Where the creek channel is 10 feet wide, the alternating pools and riffles will be approximately 50 to 70 feet long; where the creek channel is 15 to 20 feet wide, the alternating pools and riffles will be approximately 100 to 140 feet long;
9. The grades will transition to meet the existing grades within 100 feet of the use permit line;
10. The creek restoration project shall begin and end during the dry season.
11. All plants shall be irrigated until established, min. three years after planting.

CREEK RESTORATION PLAN

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- NEW ACCESS ROAD
- NEW CONTOUR
- EXISTING CONTOUR
- STREAM CHANNEL
- RESTORED CREEK CORRIDOR
- 4 FOOT DROP STRUCTURE
- (P) POOL
- (R) RIFFLE
- EXISTING CREEK
- RIP RAP SPILLWAY
- CULVERT W/ RISER

Note: For Planting Lists refer to Tables 4 - 8. For Creek details see Figures 11 & 12.

N

0 150 300

Scale in Feet

10

FIGURE

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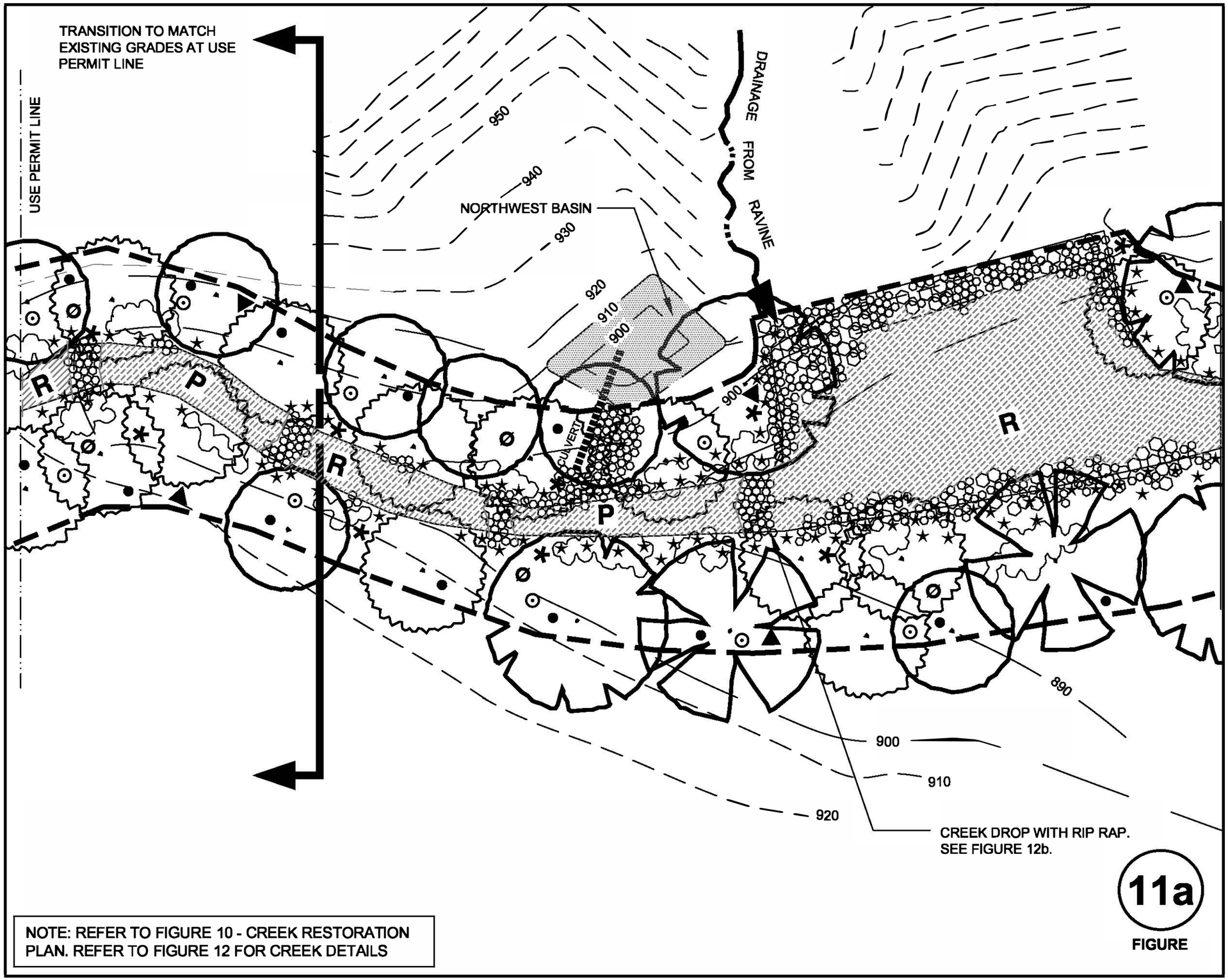

NOTE: REFER TO FIGURE 10 - CREEK RESTORATION PLAN. REFER TO FIGURE 12 FOR CREEK DETAILS

11a

FIGURE

PLANTING PLAN OF NORTH END OF CREEK CORRIDOR

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- CREEK COORIDOR
- CREEK CHANNEL
- NEW CONTOUR
- P | R | TYPE OF CREEK CHANNEL R= RIFFLE P= POOL
- RIPRAP

TREES

- BIG LEAF MAPLE
- WESTERN SYCAMORE
- ARROYO WILLOW
- CALIFORNIA LIVE OAK
- CALIFORNIA BAY LAUREL

SHRUBS

STAGGER PLANTING ON SIDE SLOPES

- CALIFORNIA SAGE BRUSH
- COYOTE BRUSH
- STICKY MONKEY FLOWER
- TOYON
- HOLLYLEAF CHERRY
- CALIFORNIA COFFEEBERRY
- CALIFORNIA ROSE
- THIMBLEBERRY
- CALIFORNIA WILD BLACKBERRY
- PACIFIC WILLOW
- MEXICAN ELDERBERRY
- SNOWBERRY

HERBACEOUS PLANTS

- SEASIDE DAISY
- DOUGLAS IRIS
- CALIFORNIA POLYPODY
- BEE PLANT
- GIANT CHAIN FERN
- LIVE WILLOW CLUSTER

N

0 40 80

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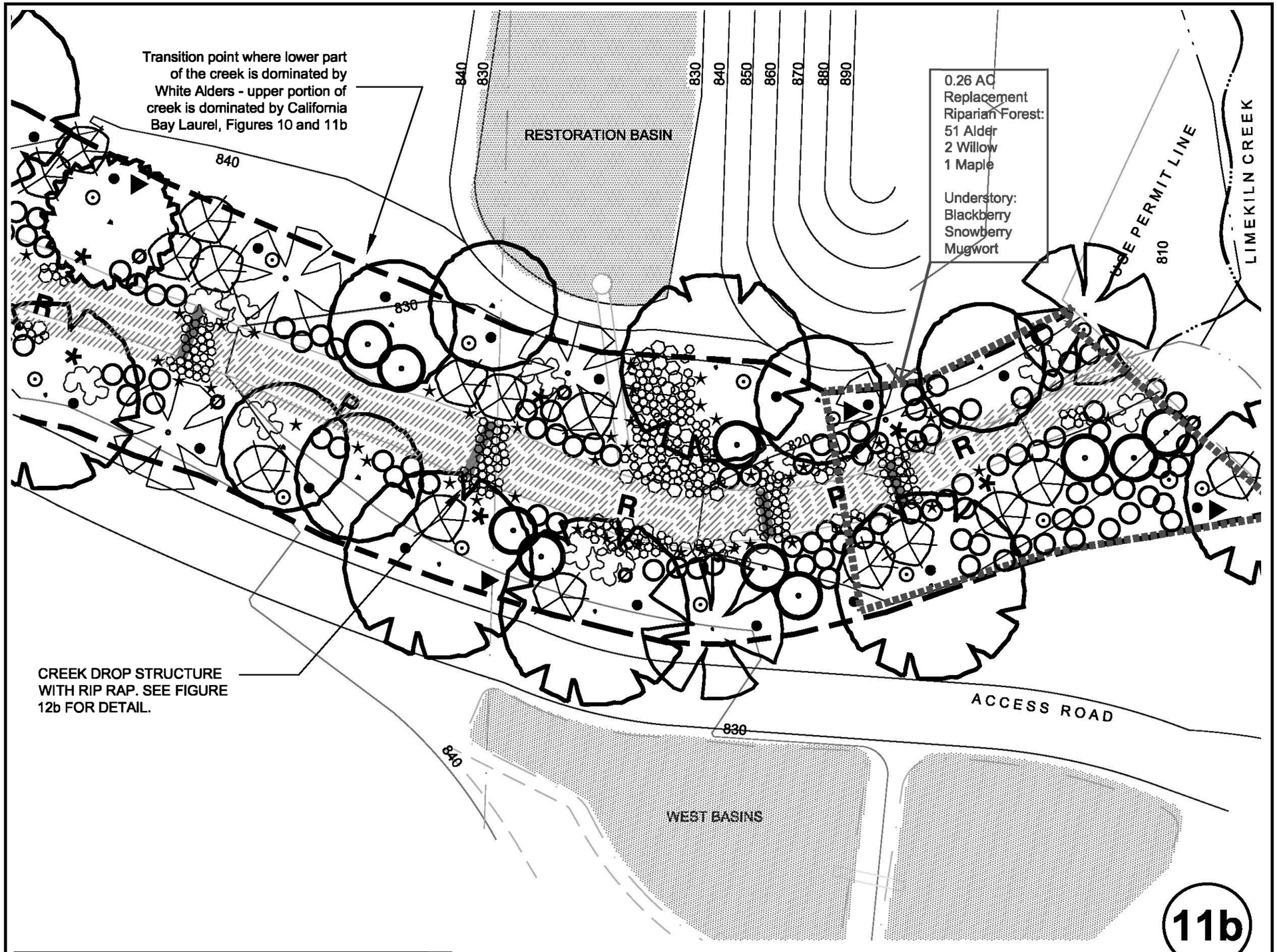

11b

FIGURE

NOTE: REFER TO FIGURE 10 - CREEK RESTORATION PLAN. REFER TO FIGURE 12 FOR CREEK DETAILS

PLANTING PLAN OF SOUTH END OF CREEK CORRIDOR

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- CREEK COORIDOR
- CREEK CHANNEL
- CONTOUR
- P | R | TYPE OF CREEK CHANNEL R= RIFFLE P= POOL
- RIPRAP
- CULVERT WITH RISER

TREES

- WHITE ALDER
- CALIFORNIA BOX ELDER
- CALIFORNIA WAX MYRTLE
- BIG LEAF MAPLE
- WESTERN SYCAMORE
- ARROYO WILLOW
- CALIFORNIA LIVE OAK
- CALIFORNIA BAY LAUREL
- CALIFORNIA BUCKEYE

SHRUBS

STAGGER PLANTING ON SIDE SLOPES

- CALIFORNIA SAGE BRUSH
- COYOTE BRUSH
- STICKY MONKEY FLOWER
- TOYON
- HOLLYLEAF CHERRY
- CALIFORNIA COFFEEBERRY
- CALIFORNIA ROSE
- THIMBLEBERRY
- CALIFORNIA WILD BLACKBERRY
- PACIFIC WILLOW
- MEXICAN ELDERBERRY
- SNOWBERRY

HERBACEOUS PLANTS

- SEASIDE DAISY
- DOUGLAS IRIS
- CALIFORNIA POLYPODY
- BEE PLANT
- GIANT CHAIN FERN
- LIVE WILLOW CLUSTER

0 40 80

Scale in Feet

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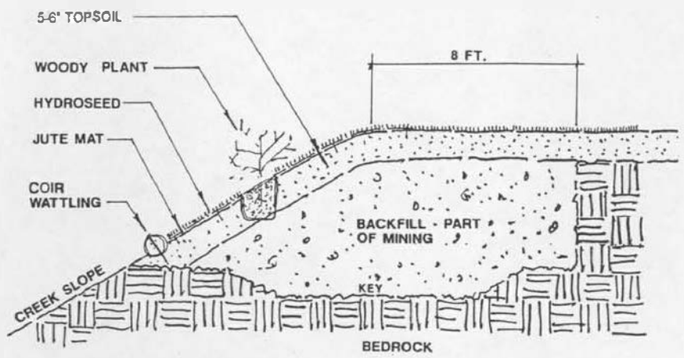
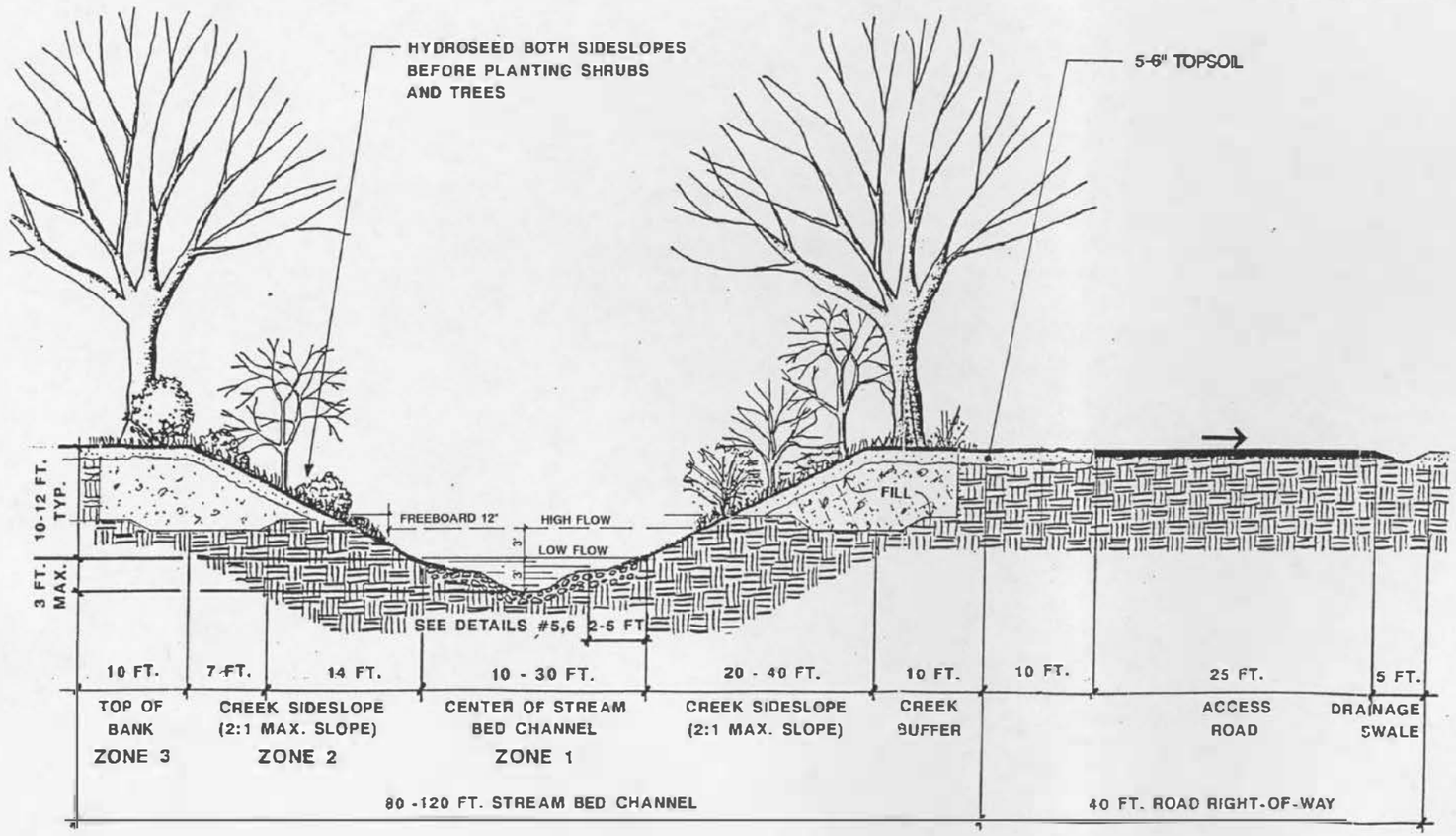
NOTE: REFER TO CREEK PLANT LIST
FOR PLANT TYPES IN EACH ZONE



DETAIL



TYPICAL CREEK CROSS SECTIONS

LEXINGTON QUARRY
WEST COAST AGGREGATES, INC.

Note:
Refer to Figure 9a, 9b and 9c - Planting Details

12a
FIGURE

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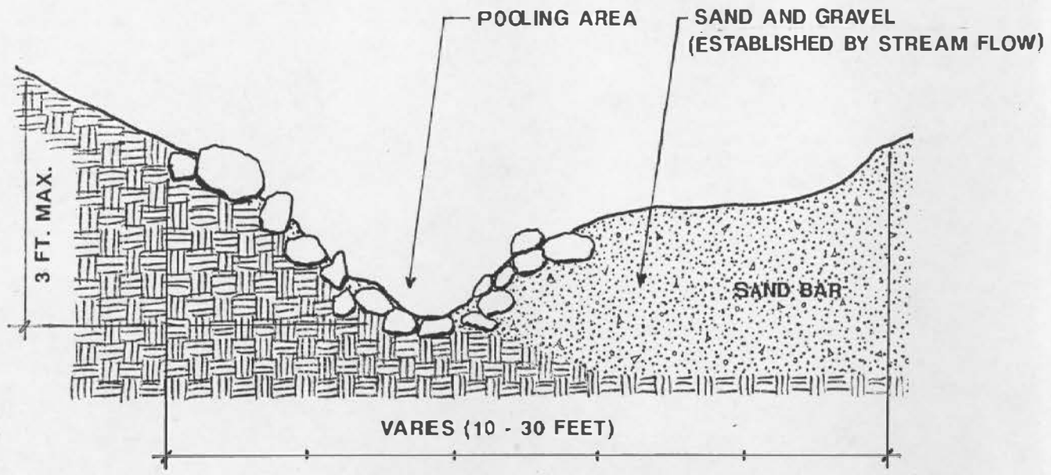
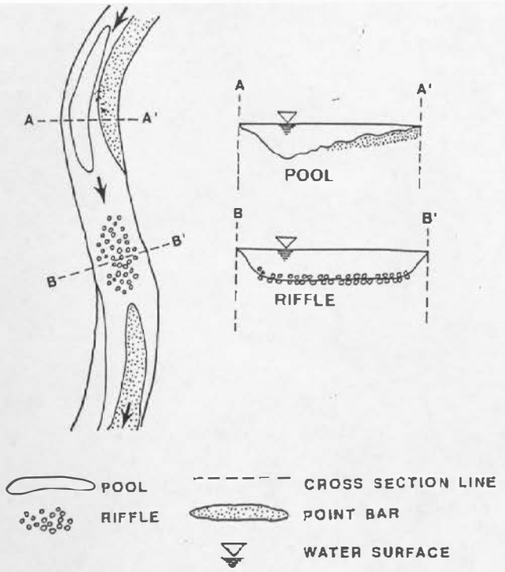


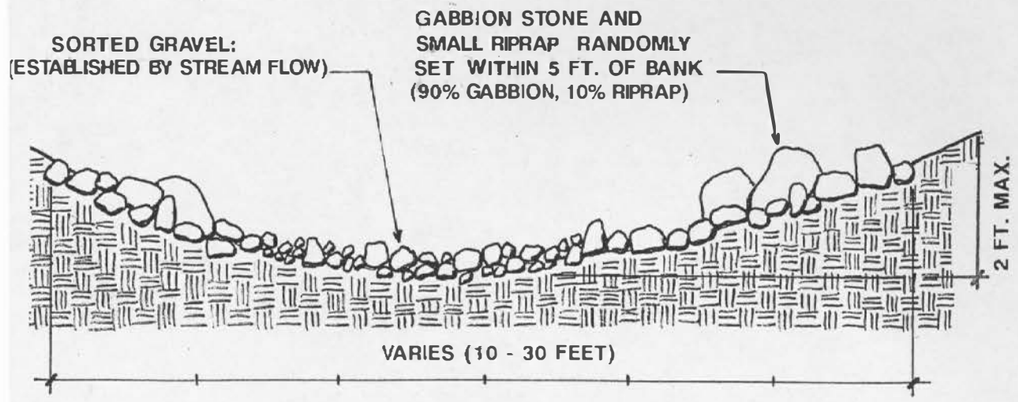
1. POOL STREAM CHANNEL

SCALE: 1' = 2 FT.



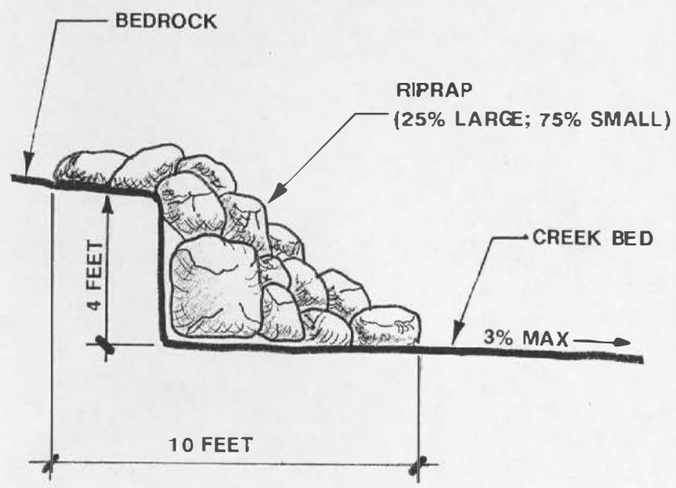
3. POOL & RIFFLE CHANNEL DIAGRAM

NTS



2. RIFFLE STREAM CHANNEL

SCALE: 1' = 3 FT.



4. CREEK AT DROP

SCALE: 1" = 4 FT.

CREEK RESTORATION SECTIONS & DETAILS

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

Note:
Refer to Figure 10 - Creek Restoration Plan and Figure 11 - Creek Restoration Detail Plans

12b

FIGURE

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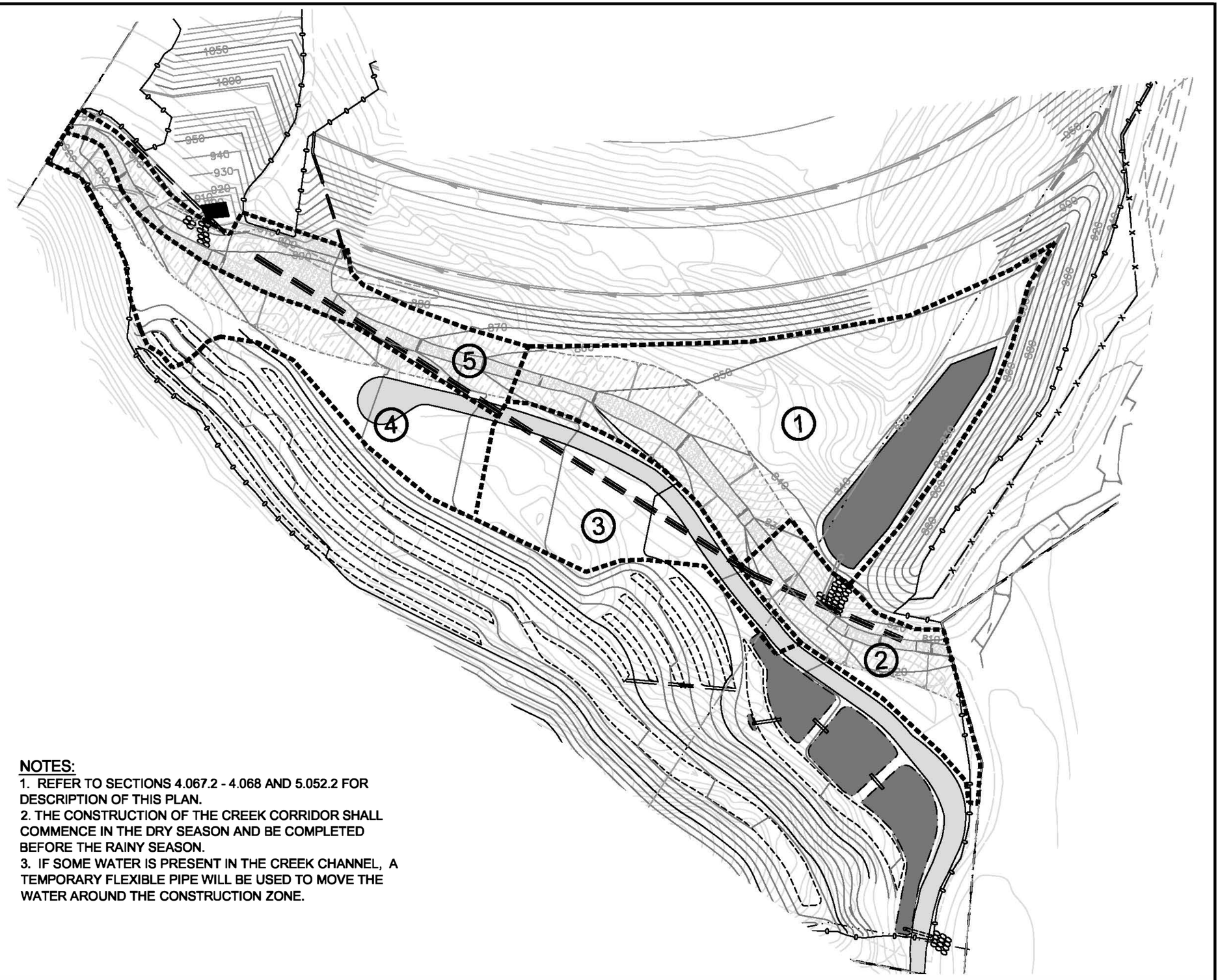


NOTES:

1. REFER TO SECTIONS 4.067.2 - 4.068 AND 5.052.2 FOR DESCRIPTION OF THIS PLAN.
2. THE CONSTRUCTION OF THE CREEK CORRIDOR SHALL COMMENCE IN THE DRY SEASON AND BE COMPLETED BEFORE THE RAINY SEASON.
3. IF SOME WATER IS PRESENT IN THE CREEK CHANNEL, A TEMPORARY FLEXIBLE PIPE WILL BE USED TO MOVE THE WATER AROUND THE CONSTRUCTION ZONE.

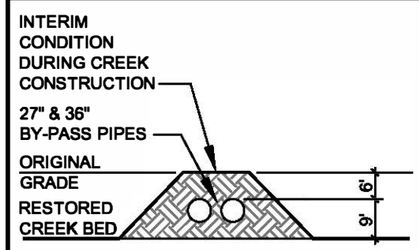
MINING SEQUENCE OF CREEK CORRIDOR & LOWERING OF QUARRY FLOOR

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND

- ① MINING SEQUENCE
- EXISTING BY-PASS PIPES
- PROPOSED CREEK CORRIDOR
- PROPOSED STREAM CHANNEL
- BASINS
- PROPOSED CONTOUR
- PROPOSED ACCESS ROAD



CROSS-SECTION AT BY-PASS PIPES

N

0 150 300

Scale in Feet

13a

FIGURE

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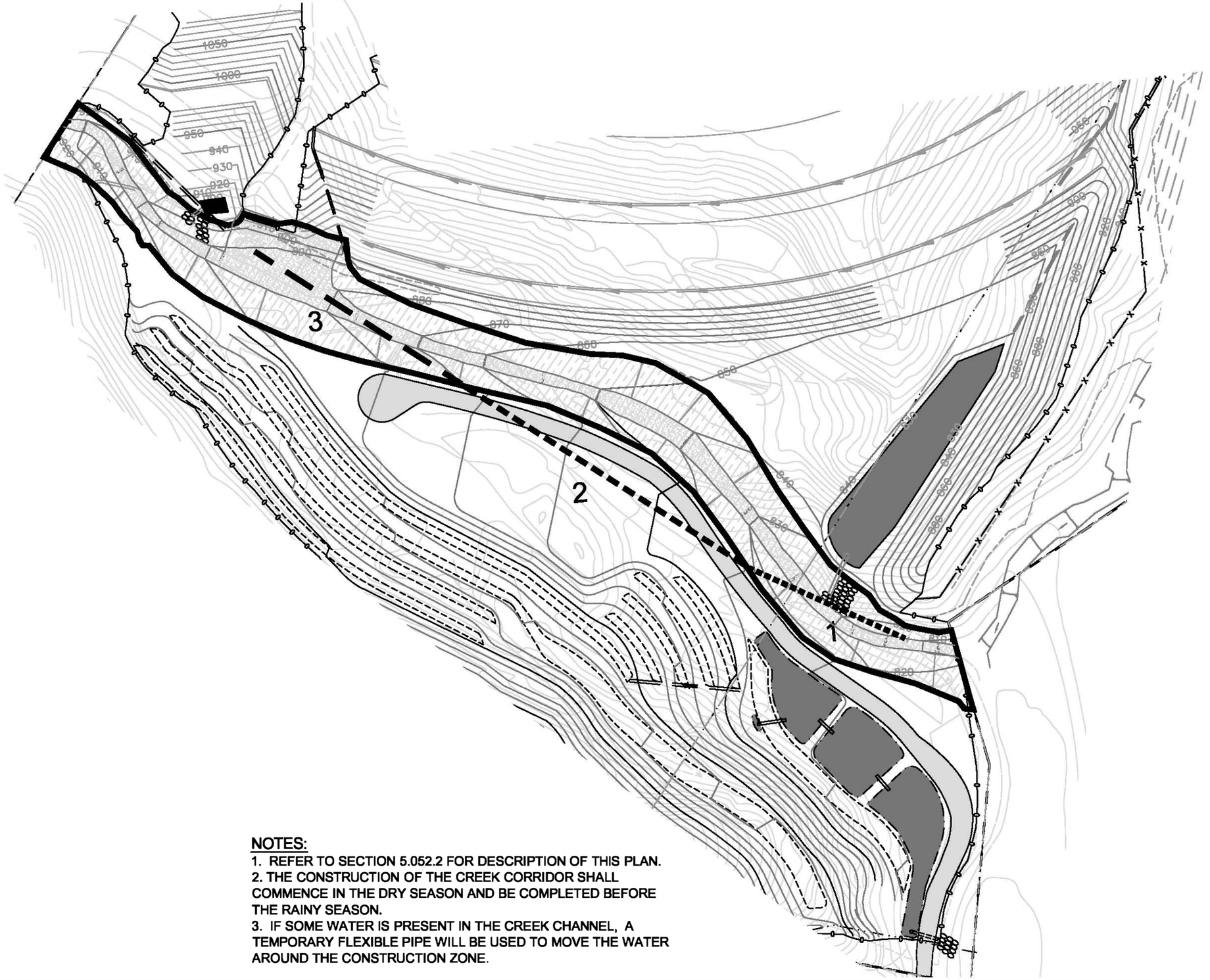


NOTES:

1. REFER TO SECTION 5.052.2 FOR DESCRIPTION OF THIS PLAN.
2. THE CONSTRUCTION OF THE CREEK CORRIDOR SHALL COMMENCE IN THE DRY SEASON AND BE COMPLETED BEFORE THE RAINY SEASON.
3. IF SOME WATER IS PRESENT IN THE CREEK CHANNEL, A TEMPORARY FLEXIBLE PIPE WILL BE USED TO MOVE THE WATER AROUND THE CONSTRUCTION ZONE.

SEQUENTIAL REMOVAL OF BY-PASS PIPES

LEXINGTON QUARRY

WEST COAST AGGREGATES, INC.

LEGEND:

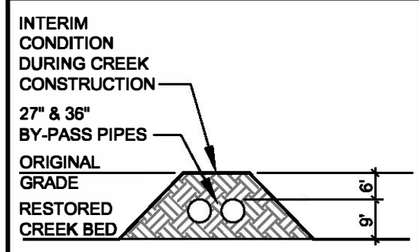
1
2
3
SEQUENCE FOR REMOVING BY-PASS PIPES

PROPOSED CREEK CORRIDOR

PROPOSED STREAM CHANNEL

BASINS

PROPOSED CONTOUR



CROSS-SECTION AT BY-PASS PIPES

N

0 150 300

Scale in Feet

13b

FIGURE

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5.060 RECLAMATION STANDARDS

5.060.1 Resoiling, Backfilling and Grading. Amended soils from on-site stockpiles of topsoil and fines, in addition to imported topsoil that will be used to resoil the east side benches, fill buttresses on the lower west side, reworked slope, quarry floor and upper creek banks. Resoiling procedures are described in detail in Section 5.052.3. Amended soils will be used to backfill the planting holes as described in Section 5.055.2. The Basins are to be backfilled with crushed rock found at the site, up to five feet below the ground surface and compacted to 90 percent relative compaction per Appendix G. The upper five feet will be granular material suitable to support plant growth and the surface will be resoiled with a layer of topsoil as described in Section 5.053.1. The fill buttresses shall be constructed of fill material and be compacted to at least 95 percent relative compaction as described in Appendix G-4. Figures 6c, 7a-c, and 10 show the final grading configuration. However, the upper 12 inches of the fill buttresses will be granular soil material suitable to support plant growth.

5.060.2 Slope Stabilization. Construction of final slopes is described in detail in Section 4.067 and in the *Slope Stabilization Analyses Reports* and other Cleary reports in Appendix G. Revegetation of mined slopes is described in Section 5.055.

5.060.3 Restoration of Pre-Mining Drainage. Before the site was first mined in 1968, an unnamed tributary flowed through the canyon bottom of the present quarry site. Two bypass pipes were installed to enlarge the constricted quarry floor and to protect upstream water from exposure to quarry activities. These pipes daylight downstream, behind the quarry offices, a few hundred feet up from Limekiln Creek, as show on Figure 6a and b. The steep pre-mining slopes above the canyon bottom previously drained directly into this tributary. Currently, all slopes disturbed by mining drain from the perimeter of the mining work area into an on-site drainage system containing basins. When the quarry operation ceases the bypass pipes will be removed, and an open creek corridor will be restored through the quarry floor as described in Sections 4.068 and 5.052 and shown on Figures 10-12. The quarry floor and creek corridor will be revegetated as described in Section 5.055. Runoff from the reclaimed quarry floor will sheet flow into drainage ditches leading to the three permanent basins. Clean water from these basins will then flow through culverts onto energy dissipaters on the bank of LimekilnCreek. The size and capacity of the permanent basins are shown on Table 3 in Section 4.080.5 and described in Appendix F-3. The hydrologic findings in Appendix F-3 indicates that the basins are large enough to; a) trap silt of an overall weighted average of 0.021 mm for a 10-year storm event and 0.026 mm for a 100-year storm event, b) store silt for a 100 year storm event under all conditions considered, and c) provide sufficient detention volume to keep the peak discharges in Limekiln Creek at or less than those for pre-mining conditions.

Runoff from the benches and slopes on the east side of the reclaimed quarry floor will flow into interceptor ditches on the benches that will flow into side collector ditches or lined ditch that will either drain into the Restoration Basin or the Northeast Basin. The benches and slopes on the west side of the reclaimed quarry floor direct runoff into collector ditches that flow into drop inlets on the benches that are connected to overside drains that discharge into a low point with an energy dissipater before flowing into the West Basins (made up of three individual cells). Except at the south end of the buttress next to the West Basin, the ditches on the benches are connected to a lined ditch that carries the water downslope to a low point that discharges through a culvert into the West Basin. Final drainage is shown on Figures 6c and 10 and detailed in Figures 7a, b and c. The permanent basins are designed to accommodate a 100-year storm event and will store accumulated sediment for a range of 30 years to 97 years as shown on Table 3 and described in Appendix F-3.

5.060.4 Removal of Equipment. All equipment, structures and vehicles used in the mining operation will be removed when the mining operation ceases. The movable equipment and vehicles will be taken to one of the other quarry operations owned by West Coast Aggregates, Inc. or will be sold directly from the quarry site. The existing wells will be retained for the duration of the reclamation

program as a source of water for the irrigation system. When mining ceases the revegetation monitoring program will continue until all monitoring planting plots achieve the objectives of the monitoring program. Three years after the last area was planted, the irrigation system will be turned off; or after the area has achieved the vegetative success criteria. The existing wells will be retained for future use as potential water sources for the private open space facilities.

5.060.5 Control of Contaminants. Contaminants and hazardous chemicals involved in the mining operation are limited to vehicle fueling and servicing (oils and lubricants). All vehicles refueling and servicing takes place at the maintenance shop area shown on the Site Plan and Work Area Map, Figure 3. The fueling tank and oil tanks are set inside secondary containment structures to contain any leaks or spills. The current *Hazardous Material Business Plan*, and *Spill Prevention Control Counter Measure Plan* for the quarry describe how fuels and oil should be used and stored on-site as well as what to do during an emergency or when a spill occurs. The County reviews these documents, and the County also monitors the use of fuels and oils at the quarry. All residual fuels and oils will be removed from the site as part of reclamation.

5.060.6 Revegetation. Revegetation procedures are described in Section 5.055. Final revegetation is shown on the Revegetation Plan, Figure 8, and Creek Restoration Plans, Figures 8 to 12.

5.060.7 Irrigation. The systems for irrigation of new plants on the quarry benches, quarry floor, and creek side slopes are described in Section 5.055.7.

5.070 RECLAMATION MONITORING AND MAINTENANCE

Reclamation activities will be monitored to ensure that reclamation of the site is done in compliance with the approved reclamation plan. The monitoring program incorporates site-specific criteria to measure compliance. Criteria are grouped into five categories: topography, sediment and erosion control, revegetation, irrigation, and ongoing maintenance.

5.070.1 Final Topography. Satisfactory completion of reclamation will occur when the configuration of the site complies with the Final Grading and Drainage Plan, Figure 6c, the cross-sections on Figures 7a-c, and the Creek Restoration Plan, Figure 10, as described herein. Final quarried slopes will have thirty-foot wide benches established at one hundred foot intervals unless otherwise indicated. Benches will be sloped a minimum of four percent to the rear (into the slope) and a minimum of two percent laterally (for drainage). Interceptor ditches will be, and have been, installed at the back of the bench with check dams. Side collector ditches and/or lined ditches with energy dissipaters at the base of the slope will direct runoff into other ditches on the floor that will flow into one of the many basins on the floor. On the new cut and fill benches on the west side, runoff from the interceptor ditches on the benches will flow into drop inlets that drain into overside drains that discharge onto energy dissipaters before the runoff is directed into the West Basins. The fill material used for the earth buttresses will be compacted to 95 percent and constructed as described in Appendix G-4. The final quarry floor will be graded to provide a six to seven percent (6-7%) slope for sheet flow towards the drainage ditches. The new creek streambed will have a maximum gradient of 3.3 percent with four-foot drops installed to replace the 9.4 percent slope that would otherwise occur.

Following the completion of mining, the Evaporation Basin (formerly the Existing Eastside Process Basin until 2003) will be completely filled in, while portions of the Restoration Basin will be back filled. Fill placed into these basins will be compacted up to five feet below the ground surface to at least a 90 percent density as determined by ASTM Test Designation D1557-78. The top five feet will be filled with predominantly granular material, which is conducive to plant growth, and the surface will receive a layer of topsoil. No fill material will contain rock, stone or other solid components larger than six inches in diameter. Satisfactory reclamation will occur when test results are presented demonstrating that compaction limits have been met.

5.070.2 Erosion, Sediment and Dust Control. A water truck will be used for wetting down work areas while filling and compacting is underway, while the ground surface is being ripped and while topsoil is being spread onto the quarry floor and creek side slopes. During construction of the creek corridor and initial grading activities, the Best Management Practices described in Section 5.053.2 will be used to avoid impacts to aquatic habitats. Drainage ditches in loose soil will be lined with rock to reduce soil erosion. The final slopes and benches, quarry floor and newly restored creek corridor will be revegetated to stabilize the ground surface. The operator will inspect revegetated slopes prior to September 1 each year, for five years, after mining. Riprap, coir wattles, silt fences, sediment traps, basins and live willow clusters will be used to mitigate areas where runoff is concentrated, so as to reduce sediment levels in the runoff. Rill erosion will be repaired whenever rills are found to be greater in cross-section than ten square inches and exceeding five feet in length. The repair will be achieved either by regrading the area or by adding erosion control measures to reduce the concentration of water causing the erosion. Satisfactory reclamation will occur when the revegetation criteria have been met.

The three remaining basins (West Basin, Northeast Basin and Restoration Basin) will be inspected annually while the operator is maintaining the site. The operator will continue to maintain the site until five years after mining ceases or two years after human intervention with planting, and after the planting success criteria are met, whichever is latest. After that time, the landowner will be in charge of maintaining the site. Once the landowner takes over the maintenance program, the three permanent basins will be inspected once every 5 years for the first 30 to 35 years depending on the basin. After the first 35 year period the West Basins and the Restoration Basin, which have a capacity to store 37 and 97 years, respectively, of accumulated sediments, will be inspected annually until they are cleaned out. After these basins have been cleaned out, the inspection cycle will repeat itself. Similarly, the Northeast Basin, designed to store 30 years' accumulation of sediment, will be inspected every five years for 30 years and then be inspected annually until it is cleaned out. After the Northeast Basin has been cleaned out, the cycle will repeat itself. However, these timed cycles for inspecting the basins may be reevaluated as appropriate, because it is anticipated that the site will become stabilized and that sediment will no longer be entering the drainage system. Any alteration in the inspection cycle in the future will require the landowner to notify the Water District and the County to establish an agreed-upon inspection cycle.

5.070.3 Revegetation. Revegetation is an ongoing activity at the quarry, because the completed quarry benches and slopes can be reclaimed once the active mining operation is a least a couple of quarry benches below the reclamation area. Revegetation of the fill buttresses on the west side, of the quarry floor and the creek corridor will not occur until the quarry operation has ceased. Plant vitality, in the reclaimed areas, will be visually monitored semi-annually (twice a year) for a two-year period following plant installation. If it is necessary to replant due to plant mortality, the two-year monitoring schedule will start over again when the plants are replaced. Fourteen monitoring plots and six test plots are shown on Figure 8b and Table 12b.- The monitoring plots will continued to be inspected until the planting success criteria have been achieved per Sections 6.030 and 6.030.1, and approval has been obtained from the County and the State Office of Mine Reclamation. The test plots in the Trial Planting Area on the east side will be continue to be monitored every other year for a six-year period (3 inspections: between 2010 and 2015[15]) to evaluate how the plants respond to being planted in amended soil fines.

Satisfactory reclamation of the quarry floor, quarried and fill benches and slopes, and creek side slopes will occur when the planting success criteria for plant density, coverage and diversity, as described in Section 6.030, has been achieved in the monitoring plots. Vegetation diversity (species-richness) will result from the three different hydroseed mixes with native seed, specified in Tables 6-8, and from the

[15] The Test Plots were planted different years so the quantified inspections will occur in different years and be completed in different years: Test Plots TA1, TA3h and TA3v will be inspected 2010, 2012 and 2014; while Test Plots TA2, TA4h and TA4v will be inspected 2011, 2013 and 2015.

installation of ten different native trees, thirteen different native shrubs and six species of herbaceous plants and vines specified in Tables 4-5.

5.070.4 Irrigation Program. Two separate irrigation systems are available to assist in the revegetation effort. Plants will be irrigated for the first three years following installation to facilitate plant establishment. Plant irrigation will be discontinued at the end of the third year or continued for an additional two years if replacement plants are installed. The objective is to meet the planting success criteria without ongoing irrigation. Once the irrigation systems are shut off, the wells will be retained for future use in conjunction with open space facilities.

Trees and shrubs on the west side benches and slopes are currently watered by Well No.1 located at the top of the west slope. This system includes three 5,000-gallon tanks to store water, and a pump to propel the water through PVC distribution pipes supplies water to the rainbirds and to drip system irrigation emitters located at each tree and shrub. The west side system will be expanded to water trees and shrubs to be planted on the quarried and fill slopes on the west side, quarry floor, on the west banks of the restored open creek channel, and to the quarried slope at the north east area.

Trees and shrubs on the east side will be irrigated using Well No. 2 located by the water tanks north of the process plant. The east side system includes a 3,000-gallon storage tank on the quarry floor, two 2,500-gallon storage tanks located on the upper slope and a pump to propel the water through PVC distribution pipes supplies water to the rainbirds, and to the drip system irrigation emitters located at each tree and shrub. The east side system will be expanded to water trees and shrubs to be planted on the quarry floor and on the east banks of the restored open creek channel.

The water pumps will be activated by electric timers to ensure consistent watering. The watering schedule will be adjusted seasonally so as to apply more water during the dry summer months. The irrigation systems will be monitored as described in Section 5.055.7 to ensure that optimal soil moisture levels are maintained in the tree and shrub planting areas.

5.070.5 Ongoing Maintenance/Monitoring Period. The quarry operator will continue to maintain the reclaimed areas for a five-year period after mining ceases or a two-year period after the last human involvement with plantings, and until the planting success criteria are satisfied, whichever occurs last. The condition of the fines placed on the east slopes below benches 1, 2, 3 and 4 will be addressed when mining ceases. The Operator shall either:

a) remove from the intervening slopes on the east side all soil fines placed on those slopes by the Operator; or
b) obtain from a State-licensed geotechnical engineer report, in form and content satisfactory to the County Geologist, analyzing the stability of all remaining soil on the intervening slopes below benches 1, 2, 3 and 4 on the east side which was placed there by the Operator, with recommendations for any actions which should be taken regarding the soil fines remaining on the intervening slopes, and the Operator shall, after approval by the County, implement the approved recommendations.

After completion of the quarry operator's monitoring period (post-mining), ongoing maintenance will be the responsibility of the landowner.

The final cut and fill benches and slopes, quarry floor, restored creek channel; graded slopes, drainage ditches and plantings will be inspected prior to October 1steach year of the five-year post-mining maintenance/monitoring period. New plantings will be visually inspected semi-annually (twice a year) between April and May, and November and December of each year for the first two years after planting. The planting test plots in the Trial Planting Area on the east side will continue with quantified inspections between April and May every other year over an additional six years (three inspections: in 2010, 2012 and 2014). The monitoring plots will continue with quantified inspections every third year between April

and May until they achieve the vegetative success criteria per Section 6.030.1. The basins will be inspected in accordance with the schedule described in Section 5.070.2. Maintenance and repair work will be completed prior to November 1; except maintenance, if required, for removal of the fines and/or accumulated rockfall on the east benches will be completed prior to October 1 each year. The Maintenance/Monitoring Inspection Cycles are shown on Table 14 in Section 6.060.4. Conditions, Covenants and Restrictions of any property sale during the five-year period, or anytime thereafter, will obligate the new owner to continue ongoing reclamation maintenance/monitoring.

5.080 RECLAMATION COSTS AND GUARANTEE

This 2009 reclamation cost estimate was approved in the Fall of 2009. . The reclamation cost estimate is up-dated annually as required by the Surface Mining and Reclamation Act. This cost estimate assumes that all mining activities are completed as described in the list of assumptions in Section 5.080.1

5.080.1 Reclamation Assumptions. Reclamation is phased to be concurrent with mining so that costs can be spread over the life of the operation. Reclamation costs are shown in the various task tables, Tables 10a – 10r and summarized in Table 11. Costs are based on work being performed by outside contractors and include the following assumptions:

- Work on various reclamation tasks will be done simultaneously and phased concurrent with mining to the maximum extent practicable.
- Operating capacities of equipment have been obtained from the Caterpillar Company estimate production reference manual.
- Equipment rental costs have been obtained from local equipment rental companies (i.e Excavator Rental Services) for the same sized equipment being operated by West Coast Aggregates, Inc. and from *Labor Surcharge and Equipment Rental Rates*, April 1, 2009 through March 31, 2010 by the State of California, Department of Transportation, and Division of Construction.
- Labor costs are current union scale and represent fully loaded hourly rates. The source of these costs is from the *General Prevailing Wage Determination* made by the California Department of Industrial Relations.
- Construction of new and expanded basins are considered to be mining costs. Back filling of basins following mining is considered to be a reclamation cost.
- Mining equipment will be relocated to another quarry operated by West Coast Aggregates, Inc., or sold at the site and removed by the buyer.
- Any stockpiled aggregate material remaining at the completion of mining will either be sold or used as fill material.
- Stockpiled soil will be amended for resoiling the quarry floor and the upper creek banks and for backfilling the planting holes.
- Rip rap and boulders will be installed in the restored creek corridor as part of reclamation and be taken from on-site stockpiles.
- Construction of the fill slopes, cut slopes, mid-slope benches, and drainage ditches are done as mining proceeds and are considered to be mining costs.
- Construction and installation of the drainage facilities on the newly graded cut and fill slopes on the west side will be done as mining proceeds and are considered to be mining costs.
- Excavation of planting trenches on the quarry benches, and backfilling and resoiling with process sediments to achieve final bench configuration are considered to be mining costs.

- The irrigation system will remain in place, and will not be removed.
- Lowering of the quarry floor and construction of the creek corridor in accordance with Figures 6c and 10 will be done as part of mining and are considered to be mining costs.
- Removal of the bypass pipes is considered a reclamation cost.

5.080.2 Financial Assurance. A Performance Bond payable to the "Santa Clara County or the Department of Conservation" has been provided to Santa Clara County in the amount of $1,050,601.19 for the estimated cost of reclamation. Each year the Financial Assurance Cost Estimate for reclamation is up-dated and the amount of the financial assurance mechanism is adjusted accordingly. As items of reclamation work are completed to the standards set forth in the approved Reclamation Plan and are acceptable to the County, the owner intends to retrieve the existing assurance and submit a new one with the face value reduced accordingly.

5.080.3 Reclamation Cost Estimate.
Reclamation tasks are grouped into four categories of related work. Work in various categories will occur simultaneously but are listed separately in the following section.

Group 1 Tasks — Group 1 tasks include equipment and building removal.

Group 2 Tasks — Group 2 tasks include removal of the bypass pipes and temporary basin culverts from the restored creek corridor, the construction of an earthen buttress on the western slopes, the reclamation of drainage facilities including filling and compacting material into the temporary basins, constructing drainage ditches on the quarry floor and installation of rip-rap, jute matting, rock lining, live willow clusters, coir wattles and other erosion and sediment control devices along drainage ditches and within the restored creek channel, and construction of the permanent, unpaved access road into the quarry floor, ripping the ground surface of the quarry floor, and resoiling the quarry floor and the upper slopes of the creek banks.

Group 3 Tasks — Group 3 tasks involve preparing the planting sites by bringing in the necessary supplies of soil amendments, mulch and fertilizer as well as digging the planting holes. In addition, it involves hydroseeding the over-steepened slope, the cut and fill benches and intervening slopes on the east and west slopes, the reworked slopes above Limekiln Creek, the creek corridor and the quarry floor, and planting the woody plant material.

Group 4 Tasks — Group 4 tasks involves maintaining the site and monitoring the reclamation program over the five-year post mining period, as shown on Table 14. Maintenance will include; annual inspections, and if needed maintenance of the basins, excavated benches and slopes, drainage facilities, culverts, erosion control mechanisms, and irrigation system. Monitoring will include inspections of the monitoring plots once every third year starting the first year after the first two-year visual inspection period, until the vegetative success criteria have been achieved.

At the beginning of the post-mining period, a geotechnical engineer will evaluate the soil fines placed on the slopes below east benches 1, 2, 3, and 4 and make recommendations to either allow the remaining soil fines to remain in place or to have them removed. If the fines are removed, the revegetated benches and slopes and quarry floor where the fines are placed will need to be replanted and monitored until the vegetative success criteria are achieved. The haul road up the

east side slope will be regraded to blend into the slope and the regraded area and the area on the quarry floor where the excess soils fines are spread will be hydroseeded.

The description of each task includes a summary of the equipment, labor and processes necessary to complete the task. Costs associated with each task are shown in a summary table accompanying each task. Table 11 provides the overall cost summary.

GROUP 1 TASKS: STRUCTURE AND EQUIPMENT REMOVAL

Overall Description of Work Activity:
All debris and structures related to the mining operation within the limits of the mining operation will be removed, including: buildings, equipment, vehicles, pipe and other debris remaining at the site. Wells, water tanks, pumps, and pipes associated with the irrigation system will be retained.

Summary of Reclamation Methods to be Used

1. All supplies will be removed by distributors/recyclers (i.e. fuels, oils, batteries).
2. Fuel tanks and scale will be sold at auction or taken to another West Coast Aggregates, Inc. facility.
3. Bulldozers will be used to knock down non-portable buildings and crush the material; an excavator with a bucket will put debris into Semi-End Dump Trucks for disposal at the landfill.
4. Excavator with a breaker will break apart concrete footings and concrete foundations, and an Excavator with a bucket will load concrete debris into Semi-End Dump Trucks for transport to a recycler.
5. Excavator with a bucket will load Miscellaneous Debris from the boneyard onto Semi-End Dump Trucks for disposal at a metal recycler.

Details and Cost Estimate for Structures and Equipment Removal

(Task 1-1) Remove Boneyard Debris

Description: Accumulated scrap metal, and metal parts must be removed from the site.

Operation: Load and transport to scrap metal recycler

Quantity: 70cy debris

Equipment: Excavator with bucket to load debris at 2.5 minutes/cy of debris

Semi-End Dump Trucks to haul salvageable metal for recycling at 24cy per load.

Duration: Excavator: 70cy X 2.5 min./cy = 175 min./60 = 3.0 hours; (Use 1 Excavator for 0.5 day)

Semi End Dump Truck round trip to recycler is 2 hours. (Use 3 trucks for 0.5 days)

Labor: 1 Excavator operator for 0.5 days

3 Semi End Dump truck drivers for 0.5 days

2 Laborers for 0.5 day to assist with loading

TABLE 10-a

COST ESTIMATE FOR TASK 1-1: Remove Boneyard Debris

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Excavator	1.0	4.0	4.0	$200.34	$801.36
Semi-End Dump Truck	3.0	4.0	12.0	$81.42	$977.04
SUBTOTAL					**$1,778.40**
LABOR (L)					
Excavator Operator	1.0	4.0	4.0	$53.60	$214.40
Semi-End Dump Truck Operator	3.0	4.0	12.0	$52.33	$627.96
Laborer	2.0	4.0	8.0	$35.64	$285.12
SUBTOTAL					**$1,127.48**
TOTAL COST (excluding management costs)**					**$2,905.88**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 1-2) Remove On-site Buildings and Structures

Description: Seven on-site buildings (scale house, office, shop, tank shed, oil shed, empty drums shed, electric van and polymer shed) related to the mining operation must be removed. The office, scale house, polymer shed and electric van are portable and will be towed from the site to another West Coast Aggregates, Inc. facility or sold at auction and relocated to the buyer's site. The scale house and office are on blocks and will have to have wheels reinstalled before being towed. The four non-portable buildings measure a total of 2,464 square feet and the total length of perimeter walls measures 5,320 linear feet. The buildings are shown on the Site Plan and Work Area, Figure 3. The scale will be removed and sold at auction or taken to another facility owned by West Coast Aggregates, Inc.

Operation: Tow the portable trailers, relocate the scale and demolish and remove the non-portable buildings

Quantity: Tow 3 portable trailers, remove one scale and demolish 4 buildings. 131cy debris and 49cy recycled

Shop measures 160 linear ft. perimeter wood walls X 20' high X 6" thick = 60cy debris, plus shop roof at 1,500sf x 6" = 28cy debris and slab 1500sf x 6" thick concrete = 28cy recycle.
Tank shed measures 144 linear ft. x 4' high cinder bock walls x 8" thick = 16cy debris, plus shed roof at 720 s.f. x 4" = 9cy debris, and slab 720sf x 8" thick concrete = 18cy recycle.
Oil shed measures 48 linear ft. perimeter walls x 7' high = 6cy debris, plus shed roof at 122sf x 4" thick = 2cy debris, 122sf x 6" thick concrete slab = 3cy recycle and 144 linear ft. x 1' high x 6" thick concrete wall = 3cy recycle.
Empty drum shed measures 100sf wood floor = 2cy debris and 40 linear ft. perimeter walls 8' high x 6" thick = 6cy debris, plus shed roof at 100sf x 4" thick = 2cy debris.

Equipment: Bulldozer to knock down 4 buildings at 1.5 hours each = 6 hours
Cutting torch to cut pipe & metal at 2 hours for each building (shop, tank shed and oil shed) = 6 hours
Excavator with bucket to load debris onto trucks at 200cy/day
Semi-End Dump Trucks with high sides to haul at 23cy/load and 2-hour turnaround
Tractors with hitch to haul portable trailers
Water truck to wet down demolition area
Crane to load scale on flat bed truck
Flat Bed Truck to haul scale at 4 hour turnaround

Duration: Bulldoze to demolish 4 structures at 1.5 hours/structure = 6 hours (Use 1 bulldozer for 1 day)
Cutting torches to work on 3 structures at 2 hours/structure = 6 hours (Use 2 torches for 0.5 days)
Excavator with bucket to load 180cy debris at 200cy/day = 7.2 hours (Use 1 excavator for 1 day)
Semi-End Dump: 180cy ÷ 23cy/load = 8 loads with 2 hour turnaround time (Use 4 trucks for 1 day)
1 Tractor to be available for 1 day to haul portable trailers
1 Water truck to be available for 1 day
1 Crane to be available for 0.5 day to load scale
1 Flat Bed truck to be available for 1 day to haul scale

Labor: 1 Bulldozer operator for 1 day
1 Excavator operator for 1 day
2 Welder for 0.5 days
4 Semi-end Dump truck drivers for 1 day
1 Tractor driver for 1 day
1 Crane operator for 0.5 day
1 Flat Bed Truck driver for 1 day
2 Laborers for 2 days to prepare trailers and assist with loading; one to drive water truck part time during demolition for 1 day.

TABLE 10-b COST ESTIMATE FOR TASK 1-2: Remove Buildings and Structures					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	8.0	8.0	$156.74	$1,253.92
Tractor w/ hitch	1.0	8.0	8.0	$85.00	$680.00
Excavator w/ bucket	1.0	8.0	8.0	$200.34	$1,602.72
Water Truck	1.0	8.0	8.0	$35.00	$280.00
Crane	1.0	4.0	4.0	$168.59	$674.36
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
Cutting Torches	2.0	4.0	8.0	$5.87	$46.96
Semi-End Dump Trucks	4.0	8.0	32.0	$81.42	$2,605.44
SUBTOTAL					**$7,383.40**
LABOR (L)					
Bulldozer Operator	1.0	8.0	8.0	$51.01	$408.08
Tractor Operator	1.0	8.0	8.0	$45.45	$363.60
Excavator Operator	1.0	8.0	8.0	$54.98	$439.84
Laborers to Prep Trailers and Load	2.0	16.0	32.0	$35.64	$1,140.48
Laborer to Drive Water Truck	1.0	8.0	8.0	$35.64	$285.12
Crane Operator	1.0	4.0	4.0	$54.98	$219.92
Flad Bed Truck Driver	1.0	8.0	8.0	$46.52	$372.16
Welders	2.0	4.0	8.0	$57.99	$463.92
Semi-End Dump Truck Drivers	4.0	8.0	32.0	$52.33	$1,674.56
SUBTOTAL					**$5,367.68**
TOTAL COST (excluding management costs **)					**$12,751.08**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

GROUP 2, 3 AND 4 TASKS: GRADING AND SITEWORK

NOTE: For purposes of tabulation, these overlapping and closely related tasks are all listed as Group 2.

Overall Description of Work Activity:

1. Remove bypass pipes.
2. Fill basins and construct fill buttresses.
3. Construct unpaved access road on quarry floor.
4. Install riprap and boulders in creek channel and on lower creek banks.
5. Install pipe for irrigation system to cross under the creek channel.
6. Rip the quarry floor and construct ditches on quarry floor.
7. Resoil the quarry floor and creek side slopes.
8. Install interim erosion control for drainage to the creek channel including coir wattles and live willow clusters until vegetation is established.
9. Inspection of east slopes below benches 1 through 4.

Summary of Reclamation Methods to be used:

1. Bulldozers will remove rock/soil from buried bypass pipes; Welders will cut bypass pipes into 16 ft. sections; Bulldozer will crush pipe sections; Excavator with jaw will lift sections into Semi-end Dump Truck for disposal at metal recycler; Loaders will distribute soil materials on the quarry floor; Grader will spread material over quarry floor and upper creek banks Excavator will remove culverts from temporary basins to be backfilled; Welders will cut culverts into 16 ft. sections; Bulldozer will crush culverts; Excavator with jaw will lift culverts into Semi-end Dump Trucks for disposal at recycler.
2. Loaders will transport materials to backfill the basins and area of fill buttresses; Bulldozer will push rock/soil materials into the basin; Excavator will place backfill in 8 - 12" lifts with outer edge being topsoil; Self Propelled Sheep's Foot Compactor will compact each layer to at least 90% relative compaction and have a moisture-conditioned to above optimum moisture content; Water Truck with jet sprayer to spray each backfill layer and will moisten ground surface for dust control. Geologist will evaluate construction of fill buttress. Graders will spread topsoil over backfilled basin area.
3. Loader will transport riprap and boulders to creek area; Excavator with bucket will place rip rap, and boulders into the creek corridor. Laborers will assist with placement. Excavator will dig a trench across the creek and Laborers will place pipe for the irrigation system into trench and Excavator will replace the soil.
4. Bulldozers and grader will construct the access road on the quarry floor; Roller will compact the road bed; Backhoe will construct drainage ditches adjacent to access road.
5. Bulldozers with ripper teeth will rip quarry floor to 18 inch depth; and Backhoe will construct drainage ditches at base of quarried slopes.
6. Loader will transport stockpiled soils and/or import topsoil for resoiling quarry floor and upper creek banks; Graders will spread the topsoil over the quarry floor; Bulldozer will spread topsoil and track walk the upper slopes of creek corridor.
7. Flat Bed Truck will import coir wattles, jute mat, and live willow clusters Pick up truck will be used to transport laborers; laborers will install coir wattles, and riprap at areas which may be susceptible to concentrated runoff in creek corridor, and at the face of the benches on the east side. Laborers will install small boulders into stream bed at locations indicated in the plans.

8. Quarry personnel will inspect benches 2-5 on the east slope and will remove from these benches any topsoil that has slid down the slope which interferes with the drainage at the toe of the slope. Quarry personnel will confirm that coir wattles at the face of the bench remain securely in place to minimize erosion and concentration of water flow over the slopes. These inspections will occur quarterly between April 15th and October 15th, and monthly during the period of October 15th to April 15th.

Quantified Description of Activities for Grading and Site Work Cost Estimate

(Task 2-1) Remove Bypass pipes and Temporary Basin Culvert

Description: Bulldozer will remove earth materials covering bypass pipes and Loader will distribute soils over the quarry floor. Welders will cut the pipe into 16 ft. sections that can be lifted out by an Excavator with a jaw. A Bulldozer will crush the pipe and the Excavator will place the crushed pipe onto a Semi-end Dump Truck for disposal at the recyclers. Water truck will spray work area to reduce dust.

Operation: Uncover bypass pipes & basin culvert, cut it to manageable lengths, crush it & dispose of it

Quantity: 1,144 l.f. of bypass pipe x 2 bypass pipes soil cover x 333 s.f./l.f. = 28,219 c.y. to be removed by bulldozer and transported to another location on-site by loader
1,144 l.f. of bypass pipex2 pipes to be cut into 16 ft. segments = 143 segments of pipe to be crushed
28,219cy of soil/rock shall be transported to fill basin
160 l.f. of culvert x 30 s.f. = 180cy soil/rock cover to be removed by excavator
160 l.f. of basin culvert to be cut into 16 ft. segments – 10 segments of pipe to be crushed

Equipment: Bulldozer to remove bypass pipes soil/rock cover at 2,400cy/hour
Excavator to remove basin culvert soil/rock cover at 360cy/hour
Loader to distribute soil/rock cover over quarry floor at 12.5cy/load and 2 minute turnaround
Bulldozer to crush pipe at rate of 200 feet/hour
Cutting torches to cut pipe into 16 foot segments for hauling at 6 cuts/hour
Excavator with jaw to load crushed pipe segments at 20 segments/hour
Semi-End Dump Trucks to haul crushed pipe segments at 20 segments/load
Water truck to wet work area for dust control

Duration: Bulldozer to remove 28,219cy soil/rock cover from bypass pipes at 2,400cy/hour = 12 hours (Use 2 bulldozers for 0.75 days)
Excavator to remove 180cy soil/rock cover from basin culverts at 360cy/hour = 0.50 hours (include w/ excavator for loading)
Loader to distribute 28,219 cy soil/rock at 250cy/hour. 28,219 ÷ 250 = 113 hours ÷ 8 = 14 equipment days. (Use 3 loaders for 4.7 days)
Bulldozer to crush 2,448 l.f.of pipe at 200 feet/hour. 2,448÷200 =12.3 hours(2 bulldozer for .75 days)
Cutting torches to cut 2,448 l.f. pipe into 16 foot segments at 6 cuts/hour. 2,448 ÷ 16 = 153 cuts (153 segments) ÷ 6 cuts/hour = 25.5 hours. (Use 2 torches for 1.6 days)
Excavator w/ jaw to load crushed pipe at 20 segments/hour. 153 pipe segments ÷ 20 = 7.7 hours (Use one excavator for 1 day)
Semi-End Dump Truck to haul crushed pipe at 20 segments/load and 2 hour turnaround. 153 pipe segments ÷ 20 segments/load = 7.7 loads. (Use 3 trucks for 1 day)
Water truck (Use 1 truck for 3 days)

Labor: 2 Bulldozer operators for 1.5 days
1 Excavator operator for 1 day
3 Loaders operators for 4.7 days or 38 hours
2 Welders for 1.6 days or 13 hours.
3 Semi-End Dump operators for 1 day
1 laborer for 3 days to operate water truck
2 laborers for 2 days to assist with pipe loading

TABLE 10-c
COST ESTIMATE TASK 2-1: Rip Quarry Floor and Creek Corridor

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	2.0	12.0	24.0	$156.74	$3,761.76
Excavator	1.0	8.0	8.0	$200.34	$1,602.72
Loader	3.0	38.0	114.0	$302.02	$34,430.28
Cutting Torches	2.0	13.0	26.0	$5.87	$152.62
Semi-End Dump Truck	3.0	8.0	24.0	$81.42	$1,954.08
Water Truck	1.0	24.0	24.0	$35.00	$840.00
SUBTOTAL					**$42,741.46**
LABOR (L)					
Bulldozer Operator	2.0	12.0	24.0	$45.45	$1,090.80
Excavator Operator	1.0	8.0	8.0	$54.98	$439.84
Loader Operator	3.0	38.0	114.0	$51.01	$5,815.14
Welder	2.0	13.0	26.0	$57.99	$1,507.74
Semi-End Dump Truck Drivers	3.0	8.0	24.0	$52.33	$1,255.92
Laborers to Assist w/ Loading	2.0	16.0	32.0	$35.64	$1,140.48
Laborer to Operate Water Truck	1.0	24.0	24.0	$35.64	$855.36
SUBTOTAL					**$12,105.28**
TOTAL COST (excluding management costs **)					**$54,846.74**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-2) Backfilling Basins and Constructing Earth Buttress on Lower West Slopes

Description: Loader will transport materials to backfill basin (included in Task 2-1); bulldozer will push material into basin; Loader will transport material sheep's foot will compact to within top five feet of final ground surface; Loader will transport material 46,000 cy to construct buttresses. Excavator to place backfill in 8 – 12" lifts w/topsoil on outer 12" at fill buttresses. Self-Propelled Sheep's Foot to compact each layer. Geologist to evaluate construction of fill buttress. Water truck will moisten each backfill layer and spray water over work areas for dust control.

Operation: Backfill and compact prior to laying topsoil on surface.

Quantity: 55,625 c.y of stockpiled backfill material and materials from excavation of creek corridor.
51,820 c.y to compact
3,300 cy of topsoil on lower fill slopes on west side, buttresses, & basin

Equipment: Bulldozer can push soil at a rate of 2,400cy/hour
Self Propelled Sheep's Foot Compacts at a rate of 2,200cy/hour
Water Truck
Excavator to place backfill material and topsoil at a rate of 360 cy/hour

Backfilling Basins:

Duration: Bulldozer to move fill 2,400cy/hour. (1 bulldozer for 1 day)
Compactor to compact basin and buttresses at 2,200cy/hour (1 compactor for 4 hours)
Water Truck (1 water truck for 8 hours)

Labor: 1 Bulldozer operator for 8 hours
1 Compactor operator for 4 hours
1 Water truck operator for 8 hours

Fill Buttress:

Duration: Bulldozer to move fill 2,400cy/hour. 55,628cy fill ÷ 2,400/hou =23 hours (3 bulldozer for 8 days)
Compactor to compact basin and buttresses at 2,200cy/hour. 51,820cy ÷ 2,200 = 24 hours. (excavator will take 10 days so compactor will be needed for 10 days)
Excavator to place backfill in 8-12" lifts w/topsoil on outer 12" at fill buttresses at 58,925c.y ÷ 360 = 163 hours (Use 2 excavators for 10 days)
Geologist to review construction of buttresses 4 hr/day ÷ 10 days = 5 days
Water truck for dust control (Use 1 truck for 14 days)

Labor: 3 Bulldozer operators for 8 days
1 Self Propelled Sheep's Foot Compactor operator for 10 days.
1 laborer to drive Water truck for 14 days
1 Geologist to evaluate construction of fill buttresses for 5 days

TABLE 10-d COST ESTIMATE FOR TASK 2-2: Remove Bypass Pipes					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	8.0	8.0	$156.74	$1,253.92
Self Propelled Sheep's Foot Compactor	1.0	4.0	4.0	$84.00	$336.00
Water Truck	1.0	8.0	8.0	$35.00	$280.00
SUBTOTAL					**$1,869.92**
LABOR (L)					
Bulldozer Operator	1.0	8.0	8.0	$51.01	$408.08
Compactor Operator	1.0	4.0	4.0	$40.40	$161.60
Laborer	1.0	8.0	8.0	$35.64	$285.12
SUBTOTAL					**$854.80**
TOTAL COST (excluding management costs)**					**$2,724.72**

TABLE 10-d(1) COST ESIMATE FOR TASK 2-2: Earth Butress on West Slopes					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Excavator	2.0	80.0	160.0	$200.34	$32,054.40
Bulldozer	3.0	64.0	192.0	$156.74	$30,094.08
Self Propelled Sheep's Foot Compactor	1.0	80.0	80.0	$84.00	$6,720.00
Water Truck	1.0	112.0	112.0	$35.00	$3,920.00
SUBTOTAL					**$72,788.48**
LABOR (L)					
Excavator Operator	2.0	80.0	160.0	$54.95	$8,792.00
Bulldozer Operator	3.0	64.0	192.0	$51.01	$9,793.92
Compactor Operator	1.0	80.0	80.0	$40.40	$3,232.00
Geologist	1.0	40.0	40.0	$105.00	$4,200.00
Laborer to Operate Water Truck	1.0	112.0	112.0	$35.64	$3,991.68
SUBTOTAL					**$30,009.60**
TOTAL COST (excluding management costs)**					**$102,798.08**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-3) Install Stream Channel Improvements

Description: Loaders will transport large riprap (400-500#), small riprap (100-200#) and gabion stone (20-40#) to designated locations on the lower creek banks and in the stream bed as indicated on the Creek Restoration Plans and Details. Excavator with bucket and jaw will place riprap and stone in to creek. Laborers will assist in placement of riprap and stone. Water truck to control dust. Excavator will dig a trench across the creek and Laborers will place pipe into trench & Excavator will replace the soil.

Operation: Construct stream channel by placing riprap and stone in designated locations. Place pipe under creek channel from west side to north east area for irrigation.

Quantity: 422cy small riprap (100-200#)
435cy gabion stone (20-30#)
123cy large riprap (400-500#)
160 l.f. of @" PVC irrigation pipe

Equipment: Loader can transport 8cy/load with 5 minute turnaround = 96cy/hour
Excavator with bucket can place riprap at rate of 96cy/hour
Excavator dig trench and replace soil in trench at 300lf./hour
Water Truck

Duration: Loader to transport stone and riprap at 96cy/hour. 980cy ÷ 96cy/hour = 10 hours ÷ 8 = 1.5 days. (Use 1 loaders for 1.5 days).
Excavator to place boulders and rip-rap at 96cy/hour. 980cy ÷ 96cy/hour = 10 hours ÷ 8 = 1.5 days. And can dig trench and replace soil at 160 lf ÷ 300 lf/hour = .05 hours (Use 1 excavator for 2 days.).
Use 1 water truck for 2 days

Labor: 1 loader operator for 1.5 days
1 Excavator operator for 2 days
1 laborer operator for 1.5 days
2 Labors to help place riprap 1.5 days

TABLE 10-e

COST ESTIMATE 2-3: Install Stream Channel Improvements

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Loader	1.0	12.0	12.0	$302.02	$3,624.24
Excavator	1.0	16.0	16.0	$200.34	$3,205.44
Water Truck	1.0	12.0	12.0	$35.00	$420.00
SUBTOTAL					**$7,249.68**
LABOR (L)					
Loader Operator	1.0	12.0	12.0	$51.01	$612.12
Excavator Operator	1.0	12.0	12.0	$54.98	$659.76
Laborer	3.0	12.0	36.0	$35.64	$1,283.04
SUBTOTAL					**$2,554.92**
TOTAL COST (excluding management costs)**					**$9,804.60**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-4) Construct Access Road on Quarry Floor

Description: Bulldozer will excavate the road bed. Loader will transport road base rock to the work area and distribute it along the road alignment. Grader will level the surface. Roller compactor will compact the surface. Backhoe will cut drainage ditches. Water truck will control dust.

Quantity: 1,300 l.f. of road X 25 feet wide = 32,500 sq. ft.
6" base rock for road surface X 32,500 sq. ft. = 600cy base rock
1,300 l.f. of road = 1,300 l.f. of drainage ditch

Equipment: Bulldozer to excavate road bed at 2,400cy/hour
Loader to transport road base at 12.5cy/load and 3 minute turnaround = 250cy/hour
Grader to level road surface at 1 acre/hour
Roller compactor to compact at 2,200cy/hour
Backhoe to construct drainage ditches at 230 l.f./hour
Water truck for duration of task

Duration: 600cy of road bed ÷ 2,400cy/hour = 1 hour. (Use 1 bulldozer for 0.5 days
600cy of base rock ÷ 250cy/hour = 2.4 hours (Use 1 loader for 0.5 days).
32,500 s.f. of road ÷ 43,560 s.f./hour = 0.75 hours (Use 1 motor grader for 0.5 days
600cy road base ÷ 2,200cy/hour = 0.25 hours (Use 1 compactor for 0.5 days
1,300 l.f of road = 1,300 l.f. of ditch ÷ 230 l.f./hour = 5.6 hours. (Use 1 backhoe for 1 day)
Use 1 water truck for 0.5 days

Labor: 1 Bulldozer operator for 0.5 days
1 Grader operator for 0.5 days
1 Roller compactor operator for 0.5 days
1 Backhoe operator for 1 day
1 laborer to drive Water truck for 1 day
1 Loader operator for 0.5 day

TABLE 10-f
COST ESTIMATE TASK 2-4: Construct Access Road on Quarry Floor

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	4.0	4.0	156.74	$626.96
Loader	1.0	4.0	4.0	302.02	$1,208.08
Grader	1.0	4.0	4.0	131.43	$525.72
Roller Compactor	1.0	4.0	4.0	$54.02	$216.08
Backhoe	1.0	8.0	8.0	$29.00	$232.00
Water Truck	1.0	8.0	8.0	$35.00	$280.00
SUBTOTAL					**$3,088.84**
LABOR (L)					
Bulldozer Operator	1.0	4.0	4.0	$51.01	$204.04
Loader Operator	1.0	4.0	4.0	$51.01	$204.04
Grader Operator	1.0	4.0	4.0	$48.75	$195.00
Compactor Operator	1.0	4.0	4.0	$40.40	$161.60
Backhoe Operator	1.0	8.0	8.0	$53.60	$428.80
Laborer to Operate Water Truck	1.0	8.0	8.0	$35.64	$285.12
SUBTOTAL					**$1,478.60**
TOTAL COST (excluding management costs)**					**$4,567.44**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-5) Rip Quarry Floor and Construct Perimeter Drainage Ditches

Description: Bulldozers rip ground surface of quarry floor to a depth of 18 inches. Backhoe will construct drainage ditches. Water truck to spray work area.

Operation: Rip compacted surface to facilitate resoiling and revegetation.

Quantity: 4.70 acres of quarry floor x 18" depth to be ripped = 11,375cy
2,600 l.f. of drainage ditch

Equipment: Bulldozer can rip at rate of 2,400cy/hour.
Backhoe can construct ditches at rate of 230 ft./hour
Water truck to reduce dust

Duration: 11,375cy to be ripped ÷ 2,400cy/hour = 5 hours (Use 1 bulldozer for 1 day)
2,600 l.f. drainage ditch ÷ 230 l.f./hour = 11 hours ÷ 8 = 1.5 days (Use 1 backhoe for 1.5 days)
Water truck for 1.5 days

Labor: 1 Bulldozer operator for 1 day
1 backhoe operator for 1.5 days
1 laborer to drive Water truck for 1.5 days

TABLE 10-g
COST ESTIMATE FOR TASK 2-5: Rip Quarry Floor and Construct Perimeter Drainage Ditches

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Bulldozer	1.0	8.0	8.0	$156.74	$1,253.92
Water Truck	1.0	12.0	12.0	$35.00	$420.00
Backhoe	1.0	12.0	12.0	$29.00	$348.00
SUBTOTAL					**$2,021.92**
LABOR (L)					
Bulldozer Operator	1.0	8.0	8.0	$51.01	$408.08
Laborer	1.0	12.0	12.0	$35.64	$427.68
Backhoe Operator	1.0	12.0	12.0	$53.60	$643.20
SUBTOTAL					**$1,478.96**
TOTAL COST (excluding management costs)**					**$3,500.88**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-6) Resoil Quarry Floor and Upper Creek Banks

Description: Loader will transport stockpiled topsoil to quarry floor and onto upper creek banks; Grader will spread topsoil over quarry floor; bulldozer will spread of topsoil over upper creek banks. Water Truck will spray work area with water.

Operation: Resoil quarry floor and upper creek banks

Quantity: 4.7 ac x 2.5 inches of topsoil = 1,577cy of amended topsoil for canyon bottom
1.93 ac x 5.5 inches of topsoil = 1,420cy of amended topsoil for upper creek banks

Equipment: Loader can transport 12.5cy/load with 5 minute turnaround = 150cy/hour
Bulldozer can distribute soil at rate of 2,400cy/hour
Grader can level at rate of 1 acre/hour
Water truck

Duration: Loader to transport 3,000cy soil at 150cy/hour. 3,000 ÷ 150 = 20.0 hours ÷ 8 = 2.5 equipment days. (Use 3 loaders for 1 day).
Bulldozer to spread 1,420cy soil on creek banks and 1,557cy soil on quarry floor at 2,400cy/hour. (Use 1 bulldozer for 1 day)
Grader to spread topsoil over 4.7 acres at 1 acre/hour (Use 1 grader for 5 hours)
Use 1 water truck for 2 days

Labor: 3 Loader operators for 1 day
1 Bulldozer operator for 1 day
1 Grader operator for 5 hours
1 Laborer to drive Water Truck for 2 days

TABLE 10-h
COST ESTIMATE FOR TASK 2-6: Resoil Quarry Floor and Upper Creek Banks

EQUIPMENT (E)	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
Loader	3.0	8.0	24.0	302.02	$7,248.48
Bulldozer	1.0	8.0	8.0	156.74	$1,253.92
Grader	1.0	5.0	5.0	131.43	$657.15
Water truck	1.0	16.0	16.0	$35.00	$560.00
Subtotal					**$9,719.55**
LABOR (L)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Loader Operator	3.0	8.0	24.0	$51.01	$1,224.24
Bulldozer Operator	1.0	8.0	8.0	$51.01	$408.08
Grader Operator	1.0	5.0	5.0	$48.75	$243.75
Laborer to Operate Water Truck	1.0	16.0	16.0	$35.64	$570.24
Subtotal					**$2,446.31**
TOTAL COST (excluding management costs)**					**$12,165.86**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-7) Installation of Temporary Erosion Control Measures

Description: Flat bed truck will import erosion control materials. Laborers to cut local willows to make and install live willow clusters in selected locations on lower elevation of the creek banks. Pick-up truck will transport laborers, tools and materials to install coir wattles, jute mat, and live willow clusters on lower creek banks. Laborers to cut local willows to make and install live willow clusters in selected locations on lower elevation of the upper creek bank.

A pick-up truck will be used to transport the coir wattles up to the benches on the east side where Laborers will place them at the face of the benches.

Operation: Import erosion control materials. Collect willow cuttings. Place coir wattles, jute mat, and live willow clusters in creek corridor to help control sediments and reduce erosion. Willow wattle clusters should be watered the same day they are planted.

Quantity: 1,740 l.f. creek corridor
3,780 l.f of benches on east side
115 willow wattle cluster collection and installation
1.93 acres of creek banks to receive jute mat

Equipment: Flat bed truck to import erosion control supplies
Pick up truck to transport laborers for creek work
Pick up truck to transport laborers for east side bench work

Materials: 1,740 l.f. creek corridor X 2 sides = 3,840 l.f. coir wattles @ $1.52/l.f including stakes
3,780 l.f. coir wattles on east side benches @ $1.52/l.f. including stakes
1.93 acres of jute mat w/ staples @ $9,459.94/ac.
Hand tools: 2 shovels and 2 wheelbarrows

Duration: 2 laborers can install coir wattles along creek sides in 1 day (Use 2 laborers for 1 day)
2 laborers can install coir wattles along the face of the benches on the east side in 1 day (Use 2 laborers for 1 days)
2 laborers can assemble, install and water 60 live willow clusters per day. 115 wattles ÷ 60 = 1.9 (Use 2 laborers for 2 days)
2 laborers can mobilize & install 1 ac. Jute mat/day÷1.93 acre area = 2 days. (Use 2 laborers for 2 days)
1 pickup truck can transport up to 3 laborers. Use 1 pickup truck for 5 days for creek work and use 1 pickup truck for 1 day for east side bench work Laborers will operate truck. (Use 1 pickup truck for 6 days)
1 Flat bed truck for creek work for 1 day and for 1 day for east side bench work (Total: Use 1 Flat bed truck for 2 days)
1 water truck to water willow wattle clusters for 2 days

Labor: 2 laborers for creek work for 5 days
2 laborers for east side work for 1 day
1 Flat bed truck driver for 2 days

TABLE 10-i COST ESTIMATE FOR TASK 2-7 Installation of Temporary Erosion Control Measures in Creek Corridor					
EQUIPMENT (E)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
Water Truck	1.0	16.0	16.0	$35.00	$560.00
Puck up Truck	1.0	28.0	28.0	$12.00	$336.00
Subtotal					**$1,136.00**
LABOR (L)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Laborers	2.0	48.0	96.0	$35.64	$3,421.44
Flat Bed truck driver	1.0	16.0	16.0	$46.52	$744.32
Subtotal					**$4,165.76**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Coir wattles w/ stakes (linear feet)	3780.0			$1.52	$5,745.60
Live Willow Clusters* (each)	166.0			$0.00	$0.00
Jute Mat w/ Staples (acre)	1.9			$9,459.94	$17,973.89
Shovel	2.0			$9.97	$19.94
Wheel Barrow	2.0			$69.99	$139.98
Subtotal					**$23,879.41**
TOTAL COST (excluding management costs)**					**$29,181.17**

*Willow cutting collected locally so no costs for materials.

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 2-8) Ongoing Monitoring of Benches on East Slope

Description: Quarry personnel will inspect the east slopes below benches 1 through 4 for accumulated sediments that interfere with drainage on the bench.

Operation: Inspect east slope benches 2 – 5

Quantity: 4 benches

Equipment: Pick up truck to transport laborers

Materials: none

Duration: 1 quarry personnel to inspect benches

Labor: 2 laborers for 3.5 days
1 Flat bed truck driver for 1 day

TABLE 10-j
COST ESTIMATE FOR TASK 2-8: Ongoing Monitoring of Benches on East Slope

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Pick-up Truck	1.0	28.0	28.0	$12.00	$336.00
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
SUBTOTAL					**$576.00**
LABOR (L)					
Laborers	2.0	28.0	56.0	$35.64	$1,995.84
Flat Bed Truck Driver	1.0	8.0	8.0	$46.52	$372.16
SUBTOTAL					**$2,368.00**
TOTAL COST (excluding management costs)**					**$2,944.00**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

GROUP 3 TASKS: REVEGETATION

Overall Description of Work Activity:

1. Install irrigation system on cut and fill benches on east and west slopes, then hydroseed benches and intervening slopes as well as plant woody plants on benches in these areas.
2. Install irrigation system on upper creek banks; hydroseed creek banks; install jute mat on creek banks; and plant woody materials on upper creek banks.
3. Hydroseed quarry floor and plant tree clusters at select locations on the quarry floor; and hydroseed the reworked slope above Limekiln Creek. Extend irrigation system to water trees and shrubs on quarry floor.
4. Monitoring program including: visual inspections of revegetated areas; monitoring plot inspections; soil moisture inspections; erosion and sediment control inspections; and noxious weed control inspections.

Summary of Reclamation Methods to be used:

Revegetate Cut and Fill Slopes and Benches on East and West Slopes; and Reworked Slope above Limekiln Creek:

1. Semi-end Dump Truck will import soil amendments, mulch to be used in replanting of benches; Flat Bed Trucks will import plants, irrigation pipe and plastic tubing; Pick up truck will import marker flags, fertilizer tablets, irrigation fittings and emitters for the irrigation system.
2. Pickup Truck will transport laborers, supplies, and equipment (wheelbarrows, shovels, picks and hammers) to and from base of quarried benches/slopes and the reworked slopes; Laborers will dig planting holes, construct watering basins in planting trenches, and install irrigation distribution system (PVC pipes and connectors, plastic tubing, emitters, stakes, overhead sprayers, pumps, and controllers); Hydroseeder will apply hydroseed mix to cut and fill slopes and benches on the east and west side, and to the reworked slopes. This work will be done during October and November prior to the heavy winter rains.
3. Pickup Truck will transport laborers, equipment, supplies and plant materials to and from base of quarry benches/slopes and the reworked slopes; Laborers will place fertilizer tablets into planting holes; and plant trees and shrubs with amended soil, mulch, and install irrigation emitter at each plant.
4. Laborers will activate the irrigation system and verify that it is functioning properly.

Creek Corridor Revegetation:

5. Semi-end Dump Truck will import soil amendments and mulch to work area at creek corridor; Flat bed truck will import plant irrigation pipe, plastic tubing and jute mat; Pick up truck will be used to import market flags, fertilizer tablets, and fittings for the irrigation system.
6. Pickup Truck will transport labors, supplies, and equipment (wheelbarrows, shovels, picks, and hammers) to creek corridor; Laborers will dig planting holes, construct watering basins, and install irrigation system. (PVC pipe, plastic tubing and stakes). This work should be done before hydroseeding begins in April or May.
7. Hydroseeder will apply hydroseed mix to upper banks of creek. This work will be done during April and May after the heavy winter rains.

8. Pickup Truck will be used to transport laborers and plant materials to and from creek corridor; Laborers will install jute mat; place fertilizer tablets into planting holes; plant trees and shrubs with amended soil mulch and install irrigation emitter at each plant. This work should be done right after hydroseeding.

9. Laborers will activate the irrigation system and verify that it is functioning properly.

Quarry Floor:

10. Semi-end Dump Truck will import soil amendments and mulch to work area at Quarry Floor; Flat bed truck to import plants, irrigation pipe and plastic tubing; Pick up truck will be used to import marker flags, fertilizer tablets and fittings for the irrigation system.

11. Pickup Truck will transport labors, supplies, and equipment (wheelbarrows, shovels, picks, and hammers) to Quarry Floor; Laborers will dig planting holes, construct watering basins, install marker flags, and install irrigation system. (PVC pipe, plastic tubing and stakes)

12. Hydroseeder will apply hydroseed mix to quarry floor and reworked slope. This work will be done during October and November before the heavy winter rains.

13. Pick up truck will transport laborers, equipment supplies and plant materials to areas where woody plants will be installed. Laborers will place fertilizer tablets into planting holes, install plants and install irrigation emitter to each plant.

14. Laborers will activate irrigation system and verify that it is functioning properly.

Monitoring

15. Revegetation expert will conduct visual inspection, quantified monitoring plot inspections and noxious weed control inspections and record findings on appropriate inspection forms, Figures 14-15.

16. Quarry personnel will check soil moisture levels of planting areas and conduct erosion and sediment control inspections and record finding on appropriate inspection forms, Figures 16 – 17.

17. Pick up truck will transport revegetation expert and quarry personnel to inspection areas.

18. Pickup truck will transport laborers, equipment and defoliant to areas with targeted noxious weeds to be removed.

Detail and Cost Estimate for Revegetation Activities

(Task 3-1) Hydroseed Cut and Fill Slopes and Benches on the East and West, and Reworked Slope[16]

Description: Hydroseeder to apply hydroseed mix with mechanical hydroseed equipment mounted on a four-wheel drive vehicle; hydroseed applied with spray nozzle Hydroseed is applied with tackifier to hold the seed mix in place. Hydroseed provides erosion and weed control, and helps to retain soil moisture. Foliage diffuses the downward force of rain and plant roots hold soil in place.

Operation: Apply hydroseed

Quantity: 30.1 acres = 1,310,956 s.f. (12.63 acres on west slopes; 15.64 acres on east slopes; 1.81 ac. at reworked slopes)

Materials: Seed
Hydroseed Specification on Table 7 ($1,360/acre)

Equipment: 1 Hydroseed Vehicle can cover 0.67 acres/hour; however on cut slopes and benches the rate is 0.5 acres/hour.

Duration: Hydroseeder to hydroseed and apply blown straw on the reworked slopes[14] at a rate of 0.67 acres/hour, 1.81 acres ÷ 0.67 = 2.7 hours PLUS Hydroseeder to hydroseed cut and fill slopes and benches at a rate of 0.50 acres/hour, 28.29 acres ÷ 0.50 = 56.58 hours. 2.7 hours + 56.58 hours = 59.28 ÷ 8 hours/day = 7.41 days (Use 2 hydroseed trucks for 3.75 days)

Labor: 2 hydroseed/straw blower[14] operator for 3.75 days or 30 hours
2 Laborers to assist hydroseed operator for 3.75 days

[16] The straw blower will be used to apply straw to the reworked slopes.

TABLE 10-k COST ESTIMATE FOR TASK 3-1: Hydroseed, Cut and Fill Slopes and Benches					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Hydroseeder	2.0	30.0	60.0	$50.00	$3,000.00
SUBTOTAL					**$3,000.00**
LABOR (L)					
Hydroseeder Operator	2.0	30.0	60.0	$40.00	$2,400.00
Laborer	2.0	30.0	60.0	$35.64	$2,138.40
SUBTOTAL					**$4,538.40**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Hydroseed (acres)	30.1			$1,360.00	$40,936.00
SUBTOTAL					**$40,936.00**
TOTAL COST (excluding management costs)**					**$48,474.40**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 3-2) Plant Trees and Shrubs on Benches and install irrigation to Benches and Slopes

Description: Semi-end Dump Truck to import soil amendments and mulches. Flat Bed Truck to import plant materials and irrigation pipe. Pick up Truck to import market flags, fertilizer and materials for irrigation system. Laborers to dig planting holes and prepare watering basins around each planting hole and mark planting hole with flags. Laborers to place fertilizer tablets into each planting hole, backfill planting holes with amended soils, install plants and add mulch to each watering basin. Laborers to install overhead sprayers to water the cut and fill slopes on the east and west sides of the quarry; and install emitters to each plant on the quarry benches, activate and inspect irrigation system, all plants should be watered the same day that they are planted. Mulches and fertilizer tablets are placed in planting holes to enhance plant growth.

Operation: Prepare planting holes on benches, install irrigation system on benches, and install plants into planting holes on benches. Activate and inspect irrigation system.

Quantity: 3,087 planting holes

Materials:
837 – 1 gal. plants (350 trees, 487 shrubs) @ $7.25/ea.
2,394 – tube stock (534 trees, 1,716 shrubs) @ $3.49
700 – tube stock vines @ $3.99
126cy amended soil @ $23.00/c.y.
Fertilizer – 8 boxes with 500 tablets in each @ $68.95
2,474 l.f. – 2" PVC and couplings – allow $3.46/l.f.
15,990 l.f. – 1.5" PVC and couplings – allow $1.47/ea.
65 – 1-1/2" caps – allow $1.66/ea.
19 – 1-1/2" X ¾" T's for drip system (at 400 l.f. intervals) – allow $3.24/ea.
130 -1-1/2" X ¾" T's for overhead system (@ ea. riser) – allow $3.24/ea.
130 – 1-1/2" X ¾" riser for overhead system @ ea. Riser – allow $4.49/ea.
130 – 3' high metal fence stake @ ea riser- allow $1.15/ea.
130 l.f. of wire ties – allow $0.19/ft.
19 - ¾" X ¾" plastic tubing connections for drip system @ $3.49/ea.
15,565 l.f. plastic tubing (2.2 X bench length) @ $0.20/l.f.
3,087 – 1 gal./hr. emitters (one per plant) @ $1.80
179 – overhead sprayer w/approximate 44 ft. radius @ $8/ea.
3,087 marker flags @ $0.18 ea.
1 – 8 hp, 3 phase pumps – allow $600
1 – 5 hp, 3 phase pumps – allow $600
1 – 5,000 gal. water tank – allow $2,523
3 – irrigation timers - allow $100/ea.
21 – irrigation station controllers for drip system (1 ea. Bench) allow $38.52/ea.
21 – irrigation station controllers for overhead system (1 ea. Bench) allow $38.52/ea.

Equipment:
Hand tools (shovels, wrecking bars, and wheelbarrows)
Pick up Trucks to transport laborers and equipment and supplies (marker flags, irrigation materials, fertilizer tablets, soil and mulch)
Flat Bed Truck to transport plant materials
Semi-end Dump Truck to import soil amendments and mulches

Duration:
1 laborer can prepare 55 planting holes in 8hrs (6.8 holes/hour), 3,087 ÷ 6.8 holes/hour = 454 hours (56.75 days) (Use 8 laborers for 7.5 days)
1 laborer can install 55 plants in 8 hrs (6.8 Plants/hour), 3,087 ÷ 6.8 plants/hour = 454 Hours (56.75 days) (Use 8 laborers for 7.5 days)
2 laborers can install irrigation system on each bench at a rate of 2 benches/day x 22 benches = 11 days (Use 4 laborers for 2.75 days)
Pick up truck can haul 3 laborers. 8 laborers ÷ 3 = 3 trucks (Use 3 pick up trucks for 15 days, and 2 pick up trucks for 3 days)
1 Flat bed truck for 1 day
1 Semi-End dump truck for 1 day

Labor: 1 Flat bed truck operator for day
1 Semi-End dump truck for 1 day
8 laborers for planting hole preparation and planting for 15 days
4 laborers for installing irrigation system for 2.75 days

TABLE 10-l
COST ESTIMATE FOR TASK 3-2: Plant Trees and Shrubs on Benches and Install Irrigation on Benches and Slopes

EQUIPMENT (E)	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
Pick-up Truck	3.0	120.0	360.0	$12.00	$4,320.00
Pick-up Truck	2.0	24.0	48.0	$12.00	$576.00
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
Semi-End Dump Truck	1.0	8.0	8.0	$81.42	$651.36
SUBTOTAL					**$5,787.36**
LABOR (L)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Flatbed Truck Operator	1.0	8.0	8.0	$46.52	$372.16
Semi-End Dump Truck Operator	1.0	8.0	8.0	$52.33	$418.64
Laborers	8.0	120.0	960.0	$35.64	$34,214.40
Laborers	4.0	22.0	88.0	$35.64	$3,136.32
Subtotal					**$38,141.52**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
1 Gallon Plants - Trees (each)	350.0			$7.25	$2,537.50
1 Gallon Plants - Shrubs (each)	487.0			$6.25	$3,043.75
Tube Stock - Trees (each)	534.0			$3.49	$1,863.66
Tube Stock - Shrubs (each)	1716.0			$3.49	$5,988.84
Tube Stock - Vines (each)	700.0			$3.99	$2,793.00
Amended Soil (cubic yards)	126.0			$23.00	$2,898.00
Fertilizer Tablets (box of 500)	8.0			$68.95	$551.60
2" PVC and Couplings (linear feet)	2474.0			$3.46	$8,560.04
1.5" PVC and Couplings (linear feet)	15990.0			$1.47	$23,505.30
1 - 1 1/2 Caps (each)	65.0			$1.66	$107.90
1 - 1 1/2" x 3/4" T's (400 linear feet intervals)	19.0			$3.24	$61.56
1 - 1 1/2" x 3/4" T's (@ each riser)	130.0			$3.24	$421.20
1 - 1/2" x 34" Riser for overhead system	130.0			$4.49	$583.70
1 - 1 1/2" x 3/4" T's (at each riser)	130.0			$3.24	$421.20
3' High Metal Fence Stake (at each riser)	130.0			$1.15	$149.50
Wire Ties (linear feet)	130.0			$0.19	$24.70
3/4" x 3/4" Plastic Tubing Connections	19.0			$3.49	$66.31
Plastic Tubing - 2.2 x bench length (l.f.)	15565.0			$0.20	$3,113.00
1 Gallon/hr Emitters (one per plant)	3087.0			$1.80	$5,556.60
Overhead Sprayer w 45' radius	179.0			$8.00	$1,432.00
Marker Flags	3087.0			$0.18	$555.66
8 hp, 3 Phase Pump (each)	1.0			$600.00	$600.00
5 hp, 3 Phase Pumps (each)	1.0			$600.00	$600.00
5 gallon water tank	1.0			$2,523.00	$2,523.00
Irrigation Timers (each)	3.0			$159.00	$477.00

TABLE 10-l COST ESTIMATE FOR TASK 3-2: Plant Trees and Shrubs on Benches and Install Irrigation on Benches and Slopes					
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Irrigation Station Controllers for Drip System - 1 each Bench (each)	21.0			$38.52	$808.92
Irrigation Station Controllers for Overhead System - 1 each Bench (each)	21.0			$38.52	$808.92
Wrecking Bars	8.0			$9.99	$79.92
Wheel Barrows	8.0			$69.99	$559.92
Shovels	8.0			$9.97	$79.76
SUBTOTAL					**$70,772.46**
TOTAL COST (excluding management costs)**					**$114,701.34**

(Task 3-3) Plant Restored Creek Corridor

Description: Semi-end Dump Truck to import soil amendments and mulch. Flat Bed Truck to import plant materials. Pick up Truck to import wooden stakes, fertilizer tablets and materials for irrigation system. Laborers to dig planting holes, construct watering basin, mark hole with flag, place fertilizer tablets into each hole and install drip irrigation system. Hydroseeder to apply hydroseed mixture on upper creek side slopes with mechanical hydroseed equipment mounted in four-wheel drive vehicle; hydroseed applied with spray nozzle. Straw blower to apply straw and tackifier with spray nozzle on upper creek banks. Laborers to install plants and add layer of mulch into watering basin

Operation: Prepare the upper banks of the creek for plant materials, and installation of the irrigation system. Hydroseed the upper creek banks, and install plant materials. Activate and inspect the irrigation system. All plants should be watered the same day as planted.

Quantity: 1.93 acres to be hydroseeded
1,832 planting holes

Materials: 666 – 1 gal. plants (109 trees, 557 shrubs) @ $7.25/ea.
1,166 – tube stock (164 trees, 835 shrubs,@ $3.49/ea., AND 167 herbaceous @$3.99/ea.)
68cy amended soil @ $23.00/c.y.

Fertilizer – 8 boxes with 500 tablets in each @ $68.95
Hand tools (6 shovels, 6 wrecking bars, 6 stake pounders, 6 wheelbarrows)
1,832 marker flags @ $.18
1,832 – 1 gal./hr. emitters (one per plant) @ $1.80
4 irrigation station controllers (2 ea. side) – allow $38.52/ea.
7,656 l.f. plastic tubing (2.2 X creek length) @ $.20/l.f.
NOTE: Use Hydroseed Specification from Table 6 ($2,400/ac)

Equipment: Pick up truck to transport laborers and equipment and supplies
Hydroseed/Straw Blower vehicle
Flat bed truck to transport plant materials
Semi-End dump truck to transport soil amendments and mulches
Water Truck to water plants

Duration: 1 Flat Bed Truck to import irrigation materials and plants (Use 1 truck for 1 day)
1 Semi-End Dump Truck to import amended soil (Use 1 truck for 1 day)
2 laborers can mobilize & install irrigation tubing and emitters on creek bank at $1,000 ft./day. 3,480 l.f. ÷ 1,000 = 3.5 days (Use 6 laborers for 1.5 days)
2 laborers can prepare 110 plant holes/day. 1,832 ÷ 110 = 16.7 days. (Use 6 laborers for 6 days)
2 laborers can mobilize & install 110 plants/day. 1,832 ÷ 110 = 16.7 days. (Use 6 laborers for 6 days)
1 Pickup truck carries 3 laborers. (Use 2 trucks for 13.5 days)
Hydroseed/Straw Blower: 1.93 ac. ÷ 0.67 ac./day = 3 hours. (Use 1 hydroseed/straw blower truck for 0.5 days)
1 Water Truck to water plants for 2 days

Labor: 1 Flat Bed Truck driver for 1 day
1 Semi-End Dump driver for 1 day
1 hydroseed truck operator for 0.5 days
6 Laborers for 13.5 days or 108 hours

TABLE 10-m COST ESTIMATE FOR TASK 3-3: Plant Restored Creek Corridor					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
Semi-End Dump Truck	1.0	8.0	8.0	$81.42	$651.36
Pick up Truck	2.0	108.0	216.0	$12.00	$2,592.00
Water Truck (for watering plants)	1.0	48.0	48.0	$35.00	$1,680.00
Hydroseed/Straw Blower	1.0	4.0	4.0	$39.00	$156.00
SUBTOTAL					**$5,319.36**
LABOR (L)					
Flat Bed Truck Driver	1.0	8.0	8.0	$46.52	$372.16
Semi-End Dump Truck Driver	1.0	8.0	8.0	$52.33	$418.64
Hydroseed/Straw Blower Truck Operator	1.0	4.0	4.0	$40.15	$160.60
Laborers	6.0	108.0	648.0	$35.64	$23,094.72
SUBTOTAL					**$24,046.12**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Hydroseed (acres)	1.9			$1,892.50	$3,652.53
1 Gallon Plants - Trees (each)	109.0			$7.25	$790.25
1 Gallon Plants -Shrubs (each)	557.0			$6.25	$3,481.25
Tube Stock - Trees (each)	164.0			$3.49	$572.36
Tube Stock - Shrubs (each)	835.0			$3.49	$2,914.15
Tube Stock - Herbaceous (each)	167.0			$3.99	$666.33
Amended Soil (cubic yards)	68.0			$23.00	$1,564.00
Fertilizer Tablets (Box of 500)	4.0			$68.95	$275.80
Shovel	6.0			$9.97	$59.82
Wrecking Bars	6.0			$9.99	$59.94
Stake Pounders	6.0			$74.96	$449.76
Wheel Barrows	6.0			$69.99	$419.94
Marker Flags (each)	1832.0			$0.18	$329.76
1 Gallon/Hour Emitters (one per plant)	1832.0			$1.80	$3,297.60
Irrigation Station Controllers - 2each side (each)	4.0			$38.52	$154.08
Plastic Tubing - 2.2 x creek length (linear feet)	7656.0			$0.20	$1,531.20
SUBTOTAL					**$20,218.77**
TOTAL COST (excluding management costs)**					**$49,584.25**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 3-4) Hydroseed and Plant Quarry Floor

Description: Semi-end Dump Truck to import soil amendments and mulches. Flat Bed Truck to import plant materials and irrigation supplies. Pick up truck to import marker flags, fertilizer and fittings for irrigation system. Laborers to prepare planting holes, install marker flags and install drip irrigation system. Hydroseeder to apply hydroseed mixture with mechanical hydroseed equipment mounted in four-wheel drive vehicle. Straw blower to apply straw and tackifier with spray nozzle. .Laborers to install plants and fertilizer, backfill each planting hole, and add layer of mulch into watering basin. Laborers to activate and test the irrigation system.

Operation: Revegetate the quarry floor, and install irrigation system. Hydroseed the canyon bottom and install plant materials. Activate and inspect the irrigation system. All plants should be watered the same day as planted.

Quantity: 4.7 acres to be hydroseeded
50 planting holes

Materials: 50 trees (all 1 gal.) @ $7.25/ea.
50 marker flags @ $.18/ea.
2cy amended soil for planting holes @ $23.00/c.y.
Fertilizer – allow $1,000
Hand tools (2 shovels, 2 wrecking bars, and 2 wheelbarrows)
2,000 l.f. – 1 ½" PVC 2 $1.00/l.f.
7 – 1 ½" X ¾" T's (one per tree cluster) – allow $3.24 ea.
7 – ¾" X ¾" plastic tubing connections @ $3.49/ea.
800 l.f. plastic tubing @ $.20/l.f.
2 – irrigation station controllers – allow $38.52/ea.
50 – 1 gal./hr. emitters (one per plant) @ $1.80
Use Hydroseed specification from Table 8 ($2,627)

Equipment: Hydroseed/ Straw blower truck
Semi-End Dump truck to import amended soil
Flat bed truck to import plants and irrigation system supplies
Pick up truck to transport laborers, tools and supplies.

Duration: 2 laborers can mobilize and plant 110 plants/day, 50 plants ÷ 110 = 0.45 (Use 2 laborers for 0.5 days)
2 laborers can prepare 110 planting holes/day, 50 planting holes ÷ 110 = 0.45 (Use 2 laborers for 0.5 days)
2 laborers can install irrigation at a rate of one side of quarry floor/day (Use 4 laborers for 1 day)
Hydroseed and apply straw on 4.7 acres at a rate of 0.67 acres/hour = 7 hours (Use 1 hydroseed truck for 1.0 days)
Pick up truck can haul 3 laborers (Use 2 trucks for 1 day)

Labor: 1 hydroseed/straw blower unit operator for 1 day
1 laborer to assist hydroseed operator for 1 day
4 laborers to install irrigation system for 1 day
2 laborers for planting for 1 day
1 Semi-End dump truck driver for 1 day
1 Flat bed truck driver for 1 day

TABLE 10-n COST ESTIMATE FOR TASK 3-4: Hydroseed and Plant Quarry Floor					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Hydroseed/Straw Blower Truck	1.0	8.0	8.0	$39.00	$312.00
Semi-End Dump Truck	1.0	8.0	8.0	$81.42	$651.36
Flat Bed Truck	1.0	8.0	8.0	$30.00	$240.00
Pick up Truck	2.0	8.0	16.0	$12.00	$192.00
SUBTOTAL					**$1,395.36**
LABOR (L)					
Hydroseed/Straw Blower Truck Operator	1.0	8.0	8.0	$40.15	$321.20
Semi-End Dump Truck Driver	1.0	8.0	8.0	$52.33	$418.64
Flat Bed Truck Driver	1.0	8.0	8.0	$46.52	$372.16
Laborers to Prepare & Plant	2.0	8.0	16.0	$35.64	$570.24
Laborers to Install Irrigation System	4.0	4.0	16.0	$35.64	$570.24
Laborer to Assist Hydroseeder	1.0	8.0	8.0	$35.64	$285.12
SUBTOTAL					**$2,537.60**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
1 Gallon Trees (each)	50.0			$7.25	$362.50
Marker Flags (each)	50.0			$0.18	$9.00
Amended Soil (cubic yards)	2.0			$23.00	$46.00
Ferilizer (allowance)	1.0			$1,000.00	$1,000.00
1.5" PVC Pipe (linear feet)	2000.0			$1.00	$2,000.00
1 - 1 1/2" x 3/4" Tees (1 per tree cluster	7.0			$3.24	$22.68
3/4" x 3/4" Plastic Tubing Connections (each)	7.0			$3.49	$24.43
Plastic Tubing (linear feet)	800.0			$0.20	$160.00
Irrigation Station Controllers	2.0			$38.52	$77.04
1 Gallon/Hour Emitters (one per plant	50.0			$1.80	$90.00
Hydroseed	4.7			$2,382.00	$11,195.40
Shovel	2.0			$9.97	$19.94
Wrecking Bars	2.0			$9.99	$19.98
Wheelbarrows	2.0			$69.99	$139.98
SUBTOTAL					**$15,166.95**
TOTAL COST (excluding management costs)**					**$19,099.91**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

GROUP 4 TASKS: POST MINING MAINTENANCE AND MONITORING

Overall Description of Work Activity:

During the 5 year post mining period, the operator will conduct routine maintenance of the drainage facilities and the erosion and sediment control systems; and conduct inspections for the noxious weed control program and the monitoring program. In addition a geotechnical engineer will inspect the condition of the east slopes below benches 1, 2, 3 and 4 and make recommendations for the soil fines on the these slopes that either the fines can remain in place or be removed. If the sediments on the east slopes are removed the affected areas will be replanted and monitored. The haul road up the east slope will be removed and replanted.

Summary of Reclamation Methods to be Used:

1. Quarry personnel will inspect the drainage ditches and basins to determine if they need to be cleaned out, they will observe the excavation areas for presence of erosion, and inspect the irrigation system to ensure that it is functioning properly; the quarry's revegetation expert will inspect the quarry for the presence of targeted noxious weeds, and when appropriate evaluate the monitoring plots for their planting success criteria.
2. Loaders will remove excess sediments from basins and place sediments into Semi-End Dump Truck for removal off-site;
3. Backhoe will remove excess sediments from drainage ditches and place sediments into Semi-End Dump Truck for removal off-site;
4. Geotechnical Engineer will evaluate the sediments placed on the east slopes below benches 1, 2, 3, and 4 and make recommendations to either allow the remaining soil fines to remain in place or to have it removed. If this task is necessary then the following will occur:
    a. Dozer and Excavator with boom to remove vegetative matter and Loader shall transport downslope and place into Debris box.
    b. Laborers shall remove irrigation system and shall place the debris into a Pick-Up Truck for transport downslope and place into Debris box.
    c. Excavator with boom shall remove sediments from cut slopes and accumulated fines at toe of slopes, and Loader shall transport sediments to quarry floor where a Dozer will spread and trackwalk the sediments in lifts over a portion of the quarry floor
    d. Laborers shall install irrigation system on cut slopes and benches, then plant woody plants on benches, and re-establish the monitoring inspection plots.
    e. Hydroseeder to hydroseed affected area on slopes, benches and quarry floor
    f. Revegetation Consultant to conduct monitoring program including: visual inspections of revegetated areas; and monitoring plot inspections.
5. Excavator to contour grade the slope to remove the haul road on east side and Loader to transport excess soils downslope to quarry floor where a Dozer will spread and trackwalk the soils in lifts over a portion of the quarry floor and a Hydroseeder will hydroseed the regraded slope and the impacted area on the quarry floor.
6. Revegetation Consultant to conduct monitoring program including: visual inspections of revegetated areas; quantified monitoring plot inspections; soil moisture inspections; erosion and sediment control inspections; and noxious weed control inspections.

Quantified Description of Activities for Post Mining Maintenance and Monitoring

(Task 4-1) Post Mining Maintenance (5-year period)

Description: Loaders and Backhoes will remove excess sediments in basins and drainage facilities and place sediments into Semi-End Dump Truck for transport to another quarry facility. Inspections will be made to observe the irrigation system, identify targeted noxious weeds and identify, and correct, as needed, areas with erosion problems.

Operation: Quarry personnel will inspect site for evidence of erosion and sediment accumulation and report findings on Figure 17. Quarry personnel will arrange for the removal of excess sediment build up from basins and drainage facilities, as needed, and arranging for transporting excess sediments to a local land fill for disposal.

Quantity: 5,850 cy of sediments to be removed , during the 5 year post mining maintenance period, by loader or backhoe and transported to another location off-site by semi-end dump truck.

Equipment: Loader to remove sediments from basins
Backhoe to remove sediments from drainage ditches
Semi-end Dump Trucks to transport sediments off-site
Pick-up Truck to transport inspector

Duration: Loader to remove 5,480 c.y sediments at 150cy/hour = 36 hours (Use 1 loader for 4.5 days)
Backhoe to remove sediments at 400 l.f./hour = 8 hours (Use 1 backhoe for 1 day)
Semi-End Dump Trucks to remove 5,850cy of sediments from basins (over 5 years) at 18cy/trip = 325 loads ÷ 10 loads/day (0.83 hours turnaround = 10 trips/day) = 32.5 days ÷ 6.5 trucks/day = 5 days ÷ 5 years = 1 day/year (Use 7 semi-end dump trucks for 1 day each of 5 years)

Labor: 1 Loader operator for 4.6 days over 5 years
1 Backhoe operator for 1 day each year
7 Semi-End Dump Truck operators for 5 days over 5 years
1 Inspector to identify areas requiring maintenance for 1 day each year.

TABLE 10-o COST ESTIMATE FOR TASK 4-1*: Post Mining Maintenance (5 year period)					
	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Loader	1.0	40.0	40.0	302.02	$12,080.80
Backhoe	1.0	40.0	40.0	29	$1,160.00
Semi-End Dump Trucks	7.0	40.0	280.0	81.42	$22,797.60
Hydroseeder	1.0	40.0	40.0	$12.00	$480.00
SUBTOTAL					**$36,518.40**
LABOR (L)					
Loader Operator	1.0	36.0	36.0	$51.01	$1,836.36
Backhoe Operator	1.0	8.0	8.0	$53.60	$428.80
Semi-End Dump Truck Driver	6.5	40.0	260.0	$52.33	$13,605.80
Inspector	1.0	8.0	8.0	$150.00	$1,200.00
SUBTOTAL					**$17,070.96**
MISCELLANEOUS	**UNIT**			**COST/UNIT**	**TOTAL**
Soil Disposal Fee (c.y.)	5844.0			$17.06	$99,698.64
SUBTOTAL					**$99,698.64**
TOTAL COST (excluding management costs)**					**$153,288.00**

*Cost over 5 years

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 4-2) Post Mining East Slope Evaluation & Possible Modifications (as needed)

Description: Geotechnical Engineer to inspect the east slopes below benches number 1 through 4 and determine if the soil fines on the slopes need to be removed. If the Geotechnical Engineer does not require removal of the fines on these cut slopes at this time then the maintenance and monitoring program already in place shall continue.

IF the Geotechnical Engineer recommends removal of the soil fines then there are 5 tasks to be performed:

1. Demolition: Laborers to remove and dispose of the irrigation system and use a pickup truck to transport it downslope for placement into debris box for disposal at a landfill. A Dozer and Excavator with boom will remove the existing vegetation and a Loader will transport the vegetative matter downslope and place it into debris boxes for disposal at a landfill.
2. Sediment Removal: Equipment required for the removal of the sediments on the slopes are a Loader, and Excavator with a 65 foot boom and a Dozer to spread/track walk the sediments on the quarry floor.
3. Irrigation System: After the sediments are removed Laborers will install the irrigation system on benches 1-4;
4. Planting: The benches and slopes will be hydroseeded and woody plant materials will be planted on the benches. The area where soil fines were spread out on the quarry floor will be hydroseeded.
5. Monitoring: The planting monitoring plots will be re-established and monitored until the vegetative success criteria are achieved.

Operation: A Geotechnical engineer will inspect the east slope to determine if the soil fines need to be removed from the cut slopes as illustrated on Figure 6c.

IF the Geotechnical Engineer recommends removal of the sediments then the following tasks will occur.

a) Dozer and Excavator with a boom will remove the vegetative material and a Loader will transport the material down slope to a Debris Boxes. Laborers will demolish the irrigation system (preserving the pump and controllers) and place the debris into a pick up truck and transport it downslope where laborers will place it into a Debris Box. An Excavator with a 65 foot boom will remove the soil fines from the slopes, a Loader will collect and transport the fines to the quarry floor where a Dozer will spread and trackwalk the soil fines in lifts over a designated 5-acre area on the quarry floor.

b) Replanting the benches and slopes and replacing the irrigation system will require: a Semi-end Dump Truck to import soil amendments and mulches. Flat Bed Truck to import plant materials and irrigation pipe. Pick up Truck to import market flags, fertilizer and materials for irrigation system. Laborers to dig planting holes and prepare watering basins around each planting hole and mark each planting hole with a flag. Laborers to place fertilizer tablets into each planting hole, backfill planting holes with amended soils, install plants and add mulch to each watering basin. Laborers to install overhead sprayers to water the cut slopes; and install drip emitters to each woody plant on the benches, activate and inspect irrigation system, all plants should be watered the same day that they are planted. Mulches and fertilizer tablets are placed in planting holes to enhance plant growth.

c) Hydroseeder to apply hydroseed mix with mechanical hydroseed equipment mounted on a four-wheel drive vehicle; hydroseed applied with spray nozzle. Hydroseed is applied with tackifier to hold the seed mix in place[17] on the slopes, benches and quarry floor; and a layer of straw mulch will be used on the quarry floor area to cover and protect the ground surface, and hold moisture until the plants are established. Hydroseeding provides erosion and weed control, and helps to retain soil moisture. Foliage diffuses the downward force of rain and plant roots hold soil in place.

d) Six monitoring plots on the east side slopes and benches will be monitored until the vegetative success criteria are achieved as described in Section. 6.030.1 and addressed in Task 4-3

[17] The soil fines placed on the east side benches will facilitate seed growth and retention of moisture; hence straw is not applied during the hydroseeding process.

Quantity: IF the Geotechnical Engineer recommends removal of the soil fines then the following quantities will be utilized:

In 2009 an estimated 13,500 cy of soil fines remain on the east slopes below benches 1 though 4. The fines may need to be removed by an excavator with a 65 foot boom and a loader (the need for this task will be determined by a geotechnical engineer once mining ceases)

Dozer to spread and track walk 13,500 cy of soil fines removed from east side cut slopes over a designated 5 acre area on the quarry floor

1422 planting holes on bench 1 through 4 on the east slope

11 acres area to be hydroseeded on the east slopes and benches

5.0 acres area to be hydroseeded at reworked area on quarry floor where sediments are spread out

Debris Boxes for vegetative material

Debris Box for construction material

1 revegetation expert to monitor monitoring plots as shown in Task 4-3

Materials: IF the Geotechnical Engineer recommends removal of the soil fines then the following materials will be required:

189 1 gal. plants (67 trees, 122 shrubs) @ $.007.25/ea.

533– tube stock (101 trees, 432 shrubs) @ $3.49/ea.

700 tube stock vines @ $3.99

126cy amended soil @ $23.00c.y.

101cy coarse bark mulch @ $34.00cy

Fertilizer – allow $551.56

1574 l.f. – 1.5" PVC and couplings – allow $.3.46/ea.

42 1-1/2" caps – allow $1.66/ea.

13 1-1/2" X ¾" T's for drip system (at 400 l.f. intervals) – allow $3.47/ea.

87-1-1/2" X ¾" T's for overhead system (@ ea. riser) – allow $3.47/ea.

87 1-1/2" X ¾" riser for overhead system @ ea. Riser – allow $4.49_/ea.

87 3' high metal fence stake @ ea riser- allow $1.15 /ea.

87l.f. of wire ties – allow $0.19/ft.

13 ¾" X ¾" plastic tubing connections for drip system @ $3.49/ea.

8317l.f. plastic tubing (2.2 X bench length) @ $0.20/l.f.

721– 1 gal./hr. emitters (one per plant) @ $1.80

84 overhead sprayer w/approximate 45" radius @ $8/ea.

2839 marker flags @ $0.18 ea.

Seed: Hydroseed Specification on Table 7: Cut Slopes and Benches: ($2,382/acre) and Table 8: Quarry Floor ($1,092.50/acre)

Debris Box and landfill disposal fee for vegetative materials ($22.50/cy)

Debris Box and landfill disposal fee for construction materials: irrigation pipes and materials ($30.50)

Equipment: IF the Geotechnical Engineer recommends removal of the soil fines then the following equipment will be required

Dozer to remove vegetative matter from Benches

Excavator with 65 foot boom to remove vegetative matter and soil fines from slopes

Loader to separately transport vegetative matter and demolished irrigations pipes downslope and place into separate Debris Boxes

Dozer to spread and trackwalk the soil fines (13,500 cy) on the quarry floor

Loader to transport soil fines (13,500 cy) down slope.

Pick-up Truck to transport Geotechnical Engineer

Pick-up Truck to import market marker flags, fertilizer, and materials for irrigation system.

Flat Bed Truck to transport plant materials and irrigation pipe

Semi-end Dump Truck to import soil amendments and mulches

Hand tools (shovels, wrecking bars, and wheelbarrows)

Pick up Trucks to transport laborers and equipment, supplies upslope (marker flags, irrigation materials, fertilizer tablets, soil and mulch) and transport demolished irrigation system downslope

1 Hydroseed Vehicle can cover 0.67 acres/hour; however on cut slopes and benches the rate is 0.5 acres/hour.

Duration: IF the Geotechnical Engineer recommends removal of the soil fines then the following is applicable:

Excavator with 65 foot boom to remove 50 cy of vegetative matter from the slopes for 1 day; PLUS remove 13,500 cy soil fines for 40 days for a total of 41days.(Use 1 Excavator for 41 days)

Loader to transport 650 cy of vegetative matter and 15 cy. demolished irrigation pipes downslope and place into Debris Boxes at 42 cy/hour = 2 days. PLUS Loader to transport 13,500 c.y sediments down to the quarry floor at 42cy/hour = 321.5 hours or 40 days; (Use 1 loader for 42 days)

Dozer to spread/track walk 13,500 cy soil fines on quarry floor for 15 days out of 2 month project or 120 hours; PLUS Dozer to remove vegetation from benches for 4 hours. (Rent 1 dozer for 2 months but only operate it for 124 hours)

1 Pick-up Truck for Geotechnical Engineer for 1 week or 40 hours over 2 month period; PLUS 2 Pick-Up Trucks to transport 4 laborers to demolish irrigation system and transport debris to bottom of slope for 1 day; PLUS 1 Pick-up Truck to import planting and irrigation materials for 1.5 days; PLUS 3 Pick-Up Trucks to transport 8 laborers during planting program for 6.5 days; PLUS 2 Pick-Up Trucks to transport 4 laborers during installation of irrigation system for 1 day. (Use 1 Pick-Up Truck for 6.5 days or 52 hours, use 2 Pick-Up Truck for 2.0 days or 16 hours and use 3 Pick-up trucks for 6.5 days or 52 hours)

2 laborers can demolish irrigation system on each bench at a rate of 2 benches/day x 4 benches – 2 days (Use 4 laborers for 1 day)

1 laborer can prepare 55 planting holes in 8hrs (6.8 planting holes/hour), 1422 planting holes ÷ 6.8 holes/hour = 209 hours (26 days) (Use 8 laborers for 3.25 days or 26 hours)

1 laborer can install 55 plants in 8 hrs (6.8 Plants/hour), 1,422 ÷ 6.8 plants/hour = 209 Hours (26 days) (Use 8 laborers for 3.25 days or 26 hours)

2 laborers can install irrigation system on each bench at a rate of 2 benches/day x 4 benches = 2 days (Use 4 laborers for 1 day)

1 Flat bed truck to import plant materials for 4 hours.(Central Coast Wilds Nursery – travel time = 52 min (roundtrip))

1 Semi-End dump truck to import soil amendments and mulches @ 227 cy ÷ 15 cy/truck load = 15 trips @ 1 hour/trip = 15 hours or 2 days. (Use 1 Semi-End Dum Truck for 2 days) (Garden Supply in Los Altos- travel time 1 hour round trip)

Hydroseeder to hydroseed a portion of the quarry floor at a rate of 0.67 acres/hour, 5.0 acres ÷ 0.67 = 7.5 hours PLUS Hydroseeder to hydroseed cut slopes and benches at a rate of 0.50 acres/hour, 13.2 acres ÷ 0.50 = 26.4 hours. TOTAL: 7.5 hours + 26.4 hours = 34 hours ÷ 8 hours/day = 4.5 days (Use 1 hydroseed truck for 4.5days or 36 hours)

Labor: IF the Geotechnical Engineer recommends removal of the soil fines then the following Laborers will be required:

1 Excavator operator for 41 days or 328 hours
1 Loader operator for 41 days or 328 hours
1 Dozer operator for 15.5 days or 124 hours
1 geotechnical engineer to evaluate east slopes below benches 1 through 4 (lump sum fee)
1 Flat bed truck operator for 4 hours
1 Semi-End dump truck for 2 days or 16 hours
4 laborers to demolish irrigation system for 1 day or 8 hours
1 laborer to import supplies for 1.5 days or 12 hours
8 laborers for planting preparation and planting for 6.5 days or 52 hours
4 laborers for installing irrigation system for 1 day or 8 hours
1 hydroseed operator for 4.5 days or 36 hours
1 Laborers to assist hydroseed operator for 4.5days or 36 hours

TABLE 10-p
COST ESTIMATE FOR TASK 4-2: Post Mining East Slope Evaluation & Possible Modifications

	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
EQUIPMENT (E)					
Excavator	1.0	328.0	328.0	$93.75	$30,750.00
Bulldozer	1.0	124.0	124.0	$45.00	$5,580.00
Loader	1.0	328.0	328.0	$87.50	$28,700.00
Pick-up Truck for Geotechnical Engineer to Import Materials	1.0	52.0	52.0	$12.00	$624.00
Pick-up Truck During Demolition and Replacement of Irrigation	2.0	16.0	32.0	$12.00	$384.00
Pick-up Truck for Planting Period	3.0	52.0	156.0	$12.00	$1,872.00
Flat Bed Truck	1.0	4.0	4.0	$30.00	$120.00
Semi-End Dump Truck	1.0	16.0	16.0	$81.42	$1,302.72
Hydroseeder	1.0	36.0	36.0	$50.00	$1,800.00
SUBTOTAL					**$71,132.72**
LABOR (L)					
Excavator Operator	1.0	328.0	328.0	$51.01	$16,731.28
Bulldozer Operator (part-time)	1.0	124.0	124.0	$53.60	$6,646.40
Loader	1.0	328.0	328.0	$52.33	$17,164.24
Geotechnical Engineer (lump sum fee)	1.0	0.0	0.0	$5,000.00	$5,000.00
Flat Bed Truck Operator	1.0	4.0	4.0	$150.00	$600.00
Semi-End Dump Truck Operator	1.0	16.0	16.0	$150.00	$2,400.00
Laborers to Demolish Irrigation System	4.0	8.0	32.0	$35.64	$1,140.48
Laborers for Preparation and Planting	8.0	52.0	416.0	$35.64	$14,826.24
Laborers for Irrigation Installation	4.0	8.0	32.0	$35.64	$1,140.48
Laborer to Import Supplies	1.0	12.0	12.0	$35.64	$427.68
Hydroseed Operator	1.0	36.0	36.0	$40.40	$1,454.40
Laborer to Assist Hydroseeder	1.0	36.0	36.0	$35.64	$1,283.04
SUBTOTAL					**$68,814.24**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
1 Gallon Plants - Trees (each)	67.0			$7.25	$485.75
1 Gallon Plants - Shrubs (each)	122.0			$6.25	$762.50
Tube Stock - Trees (each)	101.0			$3.49	$352.49
Tube Stock - Shrubs (each)	432.0			$3.49	$1,507.68
Tube Stock - Vines (each)	700.0			$3.49	$2,443.00
Amended Soil (cubic yards)	126.0			$23.00	$2,898.00
Coarse Bark Mulch (cubic yards)	101.0			$34.00	$3,434.00
Fertilizer	8.0			$68.95	$551.60
1.5: PVC and Couplings (linear feet)	1574.0			$1.47	$2,313.78
1 - 1 1/2" Caps (each)	42.0			$1.66	$69.72
1 - 1 1/2" x 3/4" Tees (for drip system)	13.0			$3.47	$45.11
1 - 1 1/2" x 3/4" Tees at each riser	87.0			$3.47	$301.89
1 -1 1/2" x 3/4" Riser for overhead	87.0			$4.49	$390.63
3' High metal fence stake (at each riser)	87.0			$1.15	$100.05

TABLE 10-p COST ESTIMATE FOR TASK 4-2: Post Mining East Slope Evaluation & Possible Modifications					
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Wire Ties (linear feet)	87.0			$0.19	$16.53
3/4" x 3/4" Plastic Tubing Connections	13.0			$3.49	$45.37
Plastic Tubing - 2.2 x bench length (linear feet)	8317.0			$0.20	$1,663.40
1 Gallon/hour Emitters (one per plant)	721.0			$1.80	$1,297.80
Overhead Sprayer with 45' radius	84.0			$8.00	$672.00
Marker Flags	2839.0			$0.18	$511.02
Hydroseed for Cut Slopes and Benches (acres)	11.0			$2,382.00	$26,202.00
Hydroseed for portion of Quarry Floor	5.0			$1,092.50	$5,462.50
SUBTOTAL	**$51,526.82**				
MISCELLANEOUS	**UNIT**			**COST/UNIT**	**TOTAL**
Construction Debris Disposal Fee (c.y.)	15.0			$30.50	$457.50
Vegetative Matter/Soil Disposal Fee (c.y)	650.0			$22.50	$14,625.00
SUBTOTAL					**$15,082.50**
TOTAL COST (excluding management costs **)					**$206,556.28**
**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead					

(Task 4-3) Removal of Haul Road on East Side

Description: The haul road up the east side to the highest bench will be removed at the end of mining when the operator no longer requires access to the benches (when all vegetative success criteria are achieved and plant monitoring plot inspections are no longer required). The areas disturbed by regrading the slope to remove the haul road, and the area on the quarry floor where the excess soil is spread will be hydroseeded.

Operation: An excavator will regrade the slope to blend the haul road into the hillside. A Loader will transport the cut soil material down to the quarry floor where a Dozer will spread and track walk the soil in lifts over a designated a 1 acre area on the quarry floor. The regraded slope (1 acre) and the quarry floor (1 acre) will be hydroseeded.

Quantity: 1,600cy of soil removed by excavator to regrade the slope to remove the haul road
Dozer to spread and track walk 1,600 cy of soils from removal of haul road onto a one acre area on the quarry floor.
1 acre to be hydroseeded at area where the haul road was graded out and ## acres on the quarry floor where the excess soil was spread and trackwalked.

Materials: Seed: Hydroseed Specification on Table 7: Cut Slopes and Benches: (1 acre at $2,382/acre) and
Table 8: Quarry Floor (1 acre at $1,092.50/acre)

Equipment: 1 Loader to transport excess soil downslope
1 Excavator to contour grade the haul road
1 Dozer to spread and trackwalk soil over quarry floor
1 Hydroseeder Vehicle can cover 0.67 acres/hour; however on cut slopes and benches the rate is 0.5 acres/hour.

Duration: Excavator to remove 1,600 cy soils for 5 days (Use 1 Excavator for 5 days)
Loader to transport 1,600 c.y soil down to quarry floor at 42 cy/hour = 38 hours or 5 days (Use 1 loader for 5days)
Dozer to spread and track walk 1,600 cy. soil in lifts on quarry floor for 2.5 days. (Rent Dozer for 5 days but only part-time for 2. 5 days or 20 hours)
Hydroseeder to hydroseed a portion of the quarry floor at a rate of 0.67 acres/hour, 1 acre ÷ 0.67 = 1.5 hours PLUS Hydroseeder to hydroseed regraded slope at a rate of 0.50 acres/hour, 1 acre ÷ 0.50 = 2 hours. Total hours: 1.5 hour + 2.0 hours = 3.5 hours (Use 1 hydroseed truck for 0.5 days).

Labor: 1 Excavator operator for 5 days or 40 hours
1 Loader operator for 5 days or 40 hours
1 Dozer operator for 2.5 days or 20 hours
1 hydroseed operator for 0.5 days or 4 hours
1 Laborers to assist hydroseed operator for 0.5 days or 4 hours

TABLE 10-q COST ESTIMATE FOR 4-3: Removal of Haul Road on East Side					
EQUIPMENT (E)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Excavator	1.0	40.0	40.0	$93.75	$3,750.00
Bullodozer	1.0	40.0	40.0	$45.00	$1,800.00
Loader	1.0	40.0	40.0	$87.50	$3,500.00
Hydroseeder	1.0	4.0	4.0	$50.00	$200.00
Subtotal					**$9,250.00**
LABOR (L)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Excavator Operator	1.0	40.0	40.0	$51.01	$2,040.40
Bulldozer Operator (part-time)	1.0	20.0	20.0	$53.60	$1,072.00
Loader	1.0	40.0	40.0	$52.33	$2,093.20
Hydroseeder Operator	1.0	4.0	4.0	$40.40	$161.60
Laborer to Assist Hydroseeder	1.0	4.0	4.0	$35.64	$142.56
Subtotal					**$5,509.76**
MATERIAL (M)	**UNIT**			**COST/UNIT**	**TOTAL**
Hydroseed for Cut Slopes and Benches	1.0			$2,382.00	$2,382.00
Hydroseed for Cut Slopes and Benches	1.0			$1,092.50	$1,092.50
Subtotal					**$3,474.50**
TOTAL COST (excluding management costs)**					**$18,234.26**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

(Task 4-4) Post Mining Monitoring

Description: The monitoring plots will be inspected when required, and document findings on Figure 15

Quantity: 1 Revegetation expert to monitor 6 test plots semi-annually for 3 years

Equipment: 1 Pickup truck to transport inspector

Duration: Inspect 1 monitoring plot for 3 hours x 6 plots = 18 hours x 2/year x 3 years = 108 hours or 13.5 days (Use pick up and inspector for 13.5 days over 3 year period)
Observe site for noxious weeds for 0.5 day/year x 3 years = 1.5 days over 3 years

Labor: 1 Pick-up truck for 15 days
1 inspector for 15 days

TABLE 10-r
COST ESTIMATE FOR TASK 4-4*: Post Mining Monitoring

EQUIPMENT (E)	UNIT	HOURS NEEDED	SUBTOTAL OF HOURS	COST/HOUR	TOTAL
Pick-up Truck	1.0	36.0	36.0	$12.00	$432.00
Subtotal					**$432.00**
LABOR (L)	**UNIT**	**HOURS NEEDED**	**SUBTOTAL OF HOURS**	**COST/HOUR**	**TOTAL**
Inspector	1.0	112.0	112.0	$150.00	$16,800.00
Subtotal					**$16,800.00**
TOTAL COST (excluding management costs)**					**$17,232.00**

**Refer to the Cost Summary Table 11 for the management costs: mobilization, supervision, contingency and profit & overhead

TABLE 11 COST SUMMARY		
TASK	**DESCRIPTION**	**COST**
1-1	Remove Boneyard Debris	$2,905.88
1-2	Remove On-Site Buildings and Structures	$12,751.08
2-1	Remove Bypass Pipe and Temporary Stilling Basin Culverts	$54,846.74
2-2	Slopes	$105,522.80
2-3	Install Stream Channel Improvements	$9,804.60
2-4	Construct Access Road on Quarry Floor	$4,567.44
2-5	Rip Quarry Floor and Construct Perimeter Drainage Ditches	$3,500.88
2-6	Resoil Quarry Floor and Upper Creek Banks	$12,165.86
2-7	Installation of Temporary Erosion Control Measures	$29,181.17
2-8	Ongoing Monitoring of Benches on East Slope	$2,944.00
3-1	Reworked Slope	$48,474.40
3-2	Slopes	$114,701.34
3-3	Plant Restored Creek Corridor	$49,584.25
3-4	Hydroseed and Plant Quarry Floor	$19,099.91
4-1	Post Mining Maintenance (5 year period)	$153,288.00
4-2	Post Mining East Slope Evaluation and Possible Modifications	$206,556.28
4-3	Removal of Haul Road on East Side	$18,234.26
4-4	Post Mining Monitoring	$17,232.00
TOTAL OF DIRECT COST		**$865,360.88**
MANAGEMENT*		
Mobilization (5% E)		$14,159.44
Supervision (5.3% L)		$12,795.05
Contingency (7% E, L & M)		$60,575.26
Profit & Overhead (9.3% E, L & M)		$80,478.56
GRAND TOTAL		**$1,050,601.19**

*These percentages are based on the State Mining & Geology Board - Financial Assurance Guidelines 6/98, Graphs 1 and 2

E = Equipment Cost

L = Labor Cost

M = Material Cost

5.090 EFFECT OF RECLAMATION ON FUTURE MINING POTENTIAL

The Final Grading Plan, Figure 6c and cross-sections on Figures 7a and b describes a final configuration consisting of safe, stable hillsides and a gradually sloping quarry floor bisected by a newly restored creek. The preferred end use is for the site to be incorporated into the Mid Peninsula Regional Open Space District, which presently adjoins the site. An alternative end use for the site would be for it to remain as privately-owned open space. The Reclamation Plan, Figure 8, for Lexington Quarry describes a configuration, which approximates an open, undeveloped natural condition. No additional mining is proposed. However, the proposed future use of the site would not preclude reactivation of mining. The top of the west slope cut could be moved father west, the slope re-benched and more material removed without encroaching on the property boundary. This would necessitate repeating the reclamation of the west side slope and any portion of the quarry floor disturbed during mining.

6.000 POST RECLAMATION MONITORING MAINTENANCE PROGRAM

6.010 Post Reclamation Maintenance Schedule. Several procedures will be followed to ensure that reclamation of the site is successful and that the site is appropriately maintained. All maintenance inspections will be conducted during August and September each year; and maintenance work will be completed by either October 1st or November 1st each year depending on the task. These annual maintenance inspections will be performed by West Coast Aggregates, Inc. personnel and recorded onto the Sediment and Erosion Control Reporting Forms on Figures 17a-c. These inspections will include repair of the irrigation system, if needed, erosion control work, fence repair, and sediment removal from ditches and basins, and if needed removal of soil fines from some of the east side benches. The quarry operator will manage the maintenance program until five years after mining ceases or two years after human intervention with planting, and after the planting success criteria in Section 6.030 are met, whichever is last. After that, the responsibility to maintain the site is the duty of the landowner.

6.020 Drainage and Sediment Control. Excavated slopes, drainage ditches, check dams, drop inlets, overside drain pipes, culverts, and basins will be inspected annually until the quarry operators' maintenance program ends. Accumulated rock fall impairing drainage on the east side benches 1-4 will be inspected per Section 6.060.1. The final maintenance program to be administered by the landowner should include: annual inspection of the excavated slopes, drainage ditches, check dams, and culverts; and inspections of the basins which were designed to hold 30 to 97 years of accumulated sediments. The West Basins and the Restoration Basin will be inspected in the fall once every 5 years for 35 years, and then they will be inspected annually until these two basins are cleaned out and then the inspection cycle will repeat itself. The Northeast Basin will be inspected in the fall once every five years for 30 years and then it will be inspected annually until it is cleaned out and then the inspection cycle will repeat itself. These inspection cycles might change in the future once the sediment loads are reduced as explained in Section 5.070.2.

Areas of erosion will be treated by placing live willow clusters or coir wattles onto the area, to restrict the concentration of runoff and reduce sedimentation. Erosion will be considered significant when individual rills exceed 12 inches in depth and occur more frequently than every 50 feet. Accumulated silts will be removed from the basins, and drainage ditches to maintain capacity.

6.030 Revegetation Monitoring and Revegetation Criteria. Revegetation consists of hydroseeding and/or hand planting of trees and shrubs, pursuant to Section 5.055 and as shown on Figures 8 – 12. Revegetation monitoring will include both visual monitoring for a two year period and quantified monitoring for varying intervals and periods of both the test plots and the monitoring plots. The visual monitoring inspections of the newly planted areas for plant survival rates will be recorded on the Visual Observation forms for each area on Figure14a –14c. The visual inspection period for the test plots in the Trial Planting Area on the east side was been completed as of May 2010[18]. The quantified monitoring inspections of the six designated test plots in the Trial Planting Area (planted in 2008) will occur over a six year period between 2010 and 2015. After the two year visual inspection period of each monitoring plot they will be subject to quantified inspections. The quantified monitoring inspections of the monitoring plots will continue until the planting success criteria are achieved. The quantified monitoring inspections will use the following planting success criteria and reporting forms on Figures 15a – 15d:

1. Plant coverage;
2. Plant density;
3. Species-richness (diversity)

[18] These visual inspections confirmed that the plants planted in the amended mixture of soil and soil fines thrived and survived.

The planting success criteria for plant coverage, plant density and species-richness has been identified and described for each plant community –oak woodland/ chaparral; grassland, and riparian in, Sections 6.030.1 through 6.030.4 and summarized on Table 13. Only native and locally-naturalized plants will be counted when evaluating the monitoring plots and test plots.

The revegetation-monitoring program will evaluate the ongoing success and failures of the reclamation program based on the planting success criteria. Modifications will be made to the planting program, if necessary, to ensure that the planting success criteria are achieved. The revegetation monitoring program will continue for 5 years after mining ceases and two years after all human intervention with planting has ended; and until all of the planting success criteria have been satisfied, whichever is last.

While ongoing revegetation efforts have indicated that the viability of plants can be determined within two years of their installation: it is anticipated that it will take a minimum of five years to achieve the planting success criteria. Failed plantings will be replaced in order to meet the planting success criteria shown in Table 13. Revegetation experts will inspect newly planted areas, test plots, and monitoring plots.

The revegetation-monitoring program will include the following tasks:

1. **Semi-annual (twice a year) visual inspections**: The newly planted areas, including the monitoring plots and test plots[19] in the Trial Planting Area, will be visually inspected the first two years after planting to provide an overview of the planting program. The newly planted areas will be visually inspected to evaluate for the survival rate and dieback rate of woody plant materials, and general overview of vegetative coverage. Replanting will be required if there is less than 50-70% survival rate of the trees and shrubs. These inspections will be recorded on the Visual Planting Inspection Forms for each area in the quarry including: 1) quarry and fill benches and slopes, and reworked slope; 2) upper creek banks; and 3) quarry floor as shown on Figures 14a – 14d. These inspections will occur between April and May, and November and December each year.

2. **Monitoring Plot and Test Plot Inspections**: he fourteen monitoring plots will be inspected once every third year, starting the first year after the first two-year visual inspection period (described above), and will continue until the planting success criteria have been achieved and approved by the County and the State Office of Mine Reclamation. Due to the time of planting and plant vitality some monitoring plots may still need to be inspected during the last year of the five year maintenance period and these quantified inspections will continue until the planting success criteria are achieved and approved by the County and the State Office of Mine Reclamation. The six test plots in the Trial Planting Area will be inspected between April and May every other year over a six year period (total of 3 quantified inspections between 2010 and 2015) These quantified inspections will evaluate the planting success criteria described in Section 6.030 of the monitoring plots and test plots identified in Table 12 and located on Figure 8b. These inspections will be recorded on the Revegetation Monitoring Plot Log for each area in the quarry including: 1) creek corridor (riparian); 2) quarry benches (Oak Woodland/Chaparral), 3) quarry floor (grassland) and 4) slopes (grassland) as shown on Figures 15a – 15 d. These quantified inspections will occur between April and May. Should a monitoring plot or test plot achieve the planting success criteria before the end of its designated inspection period, inspections may stop for that one plot or area since the planting criteria has been achieved.

The two inspections described above will be performed on a time schedule based on the year of planting. Table 12a, presents a hypothetical schedule to illustrate how the inspection program will work over time.

[19] As of May 2010 the two year visual monitoring inspection period for the test plots was completed.

TABLE 12A TYPICAL MONITORING PLOT INSPECTION SCHEDULE[20]																	
Mining Period													**Post-mining**				
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Planting Year1	X	X	•	•		•			•			•			•		•
Planting Year 2		X	X	•			•			•			•			•	•
Planting Year 3			X	X	•			•			•			•			•
Planting Year 4				X	X	•			•			•			•		•

X Is when the visual inspections occur, the first two years after planting.

• Is when monitoring plots in this hypothetical area would be inspected. These quantified monitoring inspections occur the first year after the visual inspection is completed and then once every third year until the planting success criteria are satisfied, per Section 6.030.1 and are approved by the County and State Office of Mine Reclamation.

The exact location of each monitoring plot and test plot is shown on Figure 8b. The location of each monitoring plot and test plot will be established by both placing rebar at each corner of the plots shown on Figure 9b and locating each corner with a GPS unit. The plots will be long thin rectangular transects that are ½ meters wide by 50 meters long (18 inches by 150 feet) on the benches and quarry floor. The transects for the vertical plots on the cut or fill slopes will be ½ meter by 15 meters (18 inches by 50 feet); and the transects for the horizontal plots on the cut or fill slopes will be ½ meter by 33 meters (18 inches by 109 feet). The use of rebar and GPS record will facilitate locating each transect and will also ensure that the information collected during each survey is for the exact same area (size) and location. The large transect monitoring plots in each plant community at the reclaimed quarry will provide an 80 percent confidence level in the data collected for the planting success criteria.

[20] This Table is meant to provide an example of the Inspection Schedule and does not represent the entire planting/inspection schedule.

TABLE 12B MONITORING PLOT & TEST PLOT LOCATIONS		
PLANTING PLOT	**LOCATION**	**PLANT COMMUNITY**
C1	Quarry Bench	Oak Woodland/ Chaparral
C2	Quarry Bench	Oak Woodland/ Chaparral
C3	Quarry Bench	Oak Woodland/ Chaparral
C4	Quarry Bench/Buttress	Oak Woodland/ Chaparral
C5	Quarry Bench	Oak Woodland/ Chaparral
C6	Quarry Bench	Oak Woodland/ Chaparral
A1	Quarry Floor	Grassland
A2	Quarry Floor	Grassland
A3	Quarry Slopes	Grassland
A4	Quarry Slopes	Grassland
B1	Creek Bank	Riparian
B2	Creek Bank	Riparian
B3	Creek Bank	Riparian
B4	Creek Bank	Riparian
TEST PLOT[21]	**LOCATION**	**PLANT COMMUNITY**
TA 1	Quarry Bench	Oak Woodland/ Chaparral
TA 2	Quarry Bench	Oak Woodland/ Chaparral
TA 3v	Quarry Slope	Grassland
TA 3h	Quarry Slope	Grassland
TA 4v	Creek Bank	Grassland
TA 4h	Creek Bank	Grassland

[21] These control plots in the Trial Planting Area are on benches 1 and 2 and the intervening slopes, as shown on Figure 8b.

6.030.1 Planning Success Criteria.

The quantifiable planting success criteria that will be used to evaluate the revegetation program are shown in below in Table 13.

TABLE 13
WEST COAST AGGREGATES, INC. – LEXINGTON QUARRY
PLANTING SUCCESS CRITERIA[22]

SITE LOCATION	PLANT COVERAGE (percent)	PLANT DENSITY (per transect)	SPECIES-RICHNESS (per transect)
Creek Corridor	65% [23] Total cover (all canopy layers combined)	4 [24] Native or locally-naturalized plants	13 [25] Native or locally-naturalized plants
Grassland- quarry floor & reworked slope	50% [26]	4 [27] Forbs or native, or locally-naturalized plants	5 [28] Native or locally-naturalized plants
Grassland- cut slopes	45%[29]	3[30] Forbs or native, or locally-naturalized plants	2[31] Native or locally-naturalized plants
Oak woodland/ Chaparral -benches	50%[32] Total cover (all canopy layers combined)	13 Native or locally-naturalized plants	10[33] Native or locally-naturalized plants

The transects for the monitoring and test plots that will be used to measure the planting success criteria will vary in size. On the benches the transects will be ½ meter by 50 meters (1.5 feet by 150 feet or 225 square feet) while the vertical transects on the cut or fill slopes will be ½ meter by 15 meters (1.5 feet by 50 feet or 75 square feet), and the horizontal transects on the cut or fill slopes will be ½ meter by 33 meters (1.5 feet by 109 feet or 163.5 square feet). There will be four monitoring plots for each plant community including the creek corridor (riparian); grassland, and oak woodland/chaparral for a total of 14 planting monitoring plots. There will be six test plots in the Trial Planting Area, two will be on the benches and four will be on the graded slopes between the benches.

[22] The planting success criteria numbers on this table were established with the assistance of Karen Weiss, biologist, at the State Office of Mine Reclamation in 2003 and with Leah Gardner at the Office of Mine Reclamation in 2010.

[23] Plant coverage in the creek corridor considers the combination of the following assumptions: 1) tree canopy in a creek typically has a coverage of about 85%, so it is expected that the newly restored creek will have a coverage of 50%; and 2) the coverage of the creek understory is expected to be 15% coverage which is more than the existing condition; however the extensive planting and hydroseeding of the upper creek slopes anticipates more coverage in the understory. However the planting success criteria allows for 65% coverage to be counted from the canopy of any native or locally-naturalized plant.

[24] Plant density in the creek corridor considers the combination of the following assumptions: 2 trees per transect and 2 shrubs per transect. However, the planting success criteria allows for 4 of any native or locally-naturalized plant material to be counted.

[25] Species-richness in the creek corridor considers the combination of the following assumptions: 1) tree canopy is expected to be 1-tree species per transect because of the large canopies of these trees and their spacing; and 2) the creek understory is expected to be ½ of the number of shrubs and herbaceous plants on the planting list (18) plus a little less than ½ of the perennial plant species in the hydroseed mix (11). However, the planting success criteria allows for any 13 native or locally-naturalized plant material to be counted.

[26] The plant coverage of new grassland areas on the restored quarry floor and reworked slope is expected to be 50 % coverage from all native or locally-naturalized plants.

[27] The plant density of grassland areas is not a measurement used in determining planning success criteria; however the forbs in the hydroseed mix used on the restored quarry floor and reworked slope can be counted; in addition to any other native or locally-naturalized forbe or woody plant that volunteers.

[28] The species-richness of the grassland areas on the restored quarry floor and reworked slope is expected to be ½ of the number of perennial plant species in the hydroseed mixture (10); in addition to any other native or locally-naturalized forbe or woody plant.

[29] The plant coverage of the grassland on the excavated slopes is expected to be 45% from all native or locally naturalized plants. Lower plant coverage is anticipated on the cut slopes due to the more difficult growing conditions.

[30] The plant density of grassland areas is not a measurement used in determining plant success criteria; however, the forbs in the hydroseed mix on the cut slopes can be counted (3); in addition to any other native or locally-naturalized forbe or woody plant.

[31] The species-richness of the excavated slopes is expected to be a little less ½ of the number of perennial plant species in the hydroseed mixture; in addition to any other native or locally-naturalized forbe or woody plant that volunteers. A lower species-richness count is expected on the cut slopes due to the harsher conditions: dry rocky surfaces and lack of soil.

[32] The plant coverage on the oak woodland/chaparral plantings on the benches is expected to be 50% including any native or locally-naturalized plant that volunteers.

[33] The species-richness of the oak woodland/chaparral planting on the benches is expected to be ½ of the plant species (trees, tree/shrubs, shrubs, vines = 16) on the planting list plus a little less than ½ of the perennial plant species in the hydroseed mix (6); in addition to any native or locally-naturalized plant that volunteers.

6.030.2 Plant Coverage. Plant coverage, meaning the vertical projection of the plant over the ground surface in each transect, varies in the different areas of the quarry. The criteria for vegetative coverage are shown in Table 13 above. The monitoring plots and test plots that will be used to measure vegetative coverage are identified in Table 12.

The monitoring plots will be used to determine if plant coverage can be achieved more quickly if the monitoring plot is planted more densely than typical. If this method proves to be successful the quarry operator will consider modifying the planting program to increase the number of trees and shrubs to be planted in each area.

6.030.3 Plant Density. Plant density, meaning the number of individual plants or stems of each native or locally-naturalized plant in each transect, shown on Tables 4 and 5, that is rooted in a given reference area. The criteria for plant density are shown in Table 13. The monitoring plots and test plots that will be used to measure plant density are identified in Table 12.

Areas with grasses, such as the hydroseeded slopes and the quarry floor are not included in these criteria because the plant density criteria "are best used on shrub and trees and are almost impossible to use on grassland." [34] However, since there are some forbs in the hydroseed mix, those plants will be counted as part of the plant density criteria.

6.030.4 Species – Richness. Species – richness criteria, means the number of different plant species in each transect. The plant species included on the planting lists on Tables 4 - 5 and the hydroseed mixes on Table 6 – 8 are representative of the surrounding natural plant communities. This calculation only includes native or locally-naturalized plants and does not include noxious weeds[35]. The species-richness criteria are shown on Table 13. All of the plants shown on Tables 4 - 8 are native plants. The monitoring plots and test plots that will be used to measure species-richness are identified in the Table 12.

6.031 Revegetation Monitoring Log. A Revegetation Monitoring Log, Figure 15 will be completed for each monitoring plot and test plot identified in Table 12. The inspections of the monitoring plots will be conducted semi-annually for the first two years and then once every third year until the planting success criteria have been achieved.. The inspections of the test plots in the Trial Planting Area will be conducted semi-annually (twice a year) for the first two years and then once every other year (3 times) over the next six years[36]. Each log will record the observations and measurements regarding plant coverage, plant density and species – richness as described above in Sections 6.030.1 – 6.030.4. If significant plant dieback has occurred, then adjustment will be made and additional plants will be planted to achieve the planting success criteria. The monitoring program will continue until the success criteria have been met. Should the revegetation monitoring program indicate that a certain plant species is failing, that plant will be dropped from the planting list. The plant list will be modified by either adding another similar native plant (tree, shrub, forbe or perennial) or by planting more of a plant species already on the plant list that has survived and thrived.

6.040 Irrigation System. The irrigation system will be inspected in March of each year prior to the end of the rainy season and before the dry season when the system is used more frequently. The inspector will check the pumps, valves, lines and emitters to be sure they are functioning and clear of debris and that the system does not have any leaks.

[34] State Office of Mine Reclamation, Department of Conservation, and Quarterly Newsletter: SMARA Update, "Setting Revegetation Performance Standards", and page 5, April-June 1997.
[35] Noxious weeds defined by the California Department of Food and Agriculture, Appendix L..
[36] As of May 2010 the two year visual monitoring inspections of the trial plots has been completed.

6.050 Site Security. The existing fences along the ridgelines and on the ends of the upper benches on the west side will be inspected annually. Any breaks will be repaired in order to restrict unauthorized access.

6.060 Monitoring and Reporting Program. The State Surface Mining and Reclamation Act require that Reclamation Plans include a Monitoring Program to ensure compliance with the Plan. The Monitoring Program uses the following specific criteria related to topography, revegetation, and sediment and erosion control. The monitoring program will be conducted by the quarry operator determine if the reclamation standards are being meet during mining and for the five year period after mining ceases.

6.060.1 Topography. Slopes and drainage features will be inspected and recorded on the Sediment and Erosion Control Report Form, Figure 17. These inspections will determine if any failures are evident and if any loose material has fallen onto the mid-slope benches. Loose material will be removed, as appropriate. When accumulations of rockfall on the benches are found, then a professional engineering geologist will be called in to evaluate if it will impair drainage on the benches causing greater slope instability or impairing revegetation of the benches. If the geologist determines that the rockfall will not impair the functions of the bench, and the County Geologist agrees, than the rockfall may remain in place. However, if they determine that the rockfall will impair bench drainage and slope stability than the accumulated rockfall will be removed and hydroseeding and new plants installed as needed. Additional slope and drainage issues are described in Section 6.060.3: Sediment and Erosion Control.

6.060.2 Revegetation. Approximately two years after planting, the revegetated benches with exposed areas that have less than 50 percent plant coverage and any exposed areas on the cut and fill slopes with less than 45 percent plant coverage will be hydro-seeded as specified in Sections 5.053.5 and 6.030. Two years after being planted the trees and shrubs should have a combined survival rate of 50-70 percent. Trees and shrubs are considered to be "surviving" if they have sufficient foliage to sustain themselves. The newly planted areas will be visually inspected semi-annually for two years to evaluate the survival rate of the trees and shrubs, and identify areas that require additional plants or reseeding. These inspections will be recorded on the Visual Planting Inspection Forms, Figures 14a – 14c. After the two year visual observation period the test plots and monitoring plots will be inspected to quantify the planting success criteria described in Table 13. These quantified inspections will continue until the planting success criteria are achieved for each test plot and monitoring plot and approved by the County and the State Office of Mine Reclamation. These inspections will be recorded on the Revegetation Monitoring Plot Logs, Figures 15a – 15d.

6.060.3 Sediment and Erosion Control. While mining continues and for five years after mining ceases, or when the planting success criteria in Section 6.030 are satisfied, whichever is last, the collector ditches, drop inlets, over-side drains, culverts, interceptor ditches, and basins will be inspected and cleaned out annually, or as needed, to ensure that they continue to function properly. The cut slopes covered with soil fines, on the east side below benches 1, 2, 3 and 4, will be inspected quarterly between April 15 and October 15 and monthly between October 15 and April 15 each year until mining ceases. Accumulated soil fines on the east slope benches will be removed annually before October 1st to prevent large debris flows and blockage of the drainage ditches on the benches. However, large debris flows occurring during the rainy season should be removed in a timely fashion to maintain adequate drainage at all times. Accumulated sediments in all other drainage facilities shall be removed prior to the rainy season each year. The inspections of the soil fines placed on the east side slopes will continue until mining ceases at which time the County Geologist will determine if the fines are stable and can remain, or should be removed. The temporary coir wattles will also be inspected during this period; ultimately the coir wattles will no longer be necessary. The creek protection fence above Limekiln Creek on the east side of the quarry will be inspected bi-monthly and repaired as needed. All erosion controls will continue to be used and inspected each fall before the rainy season and until such time that the vegetative cover has become established and the newly constructed slopes are stable. These inspections will be recorded on the Sediment and Erosion Control Reporting Forms, Figures 17a-c. The completed inspection form, Figure

17b, recoding the observations of the soil fines on the benches, and a map indicating the volume and location of the soil fines remaining on the east side slopes will be submitted to the County Planning Office by October 15th each year.

The basins were designed to hold either 30 to 97 years accumulation of sediment, so they will not need to be cleaned out annually. Each basin was designed to contain sediment build-up over an extended period of time as described in the Schaaf & Wheeler Hydrology Reports in Appendix F-3. These reports states that the West Basins can contain 37 years of sediment accumulation; the Northeast Basin can contain 30 years of sediment accumulation and the Restoration Basin can contain 97 years of sediment before needing to be cleaned out. These calculations also assume that the basins will be able to accommodate a 100 year storm event even when half full of sediments. The inspections of these basins are described in Section 6.020.

6.060.4 Noxious Weed Monitoring.

The goal of the noxious weed removal program is to eradicate, over the life of the mining permit, those targeted noxious weed species which compete with the native and locally-naturalized plant species found at the quarry mining property. Targeted noxious weed species including Scotch Broom and yellow star thistle shall be declining, and generally not in evidence and no where dominant[37]. The initial phase to remove these two weed species will occur during the first planting year of the uppermost benches on the east side. Ongoing weed removal will continue annually through the anticipated twelve years of this plan and until the end of the post mining 5 year maintenance period or when the planting success criteria have been achieved, whichever is last.

After the initial start up effort to remove the noxious weeds, the ongoing program will be to identify the presence of noxious weed species during annual routine inspections of quarry property. The findings of these inspections will be recorded on the Annual Noxious Weed Control Inspection forms, Figure 18. This Form requires follow up action by requesting the removal date of the noxious weed species to be noted on the form.

6.060.5 Reporting. The site will be inspected according to the inspection cycle shown on Table 14. These inspections will be documented on the appropriate form:

- Visual Planting Inspection Forms, Figures 14a, 14b, and 14c
- Revegetation Monitoring Plot Log, Figures 15a, 15b, 15 c and 15d
- Watering Program Inspection Form, Figure 16
- Sediment and Erosion Control Reporting Form, Figure 17
- Annual Noxious Weed Control Inspection Report, Figure 18

A letter report will be submitted to the County Planning Director by November 1 each year summarizing the inspection findings and any remedial action taken.

[37] Targeted noxious weeds include those weeds on the State Department of Food and Agriculture list in Appendix L.

TABLE 14
MAINTENANCE/MONITORING INSPECTION CYCLES

Inspection Tasks	Annual Inspection Cycle[38]	Semi-Annual Inspection Cycle[39]	5 Year Inspection Cycle								Annually Until Cleaned Out	5 Year Inspection Cycle							Annually Until Cleaned Out
			5	10	15	20	25	30	35	40		45	50	55	60	65	70	75	
MINING OPERATOR MAINTNENANCE INSPECTION CYCLE[40]																			
East and West Basins	X																		
Northeast Basin	X																		
Existing Stilling Basin (behind office)	X																		
Existing Northeast Process Basin	X																		
Restoration Basin	X																		
Excavated & Fill Slopes	X																		
Slopes below bench 1,2,3,4 on East side		X[41]																	
New Creek		X[42]																	
Finished valley floor		X[30]																	
Drainage ditches	X																		
Drop Inlets	X																		
Culverts, Overside Drain Pipes	X																		
Bypass pipes	X																		
Erosion controls	X																		
Irrigation system	X																		
Fencing																			
Hydroseeding		X																	
Trees & Shrubs		X																	
Monitoring Plots	X[43]																		
Test Plots	X[44]																		
Noxious Weed Control	X[45]																		
LANDOWNER MAINTENANCE PROGRAM INSPECTION CYCLES																			
West Basins & Restoration Basin			X	X	X	X	X	X	X	X	X[46]								
Northeast Basin			X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	x[47]
Excavated cut & fill slopes[48]	X																		
Drainage ditches	X																		
Erosion controls	X																		
Fencing	X																		

[38] These annual inspections are recorded on the Watering Program Inspection Form, Figure 16; and Sediment and Erosion Control Reporting form, Figure 17; unless otherwise noted.

[39] Reclaimed areas will be visually inspected semi-annually (twice a year) for two years after planting to observe for successes and failures, and evaluate the survival rate of the trees and shrub as described in Section 6.030. These inspections will be recorded on Figures 14a-c. Should an area require replanting the inspection cycle will start over with the semi-annual visual inspections for two years.

[40] The mining operator will maintain the mining site for five years after mining or two years after human intervention with plants, and after the planting success criteria in Section 6.030 are satisfied, whichever is last.

[41] During the five year maintenance and monitoring period following the completion of quarry operations, West Coast Aggregates, Inc. will inspect the benches below the slopes on the east side on which soil fines were applied. These inspections will occur quarterly between April 15 and October 15 and monthly between October 15 and April 15 each year until mining ceases. If soil fines are found to have eroded onto the benches and interfere with the engineered drainage at the toe of the slope, the excess topsoil will be removed per Sections 4.071, 5.051.1, 5.070.5 and 6.060.3. Once mining ceases the County Geologist will determine if the fines are stable and can remain, or should be removed per Section 5.051.1.

[42] This includes visually inspecting the creek banks, stream channel & the final valley floor in the fall and late spring for two years, which may be during the post-mining maintenance period after mining ceases because these areas will not be excavated until the end of mining phase.

[43] Monitoring Plots will be visually inspected twice a year for the first two years after planting, Figures 14a-c, and then quantified inspections will occur once every third year starting the first year after the initial two-year visual inspection program, and will continue until the planting success criteria has been meet and approved by the County and the State Office of Mine Reclamation. Quantified inspections are recorded on Figures 15a-d.

[44] The test plots in the Trial Planting Area on bench numbers 1 and 2 and the intervening slopes on the east side, as shown on Figure 8b, will be visually inspected twice a year for the first two years after planting (these inspections were completed as of May 2010), Figure 14a, and then once every other year (3 times between 2010 and 2015) over a six year period.

[45] Inspections for the noxious weed control program are described in Sections 5.053.3 and 6.060.4 and recorded on Figure 18.

[46] At this time the basins will be inspected annually until they are cleaned out; and then the 5 year inspection cycle shown here repeats itself.

[47] At this time the basins will be inspected annually until they are cleaned out; and then the 5 year inspection cycle shown here repeats itself.

[48] This includes the creek banks and the reworked slopes above Limekiln Creek.

FIGURE 14a

VISUAL PLANTING INSPECTION FORM[49]

CUT AND FILL BENCHES AND SLOPES, AND REWORKED SLOPE

Inspector:_____ Date:_____ (semi-annually; between April and May and November and December for 1st 2 years after planting.

Planting Area:

- Bench No. _____ on __ east or __ west side
- Slope between benches _____ and _____
- Reworked Slope _____ on _____north side or _____south side adjacent to Limekiln Creek
- Monitoring Plot Number: _____
- Test Plot Number: _____

More detailed description of location (if necessary): _____

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Species	**Number Planted**	
▪ Coast Live Oak		
▪ Knobcone Pine		
Tree/Shrub Species	**Number Planted**	
▪ Mountain Mahogany		
▪ Toyon		
▪ Hollyleaf Cherry		
▪ California Coffeeberry		
▪ Mexican Elderberry		
Locally Naturalized Volunteers	**Species Observed**	

Hydroseed Mix	Approximate Coverage on Slope %	Approximate Coverage on Bench %
Six-Week Fescue, California Brome, Blue Wild Rye (santa clara source), Regreen Hybrid Wheatgrass, Deerweed, California Poppy, California Buckwheat, Chamise, California Sagebrush, Spanish Lotus, Sticky Monkeyflower		

Plant dieback: _____ yes or _____ no

If yes, does it require replacement (if less than 50-70% survival of trees and shrubs replacement planting is required)? _____ yes; or _____no

Plant coverage on benches: _____ < 50% or _____> 50% (if less than 50% replacement planting is required)
Plant coverage on quarry slopes: _____ < 45% or ___> 45% (if less than 45% replacement planting is required)
Plant coverage on reworked slope: ____ < 50% or ___> 50% (if less than 50% replacement planting is required)

Date of replacement planting if needed: _____

Plant species requiring replacement: _____

[49] This inspection form will be used to conduct semi-annual visual inspections of newly planted areas for the first two years after planting.

FIGURE 14b

VISUAL PLANTING INSPECTION FORM[50]

UPPER CREEK BANKS

Inspector:_____ Date:_____(semi-annually; between April and May and Nov. and December for 1st 2 years after planting.)

Planting Area: _____ east or _____ west side of creek; and/or monitoring plot number _____

More detailed description of location (if necessary): _____

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Species	**Number Planted**	
▪ Big-Leaf Maple		
▪ California Box Elder		
▪ California Buckeye		
▪ White Alder		
▪ California Wax Myrtle		
▪ Western Sycamore		
▪ Coast Live Oak		
▪ Arroyo Willow		
▪ California Bay		
Shrub Species	**Number Planted**	
▪ California Sagebrush		
▪ Coyote Brush		
▪ Sticky Monkey Flower		
▪ Toyon		
▪ Hollyleaf Cherry		
▪ California Coffeeberry		
▪ California Rose		
▪ Thimbleberry		
▪ California Wild Blackberry		
▪ Pacific Willow		
▪ Mexican Elderberry		
▪ Snowberry		
Herbaceous Plants	**Number Planted**	
▪ Seaside Daisy		
▪ Douglas Iris		
▪ California Polypody		
▪ Bee Plant		
▪ Giant Chain Fern		
Locally-Naturalized Volunteers	**Species Observed**	

Hydroseed Mix	Approximate Coverage of East Side %	Approximate Coverage of West Side%
Mugwort, Fiddleneedle, Blue Wildrye, Meadow Barley, Deerweed, Purple Needle Grass, Coastal Melic, Seep Spring Monkeyflower, Dove Lupine, Creek Clover		

Plant dieback: _____ yes, or _____ no

If yes, does it require replacement (if less than 50-70% survival of trees and shrubs replacement planting is required)?

_____ yes, or _____ no

Plant coverage on upper creek banks – tree canopy: ___ < 50% or __ > 50% (if less than 50% replacement planting is required)

Plant coverage on upper creek banks - understory: ___ < 15% or ___ > 15% (if less than 15% replacement planting is required)

Date of replacement planting if needed: _____

Plant species requiring replacement: _____

[50] This inspection form will be used to conduct semi-annual visual inspections of newly planted areas for the first two years after planting

FIGURE 14c

VISUAL PLANTING INSPECTION FORM[51]

QUARRY FLOOR

Inspector: _____

Date: _____
(Semi-annually; between April and May and November and December for 1st 2 years after planting.)

Planting Area: Quarry Floor: ____east or ___ west side of creek; and/or monitoring plot number: _____

More detailed description of location (if necessary): _____

_____

_____

Date of Initial Planting: _____

PLANT TYPES	QUANTITIES PLANTED	QUANTITIES FOUND TODAY
Tree Species (only on quarry floor)	**Number Planted**	
▪ Coast Live Oak		
▪ Knobcone Pine		
Tree/Shrub Species	**Number Planted**	
▪ Mountain Mahogany		
▪ Toyon		
▪ Hollyleaf Cherry		
▪ California Coffeeberry		
▪ Mexican Elderberry		
Locally-Naturalized Volunteers	**Species Observed**	
▪		

Hydroseed Mix -quarry floor	Approximate Coverage on Quarry Floor - East Side %	Approximate Coverage on Quarry Floor–West Side %
Regreen Hybrid Wheatgrass, Purple Needlegrass, Nodding Needlegrass, California Melic, California Native Pine Bluegrass, Spanish Lotus, Pursching Lotus, Deerweed, Dove Lupine, California Buckwheat, Tree Lupine		

Plant dieback: _____ yes, or _____ no
If yes, does it require replacement (if less than 50-70% survival of trees and shrubs replacement planting is required)?
_____ yes, or _____ no
Plant coverage on quarry floor: _____ < 50% or □_____> 50% (if less than 50% replacement planting is required)
Date of replacement planting if needed: _____
Plant species requiring replacement: _____

[51] This inspection form will be used to conduct semi-annual visual inspections of newly planted areas for the first two years after planting

FIGURE 15a

REVEGETATION MONITORING PLOT LOG No. 1[52]

CREEK CORRIDOR – RIPARIAN

Inspector:_____ Date:_____(between April and May each year)

Monitoring Plot Number/Area: _____ Date of Initial Planting: _____

TREES			HERBACEOUS PLANTS		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**COMMON NAME**	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**
Big Maple Leaf			Seaside Daisy		
California Box Elder			Douglas Iris		
California Buckeye			California Polypody		
White Alder			Bee Plant		
California Way Myrtle			Giant Chain Fern		
Coast Live Oak			Hairy Honeysuckle		
Arroyo Willow					
California Bay					
SHRUBS			**HYRDOSEEDED**		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**COMMON NAME**	**QUANT.**	**STATUS**
California Sagebrush			Mugwort, Fiddleneedle, Blue Wild Rye, Meadow Barley, Purple Needle Grass, Coastal Melic, Seep Spring-Monkeyflower, Dove Lupine, Bush Lupine, Deerweed Creek Clover	Hydroseeded	
Coyote Brush					
Sticky Monkey Flower					
Toyon					
Hollyleaf Cherry					
California Coffeeberry					
California Rose					
Thimbleberry					
California Wild Blackberry					
Pacific Willow					
Mexican Elderberry					
Snowberry					
LOCALLY-NATURALIZED VOLUNTEERS					
Species Observed and Number (if appropriate)					

Monitoring Criteria:

1. Vegetative coverage – tree canopy: _____(objective + 50% coverage)*

   Vegetative coverage - understory: _____(objective + 15% coverage)*

2. Vegetative density – tree canopy: _____(objective = plants/transect)*

   Vegetative density- understory: _____(objective = plants/transect)*

3. Vegetative species – richness (tree canopy): _____(objective species/transect)*
4. Vegetative species – richness (understory): _____(objective =species/transect)*

Is replanting required: _____ yes or _____ no, if yes, date replanted:
* Refer to Section 6.030

[52] This inspection form will be used to inspect the designated monitoring plots shown on Figure 8B and described in Section 6.030. The schedule for these inspections is shown on Table 12A.

FIGURE 15b

REVEGETATION MONITORING OR TEST PLOT LOG No. 2[53]
QUARRY BENCHES – OAK WOODLAND/CHAPARRAL

Inspector:_____ Date:_____(between April and May each year)

Plot Number: _____ Date of Initial Planting: _____

TREES			TREE/SHRUB		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**COMMON NAME**	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**
Coast Live Oak			Mountain Mahogany		
Knobcone Pine			Toyon		
			Hollyleaf Cherry		
			California Coffeeberry		
			Mexican Elderberry		
SHRUBS			**HYRDOSEEDED**		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**COMMON NAME**	**QUANT.**	**STATUS**
Chamise			Six-Week Fescue, California Brome, Blue Wild Rye (santa clara) Regreen Hybrid Wheatgrass, Deerweed, California Poppy, California Buckwheat, Chamise California Sagebrush, Spanish Lotus, Sticky Monkeyflower	Hydroseeded	
Big Berry Manzanita					
California Sagebrush					
Coyote Brush					
Sticky Monkey flow					
California Scrub Oak					
California Wildrose					
California Sage					
VINES					
Hairy Honeysuckle					

LOCALLY-NATURALIZED VOLUNTEERS	
Species Observed and Number (if appropriate)	

Monitoring Criteria:

1. Vegetative coverage: _____(objective = 50% on benches)*
2. Vegetative density: _____(objective = 7 trees, 10 shrubs, & 8 vines/transect)*
3. Vegetative species – richness: _____(objective = 10 plant species/transect)*

- Is replanting required: _____ yes, or _____ no, if yes, date replanted: _____

* Refer to Section 6.030; and Table 13.

[53] This inspection form will be used to inspect the designated monitoring plots, control plots and test plots shown on Figure 8B and described in Section 6.030. The schedule for these inspections is shown on Table 12A.

FIGURE 15c

REVEGETATION MONITORING PLOT LOG No. 3[54]

QUARRY FLOOR – GRASSLAND

Inspector:_____ Date:_____(between April and May each year)

Monitoring Plot Number: _____ Date of Initial Planting: _____

TREES[55]			HYRDOSEEDED		
COMMON NAME	**QUANT. PLANTED**	**NUMBER ALIVE/DEAD**	**COMMON NAME**	**QUANT.**	**STATUS**
Coast Live Oak			Regreen Hybrid-Wheatgrass, Purple Needlegrass, Nodding Needlegrass, California Melic, Calif. Native Pine-Bluegrass, Spanish Lotus, Purshings Lotus, Deerweed, Tree Lupine, California Buckwheat, Dove Lupine	Hydroseeded	
Knobcone Pine					
LOCALLY-NAUTALIZED VOLUNTEERS					
Species Observed and Number (if appropriate)					

Monitoring Criteria:

1. Vegetative coverage – quarry floor & reworked slope: _____ (objective = 50% coverage)*

   Vegetative coverage-cut slopes: _____ (objective = 45% coverage)*

2. Vegetative density: _____ (objective = 4 plant species/transect)*

3. Vegetative species-richness: _____(objective = 5 plant species/transect)*

Is replanting required: _____ yes or _____ no, if yes, date replanted: _____

* Refer to Section 6.030 and Table 13.

[54] This inspection form will be used to inspect the designated monitoring plots shown on Figure 8B and described in Section 6.030. The schedule for these inspections is shown on Table 12A.

[55] Trees are only planted at select locations on quarry floor; no trees are planted on the grassland slopes.

FIGURE 15d

REVEGETATION MONITORING AND TEST PLOT LOG No. 4[56]

ALL SLOPES– GRASSLAND

Inspector:_____ Date:_____(between April and May each year)

Plot Number: _____ Date of Initial Planting: _____

HYDROSEED		
COMMON NAME	**QUANT.**	**STATUS**
Six-Week Fescue, California Brome, Blue Wild Rye (santa clara source), Regreen Hybrid Wheatgrass, Deerweed, California Poppy, California Buckwheat, Chamise, California Sagebrush, Spanish Lotus, Sticky Monkeyflower	Hydroseeded	
LOCALLY –NATURALIZED VOLUNTEERS		
Species Observed and Number (if appropriate)		

Monitoring Criteria:

1. Vegetative coverage – reworked slopes: _____ (objective = 50% coverage)*

   Vegetative coverage- cut & graded slopes: _____ (objective = 45% coverage)*

2. Vegetative density: _____ (objective = 3 plant species/transect)*
3. Vegetative species – richness: _____(objective = 2 plant species/transect)*

Is replanting required: _____ yes or _____ no, if yes, date replanted: _____

* Refer to Section 6.030 and Table 13.

[56] This inspection form will be used to inspect the designated monitoring plots, control plots and test plots shown on Figure 8B and described in Section 6.030. The schedule for these inspections is shown on Table 12A.

FIGURE 16

WATERING PROGRAM INSPECTION FORM

Inspector: _____

Inspection Date (varies, see "Inspection Period" below): _____

Day _____ and time _____ area last irrigated.
Inspection should be done 24-30 hours after irrigation.

Bench location: □ east side; □ west side

Bench number: _____ (on west side bench new end of benches: no. 1 @ top and bench no.8 at bottom of cut slope and then the benches on the fill buttress);
(on east side bench 1 is at top of hill, bench 5 is at base of slope)
(on northeast side bench 1 at top of hill and bench 2 at bottom of slope_
Intervening slope between bench number ___ and ___ (on west side bench new end of benches: no. 1 @ top and bench no.8 at bottom of cut slope and then the benches on the fill buttress);
(on east side bench 1 is at top of hill, bench 5 is at base of slope and on northeast side bench 1 at top and bench 2 at base of slope)

Date this bench was last planted: _____ (only complete if planted within last 2 years, except for monitoring plots which should be inspected until end of reclamation program)

Inspection Period: □ First year: twice a month during dry season and extended dry period in winter and once a month during wet season;
□ Second & Third year: one a month during dry season and extended dry period in winter each 6 weeks in wet season

INSPECT EVERY 10th TREE	**SOIL MOISTURE LEVEL (check one)**
10th tree	□ Dry □ Moist □ Wet □ Too Wet
20th tree	□ Dry □ Moist □ Wet □ Too Wet
30th tree	□ Dry □ Moist □ Wet □ Too Wet
40th tree	□ Dry □ Moist □ Wet □ Too Wet
50th tree	□ Dry □ Moist □ Wet □ Too Wet
60th tree	□ Dry □ Moist □ Wet □ Too Wet
INSPECT EVERY 10th SHRUB	**SOIL MOISTURE LEVEL (check one)**
10th shrub	□ Dry □ Moist □ Wet □ Too Wet
20th shrub	□ Dry □ Moist □ Wet □ Too Wet
30th shrub	□ Dry □ Moist □ Wet □ Too Wet
40th shrub	□ Dry □ Moist □ Wet □ Too Wet
50th shrub	□ Dry □ Moist □ Wet □ Too Wet
60th shrub	□ Dry □ Moist □ Wet □ Too Wet

Note: Refer to Section 5.055.7 in the Reclamation Plan for a description of this inspection.

FIGURE 17a

SEDIMENT AND EROSION CONTROL REPORTING FORM

Inspector: _____

INSPECTION DATE: (between August 15 and October 1 each year): _____

Location where problem found:

- ☐ Quarry Floor on _____ east or _____ west side of creek (check one)
- ☐ Bench Number _____ on _____ east or _____ west side (check one)
  (east side bench 1 at top to 5 at base; northeast benches 3A at top and 4A at bottom; west side benches: new end of bench no. 1 through no. 8, and benches on fill buttresses at base of west side slopes)
- ☐ Intervening Slope between benches ____ and ____ on ___ east or ___ west side (check one)
  (east side benches 1 at top to 5 at base; northeast benches 3A at top and 4A at bottom ; west side benches: new end of bench no. 1 through no. 8, and benches on fill buttresses at base of west side slopes)
- ☐ Creek Corridor on _____ east or _____ west side of creek (check one)
- ☐ Basin Name and (Number) _____ (Northeast Basin (3), West Basins (2), East Basins (1), or Restoration Basin east side by creek)
- ☐ Reworked Slope above Limekiln Creek on __ north side or __ south side at creek (check one)
- ☐ Creek Protection Fence above Limekiln Creek on the East Side of the quarry.__(Use Figure 17c).

Condition found at:

Drainage Facilities:

- ☐ Interceptor Ditch – needs sediment removed or repair
- ☐ Collection Ditch – needs sediment removed or repair
- ☐ Check Dams in Ditches on Benches – needs sediment removed or repair
- ☐ Drop Inlets - needs sediment removed or repair
- ☐ Overside Drain Pipe - needs to be cleared of debris or repaired
- ☐ Culvert – needs to be cleared of debris or repaired
- ☐ Basin – needs sediment removed or repairs
- ☐ Basin spillway – needs maintenance or repair

New Creek Corridor:

- ☐ Stream Bed -rills evident are deeper than 12” and/or occur more frequently than every 50 ft
- ☐ Live willow clusters – needs replacement or repair
- ☐ Coir wattles – need replacement or repair

Fill or Excavated Slopes:

- ☐ Slope – rills evident are deeper than 12” and/or occur more frequently than every 50 feet

Excavated Benches:

- ☐ Bench - rills evident are deeper than 12” and/or occur more frequently than every 50 feet
- ☐ Accumulated talus/fines obstructing drainage on bench 2, 3, 4 or 5 on east side – Use Inspection Form 17b
- ☐ Large debris flows on bench 2, 3, 4 or 5 on east side- Use Inspection Form 17b
- ☐ Accumulated rockfalls on any bench – need to be evaluated by an engineering geologist and reviewed by County Geologist to determine if it should be removed or can remain
- ☐ Coir wattles – need replacement or repair

Other:

- ☐ Access Road – needs repair
- ☐ Irrigation System – needs repair
- ☐ Creek Protection Fence above Limekiln Creek on the East side of the quarry – Use inspection Form 17c
- ☐ Other: _____

Action required: _____

_____

Corrective action (MUST be completed by November 1 each year); _____

_____

Date action completed: _____

NOTE: Refer to Sections 5.051.1, 6.060.1, and 6.060.3 in the Reclamation Plan for a description of this inspection.

FIGURE 17b

SEDIMENT AND EROSION CONTROL REPORTING FORM: for Soil Fines on East Side Benches 1 through 4

Inspector: _____

INSPECTION DATE FOR EAST SIDE INTERVENING SLOPES BELOW BENCHES 1-4:_____
(Quarterly between April 15th to October 15th, and monthly between October 15th & April 15th until mining ceases and the presence of fines remaining on the slopes will be addressed per Sections 5.051.1 and 6.060.3 and new recommendations maybe made or the fines may be removed)

Location where problem found:

- ☐ Bench Number _____
  (east side bench 1 at top to 5 at base)
- ☐ Intervening Slope between benches ____ and ____
  (east side benches 1 at top to 5 at base)

Condition found at:

- ☐ Accumulated talus/fines obstructing drainage ditches on bench 2, 3, 4 or 5 – needs to be removed annually.
- ☐ Large debris flows on bench 2, 3, 4 or 5- needs to be removed in a timely fashion during the rainy season
- ☐ Other: _____

Action required: _____

_____

Corrective action (MUST be completed by October 1 each year, if needed): _____

_____

_____

Date action completed: _____

NOTE: Refer to Sections 4.071, 5.051.1, 5.070.5, and 6.060.3 in the Reclamation Plan for a description of this inspection; and more detailed information is in the County's Conditions of Approval Numbers 83 to 87.

FIGURE 17c

SEDIMENT AND EROSION CONTROL REPORTING FORM: at Limekiln Creek Protective Fence

Inspector: _____

INSPECTION DATE: (bi-monthly during mining operation): _____

Location where problem found:

- ☐ Creek Protection Fence above Limekiln Creek on the East Side of the quarry._____

Condition found at:

- ☐ Chain Link Fence – needs sediment/rocks removed or fence needs repair
- ☐ Filter Fabric Liner – needs repair
- ☐ Soil or Rock Materials from quarry operation (southwest hillside) slide or fell beyond the creek protection fence into Limekiln Creek*
- ☐ Other: _____

Action required (see notes below.):_____

_____

_____

Corrective action (MUST be completed by November 1 each year):

_____

_____

_____

Date action completed: _____

NOTE: Refer to Sections 6.060.3 in the Reclamation Plan for a description of this inspection; and more detailed information is in the County's Conditions of Approval Numbers 72-75.

*If soil or rock materials reach Limekiln Creek, as determined by the County, all excavation near the top of the slope of the southwestern hillside shall be stopped until an alternative rockfall protection method is developed and approved by the County.

FIGURE 18

ANNUAL NOXIOUS WEED CONTROL REPORTING FORM

Inspector: _____

Date: _____(before March 1st each year)

Location where noxious weeds were found:

- ☐ Quarry Floor on _____ east or _____ west side of creek (check one)
- ☐ Bench Number _____ on _____ east or _____ west side (check one)

(east side bench 1 at top to bench 5 at base; on northeast bench 1 at top and bench 2 at base; west side bench ; west side benches: new end of bench no.1 through no. 8, and benches on fill buttresses at base of west side slopes)

- ☐ Intervening Slope between benches ____ and ____ on __ east or __ west side (check one)

(east side bench 1 at top to bench 5 at base; northeast, bench 1 at top and bench 2 at base; west side benches: new end of bench no.1 through no.8, and benches on fill buttresses at base of west side slopes)

- ☐ Creek Corridor on _____ east or _____ west side of creek (check one)
- ☐ Basin Number _____ (Northeast Basin, West Basins, East Basins, or Restoration Basin east side by creek)
- ☐ Oversteepened Slope above West Basins _____
- ☐ Reworked Slope above Limekiln Creek on __ north side or __ south side at creek (check one)

Action required: The targeted noxious weeds, scotch broom (*Cytisus scoparius*) and yellow starthistle (*Centaurea solstitialis*) will be removed[57]. Weed inspections will begin at the top of the west side and work down the existing benches and slopes to the quarry floor; and then commence at the top of the east side and work down the new benches and slopes to the quarry floor; and then inspect the quarry floor, creek corridor and adjacent graded slopes. Depending on their location, the targeted noxious weed species will either be removed by hand or with a defoliant in accordance with the manufacturer's specifications. Chemical control (i.e. Roundup or Garlon) should be used in the spring, after flowers have formed on the weed. If there are ever any large stands of Scotch Broom the plant bio-mass will be cut-off just above the ground in late summer or fall and left to dry out on the ground.

Action taken: _____

_____

_____

Date action completed: _____

NOTE: Refer to Sections 5.053.3 and 6.060.4 in the Reclamation Plan for a description of the Noxious Weed Control Program and to Appendix L for the list of noxious weeds that should be removed if they appear on the site.