A WETLAND ESTABLISHMENT PLAN

FOR THE

BROOK FOREST

CONSERVATION / MITIGATION BANK

Valley Center, California

Prepared for

BROOK FOREST, LLC
P.O. BOX 300429
ESCONDIDO, CA 92030

Prepared by

VINCENT N. SCHEIDT
CERTIFIED REVEGETATION PLANNER
3158 OCCIDENTAL STREET
SAN DIEGO CA 92122
(858) 457-3873

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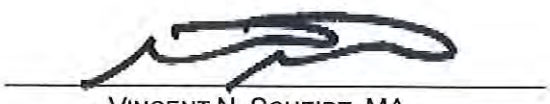

VINCENT N. SCHEIDT, MA
CERTIFIED REVEGETATION PLANNER

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TABLE OF CONTENTS

	Page
1. DESCRIPTION OF THE MITIGATION BANK PROJECT	**5**
1.1 Responsible Parties	5
1.2 Location of the Project Site	5
1.3 Project Description	6
1.4 Current Environmental Setting and Site Conditions	
2. GOALS OF THE MITIGATION BANK PROJECT	**7**
2.1 Responsibilities	7
2.2 Types and Areas of Habitat to be Established and Enhanced	8
2.3 Functions and Values	9
2.4 Timing	10
2.5 Cost	10
3. DESCRIPTION OF THE MITIGATION BANK SITE	**10**
3.1 Site Selection	10
3.1.1 Physical and Hydrological Factors	11
3.1.2 Biological Factors	11
3.1.3 Historical Factors	11
3.2 Functions and Values	11
3.3 Jurisdictional Delineation	12
3.4 Present and Proposed Uses	12
3.5 Reference Site	12
4. IMPLEMENTATION PLAN FOR THE MITIGATION BANK PROJECT	**13**
4.1 Rationale for Expecting Implementation Success	13
4.2 Financial Assurances	13
4.3 Schedule	13
4.4 Site Preparation	14
4.4.1 Equipment Proposed for Use During Implementation	14
4.4.2 Site Accessibility	14
4.4.3 Protection of Adjacent Habitat during Site Preparation and Planting	14
4.4.4 Permanent Protection Measures	15
4.4.5 Proposed Timing for Project Installation	16
4.4.6 Quality, Quantity, Type, and Size of Container Plant Material	16
4.4.7 Hydroseed Mix Quality and Composition	17
4.4.8 Plant Sources/Contract Growing	18

TABLE OF CONTENTS

Page

4.5 Planting Plan 18
4.5.1 Site and Soil Preparation 18
4.5.2 Proposed Planting and Seeding Methods 19
4.5.3 Wetland Enhancement Activities 19
4.6 Irrigation Plan 20

5. MAINTENANCE DURING MONITORING 20

5.1 Maintenance Activities 20
5.1.1 Irrigation Maintenance Needs 20
5.1.2 Weeding Schedule 20
5.1.3 Pruning 21
5.1.4 Trash and Debris Removal 21
5.1.5 Pest Control 21
5.2 Schedule 21
5.2.1 Maintenance Schedule 21
5.2.2 Irrigation Schedule 22
5.2.3 Irrigation System Removal 22

6. MONITORING PLAN FOR THE MITIGATION BANK PROJECT 22

6.1 Performance Standards for Target Dates and Success Criteria 22
6.2 Target Functions and Values 23
6.3 Target Hydrological Regime 23
6.4 Target Acreages 23
6.5 Monitoring Methods 23
6.6 Monitoring Schedule 24
6.7 Monitoring Reports and Schedule 24

7. NOTICE OF COMPLETION 24

8. CONTINGENCY MEASURES 25

8.1 Initiating Contingency Procedures 25
8.1.1 Contingency Circumstances 25
8.1.2 Replacement Planting 25
8.2 Locations for Contingency Compensatory Mitigation 26
8.3 Funding 26

TABLES, FIGURES, ATTACHMENTS

	Page
Table 1. WEP Summary	9
Table 2. Wetland Container Stock	16
Table 3. Upland Hydroseed Mix	17
Table 4. Bonding Cost Estimate	27
Certification	28
Figure 1. Regional Location	29
Figure 2. Preliminary Grading Plan	30
Figure 3. Conceptual Grading and Wetlands Establishment Plan	31
Figure 4. Proposed Fencing Exhibit	32
Figure 5. Typical Planting Profile	33
Attachment A. Plan Preparer Qualifications	A-1
Attachment B. Irrigation System Details and Typical Planting Plan	B-1

1. DESCRIPTION OF THE MITIGATION BANK PROJECT

1.1 Responsible Parties

The property owner (Brook Forest, LLC) is currently responsible for the Brook Forest Conservation/Mitigation Bank ("BFCMB") site. This responsibility shall transfer to any subsequent owner(s) of the Brook Forest Conservation/Mitigation Bank property.

1.2 Location of the Project Site

The BFCMB site (APNs 185-274-08;186-061-01,-02,-03; and 186-210-02,-18,-70) is located on a 224.2-acre portion of an approximately 226-acre property in the unincorporated part of San Diego County south of Betsworth Road (Figure 1).

1.3 Project Description

The BFCMB proposes the re-establishment of a formal wetlands mitigation bank on a 26.4-acre portion of the BFCMB property. The bank would be created by excavating an agricultural area adjacent to Moosa Creek to the appropriate elevations to support wetlands vegetation, and planting the approximately 26.4-acre wetlands re-establishment area with indigenous, native wetland species in accordance with this Wetland Establishment Plan. The project also includes limited restoration and enhancement of some of the existing riparian habitat on the BFCMB site. Activities in the existing riparian forest will include the removal of noxious invasive species, biological monitoring, and maintenance. Due to the amount of material to be removed in order to create the appropriate wetlands re-establishment area, the excavation operation will require the securement of a Major Grading (L-permit) from the County of San Diego Department of Public Works ("DPW") as well as other regulatory agency permits.

Work associated with implementation of this Wetland Establishment Plan ("WEP") may be approved by the County of San Diego's Planning & Development Services ("PDS"), and the Interagency Review Team ("IRT") consisting of the Los Angeles District of the U.S. Army Corps of Engineers ("ACOE") and the California Department of Fish and Wildlife ("CDFW"), South Coast Region prior to the initiation of wetlands re-establishment activities. The wetlands created under this WEP would be sold as credits to various interests impacting other areas of wetlands, per a program approved by the IRT. The BFCMB would be protected under a dedicated Conservation Easement and professionally managed in perpetuity pursuant to a PDS and IRT-approved Habitat Management Plan.

Excavation of the planting area would impact approximately 20.7 acres of Extensive Agriculture and 5.4 acres of Non-native Grassland habitat that is currently present in the wetlands re-establishment area (onsite and offsite). An additional 0.3 acre of Disturbed Wetland would be upgraded to Southern Cottonwood-Willow Riparian Forest as would approximately 6.0 acres of existing Southern Willow Scrub. Mitigation for the permanent loss of 5.4 acres of Non-native Grassland, at a 0.5:1 ratio, will consist of the use of 2.7 acres of the BFCMB's NNG habitat credits. There will be no mitigation for impacts to Extensive Agriculture.

1.4 Current Environmental Setting and Site Conditions

Biological field surveys of the BFCMB were completed in November of 1998 through July of 2012 by the author, Julia Groebner, Associate Biologist, and Brandon Myers, Field Assistant. These surveys included a baseline biological resources survey, a jurisdictional wetland delineation, a protocol Least Bell's Vireo (*Vireo bellii pusillus*) presence/absence survey, a protocol Southwestern Willow Flycatcher (*Empidonax traillii extimus*) habitat evaluation survey, and a protocol Arroyo Toad (*Bufo californicus*) presence/absence survey. The results of these surveys can be found in "*A Biological Resources Survey Report For The Brook Forest Conservation / Mitigation Bank Project County Of San Diego* (Scheidt, 2015) and "*Jurisdictional Wetland Delineation Report for the Brook Forest Conservation/Mitigation Bank Valley Center, California*" (Scheidt, 2012).

The Brook Forest property is gently to steeply sloping, rising up from flatter areas to the north, northwest, and southwest. A few dirt roads cross the property, with one providing access to the uppermost elevations along the site's central ridge. The lowest portions of the site support agriculture (dry farming) and ruderal grasslands. Moosa Creek bisects the northern and eastern portions of the property. This feature, which is well-vegetated with riparian vegetation, mostly parallels the northern and eastern property edge. The balance of the onsite habitat consists of chaparral, coastal scrub, grassland, woodland and other areas of riparian vegetation. Elevations on the property range between approximately 1,263 feet and 1,630 feet MSL. The soil-types found onsite consist of Clayey Alluvial Land (Co) in flat areas, Visalia Sandy Loams (VaB) on gentle slopes between 2 and 5 percent, Fallbrook Sandy Loams (FaE2, FaD2) on slopes between 9 and 30 percent, Cieneba-Fallbrook Rocky Sandy Loams (CnE2, CnG2) on slopes between 9 and 65 percent, and Las Posas Stony Fine Sandy Loams (LrG) on steep slopes between 30 and 65 percent. Las Posas soils are known to support numerous rare and endemic plants, as well as various sensitive plant communities.

The Brook Forest property supports eleven plant associations or habitats. These are Diegan Coastal Sage Scrub (Inland Form), Extensive Agriculture, Non-native Grassland (NNG), Southern Coast Live Oak Riparian Forest, Open Engelmann Oak Woodland, Southern Willow Scrub (SWS), Mafic Southern Mixed Chaparral, Disturbed Mafic Southern Mixed Chaparral, Native Grassland, Disturbed Wetland, and Disturbed Habitat

One hundred and thirty-seven species of vascular plant and one hundred and four species of vertebrate

animals and butterflies were detected during the various field surveys of BFCMB site. One sensitive plant species was observed on the Brook Forest property during the field surveys. This is Engelmann Oak. Fifteen sensitive animal species were detected. These are Southern California Rufous-crowned Sparrow, Great Blue Heron, Green Heron, Red-shouldered Hawk, Turkey Vulture, Yellow Warbler, Greater Roadrunner, Western Bluebird, Bewick's Wren, Lawrence's Goldfinch, Black-shouldered Kite, Mule Deer, Granite Night Lizard, San Diego Coast Horned Lizard, and Orange-throated Whiptail. Other sensitive animals certainly occur onsite, but were undetected during the surveys.

The BFCMB property is located in a rural part of San Diego County, although there are homes in the vicinity. Areas adjoining the property support similar native habitats (chaparral, woodland, etc.) or disturbance-responsive vegetation and landscaping in association with development.

2. GOALS OF THE MITIGATION BANK PROJECT

2.1 Responsibilities

The following parties shall be responsible for implementation of this WEP:

- The property owner (Brook Forest, LLC) shall ensure that all necessary funds are in place to guarantee that plan implementation is completed in an effective and timely manner. This responsibility shall transfer to any subsequent owner(s) of the BFCMB property.

- The IRT is responsible for ensuring that implementation of this plan takes place in a timely and effective manner.

- The Project Biologist shall be responsible for preparing and obtaining IRT approval of this WEP, for supervising all site preparation and planting activities, and for coordinating with the Installation Contractor.

- The Installation Contractor shall be responsible for the timely and effective installation of all materials identified in this plan and for coordinating directly with the Project Biologist.

- The Revegetation Monitor shall be responsible for conducting regular site inspections, assessing site conditions, and preparing regular biological monitoring reports for the first five years after implementation.

- The Project Biologist may serve as the Revegetation Monitor. The Installation Contractor shall be responsible for the timely and effective installation of all materials identified in this plan and for coordinating directly with the Project Biologist.

- The Maintenance Contractor shall be responsible for the maintenance of the wetlands re-establishment area for the duration of the biological monitoring period, as discussed subsequently in this report. If properly qualified, the Installation Contractor may serve as the Maintenance Contractor.

- Seed/plant collection/procurement contracting – All of the plants recommended for use in this WEP are normally readily available from local sources, such as Las Pilitas Nursery, Moosa Creek Nursery, and others. Container plant sources should be contacted as far in advance as possible in order to secure the appropriate selection of plants. Site-collected seeds and site-grown container plants are desirable to the extent feasible. The Project Biologist shall work with the Installation Contractor to secure all necessary plants/seeds.

All members of the Wetlands Establishment Team shall be experienced in working with successful wetlands re-establishment projects in San Diego County. This plan has been designed by Vincent N. Scheidt, Certified Revegetation Planner.

2.2 Types and Areas of Habitat to be Established and Enhanced

The project proposes the re-establishment of approximately 26.4 acres of new Southern Cottonwood-Willow Riparian Forest (SCWRF), which will correspond with 22.8 acres of U.S. (U.S. Army Corp of Engineers) and state (California Department of Fish and Wildlife) wetlands and "waters" and 3.6 acres of state-only wetlands and "waters". The existing vegetation in the onsite segment of Moosa Creek consists of Southern Willow Scrub, although some SCWRF elements (e.g.: California Sycamore *(Platanus racemosa),* Western Cottonwood *(Populus fremontii),* others) are recruiting in the scrub, indicating that the site is suitable for that higher-value habitat. Willow scrubs, which are relatively lower-value habitats, are generally found in more hydrologically-restricted site where larger riparian species are not established.

The BFCMB will preserve and enhance the approximately 6.0 acres of existing Southern Willow Scrub riparian habitat along Moosa Creek, and wetlands enhancement/re-habilitation credits will be offered for this area. U.S. and state wetlands and "waters" will be established in the widened floodway, and credits will be offered for the approximately 26.4 acres of new SCWRF-associated wetlands to be planted in this area.

The disposal of dirt and materials excavated from the wetland re-establishment area will result in the creation of up to 7.3 acres of new upland habitat planting area. This area will be planted with a sage scrub/chaparral

upland hydroseed seed mix. Once established on the dirt disposal area, the newly-created upland acres will be offered as part of the upland habitat portfolio of credits associated with the Conservation Bank element of the BFCMB.

Table 1 presents a summary of habitats associated with implementation of this WEP.

Table 1. WEP Summary – BFCMB

Plant Community	Existing Area in Wetland Enhancement Area	Area Impacted	Mitigation Required	Area Created	Acre-Credits for Sale
Southern Willow Scrub	6.0 ac	none	none	26.4 ac of established SCWRF + 7.3 ac of restored uplands	26.4 ac of Established SCWRF Wetlands + 6.0 ac of Enhanced SWS Wetlands
Extensive Agriculture	20.7 ac	20.7 ac	none		none
Disturbed Wetland	0.3 ac	0.3 ac	none		0.3 ac of restoration/enhancement DW Wetlands
Non-native Grassland	5.4 ac	5.4 ac	2.7 ac @ 0.5:1		57.8ac

2.3 Functions and Values

The new wetland habitat to be established will enhance the biological functions and values of Moosa Creek and offset wetlands impacts associated with development projects in a service area that allows the purchase of wetlands re-establishment credits from the BFCMB. Specific values of the wetlands to be established include improved water quality and hydrology, and providing shelter, cover, foraging habitat, and nursery sites for local wildlife, including the state and federally-listed Least Bell's Vireo. The expansion of the Moosa Creek floodway will furthermore increase Moosa Creek's flood control capacity. The conversion of disturbed areas (dirt roads, etc) to upland habitat will allow expanded wildlife use of areas that are currently barren, eroded, and of very low habitat value.

2.4 Timing

The grading operation is expected to begin immediately following the securement of all of the required County and IRT approvals. The wetlands re-establishment project shall begin immediately following the completion of the grading operation. Project success will be measured over time, and final success is expected to take at least five years from the initiation of wetlands re-establishment activities. The sale of wetland credits will begin at the successful completion of all initial wetland re-establishment activities, to be determined by the IRT. The sale of upland credits for (1) preserved habitat areas and (2) newly-created upland habitat areas will begin (1) upon recordation of all necessary documents and (2) as the newly-created vegetation achieves specific milestones, respectively (Section 6.1).

2.5 Cost

Table 4 provides a breakdown of anticipated costs and bonding requirements. It is important to note that actual costs will vary significantly, and many of the tasks can be completed by the land-owner at minimal cost.

3. DESCRIPTION OF THE PROPOSED MITIGATION BANK SITE

3.1 Site Selection

3.1.1 Physical and Hydrological Factors

The soil-types found onsite consist of the following:

- Clayey Alluvial Land (Co) in flat areas
- Visalia Sandy Loams (VaB) on gentle slopes between 2 and 5 percent
- Fallbrook Sandy Loams (FaE2, FaD2) on slopes between 9 and 30 percent
- Cieneba-Fallbrook Rocky Sandy Loams (CnE2, CnG2) on slopes between 9 and 65 percent
- Las Posas Stony Fine Sandy Loams (LrG) on steep slopes between 30 and 65 percent

The soil-types associated with the wetlands re-establishment area consist of Co and VaB, with adjoining areas supporting FaE2 and FaD2. Landscape characteristics of the site will be appropriate for the re-establishment of SCWRF because the areas that will be revegetated will be graded to the appropriate elevations to support this habitat-type. These elevations will be within approximately one foot of the current water level of Moosa Creek. The specific amounts of soil to be dredged and final elevations have been determined pursuant to hydrological studies by the project engineer. Therefore, the physical and hydrological conditions of this area shall be suitable for supporting the proposed riparian system after all irrigation is removed.

3.1.2 Biological Factors

The wetlands re-establishment area is located adjacent to a drainage that supports SWS. At the completion of the revegetation program, it is anticipated that the wetlands re-establishment area shall be continuous with the adjoining SWS. The site's susceptibility to weed invasion is moderate. Although the wetlands re-establishment area currently supports Extensive Agriculture, Non-native Grassland, and many weedy species, grading of the wetlands re-establishment area will remove the soil containing the weeds of these species. Wetlands enhancement/re-habilitation activities that will occur in association with Moosa Creek will include the removal of noxious invasive species from the vicinity of the wetlands re-establishment area resulting in further decreases of the susceptibility of this area to colonization by non-native species. However, non-native species present in the vicinity of the site could still colonize the wetlands re-establishment area. Therefore, the site's potential for weed invasion shall be addressed with a site-specific weeding schedule (section 5.1.2). Prior to being placed on the slope, the surface weeds present in the excavation area shall be removed from the surface and exported from the site, or thoroughly mulched into the soil before excavation. Most of the weeds currently associated with the excavation area will not grow on non-irrigated slopes that have been prepared for the growth and development of chaparral and sage scrub. The slopes' xeric conditions will severely limit weedy forb growth and favor the growth of native species or species associated with Non-native Grassland.

3.1.3 Historical Factors

The BFCMB site is currently occupied by several sensitive species (section 1.4), but the restoration of a sensitive species to the site is not a part of this WEP. The goal of this WEP, however is to create habitat that would be suitable for Least Bell's Vireo and other sensitive species known from the area. It is anticipated that the expansion of the floodway of Moosa Creek and its revegetation with native riparian forest species will create habitat that is highly suitable for sensitive species, including those that already occur within the onsite SWS.

3.2 Functions and Values

The majority of the wetlands re-establishment area currently supports Extensive Agriculture that is regularly disced and tilled, with patches of Non-native Grassland. The percent cover by native species in this part of the wetlands re-establishment area is currently close to 0%. The percent cover by non-natives is close to 100%. Species diversity in the wetlands re-establishment area is low due to the current land use of this area. The biological functions and values currently provided by the wetlands re-establishment area (with the exception of the SWS) is low.

As discussed above, excavation of the wetlands re-establishment area will also impact a small amount of the Non-native Grassland in order to bring the elevations of the site to the appropriate level for wetlands re-establishment

and create a braided floodway. The SWS associated with Moosa Creek may be subject to limited wetlands enhancement/re-habilitation activities. The percent cover by native species in SWS is approximately 90%. The percent cover by weeds is approximately 10%. Species diversity in the SWS is moderate, and the biological functions and values currently provided by this area are high, albeit restricted by historical channelization.

3.3 Jurisdictional Delineation

As mentioned above, a jurisdictional wetland delineation was conducted for BFCMB site in March of 2011. This delineation identified the federal wetlands in two disjunct areas onsite; at the site's southwest corner and within the floodway of Moosa Creek. That portion within Moosa Creek consists of 1.9 acres of federal wetlands over 3,130 linear feet of federal "waters" (which are included in the 1.9-acre calculation). The floodway of Moosa Creek was identified as supporting an additional 4.3 acres of state only wetlands and "waters". The presence of federal wetlands and waters on the BFCMB was confirmed by R.J. Van Sant and Shanti Santulli during a site reconnaissance on December 27, 2012.

3.4 Present and Proposed Uses

Current uses of Brook Forest Conservation/Mitigation Bank site include periodic dry farming with grain crops on approximately 21 acres of the site. Dry farming in the lower areas of the site commenced after the Second World War and has continued intermittently to date. The current zoning for the property includes agricultural use and a single family residence.

In order to prevent future impacts to the wetland re-establishment area and adjoining SWS, Brook Forest Conservation/Mitigation Bank shall be protected under a dedicated Conservation Easement. This easement shall include permanent fencing of the mitigation bank in order to protect the biological resources in perpetuity.

3.5 Reference Site

The existing riparian forest (SWS) on Brook Forest Conservation/Mitigation Bank, which will not be disturbed other than exotics removal and monitoring, will be used as a reference site for the areas of habitat revegetation. The adjoining, offsite riparian forest to the east will also be monitored in order to compare existing tree and understory viability with the planted stock. A biological survey of the reference site shall be provided to determine percent cover by native species, percent covered by weeds, species diversity, and any other information relevant to establishing success criteria to be identified in Sections 6.1 through 6.4. By the end of five years, it is anticipated that the wetlands re-establishment area will blend with the adjoining habitat and provide continuous high value habitat that is effectively indistinguishable from the habitat currently in the floodway.

4. IMPLEMENTATION PLAN FOR THE MITIGATION BANK PROJECT

4.1 Rationale for Expecting Implementation Success

The criteria used in the design of this WEP consist of standards, methodologies, and protocols that have demonstrated success at implementation for similar sites in the past. A concerted effort to create suitable planting densities, species composition, and other related factors have been considered during the design of the created habitat. The goal of this effort has been to maximize the opportunities for the successful re-establishment of a biologically diverse, cottonwood and willow-dominated riparian habitat. This program has been developed specifically for Brook Forest Conservation/Mitigation Bank project, taking into account site parameters, including indigenous floristic composition, soil characteristics, aspect, drainage patterns, and other factors specific to this property and vicinity.

4.2 Financial Assurances

The current owner or subsequent owner(s) of Brook Forest Conservation/Mitigation Bank property shall bear the financial responsibility to fund all proposed wetlands re-establishment activities, including site preparation, planting, maintenance, and monitoring. A revegetation agreement shall be signed and notarized by the property owner following approval of this WEP and accompanied by the required security as agreed upon by the PDS.

4.3 Schedule

The wetlands re-establishment area shall be prepared and planted immediately following the completion of the excavation operation and the approval of this WEP. Initial wetlands enhancement/re-habilitation activities shall also take place at this time. In order to avoid potential impacts to riparian nesting species, site preparation, the installation of the wetlands re-establishment program, and wetlands enhancement/re-habilitation activities shall be limited to the period from the beginning of September to the middle of January, the season when nesting does not typically occur in riparian areas in San Diego County. Should it be necessary to work during the above breeding season (15 January to 31 August of each year), active noise abatement, dust management, etc. and ongoing biological monitoring shall be required to ensure that noise levels, lighting, dust, etc. are kept to a level that will not impact nesting avifauna Following the successful completion of all initial planting activities, which shall be determined by the PDS and the IRT, the five year maintenance and monitoring period shall begin. At this time, the mitigation bank shall open to the limited sale of wetlands re-establishment credits in conformance with a credit release schedule as agreed-upon by the IRT. The wetlands re-establishment program shall be deemed complete at the end of the five year maintenance and monitoring period, as determined by the PDS and the IRT. Long-term habitat management shall commence at this time.

4.4 Site Preparation

As discussed above, the wetlands re-establishment area will be excavated to the appropriate levels to support new wetlands habitat (within approximately one foot of the current elevations of Moosa Creek). These activities will take place pursuant to the conditions of an approved County of San Diego grading permit and are not discussed in this WEP. It is assumed that all grading and contouring of the wetlands re-establishment area will occur before this WEP is implemented. However, certain minor site preparation activities may be necessary in order to prepare the wetlands re-establishment area for planting. These may include the removal of trash, debris, weeds, and invasive species.

4.4.1 Equipment Proposed for Use During Implementation

Clean-up of the wetlands re-establishment area prior to planting will be conducted by hand. Various small trucks may be used to bring the container stock to the site and to carry debris and related materials away for proper disposal.

4.4.2 Site Accessibility

To access the site, contractors will use a dirt maintenance road to be constructed along the boundary of the wetlands re-establishment area. This dirt road will take access off of Betsworth Road. Prior to the initiation of planting activities, the project biologist shall meet with the contractors and flag-off this road, as necessary, and any additional access routes so as to minimize impacts to adjacent sensitive habitats. The road will not be graded but will follow the existing contours. The corridor will be flagged and/or fenced with orange construction fencing to keep vehicles off of the adjacent habitat. Once installation is complete, the road will be abandoned and removed. The flat surface of the road will be grubbed and the area will be tilled and allowed to regrow with NNG.

4.4.3 Protection of Adjacent Habitat during Site Preparation and Planting

The wetlands re-establishment area is located adjacent to existing sensitive habitat (SWS and Moosa Creek). Prior to implementation of the WEP, the project biologist will attend a Preconstruction Meeting (PreCon) with the parties responsible for site preparation and planting to present the findings of this report in basic terms and explain the intent of the wetlands re-establishment program. A primary issue discussed at this meeting shall be efforts by all involved to avoid impacts to adjacent areas of undisturbed native vegetation. The intent of the meeting will be to inform the attendees of the sensitivity of the habitat in this area, and thus presumably minimize losses.

The project biologist shall use stakes and flagging materials to identify the limits of the wetlands re-establishment area prior to the commencement of site preparation and planting. These stakes and flagging will be used as

guidelines for the placement of temporary fencing at the edge of the SWS to remain undisturbed. This temporary fencing is required. The project biologist shall verify in the field that this temporary fencing has been placed correctly. The project biologist shall also identify any other sensitive habitats onsite, which shall be protected by any measures deemed necessary by the project biologist.

The project biologist shall be onsite during any site preparation and planting activities associated with or adjoining the SWS. In addition, all sensitive habitats adjacent to site preparation and planting activities shall be protected in accordance with required BMPs to reduce potential secondary impacts to sensitive habitat. The project biologist shall inspect stormwater management measures put into place to ensure that all erosion control devices (straw waddles, sand bags, etc.) have been properly installed, preventing potential added erosion concerns. The project biologist shall document in writing that the temporary fencing and the erosion control devices have remained in place during the site preparation and planting period. Evidence of this shall be provided in a letter to the County's Landscape Architect.

4.4.4 Permanent Protection Measures

Permanent fencing is required to delineate the mitigation bank boundaries and to limit access this area (Figure 4). All proposed wetlands re-establishment activities will be contained within areas subject to permanent fencing. The permanent fence is primarily intended to prohibit unauthorized access, clearing, and other general disturbances associated with the surrounding development. The exception to this is that fencing shall not be required or allowed within the SWS habitat that fronts the undisturbed areas along Moosa Creek. This will prevent an artificial separation between the created habitat and the existing, undisturbed habitat. All construction details and location of fencing/signage shall be identified on the project landscape plan.

Permanent, high visibility signs shall be placed at 100-foot intervals along all segments of the permanent fence. These signs shall read:

Sensitive Environmental Resources
Access Beyond this Point is Restricted
By Conservation Easement
Information:
Fallbrook Land Conservancy
Phone & Fax (760) 728-0829
E-mail: landcons@sbcglobal.net

The permanent fence locations shall be identified in the field by a California Registered Engineer or licensed surveyor and positioned along the mitigation bank boundaries. Evidence that the permanent fencing has been properly installed shall consist of a signed, stamped statement from a California Registered Engineer or licensed surveyor verifying that this task has been completed. Photographs and a brief description of design and material used shall be submitted along with the statement from the California Registered Engineer or licensed surveyor. Construction materials and fence designs are subject to approval by the PDS and the IRT. Minimum fence height shall be five feet.

4.4.5 Proposed Timing for Project Installation

Container stock planting shall be restricted to the fall-winter growing season, herein defined as being the period between November 1 and January 15. Restricting planting to this season will avoid potential impacts to Least Bell's Vireo and other sensitive species, as well as maximize the survivorship potential of the container stock. It is estimated that planting shall be completed over an approximately one-week period, which will commence immediately following the final preparation of the wetlands re-establishment area. Initial wetlands enhancement/re-habilitation activities will also occur at this time.

4.4.6 Quality, Quantity, Type, and Size of Container Plant Material

A specific plant palette has been designed for this project. This palette defines the quantity, type, and size of all required container stock plant materials for the wetlands re-establishment area and SWS subject to wetlands enhancement/re-habilitation . Table 2, below, presents this information. All plant materials to be utilized shall be of the highest quality available. Not all planted specimens are expected to survive, and the relatively high density proposed will promote rapid cover with a native canopy and eventually allow natural floristic competition to define the final overstory and understory species composition. Hydroseeding is not required in the wetlands re-establishment area because it is anticipated that native herbaceous species will quickly naturalize onto the wet substrate between the container specimens.

Table 2. Wetlands Container Stock – Brook Forest Conservation/Mitigation Bank

Number of Plants	Common Name	Scientific Name	Container Size
10,686	Mule Fat	*Baccharis glutinosa*	Rooted cuttings /1 gallon
427	California Sycamore	*Platanus racemosa*	1-5 gallon
3846	Arroyo Willow	*Salix lasiolepis*	Rooted cuttings /1 gallon
3846	Black Willow	*Salix gooddingii*	Rooted cuttings /1 gallon
3846	Sandbar Willow	*Salix hindsiana*	Rooted cuttings /1 gallon

427	Western Cottonwood	*Populus fremontii*	Rooted cuttings /1 gallon
427	Coast Live Oak	*Salix hindsiana*	Rooted cuttings /1 gallon
10,686	California Rose	*Rosa californica*	Rose Pots/1 gallon
10,686	California Blackberry	*Rubus ursinus*	Rose Pots/1 gallon

4.4.7 Hydroseed Mix Quality and Composition

All areas of the site dedicated to upland habitat re-establishment will require hydroseed treatment. These are the areas where excavated dirt is to be placed. The upland habitat re-establishment area is located on the northern portions of the property, on the slopes south of the wetland re-establishment area. The project will be filling rills and ruts, and placing a think blanket of soil over the existing, degraded soil surface in flatter areas. Appropriate bmps will be placed parallel with any existing slopes to preclude erosion This area will receive a mix consisting of Enviro Fiber S-100 Hydroseeding Mulch® or similar product containing the seed of Purple Needlegrass *(Stipa pulchra),* California Sagebrush *(Artemisia californica),* Flat-top Buckwheat *(Eriogonum fasciculatum),* Black Sage *(Salvia mellifera),* and other native species associated with coastal sage scrub and mixed chaparral (Table 3).

Table 3. Uplands Hydroseed Mix – Brook Forest Conservation/Mitigation Bank

Common Name	Scientific Name	Pure Live Seed/Pound	Pounds/acre
California Sagebrush	*Artemisia californica*	5,500,000	5
Coastal Goldenbush	*Isocoma menziesii*	800,000	2
Flat-top Buckwheat	*Eriogonum fasciculatum*	450,000	10
Deerweed	*Lotus scoparius*	200,000	1
Laurel Sumac	*Malosma laurina*	125,000	1
Red Bush Monkey Flower	*Mimulus aurantiacus*	12,000,000	2
Purple Needlegrass	*Stipa pulchra*	110,000	10
Redberry	*Rhamnus ilicifolia*	50,000	3
Sugar Bush	*Rhus ovata*	10,000	3
White Sage	*Salvia apiana*	300,000	5
Black Sage	*Salvia mellifera*	520,000	10
Ramona Lilac	*Ceanothus tomentosus*	140,000	10

Other native plant seeds may be placed in the hydroseed mixture, although any modifications to the above lists will require review by the project biologist. The seed application techniques and rates will be designated by hydroseed application technicians. These are non-irrigated hydroseed mixes, designed to grow with seasonal precipitation. All areas identified for hydroseeding will remain un-compacted to the extent feasible to allow for better seed germination.

4.4.8 Plant Sources/Contract Growing

All of the plants recommended for use in this WEP are normally readily available from local sources, such as Moosa Creek Nursery. Container plant sources should be contacted as far in advance as possible in order to secure the appropriate selection of plants (see Table 2). If possible, seeds and cuttings shall be collected from the project site itself or from locations within the same sub-watershed as the project site. In any case, no seeds or container plants may be utilized from any source where the collection of stock took place beyond San Diego County. All materials will be subject to inspection by the project biologist for source, health, vigor, and correct species identity, prior to planting.

4.5 Planting Plan

4.5.1 Site and Soil Preparation

As discussed elsewhere in this document, a substantial amount of grading will be required to bring the wetlands re-establishment area to the appropriate elevations to support SWS and U.S. and state wetlands and "waters". Approximately 22.8 acres of ACOE/CDFW wetlands and 3.6 acres of CDFG-only wetlands will be established within the floodplain of Moosa Creek through the Bank site by lowering the ground level through the Moosa Creek floodplain area an average of 1 to 3 feet. It is estimated that approximately 80,000 cubic yards of soil will be excavated from the Moosa Creek floodplain area adjacent to the streambed to establish the new wetlands. The excavated soils will be loaded and transported to areas of Disturbed Habitat on the Bank site. All areas receiving this soil will be revegetated to upland habitat to improve the functioning of the upland component of the bank. No import or export of dirt from the property will be necessary to establish the wetlands. The existing disturbed areas on site provides a sufficient area to easily accommodate the 80,000 cubic yards. Any trash, debris, or noxious invasive species present in the wetlands re-establishment area will be exported from the site. Clearing will be completed under the direct, full-time supervision of the project biologist.

Once the wetlands re-establishment area has been prepared to the satisfaction of the project biologist, the project biologist shall spot the locations of all container stock specimens in the wetlands re-establishment area to maximize survivorship potential in consultation with the project landscape plan.

4.5.2 Proposed Planting and Seeding Methods

Container stock plants will be hand-planted immediately following the final preparation of the wetlands re-establishment area. A posthole digger or mechanical auger shall be used to create holes slightly larger than the diameter of the root ball of the plant. Each hole will be filled with water and allowed to drain at least once immediately prior to planting. In order to guarantee that an indigenous microrhizal inoculum is used, small amounts of decomposed leaf litter from the adjoining SWS may be used with each planting. This mulch will be worked into the soil to a depth of approximately 12 inches and used to blend with the backfill material at each planting hole. This will provide suitable microrrhizae to facilitate rapid growth and plant development. Surface fertilization shall not be permitted in order to reduce chances for competition by aggressive weedy species. Fertilizer tablets may be added to the bottom of the planting holes at the discretion of the project biologist in discussions with the Installation Contractor at the time of planting.

All Coast Live Oaks and California Sycamores will be planted on thirty-foot centers at the slightly higher elevations of the wetlands re-establishment area, such as the peripheral slope. The willows and cottonwoods will be planted on ten-foot centers in the lower elevations of the wetlands re-establishment area. The Mule Fat, California Rose, and California Blackberry will be intermixed as an understory amongst the cottonwoods, sycamores, oaks, and willows. These will be planted randomly within approximately six feet of the trunk of the primary specimens.

Seeding of the upland habitat re-establishment area will be conducted by professional hydroseed application personnel using approved methods.

4.5.3 Wetland Enhancement Activities

Wetland enhancement/re-habilitation activities shall consist mainly of the removal of all noxious invasive species from the remaining SWS associated with Moosa Creek, along with any recommended planting of container stock in bare areas to provide additional native vegetative coverage. Prior to the initiation of invasives removal, the project biologist shall flag off or otherwise clearly identify all non-native species intended for removal. Great care must be taken to avoid or minimize damage to native vegetation during the removal of invasives. All wetland enhancement/re-habilitation activities shall be completed under the direct, full-time supervision of the project biologist.

Smaller invasives may be hand-pulled from the ground. Larger invasives will be cut off at ground level and their stumps will be painted with an herbicide such as Rodeo® or similar. The application of herbicide may need to be repeated throughout the maintenance and monitoring period in order to ensure that the invasive specimens do not regenerate within the SWS.

Following the initial round of invasives removal, any bare patches within the SWS shall be planted with the native wetland species listed in Table 1. Table 1 contains an estimate of the numbers of container stock that may be needed for wetland enhancement/re-habilitation . However, the final amounts and locations of the container stock shall be determined by the project biologist immediately following the initial removal of invasives species from the SWS subject to wetland enhancement/re-habilitation .

4.6 Irrigation Plan

A simple, temporary irrigation system shall be designed for use in portions of the revegetation plan area. Brown-line, surface-mounted irrigation lines shall be utilized to deliver water via an overhead spray system (Attachment B). The irrigation plan shall show the point of connection and source of water, either from on-site wells, or potable water meter. The temporary irrigation system shall be efficiently designed not cause waste or runoff. All systems shall be automatically controlled and include a rain sensing override device attached to the controller The irrigation system shall be installed prior to the initiation of planting activities.

5. MAINTENANCE DURING MONITORING

5.1 Maintenance Activities

5.1.1 Irrigation Maintenance Needs

The maintenance contractor shall perform routine maintenance of the irrigation system. This includes replacement of nozzles, broken lines, valves, vandalized timers, etc. Irrigation maintenance shall be flexible to account for weather.

5.1.2 Weeding Schedule

The weeding of non-native annual forbs and grasses shall occur on an "as needed" basis throughout the five-year maintenance and monitoring period. The revegetation monitor, in coordination with the maintenance contractor, shall define the need for weeding and a weeding schedule. At a minimum, four weeding visits shall be conducted during each year of the five-year period, with two to three of these visits occurring in the spring and at least one of these visits occurring in the summer, to adequately control exotics. The actual weeding schedule shall be flexible and based on precipitation, weed recruitment, and other factors.

Any noxious exotics that become established in the mitigation bank must be manually removed immediately after they are observed. These include (but are not limited to), Giant Wild Reed *(Arundo donax)*, Castor Bean *(Ricinus*

communis), Salt Cedar *(Tamarix* sp.*)*, Mexican Fan Palm *(Washingtonia robusta)*, Pampas Grass *(Cortaderia* sp.*)*, Brazilian Peppertree *(Schinus terebinthifolius)*, Hottentot Fig (*Mesembryanthemum edule*), Cocklebur (*Xanthium strumarium*), seedling *Eucalyptus, Acacia*, and any other woody plants ranked as "high" priority species in the *California Invasive Plant Inventory* prepared by the California Invasive Plant Council (Cal-IPC, 2006). Removal of exotics shall be under the direction of the revegetation monitor.

The use of control agents such as herbicides will be minimized. Any use that may become necessary will be under the direction of the revegetation monitor.

5.1.3 Pruning

The pruning of the native species that become established within the mitigation bank, either through direct planting or as a result of recruitment from the surrounding area, shall not be permitted under any circumstances, unless determined by the revegetation monitor to be necessary. Pruning will be biologically monitored.

5.1.4 Trash and Debris Removal

Removal of all trash and litter will occur on a regular basis. This shall include the clearing of all surface debris prior to planting. All planting debris (containers, excess irrigation pipe, fencing materials, trash, etc.) shall be removed from the site immediately after use. No trash or other materials not specifically related to the revegetation effort may be stored or placed on the mitigation bank site.

5.1.5 Pest Control

Control of pests such as insects, ground squirrels, gophers, etc. will not take place unless specified by the revegetation monitor. The need for active pest control is not anticipated although, if necessary, minimally invasive techniques (such as trapping, etc) may be utilized. The use of pesticides will be avoided to the maximum extent feasible.

5.2 Schedule

5.2.1 Maintenance Schedule

Maintenance of the mitigation bank fencing and signage shall be completed on an "as needed" basis for the duration of the five-year maintenance and monitoring period, as specified by the revegetation monitor. Little to no other maintenance is required during this period, other than weeding and trash removal, as discussed above.

Following final approval of the habitat re-establishment program, the entire site will be managed, monitored, and maintained pursuant to an IRT-approved Habitat Management Plan.

5.2.2 Irrigation Schedule

Irrigation shall occur on a year-round basis, except during the winter months, when normal precipitation should preclude the need for protracted irrigation. If properly planted, native plants will generally flourish without the need for any type of permanent irrigation. Excessive irrigation shall also be avoided during the mid summer months (July to September), particularly after the third year, to prevent root disease. Irrigation is most critical during the first three years following planting. Watering shall be gradually phased-out after the third year following planting. The hydroseed application includes a non-irrigated seed mix.

5.2.3 Irrigation System Removal

The irrigation system will be completely removed prior to the end of the biological maintenance and monitoring period, as defined by PDS. The entire mitigation bank shall be protected by a Conservation Easement, and removal of the irrigation system shall only be allowed under the direct supervision of the revegetation monitor. Removal shall take place outside of the breeding season, defined as the period between January 15 and August 31 of each year, so that potential impacts to nesting species may be avoided.

6. MONITORING PLAN FOR THE MITIGATION BANK PROJECT

All biological monitoring of the site shall compare data gathered from the reference site (see Section 3.5 above) in order to establish success criteria. The specific performance standards and target acreages discussed below (Section 6.1 - 6.4) shall utilize the reference site as a baseline.

6.1 Performance Standards for Target Dates and Success Criteria

Biological monitoring will consist of plant height and distribution measurements, survivorship measurements, and a qualitative analysis of the native plant cover, weed cover, species diversity and recruitment, survivorship, plant density, and the developing species composition. Survivorship of the planted container stock at the end of the first and second years of biological monitoring will be at least 90 percent. Survivorship at the end of years 3, 4, and 5 of monitoring will be 80 percent. These percentages represent a realistic goal, as the more robust stock develops and matures, precluding the less well-established specimens. Weed cover shall be no more than 10% at the end each year of monitoring.

Should the above survivorship percentages (90+ percent years 1-2; 80+ percent years 3-5) be not met at the end of each monitoring year, additional stock of like kind and size will be planted to compensate for all specimens lost, up to the required percentage of the original planting (i.e.: minimum 90% for years 1-2; minimum 80% for years 3-5). In addition, a program for adaptive management and remedial actions shall be put into place to address identifiable problems in the wetlands re-establishment area or the failure of the wetlands re-establishment area to meet success goals. See section 8 of this report.

In order to ensure that invasive species removal has been effective within the SWS subject to wetlands enhancement/re-habilitation , evidence must be provided that no specimens of Giant Wild Reed, Castor Bean, Salt Cedar, Mexican Fan Palm, Pampas Grass, Brazilian Peppertree, Hottentot Fig, Cocklebur, Eucalyptus, Acacia, have been observed within these areas for the final three years of the five-year monitoring period. Verification to that end shall be provided in the annual monitoring reports.

6.2 Target Functions and Values

The target functions and values of the wetlands re-establishment area shall be the re-establishment of 100 percent, self-sustaining SWS vegetative cover that supports indigenous native wildlife, such as Least Bell's Vireo.

6.3 Target Hydrological Regime

This wetlands re-establishment program aims to create a braided drainage within the widened channel of Moosa Creek. This target hydrological regime will simulate the natural flow of Moosa Creek prior to agricultural conversion and human use of much of the mitigation bank site.

6.4 Target Acreages

Brook Forest Conservation/Mitigation Bank project proposes the re-establishment of 26.4 acres of SCWRF, including 22.8 acres of U.S. and state wetlands and "waters" and an additional 3.6 acres of state only wetlands and "waters". The project will also restore/enhance 6.0 acres of existing SWS and 0.3 acre of DW. Finally, the project may create up to 7.3 acres of upland habitat that may be available in the future for credit sales.

6.5 Monitoring Methods

A biological monitoring program will be implemented to document the growth and development of the plants in the mitigation bank. The monitoring program will address the progress of the wetlands re-establishment effort through a five-year study and analysis of vegetative growth patterns and changes in floristic composition. Both qualitative and quantitative documentation are required. The program will determine the need for remedial activities

throughout the duration of the monitoring effort. Color photographs of the mitigation bank showing the overall wetlands re-establishment area, the areas subject to enhancement/re-habilitation , and representative specimens of each species planted will be assembled to document the success of the WEP. Permanent photo documentation points will be established by the end of the first year of biological monitoring, and photos will be taken from these points at each subsequent site monitoring visit.

6.6 Monitoring Schedule

Biological monitoring will begin shortly before the first day of planting with an inspection of the wetlands re-establishment area, the SWS subject to any enhancement/re-habilitation activities, and the container stock. It will terminate at the end of a five year period. This five year period will begin at the successful completion of all initial planting activities, as determined by the PDS and the IRT. If success criteria have not been achieved by the end of the five year maintenance and monitoring period, it may be necessary to extend this period. Monitoring inspections will be conducted four times during the first year following implementation, twice during the second and third years, and annually during the fourth and fifth years.

6.7 Monitoring Reports and Schedule

Letter-format reports summarizing the monitoring program and the vegetation re-establishment rate will be submitted to the PDS and the IRT as follows:

- Year 1: Year-End Report
- Year 2: Annual
- Year 3: Annual
- Year 4: Annual
- Year 5: Annual

Each report shall include a qualitative and quantitative analysis of the wetlands re-establishment area, SWS subject to enhancement/re-habilitation . Monitoring and maintenance field data shall be included as an addendum to each report. Site photographs shall be provided as part of the monitoring reporting effort. The data that are compiled will clearly depict the height and cover of the native vegetation.

Reports shall be submitted to the PDS and the IRT no later than the first week of March for the previous year of monitoring. Any significant issue or contingency that arises on the job site (e.g. plant survival issues, fire, or flooding) shall be reported in writing to the PDS of San Diego within two weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule.

7. NOTICE OF COMPLETION

At the end of the five year maintenance and monitoring period, the PDS shall be provided with a written Notification of Completion. The PDS and the IRT shall make the final determination of the successful completion of all wetlands re-establishment activities. If the PDS and the IRT determine that the performance standards described in this WEP have been met at the end of the five year maintenance and monitoring period, then the revegetation monitoring component of this wetlands re-establishment program shall end and perpetual site management shall begin. Perpetual site management, including a Property Analysis Record, shall be described in the project's Resource Management Plan. If, however, the PDS or the IRT determine that the wetlands re-establishment program does not meet the performance standards at the end of the five year maintenance and monitoring period, then additional measures, based on site conditions at that time, shall be undertaken to meet the goals and objectives of this WEP.

8. CONTINGENCY MEASURES

8.1 Initiating Contingency Procedures

8.1.1 Contingency Circumstances

Should the wetlands re-establishment area, SWS subject to wetlands enhancement/re-habilitation not meet anticipated qualitative and quantitative goals (sections 6.1 – 6.4), contingency measures shall be initiated to bring the failing area back to its target state.

8.1.2 Replacement Planting

Should the above survivorship percentages not be generally met at the end of each monitoring year, additional stock of like kind and size will be planted to compensate for all specimens lost, up to the required percentage of the original planting. All dead or diseased plants will be removed and new replacement specimens will be planted to meet the goals of this WEP. The need for replacement, the size of replacement plants, the timing of replanting, etc. will be determined by the revegetation monitor.

Contingency measures for the failure to eradicate noxious invasive species from the SWS subject to wetland enhancement/re-habilitation shall consist of additional maintenance and monitoring until such time as these species are verified to have been removed for three consecutive years. In addition, a program for adaptive management and remedial actions shall be put into place to address identifiable problems in the mitigation bank or the failure of the areas within the mitigation bank to meet success goals.

8.2 Locations for Contingency Compensatory Mitigation

In the event that effective wetlands re-establishment fails to occur within a reasonable time period (i.e., within 5 years), an offsite contingency mitigation location shall be identified by a County-approved Revegetation Planner working in concert with the PDS and the IRT. The contingency site shall provide mitigation for impacts to SWS and U.S. and state wetlands and "waters" associated with grading of the wetlands re-establishment area. The contingency mitigation site must support the same biological resources as were meant to be established in the wetlands re-establishment area. The securement and perpetual protection of the contingency site shall be required via the dedication of a biological open space easement or conservation easement over that land. The BFCMB site would then revert to raw land because all mitigation responsibilities would have been transferred to the contingency site, and whatever funds were available in conjunction with the BFCMB project would also be transferred to the contingency site.

8.3 Funding

The property owner (Brook Forest, LLC) shall be responsible for funding contingency compensatory mitigation associated with Brook Forest Conservation/Mitigation Bank project. This responsibility shall transfer to any subsequent owner(s) of Brook Forest Conservation/Mitigation Bank site.

Table 4. Bonding Cost Estimate[1] – Brook Forest Conservation/Mitigation Bank Wetland Establishment Plan Implementation, Maintenance, and Monitoring

I. Tasks Related to Project Implementation – first 90 days

(1) Site preparation (all grading, removal of materials, access road, fencing, BMPs, etc.) $1,274,820

(2) Container stock; 44,877 total plants including planting labor costs ($3 each, planted) $134,631

(3) Hydroseeding: 7.3 acres @ $3,500/ac $25,550

(4) Temporary overhead spray irrigation system, installed $38,000

(5) Field supervision of the initial planting:
- (a) Preliminary inspection of the container stock $2,000
- (b) Final field spotting of the container stock $3,900
- (d) Field supervision and review of the container stock plantings $3,100

(6) Various initial follow-up site reviews and 1st report at 90 days $6,600

Total costs: initial habitat re-establishment plan implementation and monitoring $1,488,601

II. Tasks Related to Long-term Monitoring and Reporting:

(7) Conduct detailed biological field monitoring of revegetated mitigation area for five years following initial planting:
- (a) year one (four surveys) $4,900
- (b) year two (two surveys) $2,500
- (c) year three (two surveys) $2,600
- (b) year four (one survey) $1,400
- (c) year five (one survey) $1,500

(8) Prepare technical reports and submit to PDS and agencies quarterly to annually for five years:
- (a) year one (quarterly reports, total annual cost) $6,100
- (b) year two (semi-annual reports, total annual cost) $3,500
- (c) year three (semi-annual reports, total annual cost) $3,500
- (b) year four (annual report, total annual cost) $2,000
- (c) year five (annual report, total annual cost) $2,000

(9) Coordinate with the landscape maintenance contractor and County Landscape Architect on ongoing basis during five-year biological monitoring period regarding replacement planting, weeding, pest control, etc.
- (a) year one $1,208
- (b) year two $575
- (c) year three $690
- (b) year four $690
- (c) year five $805

(10) Periodic Weeding of the Habitat Establishment Area by a qualified landscape contractor
- (a) amortized cost over five years $25,000

(11) Replacement Planting (10%)
- (a) Container stock $13,463
- (b) Hydroseed $3,500

Total costs: 5-year biological maintenance and monitoring $75,931

TOTAL - DIRECT COSTS $1,564,532

3% PER YEAR CPI RATE, FIVE YEARS $46,936

GRAND TOTAL $1,611,468

CASH DEPOSIT (10%) $30,000

Prepared by Vincent N. Scheidt, Biological Consultant
June 2015

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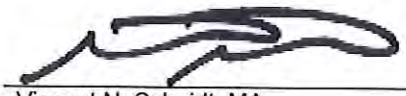
[1] - *This is an estimate for bonding purposes only.* ***ACTUAL COSTS WILL VARY SIGNIFICANTLY AND MAY BE MUCH LOWER***

CERTIFICATION

I hereby certify that the information contained in this document is complete and accurate to the best of my knowledge as of June 2015.



Vincent N. Scheidt, MA

Certified Revegetation Planner

Figure 1. Regional Location
Portion of U.S.G.S. "Valley Center, California" 7.5' Quadrangle

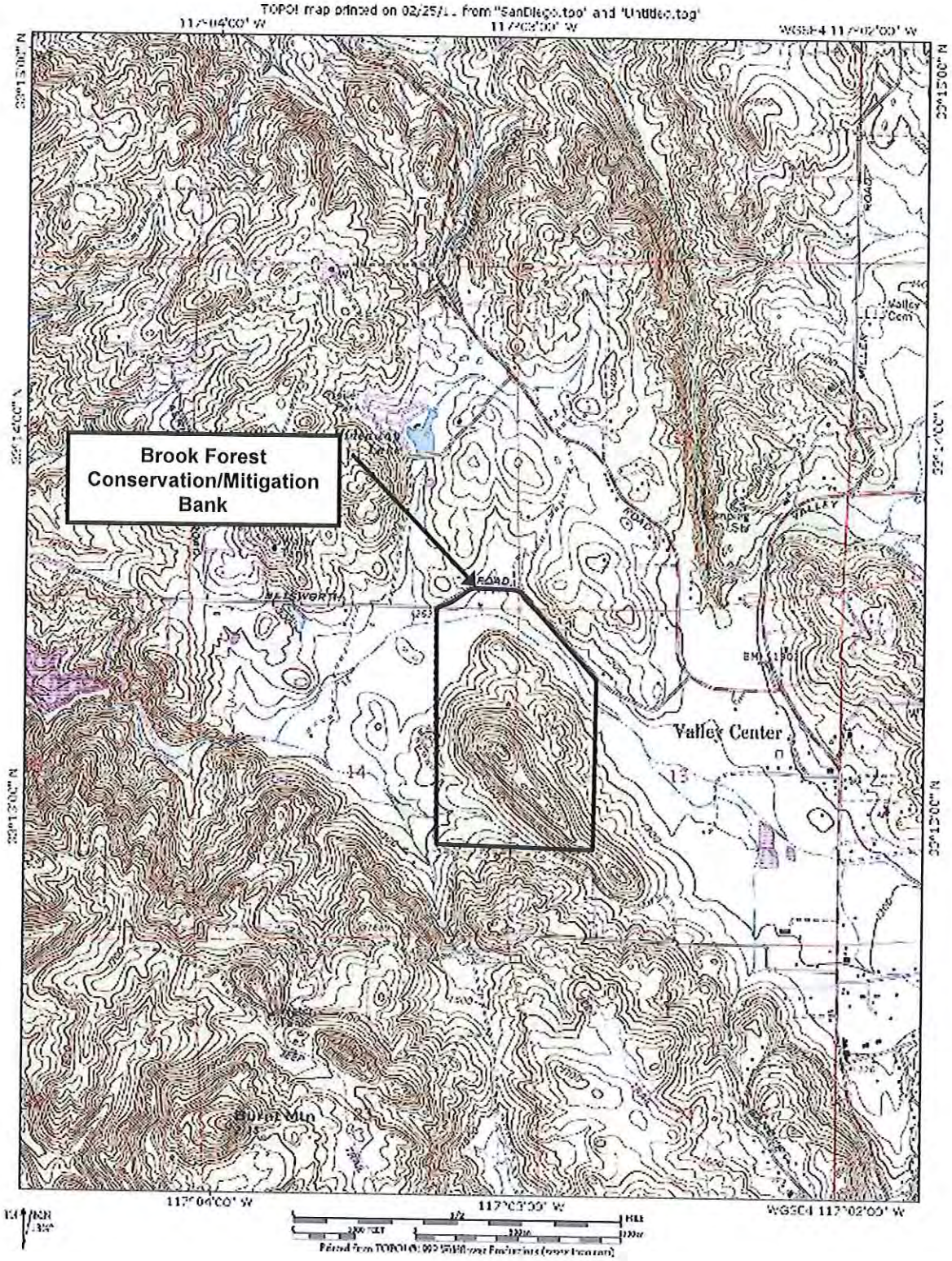
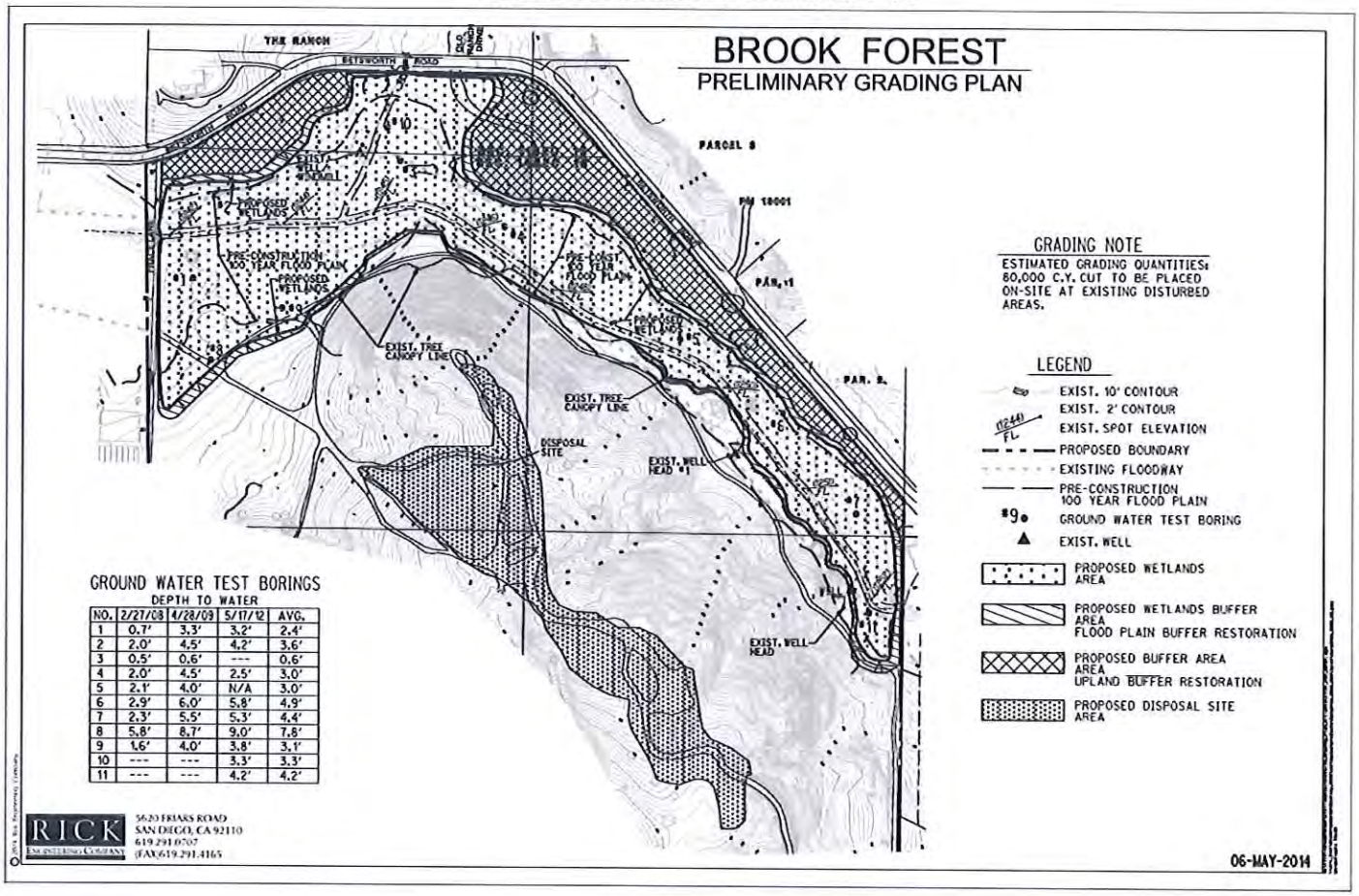


FIGURE 2. PRELIMINARY GRADING PLAN



GROUND WATER TEST BORINGS

DEPTH TO WATER

NO.	2/27/08	4/28/09	5/17/12	AVG.
1	0.7'	3.3'	3.2'	2.4'
2	2.0'	4.5'	4.2'	3.6'
3	0.5'	0.6'	---	0.6'
4	2.0'	4.5'	2.5'	3.0'
5	2.1'	4.0'	N/A	3.0'
6	2.9'	6.0'	5.8'	4.9'
7	2.3'	5.5'	5.3'	4.4'
8	5.8'	8.7'	9.0'	7.8'
9	1.6'	4.0'	3.8'	3.1'
10	---	---	3.3'	3.3'
11	---	---	4.2'	4.2'

RICK
AN ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165

FIGURE 3. CONCEPTUAL WETLANDS ESTABLISHMENT PLAN

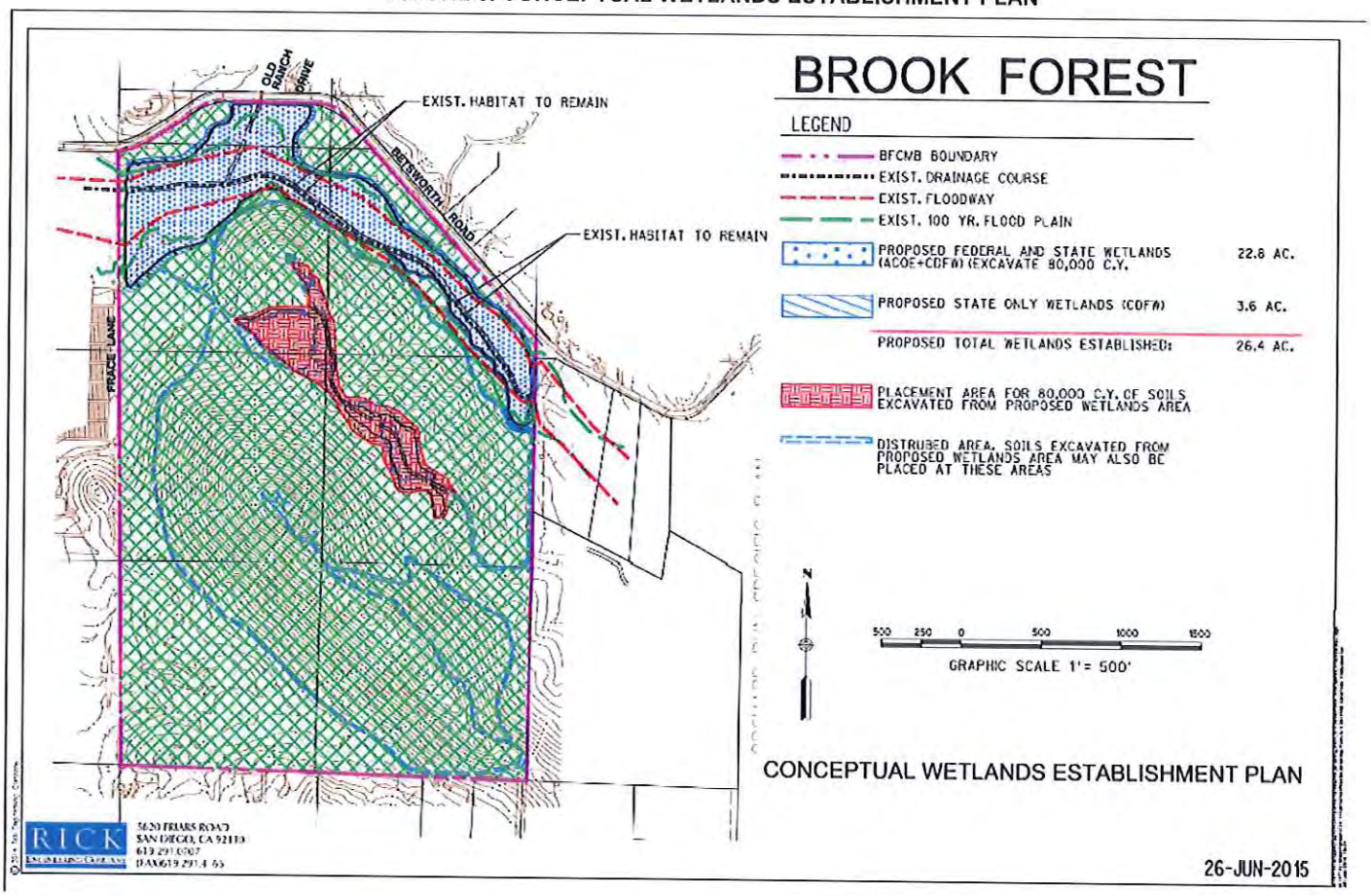


FIGURE 4 – FENCING PLAN

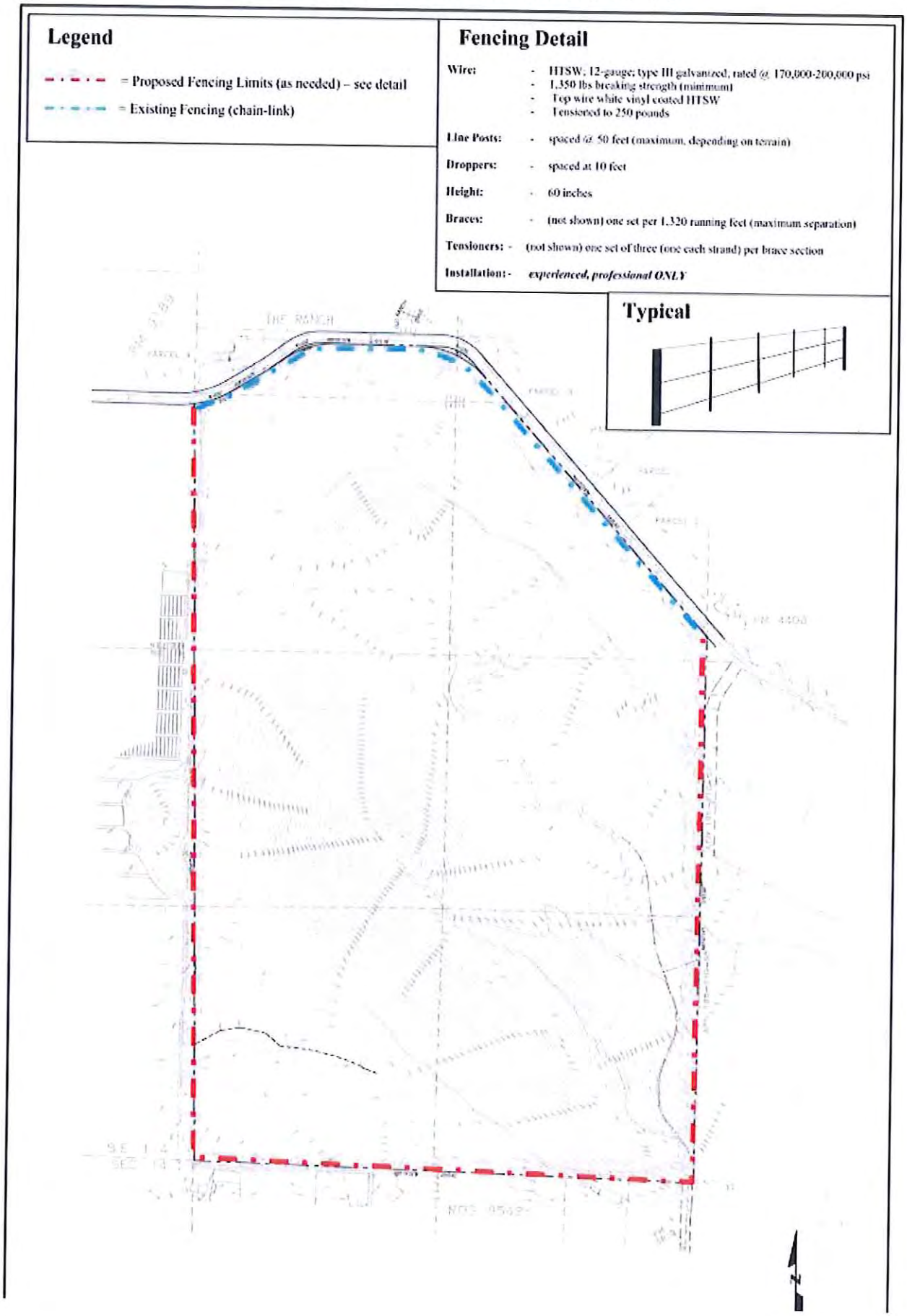
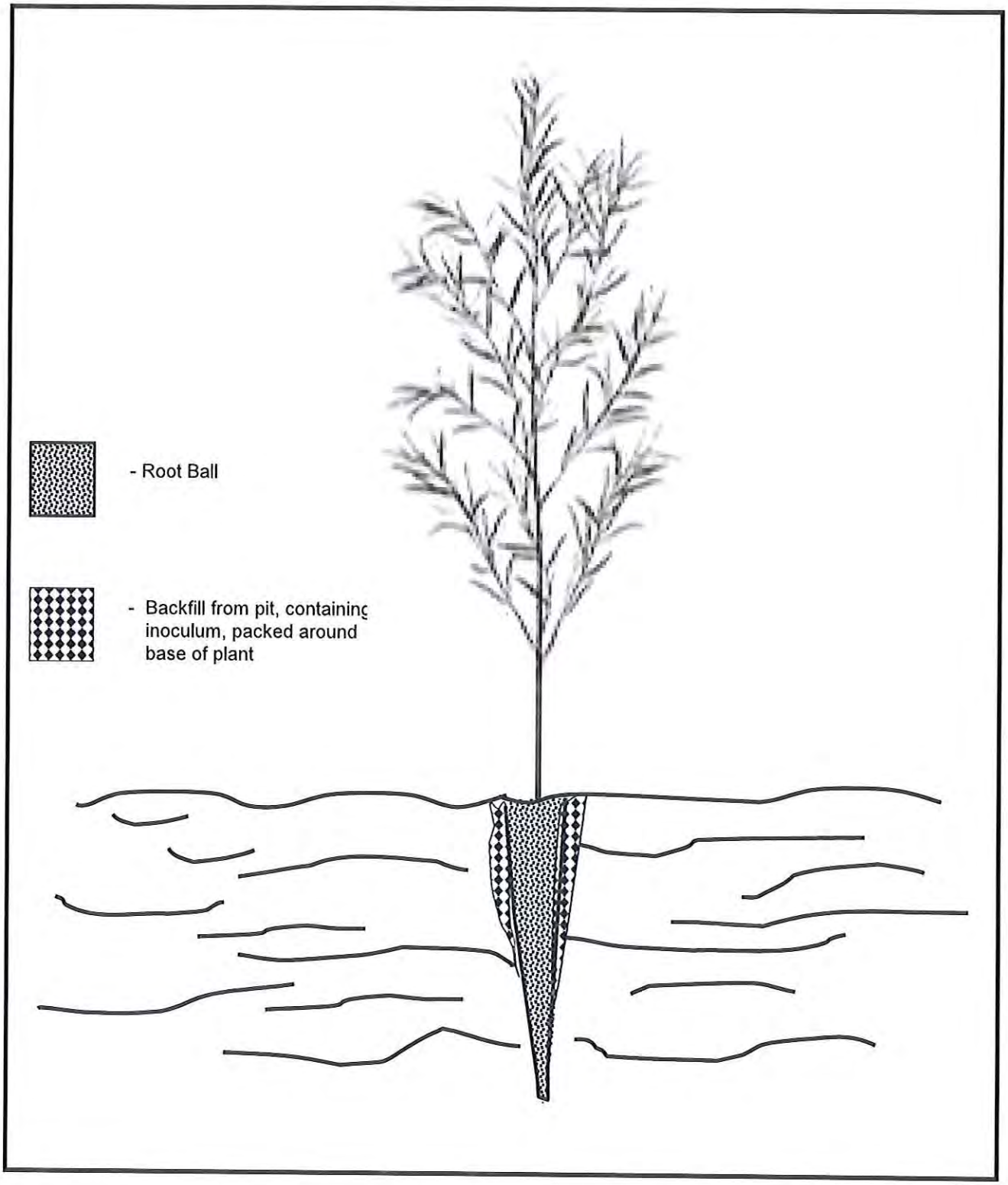


FIGURE 5 – TYPICAL PLANTING PROFILE



ATTACHMENT A

PLAN PREPARER QUALIFICATIONS

SAMPLE REVEGETATION PROJECTS - DESIGN, IMPLEMENTATION, AND MONITORING

Project - **Carmel Valley Riparian Enhancement Plan**
Year - 1989
Client / Jurisdiction - Bruce McIntyre, LMA / City of San Diego
Responsibilities - Riparian Wetland Revegetation Plan preparation

Project - **Lake Boulevard Drainage Channel Project**
Year - 1990
Client / Jurisdiction - Peter Biniaz / City of Oceanside
Responsibilities - Freshwater Marsh Revegetation Plan preparation

Project - **La Honda Road Widening Project**
Year - 1991
Client / Jurisdiction - Darrell Daugherty / City of Escondido
Responsibilities - Riparian Revegetation Plan preparation

Project - **San Luis Rey Valley United Methodist Church Revegetation Plan**
Year - 1992
Client / Jurisdiction - Morgan Brainerd / City of Oceanside
Responsibilities - Willow Woodland Restoration Plan preparation, implementation, and 3-year monitoring

Project - **Tecalote Oaks Woodland Restoration Plan**
Year - 1997
Client / Jurisdiction - Bill Kidoo / County of San Diego
Responsibilities - Oak Woodland Restoration Plan preparation and implementation.

Project - **Mahogany Ranch Revegetation Plan**
Year - 1998
Client / Jurisdiction - Ward Benshoof / County of San Diego
Responsibilities - Oak Woodland Restoration Plan preparation

Project – **Paradise Valley Road Revegetation Plan**
Year - 2002
Client / Jurisdiction – Dennis Ferdig / County of San Diego
Responsibilities – Coastal Sage Scrub Restoration Plan preparation, implementation, and 5-year monitoring

Project – **Paradise Valley Road Revegetation Plan**
Year - 2009
Client / Jurisdiction – John Edwards/ County of San Diego
Responsibilities – Oak Riparian Forest Restoration Plan preparation, implementation, and 5-year monitoring

Project – **Edwards L-Permit Revegetation Plan**
Year - 2009
Client / Jurisdiction – Aviara Master Association / Carlsbad
Responsibilities – Coastal Sage Scrub Restoration Plan preparation, implementation, and 3-year monitoring

Project – **Miller Valley Ranch Wetland Enhancement Plan**
Year - 2014
Client / Jurisdiction – Westminster Group / County of San Diego
Responsibilities – Wetland Enhancement Plan preparation

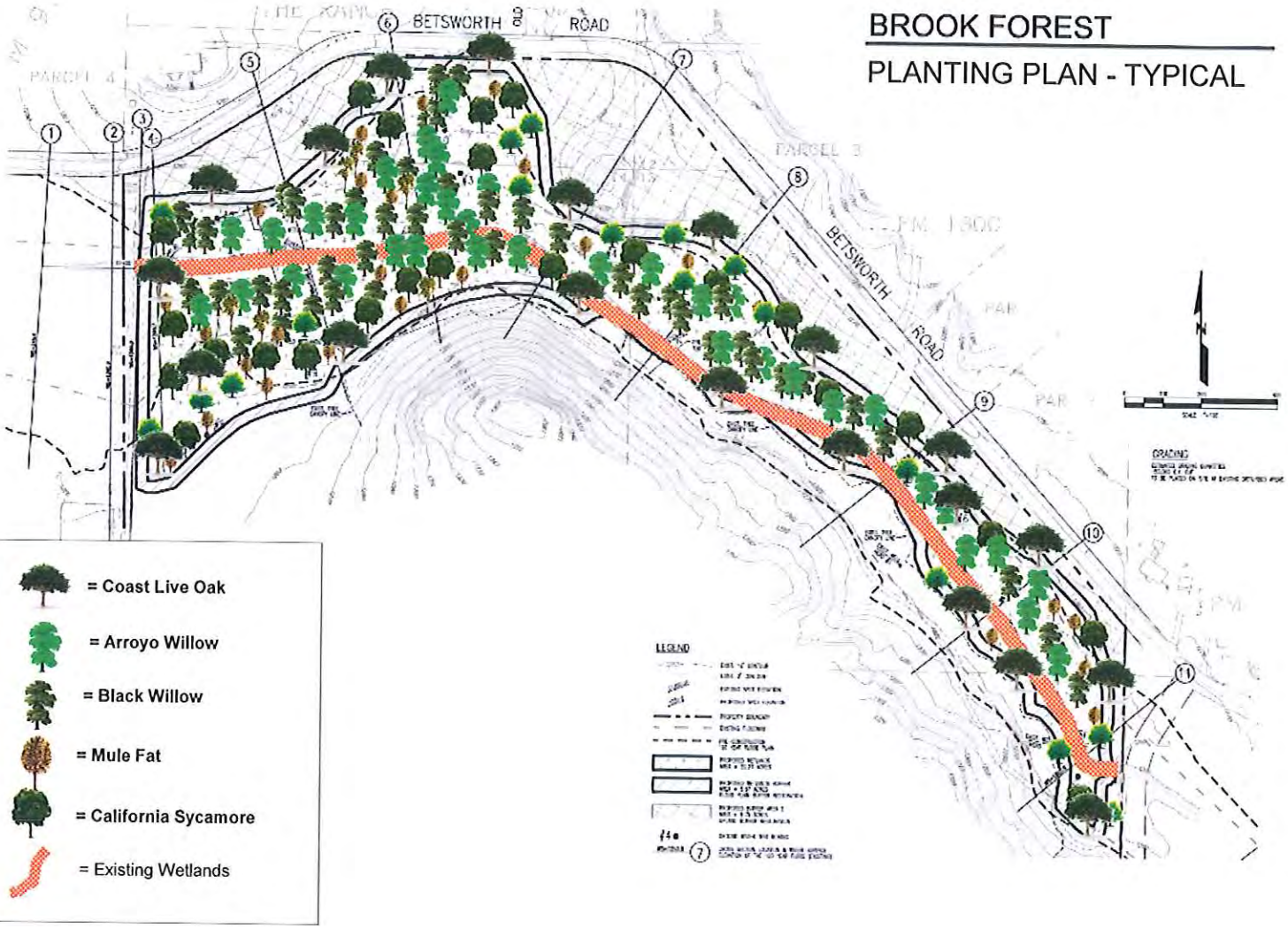
ATTACHMENT B

TYPICAL PLANTING PLAN AND IRRIGATION SYSTEM

(see black-line drawings prepared by Darsono Design Associates)

BROOK FOREST

PLANTING PLAN - TYPICAL



= Coast Live Oak

= Arroyo Willow

= Black Willow

= Mule Fat

= California Sycamore

= Existing Wetlands