California Regional Water Quality Control Board
San Diego Region

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

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

April 15, 2009

Certified Mail No. 7009 0080 0000 7308 0240

Mr. Don Mechling
Mechling Construction
17005 Dos Amigos Way
Poway, CA 92064

In reply, refer to:

Certification	08C-016
Reg. Meas.	342102
Place	714527
Party	273412
WDID	*9 000001756*

SUBJECT: Action on Request for Clean Water Act Section 401 Water Quality Certification for the Mechling Subdivision project
Water Quality Certification No. 08C-016

Dear Mr. Mechling:

Enclosed is the Clean Water Act Section 401 Water Quality Certification for the Mechling Subdivision 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 6. 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 you 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 you.

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.

Mr. Mechling
401 Certification 08C-016

April 15, 2009

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.

Respectfully,

JOHN H. ROBERTUS
Executive Officer

Enclosure:

Clean Water Act Section 401 Water Quality Certification No. 08C-016 for the Mechling Subdivision project, with 6 attachments

CC: Refer to Attachment 2 of Certification 08C-016 for Distribution List.

Linda S. Adams
Acting Secretary for Environmental Protection

California Regional Water Quality Control Board

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Arnold Schwarzenegger
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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: Mechling Subdivision
Water Quality Certification No. 08C-016

WDID	9 0000011756
CWIQS:	
Reg. Measure	342102
Place	714527
Party	273412

APPLICANT: Mr. Don Mechling
Mechling Construction
17005 Dos Amigos Way
Poway, CA 92064

ACTION:

☐ Order for Low Impact Certification	☐ Order for Denial of Certification
☑ Order for Technically-conditioned Programmatic Certification	☐ Waiver of Waste Discharge Requirements
☑ Enrollment in SWRCB GWDR Order No. 2003-017 DWQ	☐ Enrollment in Isolated Waters Order No. 2004-004 DWQ

PROJECT DESCRIPTION:

The proposed project is the subdivision of 22-acres into ten residential lots ranging in size from 2.0 to 2.7 acres. Three ephemeral streams will be impacted by grading and the installation of five culverts for future driveways.

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, Don Mechling must satisfy the following:

A. GENERAL CONDITIONS:

1. Don Mechling 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 the Attachments. 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 project construction does not commence within **5 years** of issuance of Water Quality Certification No. 08C-016, the Water Quality Certification will expire **5 years** after issuance.

3. During construction activities, Don Mechling must maintain a copy of this certification at the project site so as to be available at all times to site personnel and agencies.

4. Don Mechling must permit the Regional Board or its authorized representative at all times, upon presentation of credentials:

a. Entry onto project premises, including all areas on which wetland fill or wetland mitigation is located or in which records are kept.

b. Access to copy any records required to be kept under the terms and conditions of this certification.

c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this certification.

d. Sampling of any discharge or surface water covered by this Order.

5. Don Mechling must notify the Regional Board within **24 hours** of any unauthorized discharge, including hazardous or toxic materials, to waters of the U.S. and/or State; measures that were implemented to stop and contain the discharge; measures implemented to clean-up the discharge; the volume and type of materials discharged and recovered; and additional best management practice (BMPs) or other measures that will be implemented to prevent future discharges.

6. Don Mechling must, at all times, maintain appropriate types and sufficient quantities of materials onsite to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the U.S. and/or State.

7. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation must be subject to any remedies, penalties, process or sanctions as provided for under State law. For purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

8. In response to a suspected violation of any condition of this certification, the Regional Board may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring 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.

B. PROJECT CONDITIONS:

1. Prior to the start of the project, and annually thereafter, Don Mechling must educate all personnel on the requirements in this certification, pollution prevention measures, spill response, and Best Management Practices implementation and maintenance.

2. Don Mechling 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.

3. Don Mechling must comply with the requirements of State Water Resources Control Board Water Quality Order No. 99-08-DWQ, the NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

4. Don Mechling must notify the Regional Board in writing at least **5 days** prior to the actual commencement of construction activities.

5. 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. BEST MANAGEMENT PRACTICES:

1. Best Management Practices (BMPs) as described in Water Quality Technical Report for City of Poway TTM No. 06-04, prepared by Bill Yen & Associates, Inc., and dated June 16, 2008, must be implemented.

2. The following proposed construction BMPs must be implemented, but not be limited to:

   a. Silt fencing.
   b. Fiber rolls.
   c. Street sweeping and vacuuming.
   d. Strom drain inlet protection.
   e. Desilting basin.
   f. Gravel bag berm.
   g. Sandbag barrier.
   h. Material delivery and storage.

i. Stockpile management.
j. Solid waste management.
k. Stabilized construction entrance/exit.
l. Dewatering operations.
m. Vehicle and equipment maintenance.
n. Erosion control mats and spray-on applications.
o. Spill control and prevention.
p. Concrete waste management.
q. Water conservation practices.
r. *Paving and grinding operations.*
s. Permanent revegetation of all disturbed uncovered areas.

3. The following post-construction, non-structural and structural BMPs must be implemented, but not be limited to:

   a. Minimized street width.
   b. No sidewalks.
   c. Efficient landscape irrigation.
   d. Homeowner education on water pollution prevention.
   e. *Stenciled storm drain inlets with no dumping/discharge warning message.*
   f. Nine vegetated swales.
   g. One ADS (brand) Water Quality Unit (removes sediment, trash, oil & grease).
   h. Two - 97.5-feet long x 11-feet diameter ADS (brand) underground detention pipes for detention of storm water volume.

4. 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.

5. Don Mechling must acquire a performance bond to ensure implementation of structural Best Management Practices (BMPs) as proposed in Water Quality Technical Report for City of Poway TTM No. 06-04, prepared by Bill Yen & Associates, Inc., and dated June 16, 2008. Evidence of the acquisition of a performance bond must be submitted to the Regional Board **5 days prior** to commencement of construction.

6. In addition to the BMPs described in the Water Quality Technical Report for City of Poway TTM No. 06-04, prepared by Bill Yen & Associates, Inc., and dated June 16, 2008 and referenced in Appendix I in support of the application, the structural 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 85th 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 85th 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 85th 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 85th 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 85th percentile hourly rainfall intensity multiplied by a factor of two.

7. *Post-construction BMPs must be installed and functional prior to* occupancy and/or planned use of development areas.

8. Don Mechling or designated party must inspect and maintain structural BMPs per the manufacturers' specifications and accepted industry practices as specified in Attachment 5.

9. A BMPs maintenance log must kept on site and be available for review by germane agencies. Failure to maintain and keep a BMPs maintenance log will a violation of the Water Quality Certification 08C-016.

10. Prior to project construction, Don Mechling must submit to the Regional Board a letter accepting full responsibility for the inspection and maintenance of all BMPs installed for all roads and driveways that are

required to be improved as part of the project. Alternatively, Don Mechling may submit a letter from the City of Poway documenting that the City of Poway accepts full responsibility for the inspection and maintenance of all BMPs installed for all roads and driveways that are required to be improved as part of the project.

11. Don Mechling, assumes responsibility for the inspection and maintenance of all post-construction structural BMPs until such responsibility is legally transferred to another entity.

12. At the time maintenance responsibility for post-construction BMPs is legally transferred, Don Mechling must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer specifications and accepted industry practices.

13. At the time maintenance responsibility for post-construction BMPs is legally transferred, Don Mechling must submit to the Regional Board a copy of such documentation.

D. MITIGATION

1. Permanent impacts must not exceed 0.02-acre (123-linear feet) of unvegetated Waters of the U.S. and State. Impacts are limited to grading and the placement of the ephemeral streams in culverts.

2. Proposed mitigation consists of the onsite creation of three ephemeral streams totaling 270-linear feet and 0.037-acre and is described within the Mitigation Plan for Ephemeral Drainage Creation for Mechling Subdivision RWQCB 08C-016, prepared by RC Biological Consulting, Inc., no date, received on December 12, 2008. The Mitigation Plan for Ephemeral Drainage Creation for Mechling Subdivision RWQCB 08C-016, prepared by RC Biological Consulting, Inc., no date, received on December 12, 2008, must be implemented as proposed.

3. Don Mechling must notify the Regional Board in writing at least **5 days** prior to the actual commencement of mitigation installation, and **5 days** after completion of mitigation installation.

4. Mitigation Site Preparation: Don Mechling must salvage leaf litter, coarse woody debris, and upper soil horizons from impacted jurisdictional water sites that are free of invasive exotic species for use in on-site mitigation areas.

5. Don Mechling must also salvage large cuttings from appropriate, native tree species if they exist at the impact site and use them as live pole plantings at the mitigation site.

6. Within **90 days** of the issuance of this Certification, Don Mechling must provide the Regional Board a draft preservation mechanism (e.g. deed restriction, conservation easement, etc.) that will protect all mitigation areas and their buffers in perpetuity. Within one year of the issuance of this Certification, Don Mechling must submit proof of a completed preservation mechanism that will protect all mitigation areas and their buffers in perpetuity. Construction of the site must not be initiated until a completed preservation mechanism is received. The conservation easement, deed restriction, or other legal limitation on the mitigation property must be adequate to demonstrate that the site will be maintained without future development or encroachment on the site which could otherwise reduce the functions and values of the site for the variety of beneficial uses of waters of the U.S. that it supports. The legal limitation must prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development, and any other infrastructure development that would not maintain or enhance the wetland and streambed functions and values of the site. The preservation mechanism must clearly prohibit activities that would result in soil disturbance or vegetation removal, other than the removal of non-native vegetation. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, maintenance roads, and areas of maintained landscaping for recreation.

7. Don Mechling must submit a report (including topography maps and planting locations) to the Regional Board within **90 days** of completion of mitigation site preparation and planting, describing as-built status of the mitigation project.

8. The construction of proposed mitigation must be concurrent with project grading and completed no later than **9 months** following the initial discharge of dredge or fill material into on-site waters. Delays in implementing mitigation must be compensated for by an increased mitigation implementation of 10% of the cumulative compensatory mitigation for each month of delay.

9. The mitigation site shall be designed and constructed to meet the following conditions:

    a. Most of the channel through the mitigation site is characterized by equilibrium conditions, with no evidence of severe aggradation or degradation.

    b. As viewed along cross-sections, the channel and buffer have a variety of slopes, or elevations, that are characterized by different moisture gradients. Each sub-slope contains physical patch types or features that contribute to irregularity in height, edges, or surface and to complex topography overall.

c. The mitigation site has a well-developed plant community characterized by a high degree of horizontal and vertical interspersion among plant zones and layers.

10. Throughout the mitigation monitoring program mitigation areas must be maintained free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual exotic plant species must not occupy more than 5 percent of the onsite or offsite mitigation areas.

11. Regional Board acceptance of the final mitigation plan applies only to the site and plan that mitigates for Mechling Subdivision project and must not be construed as approval of the mitigation site or plan for use by other current or future projects.

12. Any monitoring and maintenance activities that do not contribute to the success of the mitigation site and enhancement of beneficial uses and ecological functions and services are prohibited. Maintenance activities are limited to the removal of trash and debris, removal of exotic plant species, replacement of dead native plant species and remedial measures deemed necessary for the success of the restoration program.

13. If at any time during the implementation and establishment of the mitigation area(s), and prior to verification of meeting success criteria, a catastrophic natural event (e.g., fire, flood) occurs and impacts the mitigation area, Don Mechling is responsible for repair and replanting of the damaged area(s).

14. Mitigation monitoring reports must be submitted annually until mitigation has been deemed successful by the Regional Board. Annual monitoring reports must be submitted prior to **December 1** of each year. Monitoring reports must include, but not be limited to, the following:

    a) Names, qualifications, and affiliations of the persons contributing to the report.

    b) Tables presenting the raw data collected in the field as well as analyses of the physical and biological data, including at a minimum.

    c) Topographic complexity characteristics at each mitigation site.

    d) Upstream and downstream habitat and hydrologic connectivity.

    e) Source of hydrology.

f) Width of native vegetation buffer around the entire mitigation site.

g) Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results.

h) Photodocumentation from established reference points.

i) A Survey report documenting boundaries of mitigation area.

j) Other items specified in the Conceptual Wetland Mitigation Plan, Don Mechling, Storm Water Conveyance System Maintenance Project (Merkel & Associates, September 16, 2008).

15. Responsible Party Updates: Don Mechling must provide the name and contact information of any third party accepting responsibility for implementing the mitigation requirements of this Certification. The notification must be submitted to the Regional Board within **30 days** of the transfer of responsibility. The notification must include a signed statement from the new party demonstrating acceptance and understanding of the responsibility to meet the mitigation conditions and applicable requirements of the Certification.

16. For the purpose of determining mitigation credit for the removal of exotic/invasive plant species, only the actual area occupied by exotic/invasive plant species must be quantified to comply with mitigation requirements.

17. For the purposes of this Certification:

(a) Establishment is defined as the creation of vegetated or unvegetated waters of the U.S./State where the resource has never previously existed (e.g. conversion of nonnative grassland to a freshwater marsh).

(b) Restoration is divided into two activities, re-establishment and rehabilitation.

(1) Re-establishment is defined as the return of natural/historic functions to a site where vegetated or unvegetated waters of the U.S./State previously existed (e.g., removal of fill material to restore a drainage).

(2) Rehabilitation is defined as the improvement of the general suite of functions of degraded vegetated or unvegetated waters of the U.S./State (e.g., removal of a heavy infestation or monoculture

of exotic plant species from jurisdictional areas and replacing with native species).

(c) Enhancement is defined as the improvement to one or two functions of existing vegetated or unvegetated waters of the U.S./State (e.g., removal of small patches of exotic plant species from an area containing predominantly natural plant species).

(d) Preservation is defined as the acquisition and legal protection from future impacts in perpetuity of existing vegetated or unvegetated waters of the U.S./State (e.g., conservation easement).

E. P RE-PROJECT AND POST-PROJECT PHOTO DOCUMENTATION PROCEDURE:

Don Mechling must conduct photo documentation of project areas before and after construction activities. *Photo-documentation must be modeled after the* State Water Resources Control Board Standard Operating Procedure 4.2.1.4: Stream Photo Documentation Procedure, included as Attachment 6. In addition, photo documentation must include Global Positioning System (GPS) coordinates for each of the photo points referenced. Don Mechling must submit this information in a photo documentation report to the Regional Board no later than **30 days** after project completion at each site. The report must include a compact disc that contains digital files of all the photos (jpeg file type or similar).

F. GEOGRAPHIC INFORMATION SYSTEM REPORTING:

Don Mechling must submit Geographic Information System (GIS) shape files of the impact and mitigation areas within **30 days** of project impacts and the mitigation area within **30 days** of mitigation installation. All impact and mitigation areas shapefiles must be polygons. Two GPS readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.

G. REPORTING:

1. All information requested in this Certification is pursuant to California Water Code (CWC) section 13267. Civil liability may be administratively imposed by the Regional Board for failure to furnish requested information pursuant to CWC section 13268.

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. Don Mechling must submit reports required under this certification, or other information required by the Regional Board, to:

    Executive Officer
    California Regional Water Quality Control Board
    San Diego Region
    Attn: 401 Certification No. 08C-016
    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 within 24 hours.	Within 24 hours.
Impacts to Waters	B.3. Notify before impacting Waters of U.S. and State.	5 Days prior to impacts.
BMPs	C.6. Submit evidence of performance bond.	5 Days prior to construction.
Mitigation	D.3. Notify prior to mitigation commencement and completion.	5 Days prior to installation & 5 days after completion.
Mitigation	D.6. Provide draft and final preservation mechanisms.	Within 90 days and one year of issuance of Certification.
Mitigation	D.7. Provide mitigation as-built mitigation report.	Within 90 days of completion of mitigation site installation.
Mitigation	D.14. Provide annual mitigation monitoring reports.	Prior to December 1 of each year after installation of mitigation site.
Mitigation	D.15. Provide contact information for third party implementation of mitigation requirements.	Within 30 days of transfer of responsibility.
Photo Documentation	E. Provide photo documentation of project areas.	Within 30 days of project completion at each site.
GIS shapefiles	F. Submit GIS shapefiles of impacts and mitigation areas.	30 Days after impacts and 30 days after mitigation installation.

PUBLIC NOTIFICATION OF PROJECT APPLICATION:

On May 27, 2008 receipt of the project application was posted on the Regional Board web site to serve as appropriate notification to the public.

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 Mechling Subdivision (Certification No. 08C-016) 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

JOHN H. ROBERTUS
Executive Officer
Regional Water Quality Control Board

9/15/2009
Date

Attachments:

1. Project Information
2. Distribution List
3. Location Map
4. Site Maps
5. BMP Maintenance
6. Stream Photodocumentation Procedure

ATTACHMENT 1
PROJECT INFORMATION

Applicant:	Mr. Don Mechling Mechling Construction 17005 Dos Amigos Way Poway, CA 92064 Telephone: 858-248-0078 and 858-748-5511 Facsimile: None disclosed on application Email: mechconst@cox.net
Applicant Representatives:	Mr. Andre Drummond RC Biological Consulting, Inc. 4215 Spring Street Suite 321 La Mesa, CA 91941 Telephone: 619-463-1072 Facsimile: 619-463-0859 Email: Andrew@rcbio.com
Project Name:	Mechling Subdivision (Certification 08C-016).
Project Location:	The project is located at 14633 and 14635 High Valley Road, City of Poway, north-central San Diego County. Assessor's parcel numbers 321-030-31, 321-030-32. Latitude 32.99027 north, longitude -117.01702 east.
Type of Project:	Single family housing subdivision.
Project Description:	The proposed project is the subdivision of 22-acres into ten residential lots ranging in size from 2.0 to 2.7 acres. Three ephemeral streams will be impacted by grading and the installation of five culverts for future driveways.
Project Purpose:	The purpose of the project is to provide additional estate housing in the City of Poway.
Federal Agency/Permit:	U.S. Army Corps of Engineers §404, Nationwide Permit 39, Mr. Robert Smith.

Other Required Regulatory Approvals:	California Department of Fish and Game Streambed Alteration Agreement, Ms. Kelly Fisher.
California Environmental Quality Act (CEQA) Compliance:	City of Poway Mitigated Negative Declaration, Environmental Assessment and Tentative Tract Map (TTM) 06-04, February 20, 2007.
Receiving Waters:	Three - first order, unnamed ephemeral streams tributary to other ephemeral streams that drain to Rattlesnake Creek. Penasquitos hydrologic unit, Poway hydrologic area (906.20).

Affected Waters of the United States:

Temporary:

Wetland	None
Streambed	None
Lake	None
Ocean	None

Permanent:

Wetland an	
Streambed	0.02-acre/123-linear feet
Lake	None
Ocean	None

Affected Waters of the State:

Temporary:

Wetland	None
Streambed	None
Lake	None
Ocean	None

Permanent:

Wetland	None
Streambed	0.02-acre/123-linear ft.
Lake	None
Ocean	None

Dredge Volume:	None
Related Projects Implemented/to be Implemented by the Applicant(s):	None disclosed.
Compensatory Mitigation:	Mitigation proposed is described within the Mitigation Plan for Ephemeral Drainage Creation for Mechling Subdivision RWQCB 08C-016, prepared by RC Biological Consulting, Inc., no date, received on December 12, 2008. Proposed mitigation is the onsite creation of three ephemeral streams totaling 270-linear feet and 0.037-acre.
Best Management Practices (BMPs):	BMPs are described in the Water Quality Technical Report for City of Poway TTM No. 06-04, prepared by Bill Yen & Associates, Inc., and dated June 16, 2008: Proposed BMPs include: *Construction* -

1. Silt fencing
2. Fiber rolls
3. Street sweeping and vacuuming
4. Strom drain inlet protection
5. Desilting basin
6. Gravel bag berm
7. Sandbag barrier
8. Material delivery and storage
9. Stockpile management
10. Solid waste management
11. Stabilized construction entrance/exit
12. Dewatering operations
13. Vehicle and equipment maintenance
14. Erosion control mats and spray-on applications
15. Spill control and prevention
16. Concrete waste management
17. Water conservation practices
18. Paving and grinding operations

19. Permanent revegetation of all disturbed uncovered areas

Post-construction –

1. Minimized street width
2. No sidewalks
3. Efficient landscape irrigation
4. Homeowner education
5. Stenciled storm drain inlets with warning message
6. Nine vegetated swales
7. One ADS (brand) Water Quality Unit (removes sediment, trash, oil & grease)
8. Two - 97.5-feet long x 11-feet diameter ADS (brand) underground detention pipes for detention of storm water volume.

Public Notice: March 27, 2008 – Regional Board website

Fees: ✓Total Due: $1115.00
Total Paid: $1115.00 (Check No. 16268)

CIWQS: Regulatory Measure: 342102
✓ Place: 714527
Party: 273412

ATTACHMENT 2
DISTRIBUTION LIST

Donald L. Mechling
Mechling Construction Company, Inc.
14633 High Valley Road
Poway, CA 92064

Mr. Andre Drummond
RC Biological Consulting, Inc.
4215 Spring Street
Suite 321
La Mesa, CA 91941

Mr. Robert Smith
U.S. Army Corps of Engineers
San Diego Field Office
6010 Hidden Valley Road
Suite 105
Carlsbad, CA 92011

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

Mr. Eric Raffini
Wetlands Regulatory Office
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105
R9-WTR8-Mailbox@epa.gov

State Water Resources Control Board
Division of Water Quality
401 Water Quality Certification and Wetlands Unit
P.O. Box 100
Sacramento, CA 95812-0100
Stateboard401@waterboards.ca.gov

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

ATTACHMENT 3

Location Map

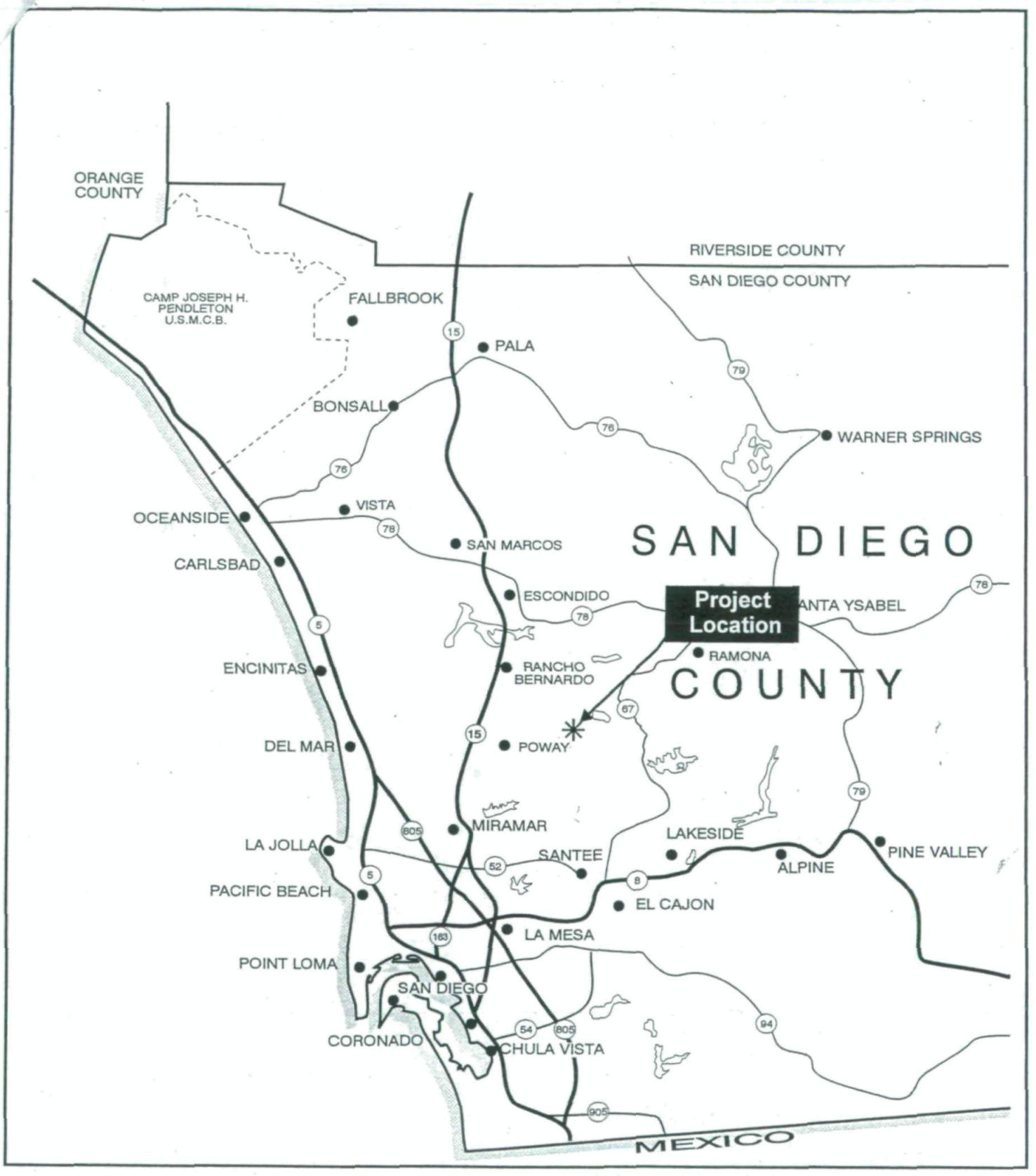
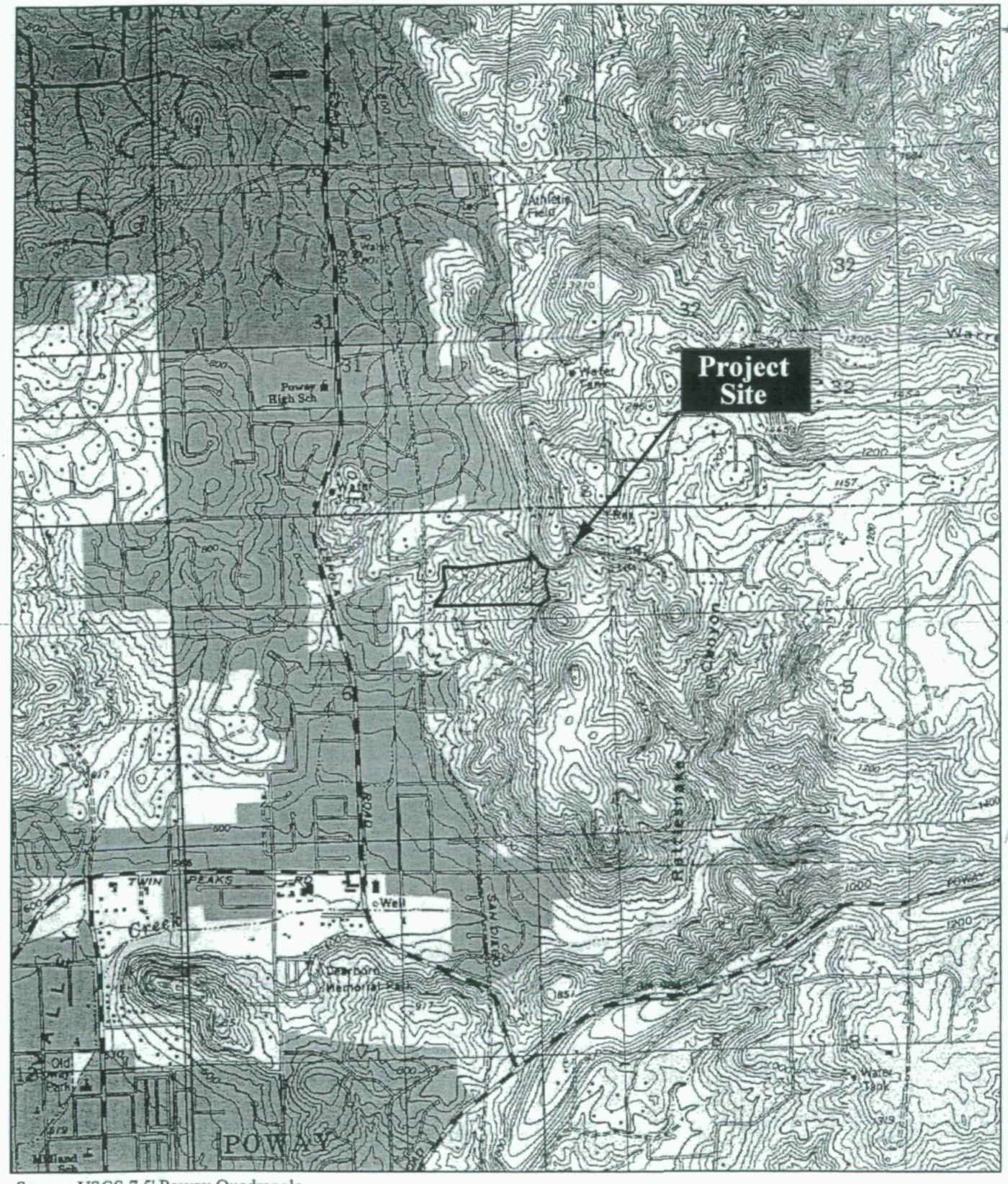


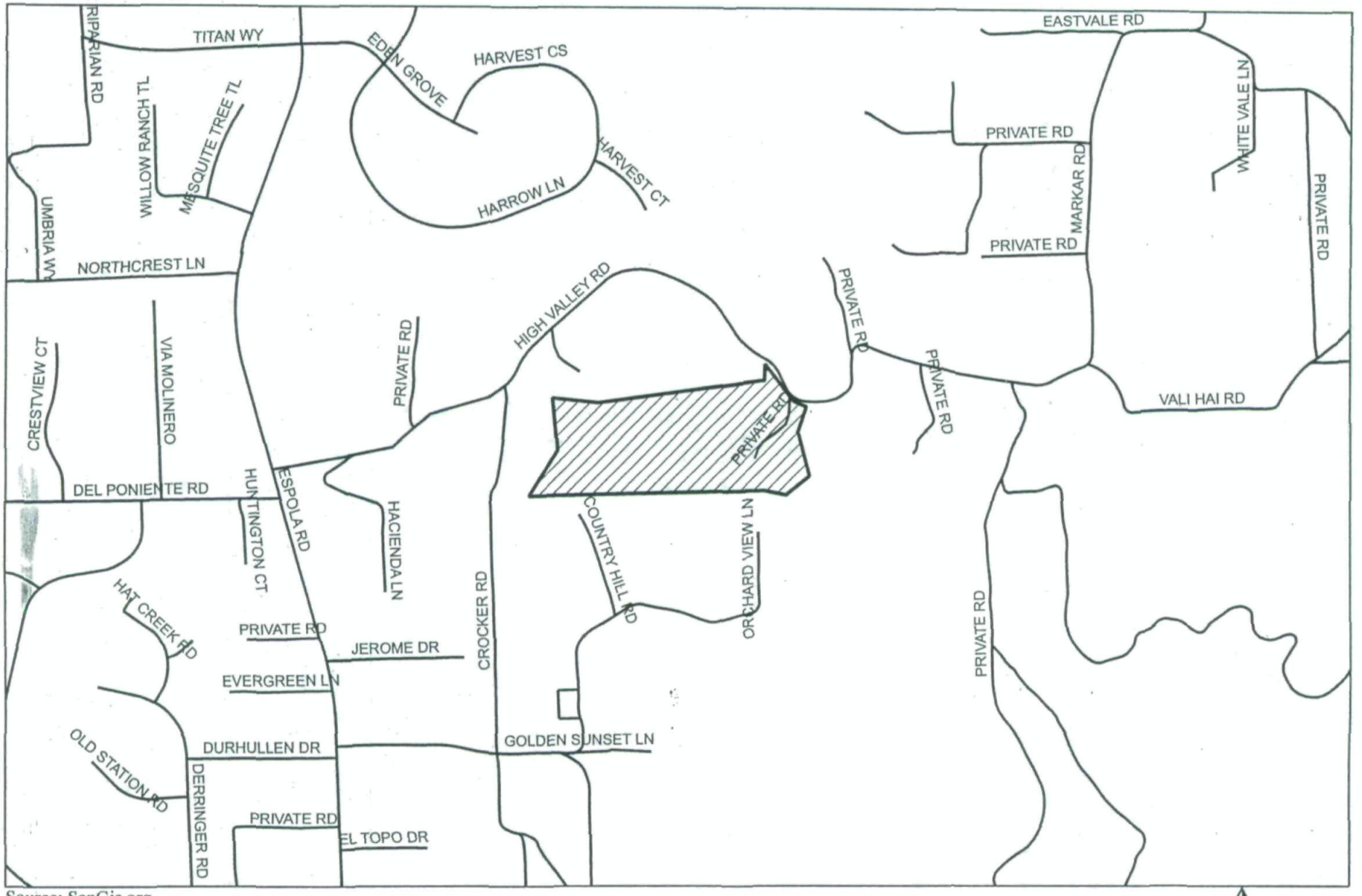
Figure 1
Regional Location Map



Source: USGS 7.5' Poway Quadrangle

Figure 2
USGS Map
Mechling Property

Feet
0 1,000 2,000

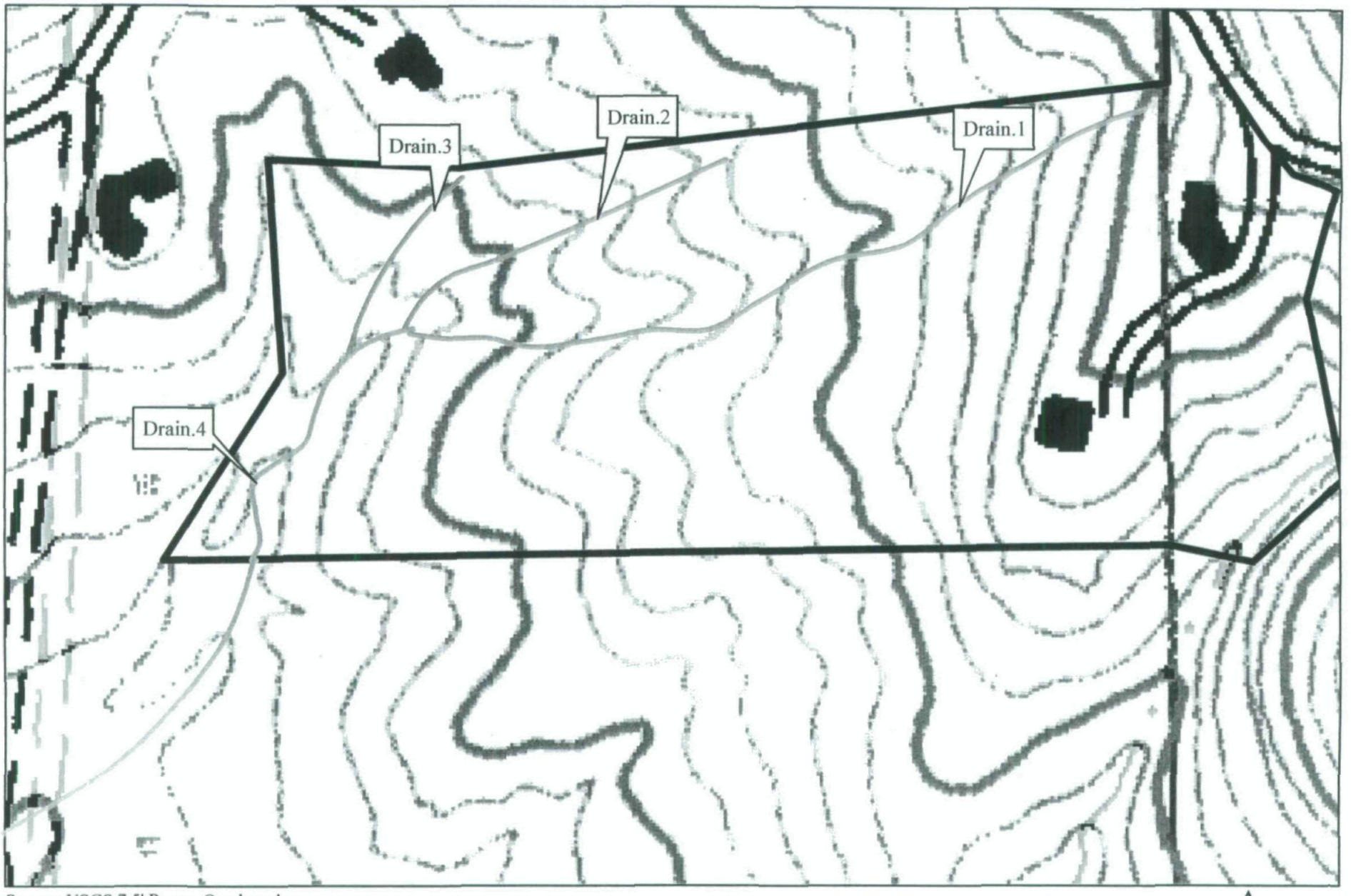


Source: SanGis.org

Figure 3
Project Location
Mechling Property

ATTACHMENT 4

Site Maps



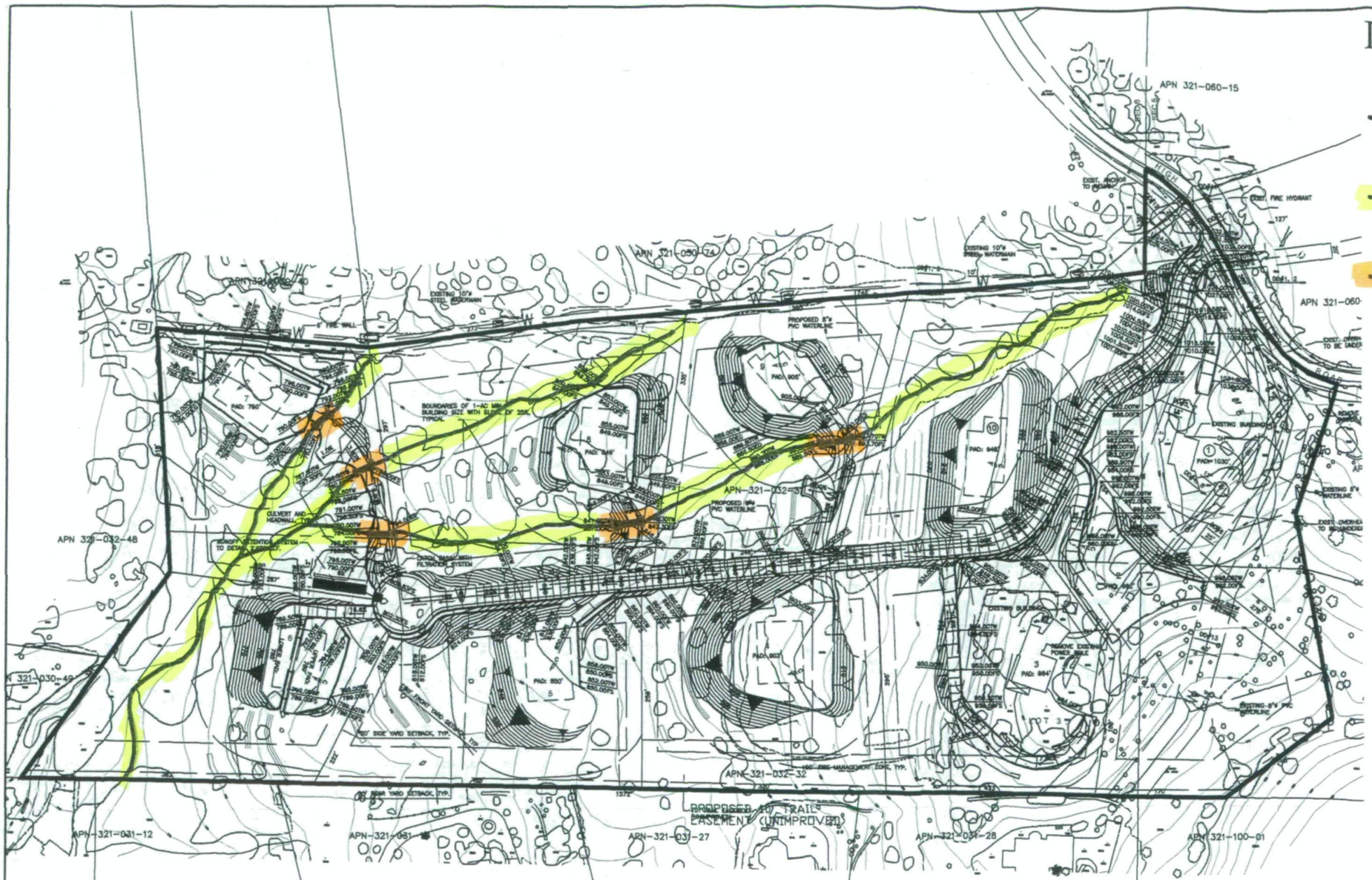
Source: USGS 7.5' Poway Quadrangle

1st Order Stream
2nd Order Stream

Mechling Project
Drainage Key

N

0 100 200 Feet



Legend:

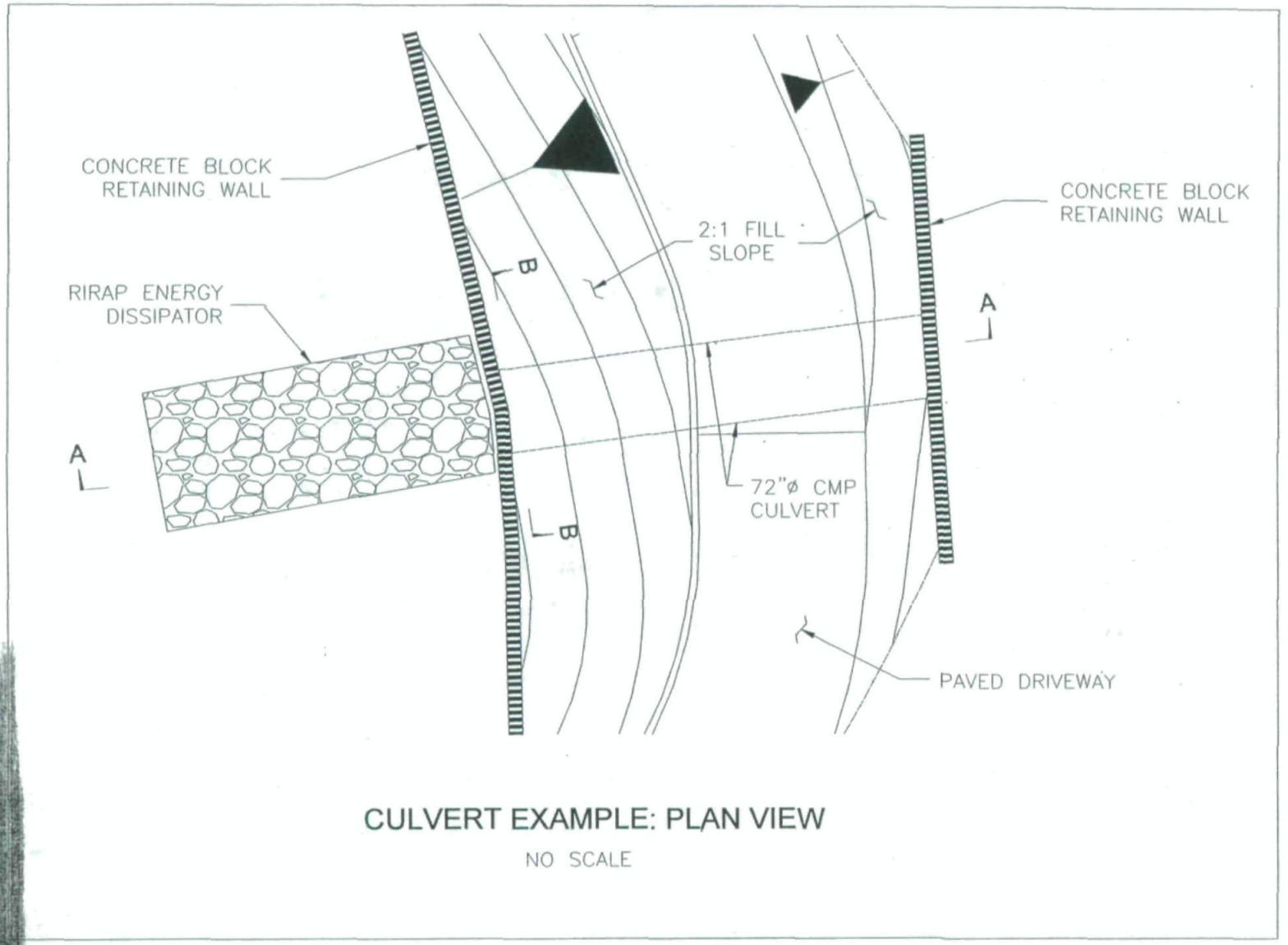
- Project Boundary (22 acres)
- ACOE, RWQCB, and CDFG Jurisdictional Drainage
- Limits of Impacts (0.02 acres, 123 linear feet)

Scale 1"=150'

RC
Biological Consulting, Inc.

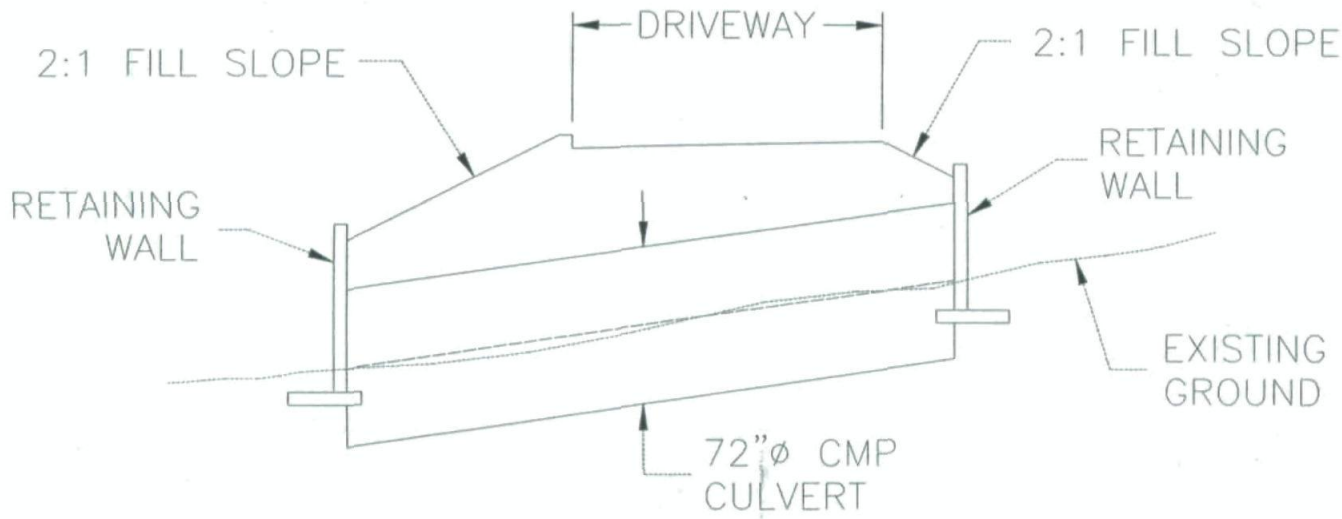
Culvert Impacts Map for the Mechling Property

Figure 4



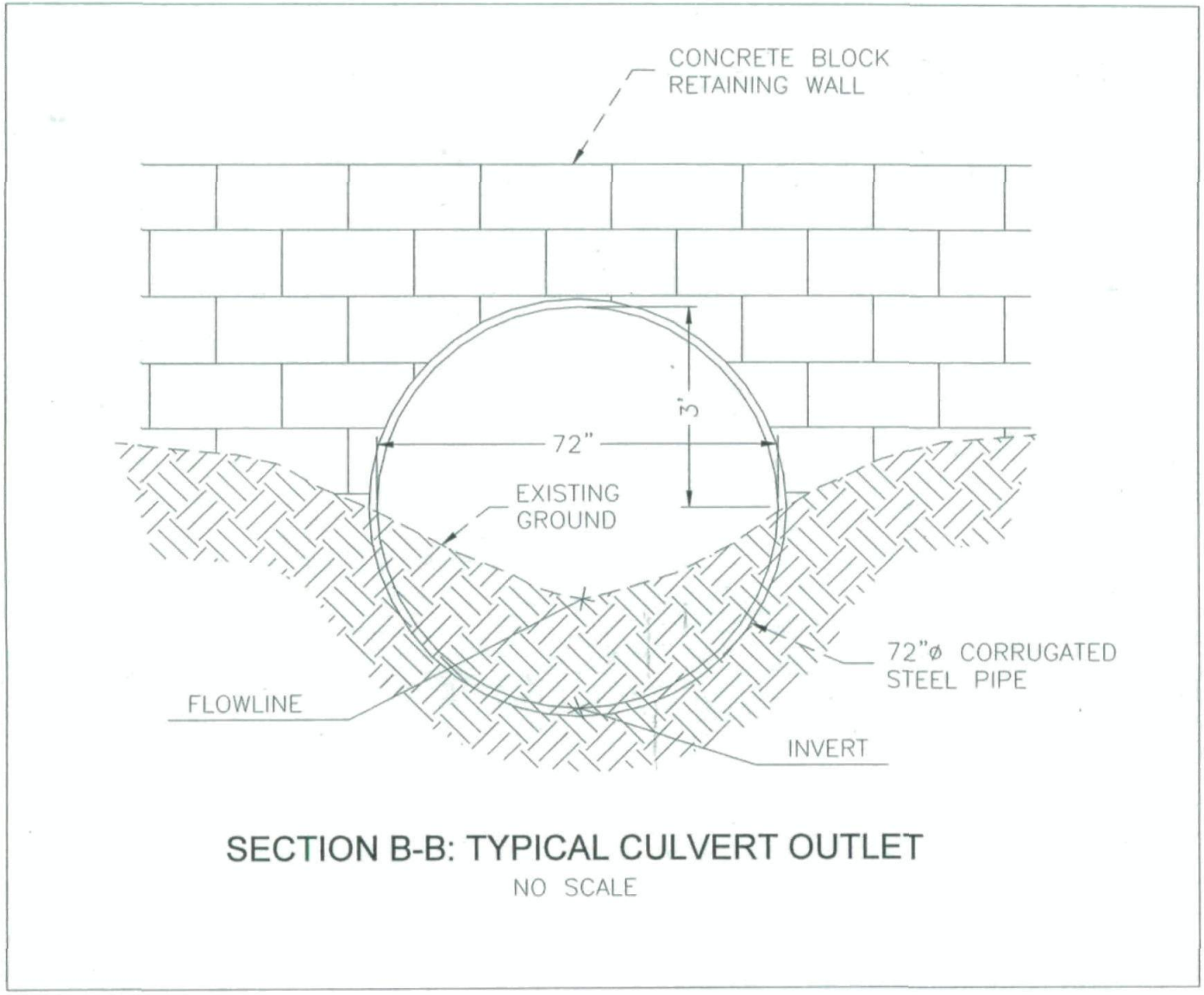
CULVERT EXAMPLE: PLAN VIEW

NO SCALE



SECTION A-A: TYPICAL CULVERT SECTION

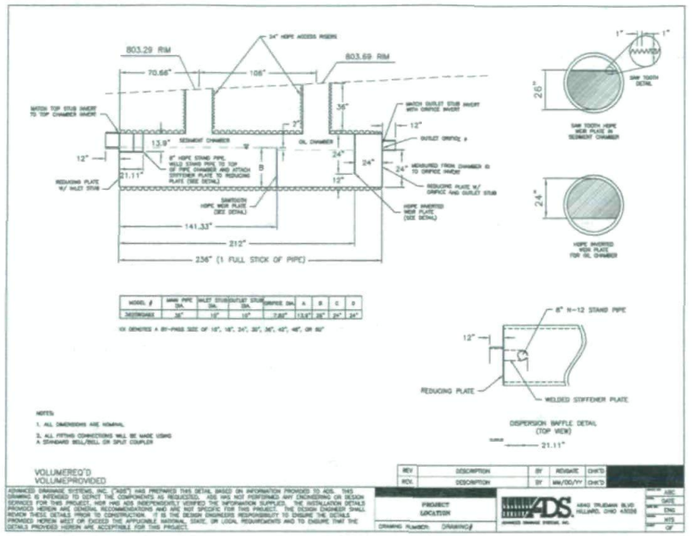
NO SCALE



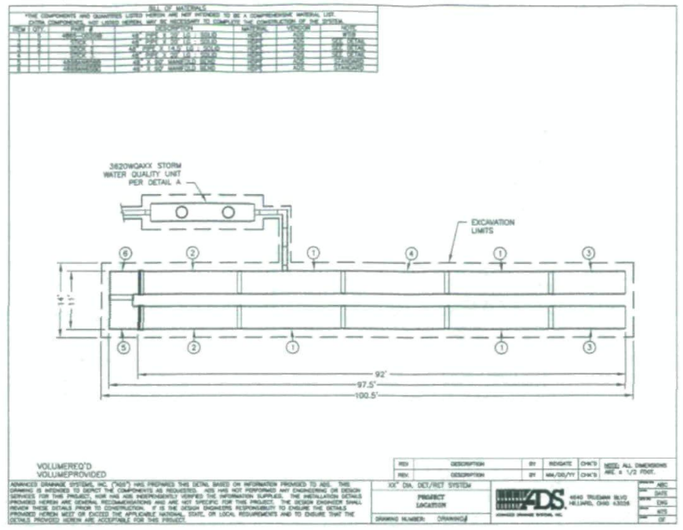
SECTION B-B: TYPICAL CULVERT OUTLET

NO SCALE

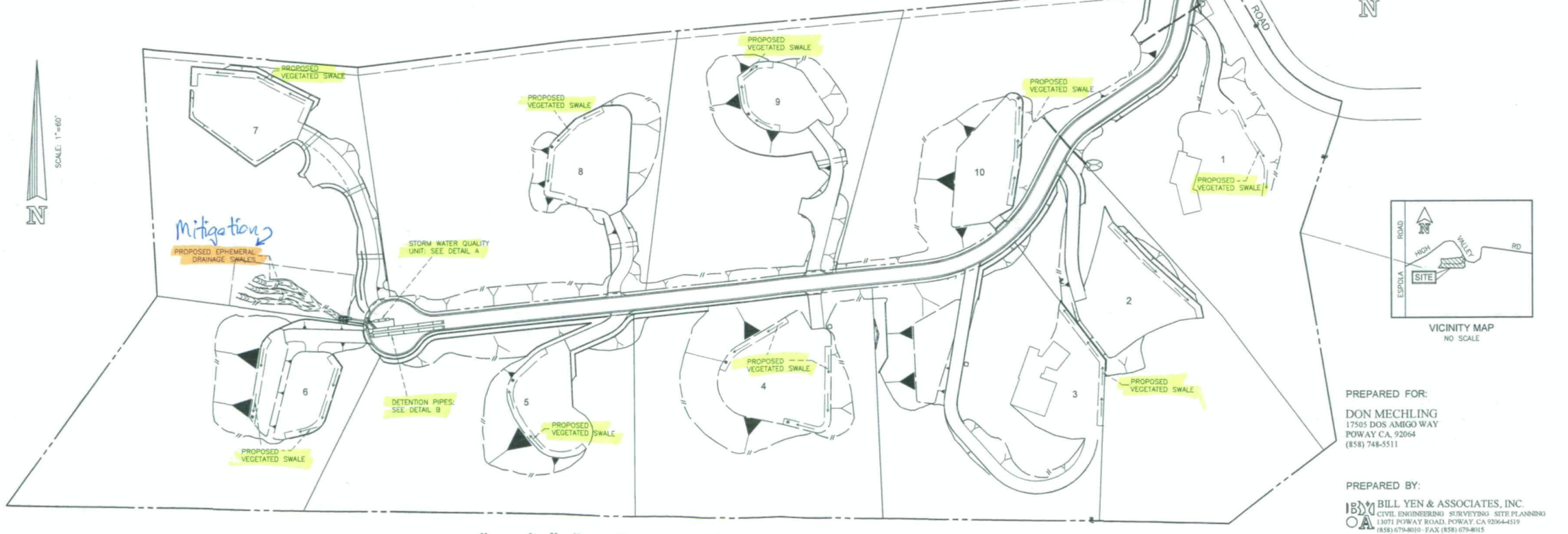
PROJECT BMP MAP
MECHLING TENTATIVE MAP



DETAIL A
NO SCALE



DETAIL B
NO SCALE



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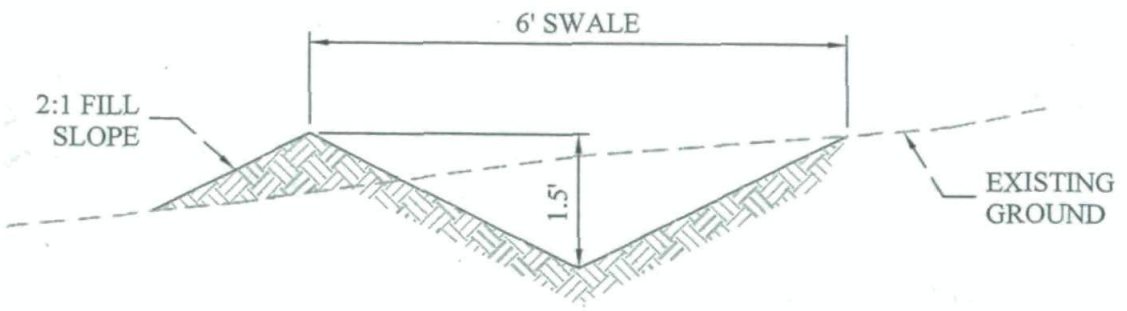


SECTION L-L: EPHEMERAL DRAINAGE

NO SCALE

Figure 4. Cross Section of Proposed Ephemeral Drainage

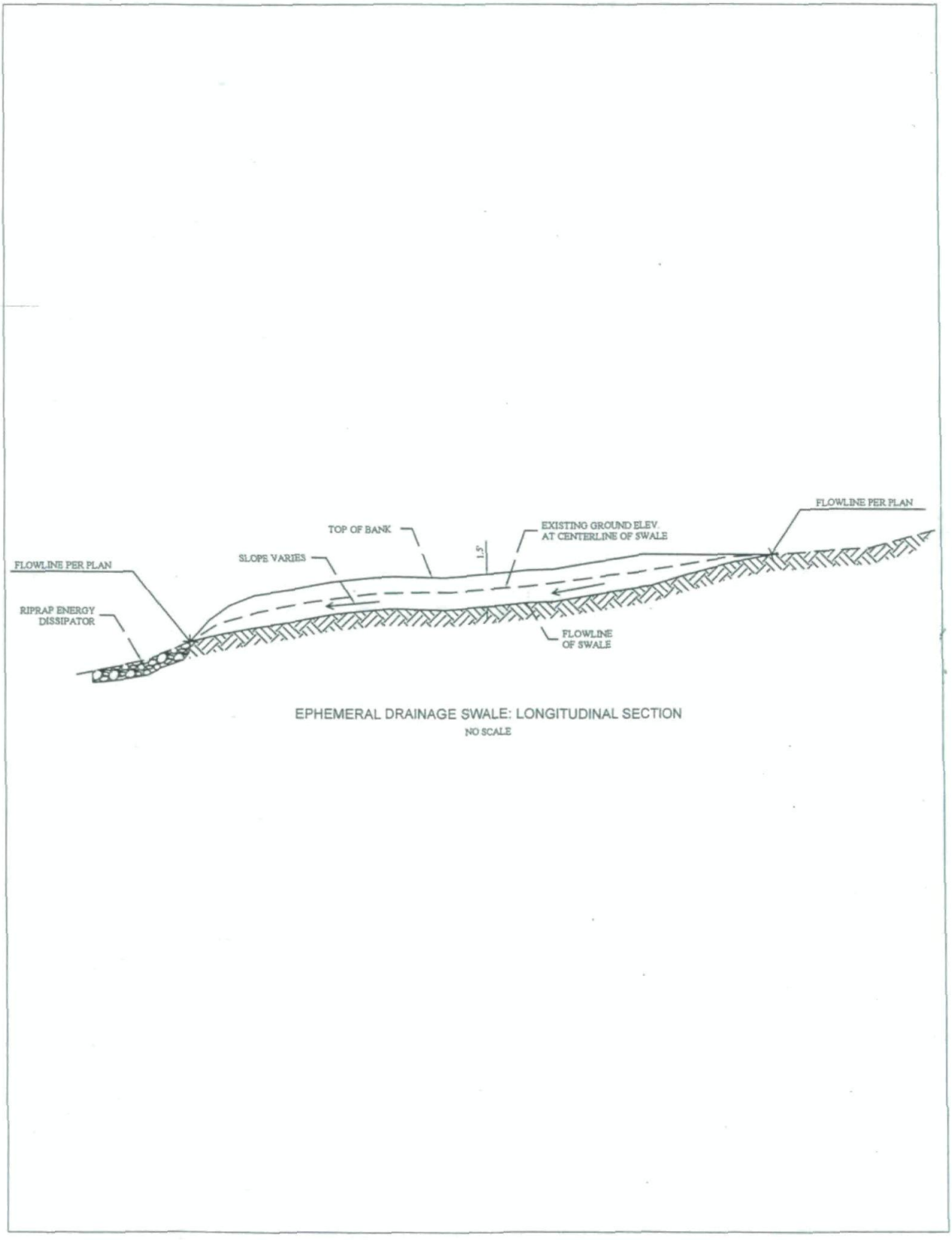


Figure 5. Longitudinal Section of Ephmeral Drainage

ATTACHMENT 5

POST-CONSTRUCTION BMPS MAINTENANCE

establishment. Where runoff diversion is not possible, cover graded and seeded areas with suitable erosion control materials.

Maintenance

The useful life of a vegetated swale system is directly proportional to its maintenance frequency. If properly designed and regularly maintained, vegetated swales can last indefinitely. The maintenance objectives for vegetated swale systems include keeping up the hydraulic and removal efficiency of the channel and maintaining a dense, healthy grass cover.

Maintenance activities should include periodic mowing (with grass never cut shorter than the design flow depth), weed control, watering during drought conditions, reseeding of bare areas, and clearing of debris and blockages. Cuttings should be removed from the channel and disposed in a local composting facility. Accumulated sediment should also be removed manually to avoid concentrated flows in the swale. The application of fertilizers and pesticides should be minimal.

Another aspect of a good maintenance plan is repairing damaged areas within a channel. For example, if the channel develops ruts or holes, it should be repaired utilizing a suitable soil that is properly tamped and seeded. The grass cover should be thick; if it is not, reseed as necessary. Any standing water removed during the maintenance operation must be disposed to a sanitary sewer at an approved discharge location. Residuals (e.g., silt, grass cuttings) must be disposed in accordance with local or State requirements. Maintenance of grassed swales mostly involves maintenance of the grass or wetland plant cover. Typical maintenance activities are summarized below:

- Inspect swales at least twice annually for erosion, damage to vegetation, and sediment and debris accumulation preferably at the end of the wet season to schedule summer maintenance and before major fall runoff to be sure the swale is ready for winter. However, additional inspection after periods of heavy runoff is desirable. The swale should be checked for debris and litter, and areas of sediment accumulation.
- Grass height and mowing frequency may not have a large impact on pollutant removal. Consequently, mowing may only be necessary once or twice a year for safety or aesthetics or to suppress weeds and woody vegetation.
- Trash tends to accumulate in swale areas, particularly along highways. The need for litter removal is determined through periodic inspection, but litter should always be removed prior to mowing.
- Sediment accumulating near culverts and in channels should be removed when it builds up to 75 mm (3 in.) at any spot, or covers vegetation.
- Regularly inspect swales for pools of standing water. Swales can become a nuisance due to mosquito breeding in standing water if obstructions develop (e.g. debris accumulation, invasive vegetation) and/or if proper drainage slopes are not implemented and maintained.

INSTALLATION GUIDE

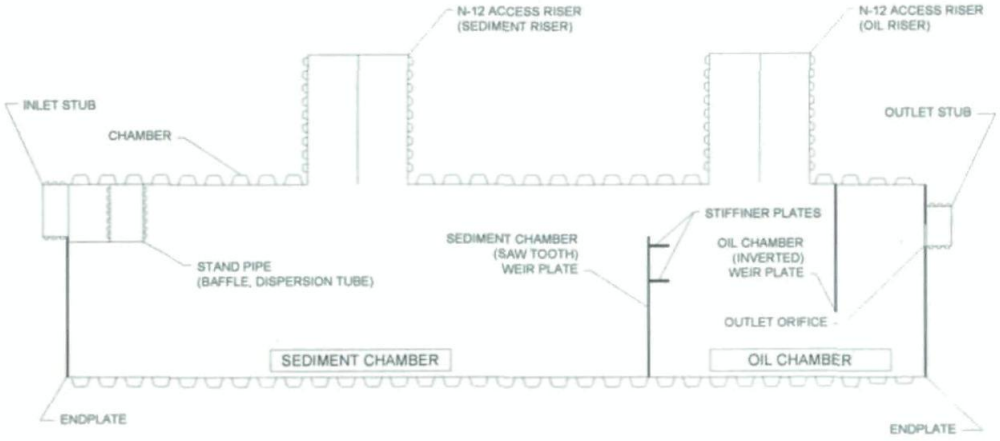
Storm Water Quality Units – Inspection & Maintenance

IG 2.02
October 2008

Description / Basic Function

The ADS Water Quality Unit harnesses the proven concepts utilized in municipal sewage treatment systems and transforms it into a compact Water Quality Unit.

The unit is ideal for storm water applications including gas stations and fast food restaurants; this system gives you a highly effective BMP solution to meet EPA requirements.



Risers

The ADS Water Quality Unit consists of two risers. A 24" riser is centered over Sediment and Oil Chambers. These two risers provide access to the individual chambers of the Storm Water Quality Unit for maintenance and inspection. Entry into the WQU should be considered an OSHA confined space and appropriate guidelines should be followed.

Maintenance Overview

The purpose of maintaining a clean and obstruction free Water Quality Unit is to ensure the system performs its intended function. A build up of debris in excess of the design storage volume could reduce the efficiency of the system.

A company specializing in such activities should perform inspection and maintenance of the Water Quality Unit.

Inspection / Maintenance Frequency for the ADS Water Quality Unit

- Inspected quarterly (4 times a year) and after major storm events.
- Cleaned (pumped and pressure washed) a minimum of once a calendar year
- Site or surrounding site conditions may require more inspections and maintenance

Inspection

An inspection should be performed when the system is installed. This allows the owner to measure the invert prior to accumulation of sediment. This survey will allow the monitoring of sediment build-up without entering the system, thereby eliminating the need for confined space entry. Documentation of pre-inspection data should be captured.

Procedures

1. In the By-Pass Structure inspect for blockage. Inspect the diversion structure and weir for damage and sediment buildup. Any damage should be repaired and sediment should be removed as required.
2. On the Water Quality Unit, locate the risers. The risers will be 24" in diameter.
3. Remove the lid of each riser. It is recommend that this be done one at a time so an open riser is not left exposed during inspection or maintenance of the other risers.
4. In the 24" riser over the Sediment Chamber, inspect the amount of floatable debris. Then measure the sediment buildup with a measuring device such as a Sludge Judge® Also inspect that the inlet pipe does not have any blockage. Blockage inspection is better suited after unit is vacuumed. Any confined space entry would be done through this riser and OSHA requirements must be followed.
5. In the 24" riser over the Oil Chamber, measure / inspect the oil depth.
6. Inspect structure and components for any damage.
7. Replace all riser lids.

Maintenance

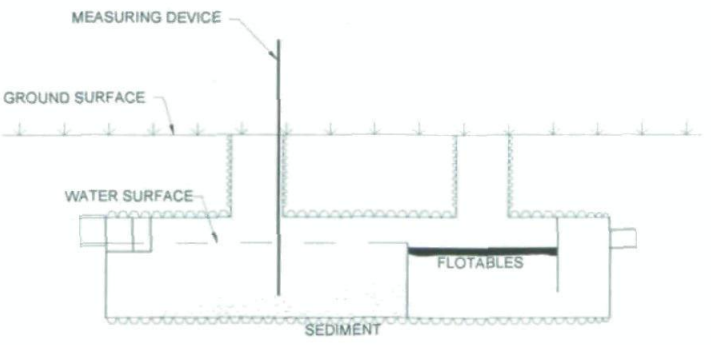
Cleaning should be performed if ***sediment volume has reduced the storage area by 20% or if the depth of sediment has reached approximately 25% of the diameter of the structure (See Table 1 for cleanout depth information).*** Furthermore, the system may need cleaning in the event a spill of a foreign substance enters the unit.

Inspection Procedures (Measuring Sediment Depth)

1. Lower measuring device into sediment riser of unit.
2. Read measurement at ground surface.
3. Subtract the current measurement reading from the distance between the ground surface to the invert of the SWQU (obtained when unit was first installed or is clean).
4. Compare calculated difference to the respective value in Table 1. If resulting value is equal to or greater than the respective value on the Table 1, maintenance shall be performed. The figure below illustrates the inspection procedure.

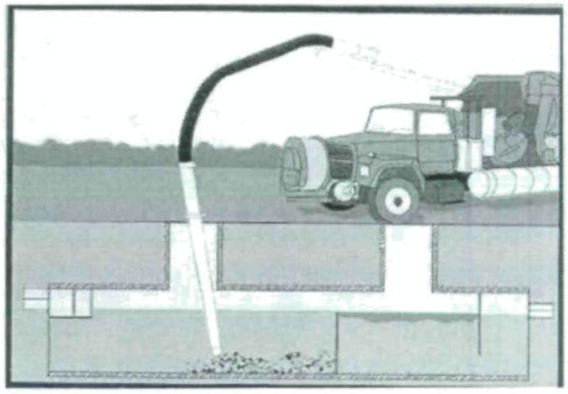
Table 1
Sediment Depth at Cleanout

Model Number	Diameter (in)	Sediment Depth (in)
3620WQ	36	9
3640WQ	36	9
4220WQ	42	10
4240WQ	42	10
4820WQ	48	12
4840WQ	48	12
6020WQ	60	15
6040WQ	60	15



Cleaning Procedures

1. Insert vacuum hose into By-Pass Structure and pump out. Inspect By-Pass Structure for any damage.
2. Insert vacuum hose into 24" riser and pump out the Sediment Chamber. Pressure wash this Chamber if needed. Inspect for any damage. Inspect the inlet pipe for any blockage. Also inspect weir plate for damage.
3. Insert vacuum hose into other 24" riser. This will pump out the Oil Chamber. Inspect for any structural damage. Pressure wash this Chamber if needed.
4. Refill water quality unit with water.
5. Replace all riser lids.



The owner or operator is responsible for meeting all federal, state, and local laws and regulations during the maintenance and cleanout operations.

Material Disposal

Owners are responsible for complying with all federal, state, and local regulations when disposing of material collected from the storm water quality unit. Water and sediment from cleanout procedures should not be dumped into sanitary sewer.

ATTACHMENT 6

STREAM PHOTO DOCUMENTATION PROCEDURE

Standard Operating Procedure (SOP) 4.2.1.4

Stream Photo Documentation Procedure
(CARCD 2001, Written by TAC Visual Assessments work group)

Introduction:

Photographs provide a qualitative, and potentially semi-quantitative, record of conditions in a watershed or on a water body. Photographs can be used to document general conditions on a reach of a stream during a stream walk, pollution events or other impacts, assess resource conditions over time, or can be used to document temporal progress for restoration efforts or other projects designed to benefit water quality. Photographic technology is available to anyone and it does not require a large degree of training or expensive equipment. Photos can be used in reports, presentations, or uploaded onto a computer website or GIS program. This approach is useful in providing a visual portrait of water resources to those who may never have the opportunity to actually visit a monitoring site.

Equipment:

Use the same camera to the extent possible for each photo throughout the duration of the project. Either 35 mm color or digital color cameras are recommended, accompanied by a telephoto lens. If you must change cameras during the program, replace the original camera with a similar one comparable in terms of media (digital vs. 35 mm) and other focal length characteristics. A complete equipment list is suggested as follows:

Required:
- Camera and backup camera
- Folder with copies of previous photos (do not carry original photos in the field)
- Topographic and/or road map
- Aerial photos if available
- Compass
- Timepiece
- Extra film or digital disk capacity (whichever is applicable)
- Extra batteries for camera (if applicable)
- Photo-log data sheets or, alternatively, a bound notebook dedicated to the project
- Yellow photo sign form and black marker, or, alternatively, a small black board and chalk

Optional:
- GPS unit
- Stadia rod (for scale on landscape shots)
- Ruler (for scale on close up views of streams and vegetation)
- Steel fence posts for dedicating fixed photo points in the absence of available fixed landmarks

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.

Vegetation Management for Fire Prevention ("fuel reduction"):

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 (wide angle if possible) showing the project area or areas. Preferably these long views should be from an elevated vantage point.

4. Medium view photos showing examples of vegetation changes, and plantings if included in the project. It is recommended that a person (preferably holding a stadia rod) be included in the view for scale

5. To the extent possible include medium and long view photos that include adjacent stream channels.

Stream Sediment Load or Erosion Monitoring:

1. Long views from bridge or other elevated position.

2. Medium views of bars and banks, with a person (preferably holding a stadia rod) in view for scale.

3. Close views of streambed with ruler or other common object in the view for scale.

4. Time series: Photograph during the dry season (low flow) once per year or after a significant flood event when streambed is visible. The flood events may be episodic in the south and seasonal in the north.

5. Optional: Use a tape set perpendicular across the stream channel at fixed points and include this tape in your photos described in 1 and 2 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.

PHOTO- LOG FORM

Project:
Location:
Date:
Photographer:
Team members:

Photo #	Time	Photo Point ID	Photo Pt. Description & Location	Bearing to Subject	Subject Description

General Notes or Comments (weather, cloud cover, time of sunrise and sunset, other pertinent information):

PHOTO SIGN FORM: Print this form on yellow paper. Complete the following information for each photograph. Include in the photographic view so that it will be legible in the finished photo.

Location:

Subject Description:

Date:

Time: