Attachment 11

San Luis Obispo County Proposition 1E Proposal
Program Preferences

The San Luis Obispo County Proposition 1E Proposal was developed with the Program Preferences in mind. The eight Program Preferences are listed below in Table 11-1 and were given special attention by San Luis Obispo stakeholders, as they relate to integrated water management objectives defined in the California Water Code and implementing legislation of the State. With a high degree of certainty, the multi-beneficial strategies of the San Luis Obispo County Integrated Proposal will achieve the results desired by the goals of the State-defined Program Preferences. Zone 1/1A Waterway Management Program, Alternative 3a Project strategies were developed through the San Luis Obispo IRWM planning process in an attempt to integrate the needs of stakeholders in the watershed and to address applicable Program Preferences outlined by the State.

The discussion below describes the Alternative 3a Project that makes up the Proposal and which Program Preferences it meets, demonstrates how the Proposal assists in meeting the Program Preferences, documents the certainty that the Proposal will meet the Program Preferences, and describes the breadth and magnitude to which the Program Preferences will be met.

Table 11-1. Program Preferences

Program Preferences	
1)	Include regional projects or programs
2)	Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board (RWQCB) region or subdivision; or other region or sub-region specifically identified by DWR
3)	Effectively resolve significant water-related conflicts within or between regions
4)	Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program (http://calwater.ca.gov/calfed/objectives/index.html)
5)	Address critical water supply or water quality needs of disadvantaged communities within the region
6)	Effectively integrate water management with land use planning
7)	For eligible SWFM funding, projects which: a) are not receiving State funding for flood control or flood prevention projects pursuant to PRC §5096.824 or §75034 or b) provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of in stream erosion and sedimentation, and groundwater recharge
8)	Address Statewide priorities (Table 1 of the guidelines establishes the specific Statewide Priorities for the IRWM Grant Program.)

1. *Include regional projects or programs*

The Alternative 3a Project is considered a regional project because it benefits more than one community and was identified as a top regional priority for the San Luis Region in the IRWM Plan. The certainty, breadth and magnitude to which the regional program preference will be met are discussed below.

The Alternative 3a Project will address a high priority, regional objective – providing increased flood protection for the disadvantaged communities of Oceano and Cienega Valley farmland. The Alternative 3a Project will provide increased flood conveyance capacity in the Zone 1/1A of the San Luis Obispo County Flood Control and Water Conservation District (District), which spans the lower Arroyo Grande Creek channel. The project will significantly improve flood protection for the lower Arroyo Grande Creek region, including the disadvantaged community of Oceano and the highly productive agricultural areas of Cienega Valley as shown in Figure 11-1. Efforts are led by a regional agency, San Luis Obispo County, and the County decision-making is guided by the Zone 1/1A Advisory Committee, which is made up of agriculturalists and other landowners within the zone, and has been meeting regularly since June 2001.

Deferred maintenance due to increased sedimentation, stringent environmental protections, levee deterioration, escalating maintenance costs, and lack of funding have reduced the channel capacity such that levee overtopping can be expected with less than a 5-year storm event. When the Arroyo Grande levee system was breached on the south side during a high rain event in 2001, hundreds of acres of farmland and several residences were flooded, resulting in damage claims to the County flood control district totaling over $1,000,000, affecting the entire County. The original project life of the Arroyo Grande Creek Flood Control Project was acknowledged to be 50-years by sponsoring organizations: Natural Resources Conservation District, San Luis Coastal Resource Conservation District and the San Luis Obispo County Flood Control and Water Conservation District. A three party agreement was executed on December 1, 2009, to acknowledge termination of the 1959 Operations and Maintenance Agreement for the original project, documenting mutual agreement between the parties that the existing project as planned in 1959 had reached its design life and achieved its intended purpose (Exhibit KK) - Acknowledgement of Termination of 1959 Agreement). The parties agreed that alterations to the original project's purpose, design, and maintenance are necessary to accommodate changing regulations, watershed hydrology, and waterway management planning. The adopted WMP is the product of the alterations determined necessary to the original project and thus, the completion of the proposed Alternative 3a Project, should be the beginning of the next 50-year project life.

The northern levee protects several residential developments, as well as the regional wastewater treatment plant that services the communities of Arroyo Grande, Oceano, and Grover Beach, and the Oceano Airport. The north levee is maintained at a higher elevation (about 6-inches higher) to encourage an overtopping to the south rather than to the north. If the north levee is overtopped or breached, risk to human life will be a threat. The southern levee protects hundreds of acres of farmland, several residences and businesses.

Maintenance of a primary low-flow channel, enforced by the presence of a stable riparian corridor, will improve sediment transport conditions throughout the flood control reach which will reduce the need for future maintenance and dredging and improved flood protection for the region. The regional flood damage reduction benefits of the Alternative 3a project will include:

- Avoided physical damage to
  - Buildings
  - Infrastructure
  - Crops
  - Ecosystems
- Avoided emergency response costs
- Avoided public safety and health impacts

Certainty, Breadth and Magnitude

The Alternative 3a Project will significantly increase the existing channel capacity (1,300 cfs, 2.8 year flood protection with 2-ft. freeboard, or 4.6 year flood protection with no freeboard) to provide 10-year flood protection with 2-ft. freeboard (5,400 cfs or 16.6 year flood protection with no freeboard). Award of this grant would advance the completion date of the project 24 years and would immediately benefit surrounding agricultural and residential areas, including the disadvantaged community of Oceano.

With this project, flooding caused by overtopping of the levees would only be experienced during the larger, less frequent storm event. Flood damage reduction benefits of the project were quantified when related to avoided physical damage to buildings, infrastructure, and crops, as described in Attachment 7.

It is expected that the project would improve conditions for the 5, 8 and 10 year events. After construction of the project, the District would be confident that the channel would contain the flood flows from each of these events since there would be a 2-foot freeboard to account for any uncertainty as well as less vegetation in the channel to catch debris that could block flows.

Flood damage reduction benefits for the levee-overtopping scenarios that would be experienced during a 2, 5, 8 or 10-year event were estimated as follows:

- The District estimated the annual crop revenue to be $9,950 per acre, based on the 2009 harvested acreage and annual crop production reported by the San Luis Obispo County Agriculture Department (Exhibit NN - 2009 San Luis Obispo County Crop Report).

- The District estimated the farm field repair and clean-up cost to be $1,340 per acre based on the estimated cost to pump flood waters back into the channel after high flows recede, remove and dispose of debris, till and remove contaminated soils, conduct weed abatement by hand weeding and herbicide(s) application, perform required soils testing and mitigation for potential contamination from storm water pollutants.

A summary of the estimated repair and loss compensation per acre is provided in Table 7-3.

Item	Quantity	Unit	Est. Repair/Loss Compensation	Total Damage
Crop Loss	700	Acre	$9,950	$6,964,909
Clean-up	700	Acre	$1,340	$938,000
			Total	**$7,902,909**

A detailed breakdown of the estimated repair and loss compensation per acre is provided in Exhibit OO.

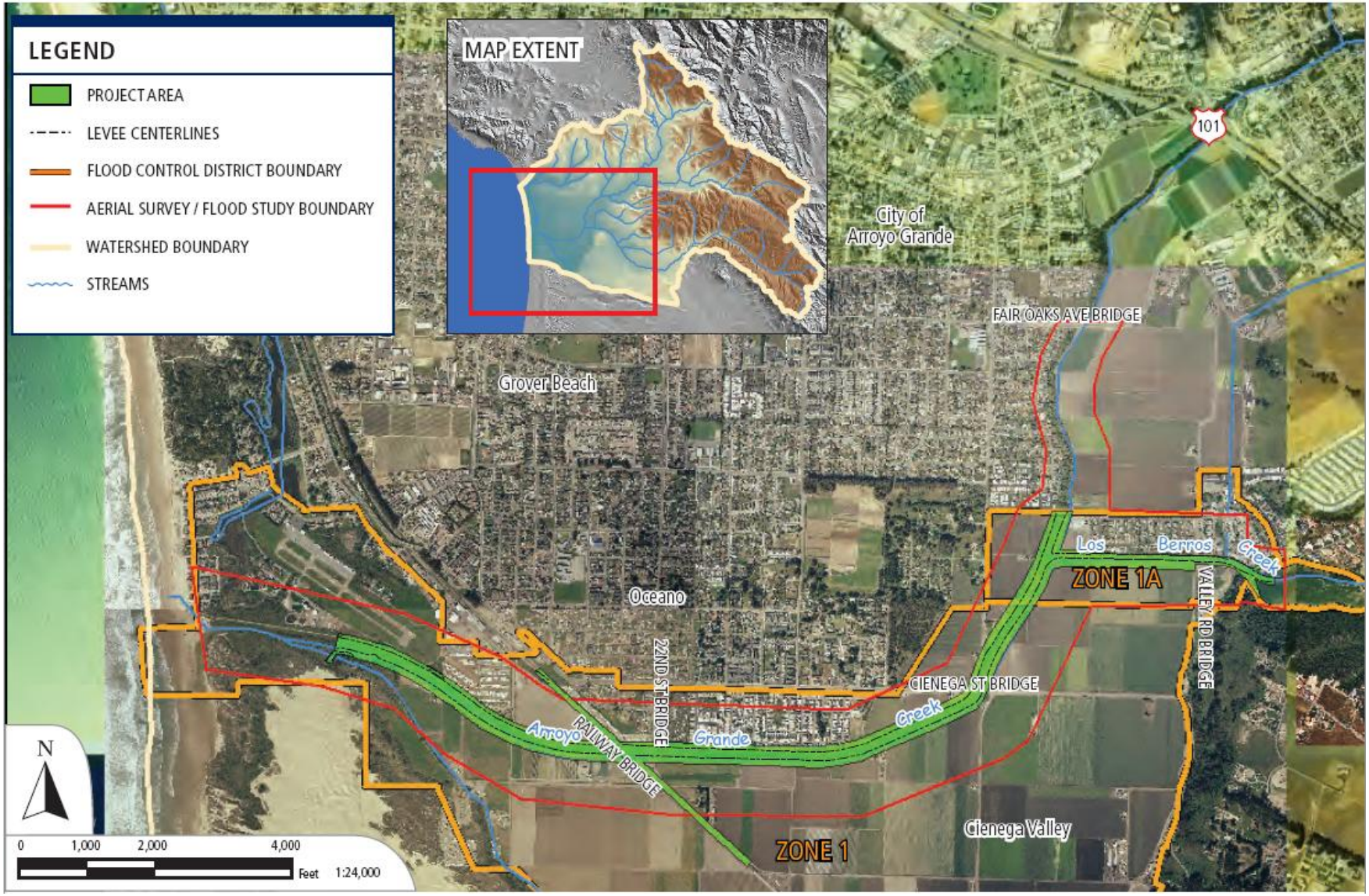
This project provides increased flood protection, which directly benefits the agricultural land holders by reducing potential for crop loss, and indirectly protects the jobs and livelihood of farm workers in Oceano, a disadvantaged community. Providing improvements that will reduce the costs of inundation and loss of valuable crops and cropland is both a local and regional benefit. By protecting State listed species habitat, the project also provides statewide benefits by addressing recovery and restoration needs of public trust resources. In addition, this project's articulation with other listed species regional recovery and restoration programs strengthens the synergy of public trust resource protection and increases the available leverage to complete recommended projects in the Arroyo Grande Creek Watershed Management Plan (2009). Beneficiaries of recovery and restoration activities include citizens of and visitors to San Luis Obispo County for future sport fishing and passive recreational opportunities.

Award of this grant would advance the completion date of this project 24 years to 2013. At that time, the increase in flood conveyance capacity will decrease the potential for flood damage to valuable farmland in the Cienega Valley. Better management and maintenance for vegetation and sediment in the channel will also decrease the likelihood of flooding with the implementation of the adopted WMP and approval of permits for long-term maintenance. The Alternative 3a project is the necessary first step in full implementation of the Zone 1/1A Flood Management Program, and provides a critical reduction of flood risk as planning and funding efforts for the overall management program move forward.

2. *Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board (RWQCB) region or subdivision; or other region or sub-region specifically identified by DWR*

The San Luis Obispo County Region is located in the Central Coast hydrologic region identified in the California Water Plan and the Central Coast Region of the Water Quality Control Board. Certainty of meeting this Program Preference is high since the Alternative 3a Project was thoroughly developed and established through the San Luis Obispo County IRWMP. The project meets a variety of goals and objectives, and provides multiple benefits to the integrated management of the region.

Figure 11-1. Alternative 3a Project Area



The Region's IRWM planning effort focused on developing multi-beneficial management strategies to address the many needs and water resources interests in the region. Borne out of the planning process was an IRWMP that integrates, on a regional basis, five main areas of water management: Water Quality, Water Supply; Ecosystem Preservation and Restoration, Groundwater Monitoring and Management, and Flood Management.

Through the IRWM planning process, projects were prioritized based on their ability to meet multiple San Luis Obispo IRWMP objectives. The Flood Control Zone 1/1A Waterway Management Program was identified as a flood management strategy in the San Luis IRWMP. The Zone 1/1A Waterway Management Program is a comprehensive set of actions designed to increase the capacity of the leveed lower three miles of Arroyo Grande Creek while simultaneously enhancing water quality and sensitive species habitat within the managed channel. Actions include raising the height of the existing levees, managing in-channel vegetation to enhance habitat, reducing sediment deposition within the channel, and implementing specific sediment removal projects.

The Alternative 3a Project is designed to maintain balance between flood protection and protection of natural resources. The goal of the vegetation and sediment management activities is to increase flood capacity throughout the project reach while at the same time improving in stream aquatic habitat and reducing the need for sediment maintenance in the future.

Certainty, Breadth and Magnitude

The Arroyo Grande Creek is recognized as an anadromous, natural production steelhead stream. Limiting factors for Arroyo Grande Creek watershed include increasing sedimentation, decreasing spawning gravel quality and quantity, fish passage barriers, decreased water quantity, and increased water temperature due to a lack of canopy. The proposed vegetation management is designed to maintain a riparian buffer to create a continuous riparian canopy through the project area that provides benefit to terrestrial and aquatic species that rely on cover habitat, cool water temperatures and other functions provided by a continuous and diverse riparian corridor. Depending upon the maturity of the trees, the upper portion of the tree canopy would likely extend well beyond the buffer width. The buffer would also act to maintain a primary low-flow channel that has developed over the last several years by providing root strength along the low flow channel margins. To improve riparian habitat through the project area, existing gaps in the riparian buffer would be revegetated with native riparian species including cottonwood, sycamore, and willow.

The proposed sediment management portion of the project will enhance geomorphic function by initial removal of accumulated sediment to create secondary channels and integration of habitat enhancement structures consisting of large natural wood logs. In natural systems, the primary channel contains low flows, whereas secondary channels become activated during higher flows that, on average, occur once a year (Figure 11-2). The Arroyo Grande Creek flood control channel currently lacks the secondary channels that are found in more natural, low gradient stream environments. Based on the current configuration of the primary (low flow) channel, secondary channels will crisscross the primary channel as the primary channel meanders between the levee side slopes (see Exhibit R - WMP Appendix B - Preliminary Engineering Design Plans).

During high flow events, the intersection of the primary and secondary channels are expected to be areas of complex flow conditions that will create localized eddies, backwaters, and scour. To take advantage of these high energy areas and encourage development of complex cover habitat for steelhead and red-legged frog, two types of large woody structures will be constructed at these locations. One type of large wood structure will be placed at the downstream end of each secondary channel as it conflues with the primary channel. The structure will provide protection from headcutting into the secondary channel and therefore enforce the location of the primary channel. The structure has also been designed to encourage pool scour at the confluence and mimic an undercut bank (similar to lunker structures traditionally used to enhance fish habitat). Because pool habitat and escape cover is lacking through the flood control reach, improvements to these physical habitat characteristics are expected to greatly improve aquatic habitat. In addition, these structures will provide escape cover for adults migrating through the reach to preferred spawning and rearing habitat areas that occur upstream of the flood control reach.

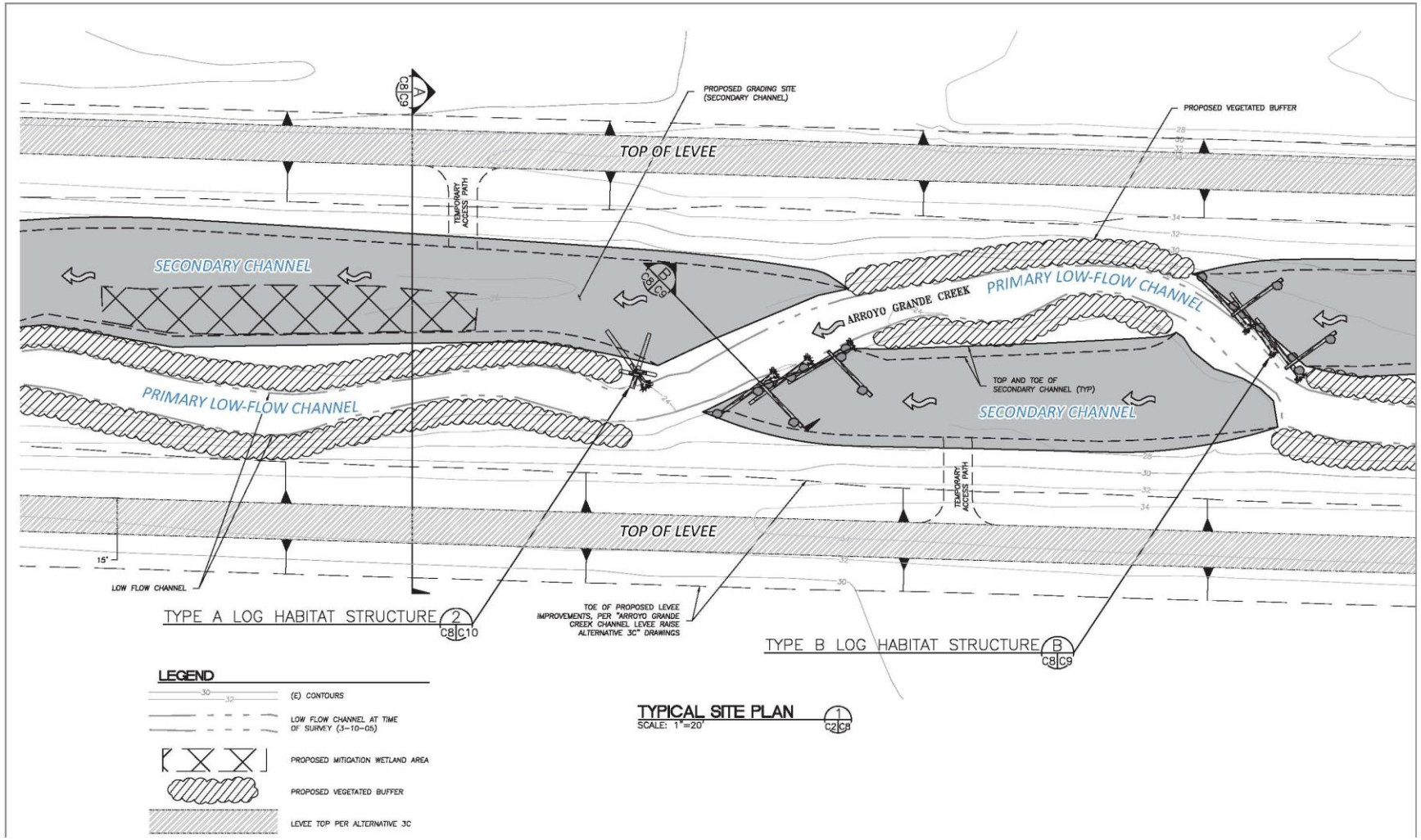


Figure 11-2: Conceptual sediment and vegetation management plans for the Arroyo Grande Creek Channel.

The second type of large wood structure would protect the head of bar that would exist at the downstream side of the confluence. This structure would also enforce maintenance of the primary and secondary channel locations and create a hard point that would encourage turbulence and creation of a pool at the confluence of the channels. Although both types of structures are designed to meet different habitat and channel stability objectives, they will promote pool scour, encourage variability in substrate and flow field conditions, and provide deep pools and cover habitat for steelhead and red-legged frog.

The combined vegetation and sediment management will "set" the flood control channel to an initial condition which mimics a natural system consisting of a primary low-flow channel supported by the presence of a stable riparian corridor. The completed project will enhance sediment transport and thereby reduce the need for future sediment removal projects providing continued ecosystem services to the existing sensitive species habitat found in both the flood control channel and upstream of it.

3. *For eligible SWFM funding, projects which: a) are not receiving State funding for flood control or flood prevention projects pursuant to PRC §5096.824 or §75034 or b) provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of instream erosion and sedimentation, and groundwater recharge*

The Alternative 3a Project is a comprehensive set of actions designed to increase the capacity of the leveed lower three miles of Arroyo Grande Creek to protect homeowners and agricultural property while simultaneously enhancing water quality and sensitive species habitat within the managed channel. Actions over time include raising the height of the existing levees, managing in-channel vegetation to enhance habitat, reducing sediment deposition within the channel, and implementing specific sediment removal projects.

Botanical Resources

Six plant community types occur within the Project Area including willow riparian woodland, riparian scrub, coyote brush scrub, ruderal (weedy) grassland, in-stream wetlands, and landscape tree groves. The willow riparian woodland habitat type comprises the majority of the proposed flood control area. In addition to the main plant community types, four special status species have been identified as having the potential to occur in the project area including sand marshwort, La Graciosa thistle, Gambels watercress, and San Bernardino aster. The potential for these species to occur is based on a records search of the California Native Plant Society (CNPS) and California Natural Diversity Database (CNDDB) inventories and the presence of suitable habitat on site.

When the flood control channel was constructed in 1959 all riparian vegetation was removed from the channel, resulting in a flat-bottom trapezoidal channel devoid of all vegetation. This condition was maintained for many decades with periodic dredging of the channel to maintain overall capacity. Due to concerns associated with the presence of threatened species, past management activities that maintained flood conveyance were restricted. Since 2006 vegetation is annually managed as part of a program conducted by the District with assistance from the RCD. The current program acquires annual permits from California Department of Fish and Game and the California Coastal Commission.

Fisheries Resources

Historically, Arroyo Grande Creek supported a large native population of steelhead (Oncorhynchus mykiss). Land use impacts in the watershed and construction of Lopez Dam and Reservoir has greatly reduced their numbers to a point where only a small run of adult steelhead occur today. Access to historic spawning habitat upstream of Lopez Reservoir was completely cut off due to construction of the dam in the late 1960's. The remaining habitat consists of the mainstem of Arroyo Grande Creek downstream of the dam and short reaches of year-round flow on tributaries such as Los Berros and Tar Springs. Unfortunately, the mainstem of Arroyo Grande Creek downstream of Lopez Reservoir, Los Berros Creek, and Tar Spring Creek do not provide the prime spawning and rearing habitat that historically occurred upstream of Lopez Reservoir. The accessible reaches of the mainstem of Arroyo Grande Creek consist of approximately 14 miles of channel along the mainstem, 14 miles of channel along Los Berros and an equal amount along Tar Springs.

In 1997, steelhead (Oncorhynchus mykiss) runs along the Central Coast of California were listed as threatened under the Endangered Species Act. Due to their declining numbers and federal protection, awareness has been raised about the fate of the steelhead run in Arroyo Grande Creek and a strategy is being pursued to restore this population through habitat enhancement measures downstream of Lopez Reservoir.

The most recent habitat assessment and steelhead abundance surveys were conducted in 2004 and 2006, respectively. Habitat assessments of the entire mainstem of Arroyo Grande Creek below Lopez Reservoir were conducted in the summer of 2004 by the California Conservation Corps (Close and Smith, 2004). Those data were then used to develop a random sample of discreet habitat units for a fish abundance survey conducted in the fall of 2006 (Dvorsky and Hagar, 2008). Within the Project Area a total of five discreet habitat units were sampled representing approximately 840 feet of channel. All of the habitat units were sampled via snorkeling and one of the habitat units was sampled via both snorkeling and electrofishing. The number of steelhead observed via snorkeling in all five habitat units sampled as part of the study was five. No steelhead were captured via electrofishing in the single habitat unit.

In the 2006 study, steelhead were markedly more abundant upstream of the flood control channel than within the flood control reach and then declined within the vicinity of Lopez Dam. In general low numbers of steelhead visually observed and sampled during the 2006 survey are consistent with previous studies on Arroyo Grande Creek which have suggested low steelhead adult returns, poor quality habitat, and impacts from loss of historic, high quality habitat present above Lopez Reservoir.

In addition to steelhead a number of other species of fish occur in the system including Sacramento sucker, California roach, and threespine stickleback. Non-native fish species include bullhead, centrarchids, and mosquito fish.

Other Threatened & Endangered Species
The California red-legged frog is a State Species of Special Concern and is Federally listed as threatened. California red-legged frogs have been observed within the flood control reach of Arroyo Grande Creek (Essex Environmental 2002; CSLRCD 2005). The flood control reach is expected to provide summer foraging habitat for the frog; however, due to swift winter flows through the study area, it is not likely to provide suitable frog breeding habitat. The lack of vegetation and dry summer conditions in the Los Berros Creek portion of the study area make it unsuitable for California red-legged frogs.

Certainty, Breadth and Magnitude

Alternative 3a Project includes the following components:

- First year vegetation management with maintenance in subsequent years;
- First year sediment removal with maintenance in subsequent years; and
- Raising existing levees representing protection from 10-year floods.

Vegetation Management
The vegetation management program for the Arroyo Grande Creek Channel will consist of maintaining a 10-foot buffer on both sides of the low-flow channel to provide riparian habitat and streamside cover to protect aquatic habitat. The buffer would also act to maintain a primary low-flow channel that has developed over the last several years by providing root strength along the low flow channel margins. Woody vegetation outside of the buffer would be removed completely to allow for high flows to access secondary channels and provide for increased conveyance and flood capacity. Non-woody herbaceous vegetation would not be removed as they are expected to lay down during a large flow event. Willows present within the buffer would be limbed up to reduce cross-sectional roughness but still provide adequate stream shading and riparian habitat.

Management activities within the buffer will consist of the following:

- Trees greater than 4” DBH on the banks of the active channel, from the toe of the active stream channel uphill to a distance of 10 feet from the channel, will have horizontal branches trimmed to a height of not more than six feet from ground level. If creek shade is provided by adjacent larger trees, willow sprouts less than 4” DBH will be cut to within 6” of the ground. Trimming the trees on the banks in this manner will encourage growth in the upper canopy of the trees, improving their ability over time to shade the creek, while also improving channel capacity to handle high flows by lowering the roughness coefficient.
- No trees will be removed within the buffer area with the exception of trees that have fallen over and are a risk to the integrity of the levee (e.g. – lodged against levee or bridge) or have the potential to increase the

risk of flooding (e.g. – have fallen across the channel and are obstructing flow). All root balls will be left intact to enable resprouting and to help stabilize soils.

All woody vegetation within the buffer occurring 50 feet upstream and 30 feet downstream of existing bridges will be removed completely.

- Vegetation management activities will be conducted by hand crews and will include the use of mechanized and non-mechanized hand equipment such as chainsaws, loppers, etc. No debris will be allowed to enter the stream channel and debris from invasive species will be separated, bagged and disposed of at a designated landfill. Native vegetation cut from the channel will be mulched on site and either used as mulch on the back side of the levees or removed to a designated off-site area.

To improve riparian habitat through the project area, existing gaps in the riparian buffer would be revegetated with native riparian species including cottonwood, sycamore, and willow. Cottonwood, sycamore, and alder will be planted at random along the length of the Arroyo Grande Creek Channel to encourage long-term diversity in the riparian corridor. Vegetation management activities will be combined with an active program to remove non-native vegetation from the flood control channel. Non-native species to be actively removed include Himalayan blackberry, English ivy, fennel, weeping willow, giant reed, castor bean, poison hemlock, and geranium. Non-native species management activities could include use of goats, application of herbicides, or removal by hand of plant and rootball. Non-native vegetation removed from the channel will be bagged and disposed of accordingly to limit their spread.

Vegetation management would be conducted as often as necessary to maintain a composite roughness of 0.04 through an adaptive management approach that would include reconnaissance surveys and site visits with regulatory agency staff. Vegetation management activities would likely occur annually depending on the amount of re-growth and funding. Based on vegetation management activities that have occurred over the last four years, regrowth of managed vegetation during the spring and summer is heavy, requiring annual maintenance.

Vegetation management involving tree trimming would occur as late as possible in the summer and fall of each year to maximize stream shading during the warmer summer months and would only occur between July 1 and October 15 of any given year. If tree trimming activities occur prior to August 15, protocols to avoid impacts to nesting birds will be followed. Vigorous regrowth of willow is expected in late winter and spring providing low, overhanging vegetation during critical months for steelhead and red-legged frog rearing (Figure 11-2).

Sediment Management

The need for constant dredging of the flood control channel to maintain design capacity is primarily rooted in two geomorphic principles that dictate sediment delivery and transport in the flood control reach. They include:

- Much of lower Arroyo Grande Creek downstream of Lopez Dam historically consisted of a broad floodplain characterized by an ephemeral active channel that migrated across the floodplain in response to sediment deposition and debris jams. The loss of that function has resulted in delivery of high sediment loads to the lower reaches of the watershed resulting in excessive sediment deposition in the flood control reach.
- The original flood control channel design did not consider the concept of a “bankfull” channel when sizing bed dimensions. Bankfull can be defined as the stage that corresponds to the discharge at which channel maintenance is the most effective. It is at the bankfull discharge where, over time, the largest volume of sediment is moved and in-stream morphologic features, such as pools and riffles, are created.

Field observations in the flood control reach, following an extended period with no appreciable dredging, suggests that a bankfull or primary low-flow channel width of approximately 20-25 feet has developed along the Arroyo Grande Creek channel. The flood control channel design created a bottom width of 60-70 feet, resulting in excessive sediment deposition because flow was spread out, resulting in shallower water depths and less energy to move sediment. Consequently, the geomorphic setting and design geometry are an important reason why there is a need to constantly remove sediment from the channel. Maintenance of a primary low-flow channel, enforced by the presence of a stable riparian corridor, will improve sediment transport conditions through the flood control reach.

To enhance geomorphic function, improve flood conveyance, and "set" the flood control channel to an initial condition that will enhance sediment transport, a two step process has been proposed for sediment management within the project area. The two step process consists of an initial phase of sediment removal that will be completed the first year, followed by a long-term sediment management program that will rely on periodic monitoring of sediment conditions in the channel and consultation with permitting agencies to "reset" conditions back to the first year condition.

Levee Raise
A key component of the Alternative 3a Project involves raising the existing levees to improve flood protection along lower Arroyo Grande Creek. The levees would be raised to achieve flood protection from the 10-year flood event.
The levees would be raised along Arroyo Grande Creek Channel from the Los Berros confluence to the upstream end of the lagoon. The existing levees will be raised with the inside slope of the levee at 2:1, the outside levee at a slope of 1.5:1 and top of levee width not less than 15 feet. All levee raising work would take place on the outside of the existing levee, where feasible, and not impinge upon the existing Ordinary High Water (OHW).

The Alternative 3a Project is a comprehensive set of actions designed to increase the capacity of Arroyo Grande Creek while simultaneously enhancing water quality and sensitive species habitat within the managed channel. The vegetation management, sediment management, and levee raise are all designed to ensure the delivery of ecosystem benefits while providing the necessary flood conveyance capacity.

Figure 11-3. Spring/early summer regrowth of vegetation in channel

4. *Address Statewide priorities – Expand Environmental Stewardship and Practice Integrated Flood Management*

As described above, the Alternative 3a Project would improve the flow characteristics of the channel by reducing channel roughness through vegetation thinning and removal enhance geomorphic function by removing accumulated sediment, establishing a primary low-flow channel, and creating secondary overflow channels to improve flood conveyance and sediment transport. Maintenance of a primary low-flow channel, enforced by the presence of a stable riparian corridor, will improve sediment transport conditions throughout the flood control reach which will reduce the need for future maintenance/dredging and provide continued flood protection. This project practices, promotes, improves, and expands environmental stewardship to protect and enhance the environment with certainty by improving instream functions and sustaining flood management ecosystems and promotes and practices integrated flood management to provide multiple benefits including:

- Better emergency preparedness and response
- Improved flood protection
- More sustainable flood and water management systems
- Enhanced floodplain ecosystems

EXHIBIT KK

ACKNOWLEDGEMENT OF TERMINATION DATE OF 1959 AGREEMENT

This Acknowledgement of Termination of 1959 Agreement (hereafter "Acknowledgement") entered into the 1ST day of December, 2009, between the San Luis Obispo County Flood Control and Water Conservation District, acting on behalf of Zones 1 and 1A (hereinafter referred to as "the County Flood Control District") and the Coastal San Luis Resource Conservation District (hereinafter referred to as the "RCD"), as successor in interest to the Arroyo Grande Soil Conservation District, and the Natural Resources Conservation Service (hereafter "NRCS"), of the United States Department of Agriculture, as the successor in interest to the Soil Conservation Service.

PREAMBLE

WHEREAS, the aforementioned parties (and/or their predecessors in interest) are partners to that certain "Watershed Protection Operation and Maintenance Agreement for Arroyo Grande Creek Channel and Los Berros Creek Diversion Improvements (Arroyo Grande Creek Watershed)" dated May 15, 1959 (the "1959 Agreement"); and

WHEREAS, the 1959 Agreement relates to the operation and maintenance of the following described works of improvement:

> The Arroyo Grande Channel and appurtenances from the Pacific Ocean upstream for a distance of 2.84 miles, and the Los Berros Creek Diversion and appurtenances along an easterly line for a distance of 0.59 miles, from the Arroyo Grande Creek Channel to a point where the existing Los Berros Creek Channel emerges from the hills, as described in the "Watershed Work Plan ARROYO GRANDE CREEK," San Luis Obispo County, California.

WHEREAS, said works of improvement described in the 1959 Agreement are hereinafter referred to as the "Original Project"; and

WHEREAS, the Original Project has achieved its intended purpose, and alterations to the Original Project's purpose, design and maintenance are necessary to accommodate changing regulations, watershed hydrology, and waterway management planning; and

WHEREAS, although the 1959 Agreement has no express termination date, the parties agree that the 1959 Agreement has an implied term of 50 years.

ACKNOWLEDGEMENT

NOW, THEREFORE, the County Flood Control District, RCD, and NRCS mutually agree as follows:

1. The parties agree that the above recitals in the Preamble are true and correct, and are incorporated herein by reference.

2. The parties hereby acknowledge, and mutually agree, that the 1959 Agreement shall be deemed terminated as of May 15, 2009.

SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

By Bruce S. Gibson
Chairperson of the Board of Supervisors

Dated: December 1, 2009

ATTEST:
JULIE RODEWALD
County Clerk and Ex-Officio Clerk of the Board of Supervisors

By: Diane A Grutton
Deputy Clerk

Dated: December 1, 2009

APPROVED AS TO FORM AND LEGAL EFFECT:

WARREN R. JENSEN
County Counsel

By _____
Patrick Foran
Deputy County Counsel

Dated: 6/25/09

COASTAL SAN LUIS RESOURCE CONSERVATION DISTRICT

By: Neil Havlik
Neil Havlik, President

Dated: 8/21/09

ATTEST:

_____
RCD

NATURAL RESOURCE CONSERVATION SERVICE, UNITED STATES OF DEPT. OF AGRICULTURE

By: _____

Name: _____

Title: _____

Dated: _____

PJF/nw
083005 / 1125nwagr.doc

APPROVED AS TO FORM AND LEGAL EFFECT:

WARREN R. JENSEN
County Counsel

By _____
Patrick Foran
Deputy County Counsel

Dated: 6/25/09

COASTAL SAN LUIS RESOURCE CONSERVATION DISTRICT

By: _____
Neil Havlik, President

Dated: _____

ATTEST:

_____
RCD

NATURAL RESOURCE CONSERVATION SERVICE, UNITED STATES OF DEPT. OF AGRICULTURE

By: _____

Name: Gayle Norman

Title: Acting State Consvst.

Dated: 9/29/2009

PJF/nw
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EXHIBIT NN

COUNTY OF SAN LUIS OBISPO
Department of Agriculture/Weights and Measures

2156 SIERRA WAY, SUITE A, SAN LUIS OBISPO, CALIFORNIA 93401-4556
ROBERT F. LILLEY
AGRICULTURAL COMMISSIONER/SEALER
www.sloag.org.

April 1, 2010

Contact: Bob Lilley, County Ag Commissioner/Sealer
805-781-5924

FOR IMMEDIATE RELEASE

Crop Statistics for 2009 for San Luis Obispo County Released.

2009 Production, Valued at $623,095,000, Increased 3% Compared to 2008.

SAN LUIS OBISPO, CA April 1, 2010—The San Luis Obispo County Department of Agriculture/Weights and Measures is pleased to announce the release of annual production statistics for the local agricultural industry for 2009. Statistics can be found on the Department's website at www.slocounty.ca.gov/agcomm. Hard copies of the annual report will be available in June.

Total crop values for 2009 are estimated at a gross value of $623,095,000 compared to $602,922,000 for 2008. This increase is an improvement of approximately 3%, according to Bob Lilley, County Agricultural Commissioner. "Many growers continued to feel the negative effects of the four year drought in 2009. However, other than the lack of rainfall, the overall mild winter and summer temperatures provided ideal growing conditions for some of the county's crops", continued Lilley.

Wine grapes continue to hold the top position in overall value. Favorable weather conditions contributed to a 42% increase in yields over 2008 tonnage totals. The prices for San Luis Obispo County's grapes declined slightly, however higher yields created a 34% overall increase in value compared to 2008. Wine Grape values were $166, 378,000 or 27% of the combined value of the County's entire agricultural industry.

The strawberry industry expanded by 370 acres to 1893 total acres, a 24% increase over 2008. Despite lower prices compared to 2008 levels, the local industry was valued at $73,198,000, an increase of approximately 12% over 2008.

Coastal avocado and Valencia orange trees suffered fruit loss due to one week of unusually high temperatures in June, 2009, resulting in significantly lower yields, compared to 2008. Lemon yields were high, but reduced consumer demand caused prices to fall.

##more##

VEGETABLE CROPS

CROP	YEAR	HARVESTED ACREAGE	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	PER UNIT	TOTAL
Bell Peppers	2009	822	1,153.0	947,766	30#	7.59	$7,194,000
	2008 **	937	1,091.0	1,022,267	30#	6.80	$6,951,000
Bok Choy	2009 +	427	814.0	347,578	80#	8.87	$3,083,000
Broccoli (All)	2009	12,909	547.0	7,061,223	23#	8.52	60,162,000
	2008 **	14,977	565.0	8,462,005	23#	8.32	70,404,000
Cabbage	2009	653	1,341.0	875,673	45#	7.67	6,716,000
	2008 **	977	772.0	754,244	45#	8.70	6,562,000
Cauliflower	2009	1,533	831.0	1,273,923	25#	10.69	13,618,000
	2008	1,567	666.0	1,043,622	25#	8.70	9,080,000
Celery	2009	787	1,160.0	912,920	60#	8.93	8,152,000
	2008 **	953	1,212.0	1,155,036	60#	9.83	11,354,000
Lettuce, Head	2009	5,312	591.0	3,139,392	50#	8.83	27,721,000
	2008 **	5,106	682.0	3,482,292	50#	6.84	23,819,000
Lettuce, Leaf	2009	2,163	482.0	1,042,566	25#	11.81	12,313,000
	2008 **	2,112	547.0	1,155,264	25#	11.95	13,805,000
Napa Cabbage	2009 +	1,294	877.0	1,134,838	80#	9.61	10,906,000
(Oriental Vegetables)	2008 **	1,185	835.0	989,475	80#	11.37	11,250,000
Peas	2009	361	245.0	88,445	10#	8.26	731,000
Edible Pod	2008	547	332.0	181,604	10#	10.40	1,889,000
Spinach	2009	834	463.0	386,142	20#	12.54	4,842,000
	2008	1,007	506.0	509,542	20#	11.77	5,997,000
Squash	2009	242	758.0	183,436	30#	7.37	1,352,000
	2008	278	771.0	214,338	30#	5.86	1,256,000
* Miscellaneous	2009	4,589					30,519,000
	2008 **	6,125					37,411,000
TOTAL VEGETABLE	2009	31,926					$187,309,000
CROPS	2008 **	35,771					$199,778,000

* *Anise, Artichokes, Arugula, Beans, Beets, Brussel Sprouts, Carrots, Chard, Chili Peppers, Cilantro, Collards, Cucumbers, Daikon, Dandelion, Dill, Endive, Escarole, Garlic, Green Garbanzo Beans, Herbs, Kale, Leeks, Melons, Mushrooms, Mustard, Onions, Parsley, Potatoes, Pumpkins, Radicchio, Radishes, Rutabagas, Sweet Corn, Tomatillos, Tomatoes, Turnips*

** *Revised*

\+ *Formerly reported as Oriental Vegetable*

FRUIT & NUT CROPS

CROP	YEAR	ACREAGE PLANTED	ACREAGE BEARING/ HARVESTED	PRODUCTION PER ACRE	PRODUCTION TOTAL	UNIT	PER UNIT	TOTAL
Avocados	2009	4,800	3,919	0.922	3,613	Ton	2,551.00	$9,218,000
	2008 **	4,800	3,919	1.354	5,306	Ton	2,060.00	$10,931,000
Grapes, Wine (All)	2009	36,276	34,100		147,380	Ton		166,378,000
	2008	36,845	34,622		103,507	Ton		124,126,000
Chardonnay	2009		3,481	6.192	21,554	Ton	1,289.00	27,784,000
	2008		3,109	5.516	17,149	Ton	1,445.00	24,781,000
Sauvignon Blanc	2009		983	6.025	5,923	Ton	920.00	5,449,000
	2008		1,147	3.660	4,198	Ton	962.00	4,038,000
White Wine (Other)	2009		1,763	4.933	8,697	Ton	1,212.00	10,541,000
	2008		2,053	3.221	6,613	Ton	1,373.00	9,079,000
Cabernet Sauvignon	2009		11,280	3.993	45,041	Ton	1,031.00	46,437,000
	2008		11,377	2.408	27,396	Ton	1,005.00	27,533,000
Merlot	2009		4,765	5.060	24,111	Ton	829.00	19,988,000
	2008		4,934	3.081	15,202	Ton	898.00	13,651,000
Pinot Noir	2009		1,905	2.299	4,380	Ton	2,714.00	11,887,000
	2008		1,548	1.866	2,889	Ton	3,107.00	8,975,000
Syrah	2009		3,525	2.986	10,526	Ton	1,188.00	12,504,000
	2008		3,550	2.517	8,935	Ton	1,261.00	11,267,000
Zinfandel	2009		2,883	3.812	10,990	Ton	1,106.00	12,155,000
	2008		3,253	3.025	9,840	Ton	1,064.00	10,470,000
Red Wine (Other)	2009		3,515	4.597	16,158	Ton	1,215.00	19,633,000
	2008		3,651	3.091	11,285	Ton	1,270.00	14,332,000
Lemons	2009	1,634	1,542	20.058	30,929	Ton	198.00	6,124,000
	2008	1,634	1,532	14.171	21,852	Ton	599.00	13,089,000
Strawberries (All)	2009		1,893		57,890	Ton		73,198,000
	2008		1,523		45,660	Ton		65,481,000
Fresh	2009			21.918	41,491	Ton	1,533.00	63,605,000
	2008			21.610	32,912	Ton	1,708.00	56,214,000
Processed	2009			8.663	16,399	Ton	585.00	9,593,000
	2008			8.370	12,748	Ton	727.00	9,267,000
Valencia Oranges	2009	304	304	6.015	1,829	Ton	261.00	477,000
	2008	304	304	21.262	6,464	Ton	137.00	886,000
English Walnuts	2009	2,371	2,330	0.330	769	Ton	1,796.00	1,381,000
	2008 **	2,371	2,330	0.233	543	Ton	2,413.00	1,310,000
* Miscellaneous	2009	2,788	1,946					14,698,000
	2008	3,173	2,083					13,838,000
TOTAL FRUIT & NUT CROPS	2009	48,173	46,034					$271,474,000
	2008 **	49,127	46,313					$229,661,000

* *Almonds, Apples, Apricots, Asian Pears, Blueberries, Bushberries, Cherries, Feijoas, Grapefruit, Kiwis, Mandarin Oranges, Navel Oranges, Nectarines, Olives, Peaches, Pears, Persimmons, Pistachios, Pomegranates, Quince, Specialty Citrus, Table Grapes, Tangerines*

** *Revised*

FIELD CROPS

CROP	YEAR	ACREAGE		PRODUCTION			VALUE	
		PLANTED	HARVESTED	PER ACRE	TOTAL	UNIT	PER UNIT	TOTAL
Alfalfa Hay	2009	2,001	2,001	5.89	11,786	Ton	$132.00	$1,556,000
	2008	2,119	2,119	6.42	13,604	Ton	$237.00	$3,224,000
Barley	2009	12,465	8,593	0.71	6,101	Ton	144.00	879,000
	2008	8,288	6,015	0.91	5,474	Ton	214.00	1,171,000
++ Grain Hay	2009	11,376	10,237	1.66	16,993	Ton	116.00	1,971,000
	2008	12,355	11,275	1.62	18,266	Ton	205.00	3,744,000
Grain Stubble	2009		10,098			Acre	11.00	111,000
(Grazed)	2008		9,910			Acre	10.00	99,000
Rangeland, Grazed	2009		1,025,000			Acre	9.00	9,225,000
	2008		1,025,000			Acre	8.00	8,200,000
* Miscellaneous	2009	2,688	3,313					1,436,000
	2008 **	8,655	6,264					1,352,000
TOTAL FIELD CROPS	2009	28,530	1,059,242					$15,178,000
	2008 **	31,417	1,060,583					$17,790,000

* *Irrigated Pasture, Garbanzo Beans, Oats, Safflower, Wheat, Field seed*
++ *Includes winter forage*
** *Revised*

EXHIBIT OO

Estimated Crop Loss and Clean Up Cost
for Flooding during the 5, 8, and 10 year Events

Estimated Proportion of Typical Crops Harvested in the 5-year Flood Area (~700 acres)

Typical Crops	2009 Harvested	% of Total	Typical Crop
Bell Peppers	822	4.75%	33.3
Cabbage	653	3.78%	26.4
Celery	787	4.55%	31.9
Lettuce, head	5,312	30.71%	215.0
Lettuce, leaf	2,163	12.51%	87.5
Spinach	834	4.82%	33.8
Squash	242	1.40%	9.8
Misc: Brussel Sprouts, Endive, Onions, Tomatoes	4,589	26.53%	185.7
Strawberries	1,893	10.95%	76.6
Total Harvested Acreage of Typical Crops	17,295	100.00%	700.0

Potential Annual Crop Revenue

Crops	Potential Annual	Potential per Acre	Potential Total	Unit	Per Unit	Total
Bell Peppers	33.3	1153	38,360	30#	$7.59	$291,152
Cabbage	26.4	1341	35,442	45#	$7.67	$271,841
Celery	31.9	1160	36,950	60#	$8.93	$329,960
Lettuce, head	215.0	591	127,064	50#	$8.83	$1,121,976
Lettuce, leaf	87.5	482	42,197	25#	$11.81	$498,346
Spinach	33.8	463	15,629	20#	$12.54	$195,985
Squash	9.8	758	7,424	30#	$7.37	$54,718
Misc: Brussel Sprouts, Endive, Onions, Tomatoes	185.7	1	186	acre	$6,650.00	$1,235,143
Strawberries	76.6	30.6	2,344	Ton	$1,265.00	$2,965,788
Potential Annual Harvested Acreage Total	**700.0**	**Potential Annual Crop Revenue Total**				$6,964,909
		Potential Annual Crop Revenue				**$9,950**

Assumptions:
1. Farm fields capable of 2 to 3 crops each year and that flooding would make fields inoperable for at least one (1)
2. Typical crops being brussel sprouts, celery, cabbage, endive, lettuce, onions, peppers, spinach, squash, tomatoes, cherry tomatoes, and strawberries.
3. Harvested acreage, per acre, and per unit crop values taken from the 2009 SLO County Crop Report prepared by the SLO County Agriculture Dept.

Estimated Crop Loss and Clean Up Cost
for Flooding during the 5, 8, and 10 year Events

Estimated Clean up Cost

Item	Quantity	Unit	Est. Repair	Total Damage
Set-up of Temporary Pump[1]	1	LS	$1,200	$1,200
Operation of Temporary Pump[2,3]	50	Day	$500	$25,000
Take-down of Temporary Pump[1]	1	LS	$1,200	$1,200
Debris Removal/Disposal	700	Acre	$1,300	$910,000
			Total Clean-up Cost	**$937,400**
			Clean-up Cost per Acre	**$1,339.14**

Assumptions:

1. Cost for 2 PW Worker III's to assemble/disassemble temporary piping and connect temporary pump (16 hours)
2. Operation costs includes $300 for fuel plus time for 1 PW Worker III to perform one service check during a single 24-hour operation period.
3. Flooded depth of 4-feet over 700 acres. Duration of pumping activity based on time to pump 2,800 acre-feet (~122M cubic feet) of water back into the channel using the District's trailer mounted pump (~30 cfs capacity).

4. Debris Removal / Disposal unit cost based on estimated cost to clear and grub fields to help aerate soil for drying and remove contaminated top soil. Clearing and grubbing costs assumed to be $0.03/SF or $1,306/acre, based on *SLO County Public Works Department Bonding Estimate - County Approved Unit Costs, 2009.*

EXHIBIT R

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN

CONCEPTUAL PLANS

PROJECT DESCRIPTION

THESE PLANS PROVIDE DETAILS FOR THE REMOVAL OF SEDIMENT FROM ARROYO GRANDE AND LOS BERROS CREEK CHANNELS IN THE COUNTY OF SAN LUIS OBISPO. CONSTRUCTION ACTIVITIES WILL CONSIST OF EXCAVATION AND DISPOSAL OF SEDIMENT FROM THE CHANNEL FLOODPLAINS AND INSTALLATION OF LOG HABITAT STRUCTURES.

GRADING SUMMARY

TOTAL CUT VOLUME =	21,332 CY
TOTAL FILL VOLUME =	0 CY
NET CUT =	21,332 CY

THE ABOVE QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND, AS MAPPED IN 2006, AND THE PROPOSED FINISH GRADE. EXISTING GROUND IS DEFINED BY THE TOPOGRAPHIC CONTOURS AND/OR SPOT ELEVATIONS ON THE PLAN. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF EARTH TO BE CONSTRUCTED.

THE ABOVE QUANTITIES HAVE BEEN CALCULATED FOR PERMITING PURPOSES ONLY AND HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND CONSTRUCTION METHODS.

THE CONTRACTOR SHALL PERFORM AN INDEPENDENT EARTHWORK ESTIMATE FOR THE PURPOSE OF PREPARING BID PRICES FOR EARTHWORK. THE BID PRICE SHALL INCLUDE COSTS FOR ANY NECESSARY IMPORT AND PLACEMENT OF EARTH MATERIALS OR THE EXPORT AND PROPER DISPOSAL OF EXCESS EARTH MATERIALS.

PRIOR TO COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL PERFORM AN UPDATED CROSS SECTION SURVEY TO DETERMINE ACTUAL CONDITIONS.

GENERAL NOTES

1) PREPARED AT THE REQUEST OF:
SAN LUIS OBISPO COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

2) AERIAL MAPPING OF THE PROJECT AREA WAS PERFORMED BY:
CENTRAL COAST AERIAL MAPPING, INC.
710 FIERO LN #24
SAN LUIS OBISPO, CALIFORNIA 93401
(805)543-4307
JOB# 2005-841
PHOTOGRAPHY DATE: 3/10/2005

3) ELEVATION DATUM: NAVD 88, BASED ON NGS BENCHMARK X 532, PID "FV0421", ELEVATION= 13.5'

4) HORIZONTAL DATUM: HORIZONTAL COORDINATES CONSTRAINED TO NGS MONUMENT HPGN CA 05 05, PID "FV2048", NAD83, CALIFORNIA STATE PLAN ZONE 5

5) APN'S: T.B.D.

6) ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF. CONTOUR INTERVAL IS 2 FEET.

7) PROPERTY LINES ARE NOT SHOWN HEREON.

8) ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF LOCAL STREETS AND ROADS (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS", AND SHALL BE SUBJECT TO APPROVAL OF THE OWNER.

9) THE COUNTY PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. A QUALIFIED CIVIL ENGINEER WITH EXPERIENCE IN THE INSTALLATION OF FEATURES OF THE TYPE SHOWN ON THESE PLANS, SHALL PROVIDE INSPECTION SERVICES DURING THE CONSTRUCTION PROCESS.

10) CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTION LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. NEITHER THE PROFESSIONAL ACTIVITIES OF CONSULTANT NOR THE PRESENCE OF CONSULTANT OR HIS OR HER EMPLOYEES OR SUB-CONSULTANTS AT A CONSTRUCTION SITE SHALL RELIEVE THE CONTRACTOR AND ITS SUBCONTRACTORS OF THEIR RESPONSIBILITIES INCLUDING, NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND APPLICABLE HEALTH OR SAFETY REQUIREMENTS OF ANY REGULATORY AGENCY OR OF STATE LAW.

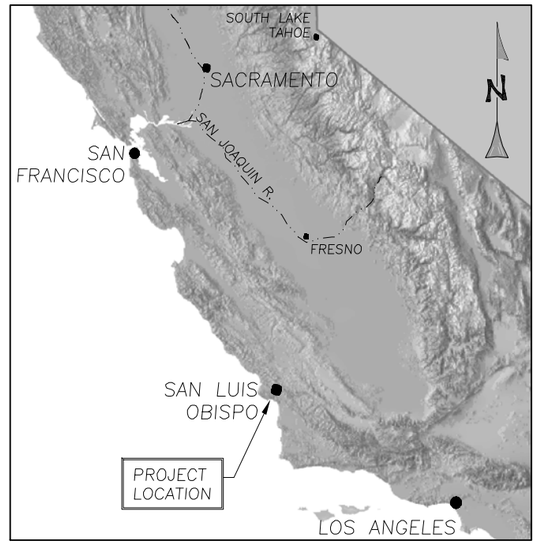
SECTION AND DETAIL CONVENTION

SECTION OR DETAIL IDENTIFICATION (NUMBER OR LETTER)

5
C2 | C3

REFERENCE SHEET FROM WHICH DETAIL OR SECTION IS TAKEN.

REFERENCE SHEET ON WHICH SECTION OR DETAIL IS SHOWN.



REGIONAL MAP
N.T.S.

VICINITY MAP
N.T.S.

SHEET INDEX

C1	COVER SHEET	C6	SITE PLAN 4 OF 5
C2	PROJECT AREA OVERVIEW	C7	SITE PLAN 5 OF 5
C3	SITE PLAN 1 OF 5	C8	TYPICAL SITE PLAN
C4	SITE PLAN 2 OF 5	C9	TYPICAL SECTIONS
C5	SITE PLAN 3 OF 5	C10	DETAILS

GENERAL NOTES CONT'D

11) EXISTING UNDERGROUND UTILITY LOCATIONS:

LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY THE APPROPRIATE UTILITY AGENCIES OR FROM FIELD MEASUREMENTS TO ABOVE GROUND FEATURES READILY VISIBLE AT THE TIME OF SURVEY. LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND DEPTH OF UNDERGROUND UTILITIES.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATION AND/OR PROTECTION OF ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT (BOTH ABOVE GROUND AND BELOW GROUND), STRUCTURES, AND ALL OTHER EXISTING IMPROVEMENTS THROUGHOUT CONSTRUCTION.

PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION, CONTRACTOR SHALL DISCOVER OR VERIFY THE ACTUAL DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES AND POTHOLE THOSE AREAS WHERE POTENTIAL CONFLICTS ARE LIKELY OR DATA IS OTHERWISE INCOMPLETE.

CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION OPERATIONS, AND SHALL BE SOLELY RESPONSIBLE FOR THE COST OF REPAIR/REPLACEMENT OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT (1-800-642-2444) TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO COMMENCING CONSTRUCTION.

UPON LEARNING OF THE EXISTENCE AND/OR LOCATIONS OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE CITY BY TELEPHONE AND IN WRITING.

UTILITY RELOCATIONS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT FACILITIES WILL BE PERFORMED BY THE UTILITY COMPANY, UNLESS OTHERWISE NOTED.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CONTACT ALL UTILITIES COMPANIES WITH REGARD TO WORKING OVER, UNDER, OR AROUND EXISTING FACILITIES AND TO OBTAIN INFORMATION REGARDING RESTRICTIONS THAT ARE REQUIRED TO PREVENT DAMAGE TO THE FACILITIES.

12) SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS, HE SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

13) THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, PERMITTING, INSTALLATION, AND MAINTENANCE OF ANY AND ALL TRAFFIC CONTROL MEASURES DEEMED NECESSARY.

14) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE GENERAL SAFETY DURING CONSTRUCTION. ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC AND THE WORK, AND PROVIDE FOR THE PROPER AND SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT.

15) THE CONTRACTOR SHALL PURSUE WORK IN A CONTINUOUS AND DILIGENT MANNER TO ENSURE A TIMELY COMPLETION OF THE PROJECT.

16) ALL CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH THE ENGINEER SO THAT THE QUALITY OF WORK CAN BE CHECKED FOR APPROVAL.

17) THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS. ALL MATERIALS SHALL BE STORED WITHIN APPROVED CONSTRUCTION AREAS.

18) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AT HIS EXPENSE, ALL PERMITS AS REQUIRED BY THE LOCAL AGENCIES, INCLUDING BUT NOT LIMITED TO; ENCROACHMENT, GRADING AND LANE CLOSURES NOT PREVIOUSLY OBTAINED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED TO COMPLY WITH ALL APPLICABLE PERMIT CONDITIONS AND REQUIREMENTS.

19) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND LAYOUT, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

20) NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS. THE DEPARMENT OF PUBLIC WORKS SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION AND OF THE TIME AND LOCATION OF THE PRE-CONSTRUCTION CONFERENCE. ANY CONSTRUCTION PERFORMED WITHOUT PRIOR NOTIFICATION TO THE DEPARTMENT OF PUBLIC WORKS WILL BE REJECTED AND WILL BE AT THE CONTRACTOR'S RISK.

21) THE CONTRACTOR SHALL NOT BEGIN ANY CONSTRUCTION WORK UNTIL THE PROJECT SCHEDULE AND WORK PLAN IS APPROVED BY THE ENGINEER.

WATERWAYS CONSULTING
403B SWIFT ST.
SANTA CRUZ, CA 95060
PH:(831)421-9291 FAX:(888)819-6847
WWW.WATWAYS.COM

CONCEPTUAL
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER WCONSERVATION DISTRICT

COVER SHEET

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

DESIGNED BY:	B.M.S.
DRAWN BY:	B.M.S.
CHECKED BY:	M.W.W.
DATE:	9/21/09
JOB NO.:	08-707

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C1

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EROSION CONTROL AND ACCESS NOTES

1. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A DETAILED CONSTRUCTION SCHEDULE, INCLUDING DETAILS OF SITE B.M.P.S AND INTENDED WORKING HOURS.

2. ACCESS TO LEVEES SHALL BE FROM EXISTING ESTABLISHED ACCESS POINTS.

3. ACCESS TO ALL GRADING SITES SHALL BE ALONG THE EXISTING LEVEES TOP ACCESS ROADS. WE ANTICIPATE THAT AN EXCAVATOR WILL ACCESS THE CHANNEL AT EACH GRADING SITE BY WALKING DOWN THE LEVEE SLOPE. THE EXCAVATOR SHALL ACCESS EACH GRADING SITE ALONG A SINGLE ACCESS PATH, AS SHOWN ON SHT. C8. ACCESS PATHS SHALL BE ESTABLISHED AT THE DIRECTION OF THE ENGINEER.

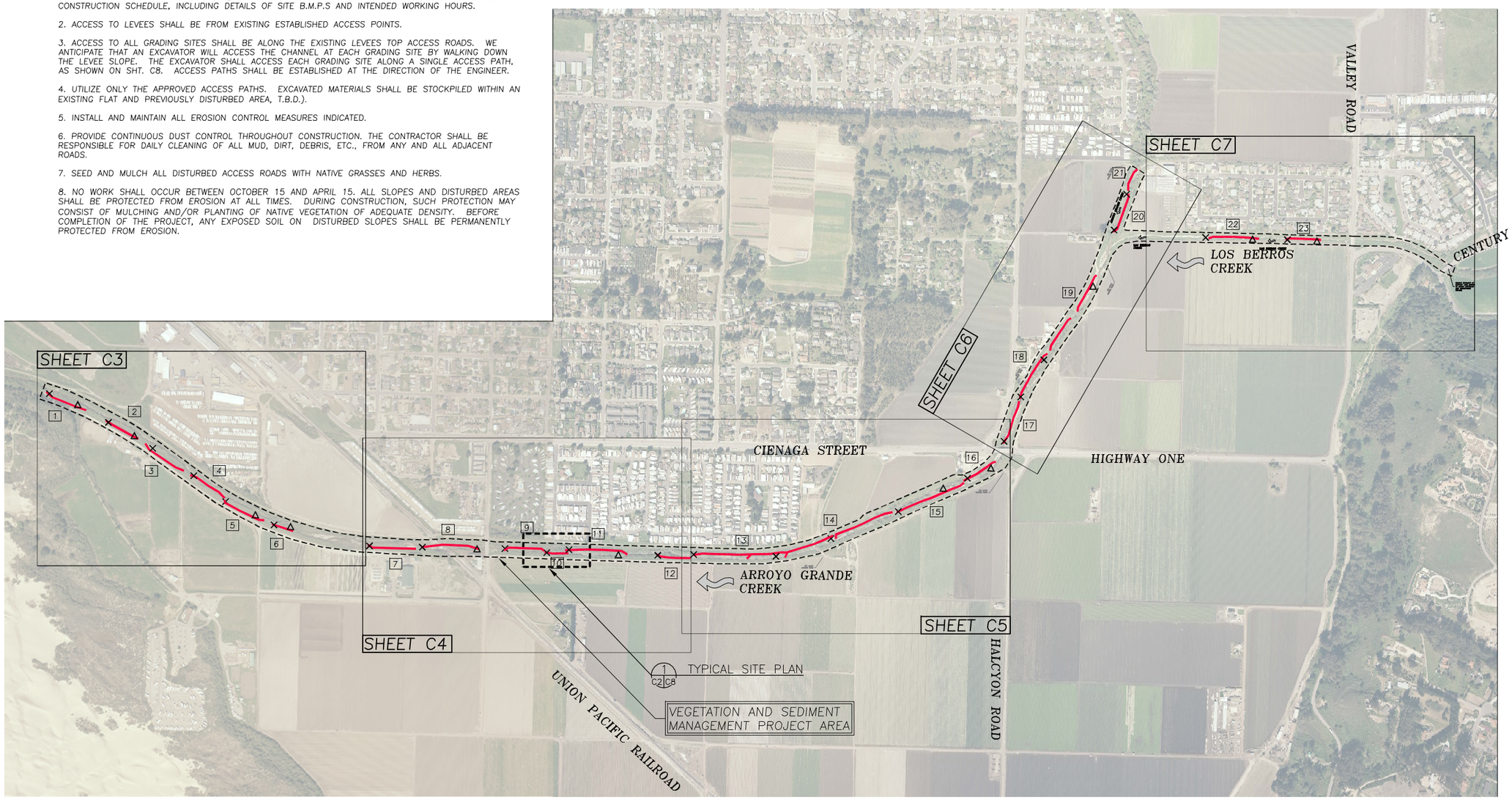
4. UTILIZE ONLY THE APPROVED ACCESS PATHS. EXCAVATED MATERIALS SHALL BE STOCKPILED WITHIN AN EXISTING FLAT AND PREVIOUSLY DISTURBED AREA, T.B.D.).

5. INSTALL AND MAINTAIN ALL EROSION CONTROL MEASURES INDICATED.

6. PROVIDE CONTINUOUS DUST CONTROL THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEANING OF ALL MUD, DIRT, DEBRIS, ETC., FROM ANY AND ALL ADJACENT ROADS.

7. SEED AND MULCH ALL DISTURBED ACCESS ROADS WITH NATIVE GRASSES AND HERBS.

8. NO WORK SHALL OCCUR BETWEEN OCTOBER 15 AND APRIL 15. ALL SLOPES AND DISTURBED AREAS SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION, SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.



PROJECT AREA OVERVIEW

SCALE: 1"=500'

LEGEND

△	TYPE "A" LOG HABITAT STRUCTURE (11 TOTAL)
×	TYPE "B" LOG HABITAT STRUCTURE (24 TOTAL)
9	GRADING SITE IDENTIFICATION NUMBER
—	PROPOSED GRADING SITE (SECONDARY CHANNEL)

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SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER WCONSERVATION DISTRICT

PROJECT AREA OVERVIEW

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

DESIGNED BY:	B.M.S.
DRAWN BY:	B.M.S.
CHECKED BY:	M.W.W.
DATE:	9/21/09
JOB NO.:	08-707

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C2

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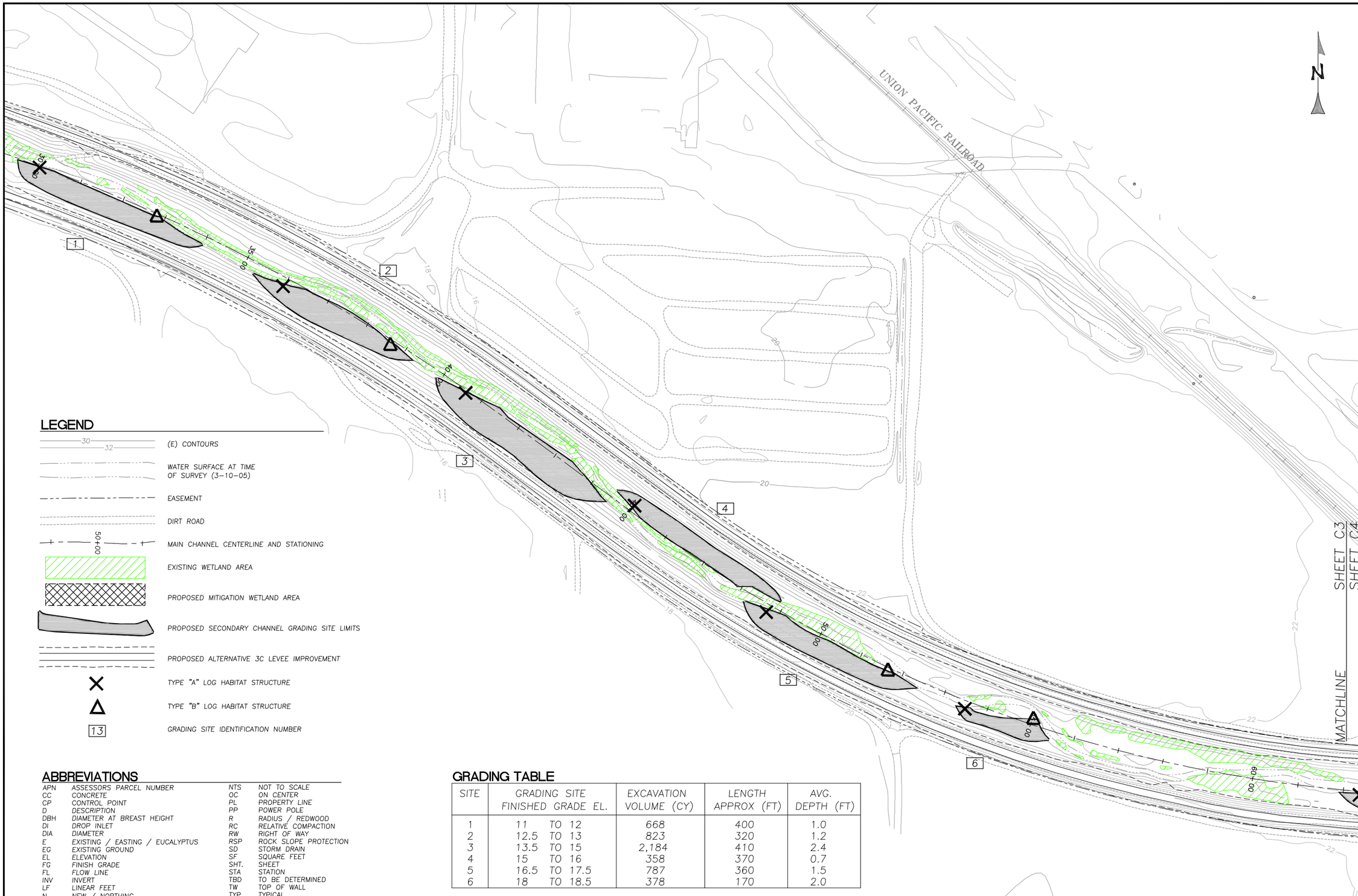

LEGEND

- (E) CONTOURS
- WATER SURFACE AT TIME OF SURVEY (3-10-05)
- EASEMENT
- DIRT ROAD
- MAIN CHANNEL CENTERLINE AND STATIONING
- EXISTING WETLAND AREA
- PROPOSED MITIGATION WETLAND AREA
- PROPOSED SECONDARY CHANNEL GRADING SITE LIMITS
- PROPOSED ALTERNATIVE 3C LEVEE IMPROVEMENT
- TYPE "A" LOG HABITAT STRUCTURE
- TYPE "B" LOG HABITAT STRUCTURE
- 13 GRADING SITE IDENTIFICATION NUMBER

ABBREVIATIONS

APN	ASSESSORS PARCEL NUMBER	NTS	NOT TO SCALE
CC	CONCRETE	OC	ON CENTER
CP	CONTROL POINT	PL	PROPERTY LINE
D	DESCRIPTION	PP	POWER POLE
DBH	DIAMETER AT BREAST HEIGHT	R	RADIUS / REDWOOD
DI	DROP INLET	RC	RELATIVE COMPACTION
DIA	DIAMETER	RW	RIGHT OF WAY
E	EXISTING / EASTING / EUCALYPTUS	RSP	ROCK SLOPE PROTECTION
EG	EXISTING GROUND	SD	STORM DRAIN
EL	ELEVATION	SF	SQUARE FEET
FG	FINISH GRADE	SHT.	SHEET
FL	FLOW LINE	STA	STATION
INV	INVERT	TBD	TO BE DETERMINED
LF	LINEAR FEET	TW	TOP OF WALL
N	NEW / NORTHING	TYP	TYPICAL
		Z	ELEVATION

GRADING TABLE

SITE	GRADING SITE FINISHED GRADE EL.	EXCAVATION VOLUME (CY)	LENGTH APPROX (FT)	AVG. DEPTH (FT)
1	11 TO 12	668	400	1.0
2	12.5 TO 13	823	320	1.2
3	13.5 TO 15	2,184	410	2.4
4	15 TO 16	358	370	0.7
5	16.5 TO 17.5	787	360	1.5
6	18 TO 18.5	378	170	2.0

SITE PLAN

SCALE: 1"=100'

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SITE PLAN 1 OF 5

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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0 1"

C3

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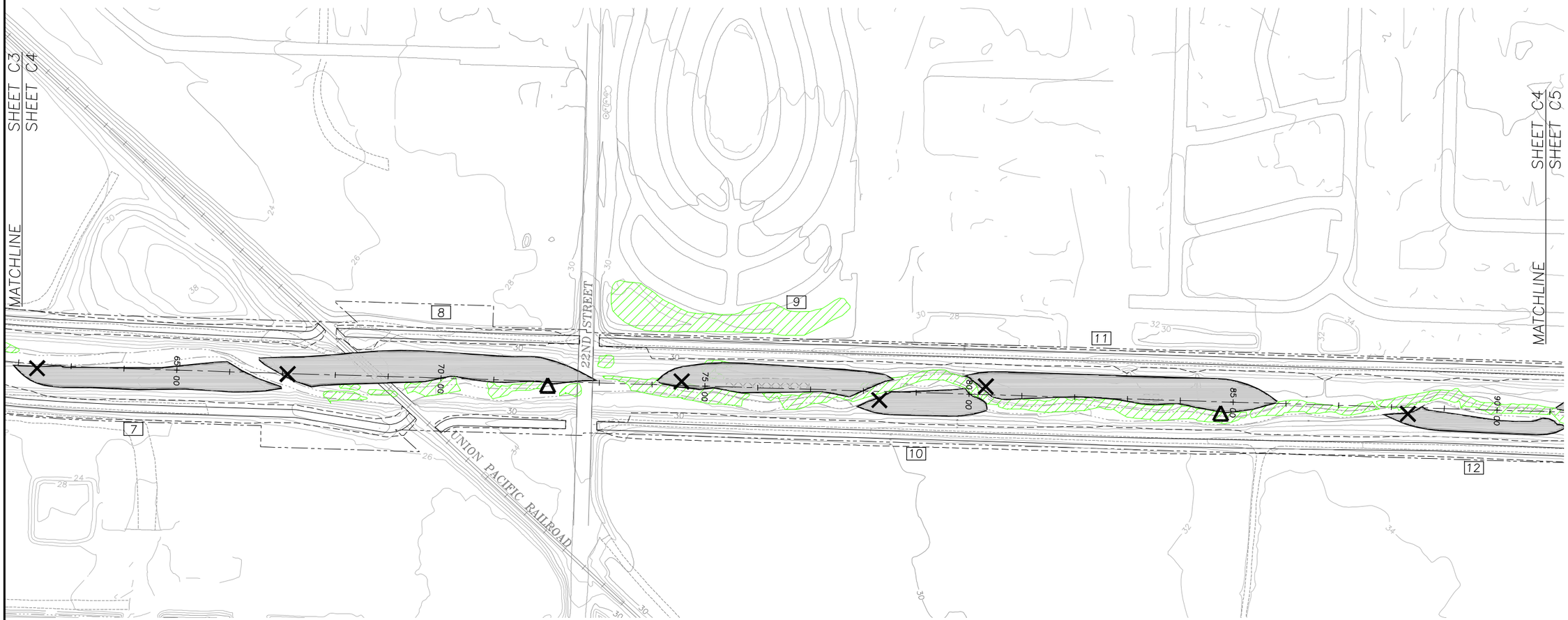

SITE PLAN

SCALE: 1"=100'

GRADING TABLE

SITE	GRADING SITE FINISHED GRADE EL.	EXCAVATION VOLUME (CY)	LENGTH APPROX (FT)	AVG. DEPTH (FT)
7	21 TO 22	193	450	0.3
8	22 TO 24	1,121	560	1.1
9	24.5 TO 25.8	738	400	1.0
10	25.8 TO 26.1	498	210	1.4
11	26.2 TO 28.5	1,262	530	1.3
12	29 TO 29.2	243	300	0.6

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SITE PLAN
2 OF 5

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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C4

4 OF 10

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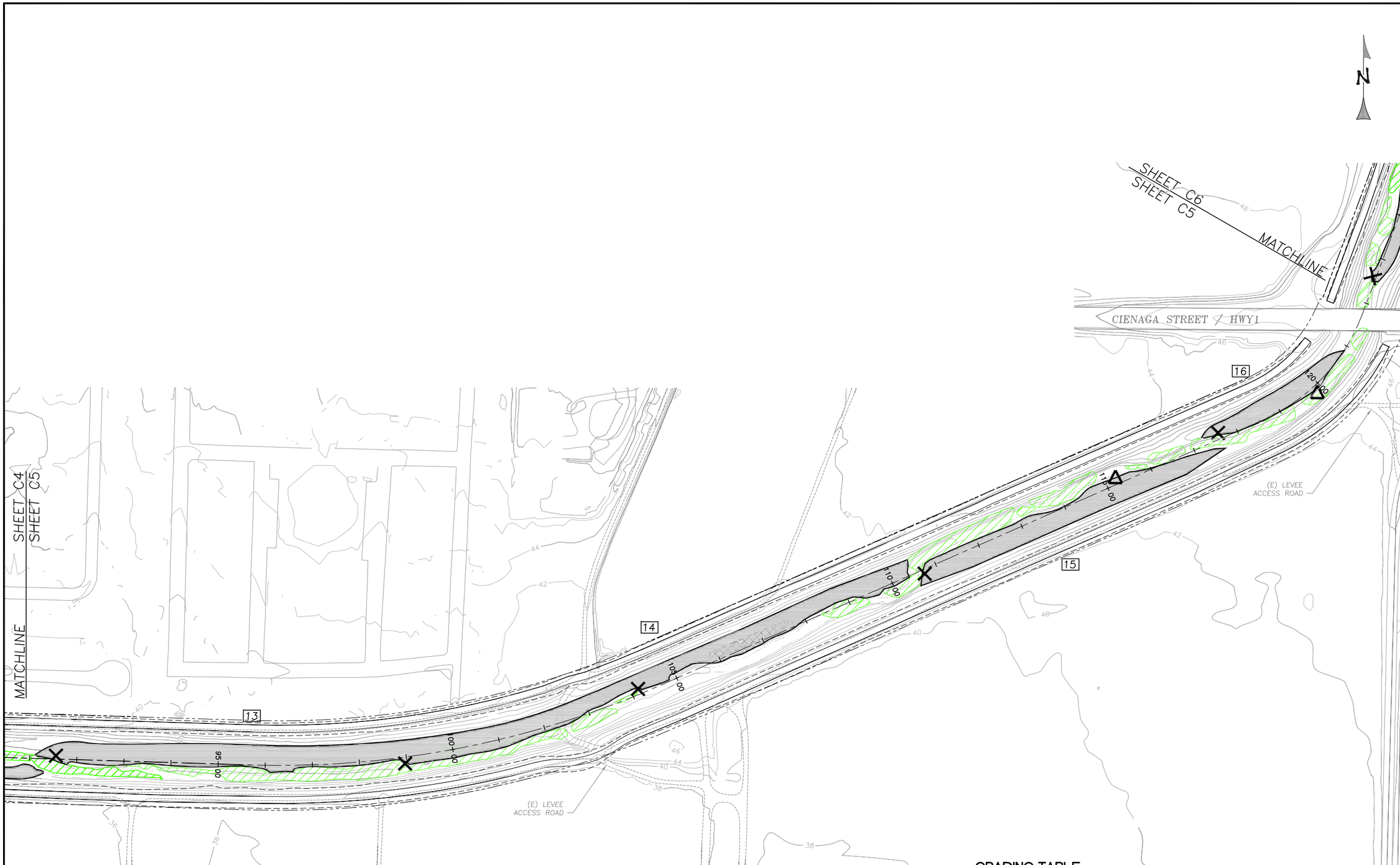

SITE PLAN

SCALE: 1"=100'

GRADING TABLE

SITE	GRADING SITE FINISHED GRADE EL.	EXCAVATION VOLUME (CY)	LENGTH APPROX (FT)	AVG. DEPTH (FT)
13	29.5 TO 31.5	2,700	830	1.8
14	31.5 TO 35	3,110	1,030	2.0
15	35.5 TO 37	1,309	660	1.2
16	37.5 TO 38.5	516	310	1.1

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SITE PLAN 3 OF 5

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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C5

5 OF 10

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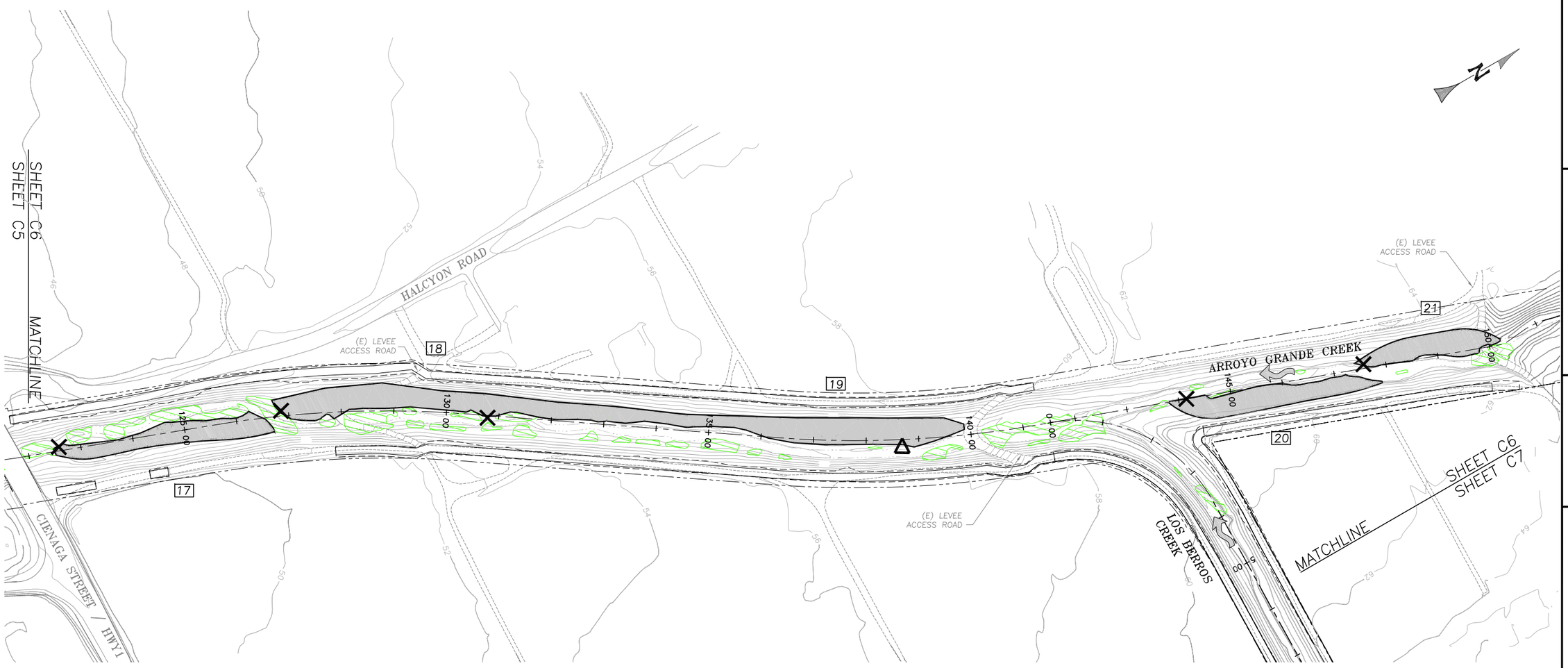

SITE PLAN

SCALE: 1"=100'

GRADING TABLE

SITE	GRADING SITE FINISHED GRADE EL.	EXCAVATION VOLUME (CY)	LENGTH APPROX (FT)	AVG. DEPTH (FT)
17	38.5 TO 40.5	605	400	1.2
18	40.5 TO 44	615	490	0.8
19	44 TO 46	504	800	0.5
20	47 TO 48	767	350	1.3
21	48.5 TO 49	532	250	1.3

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SITE PLAN
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ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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C6

6 OF 10

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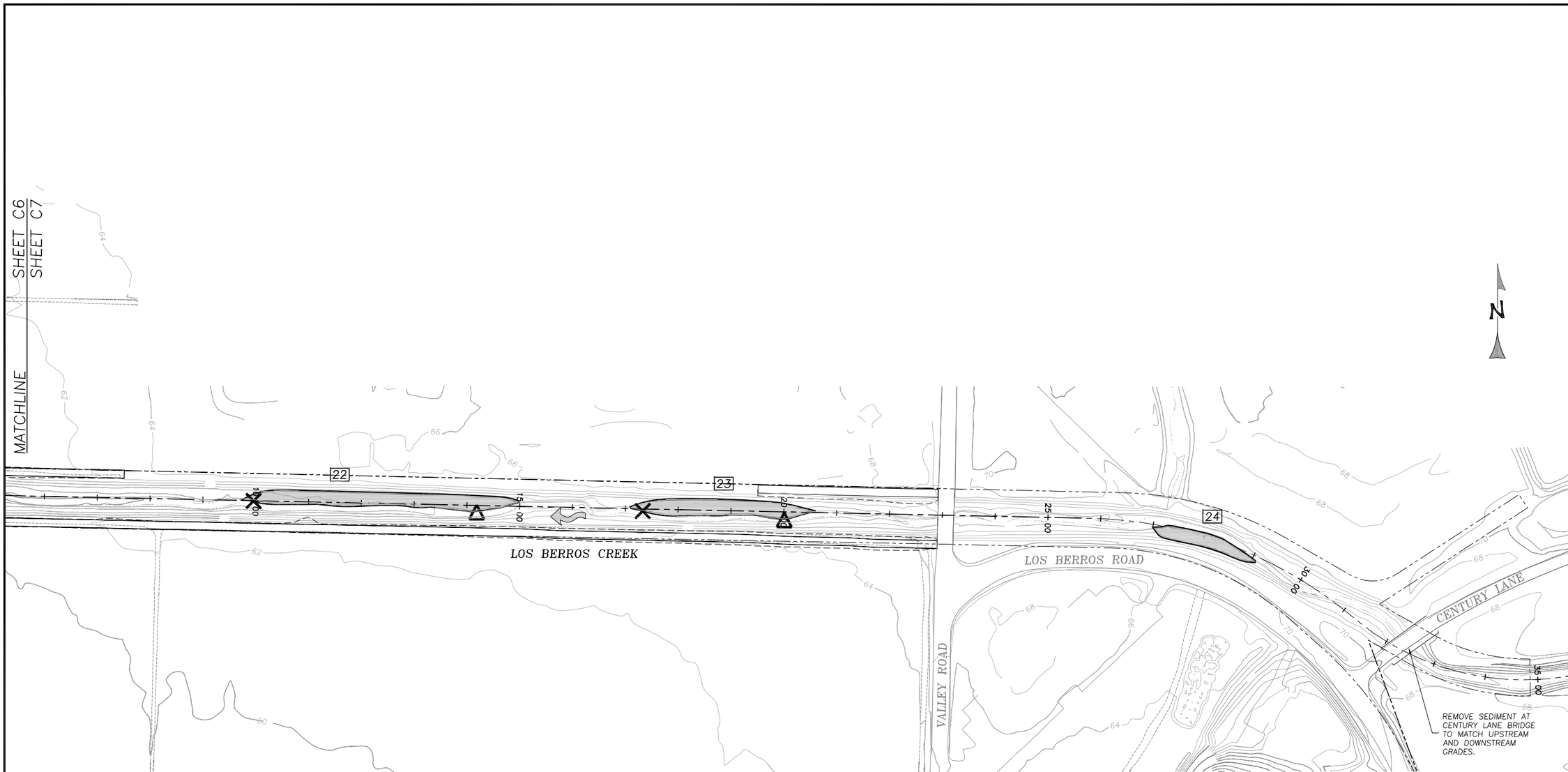

SITE PLAN

SCALE: 1"=100'

GRADING TABLE

SITE	GRADING SITE FINISHED GRADE EL.	EXCAVATION VOLUME (CY)	LENGTH APPROX (FT)	AVG. DEPTH (FT)
22	52.5 TO 54.5	825	480	1.5
23	55.5 TO 56	592	320	1.7
24	60.2 TO 60.6	106	140	0.7

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SITE PLAN 5 OF 5

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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C7 | 7 OF 10

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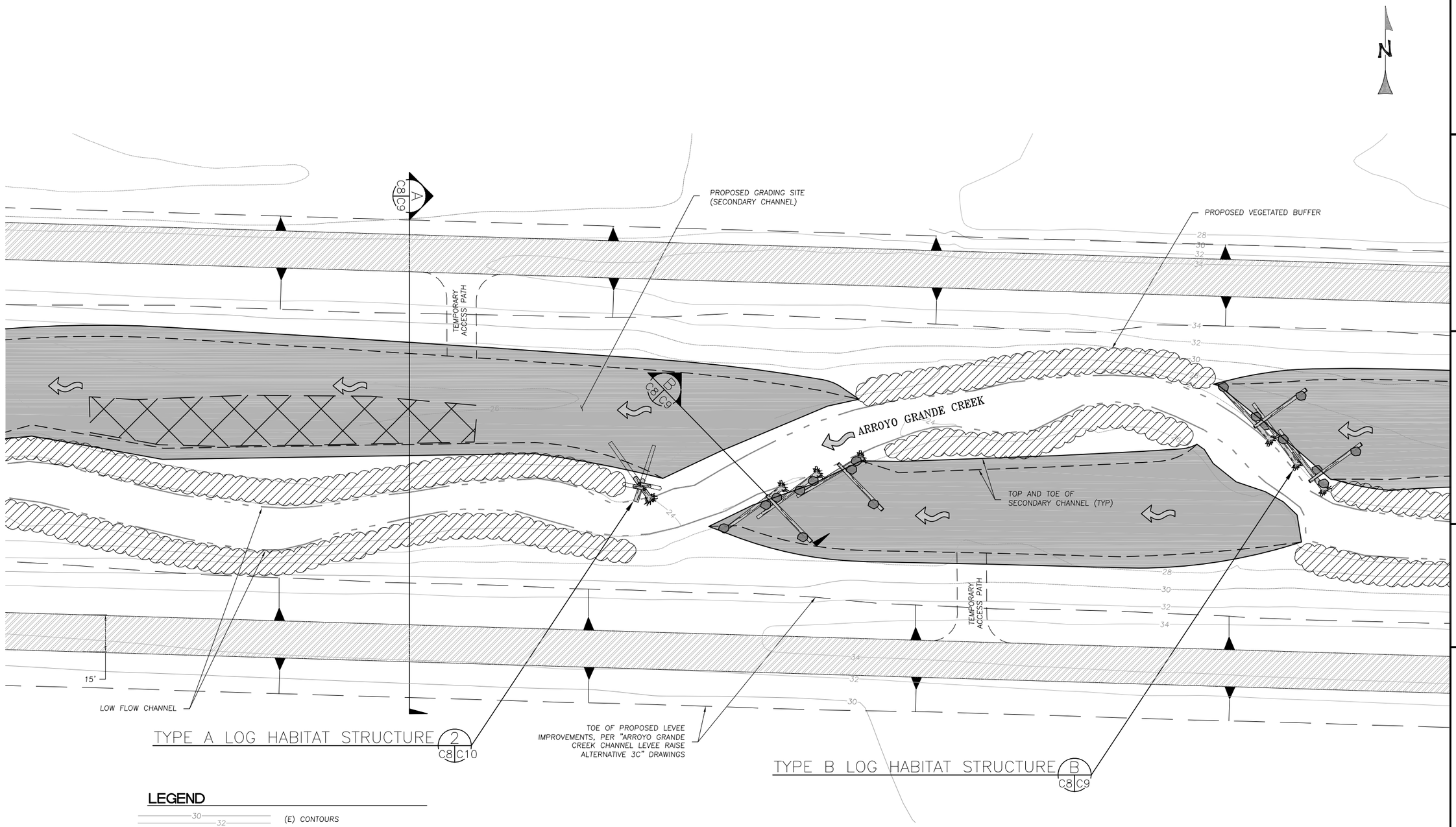

LEGEND

- (E) CONTOURS
- LOW FLOW CHANNEL AT TIME OF SURVEY (3-10-05)
- PROPOSED MITIGATION WETLAND AREA
- PROPOSED VEGETATED BUFFER
- LEVEE TOP PER ALTERNATIVE 3C

TYPICAL SITE PLAN

1 / C2 C8

SCALE: 1"=20'

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TYPICAL SITE PLAN

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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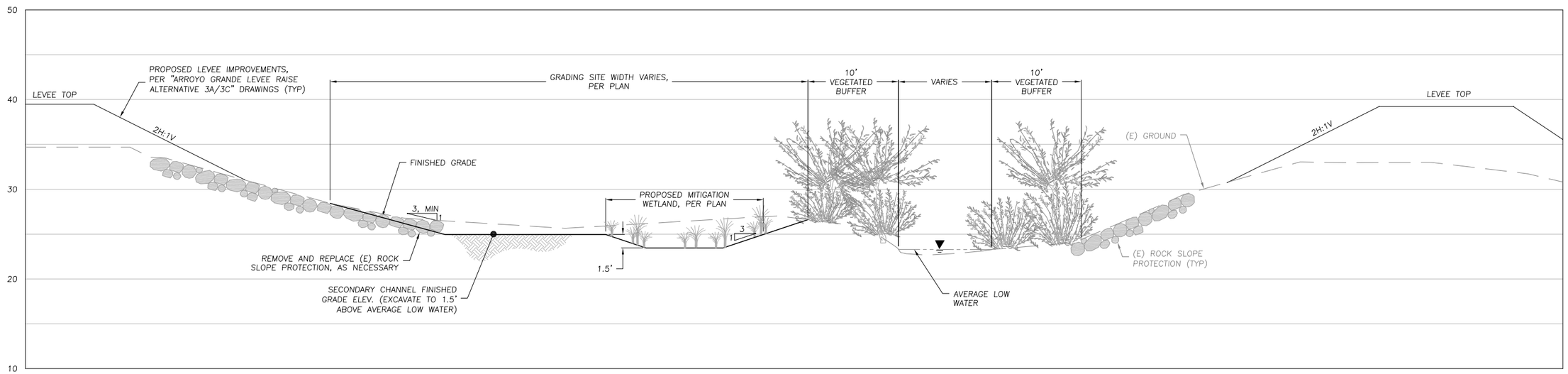


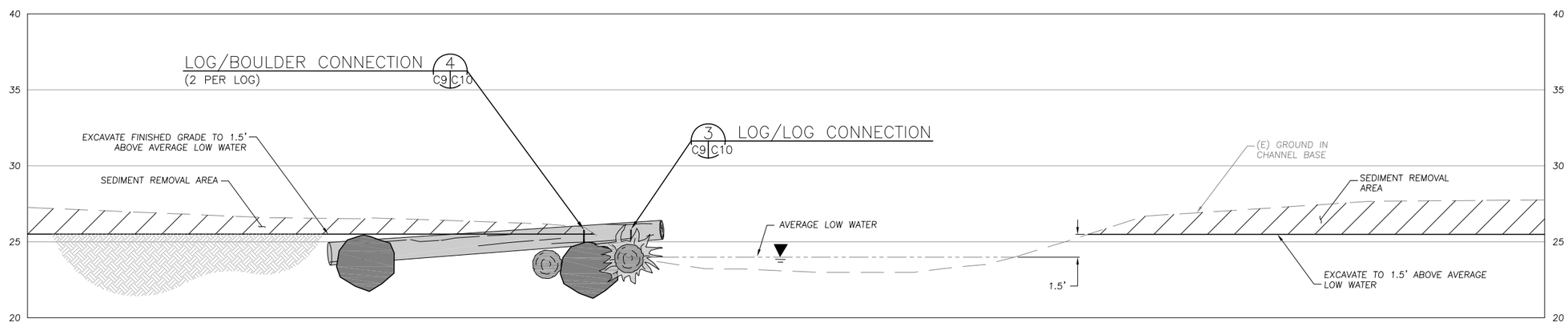
NOTES:

1. REMOVE IMPOUNDED SEDIMENT BETWEEN PROPOSED VEGETATED BUFFER AND LEVEE TOE. EXCAVATED SLOPES SHALL NOT EXCEED 3H:1V. EXCAVATE TO 1.5 FEET ABOVE AVERAGE LOW WATER. DO NOT DISTURB EXISTING LOW FLOW CHANNEL.

2. REMOVE VEGETATION FROM OUTSIDE OF VEGETATED BUFFER TO TOP OF LEVEE.

TYPICAL SECTION (A / C8 | C9)

SCALE: 1"=6'



TYPE B LOG HABITAT STRUCTURE SECTION (B / C8 | C9)

SCALE: 1"=4'

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TYPICAL SECTIONS

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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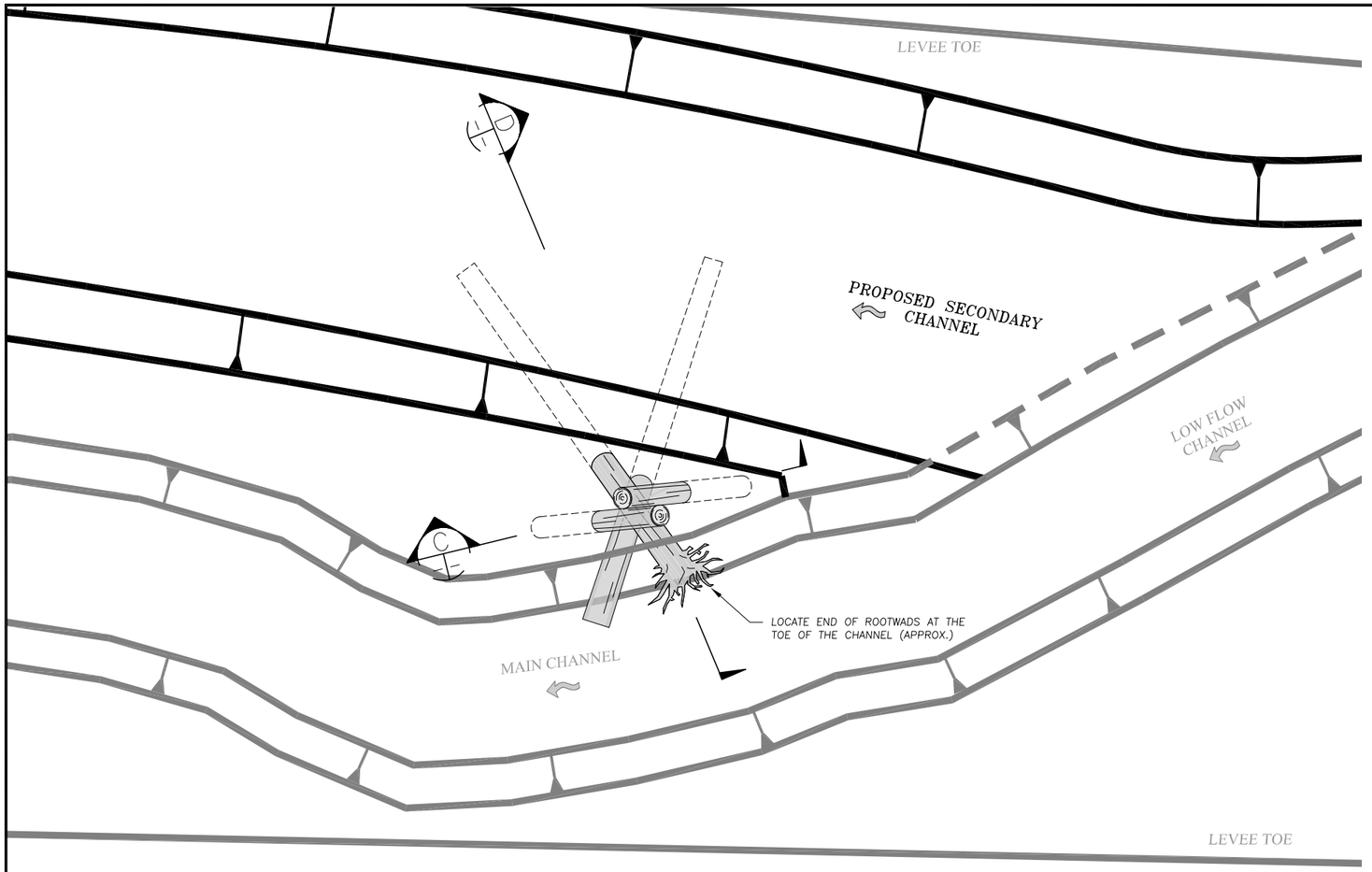
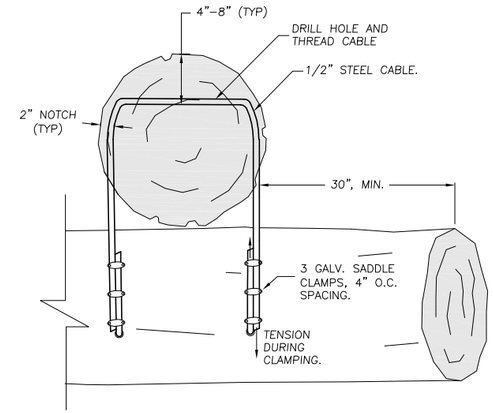


TYPE A LOG HABITAT STRUCTURE

SCALE: 1"=5'

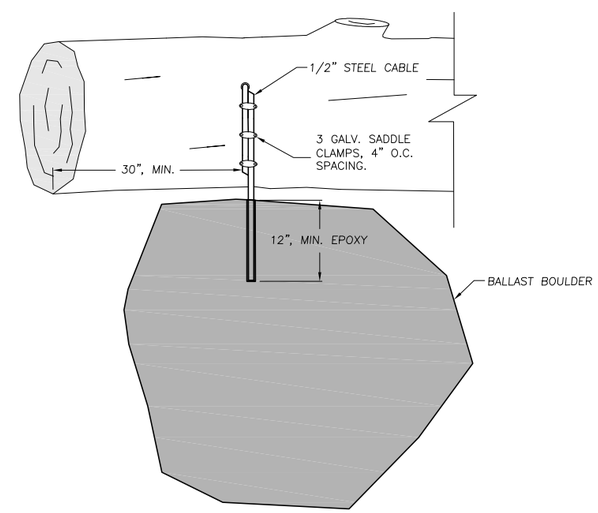
2 C8 C10



LOG/LOG CONNECTION

SCALE: 1"=1'

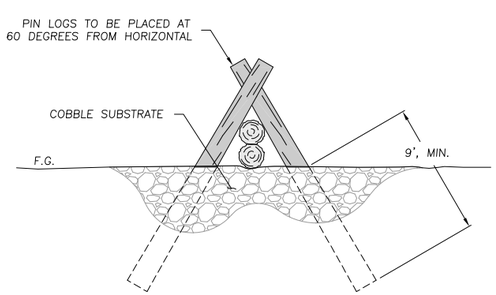
3 C9 C10



LOG/BOULDER CONNECTION

SCALE: 1"=1'

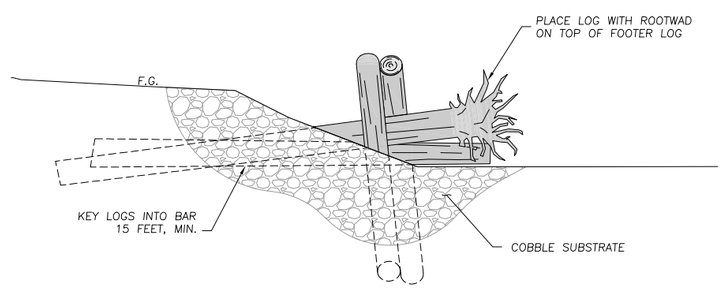
4 C9 C10



SECTION

SCALE: 1"=5'

C



ELEVATION

SCALE: 1"=5'

D

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DETAILS

ARROYO GRANDE CREEK CHANNEL SEDIMENT AND VEGETATION MANAGEMENT PLAN CONCEPTUAL PLANS

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C10

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