



SUNRISE POWERLINK

Suncrest Substation

Screening Plan

November 5, 2010

Table of Contents

Background.....	3
Description of Construction Activities	3
Sensitive Receptors.....	3
Screening Elements.....	4
Visual Simulation.....	6
Schedule.....	6
Inspection.....	7
Compliance with Mitigation Measure	7
Applicable Mitigation Measure	7

Appendices

Appendix A: Suncrest Substation Screening Element Plan Drawing

Appendix B: Suncrest Substation Planting List

Appendix C: Suncrest Substation Visual Simulation

Background

In accordance with mitigation measure V-7b of the Mitigation, Monitoring, Compliance, and Reporting Program (MMCRP) for the approved Sunrise Powerlink Project, SDG&E submits this Screening Plan for construction and operation activities at Suncrest Substation. The full text of V-7b is provided at the end of this document.

Mitigation measure V-7b requires SDG&E to submit a Screening Plan 90 days prior to installing landscape screening.

Suncrest (SCR) Substation will be south of Bell Bluff Truck Trail, approximately 2.8 miles west of Japatul Valley Road, southwest of the Interstate 8 and Japatul Valley Road intersection, and east of the City of Alpine, California in San Diego County. The substation is on SDG&E owned property in a rural, sparsely developed setting. The site is bordered by the Cleveland National Forest to the north, west, and south and private lands to the east. US Interstate 8 (I-8) is approximately two miles north of the substation.

Description of Construction Activities

SCR will accommodate the termination of one 500 kV and two 230 kV transmission lines. Construction of the substation includes: grading and fencing of a 40 acre pad; construction of a single-story relay/control shelter and storage shelter; installation of a 300,000 gallon water tank with associated irrigation plumbing and fire hydrants; revegetation of disturbed slopes; and widening and paving of an existing 2.6 mile access road. Electrical equipment installation includes: 500 kV and 230 kV circuit breakers; 500 kV and 230 kV disconnect switches; 500/230kV transformers; 500 kV series capacitor; 230 kV shunt capacitors; substation bus support and dead-end structures; buswork; and associated hardware and foundations.

The tallest structures installed in the substation will be the 500 kV line and transformer dead-end structures. Maximum heights for these structures will be 130 feet and 75 feet, respectively. With the exception of a reduction in overall disturbance impacts, there have been no changes to the proposed construction activities for this site as compared to those described in the approved Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS).

Sensitive Receptors

The yard elevation and the existing undulating terrain surrounding SCR blocks the view of the substation construction area from properties to the west, north, and east of the substation. Thus, the substation will be visible only from the south, southwest and southeast.

The closest existing residences to the southeast and south of the substation are approximately $\frac{3}{4}$ of a mile away. There are no nearby residences to the southwest of the SCR. Depending on the relative elevations of the nearby residences, they may have a partial view of the upper portions of the substation structures, specifically the A-

frame termination and bus support structures. Based on property information, approximately twelve residences would have a partial view of some portion of the substation.

In addition, there are distant, partial views of the substation and views of some of the transmission towers from a few locations along Japatul Valley Road approximately 1.8 miles southeast and approximately 2.8 miles southwest of the substation. These are the closest public viewing locations from through-roads in the vicinity of the substation.¹

There will be a single point of access to the substation via Bell Bluff Truck Trail (BBTT). Currently, the last two miles of BBTT is dirt road that traverses SDG&E owned or other private property, otherwise not accessible to the general public. This portion of the road provides access to two private properties in addition to the SDG&E owned property. There are currently two locked gates along this private portion of the road to control access. One gate is approximately 0.8 miles east of the substation and the second gate is approximately two miles east of the substation. As part of this project two locked gates will be established in approximately the same locations. Keyed access will be restricted to SDG&E employees, SDG&E contractors and private property owners.

Screening Elements

A plan view of the substation pad showing the locations of the screening elements is shown in the Screening Element Plan Drawing, which is attached as Appendix A. This drawing identifies the planted areas around the substation including the types and quantities of proposed plants as well as the locations of the plantable retaining walls. A detailed Plant List is attached as Appendix B. This list presents the types of plants to be added to the disturbed and manufactured slopes around the substation as part of the long term revegetation process. This list includes the sizes and ages of the plants to be installed as well as the projected heights after 5 years of growth and at maturity.

The location of this substation was selected to provide the greatest possible natural screen from the public. As discussed, the site's natural contours result in the substation being completely hidden from receptors on the east, north, and west and mostly hidden from public view from the south, southwest and southeast. Moreover, views of major equipment, buildings and ancillary structures are only available from the substation yard itself which will not be accessible to the general public.

SDG&E is proposing to use a standard galvanized chain link steel fence to surround the substation due to the inherent security and maintenance free performance. The fence will be eight feet high and will be topped with two feet of barbed wire strands. The fence will not be obtrusive from a distance of $\frac{3}{4}$ of a mile.

The major steel structures within the substation footprint, which will be partially visible from the south, southeast and southwest, cannot be screened by vegetation. The

¹ Documentation of potential sight lines, public viewing locations, and distant visual simulations are covered in detail in the Suncrest Substation Surface Treatment Plan (dated August 3, 2010) submitted to the CPUC and BLM with Transmittal No. 03667.

partial views of the tops of the structures will have a natural back-drop allowing the structures to blend with the rocky hills and vegetation.

The major elements of the screening plan are the landscaping and design of the retaining walls and other hardscape features related to the substation pad development. The walls were designed to incorporate non-linear features (both horizontal and vertical curves) to create a more natural appearance that blends with the existing undulating topography. There will be six plantable mechanically stabilized earth (MSE) retaining walls with heights of up to 32 feet. Five will be located within the substation grading area while one wall will be along Bell Bluff Truck Trail. The plantable MSE retaining walls will be constructed of “buff” colored concrete blocks to blend with the natural soil colors.

Based on the stability of the exposed rock and soil material, in some portions of the cut areas near the substation pad, soil nail walls may be required. If during the excavation it is determined that a soil nail wall is necessary, the soil nail wall will be covered with stained and textured concrete to simulate a natural rock surface. If the soil nail wall is not necessary, the slope area will be revegetated with native plants. (For the purpose of the visual simulation, it was assumed that a soil nail wall will not be necessary.)

Drainage ditches outside the substation pad will be constructed with colored, pre-mixed concrete. Vertical concrete features outside of the substation such as headwalls will be stained to simulate the color of the surrounding natural soil. The staining material will produce a spectrum of brown earth tone colors closely matching those found on adjacent exposed soil and natural rock. The stain will produce color variations and shades that help disguise the concrete surface when viewed at a distance. The stain colors will be permanent, UV resistant and color stable. The stain will be applied to allow for natural looking variations in shading. These hardscape features, combined with the landscaping of the slope areas with vegetation native to the site, will allow the sloped areas around the substation to blend in with the natural features in the undisturbed areas surrounding the substation within approximately five years after the completion of construction. The plants that are appropriate to this area are slow growing and a period of more than 5-years may be necessary before in-filling and screening approaches the optimal level.

The 300,000 gallon concrete water tank (approximately 50 foot in diameter by 26 feet tall) that will be present on site will be finished with “buff” colored concrete paint. The water tank will be constructed approximately a thousand feet northeast of the substation pad and will not be visible from the west, south and east due to the existing topography. There may be a partial view of the upper portion of the tank from I-8, which is roughly two miles north of the tank location. A line-of-sight analysis of this view indicates that the public is unlikely to see this tower and that the distance and setting will screen this feature appropriately in concert with the neutral color.

Special consideration was given to the treatment of the slopes that will be created as part of the substation grading operation. These features combined with the landscaping

planned for these areas will help blend the developed area with the texture and color of the surrounding native landscape.

Visual Simulation

A visual simulation of the completed substation with the landscape features depicted after 5 years growth is attached as Appendix C. Since ground level public viewing locations are between $\frac{3}{4}$ to 2.8 miles away from the substation, the simulation provides an aerial viewpoint in order to provide a reasonable level of detail.² This viewpoint, which generally depicts an above ground “birds-eye” view offers a perspective from the southwest of the substation.

This simulation illustrates the characteristics of the selected substation site (terrain and distance to public viewpoints) as well as the design and treatment of the manufactured slopes that minimize the visual contrast of the Suncrest Substation structures and blends with the existing landscape. The aerial overview shows bushes, shrubs, and trees but there will be other plants on the slopes that are not depicted in this simulation that will cover the bare earth and provide a more natural appearance after several years of growth.

Schedule

Construction activities at the substation are anticipated to last approximately 17 months. Construction will begin upon receipt of an approved Notice to Proceed. Below is a schedule of construction activities required for the complete construction of the substation:

SDG&E - Suncrest Substation Overall Project Schedule		
Activity Description	Start Date	Finish Date
Site Development – Equipment & Materials Storage Yard	M1	M1
Site Development - Clearing & Grubbing	M1	M2
Site Development - Access Road (Bell Bluff Truck Trail) Upgrade	M1	M3
Site Development - Substation Pad Development	M2	M8
Foundation Construction	M7	M11
Installation of Cable Trench and Conduit	M8	M15
Installation of Ground Grid	M9	M12
Steel Structure Erection	M9	M11
Installation of water supply system	M8	M11
Installation of irrigation system and landscaping	M7	M13
Control Shelter and Maintenance Shelter Construction	M9	M12
Series Capacitor Installation	M11	M17
Installation of Substation Bus & Equipment	M12	M15
Finish Grading & Paving within Substation Yard	M14	M16
Finish Grading & Paving of Access Roads	M12	M13
Testing & Commissioning	M16	M17
Demobilization	M17	M17

² The visual simulations included in the Suncrest Substation Surface Treatment Plan (dated August 3, 2010) also depict the landscape features after 5 years growth. This plan was submitted to the CPUC and BLM with Transmittal No. 03667.

Mitigation measure V-7b requires completion of the screening installation prior to the start of project operation. The landscaping schedule will depend on what time of year the site development is completed with the intent to reestablish a natural landscape with native plants. Ideally, landscaping would be installed in late fall to optimize plant success. Water supply and irrigation system installation will need to be completed prior to the installation of the landscaping with a plan to install an irrigation system that supplements the natural rain fall for 5 years to mimic “average rain fall” to increase the probability of the natural plants thriving. At the end of 5 years SDG&E intends to shut off the irrigation system. The landscape contractor is responsible for replacement and maintenance of any container plants that have not survived 6 months after landscape installation is completed. After the original maintenance period is complete, SDG&E will take over the maintenance responsibility for the landscape installation.

Inspection

To demonstrate compliance with mitigation measure V-7b, within 7 days following the completion of the screening installation anticipated in late 2011 or early 2012, SDG&E shall notify the BLM and CPUC that screening elements are ready for inspection.

Compliance with Mitigation Measure

The remoteness, natural topography, private properties surrounding the substation site, limited access route and substation design, combine to minimize the potential public views of the substation. In addition, the special treatment of the cut and fill slopes around the substation pad and the revegetation of the slopes with native plant materials is anticipated to result in a blending of the overall substation development into the natural surroundings to the degree possible. As a result, the development is in compliance with the visual contrast reduction goals of mitigation measure V-7b.

Applicable Mitigation Measure

Mitigation Measure	<p>V-7b: Screen ancillary facilities. SDG&E shall provide a Screening Plan for screening vegetation, walls, and fences that reduces visibility of ancillary facilities (except Imperial Valley Substation) and helps the facility blend in with the landscape. The use of berms to facilitate project screening may also be incorporated into the Plan. SDG&E shall submit the Plan to the BLM and CPUC for review and approval at least 90 days prior to installing the landscape screening. If the BLM or CPUC notifies SDG&E that revisions to the Plan are needed before the Plan can be approved, within 30 days of receiving that notification, SDG&E shall prepare and submit for review and approval a revised Plan. The plan shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"> • An 11” x 17” color simulation of the proposed landscaping at 5 years • A plan view to scale depicting the project and the location of
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	<p>screening elements</p> <ul style="list-style-type: none"> • A detailed list of any plants to be used; their size and age at planting; the expected time to maturity, and the expected height at five years and at maturity
	– (V-7b) SDG&E shall complete installation of the screening prior to the start of project operation. SDG&E shall notify the BLM and CPUC within seven days after completing installation of the screening, that the screening components are ready for inspection.
Location	Applies to all permanent ancillary facilities including substations and switchyards.
Monitoring/ Reporting Action	CPUC and BLM to review Screening Plan prior to start of construction and verify implementation following construction.
Effectiveness Criteria	The occurrence of visual contrast from ancillary facilities will be minimized and facilities will blend with the landscape to the extent feasible.
Responsible Agency	CPUC, BLM on BLM-administered lands
Timing	Pre-, during and post construction.
Interpretation & Approach	7/2/09: SDG&E will match existing screening within existing substations.

APPENDIX A
Suncrest Substation Screening Element Plan
Drawing

PLANTABLE
RETAINING WALL
EXPOSED HEIGHT
0' TO 21' MAX.

FUEL MODIFICATION
LIMIT - ZONE 2

PLANTABLE
RETAINING WALL
EXPOSED HEIGHT
0' TO 21' MAX.

ACCESS ROAD
LINED DETENTION
BASIN

SHRUB PLANTING
SEE LEGEND

PLANTABLE
RETAINING WALL
EXPOSED HEIGHT
0' TO 20' MAX.

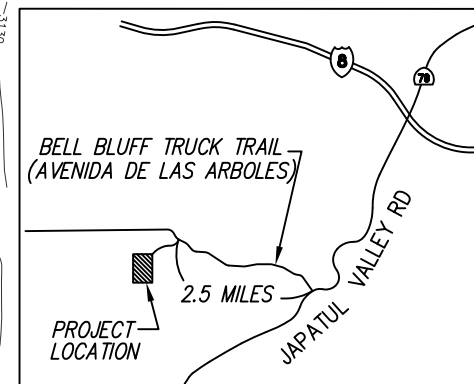
PLANTABLE
RETAINING WALL
EXPOSED HEIGHT
0' TO 25' MAX.

PLANTABLE
RETAINING WALL
EXPOSED HEIGHT
0' TO 8' MAX.

PERIMETER FENCE

PERIMETER FENCE

FUEL MODIFICATION
LIMIT - ZONE 2



VICINITY MAP
N.T.S.



PLANTABLE RETAINING WALL LAYOUT
EVERY BLOCK IN EVERY THIRD ROW OF RETAINING WALL BLOCKS SHALL BE PLANTED. SPECIES SHALL BE PLANTED IN RANDOM GROUPS AS DIRECTED BY LANDSCAPE ARCHITECT.

COVERAGE SHALL BE 50% AFTER 2 YEARS AND 80% AFTER 5 YEARS.

SHRUB PLANTING
ALL SLOPES SHALL BE PLANTED AT 1 SHRUB PER 100 SF.
ALL SLOPES SHALL HAVE NATIVE HYDROSEED APPLIED



ORIGINAL SCALE: 1" = 200'



REVISIONS

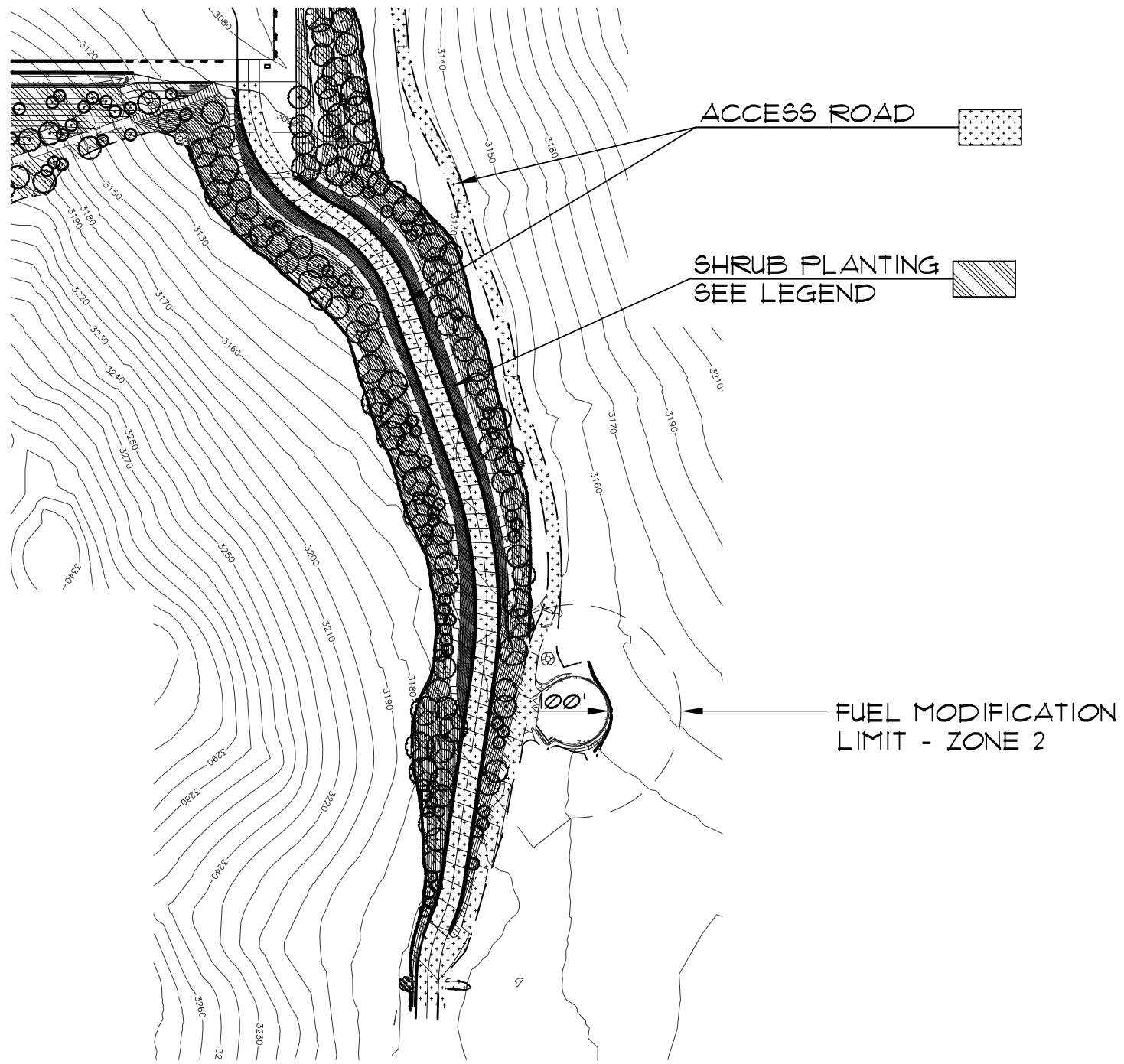
CONSTRUCTION DOCUMENTS

NO.	WORK DONE	DATE	BY	APP'D.	NO.	WORK DONE	DATE	BY	APP'D.	NO.	WORK DONE	DATE	BY	APP'D.

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

SUNCREST SUBSTATION
SCREENING ELEMENT PLAN DRAWING

DRAWN BY: DATE: SCALE: NO.: REV:
CHECKED BY: DATE: SHEET OF
APP'D BY: DATE: **APPENDIX A-1**
CND NO.: 525-01 PLOT SCALE: 1:1



FUEL MANAGEMENT ZONES

FUEL MANAGEMENT ZONES (FIRE BUFFERS) SHALL BE ESTABLISHED AND MAINTAINED BETWEEN NATIVE OPEN SPACE AND PROPOSED SUBSTATION AND ANCILLARY STRUCTURES AS INDICATED ON THE PLANS AND AS DIRECTED BY THE FIRE DISTRICT. AT THE MINIMUM, THIS BUFFER SHALL CONSIST OF THE FOLLOWING:

ZONE 1 - 30' FUEL MODIFICATION VEGETATION SETBACK:

A MINIMUM 30' WIDE VEGETATION SETBACK SHALL BE MAINTAINED FROM THE SUBSTATION PERIMETER FENCE. THIS AREA IS TO BE MAINTAINED FREE OF VEGETATION, AND MAY BE A GRADED PAD COVERED WITH GRAVEL, CLASS 2 ROAD BASE, OR DECOMPOSED GRANITE SURFACING TO ALLOW TRUCK ACCESS.

ZONE 2 - 100' FUEL MODIFICATION ZONE:

THE AREA WITHIN 100' OF THE SUBSTATION FENCE, AND OUTSIDE THE 30' ZONE 1 SHALL BE MAINTAINED IN A SUITABLE MANNER TO REDUCE COMBUSTIBLE FUEL. THE AREA WILL CONSIST OF NATIVE PLANT SPECIES (PLANTED OR EXISTING) THAT SHALL BE PRUNED TO REDUCE FUEL VOLUME BY REMOVING HIGHLY COMBUSTIBLE SPECIES, AND REMOVING DEAD BRANCHES, FALLEN LITTER, AND VEGETATION BUILD-UP. MAINTENANCE SHALL CONSIST OF THE FOLLOWING:

1. REMOVE ALL DEAD AND DYING VEGETATION, DOWNED WOOD, DENSE CLUMPS OF DRY GRASS AND OTHER FLAMMABLE REFUSE.
2. TREES SHALL BE MAINTAINED WIDELY SPACED TO AVOID A CONTINUOUS FOLIAGE CANOPY. PRUNE TREES SO THAT A CLEARANCE OF THREE TIMES THE HEIGHT OF THE UNDER-STORY PLANT MATERIAL IS MAINTAINED.
3. LARGE SHRUBS SHALL BE PRUNED INTO WIDELY SPACED INDIVIDUAL PLANTS AND SHALL BE MAINTAINED TO ALLOW A 2' CLEARANCE ABOVE THE GROUND COVER TO ALLOW A CLEAR SPACE BETWEEN THE GROUND COVER PLANTS AND THE SHRUB CANOPY. SHRUBS SHOULD BE MAINTAINED SPACED TO AVOID A CONTINUOUS FOLIAGE CANOPY GREATER THAN 20'.
4. GROUND COVER SHALL BE MAINTAINED TO A HEIGHT OF APPROXIMATELY 18' BY YEARLY TRIMMING AFTER THE GROWING SEASON. SELECTED PLANTS MAY BE REMOVED TO MAINTAIN SPACING UNDER THE DIRECTION OF THE LANDSCAPE ARCHITECT/ OWNER'S REPRESENTATIVE. A FULL COVER IS TO BE MAINTAINED TO AVOID EROSION.
5. FIRE BUFFERS SHALL BE MAINTAINED IN ACCORDANCE WITH THE LOCAL FIRE DISTRICT. THE ZONES MAY BE MODIFIED BY THE FIRE DISTRICT BASED ON SITE CONDITIONS.
6. REMOVE FIRE PRONE SPECIES AS LISTED IN THE FIRE DISTRICT'S GUIDELINES.
7. PERFORM OTHER VEGETATION THINNING AS REQUIRED BY THE FIRE CHIEF.
8. ALL FUEL MODIFICATION SHALL BE AS DIRECTED AND ACCEPTED BY THE LOCAL FIRE CHIEF.



REVISIONS

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SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

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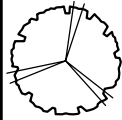
APPENDIX A-2

APPENDIX B

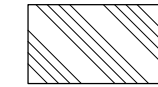
Suncrest Substation Planting List

SUNCREST SUBSTATION - PLANTING LIST

TREE LEGEND



BOTANICAL NAME	COMMON NAME	QTY	SIZE @ PLANTING	SIZE @ 5 YEARS	SIZE @ MATURITY (20 YEARS)
QUERCUS AGRIFOLIA 'OXYADENIA'	COAST LIVE OAK	99	1 GAL 2' TALL	15'-20' WIDE 12'-15' TALL	30'-40' WIDE 20'-30' TALL
QUERCUS X ACUTIDENS	INLAND SCRUB OAK	356	1 GAL 1' TALL	10'-15' WIDE 5'-8' TALL	20'-25' WIDE 10'-15' TALL
QUERCUS ENGELMANNII	BLUE OAK	296	1 GAL 2' TALL	15'-20' WIDE 10'-15' TALL	40'-50' WIDE 20'-30' TALL



SHRUB LEGEND

BOTANICAL NAME	COMMON NAME	QTY	SIZE @ PLANTING	SIZE @ 5 YEARS	SIZE @ MATURITY (20 YEARS)
ADENOSTOMA FASCICULATUM	CHAMISE	765	1 GAL 1' TALL	3'-6' WIDE 3'-6' TALL	5'-12' WIDE 5'-12' TALL
ARCTOSTAPHYLOS GLAUCA	BIG BERRY MANZANITA	383	1 GAL 2' TALL	6' WIDE 4' TALL	20' WIDE 15' TALL
ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	1532	1 GAL 1' TALL	2'-3' WIDE 2'-3' TALL	4'-7' WIDE 2'-5' TALL
CEONOTHUS LEUCODERMIS	BUCK BRUSH	383	1 GAL 1' TALL	3'-6' WIDE 3'-6' TALL	5'-12' WIDE 5'-12' TALL
CERCOCARPUS BETULOIDES	MOUNTAIN MAHOGANY	383	1 GAL 1' TALL	3'-6' WIDE 3'-6' TALL	5'-12' WIDE 5'-12' TALL
HETEROMELES ARBUTIFOLIA	TOYON	765	1 GAL 1' TALL	3'-6' WIDE 3'-6' TALL	6'-10' WIDE 6'-10' TALL
MALOSMA LAURINA	LAUREL SUMAC	765	1 GAL 1' TALL	3'-8' WIDE 3'-8' TALL	6'-15' WIDE 6'-15' TALL
PRUNUS ILICIFOLIA	HOLLY-LEAFED CHERRY	765	1 GAL 1' TALL	4'-6' WIDE 4'-6' TALL	10'-15' WIDE 10'-15' TALL
RHUS OVATA	SUGAR BUSH/LAUREL WHITETHORN	765	1 GAL 1' TALL	2'-5' WIDE 2'-5' TALL	4'-10' WIDE 4'-10' TALL
RHUS TRILOBATA	SQUAW BUSH	1148	1 GAL 1' TALL	2'-5' WIDE 2'-5' TALL	4'-8' WIDE 4'-8' TALL

SHRUBS FOR SEGMENTAL RETAINING WALL LEGEND

BOTANICAL NAME	COMMON NAME	QTY	SIZE @ PLANTING	SIZE @ 5 YEARS	SIZE @ MATURITY (20 YEARS)
ADENOSTOMA FASCICULATUM	CHAMISE	183	1 GAL 1' TALL	3'-4' WIDE 3'-4' TALL	6'-10' WIDE 6'-10' TALL
ARTEMISIA CALIFORNICA	CALIFORNIA SAGEBRUSH	222	1 GAL 1' TALL	2'-3' WIDE 2'-3' TALL	4'-7' WIDE 2'-5' TALL
BACCHARIS SARATHROIDES	BROOM BACCHARIS	91	1 GAL 1' TALL	2'-3' WIDE 2'-3' TALL	5'-6' WIDE 5'-6' TALL
ERIOGONUM FASCICULATUM 'FOLIOLOSUM'	CALIFORNIA BUCKWHEAT	352	1 GAL 1' TALL	1'-2' WIDE 1'-2' TALL	2'-4' WIDE 2'-4' TALL
LOTUS SCOPARIUS	DEER WEED	274	1 GAL 1' TALL	1'-2' WIDE 1'-2' TALL	2'-4' WIDE 2'-4' TALL
NASSELLA PULCHRA/LEPIDA	STIPA	183	1 GAL 1' TALL	1' WIDE 2' TALL	2' WIDE 3' TALL

REVISIONS

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APPENDIX B

APPENDIX C

Suncrest Substation Visual Simulation

