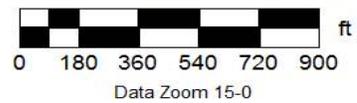


Data use subject to license.

© 2005 DeLorme. Street Atlas USA® 2006.

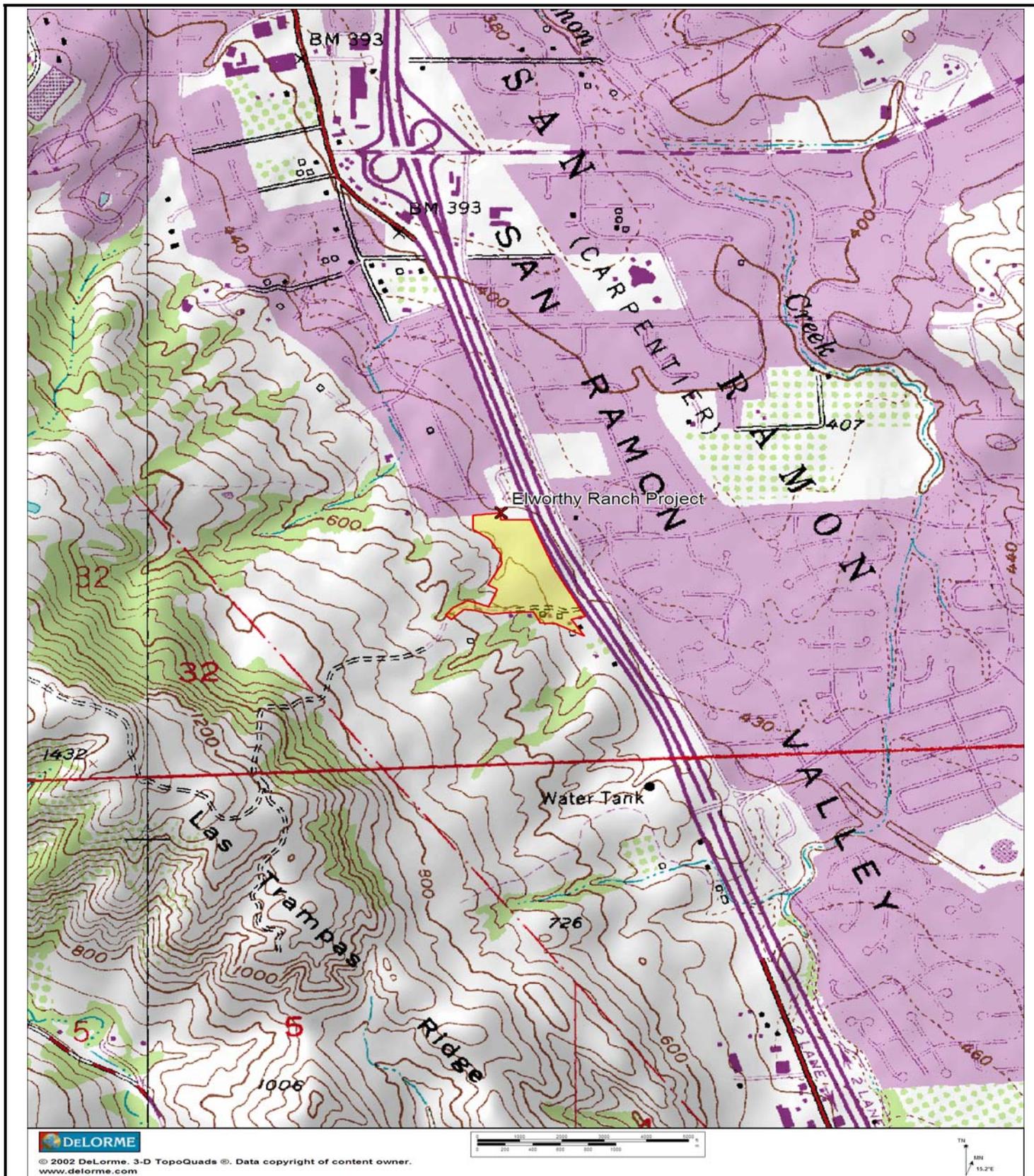
www.delorme.com



Olberding Environmental, Inc.
 3170 Crow Canyon Place, Suite 260
 San Ramon, California 94583
 Phone: (925) 866-2111

Figure 1
Vicinity Map of the Elworthy Ranch Residential
Development Project
 Contra Costa County, California

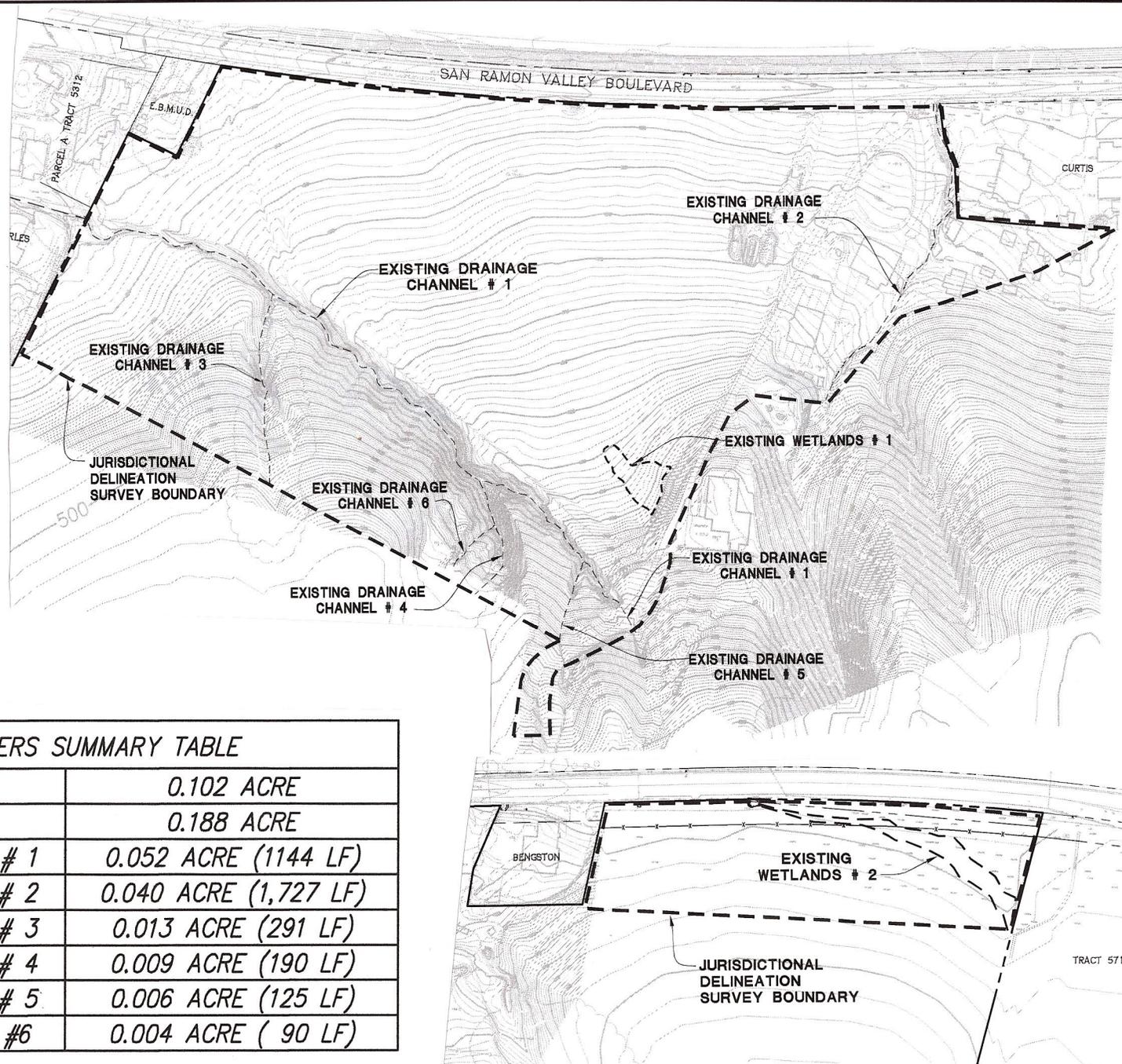
This document is not intended for detail design work.



Olberding Environmental, Inc.
 3170 Crow Canyon Place, Suite 260
 San Ramon, California 94583
 Phone: (925) 866-2111

Figure 2
USGS Quadrangle Map of the Elworthy Ranch Residential Development Project
 Diablo Quadrangle
 Contra Costa County, California

This document is not intended for detail design work.



JURISDICTIONAL WATERS SUMMARY TABLE

EXISTING WETLAND # 1	0.102 ACRE
EXISTING WETLAND # 2	0.188 ACRE
EXISTING DRAINAGE CHANNEL # 1	0.052 ACRE (1144 LF)
EXISTING DRAINAGE CHANNEL # 2	0.040 ACRE (1,727 LF)
EXISTING DRAINAGE CHANNEL # 3	0.013 ACRE (291 LF)
EXISTING DRAINAGE CHANNEL # 4	0.009 ACRE (190 LF)
EXISTING DRAINAGE CHANNEL # 5	0.006 ACRE (125 LF)
EXISTING DRAINAGE CHANNEL #6	0.004 ACRE (90 LF)

Olberding Environmental, Inc.

193 Blue Ravine Road, Suite 165

Folsom, California 95630

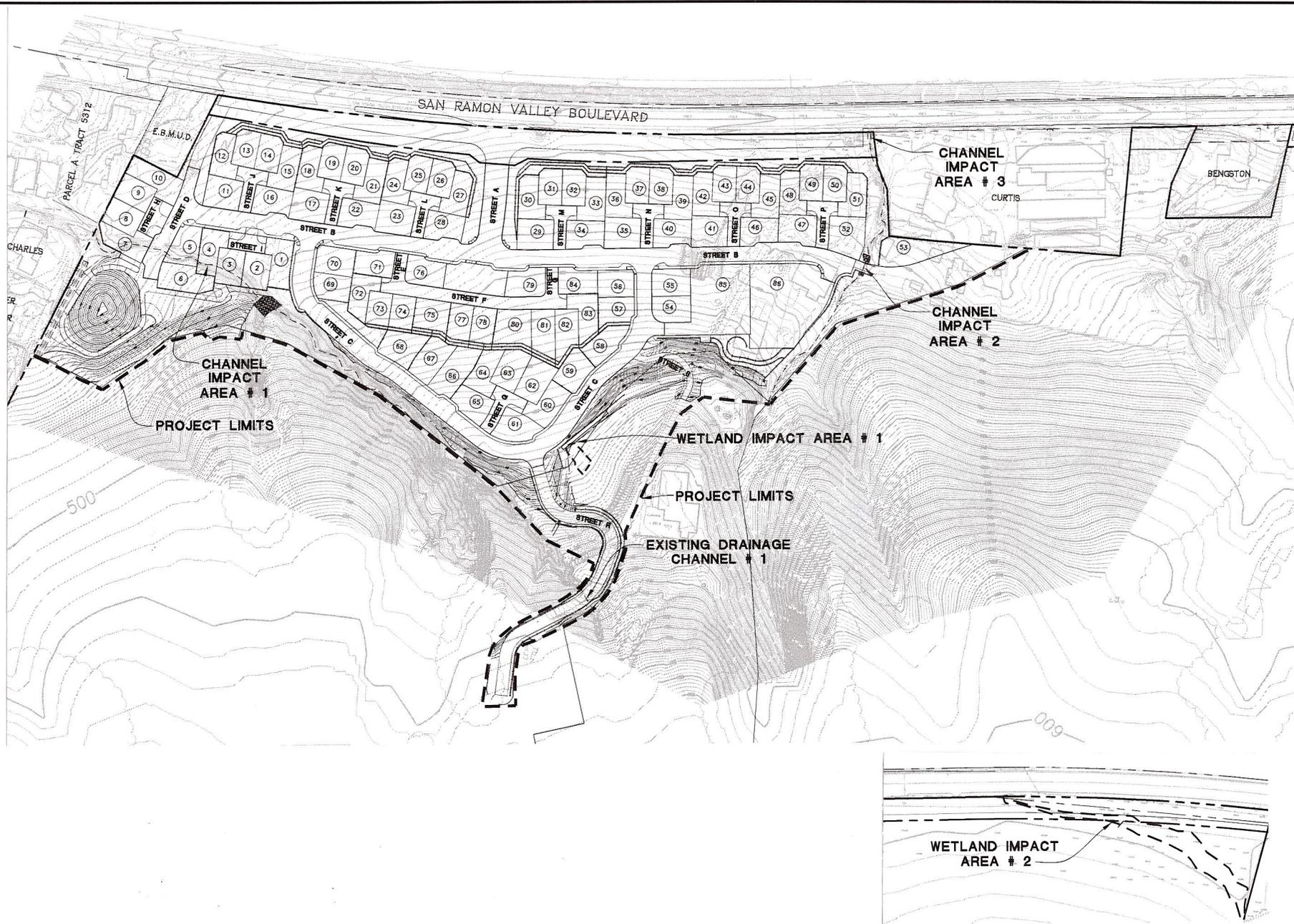
(916) 985-1188 office

This document is not intended for detail design work.

Figure 3

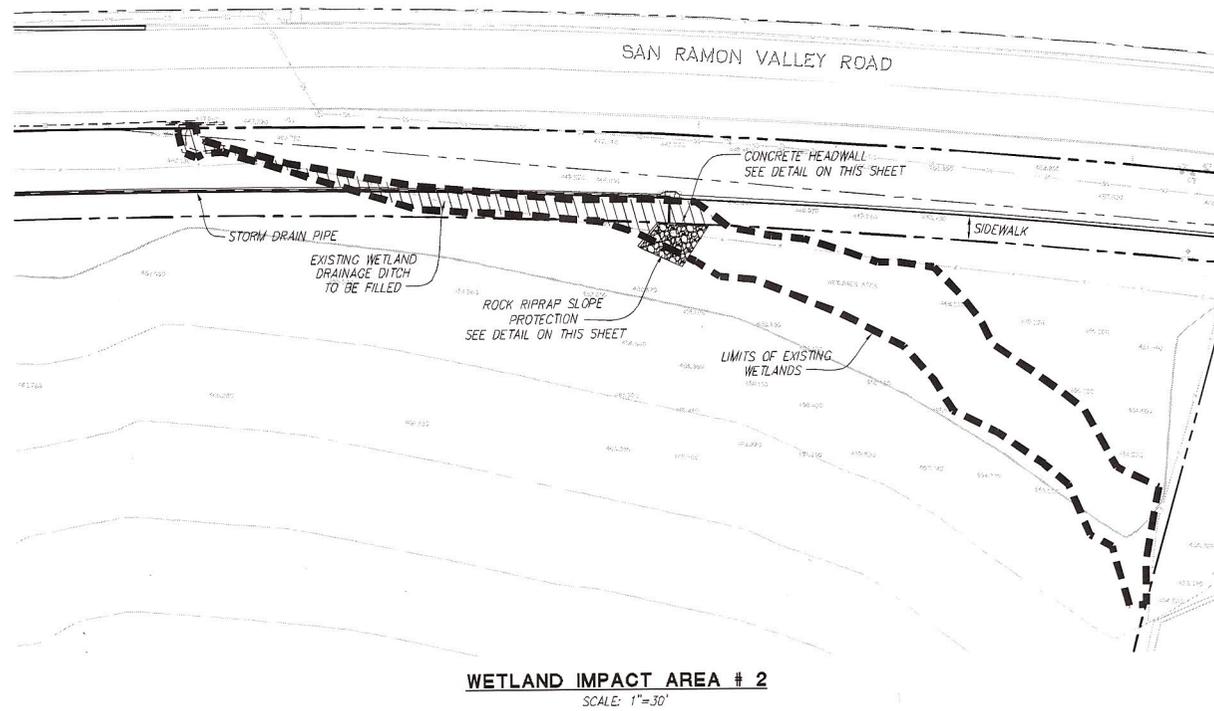
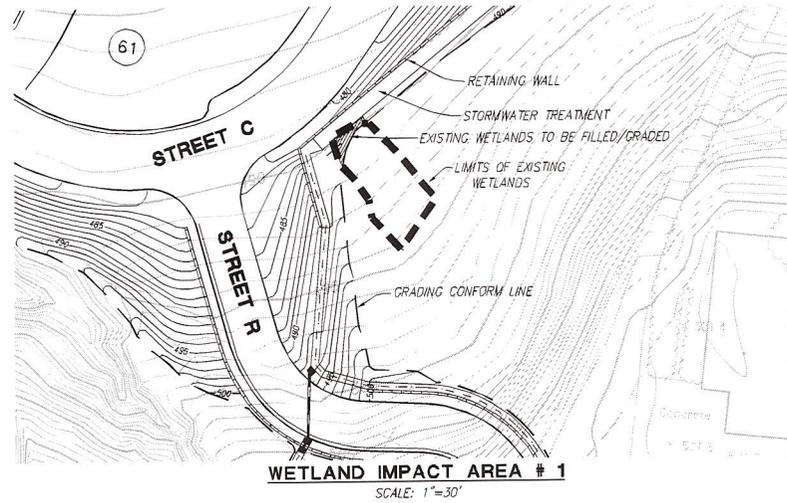
Corps Delineation Map for the Elworthy Ranch Residential Development Project

Contra Costa County, California



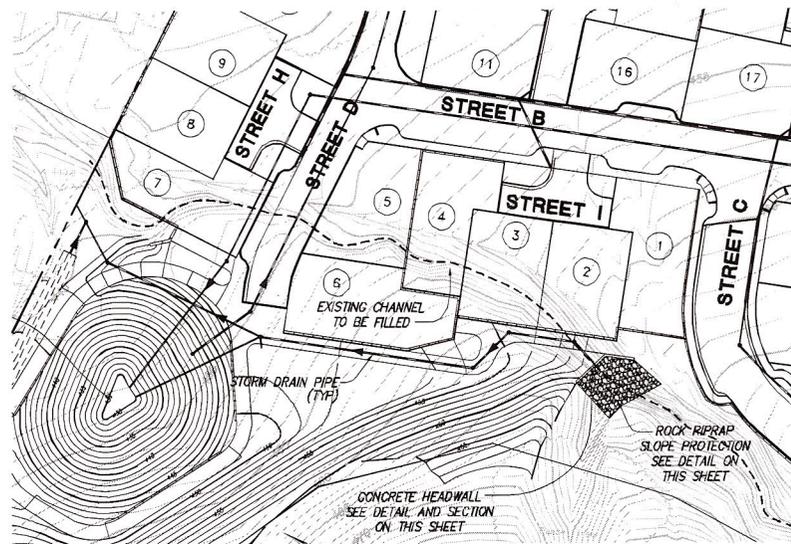
Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 4
Development Site Plan for the Elworthy Ranch Residential
Development Project
 Contra Costa County, California



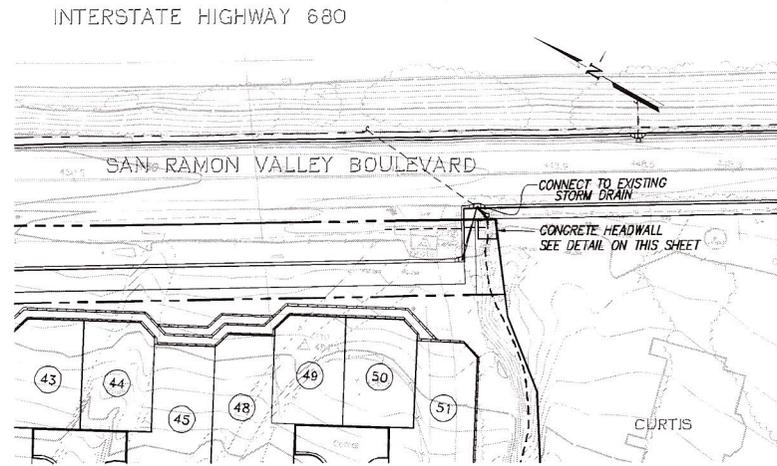
Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 5
Wetland Impacts for the Elworthy Ranch Residential
Development Project
 Contra Costa County, California



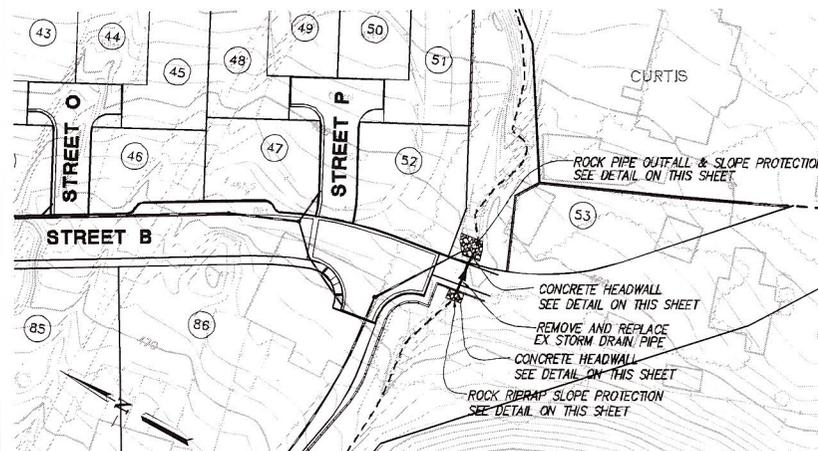
IMPACT AREA #1

SCALE: 1"=40'



IMPACT AREA #3

SCALE: 1"=40'

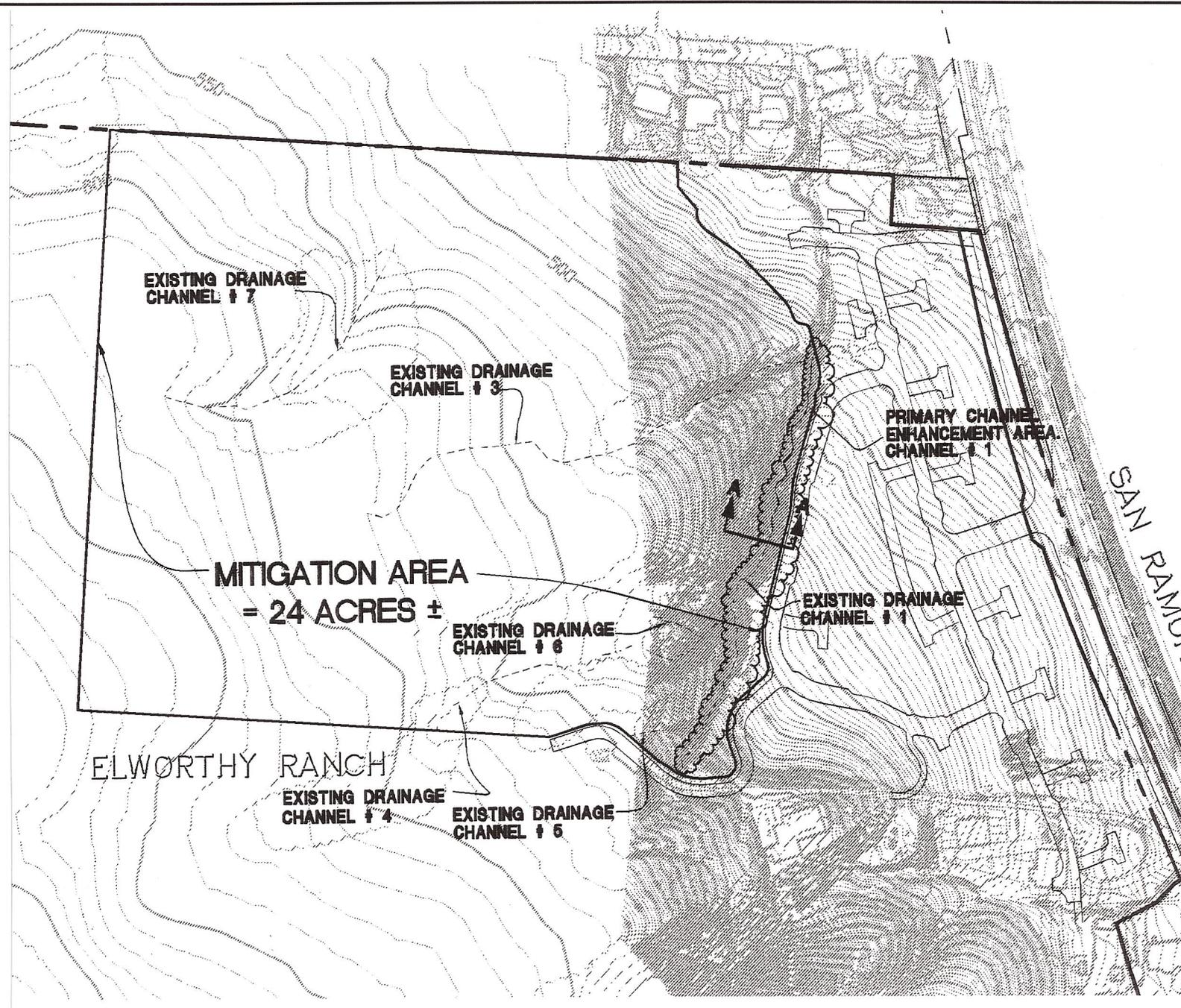


IMPACT AREA #2

SCALE: 1"=40'

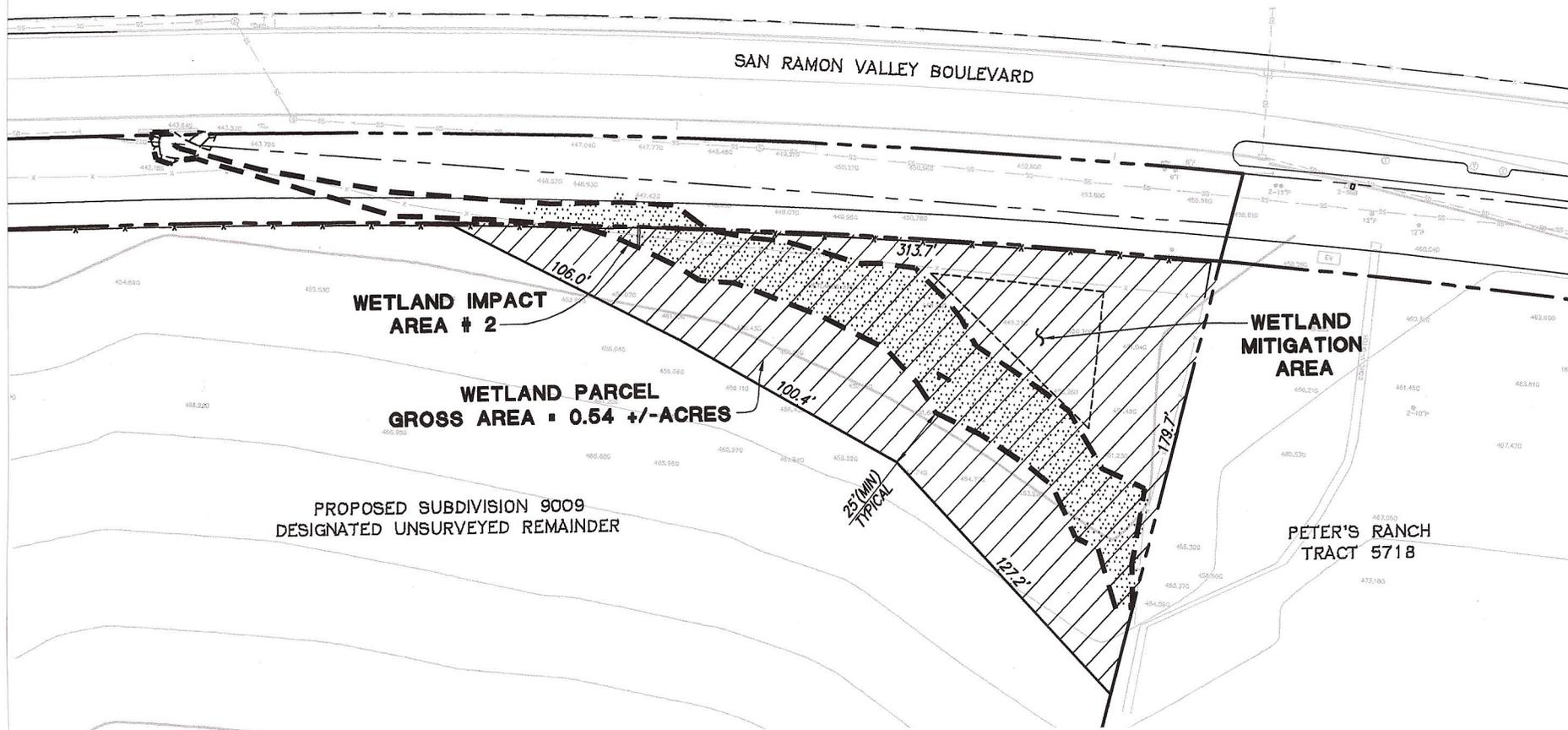
Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 6
Channel Impacts for the Elworthy Ranch Residential
Development Project
 Contra Costa County, California



Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 7
 Mitigation Site Location for the Elworthy Ranch Residential
 Development Project
 Contra Costa County, California



Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 8
Wetland Mitigation Site for the Elworthy Ranch Residential
Development Project
 Contra Costa County, California

LEGEND

-  BLACK WALNUT
-  COAST LIVE OAK
-  VALLEY OAK
-  ARROYO WILLOW
-  RED WILLOW
-  AREA OF REFUSE REMOVAL
-  AREA OF BLACKBERRY MITIGATION

PLANT LIST

TREES

BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
JUGLANS C. HINDSII	BLACK WALNUT	15 GAL	AS SHOWN	11
QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX	AS SHOWN	28
QUERCUS LOBATA	VALLEY OAK	24" BOX	AS SHOWN	11
SALIX LAMIGATA	RED WILLOW	15 GAL	AS SHOWN	20
SALIX LASIOLEPIS	ARROYO WILLOW	15 GAL	AS SHOWN	22

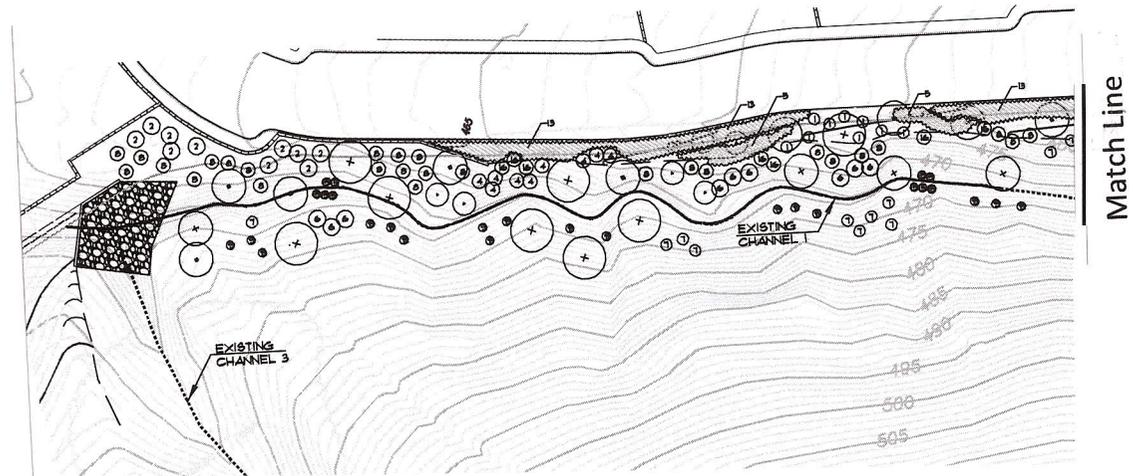
SHRUBS & GROUND COVER

BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
1 BACCHARIS P. TUIN PEAKS 2'	DWARF COYOTE BUSH	1 GAL	4' O.C.	14
2 CALYCANTHUS OCCIDENTALIS	SPICE BUSH	5 GAL	5' O.C.	12
3 CEANOTHUS 'CENTENNIAL'	CENTENNIAL CEANOTHUS	1 GAL	8' O.C.	20
4 HETEROMELES ARBUTICOLA	TOYON	1 GAL	8' O.C.	14
5 MIMULUS AURANTIACUS	STICK MONKEYFLOWER	1 GAL	3' O.C.	97
6 RHAMNUS CALIFORNICA	COFFEEBERRY	1 GAL	5' O.C.	18
7 ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1 GAL	4' O.C.	18
8 RIBES SANGUINEUM	RED FLOUERING CURRANT	5 GAL	3' O.C.	37
9 RIBES SPECIOSUM	GOOSEBERRY	5 GAL	3' O.C.	11
10 ROMNEYA COULTERI	MATILIA POPPY	1 GAL	4' O.C.	10
11 RIBES URSINUS	CALIFORNIA BLACKBERRY	1 GAL	4' O.C.	104
12 VITIS CALIFORNICA	CALIFORNIA WILD GRAPE	1 GAL	4' O.C.	3

GRASSES

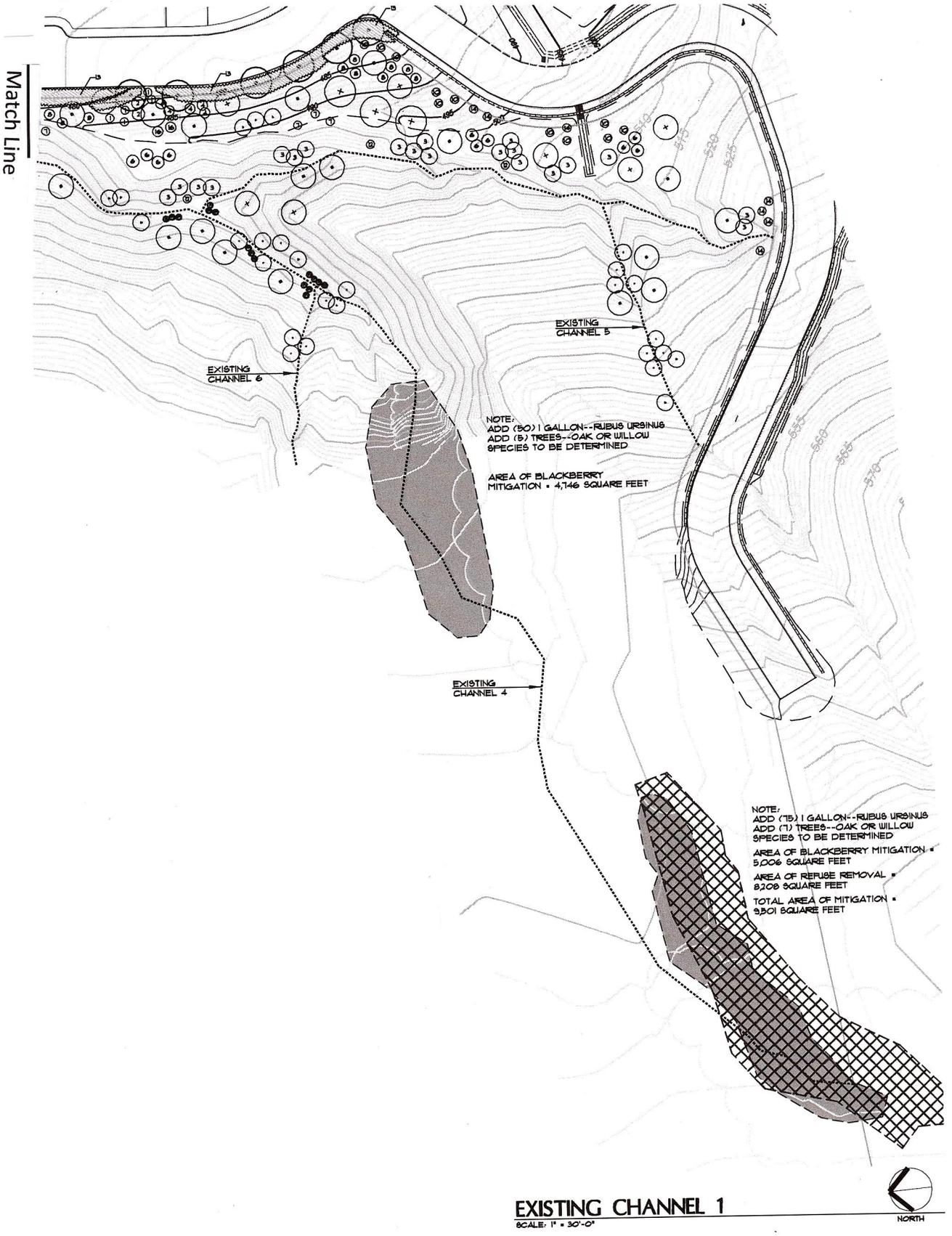
BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
13 CAREX DIVILBA	BERKELEY SEDGE	1 GAL	18" O.C.	1057
14 HELICTOTRICHON SEMPERVIRENS	BLUE-OAT GRASS	1 GAL	AS SHOWN	7
15 JUNCUS PATERNS	CALIFORNIA GRAY RUSH	1 GAL	AS SHOWN	26
16 STIPA GIGANTEA	GIANT FEATHER GRASS	1 GAL	AS SHOWN	8

NOTE:
REFUSE REMOVAL AND BLACKBERRY MITIGATION AREAS SHALL HAVE PLANT MATERIAL FIELD-LOCATED BY ENVIRONMENTAL ENGINEER OR LANDSCAPE ARCHITECT.



Olberding Environmental, Inc.
193 Blue Ravine Road, Suite 165
Folsom, California 95630
(916) 985-1188 office
This document is not intended for detail design work.

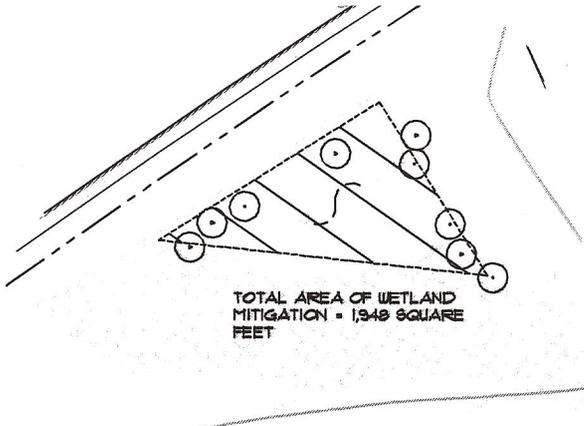
Figure 9A
Channel Mitigation Landscape Plans for the Elworthy Ranch
Residential Development Project
Contra Costa County, California



Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 9B
Channel Mitigation Landscape Plans for the Elworthy Ranch
 Contra Costa County, California

Oberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.



TOTAL AREA OF WETLAND MITIGATION = 1,949 SQUARE FEET



LEGEND

- BLACK WALNUT
- COAST LIVE OAK
- VALLEY OAK
- ARROYO WILLOW
- RED WILLOW
- AREA OF REFUSE REMOVAL
- AREA OF BLACKBERRY MITIGATION

PLANT LIST

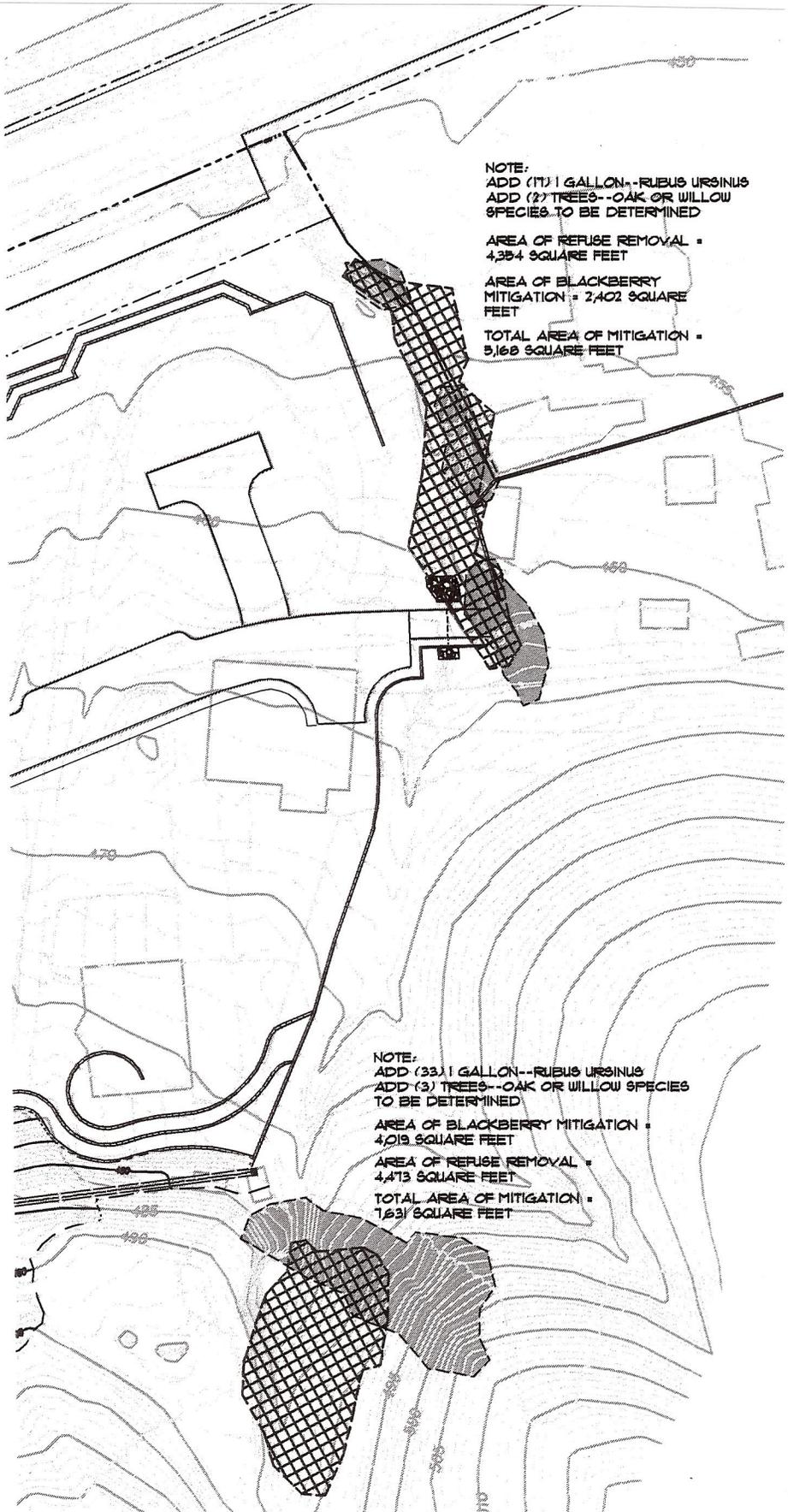
TREES				
BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
JUGLANS G. HINDSII	BLACK WALNUT	18 GAL	48 SHOUN	11
QUERCUS AGROFOLIA	COAST LIVE OAK	24" BOX	48 SHOUN	28
QUERCUS LEBATA	VALLEY OAK	24" BOX	48 SHOUN	11
SALIX LAMIGATA	RED WILLOW	18 GAL	48 SHOUN	20
SALIX LASIOLEPIS	ARROYO WILLOW	18 GAL	48 SHOUN	22

SHRUBS & GROUND COVER				
BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
1 BACCHARIS P. 'TWIN PEAKS 2'	DWARF COYOTE BUSH	1 GAL	4' O.C.	14
2 CALYCANTHUS OCCIDENTALIS	SPICE BUSH	5 GAL	6' O.C.	12
3 CEANOTHUS 'CENTENNIAL'	CENTENNIAL CEANOTHUS	1 GAL	8' O.C.	20
4 HETEROTHELES ARBUTIFOLIA	TOYON	1 GAL	8' O.C.	14
5 MIMULUS AURANTIACUS	STICK MONKEYFLOWER	1 GAL	3' O.C.	57
6 RHAMNUS CALIFORNICA	COFFEEBERRY	1 GAL	6' O.C.	19
7 ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1 GAL	4' O.C.	19
8 RIBES SANGUINEUM	RED FLOWERING CURRANT	5 GAL	5' O.C.	37
9 RIBES SPECIOSUM	GOOSEBERRY	5 GAL	3' O.C.	17
10 ROMNEYA COULTERI	MATILINA POPPY	1 GAL	4' O.C.	104
11 RIBES URBINUS	CALIFORNIA BLACKBERRY	1 GAL	4' O.C.	104
12 VITIS CALIFORNICA	CALIFORNIA WILD GRAPE	1 GAL	4' O.C.	3

GRASSES				
BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QUANTITIES
13 CAREX DIVULSA	BERKELEY SEDGE	1 GAL	18" O.C.	1087
14 HELICTOTRICHON SEMPERVIRENS	BLUE-OAT GRASS	1 GAL	48 SHOUN	1
15 JUNCUS PATENS	CALIFORNIA GRAY RUSH	1 GAL	48 SHOUN	26
16 STIPA GIGANTEA	GIANT FEATHER GRASS	1 GAL	48 SHOUN	9

NOTE:
 REFUSE REMOVAL AND BLACKBERRY MITIGATION AREAS SHALL HAVE PLANT MATERIAL FIELD-LOCATED BY ENVIRONMENTAL ENGINEER OR LANDSCAPE ARCHITECT.

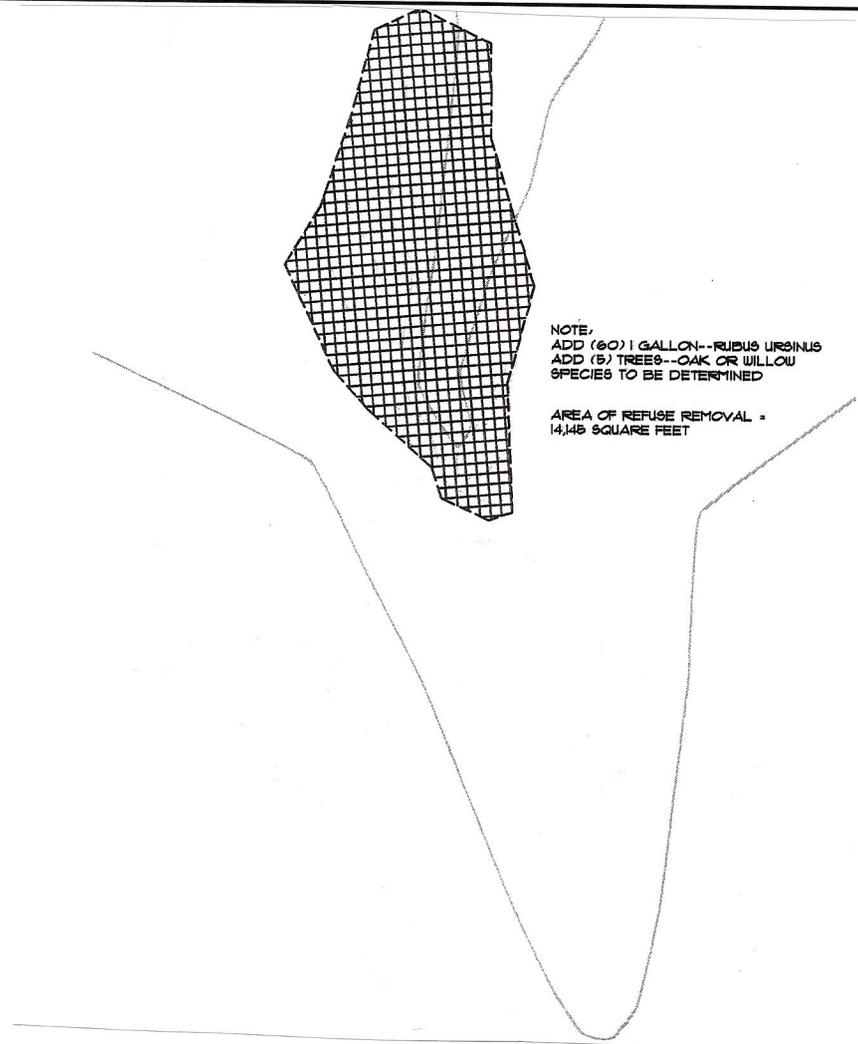
Figure 10A
 Channel Mitigation Landscape Plans for the Elworthy Ranch
 Residential Development Project
 Contra Costa County, California



Olbarding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 10B
 Channel Mitigation Landscape Plans for the Elworthy Ranch
 Residential Development Project
 Contra Costa County, California

Olberding Environmental, Inc.
193 Blue Ravine Road, Suite 165
Folsom, California 95630
(916) 985-1188 office
This document is not intended for detail design work.



NOTE:
ADD (20) 1 GALLON--RUBUS URSINUS
ADD (2) TREES--OAK OR WILLOW
SPECIES TO BE DETERMINED

AREA OF REFUSE REMOVAL = 1,957
SQUARE FEET



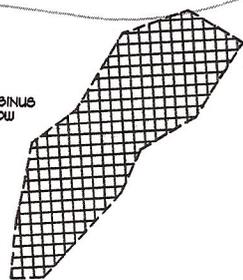
NOTE:
ADD (14) 1 GALLON--RUBUS URSINUS
ADD (2) TREES--OAK OR WILLOW
SPECIES TO BE DETERMINED

AREA OF REFUSE REMOVAL = 1,272
SQUARE FEET



NOTE:
ADD (52) 1 GALLON--RUBUS URSINUS
ADD (3) TREES--OAK OR WILLOW
SPECIES TO BE DETERMINED

AREA OF REFUSE REMOVAL =
4,691 SQUARE FEET



EXISTING CHANNEL 2
SCALE: 1" = 40'-0"



Figure 10C
Channel Mitigation Landscape Plans for the Elworthy Ranch
Residential Development Project
Contra Costa County, California



SITE PLAN
BIO-ENGINEERED
CHANNEL STABILIZATION
ELWORTHY
 SAN RAMON, CALIFORNIA
 FOR
 KB HOMES

BIO-ROCK SPECIFICATIONS:

1. 1 TO 2 FOOT DIAMETER
2. APPARENT SPECIFIC GRAVITY 2.5 MINIMUM
3. ABSORPTION 4.5% MAXIMUM
4. DURABILITY 50 MINIMUM

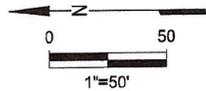
EXPLANATION



BIO-ENGINEERED HEADCUT STABILIZATION STRUCTURE (SEE PLATE 2)

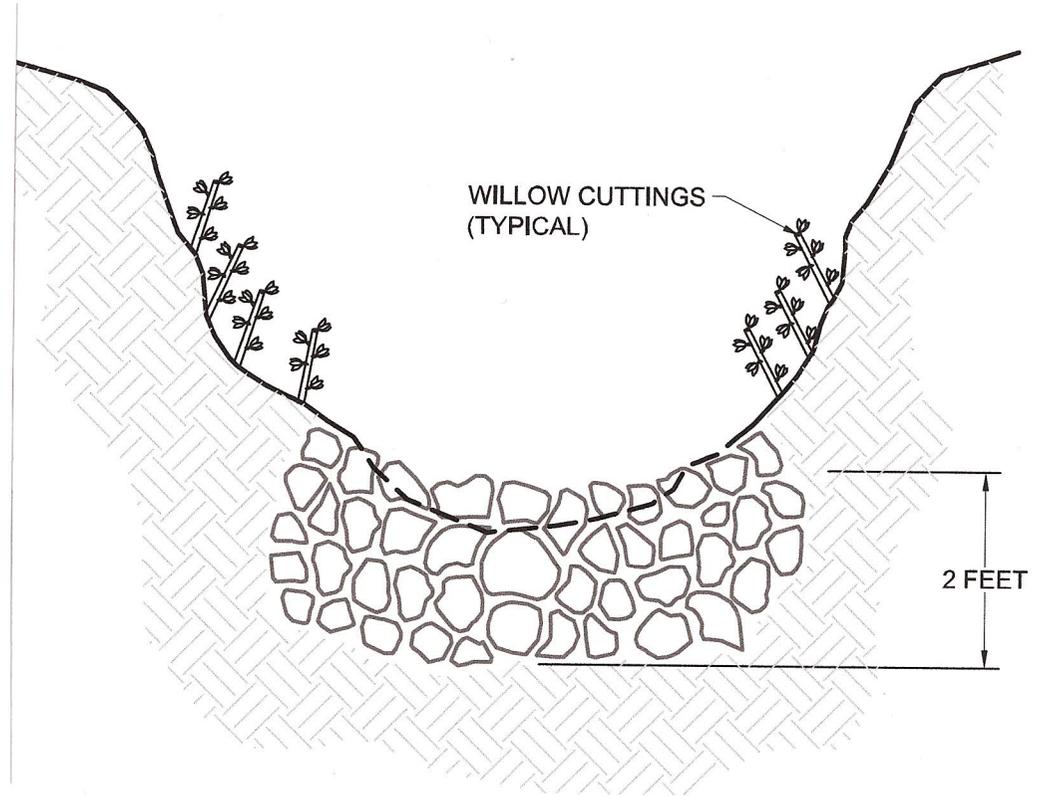
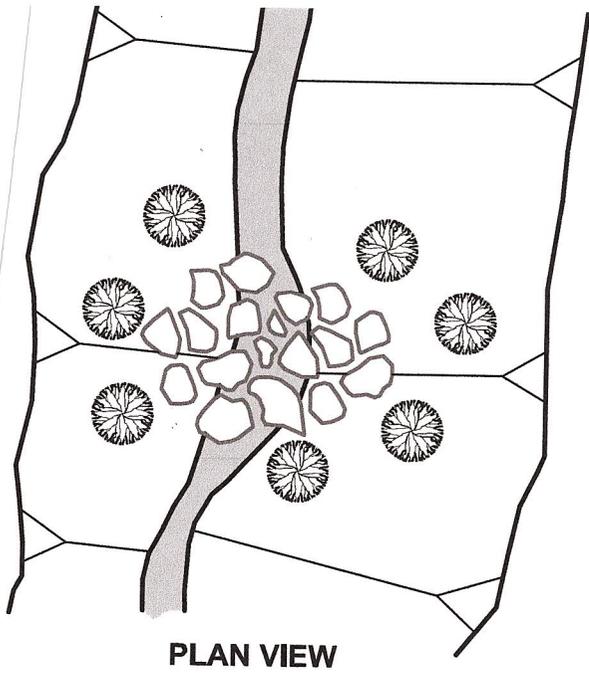


BIO-ENGINEERED GRADE STABILIZATION STRUCTURE (SEE PLATE 3)



Olberding Environmental, Inc.
 193 Blue Ravine Road, Suite 165
 Folsom, California 95630
 (916) 985-1188 office
 This document is not intended for detail design work.

Figure 11
Channel Stabilization Map the Elworthy Ranch Residential
Development Project
 Contra Costa County, California



Olberding Environmental, Inc.
193 Blue Ravine Road, Suite 165
Folsom, California 95630
(916) 985-1188 office
This document is not intended for detail design work.

Figure 12
Grade Stabilization Details for the Elworthy Ranch Residential
Development Project
Contra Costa County, California

