



# California Regional Water Quality Control Board

## San Diego Region



Arnold  
Schwarzenegger  
Governor

Linda S. Adams  
Secretary for  
Environmental  
Protection

Over 50 Years Serving San Diego, Orange, and Riverside Counties  
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340  
(858) 467-2952 • Fax (858) 571-6972  
<http://www.waterboards.ca.gov/sandiego>

February 2, 2009

Certified Mail No. 7008 0150 0003 7457 8322

Mr. Peter G. Aylward  
Strategic Property Advisors  
3250 Vista Diego Road  
Jamul, CA 91935

In reply, please refer to:

WDID	9 000001793
Reg. Measure	346388
Place	718944
Party	471863
Person	471862

**SUBJECT:** Action on Request for Clean Water Act Section 401 Water Quality Certification for the Carlsbad Paseo Retail Center Project, Water Quality Certification No. 08C-040

Dear Mr. Aylward:

Enclosed is the Clean Water Act Section 401 Water Quality Certification for the **Carlsbad Paseo Retail Center Project**. A description of the project and project location can be found in the project information sheet, project location map, and project site maps which are included as Attachments 1 through 5. Any petition for reconsideration of this Certification must be filed with the State Water Resources Control Board within 30 days of certification action (23 CCR § 3867). If no petition is received, it will be assumed that the Peter G. Aylward and Strategic Property Advisors, Inc. have accepted and will comply with all conditions of the Certification. Failure to comply with all conditions of this Certification may result in enforcement actions against Peter G. Aylward and Strategic Property Advisors, Inc.

The heading portion of this letter includes a Regional Board code number noted after "In reply, refer to:" In order to assist us in the processing of your correspondence please include these codes number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

If you have any questions regarding this notification, please call Mike Porter directly at (858) 467-2726 or via email at [mporter@waterboards.ca.gov](mailto:mporter@waterboards.ca.gov).

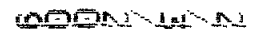
Respectfully,

JOHN H. ROBERTUS  
Executive Officer

**California Environmental Protection Agency**

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at <http://www.swrcb.ca.gov>.*

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Linda S. Adams  
Acting Secretary for  
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# California Regional Water Quality Control Board San Diego Region

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Arnold  
Schwarzenegger  
Governor

Action on Request  
for  
Clean Water Act Section 401 Water Quality Certification  
and  
Waste Discharge Requirements  
for  
Discharge of Dredged and/or Fill Materials

**PROJECT:** Carlsbad Paseo Retail Center  
Water Quality Certification No. 08C-040

**APPLICANT:** Mr. Peter G. Aylward  
Strategic Property Advisors  
3250 Vista Diego Road  
Jamul, CA 91935

WDID	9 000001793
CWIQS:	
Reg. Measure	346388
Place	718944
Party	471863
Person	471862

**ACTION:**

<input type="checkbox"/> Order for Low Impact Certification	<input type="checkbox"/> Order for Denial of Certification
<input checked="" type="checkbox"/> Order for Technically-conditioned Certification	<input type="checkbox"/> Waiver of Waste Discharge Requirements
<input checked="" type="checkbox"/> Enrollment in SWRCB GWDR Order No. 2003-017 DWQ	<input type="checkbox"/> Enrollment in Isolated Waters Order No. 2004-004 DWQ

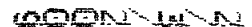
**PROJECT DESCRIPTION:**

The proposed project is the construction of 44,000-feet<sup>2</sup> of retail shops and two separate buildings for restaurants. An existing 255-feet by 21-feet concrete trapezoidal channel will be removed and replaced with a 6-feet by 6-feet concrete box culvert that is approximately the same length. The purpose of the project is to provide additional shopping and restaurants in the City of Carlsbad.

*California Environmental Protection Agency*

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at <http://www.swrcb.ca.gov>.*

Recycled Paper



**STANDARD CONDITIONS:**

The following three standard conditions apply to all certification actions, except as noted under Condition 3 for denials (Action 3).

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and must not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action (Actions 1 and 2) must be conditioned upon total payment of the full fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

**ADDITIONAL CONDITIONS:**

In addition to the three standard conditions, Peter G. Aylward, Strategic Property Advisors, Inc. must satisfy the following:

**A. GENERAL CONDITIONS:**

1. Peter G. Aylward, Strategic Property Advisors, Inc. must, at all times, fully comply with the engineering plans, specifications and technical reports submitted to the California Regional Water Quality Control Board, San Diego Region (Regional Board), to support this 401 Water Quality Certification and all subsequent submittals required as part of this certification and as described in Attachment 1. The conditions within this certification must supersede conflicting provisions within such plans submitted prior to the certification action. Any modifications thereto, would require notification to the Regional Board and reevaluation for individual Waste Discharge Requirements and/or certification amendment.
2. If the project is not completed within 5 years of issuance of Water Quality Certification No. 08C-040 (Certification), the Certification expires and no impacts to Waters of the U.S. or State will be allowed without a new Certification.



reports the Regional Board deems appropriate, provided that the burden, including costs, of the reports must bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

9. In response to any violation of the conditions of this certification, the Regional Board may add to or modify the conditions of this certification as appropriate to ensure compliance.
10. Peter G. Aylward, Strategic Property Advisors, Inc. must submit annual progress reports to the Regional Board prior to **August 1** of each year following the issuance of this certification.

**B. PROJECT CONDITIONS:**

1. Prior to the start of the project, and annually thereafter, Peter G. Aylward, Strategic Property Advisors, Inc. must educate all personnel on the requirements in this certification, pollution prevention measures, spill response, and Best Management Practices implementation and maintenance.
2. Peter G. Aylward, Strategic Property Advisors, Inc. must comply with the requirements of State Water Resources Control Board Water Quality Order No. 2003-0017-DWQ, Statewide General Waste Discharge Requirements for discharges of dredged or fill material that have received State Water Quality Certification. These General Waste Discharge Requirement are accessible at:  
[http://www.waterboards.ca.gov/cwa401/docs/generalorders/go\\_wdr401regulated\\_projects.pdf](http://www.waterboards.ca.gov/cwa401/docs/generalorders/go_wdr401regulated_projects.pdf).
3. Peter G. Aylward, Strategic Property Advisors, Inc. must notify the Regional Board in writing at least **5 days** prior to the actual commencement of maintenance activities.
4. Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or the State or placed in locations that may be subjected to storm flows. Pollutants discharged to areas within a stream diversion area must be removed at the end of each work day or sooner if rain is predicted.

**C. CONSTRUCTION, PRE-DEVELOPMENT FLOW, AND POST-CONSTRUCTION BEST MANAGEMENT PRACTICES:**

1. All storm drain inlet structures within the project boundaries must be stamped and/or stenciled (or equivalent) with appropriate language prohibiting non-storm water discharges.

2. Peter G. Aylward, Strategic Property Advisors, Inc. must acquire a performance bond to ensure implementation of structural Best Management Practices (BMPs) as proposed in Storm Water Management Plan for CTP/SC Title Holding Corp., 533 S. Fremont, 7<sup>th</sup> Floor, Los Angeles, CA 90071. Project: Carlsbad Paseo, CUP 07-03, 5700 Paseo Del Norte, APN 211-021-30, Carlsbad, CA, prepared by TerraData and dated November 24, 2008.
3. Evidence of the acquisition of a performance bond must be submitted to the Regional Board **prior** to construction.
4. In addition to the BMPs described in the Storm Water Management Plan for CTP/SC Title Holding Corp., 533 S. Fremont, 7<sup>th</sup> Floor, Los Angeles, CA 90071. Project: Carlsbad Paseo, CUP 07-03, 5700 Paseo Del Norte, APN 211-021-30, Carlsbad, CA, prepared by TerraData and dated November 24, 2008, and referenced in Appendix I in support of the application, the post-construction BMPs must be sized to comply with the following numeric sizing criteria:
  - a. Volume  
Volume-based BMPs must be designed to mitigate (infiltrate, filter, or treat) either:
    - i. The volume of runoff produced from a 24-hour 85<sup>th</sup> percentile storm event, as determined from the local historical rainfall record (0.6 inch approximate average for the San Diego County area); or
    - ii. The volume of runoff produced by the 85<sup>th</sup> percentile 24-hour rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or
    - iii. The volume of annual runoff based on unit basin storage volume, to achieve 90% or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial, (1993); or
    - iv. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85<sup>th</sup> percentile 24-hour runoff event; or
  - b. Flow  
Flow-based BMPs must be designed to mitigate (infiltrate, filter, or treat) either:
    - i. The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or

- ii. The maximum flow rate of runoff produced by the 85<sup>th</sup> percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or
  - iii. The maximum flow rate of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85<sup>th</sup> percentile hourly rainfall intensity multiplied by a factor of two.
5. Post-construction BMPs must be installed and functional prior to occupancy and/or planned use of development areas.
6. As proposed in the Storm Water Management Plan for CTP/SC Title Holding Corp., 533 S. Fremont, 7<sup>th</sup> Floor, Los Angeles, CA 90071. Project: Carlsbad Paseo, CUP 07-03, 5700 Paseo Del Norte, APN 211-021-30, Carlsbad, CA, prepared by TerraData and dated November 24, 2008, construction BMPs must include, but are not be limited to:
  - a) Silt fencing.
  - b) Street sweeping.
  - c) Stockpile management.
  - d) Solid waste management.
  - e) Stabilized Construction Entrance/Exit.
  - f) Gravel bag berm.
  - g) Material delivery and storage.
  - h) Concrete waste management.
  - i) Paving and grinding operations.
7. As proposed in the Storm Water Management Plan for CTP/SC Title Holding Corp., 533 S. Fremont, 7<sup>th</sup> Floor, Los Angeles, CA 90071. Project: Carlsbad Paseo, CUP 07-03, 5700 Paseo Del Norte, APN 211-021-30, Carlsbad, CA, prepared by TerraData and dated November 24, 2008, post-construction BMPs must include, but are not be limited to:
  - a) Existing storm water and non-storm water flow onto the property must be treated by a Bio Clean Upflow Water Polishing Unit manufactured by Bio Clean Environmental Services, Inc.
  - b) New storm water and non-storm water flows from impervious project areas must be treated and detained with Underground Detention Pipes (Storm Tank) with pre-treatment Baffle Boxes (Suntree).
8. Peter G. Aylward, Strategic Property Advisors, Inc., their designated party, or other parties that assume future transferred liability under this Certification, shall inspect and maintain post-construction structural BMPs per the





2. All reports and information submitted to the Regional Board must be submitted in both hardcopy and electronic format. The preferred electronic format for each report submission is one file in PDF format that is also Optical Character Recognition (OCR) capable.
3. All applications, reports, or information submitted to the Regional Board must be signed and certified as follows:
  - a. For a corporation, by a responsible corporate officer of at least the level of vice president.
  - b. For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
  - c. For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.
4. A duly authorized representative of a person designated in Items 3.a. through 3.c. above may sign documents if:
  - a. The authorization is made in writing by a person described in Items 3.a. through 3.c. above.
  - b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
  - c. The written authorization is submitted to the Regional Board Executive Officer.
5. All applications, reports, or information submitted to the Regional Board must be signed and certified as follows:

*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."*
6. The Carlsbad Paseo Retail Center must submit reports required under this certification, or other information required by the Regional Board, to:

Executive Officer  
California Regional Water Quality Control Board

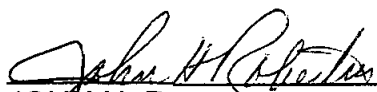
**REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:**

Mike Porter  
California Regional Water Quality Control Board, San Diego Region  
9174 Sky Park Court, Suite 100  
San Diego, CA 92123  
858-467-2726  
mporter@waterboards.ca.gov

**WATER QUALITY CERTIFICATION:**

I hereby certify that the proposed discharge from the **Carlsbad Paseo Retail Center** (Certification No. 08C-040) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017 DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the Regional Board may issue individual waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicants' project description and/or on the attached Project Information Sheet, and (b) on compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).

  
\_\_\_\_\_  
JOHN H. ROBERTUS  
Executive Officer  
Regional Water Quality Control Board

2 FEB 2009  
Date

- Attachments:
1. Project Information
  2. Distribution List
  3. Location Map
  4. Site Map
  5. Stream Photodocumentation Procedure

San Diego Region  
 Attn: 401 Certification No. 08C-040  
 9174 Sky Park Court, Suite 100  
 San Diego, California 92123

7. Required Reports: The following list summarizes the reports, including spill notifications and emergency situations, required per the conditions of this Certification to be submitted to the Regional Board.

Report Topic	Certification Condition	Due Date(s)
Unauthorized Discharges	A.5. Report to Regional Board within 24 hours.	Within 24 hours.
Annual Progress Reporting	A.10. Submit annual progress reports to Regional Board.	Annually before August 1 <sup>st</sup> .
Notification of Impacts to Waters	B.3. Notify Regional Board before impacting Waters of U.S. and State.	5 Days prior to impacts.
Post-construction BMPs	C.3. Submit evidence of the acquisition of a performance bond to Regional Board prior to construction.	Prior to construction.
Post-construction BMPs	C.9. Submit letter describing where the post-construction BMPs inspections and maintenance log will be kept.	Prior to occupancy.
Post-construction BMPs	C.10. Submit a letter accepting full responsibility for the inspection and maintenance of all post-construction BMPs.	Prior to construction.
Project Photodocumentation	D. Photo documentation of project sites.	30 Days after project completion.

**PUBLIC NOTIFICATION OF PROJECT APPLICATION:**

On June 17, 2008 receipt of the project application was posted on the Regional Board web site to serve as appropriate notification to the public.

**ATTACHMENT 1  
PROJECT INFORMATION**

- Applicant: ✓ Mr. Peter G. Aylward  
Strategic Property Advisors, Inc.  
3250 Vista Diego Road  
Jamul, CA 91935  
Telephone: 619-669-6688  
Facsimile: none  
Email: Peter@spadvise.com
- Applicant Representatives: ✓ Mr. Paul Klukas  
Planning Systems  
1530 Faraday Avenue  
Carlsbad, CA 92008  
Telephone: 760-931-0780  
Facsimile: 760-931-5744  
Email: pklukas@planningsystems.net
- Project Name: ✓ Carlsbad Paseo Retail Center (Certification 08C-040).
- Project Location: ✓ The project is located west of and adjacent to Paseo Del Norte, City of Carlsbad, north-coastal San Diego County. Latitude 33.1263 north, longitude 117.3240 west.
- Type of Project: ✓ Retail shopping and restaurant development.
- Project Description: ✓ (The proposed project is the construction of 44,000-ft<sup>2</sup> of retail shops and two separate buildings for restaurants. An existing 255-feet by 21-feet concrete trapezoidal channel will be removed and replaced with a 6-feet by 6-feet concrete box culvert that is approximately the same length.
- Project Purpose: ✓ The purpose of the project is to provide additional retail shopping and restaurants in the City of Carlsbad.
- Federal Agency/Permit: ✓ U.S. Army Corps of Engineers §404, NWP 39, Ms. Lanika Cervantes.

✓ Other Required Regulatory Approvals: None disclosed.

California Environmental Quality Act (CEQA) Compliance: Mitigated Negative Declaration, City of Carlsbad, August 12, 2008, SCH # 2008051076.

✓ Receiving Waters: Unnamed trapezoidal channel draining directly to Pacific Ocean (~1800-foot west of site). Carlsbad hydrologic unit, Encinas hydrologic area (904.40).

✓ Affected Waters of the United States: Temporary:

Wetland	None
Streambed	None
Lake	None
Ocean	None

Permanent:

Wetland	None
Streambed	0.053-acre/255-linear feet
Lake	None
Ocean	None

✓ Affected Waters of the State: Temporary:

Wetland	None
Streambed	None
Lake	None
Ocean	None

Permanent:

Wetland	None
Streambed	0.053-acre/255-linear feet
Lake	None
Ocean	None

Dredge Volume: ✓ None

Related Projects Implemented/to be Implemented by the Applicant(s): - None disclosed.

Compensatory Mitigation: ✓ None proposed or required.

Best Management Practices (BMPs): ✓BMPs are described in the:

Storm Water Management Plan for CTP/SC Title Holding Corp., 533 S. Fremont, 7<sup>th</sup> Floor, Los Angeles, CA 90071. Project: Carlsbad Paseo, CUP 07-03, 5700 Paseo Del Norte, APN 211-021-30, Carlsbad, CA, prepared by TerraData and dated November 24, 2008.

-Construction BMPs will include, but are not be limited to:

- Silt fencing.
- Street sweeping.
- Stockpile management.
- Solid waste management.
- Stabilized Construction Entrance/Exit.
- Gravel bag berm.
- Material delivery and storage.
- Concrete waste management.
- Paving and grinding operations.

✓Post-construction BMPs have been proposed for existing flow (surrounding developed areas) onto the site and for flows from new, impervious areas that will be created as part of the project.

Existing storm water and non-storm water flow onto the property will be treated by a Bio Clean Upflow Water Polishing Unit manufactured by Bio Clean Environmental Services, Inc. This Unit uses a sediment chamber and a "BioMediaGreen Filter Media Hydrocarbon Filter". This Unit will treat up to 6.56-ft<sup>3</sup>/second.

✓ New storm water and non-storm water flows from impervious project areas will be treated and detained with Underground Detention Pipes (Storm Tank) with pre-treatment Baffle Boxes (Suntree). The Underground Detention Pipes will detain the difference between the pre- and post-development flows. The Underground Detention Pipes with pre-treatment Baffle Boxes will treat up to 5- ft<sup>3</sup>/second.

Public Notice: June 17, 2008 – Regional Board internet website.

Fees:                    ✓ Total Due:            \$1775.00  
                                 Total Paid:            \$500.00    (Check No. 10965)  
                                 Total Paid:            \$1275.00   (Check No. 61085)

CIWQS:                    ✓ Reg. Measure    346388  
                                 Place                718944  
                                 Party                471863  
                                 Person               471862



**ATTACHMENT 2  
DISTRIBUTION LIST**

Ms. Lanika Cervantes  
U.S. Army Corps of Engineers  
San Diego Field Office  
6010 Hidden Valley Road  
Suite 105  
Carlsbad, CA 92011

Ms. Tamara Spear  
California Department of Fish and Game  
South Coast Region  
Habitat Conservation Planning – North  
4949 Viewridge Avenue  
San Diego, CA 92123

Ms. Elizabeth Goldmann  
Wetlands Regulatory Office  
U.S. Environmental Protection Agency, Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

Mr. Paul Klukas  
Planning Systems  
1530 Faraday Avenue  
Carlsbad, CA 92008

State Water Resources Control Board  
Division of Water Quality  
401 Water Quality Certification and Wetlands Unit  
P.O. Box 100  
Sacramento, CA 95812-0100

U.S. Department of the Interior  
Fish and Wildlife Service  
6010 Hidden Valley Road  
Carlsbad, CA 92011

Certification No. 08C-040

**ATTACHMENT 3**

Location Map

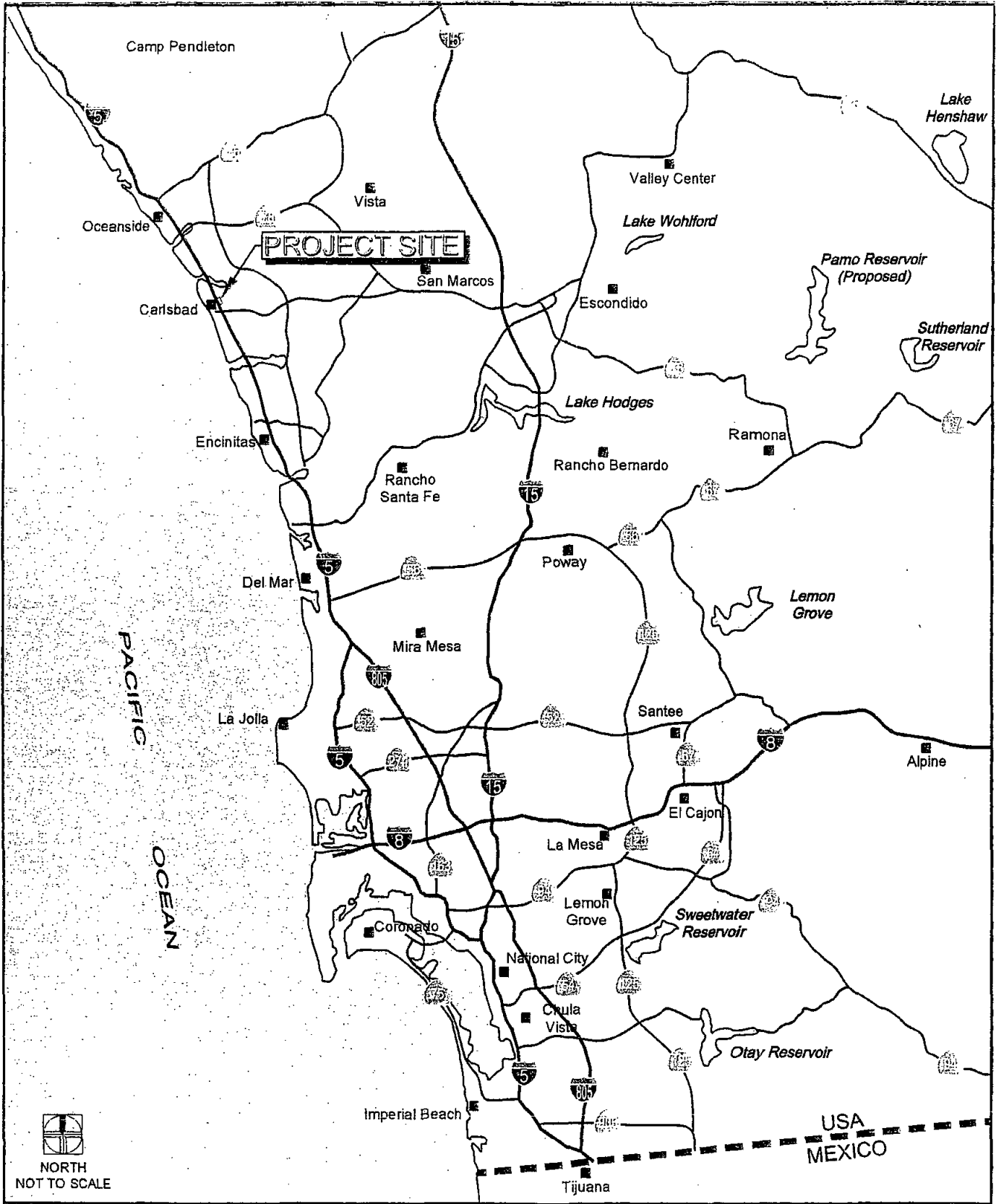


FIGURE 1  
**Regional Map**  
 Carlsbad, California

January 25, 2007 PS# 060821

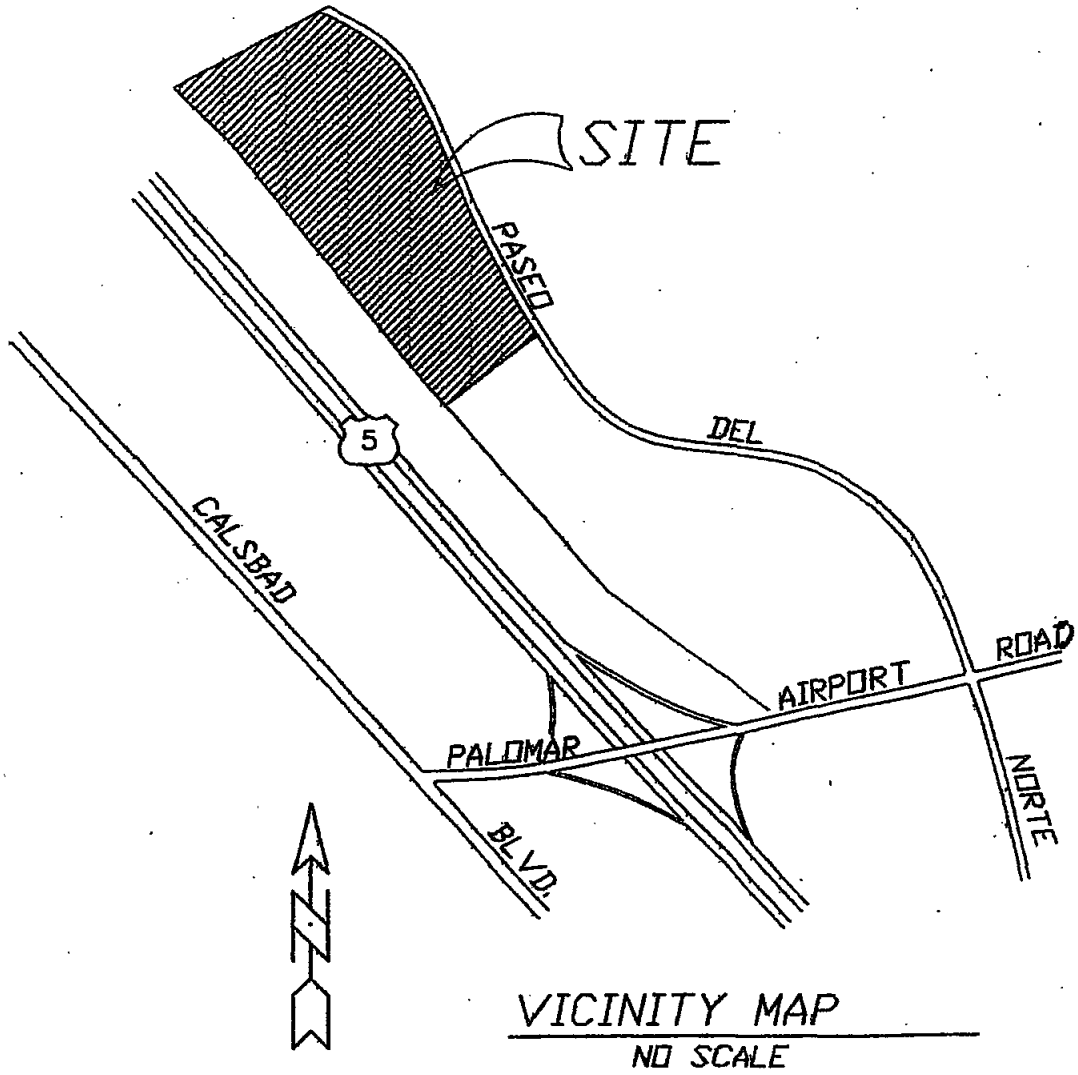
PLANNING SYSTEMS LAND USE/COASTAL PLANNING LANDSCAPE ARCHITECTURE POLICY AND PROCESSING ENVIRONMENTAL MITIGATION

1530 FARADAY AVENUE, SUITE 100, CARLSBAD, CA 92008  
 (760) 931-0780 FAX (760) 931-0771





2. VICINITY MAP






VICINITY MAP  
NO SCALE

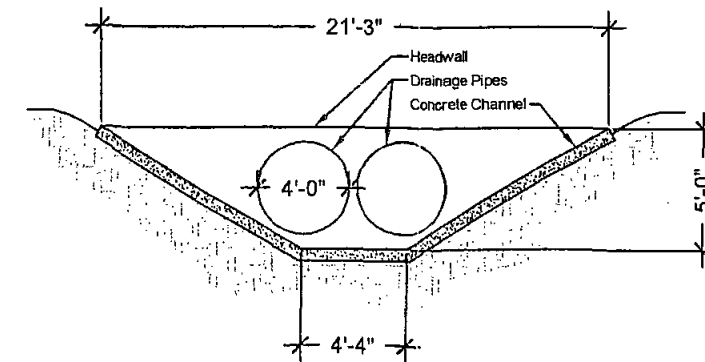
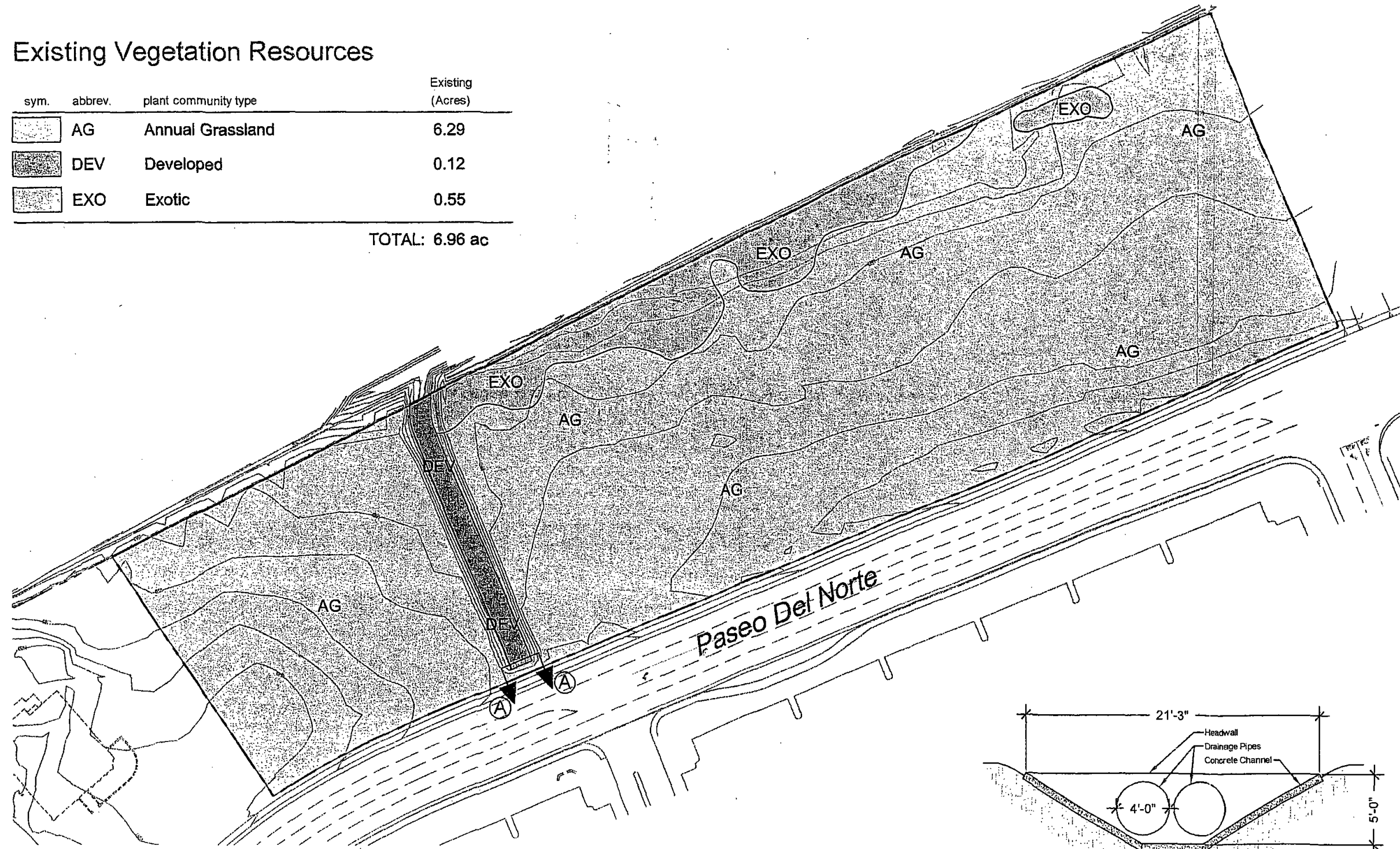
FIGURE 3

# Carlsbad Paseo Vegetation Resources

Carlsbad, California

## Existing Vegetation Resources

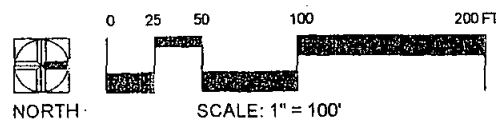
sym.	abbrev.	plant community type	Existing (Acres)
	AG	Annual Grassland	6.29
	DEV	Developed	0.12
	EXO	Exotic	0.55
<b>TOTAL:</b>			<b>6.96 ac</b>



**CROSS SECTION A-A**  
Scale: 1/8" = 1'-0"

January 25, 2007

PS# 060821



LAND USE/COASTAL PLANNING  
 ANALYSIS AND PREPARATION  
 ENVIRONMENTAL MITIGATION  
 PLANNING SYSTEMS  
 1620 PARADISE AVENUE, SUITE 100, CARLSBAD, CA 92008  
 (760) 931-0700 FAX (760) 931-9744

**Carlsbad Paseo Vegetation Resources**  
 Carlsbad, California

FIGURE 3

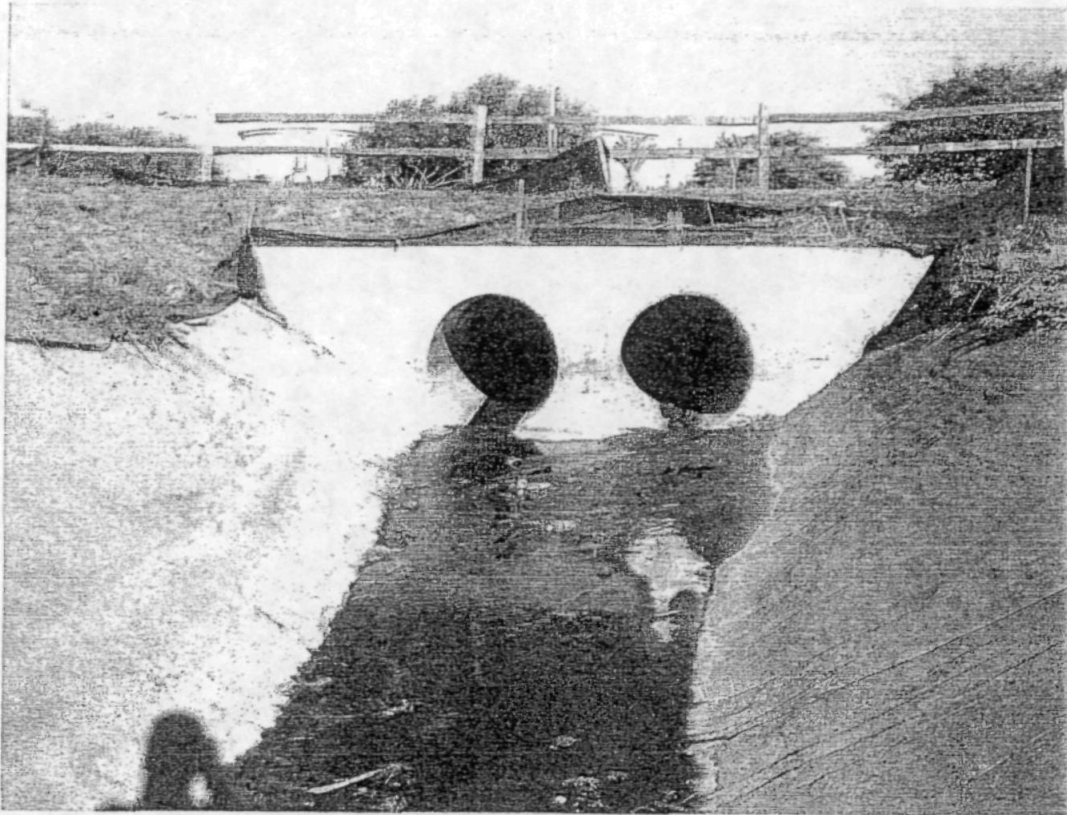


Figure 1 - Headwall at east end of channel with Carlsbad Premium Outlet Stores in the background.

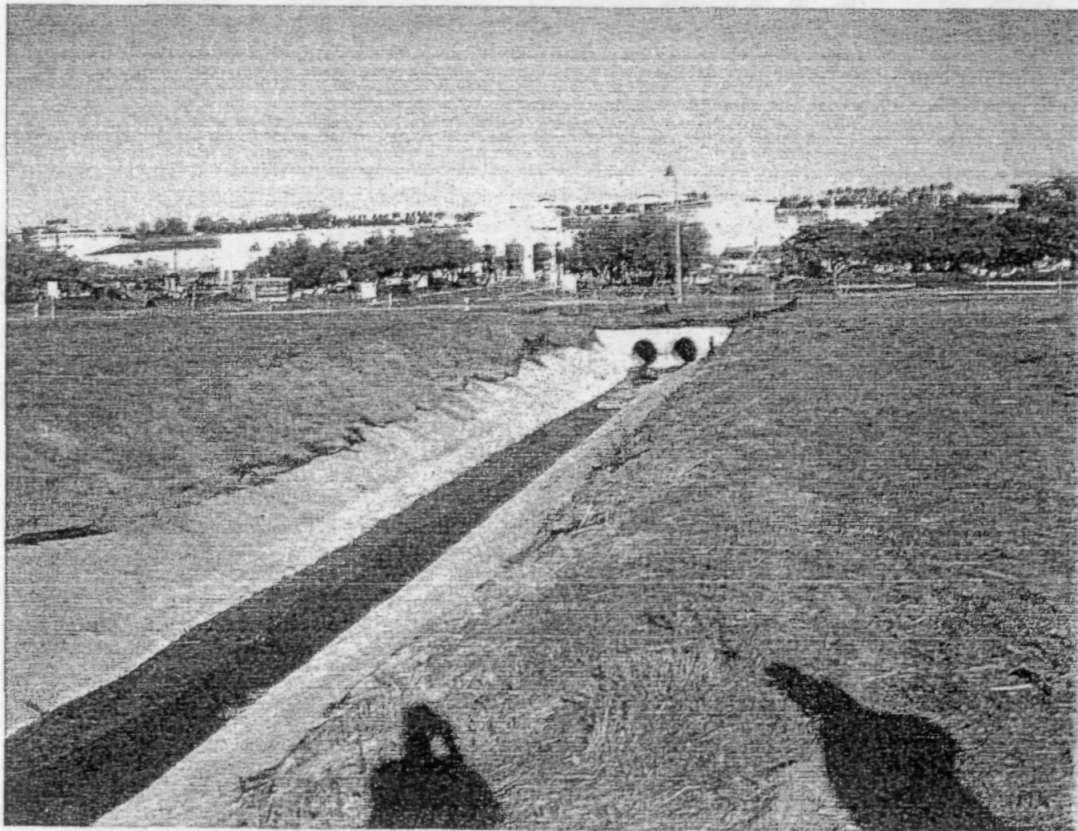


Figure 2 - Concrete-lined channel and annual grassland on the site. Note absence of vegetation in channel.



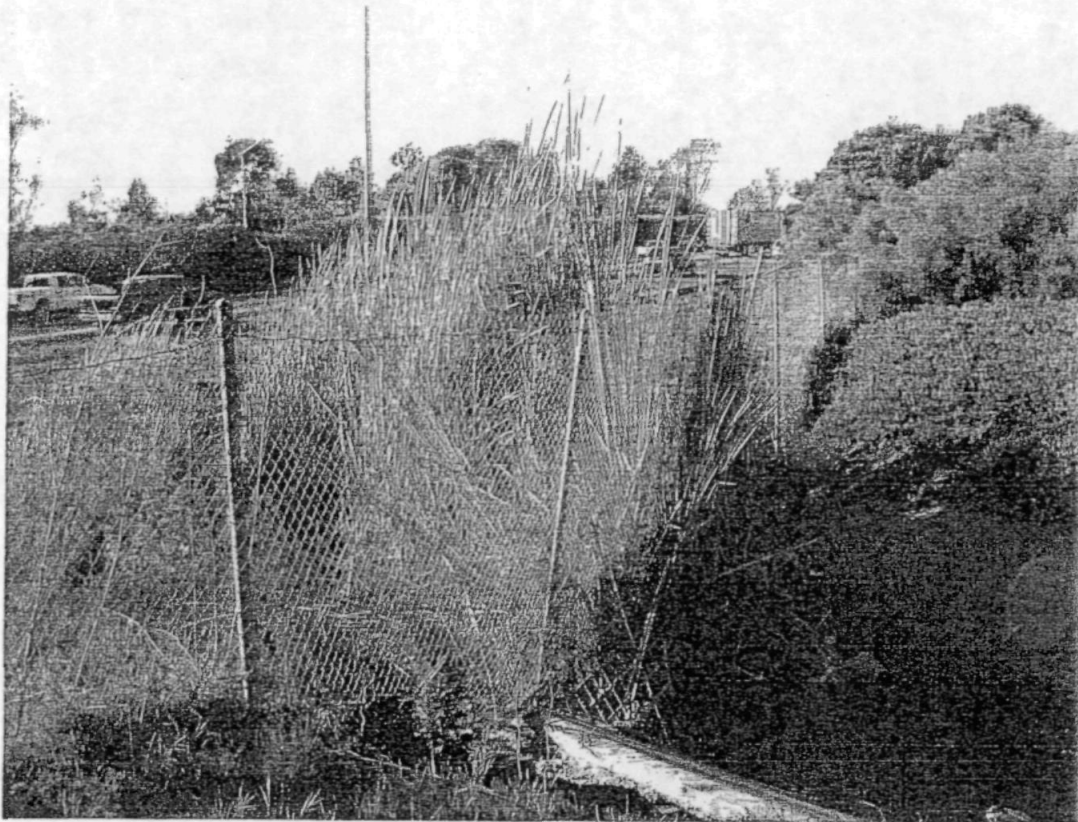


Figure 3 - Cattails growing offsite in the Interstate 5 right-of-way.



Figure 4 - Trash rack at the west end of channel showing presence of immature cattails.

W.M. NADON  
W.M. NADON

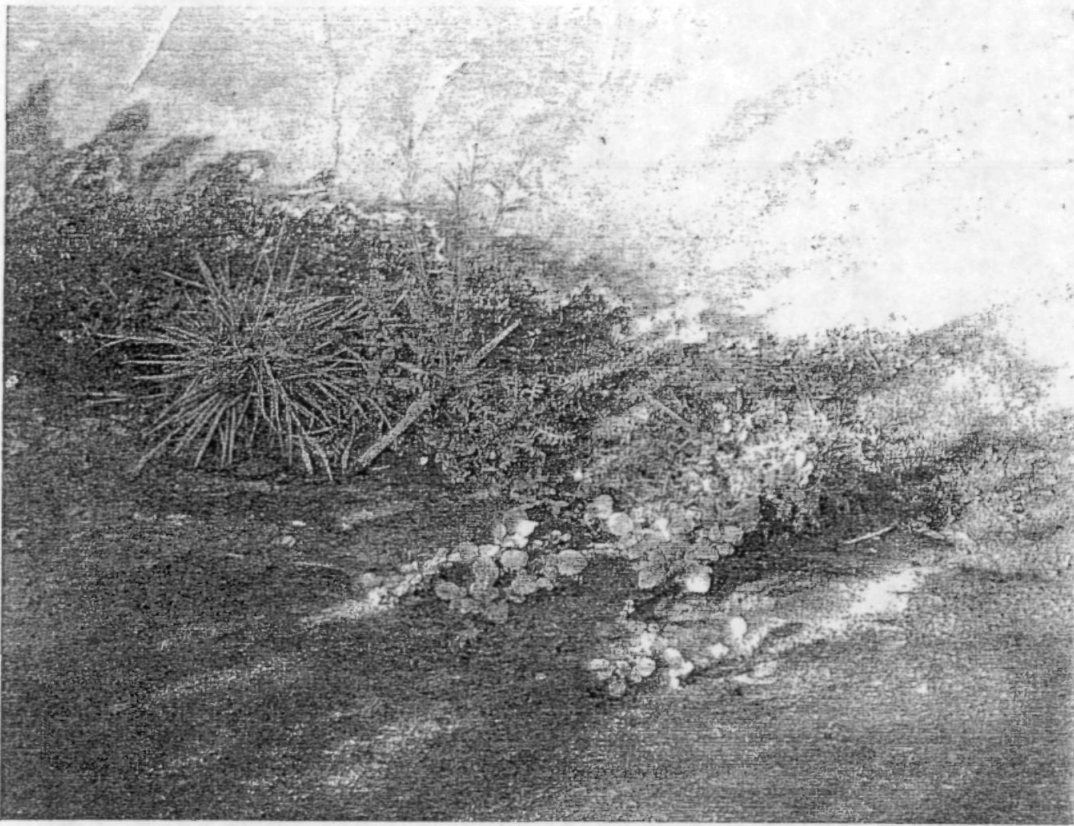


Figure 5 - Example of sparse vegetation present in channel.

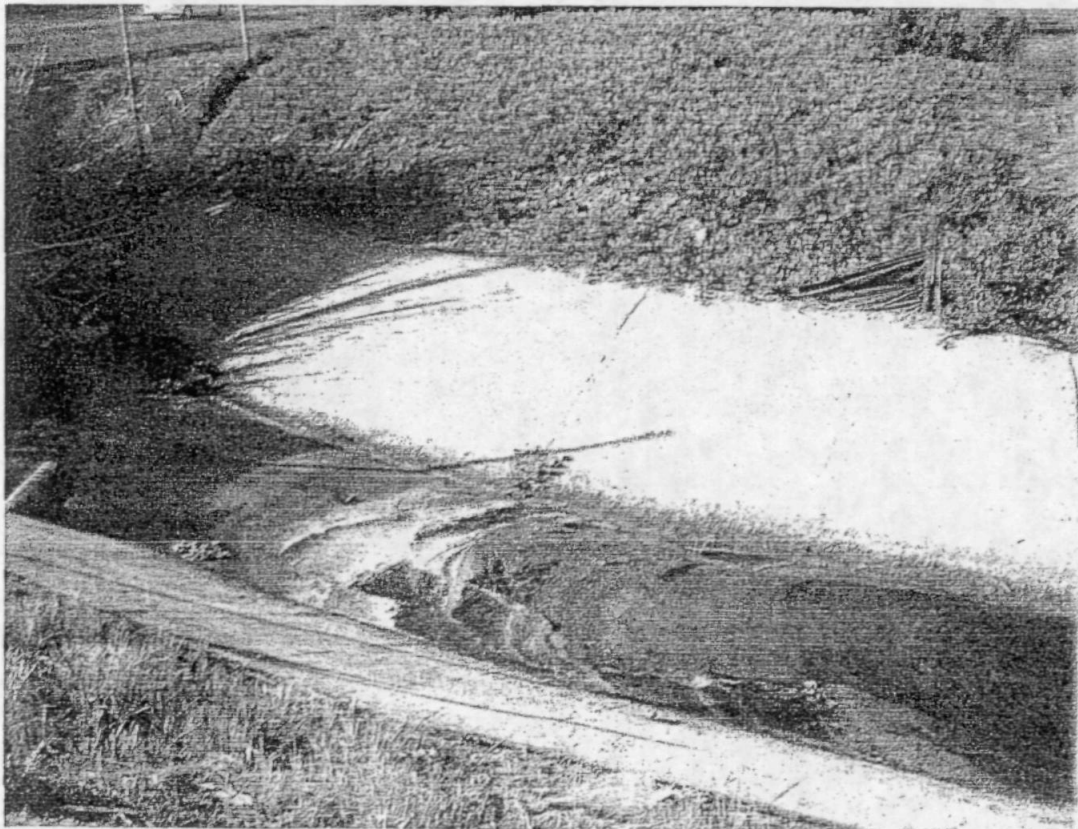


Figure 6 - Showing limited amounts of sediment that have accumulated in the channel.

0000\OW\W

0000\W\N





**How to Access Aerial Photographs:**

Aerial Photos can be obtained from the following federal agencies:

USGS Earth Science Information Center  
507 National Center  
12201 Sunrise Valley Drive  
Reston, VA 22092  
800-USA-MAPS

USDA Consolidated Farm Service Agencies  
Aerial Photography Field Office  
222 West 2300 South  
P.O. Box 30010  
Salt Lake City, UT 84103-0010  
801-524-5856

Cartographic and Architectural Branch  
National Archives and Records Administration  
8601 Adelphi Road  
College park, MD 20740-6001  
301-713-7040

**Roles and Duties of Team:**

The team should be comprised of a minimum of two people, and preferably three people for restoration or other water quality improvement projects, as follows:

1. Primary Photographer
2. Subject, target for centering the photo and providing scale
3. Person responsible for determining geographic position and holding the photo sign forms or blackboard.

One of these people is also responsible for taking field notes to describe and record photos and photo points.

**Safety Concerns:**

Persons involved in photo monitoring should **ALWAYS** put safety first. For safety reasons, always have at least two 2 volunteers for the survey. Make sure that the area(s) you are surveying either are accessible to the public or that you have obtained permission from the landowner prior to the survey.

Some safety concerns that may be encountered during the survey include, but are not limited to:

- Inclement weather
- Flood conditions, fast flowing water, or very cold water

- Poisonous plants (e.g.: poison oak)
- Dangerous insects and animals (e.g.: bees, rattlesnakes, range animals such as cattle, etc.)
- Harmful or hazardous trash (e.g.: broken glass, hypodermic needles, human feces)

We recommend that the volunteer coordinator or leader discuss the potential hazards with all volunteers prior to any fieldwork.

### **General Instructions:**

From the inception of any photo documentation project until it is completed, always take each photo from the same position (photo point), and at the same bearing and vertical angle at that photo point. Photo point positions should be thoroughly documented, including photographs taken of the photo point. Refer to copies of previous photos when arriving at the photo point. Try to maintain a level (horizontal) camera view unless the terrain is sloped. (If the photo can not be horizontal due to the slope, then record the angle for that photo.) When photo points are first being selected, consider the type of project (meadow or stream restoration, vegetation management for fire control, ambient or event monitoring as part of a stream walk, etc.) and refer to the guidance listed on *Suggestions for Photo Points by Type of Project*.

When taking photographs, try to include landscape features that are unlikely to change over several years (buildings, other structures, and landscape features such as peaks, rock outcrops, large trees, etc.) so that repeat photos will be easy to position. Lighting is, of course, a key ingredient so give consideration to the angle of light, cloud cover, background, shadows, and contrasts. Close view photographs taken from the north (i.e., facing south) will minimize shadows. Medium and long view photos are best shot with the sun at the photographer's back. Some artistic expression is encouraged as some photos may be used on websites and in slide shows (early morning and late evening shots may be useful for this purpose). Seasonal changes can be used to advantage as foliage, stream flow, cloud cover, and site access fluctuate. It is often important to include a ruler, stadia rod, person, farm animal, or automobile in photos to convey the scale of the image. Of particular concern is the angle from which the photo is taken. Oftentimes an overhead or elevated shot from a bridge, cliff, peak, tree, etc. will be instrumental in conveying the full dimensions of the project. Of most importance overall, however, is being aware of the goal(s) of the project and capturing images that clearly demonstrate progress towards achieving those goal(s). Again, reference to *Suggestions for Photo Points by Type of Project* may be helpful.

If possible, try to include a black board or yellow photo sign in the view, marked at a minimum with the location, subject, time and date of the photograph. A blank photo sign form is included in this document.

**Recording Information:**

Use a systematic method of recording information about each project, photo point, and photo. The following information should be entered on the photo-log forms (blank form included in this document) or in a dedicated notebook:

- Project or group name, and contract number (if applicable, e.g., for funded restoration projects)
- General location (stream, beach, city, etc.), and short narrative description of project's habitat type, goals, etc.
- Photographer and other team members
- Photo number
- Date
- Time (for each photograph)
- Photo point information, including:
  - Name or other unique identifier (abbreviated name and/or ID number)
  - Narrative description of location including proximity to and direction from notable landscape features like roads, fence lines, creeks, rock outcrops, large trees, buildings, previous photo points, etc. – sufficient for future photographers who have never visited the project to locate the photo point
  - Latitude, longitude, and altitude from map or GPS unit
- Magnetic compass bearing from the photo point to the subject
- Specific information about the subject of the photo
- Optional additional information: a true compass bearing (corrected for declination) from photo point to subject, time of sunrise and sunset (check newspaper or almanac), and cloud cover.

For ambient monitoring, the stream and shore walk form should be attached or referenced in the photo-log.

When monitoring the implementation of restoration, fuel reduction, or Best Management Practices (BMP) projects, include or attach to the photo-log a narrative description of observable progress in achieving the goals of the project. Provide supplementary information along with the photo, such as noticeable changes in habitat, wildlife, and water quality and quantity.

Archive all photos, along with the associated photo-log information, in a protected environment.

**The Photo Point: Establishing Position of Photographer:**

1. Have available a variety of methods for establishing position: maps, aerial photos, GPS, permanent markers and landmarks, etc. If the primary method fails (e.g., a GPS or lost marker post) then have an alternate method (map, aerial photo, copy of an original photograph of the photo-point, etc).

2. Select an existing structure or landmark (mailbox, telephone pole, benchmark, large rock, etc.), identify its latitude and longitude, and choose (and record for future use) the permanent position of the photographer relative to that landmark. Alternatively, choose the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the photographer.
3. For restoration, fuel reduction, and BMP projects, photograph the photo-points and carry copies of those photographs on subsequent field visits.

#### **Determining the Compass Bearing:**

1. Select and record the permanent magnetic bearing of the photo center view. You can also record the true compass bearing (corrected for declination) but do not substitute this for the magnetic bearing. Include a prominent landmark in a set position within the view. If possible, have an assistant stand at a fixed distance from both the photographer and the center of the view, holding a stadia rod if available, within the view of the camera; preferably position the stadia rod on one established, consistent side of the view for each photo (right or left side).
2. Alternatively, use the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the focal point (photo center).
3. When performing ambient or event photo monitoring, and when a compass is not available, then refer to a map and record the approximate bearing as north, south, east or west.

#### **Suggestions for Photo Points by Type of Project:**

##### **Ambient or Event Monitoring, Including Photography Associated with Narrative Visual Assessments:**

1. When first beginning an ambient monitoring program take representative long and/or medium view photos of stream reaches and segments of shoreline being monitored. Show the positions of these photos on a map, preferably on the stream/shore walk form. Subjects to be photographed include a representative view of the stream or shore condition at the beginning and ending positions of the segment being monitored, storm drain outfalls, confluence of tributaries, structures (e.g., bridges, dams, pipelines, etc.).
2. If possible, take a close view photograph of the substrate (streambed), algae, or submerged aquatic vegetation.
3. Time series: Photographs of these subjects at the same photo points should be repeated annually during the same season or month if possible.



4. Event monitoring refers to any unusual or sporadic conditions encountered during a stream or shore walk, such as trash dumps, turbidity events, oil spills, etc. Photograph and record information on your photo-log and on your Stream and Shore Walk Visual Assessment form. Report pollution events to the Regional Board. Report trash dumps to local authorities.

### **All Restoration and Fuel Reduction Projects – Time Series:**

Take photos immediately before and after construction, planting, or vegetation removal. Long term monitoring should allow for at least annual photography for a minimum of three years after the project, and thereafter at 5 years and ten years.

#### **Meadow Restoration:**

1. Aerial view (satellite or airplane photography) if available.
2. In the absence of an aerial view, a landscape, long view showing an overlapping sequence of photos illustrating a long reach of stream and meadow (satellite photos, or hill close by, fly-over, etc.)
3. Long view up or down the longitudinal dimension of the creek showing riparian vegetation growth bounded on each side by grasses, sedges, or whatever that is lower in height
4. Long view of conversion of sage and other upland species back to meadow vegetation
5. Long view and medium view of streambed changes (straightened back to meandering, sediment back to gravel, etc.)
6. Medium and close views of structures, plantings, etc. intended to induce these changes

#### **Stream Restoration/stabilization:**

1. Aerial view (satellite or airplane photography) if available.
2. In the absence of an aerial view, a landscape, long-view showing all or representative sections of the project (bluff, bridge, etc.)
3. Long view up or down the stream (from stream level) showing changes in the stream bank, vegetation, etc.
4. Long view and medium view of streambed changes (thalweg, gravel, meanders, etc.)
5. Medium and close views of structures, plantings, etc. intended to induce these changes.
6. Optional: Use a tape set perpendicular across the stream channel at fixed points and include this tape in your photos described in 3 and 4 above. For specific procedures refer to Harrelson, Cheryl C., C.L. Rawlins, and John P. Potyondy, *Stream Channel Reference Sites: An Illustrated Guide to Field Techniques*, United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-245.







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