COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY PREVISICH, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **County of Santa Cruz (Parks)**

APPLICATION NO.: **06-0370**

PARCEL NUMBER (APN): **028-041-02, 028-041-03**

The Environmental Coordinator has reviewed the Initial Study for your application and made the following preliminary determination:

XX Negative Declaration
(Your project will not have a significant impact on the environment.)

XX Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared to address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Matt Johnston, Environmental Coordinator at (831) 454-3201, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: **May 19, 2010**

Annette Olson, staff planner

Phone: **(831) 454-3134**

Date: **April 30, 2010**

Environmental Review
Initial Study

Application Number: 06-0370

Date: April 26, 2010
Staff Planner: Annette Olson

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Bob Olson, County Parks **APNs**: 028-041-02, 028-041-03

OWNER: County of Santa Cruz **SUPERVISORAL DISTRICT**: 1

LOCATION: Property located on the south side of Felt Street (1904 Felt Street) about 400 feet east of 17th Avenue, in Santa Cruz. (Attachment 1)

SUMMARY PROJECT DESCRIPTION:

Proposal to demolish the existing house and garage and construct a park consisting of a parking lot, accessible restroom, accessible play area, bocce courts, skate park, group picnic area, community garden, fences, signage, art features, and various drainage and landscaping improvements.

ALL OF THE FOLLOWING POTENTIAL ENVIRONMENTAL IMPACTS ARE EVALUATED IN THIS INITIAL STUDY. CATEGORIES THAT ARE MARKED HAVE BEEN ANALYZED IN GREATER DETAIL BASED ON PROJECT SPECIFIC INFORMATION.

____	Geology/Soils	X	Noise
X	Hydrology/Water Supply/Water Quality	____	Air Quality
____	Biological Resources	____	Public Services & Utilities
____	Energy & Natural Resources	____	Land Use, Population & Housing
____	Visual Resources & Aesthetics	____	Cumulative Impacts
____	Cultural Resources	____	Growth Inducement
____	Hazards & Hazardous Materials	____	Mandatory Findings of Significance
____	Transportation/Traffic		

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

___	General Plan Amendment	_X_	Grading Permit
___	Land Division	___	Riparian Exception
___	Rezoning	_X_	Other: Master Site Plan Approval
_X_	Development Permit	_X_	Variance
_X_	Coastal Development Permit	_X_	Significant Tree Removal

NON-LOCAL APPROVALS

Other agencies that must issue permits or authorizations: Regional Water Quality Control Board

ENVIRONMENTAL REVIEW ACTION

On the basis of this Initial Study and supporting documents:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

_X_ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached mitigation measures have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

___ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Matt Johnston

Matt Johnston

4/27/2010

Date

For: Claudia Slater
Environmental Coordinator

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS

Parcel Size: 78,081 square feet (total of both parcels)
Existing Land Use: Single-family dwelling
Vegetation: grasses, eucalyptus, fruit trees
Slope in area affected by project: _X_ 0 - 30% ___ 31 – 100%
Nearby Watercourse: Arana Gulch; Monterey Bay; Rodeo Creek Gulch
Distance To: Respectively: 2,300 feet to west; 2,500 feet to south; 2,000 feet to east

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: N/A
Water Supply Watershed: Not mapped
Groundwater Recharge: Not mapped
Timber or Mineral: Not mapped
Agricultural Resource: Not mapped
Biologically Sensitive Habitat: Not mapped; none seen on-site
Fire Hazard: Not mapped
Floodplain: Not mapped
Erosion: Not mapped
Landslide: Not mapped
Liquefaction: Mapped as low potential
Fault Zone: Not mapped
Scenic Corridor: Not mapped
Historic: No historic resource on site
Archaeology: Not Mapped
Noise Constraint: Not mapped, Acoustical study completed
Electric Power Lines: N/A
Solar Access: Adequate
Solar Orientation: Southern exposure
Hazardous Materials: N/A

SERVICES

Fire Protection: Central FPD
School District: Live Oak USD
Sewage Disposal: Santa Cruz County Sanitation District
Drainage District: Zone 5
Project Access: Felt Street
Water Supply: City of Santa Cruz

PLANNING POLICIES

Zone District: PR
General Plan: O-R
Special Designation: None
Urban Services Line: _X_ Inside ____ Outside
Coastal Zone: _X_ Inside ____ Outside

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

PROJECT SETTING AND BACKGROUND:

The subject property is approximately 78,081 square feet (1.8 acres) in area and is located on the south side of Felt Street, about 400 feet east of 17th Avenue in Santa Cruz. The project site is composed of two parcels. APN 028-041-02 (the eastern parcel) is about 35,618 and is developed with a single-family dwelling and detached garage which are both accessed via Felt Street. APN 028-041-03 is about 42,463 square feet and is vacant. The site has slopes of 0-2 percent, with the most significant vegetation being eucalyptus and fruit trees.

Although the current use is residential, both properties are zoned PR (Parks, Recreation and Open Space) and have a General Plan Designation of O-R (Parks, Recreation and Open Space). The parcels are specifically identified in the General Plan as having a preferred use as a neighborhood park (Figure 2-5, Page 2-50) and, if developed as a park, are required to have a pedestrian connection to the adjacent Del Mar School site.

Few permits have been issued for the subject parcels. In 1990, a plumbing permit was finalled for the dwelling on APN 028-041-02. In March 2006, a Significant Tree removal permit allowed for the removal of three dead eucalyptus trees.

The uses surrounding the property are a church to the west; single-family residential to the north, northwest and east; multi-family residential to the northeast, and an elementary school to the south. An informal series of dirt paths connects Felt Street and the southern entrance of Del Mar Elementary through the subject parcel. Monterey Bay is located about 2,500 feet to the south.

DETAILED PROJECT DESCRIPTION:

The project description is based upon a plan set by John Cahalan, landscape architect, dated 10/22/09 with civil engineering completed by David B. Voorhies of Underwood & Rosenblum, Inc. The restroom is the only building proposed. It is proposed to be a pre-fabricated structure by Romtec. Spohn Ranch designed the skate park.

This application is a proposal to construct a neighborhood park on two adjacent parcels where one single-family dwelling and a garage currently exist. Neighborhood parks are intended to serve the residents within one-half mile of the park site, in this case, serving a population of between 1,500 to 2,000 people.

The park would consist of: a 21,240 square foot lawn area which is not designed or intended for organized sports, children's play areas for both 2-5 year olds and 5-12 year olds, two bocce courts, a 2,352 square foot skate park, a group picnic area with barbeques, an 18-plot community garden, a paved and accessible path connecting Felt Street and Del Mar Elementary, an eight-stall parking lot with one accessible parking space, accessible male and female restrooms, fences, signage, art features, and

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various drainage and landscaping improvements. The required permits are: Development Permit (Master Site Plan), Coastal Development Permit and Variance to allow for about 39% impervious surfacing instead of the 20% allowed by County Code and to reduce the front yard setback from the required 30 feet to about 19 feet to allow for a skateboard area. The only off-site improvements proposed is a crosswalk across Felt Street to provide safe access for pedestrians approaching the park from the north. The park would be open from dawn to dusk with maintenance provided by the County Parks Department. The County Sheriff Department would be responsible for enforcing park rules and regulations.

To prepare the site for the park, the existing dwelling and garage would be demolished, and two Significant Trees and several smaller trees would be removed. The park would have 30,988 square feet of impervious area and 47,103 square feet of pervious surfaces. To control runoff from the impervious area, a series of swales, inlets and detention pipes would be utilized. About 600 cubic yards of both cut and fill (balanced on-site) would be graded to establish the finish grades of the parking lot and concrete walkways and the slopes required for the vegetative swales. Along the perimeter of the park, the vegetative swales would direct runoff from the parking lot and other improvements to inlets. These inlets would connect to a pipe system that is oversized to provide adequate capacity for detention. The pre-development release rate would be maintained by reducing the outflow pipe from 24-inches to four inches. This drainage plan represents a minor diversion of stormwater as the property naturally drains to the south but the drainage pipes would be sloped such that the stormwater would flow north to the Felt Street storm drain system. The Department of Public Works has reviewed and accepted the proposed plan.

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III. ENVIRONMENTAL REVIEW CHECKLIST

A. Geology and Soils

Does the project have the potential to:

1.	Expose people or structures to potential adverse effects, including the risk of material loss, injury, or death involving:				
	a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or as identified by other substantial evidence?	____	____	X	____
	b. Seismic ground shaking?	____	____	X	____
	c. Seismic-related ground failure, including liquefaction?	____	____	X	____
	d. Landslides?	____	____	____	X

All of Santa Cruz County is subject to some hazard from earthquakes. However, the project site is not located within or adjacent to a County or state mapped fault zone. For this reason the potential for rupture of a known earthquake fault is unlikely to occur on the subject property. The improvements would be designed in accordance with the California Building Code, which should mitigate the hazards of seismic shaking and liquefaction to a less than significant level. There is no indication that landsliding is a significant hazard at this site.

2.	Subject people or improvements to damage from soil instability as a result of on- or off-site landslide, lateral spreading, to subsidence, liquefaction, or structural collapse?	____	____	X	____

See responses A-1-b, A-1-c & A-1-d.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Develop land with a slope exceeding 30%?				X

There are no slopes exceeding 30% on the subject parcel.

4. Result in soil erosion or the substantial loss of topsoil?			X	

Given that the slopes on site are from 0-2% and the fact that the applicant has provided a preliminary erosion control plan, soil erosion or the substantial loss of topsoil is not anticipated.

5. Be located on expansive soil, as defined in section 1802.3.2 of the California Building Code, creating substantial risks to property?			X	

There is no indication that the development site is subject to substantial risk caused by expansive soils. In addition, a pre-fabricated restroom structure is the only proposed building for the project.

6. Place sewage disposal systems in areas dependent upon soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems?			X	

No septic systems are proposed. The project would connect to the Santa Cruz County Sanitation District, and the applicant would be required to pay standard sewer connection and service fees that fund sanitation improvements within the district as a Condition of Approval for the project.

7. Result in coastal cliff erosion?				X

The subject parcels are not located on a coastal cliff.

B. Hydrology, Water Supply and Water Quality

Does the project have the potential to:

1. Place development within a 100-year flood hazard area?			X	

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Place development within the floodway resulting in impedance or redirection of flood flows?			X	

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated March 2, 2006, no portion of the project site lies within a 100-year flood hazard area.

3. Be inundated by a seiche or tsunami?			X	

According to the Santa Cruz Office of Emergency Services, in extreme cases along the west coast of north America, a tsunami can reach heights of up to 100 feet. The site is located at an elevation of approximately 60 feet above mean sea level. The impact of a tsunami would be mitigated by the fact that most of the tsunami's force would be directed up Logan Creek to the west and Rodeo Creek to the east. In addition, the coastal bluff and existing structures that line the coast south of the project site, would slow the tsunami and reduce its impact upon the project site.

4. Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit, or a significant contribution to an existing net deficit in available supply, or a significant lowering of the local groundwater table?			X	

The project would obtain water from City of Santa Cruz Water Department and would not rely on private well water. Although the project would incrementally increase water demand, City of Santa Cruz Water Department has indicated that adequate supplies are available to serve the project (Attachment 5). The project is not located in a mapped groundwater recharge area.

5. Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).			X	

County Code section 16.22 (Erosion Control) requires the preparation an implementation of an erosion control plan for all projects involving ground disturbance. Potential siltation from the proposed project would be mitigated through implementation of the required erosion control plan.

Park maintenance involves the use of antimicrobial soaps, fertilizers and Category 1

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(caution) pesticides. These products are regulated by the United States Environmental Protection Agency and, based upon those standards, a less than significant impact is anticipated to affect the water supply. To reduce the amount of pesticides used, the County Parks Department uses integrated pest management (IPM). IPM is a pest management strategy that prevents or suppresses pest problems through a combination of techniques such as monitoring for pests, using non-chemical practices to make the habitat less inviting to the pest, improving sanitation, and employing mechanical and physical controls.

The parking and driveway associated with the project would incrementally contribute urban pollutants to the environment; however, the contribution would be minimal given the size of the driveway and parking area. A silt and grease trap, and a plan for maintenance, would be required by the Department of Public Works to reduce this impact to a less than significant level.

6.	Degrade septic system functioning?				X

There are no septic systems in the area.

7.	Alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which could result in flooding, erosion, or siltation on or off-site?			X	

The drainage plan proposes a small diversion that would not affect the overall drainage pattern for the area. The park site slopes from north to south, but the proposed drainage pipes would be placed to slope from south to north. This is to facilitate the park connecting to the existing storm drain system in Felt Street. To the south is Del Mar Elementary school's track field. No storm drain facility is available on the school property and ponding on the track and field is already a problem during winter months. The ultimate destination of the runoff in both scenarios (i.e. in the natural pattern and in the proposed diversion) is Rodeo Creek Gulch. From there, the Monterey Bay is less than 2500 feet away. The proposed diversion would not alter the existing drainage pattern of the broader area in a manner which could result in flooding, erosion, or siltation on- or off-site.

8.	Create or contribute runoff which would exceed the capacity of existing or planned storm water drainage systems, or create additional source(s) of polluted runoff?			X	

Drainage Calculations prepared by Dave Voorhies, revised to June 13, 2008, have been reviewed for potential drainage impacts and accepted by the Department of

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Public Works (DPW) Drainage Section staff. The calculations show that the pre-development runoff flow rate for the entire site for the five year storm event as being .94 cubic feet per second (cfs). The 10 year storm post-development rate is calculated to be 1.71 cfs. The runoff rate from the property would be controlled by first encouraging on-site infiltration and then detaining runoff on-site and releasing it through an orifice sized to maintain the pre-development runoff rate. In this case, the outflow rate would be .32 cfs, which is below the existing five-year storm release rate. DPW staff have determined that existing storm water facilities are adequate to handle the increase in drainage associated with the project. Refer to response B-5 for discussion of urban contaminants and/or other polluting runoff.

9.	Contribute to flood levels or erosion in natural water courses by discharges of newly collected runoff?	____	____	X	____

See response B-8.

10.	Otherwise substantially degrade water supply or quality?	____	____	X	____

A silt and grease trap, and a plan for maintenance, would be required by the Department of Public Works to minimize the effects of urban pollutants.

C. Biological Resources

Does the project have the potential to:

1.	Have an adverse effect on any species identified as a candidate, sensitive, or special status species, in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, or U.S. Fish and Wildlife Service?	____	____	X	____

Although the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Game shows that the Zayante band-winged grasshopper and the white-rayed pentachaeta are mapped as being on the subject and adjacent properties, these species are associated with sandhills habitat which is not present in the area. The CNDDB also maps the area as possibly supporting the pallid bat. However, none were identified on-site and the favored habitat of the bat is desert rock outcrops of which there are none on-site or nearby.

Although there are eucalyptus trees on the project site which can provide habitat to the monarch butterfly, a state species of concern, none was observed on-site. In addition, to provide overwintering habitat for the monarch butterfly, stand-alone eucalyptus trees

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are not adequate; the monarch butterfly requires a grove of the trees in order to create the micro-climate and wind protection needed by the butterfly.

2.	Have an adverse effect on a sensitive biotic community (riparian corridor), wetland, native grassland, special forests, intertidal zone, etc.)?	____	____	X	____

There are no mapped or designated sensitive biotic communities on or adjacent to the project site.

3.	Interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native or migratory wildlife nursery sites?	____	____	X	____

See response C.1 above.

4.	Produce nighttime lighting that will illuminate animal habitats?	____	____	X	____

The subject property is located in an urbanized area and is surrounded by existing institutional facilities (Del Mar Elementary, a church, Shoreline Middle School and Simpkins Swim Center) and residential development that currently generates nighttime lighting. The park is closed at night. The only nighttime lighting would be motion-sensitive security lighting to illuminate the restroom area. Except when the light is triggered, no animal habitats in the vicinity would be illuminated as a result of this project.

5.	Make a significant contribution to the reduction of the number of species of plants or animals?	____	____	X	____

See responses C.1.

6.	Conflict with any local policies or ordinances protecting biological resources (such as the Significant Tree Protection Ordinance, Sensitive Habitat Ordinance, provisions of the Design Review ordinance protecting trees with trunk sizes of 6 inch diameters or greater)?	____	X	____	____

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County Code 13.11.075(a)(2)I requires the retention of trees greater than six inches in diameter at breast height unless the trees are dead, dying or diseased; would obstruct solar access; or if the tree(s) obstruct the prime building site to provide a better project design not possible without the tree removal. In addition, to this regulation, for projects within the Coastal Zone, trees which are 20" in diameter at breast height, are considered to be "Significant Trees" and are protected unless the required findings in County Code 16.34.060 can be made. James P. Allen & Associates completed an Arborist Report for the project which included an inventory of and recommendations for the trees on-site and three trees on the parcel to the west (see Attachment 7).

In this case, the following trees which are less than six inches in diameter at breast height are proposed for removal: two oaks, an acacia, a walnut, a golden rain, and a pear tree. These trees are not required to be retained; they were, however, evaluated by James P. Allen in his arborist report. All, except the acacia and golden rain, were evaluated as having "poor" health, structure and suitability. The acacia and golden rain trees were evaluated as having fair health, poor structure and poor suitability.

In addition to these tree removals are three trees which are greater than six inches in diameter at breast height. They are: two walnut trees, each with four trunks; and a golden rain tree with a double trunk (trees 8, 11 and 12 in the arborist report). These trees all were graded as being in fair or poor health, structure and suitability.

The final category of tree removals are the three trees which are considered to be Significant Trees. These are a multi-trunk plum tree, a eucalyptus, and a double trunk eucalyptus tree (trees 4, 5 and 10 in the arborist report). For trees 4 and 10, the trees received grades of fair health but poor structure and suitability. Tree 5 is identified as having poor trunk / stem attachment. All three were identified as having a risk of failure, which is an unacceptable hazard at a public park.

To mitigate the impact of these tree removals, 57 replacement trees will be included in the landscape plan. Prior to Building Permit issuance, the applicant shall provide an updated planting plan showing at least 57 trees. In addition, the plans shall reflect the project arborist's tree protection recommendations and detail a monitoring program for the replacement trees. The monitoring program shall show that a qualified professional shall monitor the replacement trees for five years at six month intervals. One hundred percent survival rate is required and shall be implemented according to the recommendations in the arborist's report.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
7. Conflict with the provisions of an adopted Habitat Conservation Plan, Biotic Conservation Easement, or other approved local, regional, or state habitat conservation plan?				X

D. Energy and Natural Resources

Does the project have the potential to:

1. Affect or be affected by land designated as "Timber Resources" by the General Plan?				X
2. Affect or be affected by lands currently utilized for agriculture, or designated in the General Plan for agricultural use?				X

The project site is not currently being used for agriculture and no agricultural uses are proposed for the site or surrounding vicinity.

3. Encourage activities that result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?			X	

The primary resource that would be used at the park is water. All of the landscape irrigation would comply with the City of Santa Cruz's Water Efficient Landscape Ordinance. In addition, the toilets and urinals would be low-flow fixtures.

4. Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?				X

No natural resources such as minerals or energy resources are available or mined in the vicinity.

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E. Visual Resources and Aesthetics

Does the project have the potential to:

1. Have an adverse effect on a scenic resource, including visual obstruction of that resource?				X

The project site is neither mapped as being a scenic resource, nor is it within the line of sight of any scenic resource. Therefore, the project would not have any adverse effect on a scenic resource.

2. Substantially damage scenic resources, within a designated scenic corridor or public view shed area including, but not limited to, trees, rock outcroppings, and historic buildings?			X	

See response E-1.

3. Degrade the existing visual character or quality of the site and its surroundings, including substantial change in topography or ground surface relief features, and/or development on a ridge line?			X	

The visual character and quality of the site and its surrounding would be improved as a result of the project. The existing single-family dwelling is not well maintained and the proposed park, which includes substantial areas of landscaping, would enhance the visual character of both the site and the surrounding neighborhood. No substantial change in topography is proposed and the project is not located on a ridgeline.

4. Create a new source of light or glare which would adversely affect day or nighttime views in the area?			X	

Only motion-activated nighttime lighting is proposed. During the day, the only potential source of glare would be from the skylights in the restroom structure. Given the height of the structure and the height from where it would be viewed by pedestrians and motorists, the potential glare of these skylights is less than significant.

5. Destroy, cover, or modify any unique geologic or physical feature?				X

There are no unique geological or physical features on or adjacent to the site that

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

would be destroyed, covered, or modified by the project.

F. Cultural Resources

Does the project have the potential to:

1. Cause an adverse change in the significance of a historical resource as defined in CEQA Guidelines 15064.5?	____	____	X	____

The existing structures on the property are not designated as a historic resource on any federal, state or local inventory.

2. Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?	____	____	X	____

The project site is not mapped as having the potential to contain archaeological resources and no archaeological resources have been identified on the subject parcels. However, pursuant to Section 16.40.040 of the Santa Cruz County Code, if archeological resources are uncovered during construction, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in County Code Chapter 16.40.040.

3. Disturb any human remains, including those interred outside of formal cemeteries?	____	____	X	____

See response F-2. Pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

4. Directly or indirectly destroy a unique paleontological resource or site?	____	____	X	____

No paleontological resources have been mapped or identified on the project site.

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G. Hazards and Hazardous Materials

Does the project have the potential to:

1. Create a significant hazard to the public or the environment as a result of the routine transport, storage, use, or disposal of hazardous materials, not including gasoline or other motor fuels?	____	____	X	____

Park maintenance involves the application of antimicrobial soaps, fertilizers and Category 1 pesticides. Category 1 products are regulated by the United States Environmental Protection Agency and, based upon those standards, a less than significant impact is anticipated to affect the water supply. To reduce the amount of pesticides used, the County Parks Department uses integrated pest management (IPM). IPM is a pest management strategy that prevents or suppresses pest problems through a combination of techniques such as monitoring for pests, using non-chemical practices to make the habitat less inviting to the pest, improving sanitation, and employing mechanical and physical controls..

2. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	____	____	X	____

The project site is not included on the 1/14/09 list of hazardous sites in Santa Cruz County compiled pursuant to the specified code.

3. Create a safety hazard for people residing or working in the project area as a result of dangers from aircraft using a public or private airport located within two miles of the project site?	____	____	____	X

No public or private airport is located within two miles of the project site.

4. Expose people to electro-magnetic fields associated with electrical transmission lines?	____	____	____	X

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
5. Create a potential fire hazard?			X	

The project design incorporates all applicable fire safety code requirements and would include fire protection devices as required by the local fire agency. The only structure proposed for the park is a restroom made of CMU (Concrete Masonry Unit) block, a fire restive material.

6. Release bio-engineered organisms or chemicals into the air outside of project buildings?				X

H. Transportation/Traffic

Does the project have the potential to:

1. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	

The proposed park is designed to serve the surrounding neighborhood and is not intended to have regional appeal. The park opening would result in an increase of pedestrian and bicycle trips, and possibly an increase in vehicle trips from surrounding neighborhoods on Felt Street, Corcoran Avenue and 17th Avenue. Most of the vehicular trips would occur during off-peak hours (i.e. not during weekdays from 7 to 9 AM and 4 to 7 PM). Weekends are expected to be the peak use days. The volume of pedestrian, bicycle and vehicular trips is not expected to result in a significant impact on the surrounding streets or circulation system.

2. Cause an increase in parking demand which cannot be accommodated by existing parking facilities?			X	

As noted above, this is to be a neighborhood park, not a regional park, so most park users would walk or ride bicycles. As such, this park is not expected to generate a significant parking demand. To accommodate park users who do drive, such as the disabled, eight parking spaces would be available, including one van-accessible parking space. Limited on-street parking is available on the north side of Felt Street.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Increase hazards to motorists, bicyclists, or pedestrians?			X	

The proposed project would not increase hazards to motorists, bicyclists or pedestrians. Rather, it would reduce hazards to these groups through the provision of a new driveway with accessible wrap around, new crosswalk from the southeast corner of Aloha Lane to the park entrance, new sidewalk along the frontage, and pedestrian paths on-site. The proposed driveway and sidewalk was reviewed by the Department of Public Works, Road Engineering; DPW had no issue with the location of the driveway or with its line of sight. In addition, the informal dirt path, which currently connects Felt Street to Del Mar Elementary, would be formalized as a paved path which would make it accessible as well as reduce tripping hazards to pedestrians.

4. Exceed, either individually (the project alone) or cumulatively (the project combined with other development), a level of service standard established by the county congestion management agency for designated intersections, roads or highways?			X	

See response H-1.

I. Noise

Does the project have the potential to:

1. Generate a permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

Charles M. Salter Associates, Inc (Attachment 9) completed an acoustical study for the project. The skate feature is anticipated to be the most significant generator of noise for the project. For the skate feature, the day / night average (DNL) at the nearest property lines is anticipated to increase by a maximum of .2 decibels over the existing DNL. The future DNL, including the skate feature, is calculated to be a maximum of 64 decibels at the northern property line which is below what the General Plan specifies as "normally acceptable" for neighborhood parks and playgrounds. The maximum noise anticipated to come from the skate feature is predicted to be at or below the existing environmental noise sources. Note that no nighttime noise generation is anticipated as the park is closed from dusk to dawn.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?			X	

See response I-1.

3. Generate a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

Noise generated during construction would increase the ambient noise levels for adjoining areas. Construction would be temporary, however, and given the limited duration of this impact it is considered to be less than significant.

J. Air Quality

Does the project have the potential to:

1. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		

The North Central Coast Air Basin does not meet State standards for ozone and particulate matter (PM10). Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NOx]), and dust.

Given the modest amount of new traffic that would be generated by the project there is no indication that new emissions of VOCs or NOx would exceed Monterey Bay Unified Air Pollution Control District (MBUAPCD) thresholds for these pollutants and therefore there would not be a significant contribution to an existing air quality violation.

Project construction may result in a short-term, localized decrease in air quality due to generation of dust. In order to mitigate the potential impacts of dust on air quality, standard dust control Best Management Practices shall be implemented during all grading and demolition work. Notes reflecting this shall be included in the final project plans and shall include at a minimum the following measures:

1. Water site as needed on a daily basis.
2. Cover all inactive spoils piles.
3. Refrain from grading on windy days (15mph or more average wind speed)
4. Install minimum 30 feet of 1-inch rock at site entrance and exit to prevent tracking sediment off site.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
2. Conflict with or obstruct implementation of an adopted air quality plan?			X	

See response J-1. The project would not conflict with or obstruct implementation of the regional air quality plan.

3. Expose sensitive receptors to substantial pollutant concentrations?			X	

Although Del Mar Elementary is directly south of the park, no substantial pollutant concentrations are anticipated as resulting from the proposed project.

4. Create objectionable odors affecting a substantial number of people?			X	

The construction phase may generate objectionable odors such diesel exhaust for a short period of time. Given its limited duration, however, the affect is not anticipated to be significant.

K. Public Services and Utilities

Does the project have the potential to:

1. Result in the need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a. Fire protection?			X	

The proposed restroom facility, to be constructed of CMU block, would be less flammable than the existing single-family dwelling and garage. Therefore, the park is not anticipated to generate a significant increase in fire protection services. The park may generate additional emergency medical services on the project site; however, without the park, these events likely would occur elsewhere in the community and would still require a response from the fire agency. Therefore, no significant increase in emergency medical calls is anticipated to occur as a result of the park use.

b. Police protection?			X	

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

The County's Sheriff Department would be responsible for park security. Given that the park is closed at night and the fact that the park's location imbedded within a neighborhood where many people would be able to easily observe activities within the park, no significant increase in Sheriff services over the existing vacant lot and residential use is anticipated.

c. Schools?			X	
d. Parks or other recreational activities?			X	

Because this project is for a neighborhood park, it would increase the availability of recreational opportunities for the area and decrease the demand on the existing parks / recreational facilities in the area.

e. Other public facilities; including the maintenance of roads?			X	

Once the park site and associated improvements are constructed by the Redevelopment Agency, the Parks Department would operate and maintain the facility. Felt Street is a county-maintained roadway. Therefore, the construction of this park would not result in a significant impact to available County resources.

2. Result in the need for construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

Drainage analysis of the project by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, concluded that no new storm water drainage facilities or expansion of existing facilities would be required. Department of Public Works Drainage staff have reviewed the drainage information and have determined that downstream storm facilities are adequate to handle the increase in drainage associated with the project (Attachment 3).

3. Result in the need for construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

The development would be connected to the City of Santa Cruz Water Department and Santa Cruz County Sanitation District for water and sanitary sewer service.

4. Cause a violation of wastewater treatment standards of the Regional Water Quality Control Board?	____	____	X	____

The wastewater flows from the proposed development would not violate any wastewater treatment standards.

5. Create a situation in which water supplies are inadequate to serve the project or provide fire protection?	____	____	X	____

The water mains serving the project site provide adequate flows and pressure for fire suppression. Additionally, the local fire agency has reviewed and approved the project plans (Attachment 4), assuring conformity with fire protection standards that include minimum requirements for water supply for fire protection.

6. Result in inadequate access for fire protection?	____	____	X	____

The existing driveway access has been approved by the local fire agency (Attachment 4). In addition, the Felt Street frontage would provide adequate access to the bathrooms which are housed in the only permanent structure on-site.

7. Make a significant contribution to a cumulative reduction of landfill capacity or ability to properly dispose of refuse?	____	X	____	____

The proposed park use's contribution would be relatively small and would be of similar magnitude to that created by existing land uses around the project. However, demolition waste makes up about 22% of the waste stream entering the local landfill. To mitigate the impact of the construction waste generated by this project on the landfill's capacity, the applicant and/or property owner shall recycle and reuse materials, as appropriate, and to the maximum extent possible. Notes to this affect shall be included on the final building permit plan set. At a minimum, construction and demolition waste shall be processed through the Buena Vista Construction and Demolition Waste program.

8. Result in a breach of federal, state, and local statutes and regulations related to solid waste management?	____	____	____	X

	Significant Or Potentially *Significant* Impact	Less than Significant with *Mitigation* Incorporation	Less than Significant *Or* No Impact	*Not* Applicable

L. Land Use, Population, and Housing

Does the project have the potential to:

1. Conflict with any policy of the County adopted for the purpose of avoiding or mitigating an environmental effect?	____	____	X	____

See response C-6 for information on tree removals.

2. Conflict with any County Code regulation adopted for the purpose of avoiding or mitigating an environmental effect?	____	____	X	____

See response C-6 for information on tree removals.

3. Physically divide an established community?	____	____	X	____

The project would not include any element that would physically divide an established community. Rather, the project would formalize the connection between the Felt Street neighborhood and Del Mar Elementary as the northern entrance to the school is accessed via the project site. Where there is currently an informal dirt path, there would be a paved, accessible, all-season path.

4. Have a potentially significant growth inducing effect, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	____	____	X	____

The proposed project is a park intended to serve the surrounding neighborhood. Parks are not considered to be growth-inducing infrastructure. The project does not propose any new or additional units or involve extensions of utilities (e.g., water, sewer, or new road systems) into areas previously not served. Consequently, it is not expected to have a growth-inducing effect.

5. Displace substantial numbers of people, or amount of existing housing, necessitating the construction of replacement housing elsewhere?	____	____	X	____

The proposed project would result in the demolition of one single-family dwelling. The

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

loss of one dwelling does not necessitate the construction of housing elsewhere. In addition, this is a site zoned for a park, not a residential use.

M. GREENHOUSE GAS EMISSIONS

Would the project:

1.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	____	____	X	____

The proposed park project, like all development, is responsible for an incremental increase in green house gas emissions by usage of fossil fuels during the project construction. On-going green house gas emissions are limited that resulting from park security lighting and the pumping of water for irrigation.

At this time, Santa Cruz County is in the process of developing a Climate Action Plan (CAP) intended to establish specific emission reduction goals and necessary actions to reduce greenhouse gas levels to pre-1990 levels as required under SB 375 legislation. Until the CAP is completed, there are no specific standards or criteria to apply to this project. However, the following factors, when considered as a whole, are expected to reduce any impacts of increased green house gas emissions to a less than significant level:

1. The only structure proposed on site would be the restroom building which is not proposed to be heated or cooled and therefore would not contribute to the emission of green house gas emissions.
2. The facility is intended to be a neighborhood park and most park users are expected to arrive by foot or bicycle.
3. The proposed park is located in a residential neighborhood and would reduce vehicle trips of nearby residents that would otherwise travel to visit a park.
4. Finally, the project construction would be required to comply with the Regional Air Quality Control Board emissions requirements for construction equipment involved in the project.

2.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	____	____	X	____

See Item 1, above.

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

N. Non-Local Approvals

Does the project require approval of federal, state, or regional agencies? Yes X No ____

The project's Storm Water Pollution Prevention Plan is required to be approved by the Regional Water Quality Control Board.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

O. Mandatory Findings of Significance

1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes ____ No X

2. Does the project have the potential to achieve short term, to the disadvantage of long term environmental goals? (A short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future) Yes ____ No X

3. Does the project have impacts that are individually limited, but cumulatively considerable ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)? Yes ____ No X

4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes ____ No X

Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED	N/A
Agricultural Policy Advisory Commission (APAC) Review			X
Archaeological Review			X
Biotic Report/Assessment			X
Geologic Hazards Assessment (GHA)			X
Geologic Report			X
Geotechnical (Soils) Report			X
Riparian Pre-Site			X
Septic Lot Check			X
Other:			
Arborist Report		XXX	
Acoustical Study		XXX	

Attachments:

1. Vicinity Map, Map of Zoning Districts, Map of General Plan Designations, Assessors Parcel Map
2. Master Site Plan as shown on Master Site Plan by Robert Olson, Park Planner and Project Plans: prepared by John Cahalan, Landscape Architect, dated 10/22/09; Civil Engineering Plans prepared by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, dated 10/22/09; Survey by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, dated 2/22/06; Restroom design by Romtec; Skate Area Plan by Spohn Ranch.
3. Summary of Drainage calculations prepared by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, Revised to June 13, 2008 (calculations on file with the County of Santa Cruz).
4. Discretionary Application Comments, dated April 14. 2010
5. Letter from City of Santa Cruz Water District, dated April 14, 2010
6. Arborists Report prepared by James P. Allen, dated April 9, 2008 and Project Arborist Final Plan Review, undated.
7. Parking Study (Conclusions and Recommendations) prepared by Robert Olson, Park Planner, dated March 30, 2010
8. Acoustical Study (Conclusions and Recommendations) prepared by Charles M. Salter, Associates, Inc., dated August 18, 2009

ATTACHMENT 1

Location Map

Legend

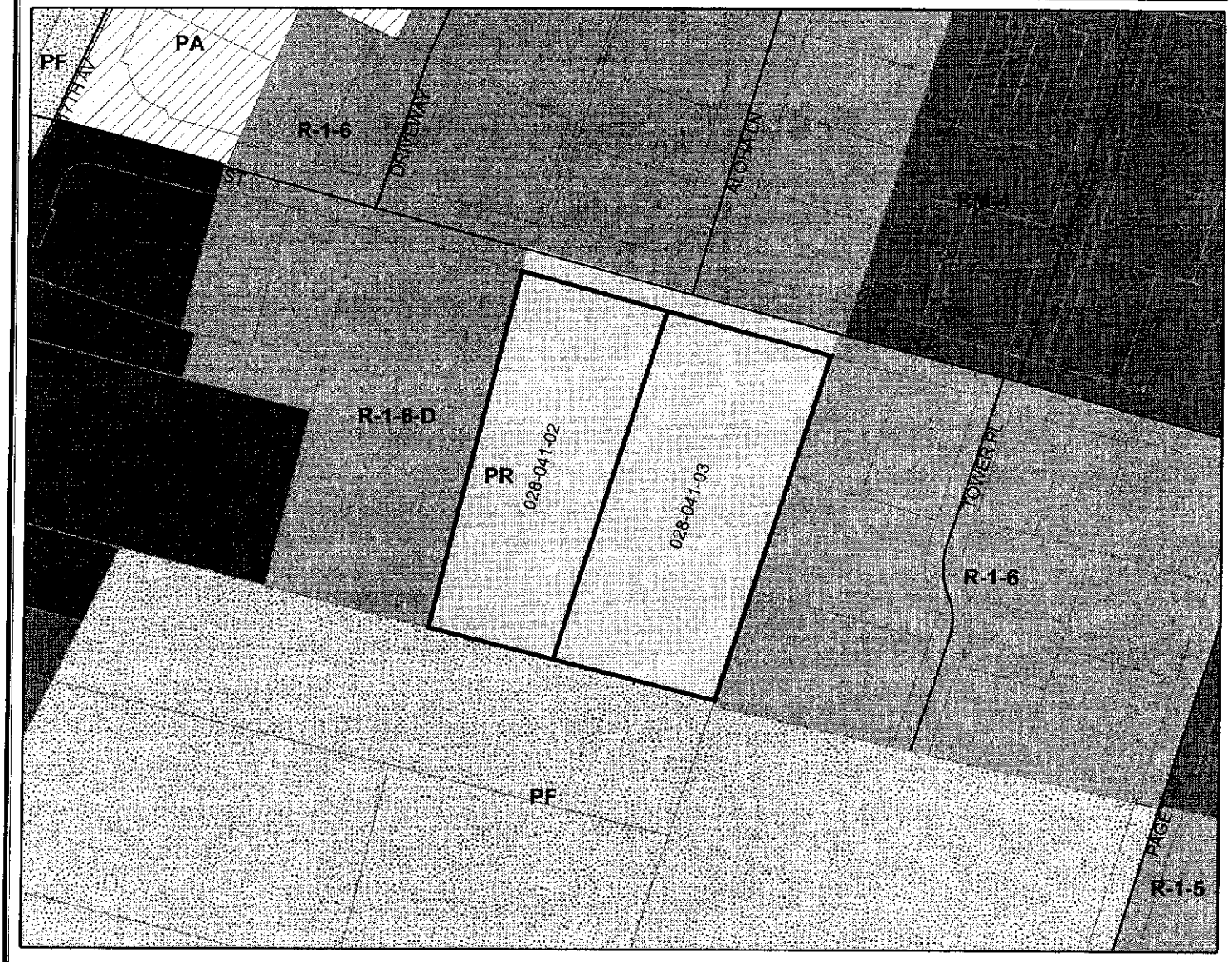
- Assessors Parcels selection
- Assessors Parcels
- Streets
- Railroads

N
W E
S

Map Created by
County of Santa Cruz
Planning Department
August 2006

ATTACHMENT 1

Zoning Map



0 115 230 460 690 920 Feet

Legend

- Project Parcels
- Assessors Parcels
- Streets
- PARK (PR)
- RESIDENTIAL-SINGLE FAMILY (R-1)
- RESIDENTIAL-MULTI FAMILY (RM)
- COMMERCIAL-NEIGHBORHOOD (C-1)
- COMMERCIAL-PROF OFFICE (PA)
- PUBLIC FACILITY (PF)

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W E
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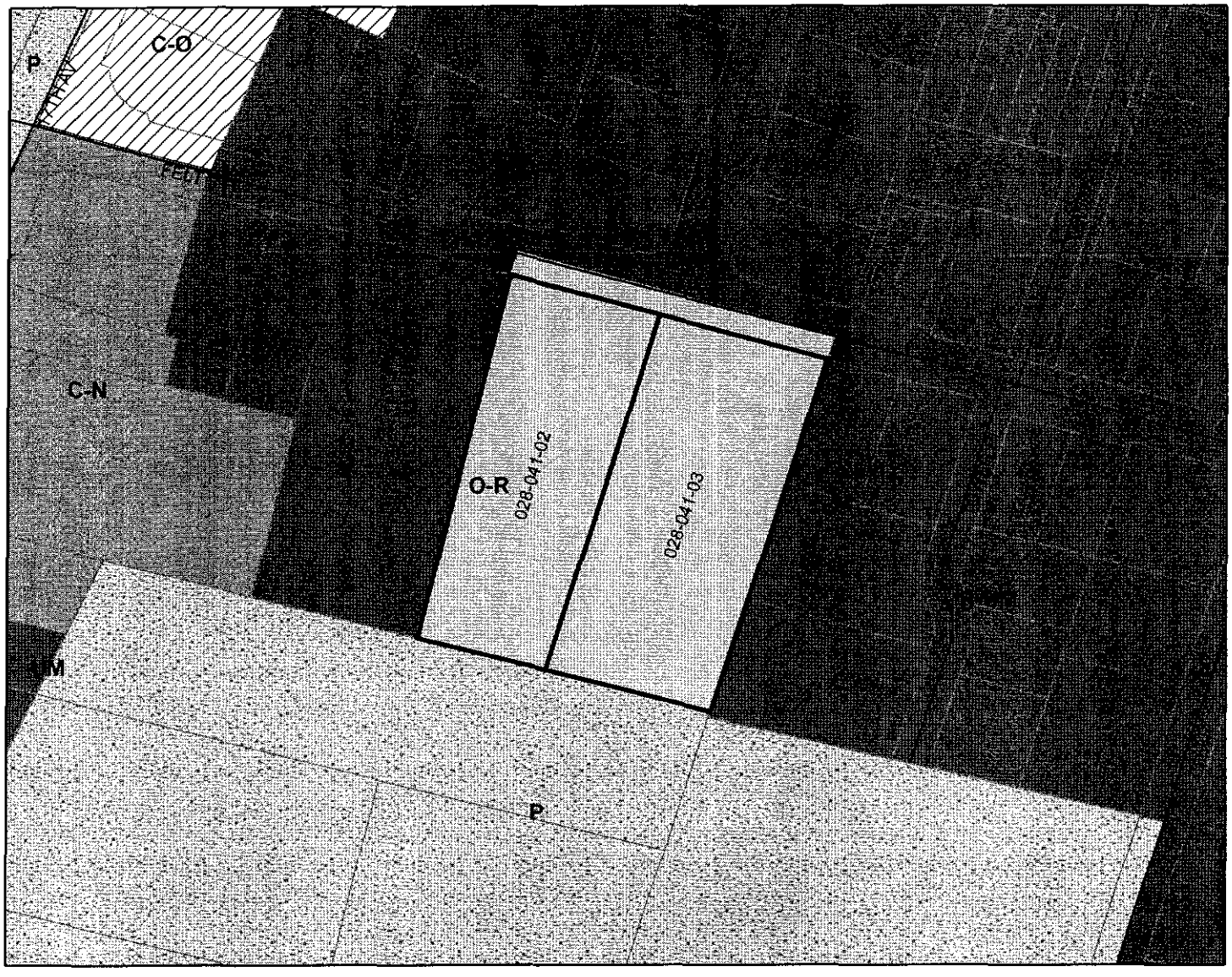
Map Created by
County of Santa Cruz
Planning Department
August 2006

ATTACHMENT 3

General Plan Designation Map



Legend

- Assessors Parcels selection
- Assessors Parcels
- Streets
- *Parks and Recreation* (O-R)
- Public Facilites (P)
- Commercial-Neighborhood (C-N)
- Residential - Urban Medium Density (R-UM)
- Commercial-Office (C-O)

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Map Created by
County of Santa Cruz
Planning Department
August 2006

ATTACHMENT 1

Felt Street Park
Master Site Plan Information
March 23, 2010

I. Proposed Park Uses:

Felt Street Park is located in the Live Oak planning Area of Santa Cruz County at 1904 Felt Street, Santa Cruz, APN 028-041-02,03. The General Plan identifies this 1.8 acre park site as a neighborhood park. Neighborhood parks are intended to serve the residents within one-half mile of the park site, serving a population between 1,500 to 2,000 people.

Felt Street Park will have a variety of recreational components serving a diverse number of needs and interests. Facilities include: a 21,240 S.F. turf area intended for general play and pick up sports. The turf area is not intended to be utilized for organized sports. Other recreational components include a children's play area for both 2-5 year olds and 5-12 year olds; a 2,352 S.F. above ground skate feature; two bocce ball courts; picnic area; an eighteen plot community garden; game table and bench area; restroom; an eight space parking lot and area landscaping consisting of native and ornamental plant material.

The park is adjacent to Del Mar Elementary School. Walking paths in the park have been designed to maintain a vital link between the neighborhood and the school. School personnel will regulate the gate that adjoins the school and the park for safe passage to and from school.

II. Construction Phasing:

The park will be built in one phase. However, the demolition of the existing structures and the development of the park will be done with two separate contracts.

III. Future Boundary Expansions:

The park is surrounded by Del Mar Elementary School to the south, Center for Conscious Living to the west, Felt Street and R-1-6 residential to the north and east. The Center for Conscious Living has an R-1-6-D zoning and is designated as PK-N in the future General Plan. In the event the owner of this site files an application to the Planning Department, this would initiate the park site review process.

IV. Provision of Adequate Access and Public Service:

The design and implementation of Felt Street Park will result in a variety of recreational facilities and opportunities and will be fully ADA compliant. Passive

park uses will include picnicking, bocce ball, game board table, reading and rest area, gardening and walking paths. Active park uses will include a children's play area for age groups 2-5 year olds and 5-12 year olds, skateboarding and pick up sports on the turf area. Restroom facilities will be provided to accommodate both female and male park users.

V. Park Management Plan

Please refer to the attached management manual.

County of Santa Cruz
Parks, Open Space & Cultural Services

FELT STREET PARK
SANTA CRUZ, CALIFORNIA

PROJECT DESCRIPTION

THIS PROJECT INVOLVES DEMOLITION, GRADING AND DRAINAGE, UTILITIES, INSTALLATION OF A PARKING LOT, AN ACCESSIBLE FLUSH RESTROOM, ACCESSIBLE PRE-SCHOOL AND SCHOOL AGE PLAY AREAS, ACCESSIBLE BOCCE COURTS WITH SYNTHETIC SURFACING, PRE-FABRICATED SKATE AREA, ACCESSIBLE GROUP PICNIC AREA, ACCESSIBLE COMMUNITY GARDEN, WALKWAYS, FENCES, PARK SIGNAGE, ACCESSIBLE SITE FURNISHINGS, AUTOMATIC IRRIGATION, SOIL PREPARATION AND FINE GRADING, SOD TURF AREA, LANDSCAPING AND LANDSCAPE MAINTENANCE

PERMITS INVOLVED INCLUDE SITE GRADING, SITE DEVELOPMENT, ENCROACHMENT, AND SEWAGE DISPOSAL. ALL PERMITS SHALL BE OBTAINED AND PAID FOR BY THE OWNER

EARTH WORK CALCULATIONS:
CUT: 600 CUBIC YARDS
FILL: 600 CUBIC YARDS

REQ'D IMPORT AND EXPORT: 0
NOTE; CALCS. ALLOW FOR 15% SHRINKAGE

GENERAL NOTES

1. **DESIGN INTENT:** These drawings represent the general design intent to be implemented on the site. The Contractor shall be responsible for contacting the Landscape Architect for any clarification or details necessary to accommodate site conditions or construction details.

2. **CONTRACTOR COORDINATION:** Each Contractor shall coordinate and otherwise integrate his work with that of others in an efficient craftsman-like and timely manner so as to provide the County with a well constructed easily maintainable project. Each Contractor shall notify the others at least two working days in advance of covering, completing or exposing work to be installed by others.

3. **CONTRACTOR'S JOB SITE CONDITIONS:** Contractor agrees that he shall assume complete and sole responsibility for site conditions during the course of construction of this project, including the safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend and indemnify and hold the County and Landscape Architect harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from sole negligence of the County or the Landscape Architect.

4. **COMPOSITE BASE SHEET:** The proposed improvements shown on these drawings are superimposed or redrawn on a base sheet. This base sheet is compiled from a topographic survey, architectural or engineering documents, and/or other data as made available to the Landscape Architect, who shall not be held liable for changes, inaccuracies, omissions or other errors on these documents. The composite base sheet is provided as an aid only and the Contractor shall be responsible for reviewing these documents and incorporating and integrating all construction as required to accommodate same.

5. **THE BASE SHEET SOURCE FOR THESE DRAWINGS IS:** Based on Topographic Map of Future Felt Street Park, dated June 16, 2003, by Bowman & Williams, Consulting Civil Engineers, Santa Cruz, CA.

6. **UTILITIES:** The Contractor is hereby notified that, prior to commencing construction, he is responsible for contacting the utility companies involved and requesting a visual verification if necessary, of the locations of their underground facilities. The utility companies are members of the Underground Service Alert (U.S.A.) on-call program. The Contractor of any Subcontractor for this contract may wish to notify members of the U.S.A. 48 hours in advance of performing any excavation work by calling the toll-free number at 800 642-2444. Excavation is defined as being 18 inches or more in depth below the existing surface.

PROJECT TEAM

Santa Cruz County Board of Supervisors:
NEAL COONERTY, CHAIRPERSON
TONY CAMPOS
JOHN LEOPOLD
ELLEN PIRIE
MARK W. STONE

Department of Parks, Open Space & Cultural Services:
JOE SCHULTZ, DIRECTOR
ROBERT OLSON, PARK PLANNER

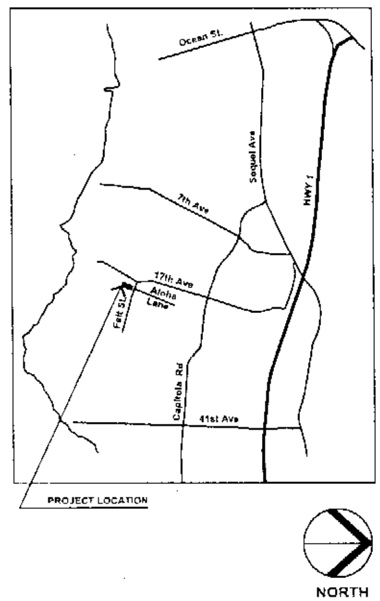
Landscape Architect:
JOHN CAHALAN, LANDSCAPE ARCHITECT
15559 Union Ave., Suite 206, Los Gatos, CA 95032
Tel. (408) 358-5122
Fax (408) 358-5133

Civil Engineer:
DAVID VOORHIES, P.E., PRINCIPAL ENGINEER
UNDERWOOD & ROSENBLUM, INC.
CIVIL ENGINEERS AND SURVEYORS
1630 Oakland Rd., Suite A114, San Jose, CA 95131
Tel. (408) 453-1222
Fax (408) 453-1207

Electrical Engineer:
ARSENIO ORTEGA, P.E.
5 Third Street, Suite 1220, San Francisco, CA 94103
Tel. (415) 546-0490
Fax (415) 546-0491

VICINITY MAP

NOT TO SCALE



SHEET INDEX

SHEET NO.	SHEET TITLE
CS	COVER SHEET
TS-1	TOPOGRAPHIC SURVEY
C-1	GRADING AND UTILITY PLAN
C-2	EROSION CONTROL PLAN
C-3	CIVIL DETAILS
C-4	CIVIL DETAILS
C-5	CIVIL DETAILS
L-1	DEMOLITION PLAN
L-2	LAYOUT PLAN
L-3	IRRIGATION PLAN
L-4	PLANTING PLAN
L-5	CONSTRUCTION DETAILS
L-6	CONSTRUCTION DETAILS
L-7	CONSTRUCTION DETAILS
L-8	CONSTRUCTION DETAILS
L-9	CONSTRUCTION DETAILS
L-10	PLAY AREA PLANS
L-11	SKATE AREA PLANS
L-12	ENLARGED PLANS
L-13	IRRIGATION DETAILS
L-14	IRRIGATION & PLANTING DETAILS
E-1	ELECTRICAL PLAN
R-1	RESTROOM COVER SHEET / SITE PLAN
R-2	RESTROOM PLAN / ELEVATIONS
R-3	RESTROOM SECTIONS / FOUNDATION
R-4	RESTROOM DETAILS
R-5	RESTROOM DETAILS
R-6	RESTROOM ROOF PLAN / DETAILS
R-7	RESTROOM ROOF DETAILS
R-8	RESTROOM INTERIOR ELEVATIONS
R-9	RESTROOM PLUMBING PLANS
R-10	RESTROOM ELECTRICAL PLANS

LICENSED LANDSCAPE ARCHITECT — JOHN CAHALAN — STATE OF CALIFORNIA

Approvals:
Recommended by: ____________ Date: ______
Park Planner

Approvals by: ____________ Date: ______
Director of the Department of Parks, Open Space and Cultural Services, Santa Cruz County

REVISIONS | BY

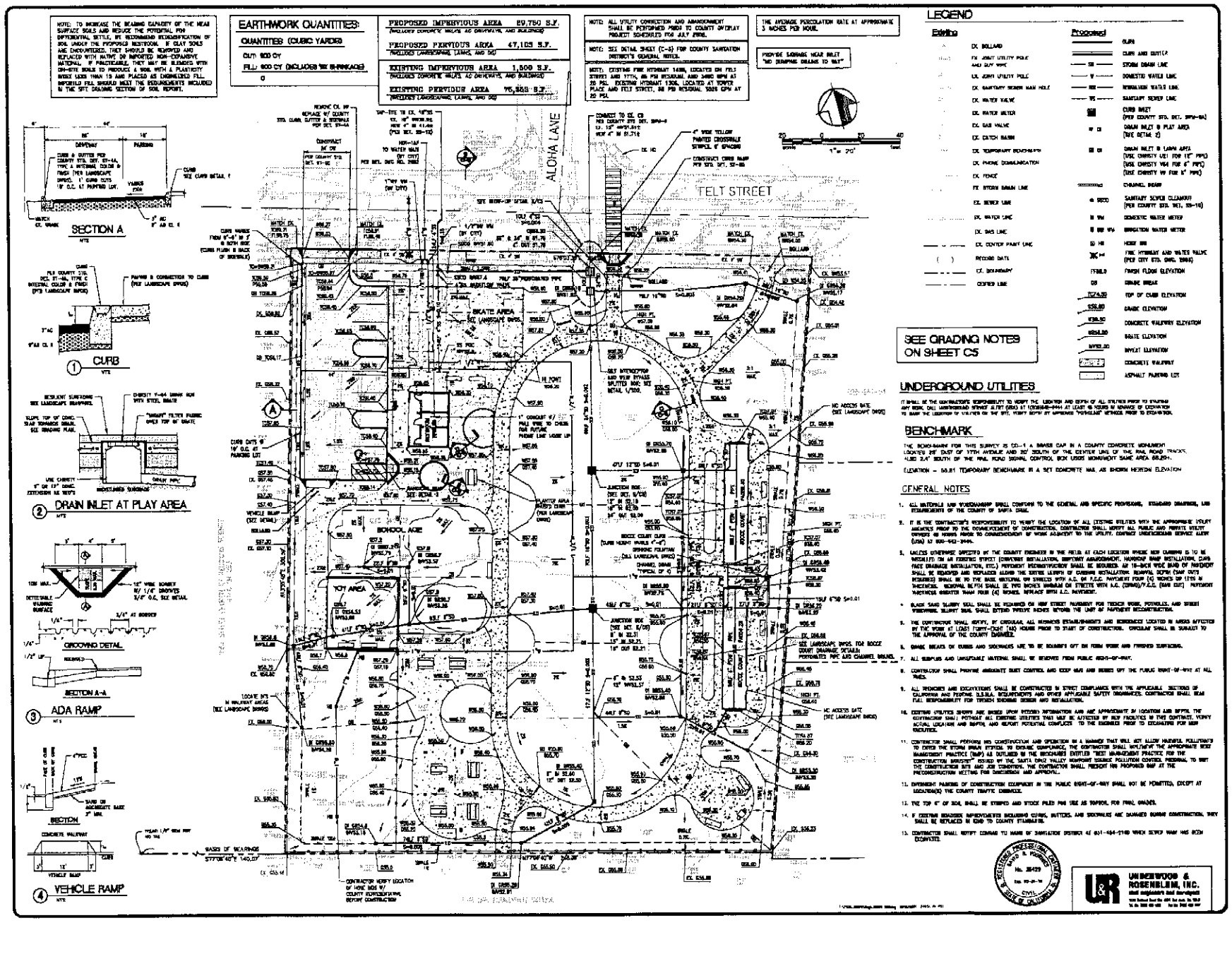
JOHN CAHALAN LANDSCAPE ARCHITECT
15559 Union Avenue, Suite 206 • Los Gatos CA 95032

COVER SHEET

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 26-041-02,03
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

DRAWN: JN A.G.
CHECKED: JC
SCALE: AS NOTED
SHEET
CS

ATTACHMENT 2



REVISIONS | BY

JOSE CARVAJAL LANDSCAPE ARCHITECT

GRADING AND UTILITY PLAN

FELT STREET PARK
1964 Felt Street, Santa Cruz, CA 95062
APN 026-041-10,33
Prepared for:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

DRAWN: JH
CHECKED: DMR
DATE: 10-23-06
SCALE: 1"=20'
JOB NO: 206128
SHEET: 2 of 5

C-1

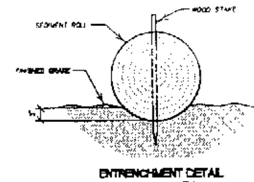
35 / 115

ATTACHMENT 2

LEGEND

- SILT FENCE DROP INLET SEDIMENT BARRIER
- CURB INLET SEDIMENT BARRIER
- FIBER ROLL
- GRAVEL CONSTRUCTION ENTRANCE

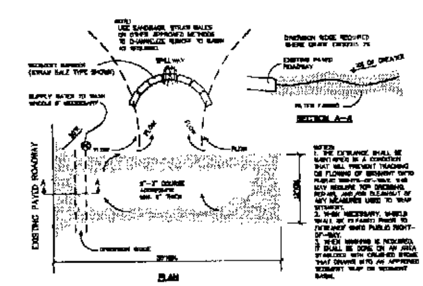
1" = 20'



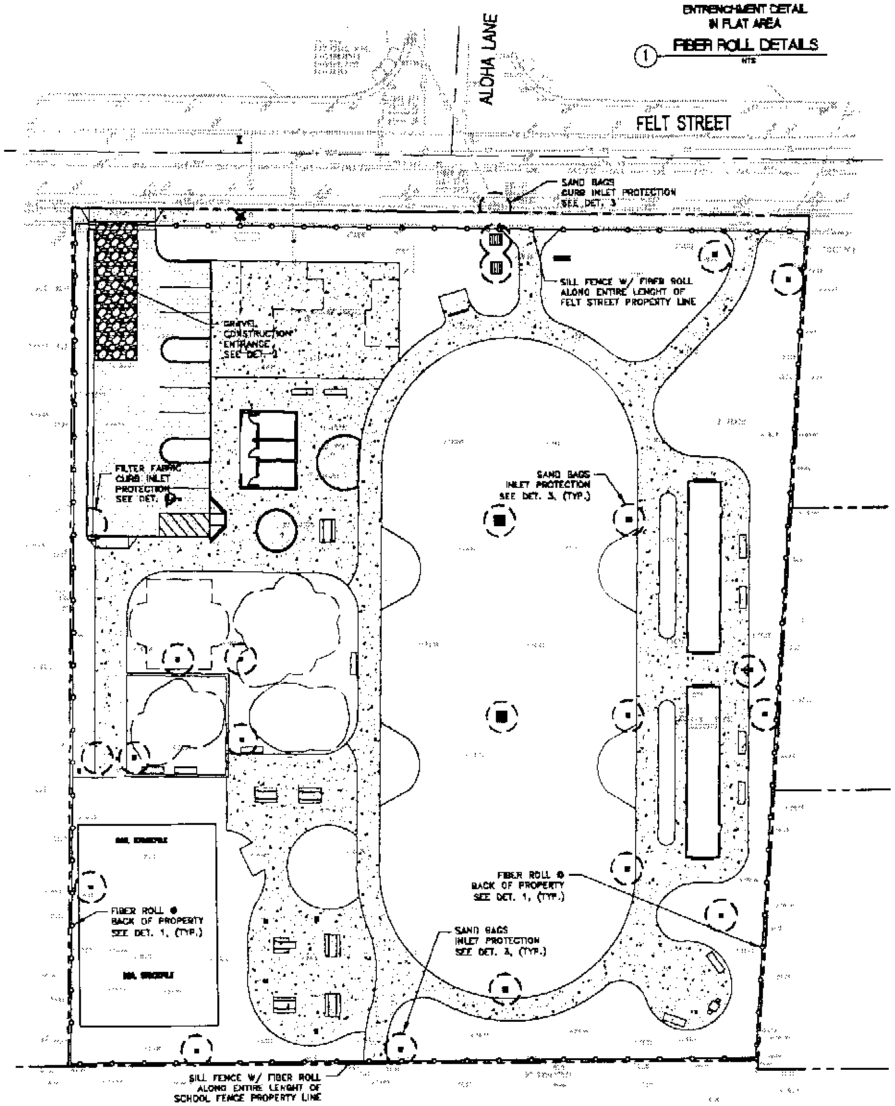
ENTRENCHMENT DETAIL IN FLAT AREA

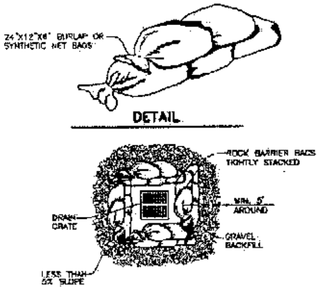
(1) FIBER ROLL DETAILS

NTS



(2) TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT





DETAIL

PLAN VIEW

NOTES:

1. FILL ROCK BARRIER BAGS ¾ FULL OF ¾" ROCK.
2. PLACE BAGS SUCH THAT NO GAPS ARE EVIDENT IN A SINGLE OR DOUBLE LAYER. STAMP ENTIRE LAYER INTO PLACE PRIOR TO STARTING THE NEXT LAYER.
3. ROCK BARRIER BAGS FOR CATCH BASIN SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%).

(3) ROCK BAG CATCH BASIN SEDIMENT BARRIER

EROSION CONTROL NOTES

1. THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL THE SEDIMENT DURING THE RAINY SEASON, OCTOBER 15, TO APRIL 15, AFTER ROUGH GRADING HAS BEEN COMPLETED. MEASURES ARE TO BE OPERABLE PRIOR TO OCTOBER 15TH OF ANY YEAR GRADING OPERATIONS HAVE LEFT AREAS UNPROTECTED FROM EROSION.
2. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS: A) REPAIR DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION AT THE END OF EACH WORKING DAY. B) SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS REQUIRED. C) STRAW BALE DIKE, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS ARE TO BE MADE AS NEEDED. D) SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO WITHIN ONE FOOT OF OUTLET ELEVATION. E) SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.
4. CONSTRUCTION ENTRANCE CONSISTING OF AN 8" THICK LAYER OF 2"-3" COARSE DRAINROCK FOR A DISTANCE OF 50 FEET IS TO BE PROVIDED AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS.
5. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL TO BE BLOCKED UNLESS THE AREA DRAINED IS UNDISTURBED OR STABILIZED.
6. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE DIRECTOR OF PUBLIC WORKS.
7. THIS PLAN COVERS ONLY THE FIRST WINTER FOLLOWING GRADING. PLANS ARE TO BE RE-SUBMITTED FOR CITY APPROVAL PRIOR TO THE SEPTEMBER FIRST OF EACH SUBSEQUENT YEAR UNTIL THE SITE IMPROVEMENTS ARE ACCEPTED BY THE CITY.
8. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY OR DAILY DURING THE RAINY SEASON.
9. SEDIMENT BASINS SHALL BE CLEANED OUT WHENEVER SEDIMENT REACHES THE SEDIMENT CLEANOUT LEVEL INDICATED ON THE PLANS.
10. BORROW AREAS AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.
11. ALL CUT AND FILL SLOPES ARE TO BE PROTECTED TO PREVENT OVERBANK FLOW.
12. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF THE CITY.
13. ALL NEW ON-SITE DRAINS IN EXISTING OR PROPOSED AC PAVEMENT AREAS SHALL BE FITTED WITH A "FOSSIL FILTER FLOGARD" SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

UNDERWOOD & ROSENBLUM, INC.

JOHN DAHLIN LANDSCAPE ARCHITECT

EROSION CONTROL PLAN

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 26 341 32,03

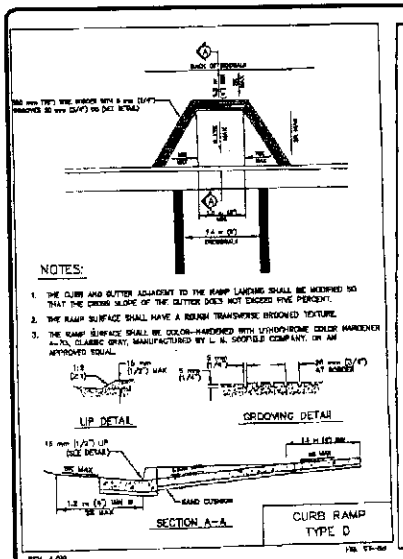
Prepared for:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

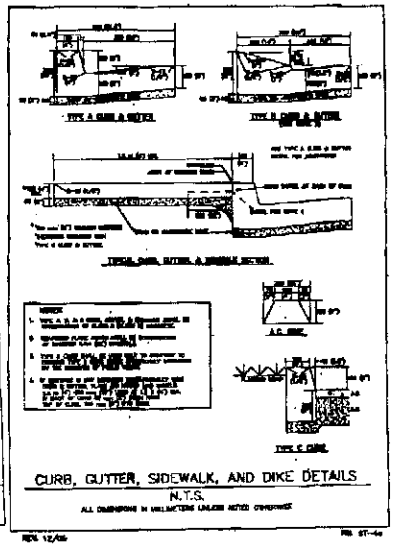
DRAWN	BH
CHECKED	DVR
DATE	10-22-09
SCALE	1"=20'
JOB NO.	45178
SHEET	2 of 5

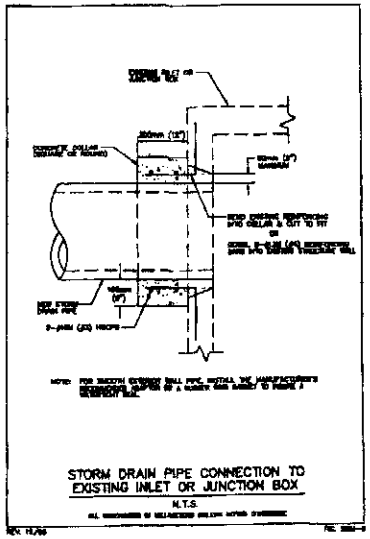
C-2

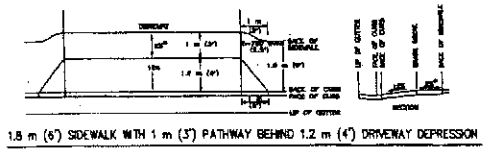
of 5

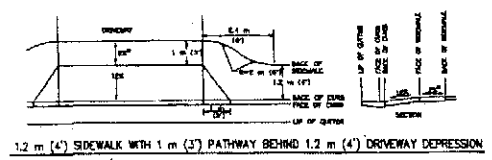
ATTACHMENT 2





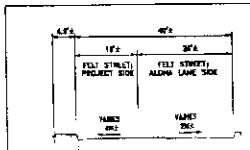


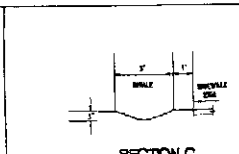


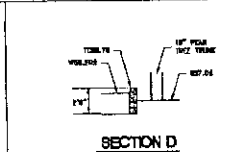


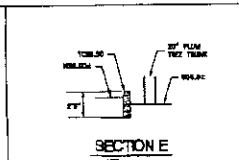
COUNTY SANITATION DISTRICTS
GENERAL NOTES

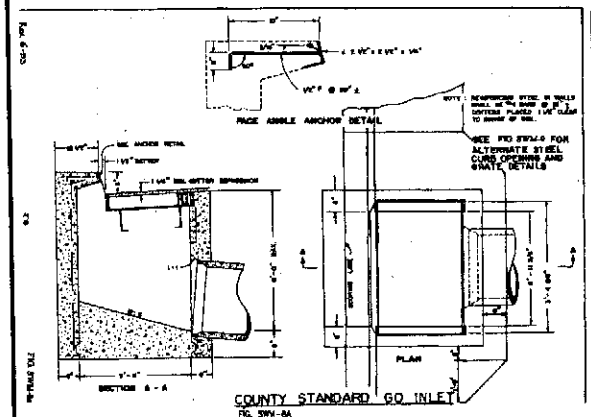
1. All construction shall comply with applicable requirements in the current edition of the "County of Santa Cruz Design Criteria".
2. All figure (Fig) references, unless otherwise specified, refer to standard drawings in the current edition of the "County of Santa Cruz Design Criteria".
3. No changes in the approved Improvement Plans shall be made without prior approval of the Department of Public Works.
4. The Director of Public Works or the authorized representative shall have the authority to "stop work" if the work is not being done in accordance with the approved Improvement Plans.
5. The Contractor shall notify the County Construction Engineer (831_454-2160) 48 hours prior to start of construction.
6. The Contractor shall notify the Sanitation District Inspector (831_454-2160 or leave message at 831_454-2160) before 9:00 a.m. at least 24 hours prior to the connection of any building sewer to the sanitary sewer lateral, or for the abandonment thereof (in the case of abandonments, no connection permits will be issued until sewer line has been abandoned).
7. Each new sanitary sewer lateral not immediately connected to a dwelling unit shall be marked with a 4" x 4" x 8" redwood stake painted, to 18" above finish grade, at the end of each new lateral shall be painted on the exterior and the end of each lateral shall be properly capped. All laterals installed in new developments shall also be marked by stamping an "S" in the curb just above the lateral.
8. Insulated copper wire (No. 10) shall be placed along top of all gravity and force mains. The wire shall run between manholes, cleanouts, or other appropriate locations, brought to the surface and looped or otherwise securely entered to the manhole or cleanout cover or other appropriate metal structure.
9. Following the successful completion of cleaning and testing of sanitary sewer mains which are to be County-maintained, or private lines in the dedication of the Public Works Department, shall first be inspected. The inspection shall be performed by the District's inspector or DVD by a Monterey Video Pipeline Inspection Services. Said video recording and accompanying report shall be submitted to the Sanitation District for review and approval prior to the completion of the project and any associated sign offs for building occupancy. The Contractor shall refer to Part 4, "Sanitary Sewer Design" of the Design Criteria for specifications on video taping, pipeline testing and alternate design requirements.
10. Backflow prevention devices shall be installed on all laterals where the finished floor elevation is less than one foot above the rim elevation of the nearest upstream manhole or cleanout. The valves shall be located to work a way as to prevent any damage to adjacent property as a result of sewage released from the device (Figure SS-14).
11. Underground utility locations shown are compiled from information supplied by the appropriate utility agency. Contractor shall verify location of affected utility lines and perform those areas where potential conflicts are likely or shall be responsible therefore.
12. Any existing utilities that are required to be relocated as a part of this construction shall be relocated at the developer's expense.
13. All sanitary sewers within the roadway or under curb, gutter or sidewalk shall be in place, videotaped, and approved for acceptance prior to placing the permanent paving but said trenchwork or placing any curb, gutter or sidewalk. Exception.
14. If sidewalk is not placed monolithically with curb and gutter, place pit spindle 18" long at 4' O.C. in back of curb 3" below top of curb, 6" into concrete.
15. Refer to Figures SS_5A & -5B and SP_1 & -2 for manhole requirements. Refer to SS_11 for connection and encasement requirements.
16. Water service for the site shall be installed by the contractor according to City of Santa Cruz/Soquel Creek Water District/City of Watsonville requirements per details by individual/employer.
17. Between October 15 and April 15, exposed soil shall be protected from erosion at all times. During construction each protective area detailed of mulching and/or planting of native vegetation or adequate density. Before completion of the project, any exposed soil on disturbed slopes shall be permanently protected from erosion.
18. Prior to consideration for formal County acceptance of the improvements, an "as built" plans will be prepared by County staff. Any changes from the Improvement plans not previously approved by the Department of Public Works shall require revision and adjustment to the satisfaction of the County.
19. Sanitary sewer manholes subject to surface or storm water, shall have water-tight lids.

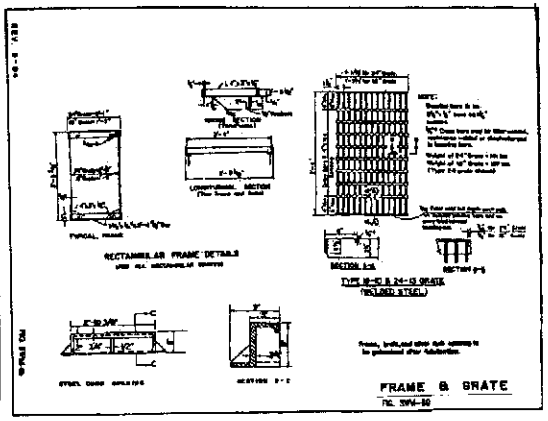


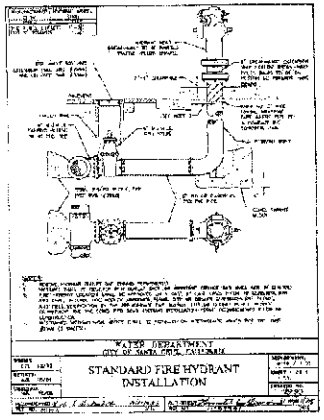












REGISTERED PROFESSIONAL ENGINEER No. 19429 Exp. 03-31-10 CIVIL STATE OF CALIFORNIA

U&R UNDERWOOD & ROSENBLUM, INC. civil engineers land surveyors

REVISIONS	BY

JOHN CHIARA LANDSCAPE ARCHITECT

CIVIL DETAILS

FELT STREET PARK
1501 Felt Street Santa Cruz, CA 95062
APN 026-01-107,20

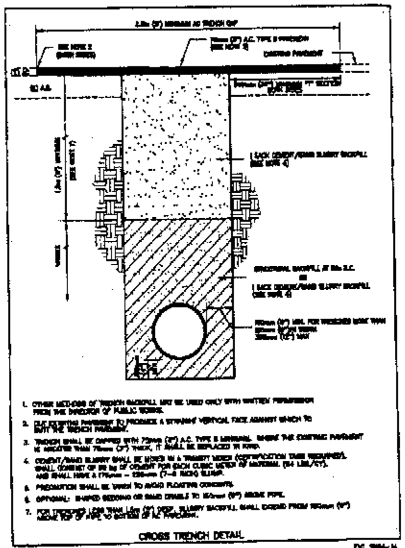
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue Santa Cruz, CA 95062

DRAWN	BH
CHECKED	DMD
DATE	10-22-09
SCALE	1"=20'
JOB NO.	208124
SHEET	3 of 5

C-3

OF 5 SHEETS

ATTACHMENT 2



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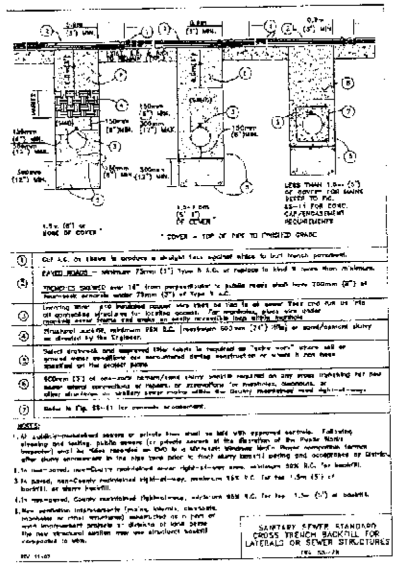

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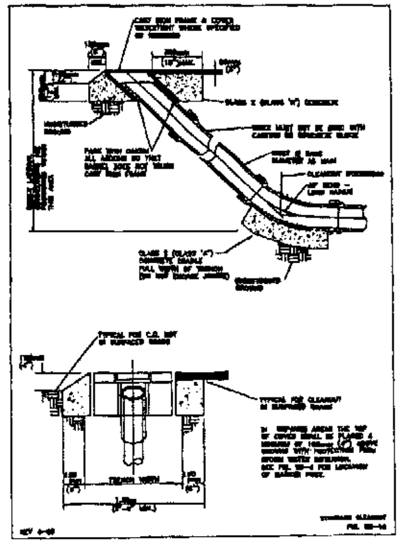
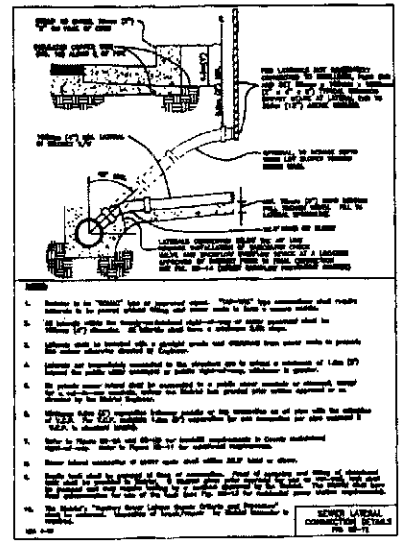
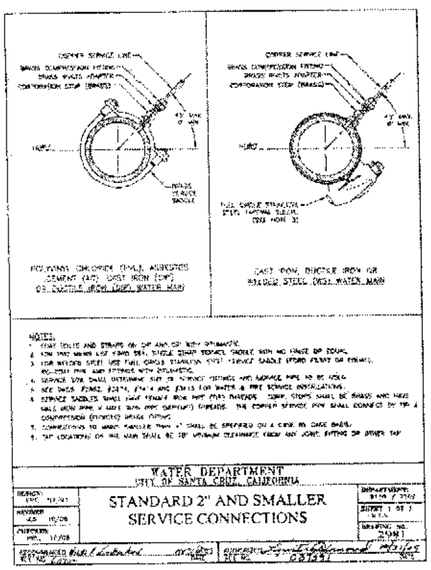
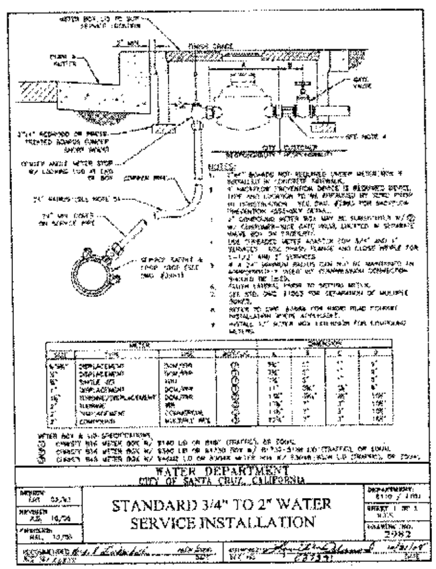
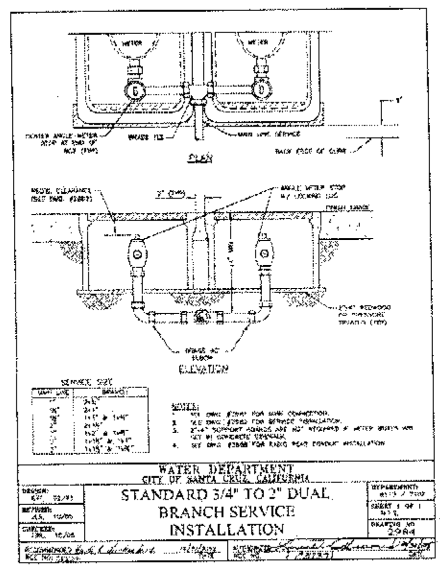
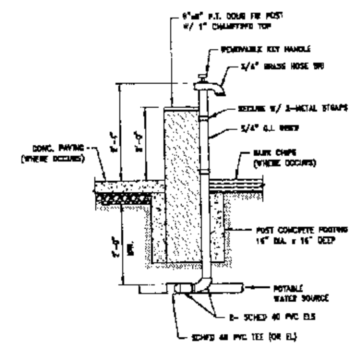












HOSE BIB DETAIL
AT COMMUNITY GARDEN

UNDERWOOD & ROSENBLUM, INC.

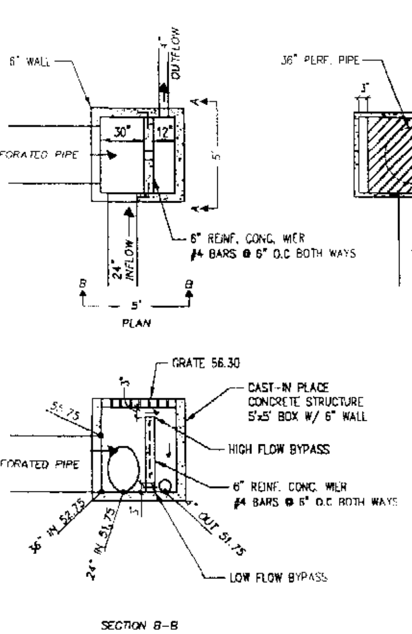
CIVIL DETAILS

FELT STREET PARK

Prepared for:
County of Santa Cruz Department of Parks
Open Space & Cultural Services

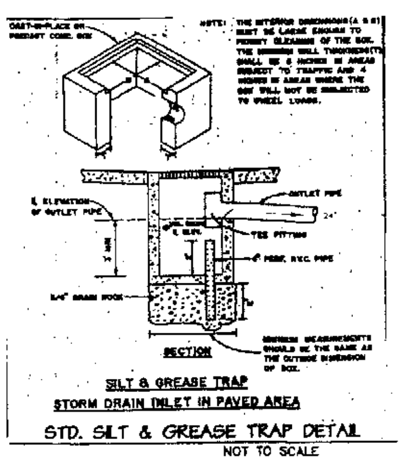
C-4

ATTACHMENT 2



① WEIR BYPASS SPLITTER BOX DETAIL

NTS

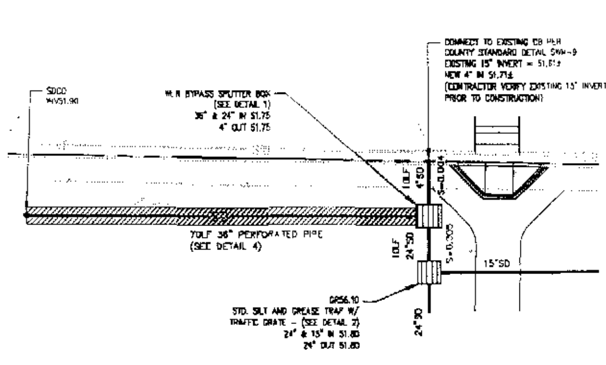


STD. SILT & GREASE TRAP DETAIL

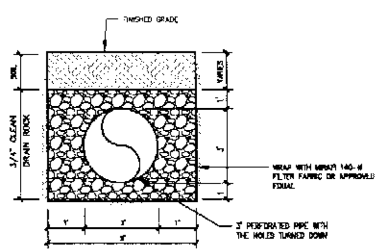
NOT TO SCALE

② STD. SILT AND GREASE TRAP DETAIL

NTS

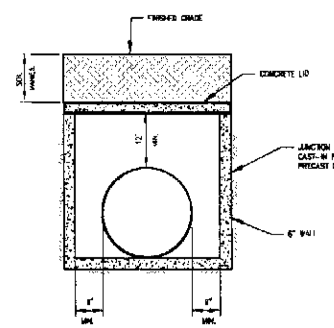


③ EXPANDED VIEW OF DETENTION AREA



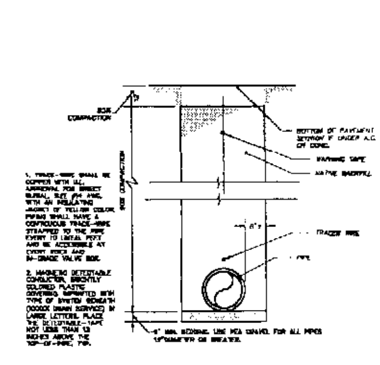
④ 36" PERFORATED PIPE DETAIL

NOT TO SCALE



⑤ JUNCTION BOX W/ CONCRETE LID DETAIL

NOT TO SCALE



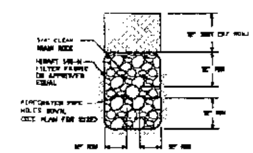
① TRACE WIRE SHALL BE COPPER WITH UL APPROVAL FOR DIRECT BURIAL, SIZE #14 AWG, WITH AN INSULATING JACKET OF YELLOW COLOR. PIPING SHALL HAVE A CONTINUOUS TRACE-WIRE STRAPPED TO THE PIPE EVERY 10 LINEAL FEET AND BE ACCESSIBLE AT EVERY BOX AND IN-GRADE VALVE BOX.

② MAGNETIC DETECTABLE CONDUCTOR, BRIGHTLY COLORED PLASTIC COVERING, IMPRINTED WITH TYPE OF SYSTEM BENEATH (XXXXX DRAIN SERVICE) IN LARGE LETTERS. PLACE THE DETECTABLE-TAPE NOT LESS THAN 12 INCHES ABOVE THE TOP-OF-PIPE, TYP.

4" MIN. BEDDING. USE PEA GRAVEL FOR ALL PIPES 12" DIAMETER OR GREATER.

⑥ TRENCH BACKFILL DETAIL

NOT TO SCALE



⑦ PERFORATED PIPE DETAIL

NOT TO SCALE

GRADING NOTES

1. THE GEOTECHNICAL ENGINEER SHOULD BE NOTIFIED AT LEAST FOUR (4) WORKING DAYS PRIOR TO ANY GRADING OR FOUNDATION EXCAVATING SO THE WORK IN THE FIELD CAN BE COORDINATED WITH THE GRADING CONTRACTOR AND ARRANGEMENTS FOR TESTING AND OBSERVATION CAN BE MADE. THE RECOMMENDATIONS OF THE REPORT ARE BASED ON THE ASSUMPTION THAT THE GEOTECHNICAL ENGINEER WILL PERFORM THE REQUIRED TESTING AND OBSERVATION DURING GRADING AND CONSTRUCTION. IT IS THE OWNER'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS FOR THESE REQUIRED SERVICES UNLESS DELEGATED BY CONTRACT TO A THIRD PARTY.
2. AREAS TO BE GRADED SHOULD BE CLEARED OF OBSTRUCTIONS INCLUDING LOOSE FILL, DEBRIS, TREES NOT DESIGNATED TO REMAIN, EXISTING STRUCTURES, AND OTHER UNSUITABLE MATERIAL. EXISTING DEPRESSIONS OR VOIDS CREATED DURING SITE CLEARING SHOULD BE BACKFILLED WITH ENGINEERED FILL. EXISTING UNDERGROUND UTILITIES UNCOVERED IN THE COURSE OF GRADING AND TRENCHING SHOULD BE REMOVED OR CAPPED AND ABANDONED IN PLACE. EXISTING WELLS, IF ANY, SHOULD BE BROUGHT TO THE ATTENTION OF THE SANTA CRUZ COUNTY ENVIRONMENTAL HEALTH DEPARTMENT AND ABANDONED OR DEVELOPED IN ACCORDANCE WITH THEIR RECOMMENDATIONS. ANY INDIVIDUAL SEWAGE DISPOSAL SYSTEMS UNCOVERED SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENVIRONMENTAL HEALTH DEPARTMENT AND THE GEOTECHNICAL ENGINEER.
3. CLEARED AREAS SHOULD THEN BE STRIPPED OF ORGANIC-LADEN TOPSOIL. STRIPPING DEPTH SHOULD BE FROM 4 TO 6 INCHES. ACTUAL DEPTH OF STRIPPING SHOULD BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER. STRIPPINGS SHOULD BE WASTED OFF-SITE OR STOCKPILED FOR USE IN LANDSCAPED AREAS IF DESIRED.
4. AREAS TO RECEIVE ENGINEERED FILL AND/OR THE SUBGRADE BENEATH INTERIOR SLABS SHOULD BE SCARIFIED TO A DEPTH OF 8 INCHES, MOISTURE CONDITIONED, AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION. THE ON-SITE SOIL MAY NEED TO BE MOISTURE CONDITIONED TO ACHIEVE SUITABLE MOISTURE CONTENT FOR COMPACTION BASED ON ASTM TEST D1557. THESE AREAS MAY THEN BE BROUGHT TO DESIGN GRADE WITH ENGINEERED FILL.
5. ENGINEERED FILL SHOULD BE PLACED IN THIN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED, AND COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION. THE UPPER 6 INCHES OF PAVEMENT AND SLAB SUBGRADES SHOULD BE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION. THE AGGREGATE BASE BELOW PAVEMENTS SHOULD LIKEWISE BE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.
6. IF GRADING IS PERFORMED DURING OR SHORTLY AFTER THE RAINY SEASON, THE GRADING CONTRACTOR MAY ENCOUNTER COMPACTION DIFFICULTY, SUCH AS PUMPING OR BRINGING FREE WATER TO THE SURFACE, IN THE UPPER SURFACE CLAYEY AND SILTY SANDS. IF COMPACTION CANNOT BE ACHIEVED AFTER ADJUSTING THE SOIL MOISTURE CONTENT, IT MAY BE NECESSARY TO OVER-EXCAVATE THE SUBGRADE SOIL AND REPLACE IT WITH ANGULAR CRUSHED ROCK TO STABILIZE THE SUBGRADE. WE ESTIMATE THE DEPTH OF OVER-EXCAVATION WOULD BE APPROXIMATELY 24 INCHES UNDER THESE ADVERSE CONDITIONS.

REGISTERED PROFESSIONAL ENGINEER
DAVID E. HOCHREIN (?)
STATE OF CALIFORNIA
CIVIL

UNDERWOOD & ROSENBLUM, INC.

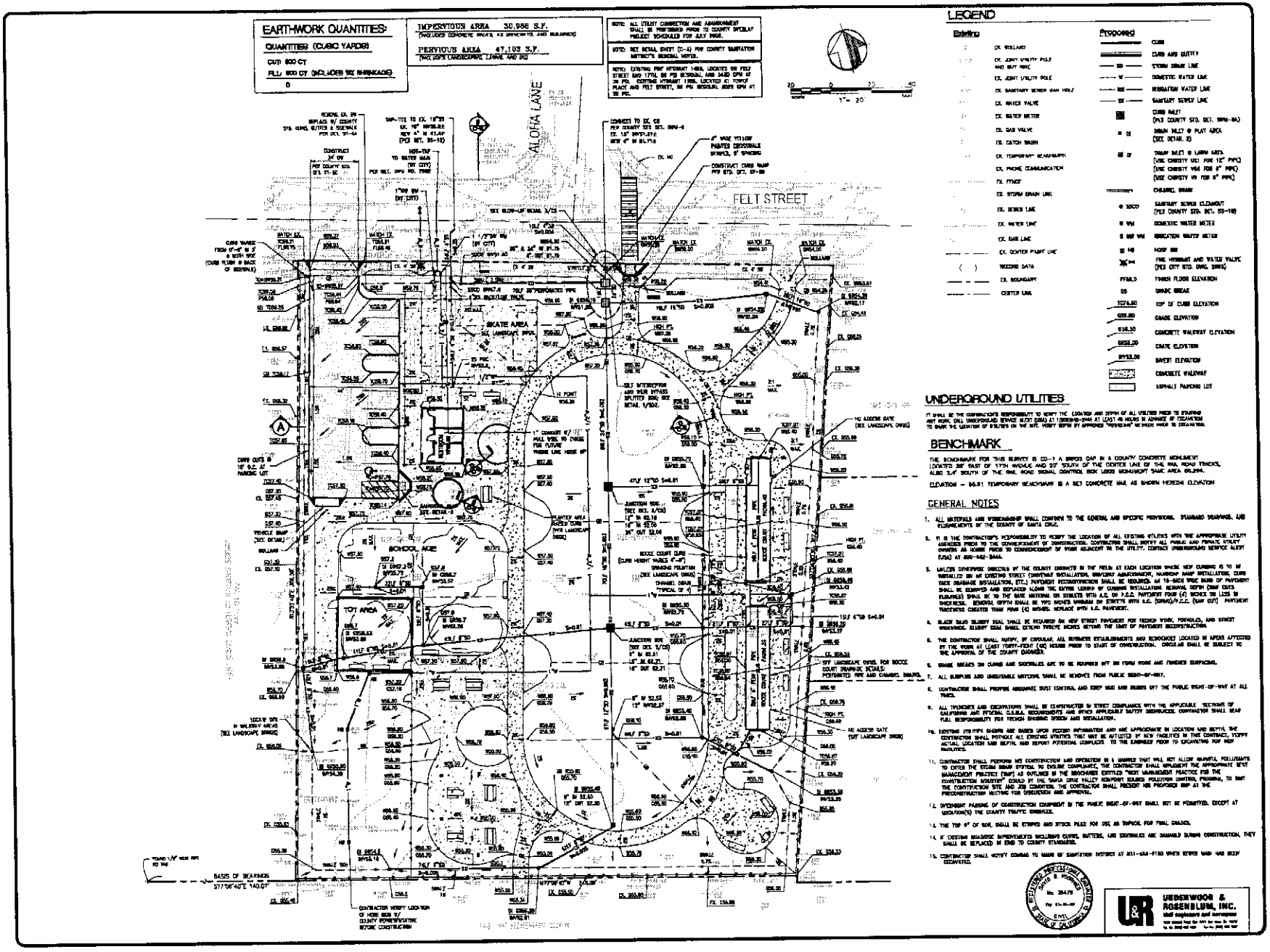
CIVIL DETAILS: STORM DRAIN

FELT STREET PARK
1904 Felt Street Santa Cruz, CA 95062
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue Santa Cruz, CA 95062

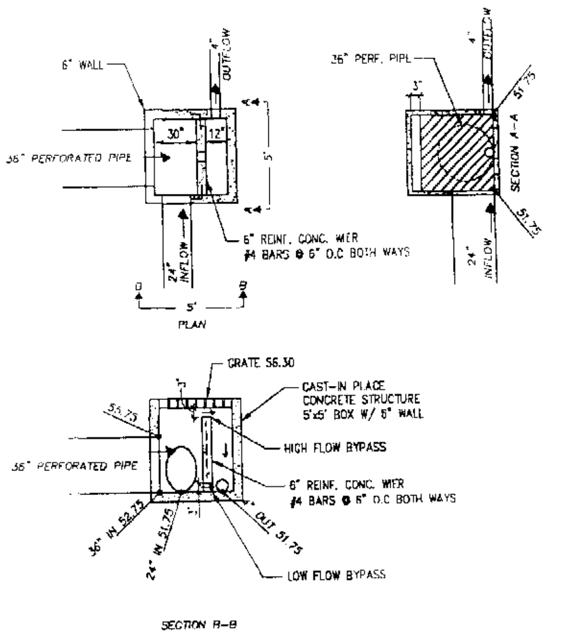
DRAWN:	TM
CHECKED:	DVR
DATE:	
SCALE:	AS SHOWN
JOB NO:	
SHEET	1 OF 5

C5

OF 5 SHEETS

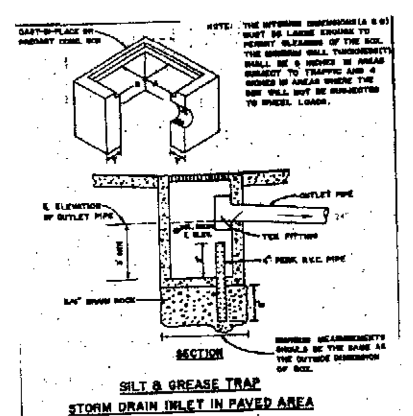


FELT STREET PARK
GRADING AND UTILITY PLAN
County of Santa Cruz Department of Parks Open Space & Cultural Services
SD1



1 WEIR BYPASS SPLITTER BOX DETAIL

NTS

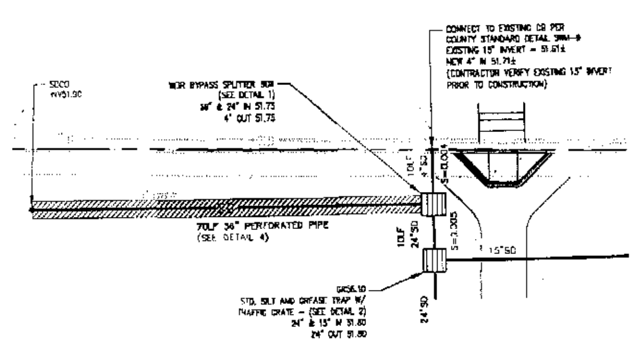


STD. SILT & GREASE TRAP DETAIL

NOT TO SCALE

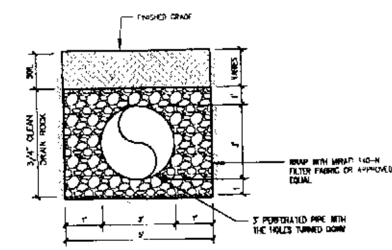
2 STD. SILT AND GREASE TRAP DETAIL

NTS



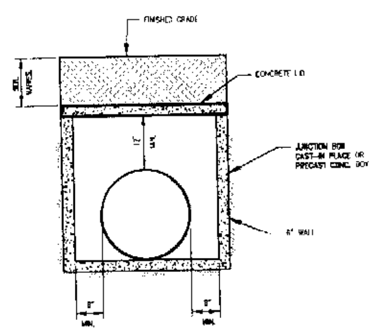
3 EXPANDED VIEW OF DETENTION AREA

1"=10'



4 36" PERFORATED PIPE DETAIL

NOT TO SCALE



5 JUNCTION BOX W/ CONCRETE LID DETAIL

NOT TO SCALE

UNDERWOOD & ROSENBLUM, INC.

civil engineers and surveyors

REVISIONS	BY

JONI L. JANECKI
LANDSCAPE ARCHITECT

CIVIL DETAILS: STORM DRAIN

FELT STREET PARK

1904 Felt Street, Santa Cruz, CA 95062

APN 26-041-02,03

Prepared For

County of Santa Cruz Department of Parks

Open Space & Cultural Services

979 17th Avenue, Santa Cruz, CA 95062

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DATE	10.15.04
SCALE	AS SHOWN
JOB NO.	
SHEET	1 of 1

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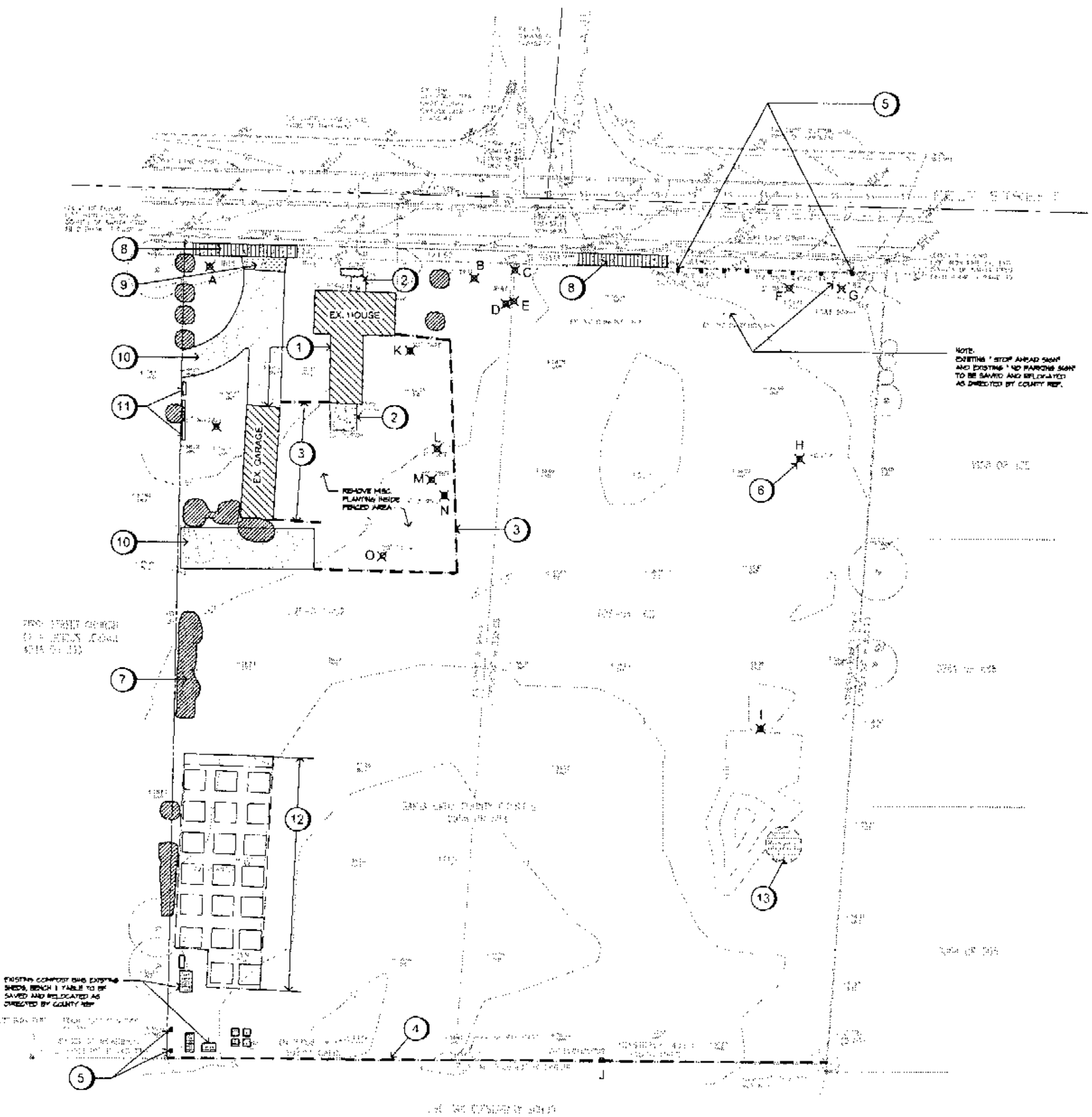
of 2 SHEETS



DEMOLITION NOTES

1. THE EXISTING SEWER LATERAL MUST BE PROPERLY ABANDONED (INCLUDING INSPECTION BY DISTRICT) PRIOR TO ISSUANCE OF DEMOLITION PERMIT OR RELOCATION OR DISCONNECTION OF STRUCTURE. AN ABANDONMENT PERMIT (NO CHARGE) FOR DISCONNECTION MUST BE OBTAINED FROM THE DISTRICT. LATERAL SHALL BE ABANDONED AT THE PROPERTY LINE PRIOR TO REMOVAL OF STRUCTURE.
2. PRIOR TO ANY DEMOLITION WORK, CONTRACTOR SHALL INSTALL SELF-SUPPORTING INTERLOCKING CHAIN-LINK TEMPORARY CONSTRUCTION FENCING TO ENCLOSE AND SECURE THE PROJECT AREA AS SHOWN ON PLAN. THE FENCING SHALL CONTAIN PEDESTRIAN AND/OR VEHICULAR ACCESS GATES AS NECESSARY AND SHALL BE MINIMUM 6 FEET HIGH WITH A TOP AND BOTTOM RAIL WITH KNUCKLED TOP AND BOTTOM SELVAGE (NO BARBED WIRE PERMITTED). THE CONSTRUCTION FENCING WORK SHALL BE SUBJECT TO THE DISCRETION OF THE COUNTY'S REPRESENTATIVE.
3. ALL BUILDINGS, PAVING, FENCING AND OTHER MISCELLANEOUS ITEMS TO BE REMOVED UNLESS OTHERWISE NOTED AS "TO BE SAVED AND RELOCATED AS DIRECTED BY COUNTY REP "SHALL BE HAULED OFFSITE AND DISPOSED OF IN A LEGAL AND PROPER FASHION.
4. PROTECT (E) FENCING TO REMAIN.
5. STRIP & GRUB ALL (E) SOIL AREAS.
6. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DUST AND DEBRIS FROM SPREADING ONTO ADJACENT PROPERTIES AND STREETS.
7. EXISTING UTILITIES AT (E) HOUSE TO BE ABANDONED AND CAPPED.

DEMOLITION LEGEND

KEY	DESCRIPTION
1	REMOVE HOUSE AND GARAGE
2	REMOVE CONCRETE PAVING AT HOUSE.
3	REMOVE WOOD FENCE AT HOUSE
4	REMOVE CHAIN LINK FENCE AND GATES AT SCHOOL
5	REMOVE METAL AND WOOD FENCE POSTS
6	REMOVE TREES (TYPICAL)
7	REMOVE SHRUBS (TYPICAL).
8	REMOVE SIDEWALK. SEE CIVIL DWGS. FOR LIMITS OF NEW SIDEWALK, DRIVEWAY, RAMP & HANDICAP RAMP
9	REMOVE A.C. PAVING
10	REMOVE GRAVEL PAVING
11	REMOVE WOOD LOGS
12	REMOVE HEADERBOARDS AT GARDEN.
13	REMOVE PILE OF BRICKS.

(E) TREE DISPOSITION LEGEND

KEY	BOTANICAL/COMMON NAME	SIZE & CONDITION	PRESERVE/ REMOVE
A	WALNUT	6" DIAM, POOR	REMOVE
B	GOLDEN RAIN TREE	4" DIAM, POOR	REMOVE
C	WALNUT	5" DIAM, POOR	REMOVE
D	SPECIES UNKNOWN	5" DIAM, POOR	REMOVE
E	SPECIES UNKNOWN	5" DIAM, POOR	REMOVE
F	QUERCUS SP. (OAK)	5" DIAM, POOR	REMOVE
G	QUERCUS SP. (OAK)	3" DIAM, POOR	REMOVE
H	ACACIA SP. (ACACIA)	(2) 6" DIAM, FAIR	REMOVE
I	EUCALYPTUS SP. (EUCALYPTUS)	(2) 24" DIAM, FAIR	REMOVE
J	EUCALYPTUS SP. (EUCALYPTUS)	24" DIAM, FAIR	PRESERVE
K	JUGLANS SP. (BLACK WALNUT)	30" DIAM, POOR	REMOVE
L	MALUS SP. (APPLE)	4" DIAM, POOR	REMOVE
M	PYRUS SP. (FRUITING PEAR)	10" DIAM, FAIR	REMOVE
N	APRICOT	4" DIAM, POOR	REMOVE
O	PLUM	20" DIAM, FAIR	REMOVE

0' 10' 20' 40' 80'

North

JOHN CAHALAN
LANDSCAPE ARCHITECT

DEMOLITION PLAN

FELT STREET PARK
1904 Felt Street, Santa Cruz CA 95062
APN 28-041-02,03

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
379 17th Avenue, Santa Cruz, CA 95062

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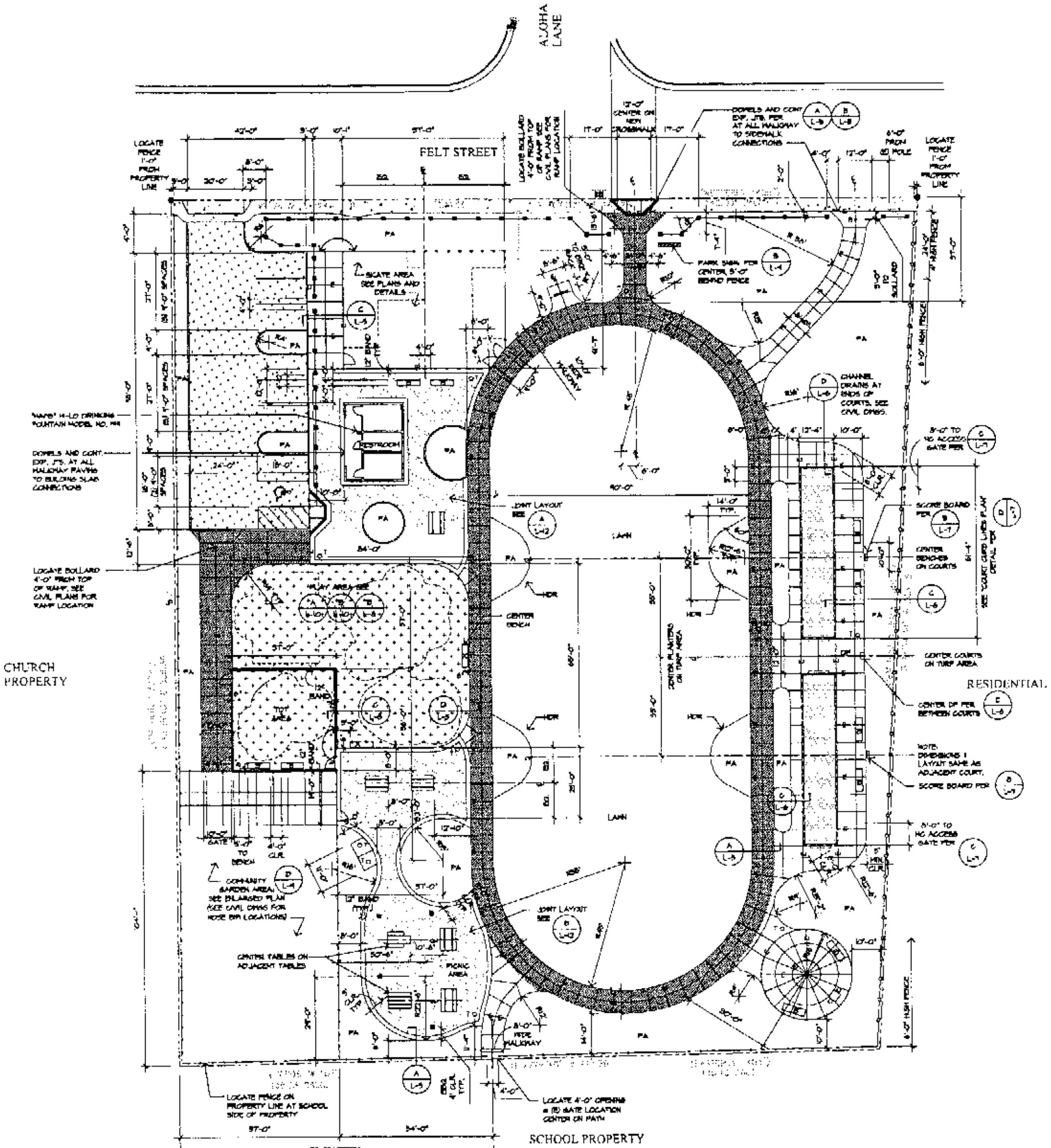


SITE CONSTRUCTION LEGEND

- PEDESTRIAN CONCRETE PAVING FOR COLOR & FINISH SEE SPECS (A/L-5, B/L-6)
  - EXPANSION JOINT, CONTINUOUS
  - SCORE JOINT
- STAMPED CONCRETE PAVING WITH BANDING: (A/L-5)
  - FIELD PATTERN:
    "LARGE RANDOM SLATE", INTEGRAL COLOR AND CUSTOM COLOR HARDENER PER SPECS. EXPANSION JOINTS IN STAMPED CONCRETE AREA TO HAVE SEALANT. COLOR TO MATCH PER SPECS.
  - BANDING:
    12" WIDE BAND, INTEGRAL COLOR ONLY PER SPECS. (NO COLOR HARDENER) BAND TO HAVE "SLATE TEXTURE".

  NOTE: SAMPLE OF STAMPED CONCRETE (24"x60") AVAILABLE FOR VIEWING AT COUNTY OFFICE.
- LIMITS OF PEDESTRIAN AND MAINTENANCE VEHICULAR PAVING (CONCRETE) (A/L-5)
- A.C. PAVING WITH CURB. SEE CIVIL DWGS.
- SIDEWALK AT FELT STREET. SEE CIVIL DWGS.
- CONCRETE CURB AT TREE PLANTERS (D/L-5, A/L-4)
- COURT CURB (WITH SKATE STOPPERS) (C/L-6)
- BOCCE COURT SURFACING (B/L-6)
- CONCRETE SLAB UNDER RESILIENT SURFACING FOR PLAY AREA. SEE RESILIENT SURFACING LAYOUT PLAN (D/L-6)
- SPLIT RAIL FENCE (A/L-7)
- CHAIN LINK FENCE AND GATES (4' HIGH) (E/L-5, F/L-5, G/L-5)
- PLAY AREA FENCE & GATE (WITH FENCE FOOTING BAND WHEN OCCURS) (F/L-6)
- CHAIN LINK FENCE WITH SLATS: FABRIC WITH PRE-INSERTED SLATS PER SPECS. HEIGHTS PER PLAN (E/L-5)
- PARK SIGN (B/L-4)
- BENCH, PER SPECS. QTY. (12) SEE COMMUNITY GARDEN AREA. (A/L-6)
- BENCH (BACKLESS), PER SPECS. QTY. (3) (A/L-6)

SKATE STOPPERS NOTES:

1. SKATESTOPPERS ON ALL BENCHES (EXCEPT IN COMMUNITY GARDEN AREA AND TOT AREA), (2) PER BENCH, CENTERED, 32" APART. MODEL MG BULLNOSE 1.50 ALUMINUM, 1 1/2" RADIUS BRACKET. TOTAL QTY FOR BENCHES: 24. (TURN OVER EXTRA QTY. TO COUNTY)
2. ON BACKLESS BENCHES: INSTALL ON CONCRETE PAVING SIDE ONLY.
3. AVAILABLE FROM SKATESTOPPERS. CONTACT: CHRIS LOARIE (XX)447-4574.

- DRINKING FOUNTAIN, PER SPECS. QTY. (1) (BY BOCCE COURTS) (C/L-6)
- PICNIC TABLE, PER SPECS. QTY. (3). SEE COMMUNITY GARDEN AREA (A/L-6)
- ACCESSIBLE PICNIC TABLE, PER SPECS. QTY. (1) (A/L-6)
- GAME TABLE, PER SPECS. QTY. (1) (A/L-6)
- BARBEQUE, PER SPECS. QTY. (4) (A/L-6)
- BIKE RACK, PER SPECS. QTY. (1) (A/L-6)
- BOLLARD, QTY. (5) (A/L-6)
- TRASH RECEPTACLES. QTY. (8) BY COUNTY
- HEADBOARD (7/L-14)
- ALIGN
- CENTERLINE
- PLANTING AREA

0' 10' 20' 40' 80'

North

SITE CONSTRUCTION NOTES

1. PLAY EQUIPMENT & RESILIENT SURFACING: PLAY EQUIPMENT (LANDSCAPE STRUCTURES) & RESILIENT SURFACING BY ROSS RECREATION. CONTACT THE PLAY EQUIPMENT REPRESENTATIVE, LIZ RIEHL (831)688-4110, 229 SEA RIDGE ROAD, APTOS, CA 95003.
2. LAYOUT OF WORK: CONTRACTOR SHALL VERIFY LAYOUT OF ALL IMPROVEMENTS WITH COUNTY REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.
3. DIMENSIONS AND LAYOUT: ALL DIMENSIONS ARE FROM FACE OF WALL OR CURB UNLESS OTHERWISE NOTED. NOTIFY COUNTY REPRESENTATIVE OF ANY FIELD DISCREPANCIES.
4. SLEEVING & CONDUIT: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL SLEEVING AND CONDUIT FOR ELECTRICAL AND/OR IRRIGATION WORK.
5. CURB & SIDEWALK PROTECTION: CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE EXISTING CITY SIDEWALKS AND CURBS (TO REMAIN) DURING CONSTRUCTION. ANY DAMAGE THAT MAY OCCUR WILL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE COUNTY.
6. SEE GRADING PLAN FOR STRIP AND STOCKPILE INFORMATION.
7. SEE CIVIL DRAWINGS FOR ACCESSIBLE AND VEHICULAR RAMPS. ALL RAMPS, CURBS, AND GUTTER (EXCEPT THOSE THAT OCCUR IN SIDEWALK AT STREET) TO HAVE INTEGRAL COLOR TO MATCH SITE CONCRETE PAVING PER LANDSCAPE DRAWINGS.

NOTE:
THE CONTRACTOR WILL BE FURNISHED THE CAD FILES ON A CD FOLLOWING AWARD OF CONTRACT, AND SHALL USE THEM AS NEEDED TO FACILITATE LAYOUT, LENGTHS AND LOCATIONS, RADIUS, ETC. TO THE EXTENT THAT THEY ARE NOT PROVIDED ON THESE PLANS FOR ALL SITE IMPROVEMENTS.

REVISIONS	BY

JOHN CAHALAN
LANDSCAPE ARCHITECT
15559 Union Avenue
Suite 300 • Los Gatos CA 95032

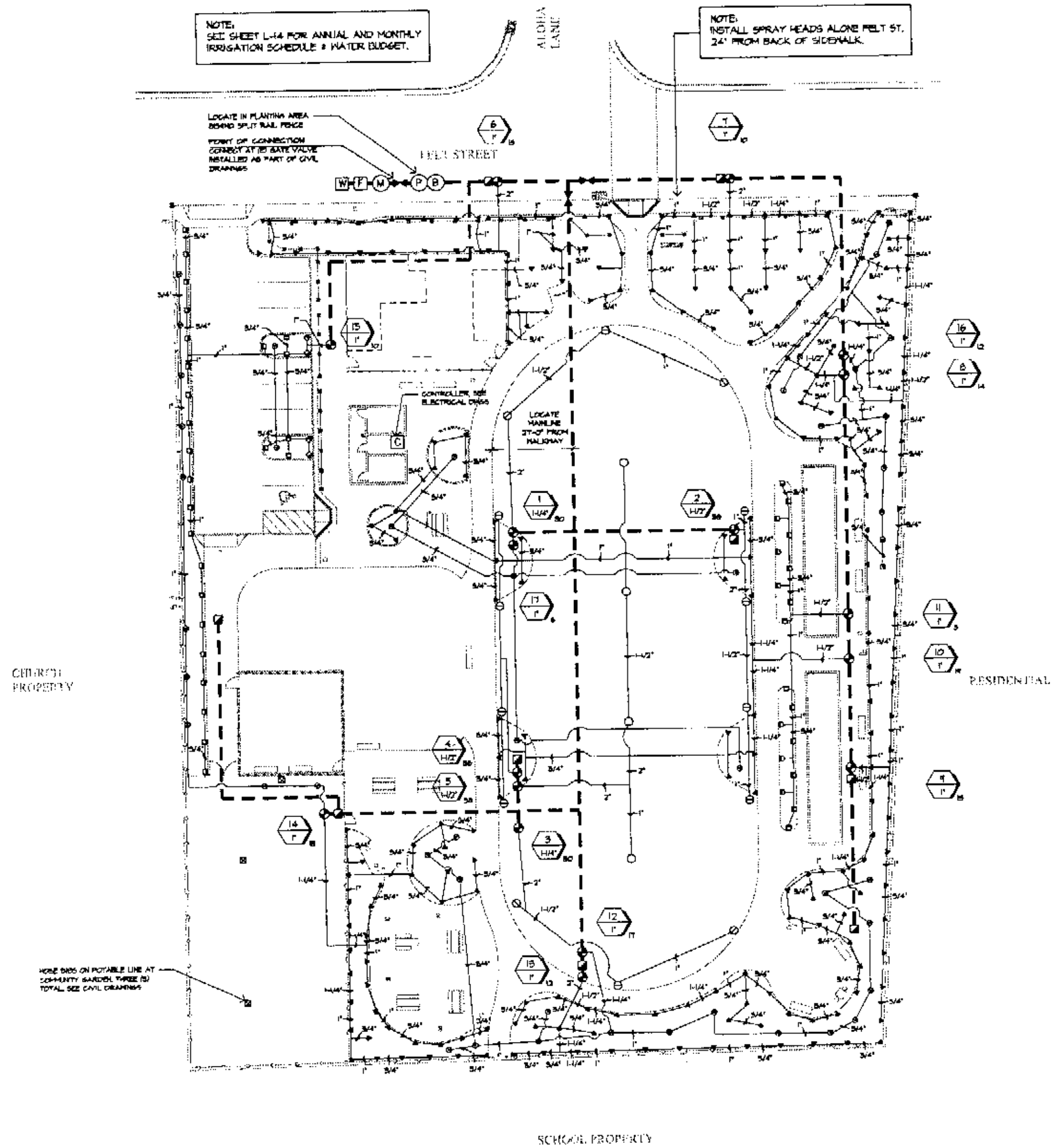
LAYOUT PLAN

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 28-041-02,03

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

DRAWN	BLA.G
CHECKED	JC
DATE	10/22/09
SCALE	1"=20'-0"
JOB No.	
SHEET	L-2

1 OF 12 SHEETS



IRRIGATION LEGEND

SYMBOL	DESCRIPTION
⊖ ○	ROTOR HEADS: HUNTER I-25 PLUS NOZZLE SERIES, ADJUSTABLE OR FULL, 6" POP-UP STAINLESS STEEL WITH CHECK VALVES. "LIGHT GREEN" #10 NOZZLES EMIT APPROX. 4.5 GPM AT 50 PSI WITH A 51' RADIUS
▼	STREAM SPRAY HEADS: MP ROTATOR 12" POP-UP, MP1000, 90-120°, 210-270° AND 360° ADJUSTABLE ARC WITH 12' RADIUS AT 30 PSI. MATCHED PRECIPITATION RATES.
●	STREAM BUBBLER HEADS: RAINBIRD 5 SERIES, MPR 6" POP-UP, 5H-B, 5Q-B AS REQUIRED. 5' RADIUS AT 30 PSI. MATCHED PRECIPITATION RATES.
•	FLOOD BUBBLER: TORO 510Z SERIES, FB-100-PC, TWO PER TREE, ONE PER VINE AS SHOWN.
◕	REMOTE CONTROL VALVE: RAINBIRD, GB SERIES, BRASS VALVE WITH GLOBE CONFIGURATION, SIZE PER PLAN
●	HOSE BIBS AT COMMUNITY GARDEN: PART OF POTABLE SYSTEM, SEE CIVIL ENGINEER'S DRAWINGS.
C	CONTROLLER: "CALSENSE", 24 - STATION CONTROLLER, ET2000-24-ME-RR-SSER. VERIFY EXACT LOCATION OF CONTROLLER AND PHONE LINE INSTALLATION WITH COUNTY REPRESENTATIVE. CONTRACTOR SHALL PULL ALL VALVE WIRES AND INSTALL PULL BOX WITH SPARE CONDUCTORS AND COMMON WIRES FOR REMAINING STATIONS FOR FUTURE USE. CONTACT CALSENSE REP., IAN CLARKE AT (415) 41-3101 OR 1-800-572-8608.
W	IRRIGATION WATER METER: 1" SIZE. CONTACT "SANTA CRUZ MUNICIPAL UTILITIES" AT (831) 420-5210 FOR COORDINATION OF INSTALLATION. ALL FEES TO BE PAID FOR BY CONTRACTOR.
F	FLOW METER: 1-1/2" SIZE, "CALSENSE" FM 1.5 (5 TO 180 GPM FLOW). WIRES FROM THE FLOW METER TO THE IRRIGATION CONTROLLER SHALL CONSIST OF ONE (1) BLACK AND ONE (1) RED STANDARD #14 AWG IRRIGATION WIRE.
M	MASTER VALVE: 2" SIZE (LINE SIZE), SUPERIOR OR GRISWOLD 200 N OR EQUAL NORMALLY OPEN.
B	BACKFLOW PREVENTION DEVICE: FEBCO 825Y, 1 1/2" SIZE, REDUCED PRESSURE BACKFLOW PREVENTER WITH WYE STRAINER. INSTALL WITH A LOCK-READY EXPANDED METAL CAGE BY "LE MEUR OR STRONGBOX" AND EQUIP WITH A FROST BLANKET INSULATOR BY "POLARPARKA" OR "WEATHERGURAD"
P	PRESSURE REDUCER: WATTS U5B, 1 1/2" SIZE.
◪	QUICK COUPLER: RAINBIRD #44 LRC, 1" SIZE
⋈	GATE VALVE: KENNEDY, LINE SIZE, INSTALL IN ROUND "CARSON" BOX WITH BOLT-DOWN LID.
———	LATERAL LINE: SCH 40 PVC PURPLE RECLAIMED WATER PIPE, SIZE PER PLAN, 18" MIN. BURIAL.
— — —	MAIN LINE: SCHEDULE 40 PVC PURPLE RECLAIMED WATER PIPE, 2" SIZE, 24" MIN. COVER.
1 / 1 1/2" / 95	VALVE # / VALVE SIZE / APPROXIMATE GPM THRU VALVE

IRRIGATION NOTES

1. SPECIFICATIONS: See the technical section of the specifications for additional information and requirements.

2. VERIFICATION: System design is based on 64 P.S.I. and 38 G.P.M. available at discharge outlet of meter or other point of connection. Contractor shall verify same on site and notify Landscape Architect if such data adversely effects the operation of the system. Such notice shall be made in writing prior to commencing with any irrigation installation. Pressure information was provided by "Santa Cruz Municipal Utilities".

3. UTILITIES: See "General Notes".

4. SCHEMATIC CLARITY: System features are shown schematically for graphic clarity. Install all piping and valves in common trenches where feasible and in planting areas whenever possible. All valves shall be located in ground cover or shrub areas instead of lawn areas where possible.

5. CODES: Irrigation system shall be installed in accordance with all local and state codes and ordinances and the manufacturer's specifications. Notify Landscape Architect by telephone and in writing if any conflicts occur prior to installation.

6. SLEEVING: Piping and wiring under paved areas shall be sleeved in PVC SCH. 40 min. pipe sleeves which shall extend a minimum of 8" into planting areas past paving typical. Sleeves shall be sized a minimum of 2X the size of pipe being sleeved with 6" sleeving used wherever possible.

7. BACKFLOW DEVICES: Locate all backflow devices in shrub or ground cover areas. Devices shall be in an inconspicuous location, approved prior to installation by the Landscape Architect.

8. QUICK COUPLER VALVES: Install on double swing joint. Locate 12" away from edge of walks, walls, curbs and headerboards within planting areas. Provide County with one operating key, two sets of locking cover keys and one swivel hose ell.

9. CONTROLLER: Install controller 4'-0" above floor or finished grade (where applicable) and fasten securely to wall or controller enclosure. All above grade conduit shall be either 240V or 110V rigid steel, securely fastened to structure, wall, or enclosure.

10. WIRE SIZING AND UNUSED CONTROL WIRES: Low voltage direct burial wires shall be sized appropriately based on length of run but at minimum shall be 12 gauge white for common wires and 14 gauge red for control wires. The number of control wires installed shall, at a minimum, match the number of stations available on the controller, regardless of them being used in the current design. Un-used control wires shall run from the controller to the last valve at the end of the irrigation mainline in all directions (with splices provided as necessary) to facilitate future valve additions. In addition, two spare control wires (each of a different color, not red or white) shall be run with all wires and shall be visible in each RCV box. Where un-used or spare wires pass by a remote control valve box, they shall be looped up into box visibly. Wires shall be bundled together and taped at 10-15' intervals (except in sleeves-no tape) and shall follow the mainline run in same trench wherever possible.

0' 10' 20' 40' 80'

North

LICENSED LANDSCAPE ARCHITECT JOHN CAHALAN NO. 2994

JOHN CAHALAN LANDSCAPE ARCHITECT

IRRIGATION PLAN

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 28-041-02,03

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue Santa Cruz, CA 95062

DRAWN	BL/KC
CHECKED	JC
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SHEET	L-3

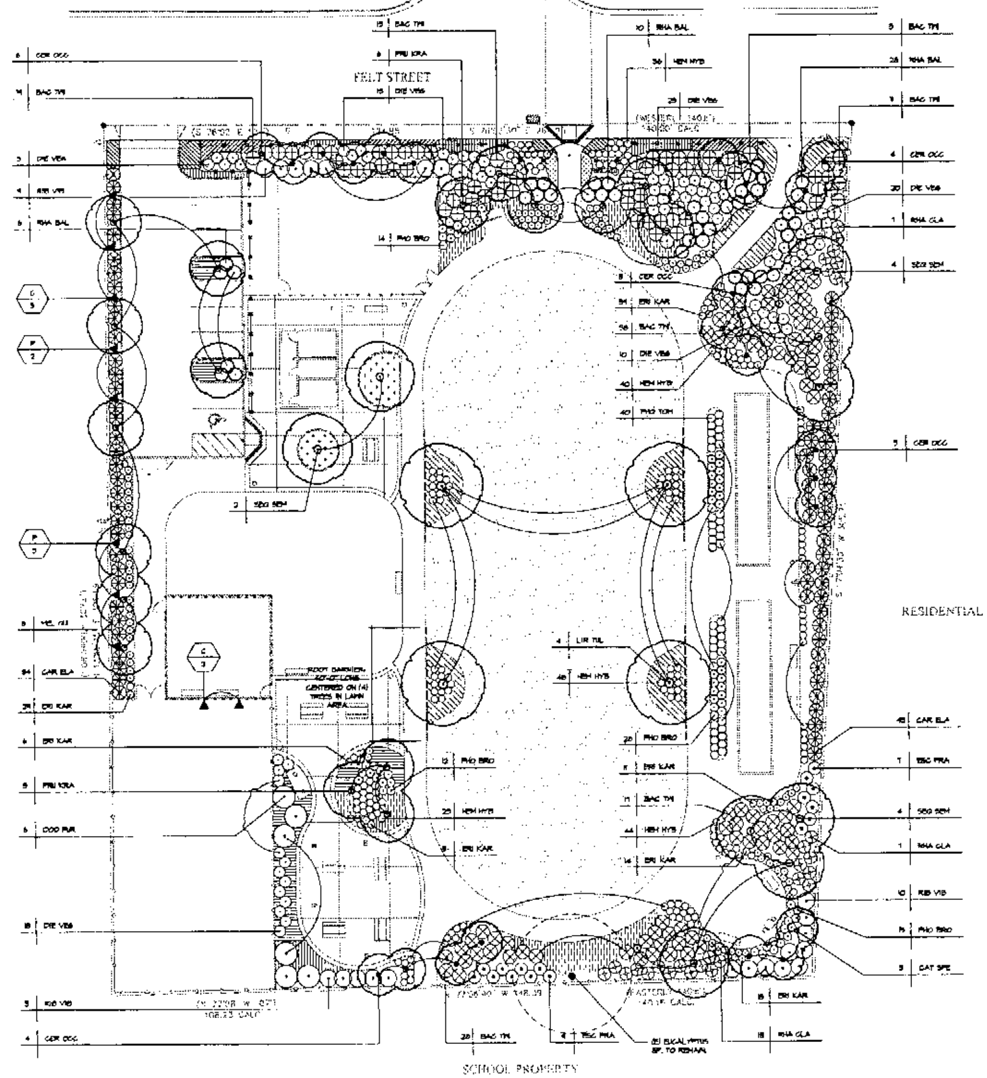
REVISIONS	BY

ATTACHMENT 2

TREES TO BE REMOVED (6" CALIPER OR LARGER): 5
NEW 24" BOX TREES: 46
NEW 15 GAL. TREES : 11
TREE RATIO REPLACEMENT: 10:1

TREE RATIO REPLACEMENT WITH "SIGNIFICANT REPLACEMENT TREES": MIN. 2:1

TOTAL PLANTING AREA:	19,000 S.F.
TOTAL LAWN AREA:	17,000 S.F.
TOTAL LANDSCAPE AREA:	36,000 S.F.



PLANT LIST

Key	Botanical/Common Name	Size	Qty.
Trees:	NOTE: All trees to be installed with "Tree Pit Drain" per 4/L-44		
** CAT SPE	Catalpa speciosa (Catalpa)	15 gal.	5
* CER OCC	Cercis occidentalis (Western Redbud)	24" box, standard	20
LIR TUL	Liriodendron tulipifera (Tulip Tree)	24" box	4
MEL QUI	Melaleuca quinquenervia (Cajeput Tree)	15 gal.	6
PRU KRA	Prunus cerasifera 'Krauter Vesuvius' (Purple Leaf Plum)	24" box	9
** SEQ SEM	Sequoia sempervirens (Redwood)	24" box	10
Shrubs:			
* BAC TWI	Baccharis 'Twin Peaks'	5 gal.	129
CAR ELA	Carex elata 'Aurea' (Bowles Golden)	5 gal.	77
DIE VEG	Dietes vegeta (Fortnight Lily)	5 gal.	84
DOD PUR	Dodonaea Viscosa 'Purpurea' (Purple Hop Bush)	5 gal.	6
ERI KAR	Erigeron karvinskianus (Mexican Daisy)	1 gal.	123
ESC FRA	Escallonia 'Fradesii'	5 gal.	16
HEM HYB	Hemerocallis hybridus (pale yellow, dwarf, evergreen variety only)	1 gal.	141
PHO BRO	Phormium tenax 'Bronze Baby'	5 gal.	64
PHO TOM	Phormium tenax 'Tom Thumb'	5 gal.	40
RHA BAL	Rhaphiolepis indica 'Ballerina'	5 gal.	44
RHA CLA	Rhaphiolepis indica 'Clara'	5 gal.	27
* RIB VIB	Ribes viburnifolium (Evergreen Currant)	5 gal.	33

Ground Cover: 4/L-44

	Botanical/Common Name	Size
	Agapanthus 'Rancho White' (Dwarf Lily-of-the-nile)	1 gal. at 2'-0" O.C.
	Armeria maritima (Common Thrift)	1 gal. at 2'-0" O.C.
	Gazania hybrid, trailing (white)	Flats at 12" O.C.
	Gazania hybrid, clumping (yellow)	Flats at 18" O.C.
*	Heuchera micrantha 'Palace Purple'	1 gal. at 2'-0" O.C.
	Juniperus conferta (Shore Juniper)	1 gal. at 3'-0" O.C.
*	Fragaria chiloensis (Beach Strawberry)	Flats at 12" O.C.

Vines: ▲

		Size	Qty.
	Parthenocissus tricuspidata (Boston Ivy)	5 gal.	5
	Cytostoma callistegioides (Lavender Trumpet Vine)	5 gal.	5

Lawn:

Lawn: sod, type: "Dwarf Enduro" Fescue by Greenfields Turf, Inc. Sod composition: Sod shall be composed of 90-95% Dwarf Tall Fescue and 5-10% Bluegrass, "Dwarf Enduro" grown by Greenfields Turf, Inc. (800) 525-8877, Greenfield, CA. Verify with County Representative before installation.

Root barrier, continuous. See plan for lengths and locations. Type: DeepRoot UB 24-2. Install per manufacturer's recommendations. Install against concrete paving with vertical ribs facing toward tree and top edge 1/2" min. above grade.

* Indicates California Native Plants.

** Indicates trees on the county's "Significant Tree Replacement List".

NOTES

1. SOIL PREPARATION: See specifications and refer to Soil and Plant Laboratory Soil Analysis Report dated March 31, 2006.
2. STRIP AND STOCKPILE: See Grading plan for strip and stockpile information.
3. BARK MULCH: All planting areas shall receive a 3" layer of "Shredded Cedar bark" mulch by "Sun Up Forest Products", (800)222-2551, or approved equal.
4. PLANT REVIEW: Notify County's representative minimum 48 hours in advance for plant material review and acceptance. Representative reserves the right to reject any or all plant material that is deemed to be unacceptable in size or health.
5. PLANT LAYOUT: Plant layout and locations to be reviewed by County Representative prior to installation.

0' 10' 20' 40' 80'

North

JOHN CATALAN LANDSCAPE ARCHITECT

PLANTING PLAN

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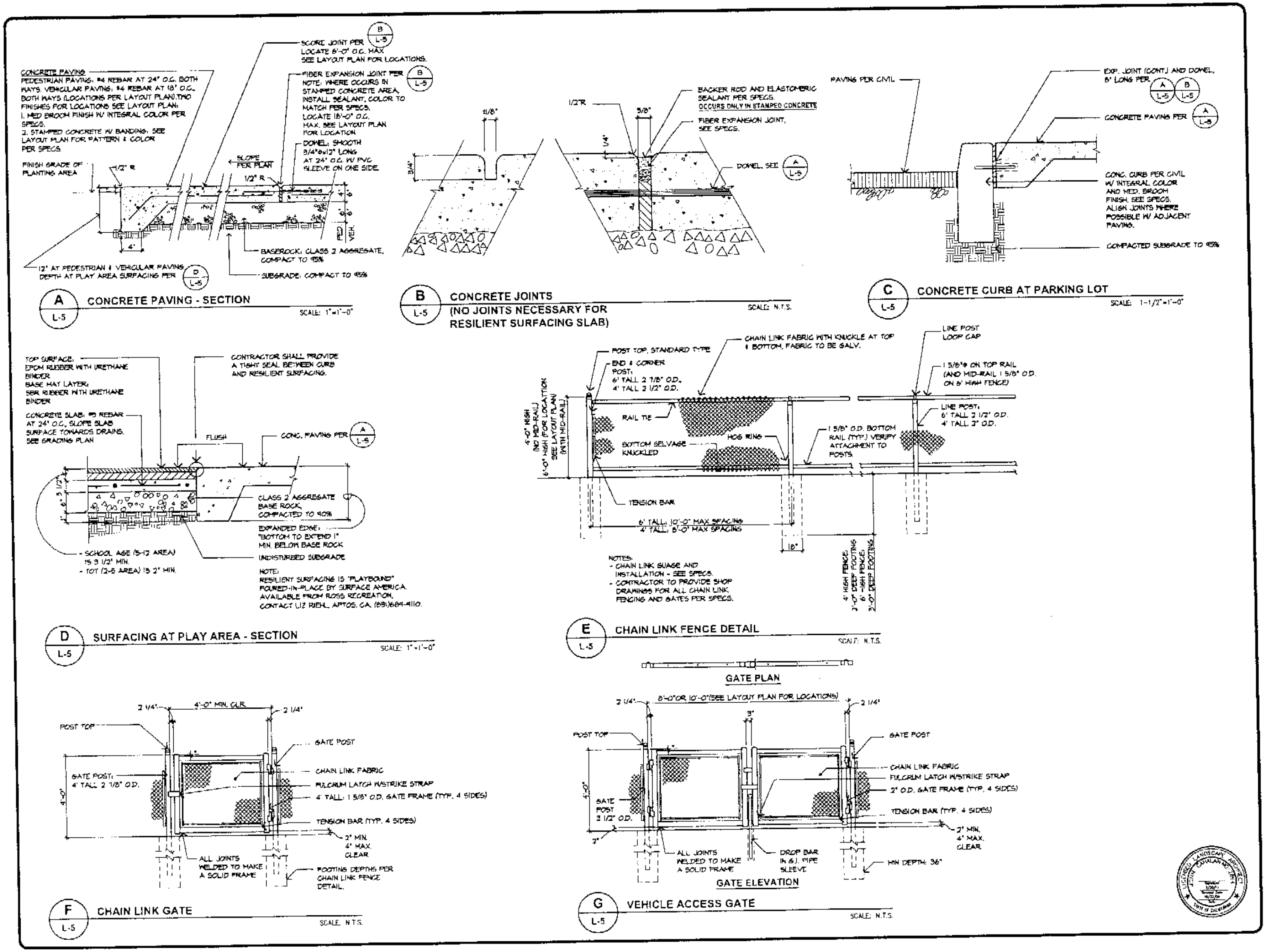
SHEET L-4

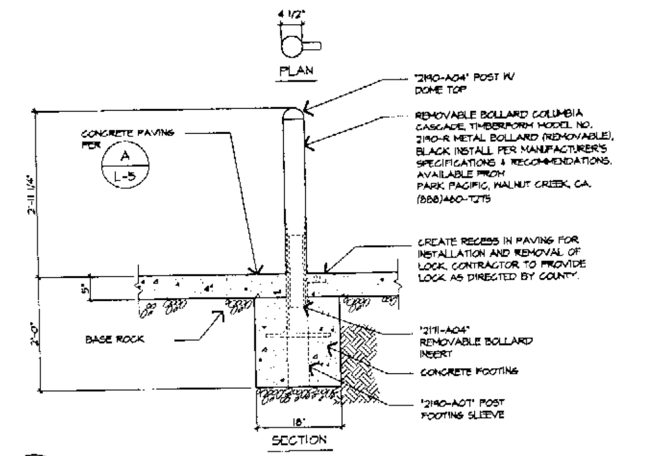

CONCRETE PAVING: PEDESTRIAN PAVING: #4 REBAR AT 24" O.C. BOTH WAYS. VEHICULAR PAVING: #4 REBAR AT 18" O.C. BOTH WAYS (LOCATIONS PER LAYOUT PLAN). TWO FINISHES FOR LOCATIONS SEE LAYOUT PLAN: 1. MED BROOM FINISH W/ INTEGRAL COLOR PER SPECS. 2. STAMPED CONCRETE W/ BANDING: SEE LAYOUT PLAN FOR PATTERN & COLOR PER SPECS.
SCORE JOINT PER B/L-5 LOCATE 6'-0" O.C. MAX SEE LAYOUT PLAN FOR LOCATIONS.
FIBER EXPANSION JOINT PER B/L-5 NOTE: WHERE OCCURS IN STAMPED CONCRETE AREA, INSTALL SEALANT, COLOR TO MATCH PER SPECS. LOCATE 18'-0" O.C. MAX. SEE LAYOUT PLAN FOR LOCATION
DOWEL: SMOOTH 3/4"ø×12" LONG AT 24" O.C. W/ PVC SLEEVE ON ONE SIDE.
FINISH GRADE OF PLANTING AREA
SLOPE PER PLAN
1/2" R
BASEROCK: CLASS 2 AGGREGATE, COMPACT TO 95%
SUBGRADE: COMPACT TO 95%
12" AT PEDESTRIAN & VEHICULAR PAVING DEPTH AT PLAY AREA SURFACING PER D/L-5
A L-5 CONCRETE PAVING - SECTION
SCALE: 1"=1'-0"
BACKER ROD AND ELASTOMERIC SEALANT PER SPECS. OCCURS ONLY IN STAMPED CONCRETE
FIBER EXPANSION JOINT, SEE SPECS.
DOWEL, SEE A/L-5
B L-5 CONCRETE JOINTS (NO JOINTS NECESSARY FOR RESILIENT SURFACING SLAB)
SCALE: N.T.S.
PAVING PER CIVIL
EXP. JOINT (CONT.) AND DOWEL, 8' LONG PER A/L-5 B/L-5
CONCRETE PAVING PER A/L-5
CONC. CURB PER CIVIL W/ INTEGRAL COLOR AND MED. BROOM FINISH, SEE SPECS. ALIGN JOINTS WHERE POSSIBLE W/ ADJACENT PAVING.
COMPACTED SUBGRADE TO 95%
C L-5 CONCRETE CURB AT PARKING LOT
SCALE: 1-1/2"=1'-0"
TOP SURFACE: EPDM RUBBER WITH URETHANE BINDER
BASE MAT LAYER: SBR RUBBER WITH URETHANE BINDER
CONCRETE SLAB: #3 REBAR AT 24" O.C. SLOPE SLAB SURFACE TOWARDS DRAINS. SEE GRADING PLAN
CONTRACTOR SHALL PROVIDE A TIGHT SEAL BETWEEN CURB AND RESILIENT SURFACING.
FLUSH
CONC. PAVING PER A/L-5
CLASS 2 AGGREGATE BASE ROCK, COMPACTED TO 90%
EXPANDED EDGE: "BOTTOM TO EXTEND 1" MIN. BELOW BASE ROCK
UNDISTURBED SUBGRADE
- SCHOOL AGE (5-12 AREA) IS 3 1/2" MIN.
- TOT (2-5 AREA) IS 2" MIN.
NOTE: RESILIENT SURFACING IS "PLAYBOUND" POURED-IN-PLACE BY SURFACE AMERICA. AVAILABLE FROM ROSS RECREATION, CONTACT LIZ RIEHL, APTOS, CA. (831)684-4110.
D L-5 SURFACING AT PLAY AREA - SECTION
SCALE: 1"=1'-0"
POST TOP, STANDARD TYPE
END & CORNER POST: 6' TALL 2 7/8" O.D. 4' TALL 2 1/2" O.D.
CHAIN LINK FABRIC WITH KNUCKLE AT TOP & BOTTOM, FABRIC TO BE GALV.
LINE POST LOOP CAP
1 5/8"ø ON TOP RAIL (AND MID-RAIL 1 5/8" O.D. ON 6' HIGH FENCE)
LINE POST: 6' TALL 2 1/2" O.D. 4' TALL 2" O.D.
RAIL TIE
HOG RING
BOTTOM SELVAGE KNUCKLED
1 5/8" O.D. BOTTOM RAIL (TYP.) VERIFY ATTACHMENT TO POSTS.
4'-0" HIGH (NO MID-RAIL) 6'-0" HIGH (FOR LOCATION SEE LAYOUT PLAN) (WITH MID-RAIL)
TENSION BAR
6' TALL: 10'-0" MAX SPACING 4' TALL: 8'-0" MAX SPACING
4' HIGH FENCE: 2'-0" DEEP FOOTING 6' HIGH FENCE: 3'-0" DEEP FOOTING
NOTES: - CHAIN LINK GUAGE AND INSTALLATION - SEE SPECS. - CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL CHAIN LINK FENCING AND GATES PER SPECS.
E L-5 CHAIN LINK FENCE DETAIL
SCALE: N.T.S.
POST TOP
GATE POST: 4' TALL 2 7/8" O.D.
4'-0" MIN. CLR.
GATE POST
CHAIN LINK FABRIC
FULCRUM LATCH W/STRIKE STRAP
4' TALL: 1 5/8" O.D. GATE FRAME (TYP. 4 SIDES)
TENSION BAR (TYP. 4 SIDES)
2" MIN. 4" MAX. CLEAR
ALL JOINTS WELDED TO MAKE A SOLID FRAME
FOOTING DEPTHS PER CHAIN LINK FENCE DETAIL
F L-5 CHAIN LINK GATE
SCALE: N.T.S.
GATE PLAN
8'-0" OR 10'-0" (SEE LAYOUT PLAN FOR LOCATIONS)
GATE POST 3 1/2" O.D.
2" O.D. GATE FRAME (TYP. 4 SIDES)
DROP BAR IN G.I. PIPE SLEEVE
MIN DEPTH: 36"
GATE ELEVATION
G L-5 VEHICLE ACCESS GATE
SCALE: N.T.S.

CONSTRUCTION DETAILS

FELT STREET PARK
1934 Felt Street, Santa Cruz, CA 95062
APN 28-04-02,03

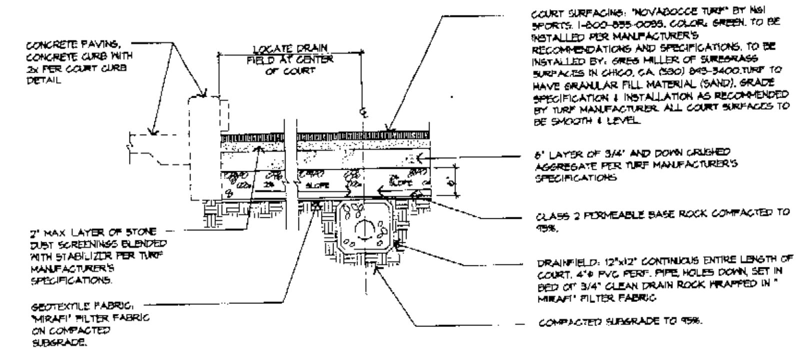
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

L-5



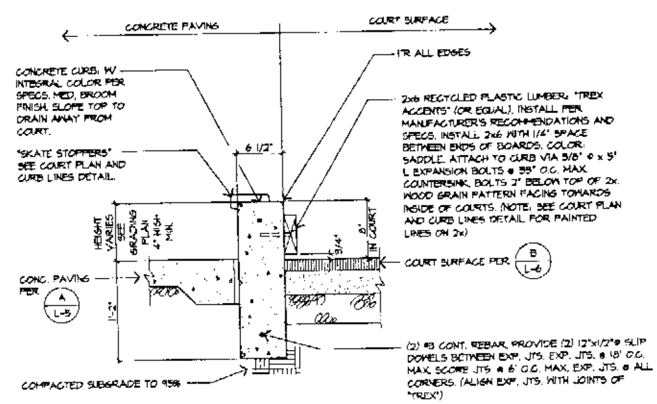
A L-6 BOLLARD DETAIL

SCALE 1"=1'-0"



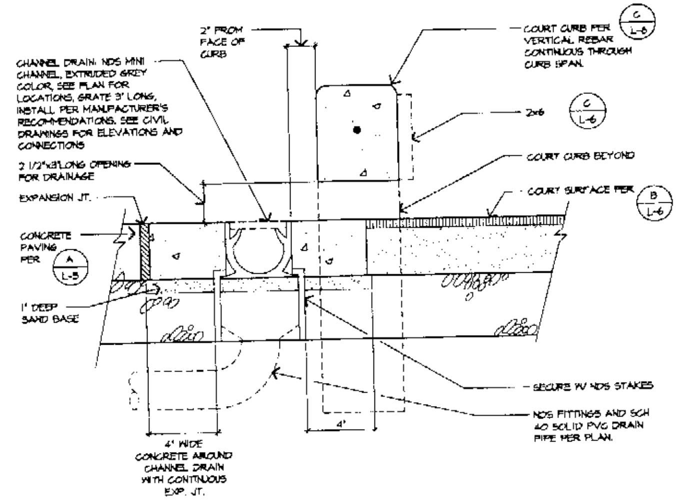
B L-6 COURT SURFACING SECTION

SCALE: 1"=1'-0"



C L-6 COURT CURB DETAIL

SCALE: 1 1/2"=1'-0"



D L-6 COURT DRAINAGE DETAIL

SCALE: N.T.S.

CONSTRUCTION DETAILS

FELT STREET PARK
1304 Felt Street, Santa Cruz, CA 95062
APN 25-041-02,03

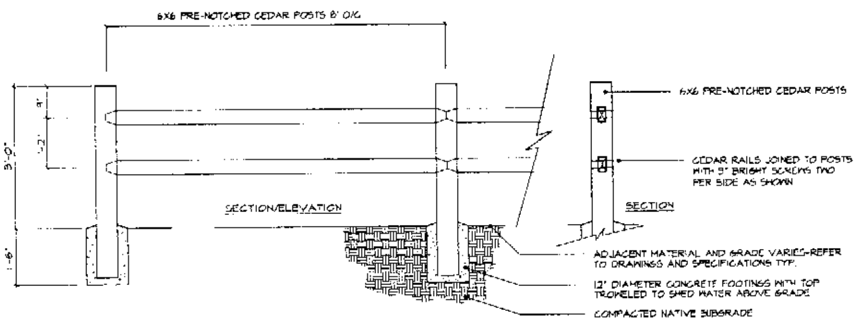
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

JOHN CAHALAN LANDSCAPE ARCHITECT

REVISIONS	BY

DRAWN BCL/JC
CHECKED JC
DATE 10/22/05
SCALE AS NOTED
JOB #
SHEET
L-6

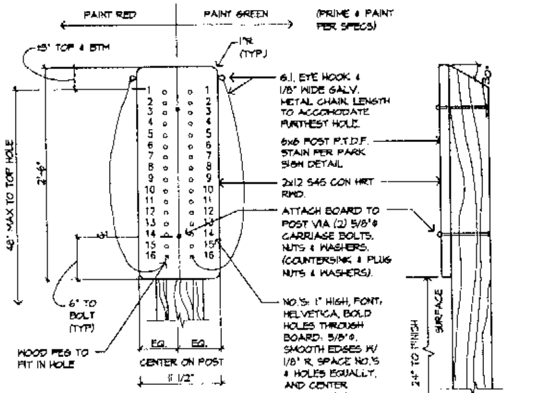
ATTACHMENT 2



NOTES:
1. ALL WOOD SHALL BE "SPLIT RAIL AND POST" TYPE CEDAR POSTS ARE APPROX 6'X6", RAILS ARE APPROX. 3"X4".
2. CONFIRM POST LOCATION AND SPACING WITH OWNERS REPRESENTATIVE PRIOR TO COMMENCING WORK.
3. REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

A / L-7 SPLIT RAIL FENCE

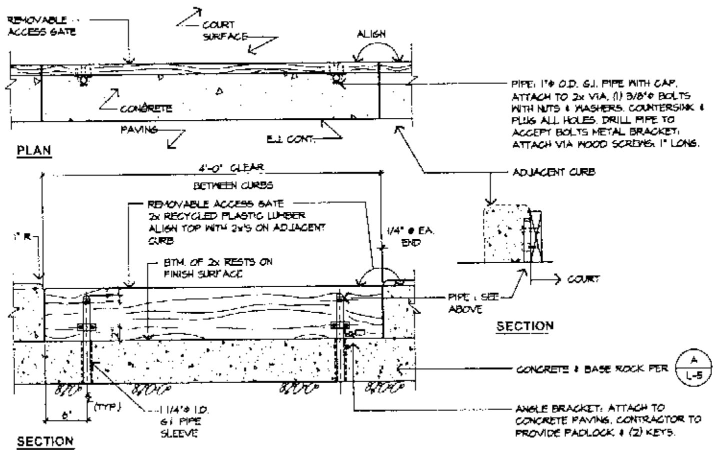
SCALE: 3/4"=1'-0"



NOTES:
1. ONE SCORE BOARD PER COURT, SEE LAYOUT PLAN FOR LOCATIONS
2. POST FOOTING 12" DIA. CONCRETE, 1'-6" DEEP. SLOPE TOP TO DRAIN.

B / L-7 SCORE BOARD DETAIL

SCALE: 1 1/2"=1'-0"

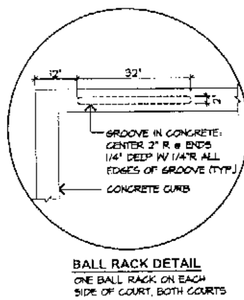


C / L-7 HANDICAP ACCESS GATE AT COURTS

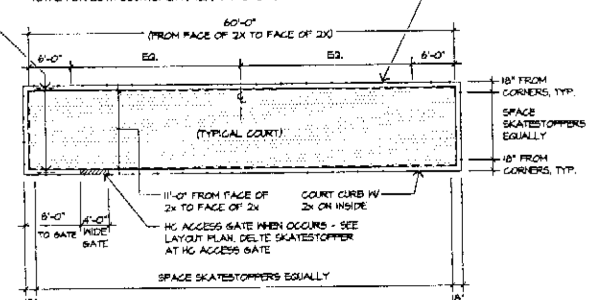
SCALE: 1 1/2"=1'-0"

PLAN SHOWS LOCATIONS OF LINES DIMENSIONED FROM FACE OF 2X.
(NO LINES REQUIRED @ 2x AT ENDS OF COURT)
LINES ARE TO BE PAINTED ON VERTICAL FACE OF 2 x ON COURT SIDE OF CURB ONLY, BOTH SIDES OF EACH COURT. LINE IS TO BE 1" WIDE, FULL LENGTH OF VERTICAL FACE. RED COLOR PER SPECS.

"SKATESTOPPERS", MODEL #FRI.O ALUMINUM, 1" RADIUS BRACKET, SPACING 42" O.C. MAX. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. LANDSCAPE ARCHITECT TO APPROVE LAYOUT PRIOR TO INSTALLATION. CONTACT: CHRIS LOARIE (619) 447-6574. TOTAL FOR BOTH COURTS: QTY. 92. (TURN OVER EXTRA QTY. TO COUNTY)



BALL RACK DETAIL
ONE BALL RACK ON EACH SIDE OF COURT, BOTH COURTS



PLAN OF BOCCE COURT (TYPICAL)

D / L-7 COURT PLAN AND CURB LINES

SCALE: 1/8"=1'-0"

REVISIONS	BY

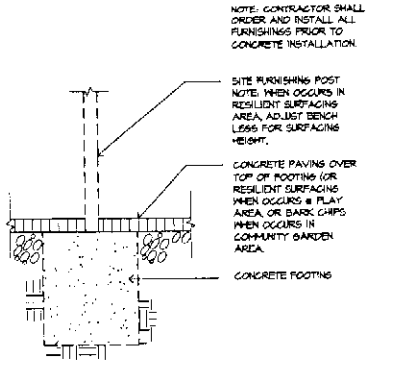
JOHN CAHALAN LANDSCAPE ARCHITECT

CONSTRUCTION DETAILS

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 26-041-22.03
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

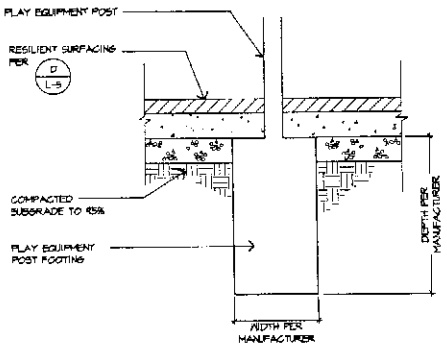
DRAWN R.I.G.
CHECKED JC
DATE 10/22/09
SCALE AS NOTED
JOB No.
SHEET

L-7



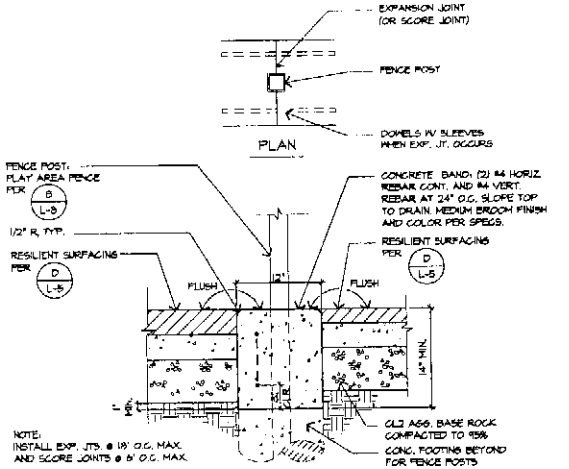
A L-8 PAVING CONDITION @ FOOTINGS

SCALE: N.T.S.



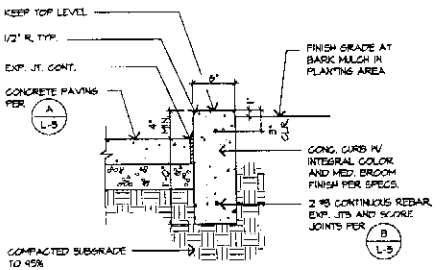
B L-8 PLAY EQUIPMENT POST FOOTING DETAIL

SCALE: N.T.S.



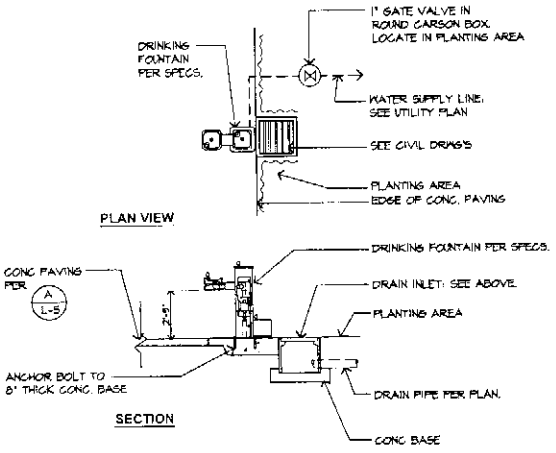
C L-8 CONCRETE BAND @ PLAY AREA FENCE

SCALE: 1 1/2"=1'-0"



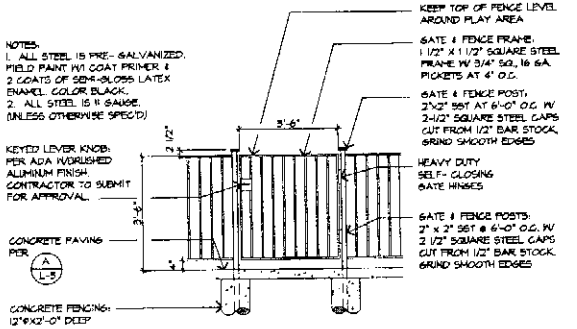
D L-8 CONCRETE CURB AT TREE PLANTERS- SECTION

SCALE: 1 1/2"=1'-0"



E L-8 DRINKING FOUNTAIN

SCALE: N.T.S.



F L-8 PLAY AREA FENCE & GATE

SCALE: N.T.S.

JOHN CHALLM
LANDSCAPE ARCHITECT
15359 Union Avenue
Los Gatos, CA 95032
t 408-354-5122 f 408-354-1433
CA Lic. No. 1981

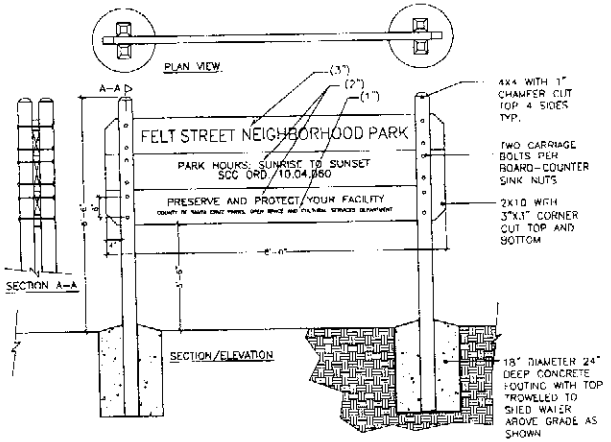
CONSTRUCTION DETAILS

FELT STREET PARK
FELT & ELECTRIC STREET
APN: 028-041-03-03

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

REVISIONS	BY

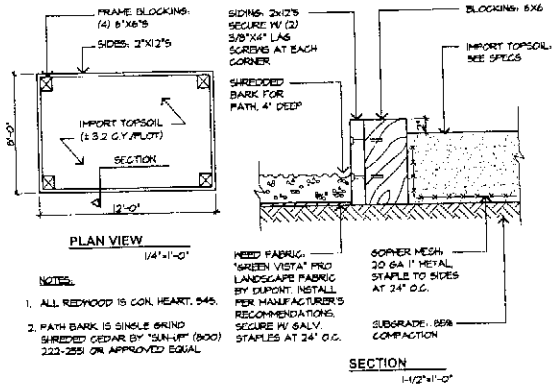
DRAWN	BLG
CHECKED	JC
DATE	10/22/09
SCALE	AS NOTED
JOB No.	
SHEET	L-8



NOTES:
1. ALL POSTS SHALL BE CONSTRUCTION GRADE HEARTWOOD (CON HEART) ROUGH. 2 X 10 MATERIAL SHALL BE SURFACED–SIZES DESCRIBED ARE NOMINAL NOT ACTUAL
2. ALL FASTENERS, CONNECTORS, NUTS, BOLTS SHALL BE CORROSION RESISTANT HD GALVANIZED OR BETTER
3. REFER TO DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION
4. AFTER ACCEPTANCE BY OWNER, PEEN ALL EXPOSED THREADS TO PRECLUDE REMOVAL OF FASTNERS
5. LETTERING TO BE SIZED AS SHOWN–CENTER ALL. ROUT LETTERS INTO WOOD WITH SQUARED BITS AND PAINT WITH TWO COATS OF EXTERIOR WOOD YELLOW AND STAIN SIGN WITH TWO COATS "DUX BACK–HEART RED" OR ACCEPTABLE EQUAL

A L-9 **PARK SIGN**

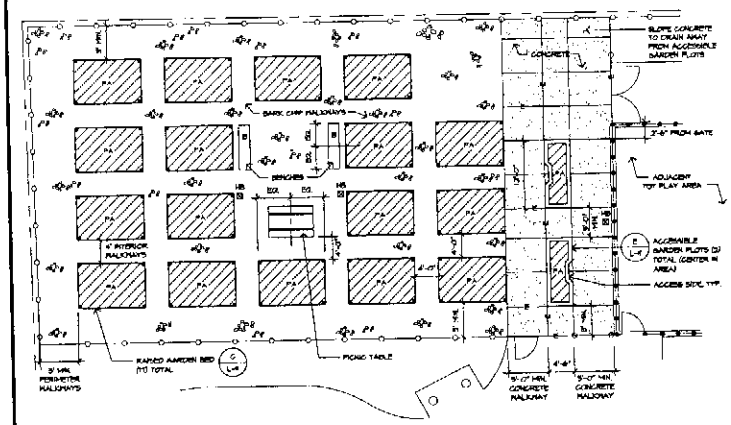
SCALE: 3/4"=1'-0"



NOTES:
1. ALL REDWOOD IS CON. HEART. S4S.
2. PATH BARK IS SINGLE GRIND SHREDED CEDAR BY "SUN-UP" (800) 223-2551 OR APPROVED EQUAL

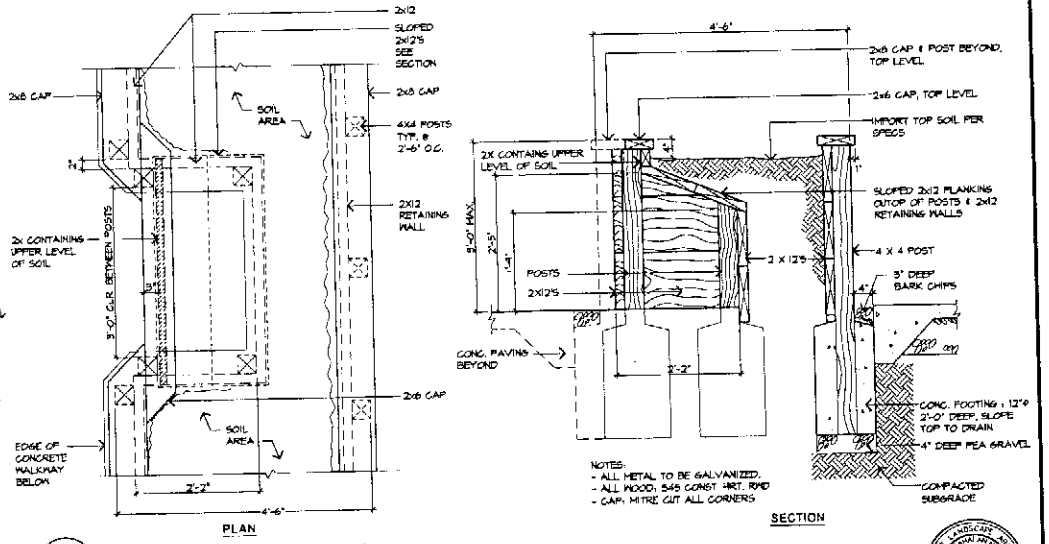
B L-9 **RAISED GARDEN BED**

SCALE: AS SHOWN



C L-9 **COMMUNITY GARDEN ENLARGED PLAN**

SCALE: 1"=10'-0"



D L-9 **ACCESSIBLE GARDEN PLOT DETAIL**

SCALE: 1" = 1'-0"

REVISIONS	BY

JOHN CARAVAS LANDSCAPE ARCHITECT
15598 Union Avenue Ste 105 - Los Gatos CA 95032
T 408.358.5172 - F 408.354.0333
jc@jc-la.com

CONSTRUCTION DETAILS

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 026-141-32-00

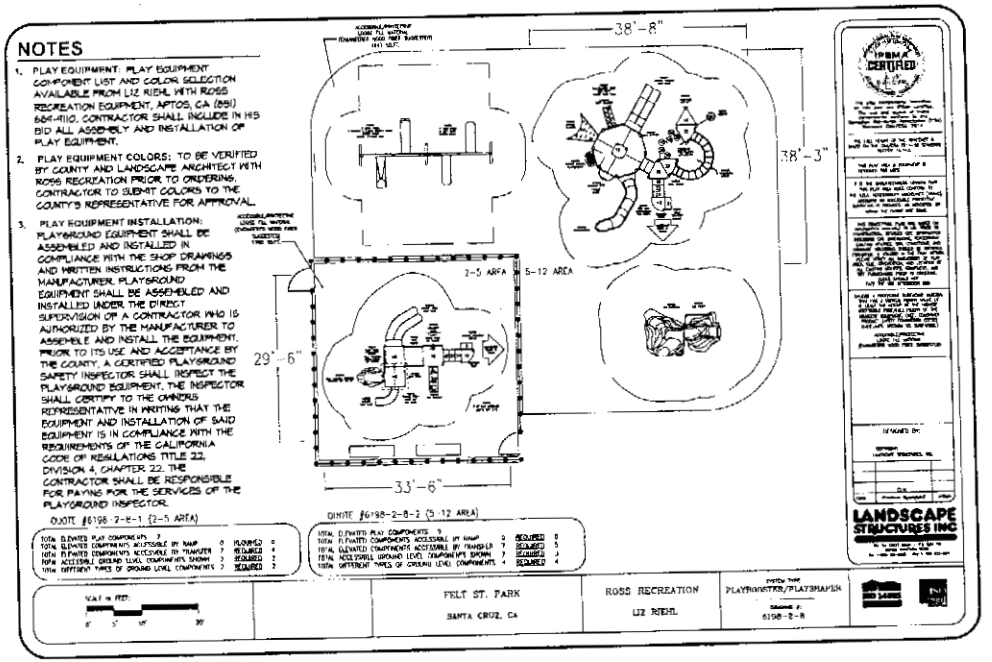
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

DRAWN	BLK
CHECKED	JC
DATE	10/2/08
SCALE	AS NOTED
JOB No.	
SHEET	L-9

50 / 115

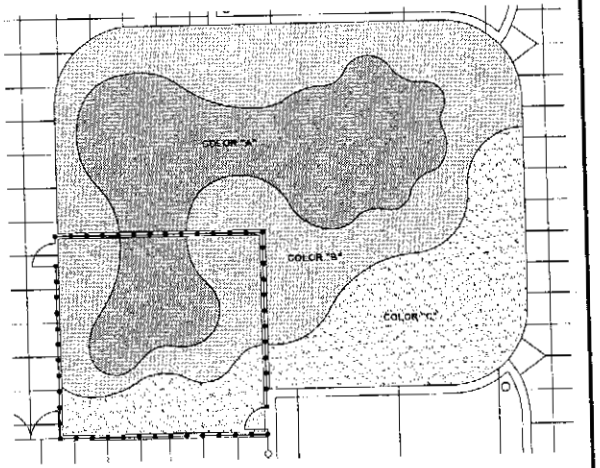
NOTES

1. PLAY EQUIPMENT: PLAY EQUIPMENT COMPONENT LIST AND COLOR SELECTION AVAILABLE FROM LIZ RIEHL WITH ROSS RECREATION EQUIPMENT, APTOS, CA (831) 684-4110. CONTRACTOR SHALL INCLUDE IN HIS BID ALL ASSEMBLY AND INSTALLATION OF PLAY EQUIPMENT.
2. PLAY EQUIPMENT COLORS: TO BE VERIFIED BY COUNTY AND LANDSCAPE ARCHITECT WITH ROSS RECREATION PRIOR TO ORDERING. CONTRACTOR TO SUBMIT COLORS TO THE COUNTY'S REPRESENTATIVE FOR APPROVAL.
3. PLAY EQUIPMENT INSTALLATION: PLAYGROUND EQUIPMENT SHALL BE ASSEMBLED AND INSTALLED IN COMPLIANCE WITH THE SHOP DRAWINGS AND WRITTEN INSTRUCTIONS FROM THE MANUFACTURER. PLAYGROUND EQUIPMENT SHALL BE ASSEMBLED AND INSTALLED UNDER THE DIRECT SUPERVISION OF A CONTRACTOR WHO IS AUTHORIZED BY THE MANUFACTURER TO ASSEMBLE AND INSTALL THE EQUIPMENT. PRIOR TO ITS USE AND ACCEPTANCE BY THE COUNTY, A CERTIFIED PLAYGROUND SAFETY INSPECTOR SHALL INSPECT THE PLAYGROUND EQUIPMENT. THE INSPECTOR SHALL CERTIFY TO THE OWNERS REPRESENTATIVE IN WRITING THAT THE EQUIPMENT AND INSTALLATION OF SAID EQUIPMENT IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE CALIFORNIA CODE OF REGULATIONS TITLE 22, DIVISION 4, CHAPTER 22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYING FOR THE SERVICES OF THE PLAYGROUND INSPECTOR.



A L-10 PLAY AREA PLAN

SCALE: 1"=10'-0"



RESILIENT SURFACING COLORS:

- COLOR "A": 25% BLACK AND 75% ROYAL BLUE (#590)
- COLOR "B": 25% BLACK AND 75% TEAL (#580)
- COLOR "C": 25% BLACK AND 75% BEIGE (#210)

Resilient surfacing by "SurfaceAmerica". Contact Liz Riehl with Ross Recreation Equipment, Aptos, CA (831) 684-4110.

NOTES:

1. Contractor shall stake off the curve layouts for resilient surfacing with Landscape Architect and County Representative. Do not proceed with installation until layout has been thoroughly reviewed and approved by Landscape Architect and County Representative.
2. The contractor will be furnished the CAD files on a CD following award of contract, and shall use them as needed to facilitate layout, lengths and locations, radius, etc. to the extent that they are not provided on these plans for all site improvements.

B L-10 LAYOUT PLAN FOR RESILIENT SURFACING

SCALE: 1"=10'-0"

REVISIONS

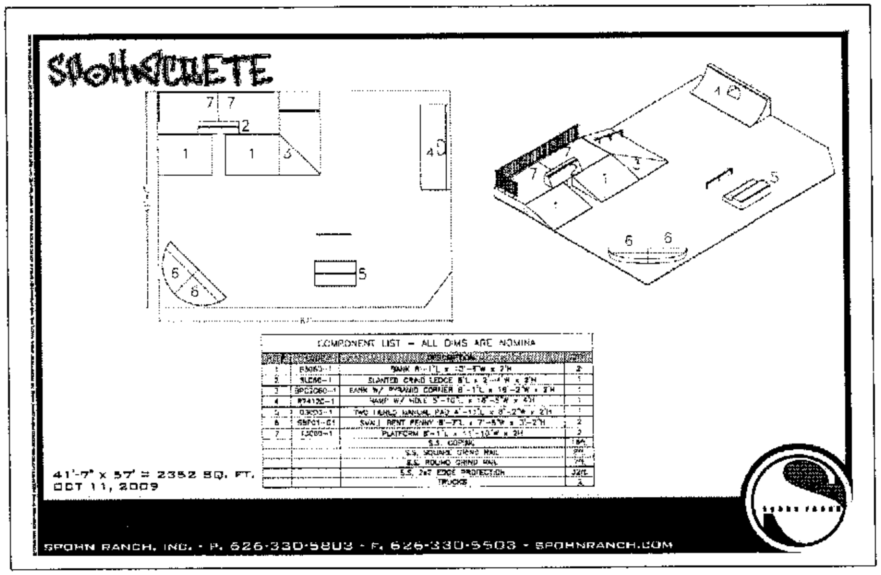
FELT STREET PARK
1867 FELT STREET
SANTA CRUZ, CA 95062

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

PLAY AREA PLANS

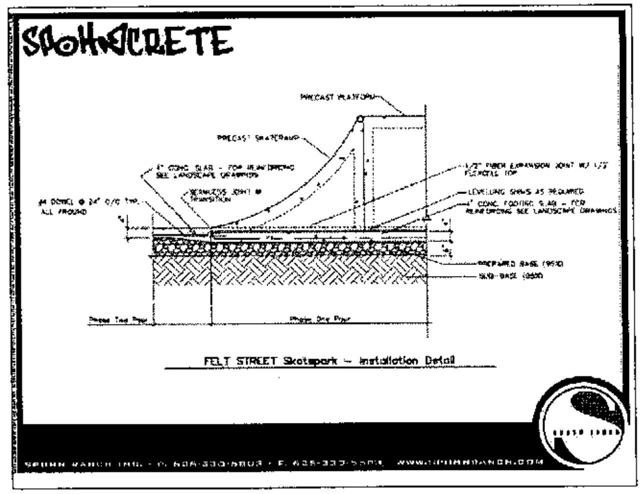
DRAWN: BLAS
CHECKED: JC
DATE: 10/03/08
SCALE: AS NOTED
JOB NO:
SHEET: L-10

51 / 115



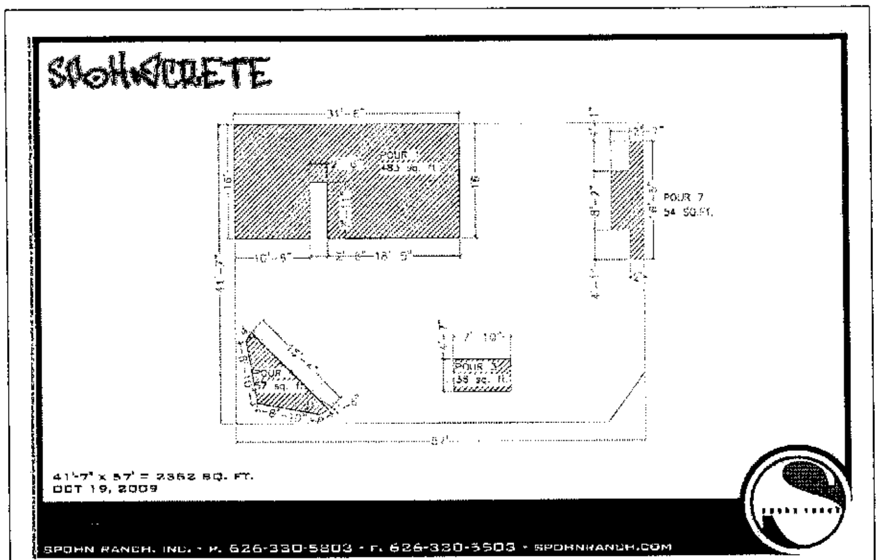
A L-11 SKATE LAYOUT PLAN

SCALE: N.T.S.



B L-11 INSTALLATION DETAIL

SCALE: N.T.S.



C L-11 FOOTINGS LAYOUT PLAN

SCALE: N.T.S.

NOTES

1. BARKMAN CONCRETE TO SUPPLY SKATE COMPONENTS. CONTACT: ANDREW CONDRAT, BARKMAN CONCRETE 1-800-461-2278. INSTALL SKATE COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS.
2. INSTALLATION SUPERVISION OF PRE-CAST CONCRETE SKATE FEATURES TO BE SUPPLIED BY BARKMAN CONCRETE. SUPERVISION BY BARKMAN CONCRETE IS ONLY FOR INSTALLATION OF SKATE COMPONENTS.
3. CONCRETE SLAB INSIDE SKATE AREA TO BE STANDARD GREY CONCRETE. SLOPE AT 1-1/2% MAX.
4. CONCRETE SLAB BETWEEN SKATE COMPONENTS FINISH: HARD TROWEL UNTIL ALL VISIBLE PORES ARE CLOSED (CEASE TROWEL BEFORE GLOSS FORMS ON SURFACE OF SLAB)

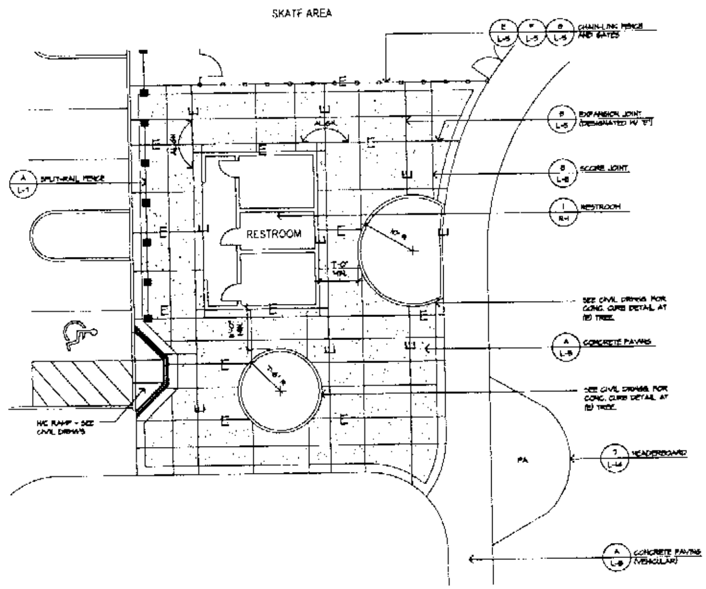
REVISIONS | BY

JOHN CAHALAN LANDSCAPE ARCHITECT

SKATE AREA PLANS

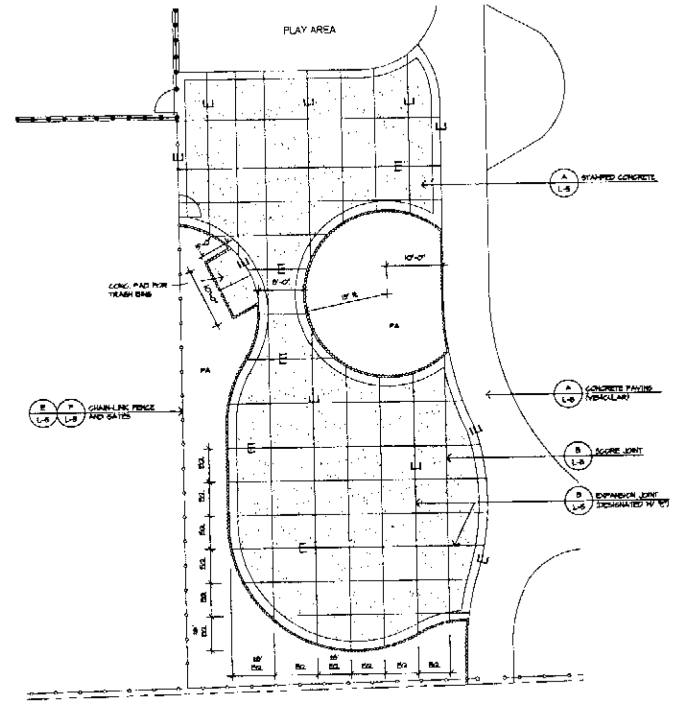
FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 26-041-02.03
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

SHEET
L-11



A L-12 ENLARGED PLAN AT RESTROOM AREA

SCALE: 1"=10'-0"



B L-12 ENLARGED PLAN AT PICNIC AREA

SCALE: 1"=10'-0"

NOTE:

1. SEE SHEET L-2 FOR ADDITIONAL LAYOUT DIMENSIONS.
2. CONTRACTOR SHALL STAKE-OUT ALL SITE FEATURES AND PAVING FOR REVIEW AND APPROVAL BY COUNTY, CIVIL ENGINEER AND LANDSCAPE ARCHITECT.
3. THE CONTRACTOR WILL BE FURNISHED THE CAD FILES ON A CD FOLLOWING AWARD OF CONTRACT, AND SHALL USE THEM AS NEEDED TO FACILITATE LAYOUT, LENGTHS AND LOCATIONS, RADIUS, ETC. TO THE EXTENT THAT THEY ARE NOT PROVIDED ON THESE PLANS FOR ALL SITE IMPROVEMENTS.

REVISIONS | BY

JOHN CAHALAN LANDSCAPE ARCHITECT

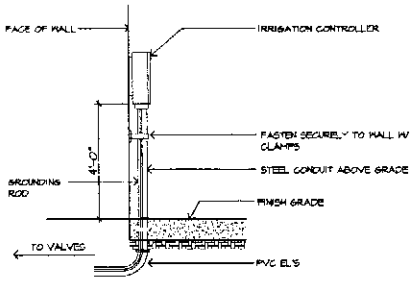
ENLARGED PLANS

FELT STREET PARK
1304 Felt Street, Santa Cruz, CA 95062
APN 25-041-02,03

Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

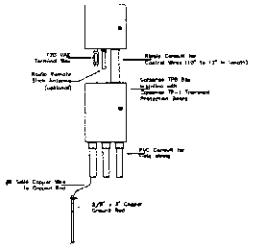
DRAWN BLA.G
CHECKED JC
DATE 10/22/09
SCALE AS NOTED
JOB No.
SHEET

L-12



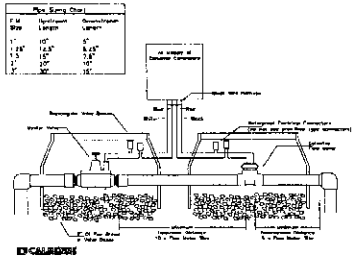
1 / L-13 **WALL MOUNTED IRRIGATION CONTROLLER**

NOT TO SCALE



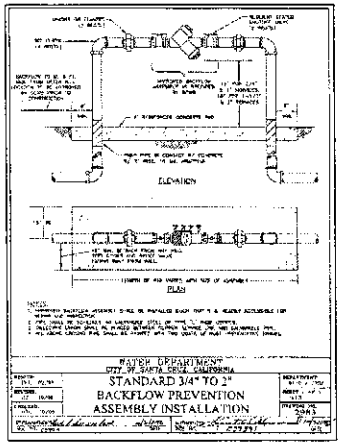
2 / L-13 **CALSENSE CONTROLLER**

NOT TO SCALE



3 / L-13 **FLOW METER INSTALLATION**

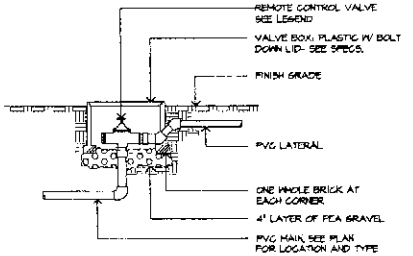
NOT TO SCALE



4 / L-13 **BACKFLOW PREVENTER**

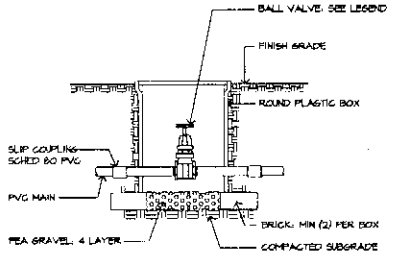
(CITY OF SANTA CRUZ)

NOT TO SCALE



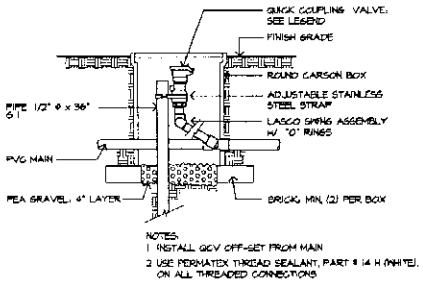
5 / L-13 **REMOTE CONTROL VALVE**

NOT TO SCALE



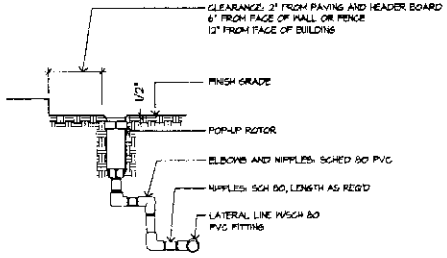
6 / L-13 **GATE VALVE**

NOT TO SCALE



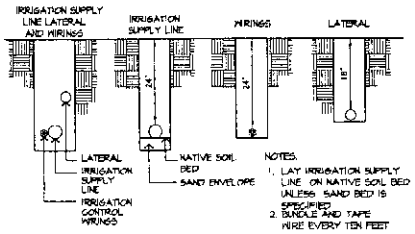
7 / L-13 **QUICK COUPLING VALVE**

NOT TO SCALE



8 / L-13 **ROTOR HEAD**

NOT TO SCALE



9 / L-13 **TRENCHING**

NOT TO SCALE

REVISIONS	BY

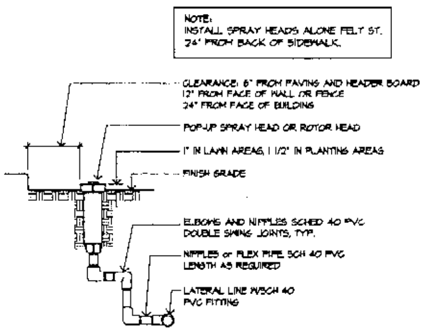
CONSTRUCTION DETAILS

FELT STREET PARK
1934 Felt Street, Santa Cruz, CA 95062
APN: 26-341-03, 39

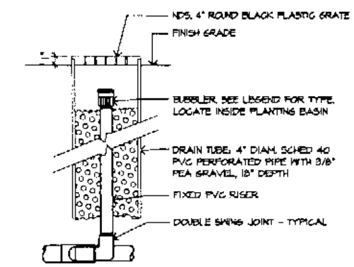
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

DRAWN	RLLO
CHECKED	JC
DATE	10/22/08
SCALE	AS NOTED
JOB NO.	
SHEET	L-13

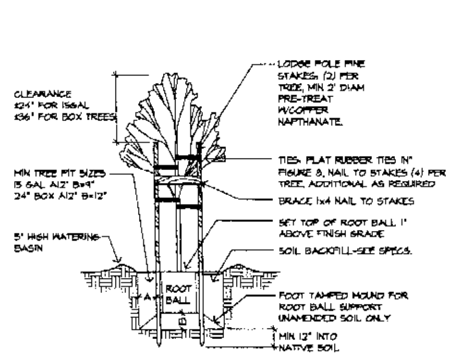
54 / 115



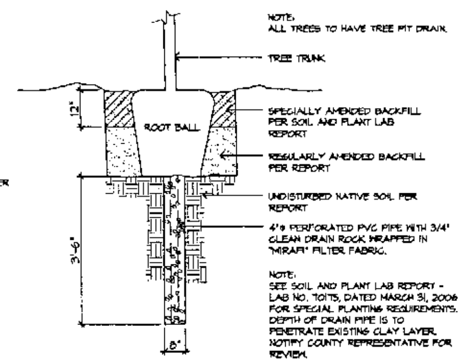
1 / L-14 POP-UP IRRIGATION HEAD — NOT TO SCALE



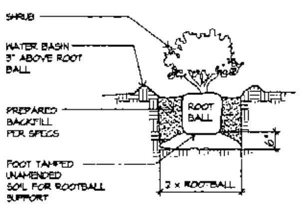
2 / L-14 TREE BUBBLER HEAD WITH IRRIGATION TUBE — NOT TO SCALE



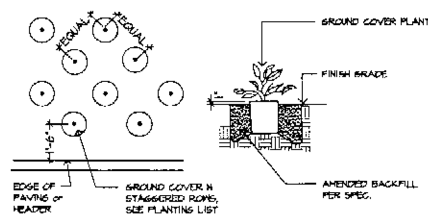
3 / L-14 TREE STAKING — NOT TO SCALE



4 / L-14 TREE PIT DRAIN AND SOIL PREPARATION — NOT TO SCALE

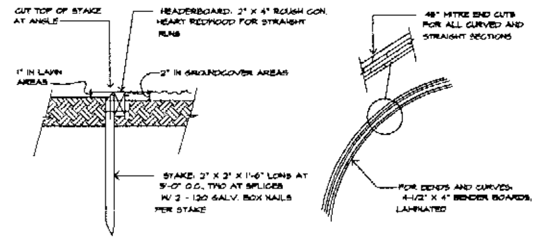


5 / L-14 SHRUB PLANTING — NOT TO SCALE



PLAN — SECTION

6 / L-14 GROUND COVER — NOT TO SCALE



SECTION — PLAN AT CURVE

7 / L-14 HEADERBOARD — NOT TO SCALE

STATION NO. & GPM — LEGEND: GALLONS USED/WEEK (XXX), RUN TIME MINS/DAY (XX), NO. OF DAYS/WEEK (X)

MONTH	1. (30)			2. (38)			3. (30)			4. (38)			5. (38)			6. (13)		
JAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	1	35	1050	1	35	1330	1	35	1050	1	35	1330	1	35	1330	1	10	130
APRIL	2	25	1500	2	25	1900	2	25	1500	2	25	1900	2	25	1900	1	10	130
MAY	2	30	1800	2	30	2280	2	30	1800	2	30	2280	2	30	2280	1	10	130
JUNE	3	22	1980	3	22	2508	3	22	1980	3	22	2508	3	22	2508	2	10	360
JULY	3	22	1980	3	22	2508	3	22	1980	3	22	2508	3	22	2508	2	10	360
AUG	2	30	1800	2	30	2280	2	30	1800	2	30	2280	2	30	2280	2	10	360
SEPT	2	30	1800	2	30	2280	2	30	1800	2	30	2280	2	30	2280	1	10	130
OCT	1	35	1050	1	35	1330	1	35	1050	1	35	1330	1	35	1330	1	10	130
NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS:			12960			16416			12960			16416			16416			1730
(x4 WKS/MONTH)			51840			65664			51840			65664			65664			6920
GRAND TOTAL:																		GALLONS/YEAR

STATION NO. & GPM — LEGEND: GALLONS USED/WEEK (XXX), RUN TIME MINS/DAY (XX), NO. OF DAYS/WEEK (X)

MONTH	7. (10)			8. (14)			9. (13)			10. (9)			11. (5)			12. (17)		
JAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	1	10	100	1	10	140	1	10	130	1	10	90	1	10	50	1	10	170
APRIL	1	10	100	1	10	140	1	10	130	1	10	90	1	10	50	1	10	170
MAY	1	10	100	1	10	140	1	10	130	1	10	90	1	10	50	1	10	170
JUNE	2	10	200	2	10	280	2	10	260	2	10	180	2	10	100	2	10	340
JULY	2	10	200	2	10	280	2	10	260	2	10	180	2	10	100	2	10	340
AUG	2	10	200	2	10	280	2	10	260	2	10	180	2	10	100	2	10	340
SEPT	1	10	100	1	10	140	1	10	130	1	10	90	1	10	50	1	10	170
OCT	1	10	100	1	10	140	1	10	130	1	10	90	1	10	50	1	10	170
NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS:			1100			1540			1430			990			550			1870
(x4 WKS/MONTH)			4400			6160			5720			3960			2200			7480
GRAND TOTAL:																		GALLONS/YEAR

STATION NO. & GPM — LEGEND: GALLONS USED/WEEK (XXX), RUN TIME MINS/DAY (XX), NO. OF DAYS/WEEK (X)

MONTH	13. (12)			14. (13)			15. (8)			16. (12)			17. (4)		
JAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAR	1	10	120	1	10	130	1	10	80	1	10	120	1	10	40
APRIL	1	10	120	1	10	130	1	10	80	1	10	120	1	10	40
MAY	1	10	120	1	10	130	1	10	80	1	10	120	1	10	40
JUNE	2	10	240	2	10	360	2	10	160	2	10	240	2	10	80
JULY	2	10	240	2	10	360	2	10	160	2	10	240	2	10	80
AUG	2	10	240	2	10	360	2	10	160	2	10	240	2	10	80
SEPT	1	10	120	1	10	130	1	10	80	1	10	120	1	10	40
OCT	1	10	120	1	10	130	1	10	80	1	10	120	1	10	40
NOV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS:			1320			1730			880			720			440
(x4 WKS/MONTH)			5280			6970			3520			2880			1760
GRAND TOTAL:														357872	GALLONS/YEAR

8 / L-14 ANNUAL IRRIGATION SCHEDULE

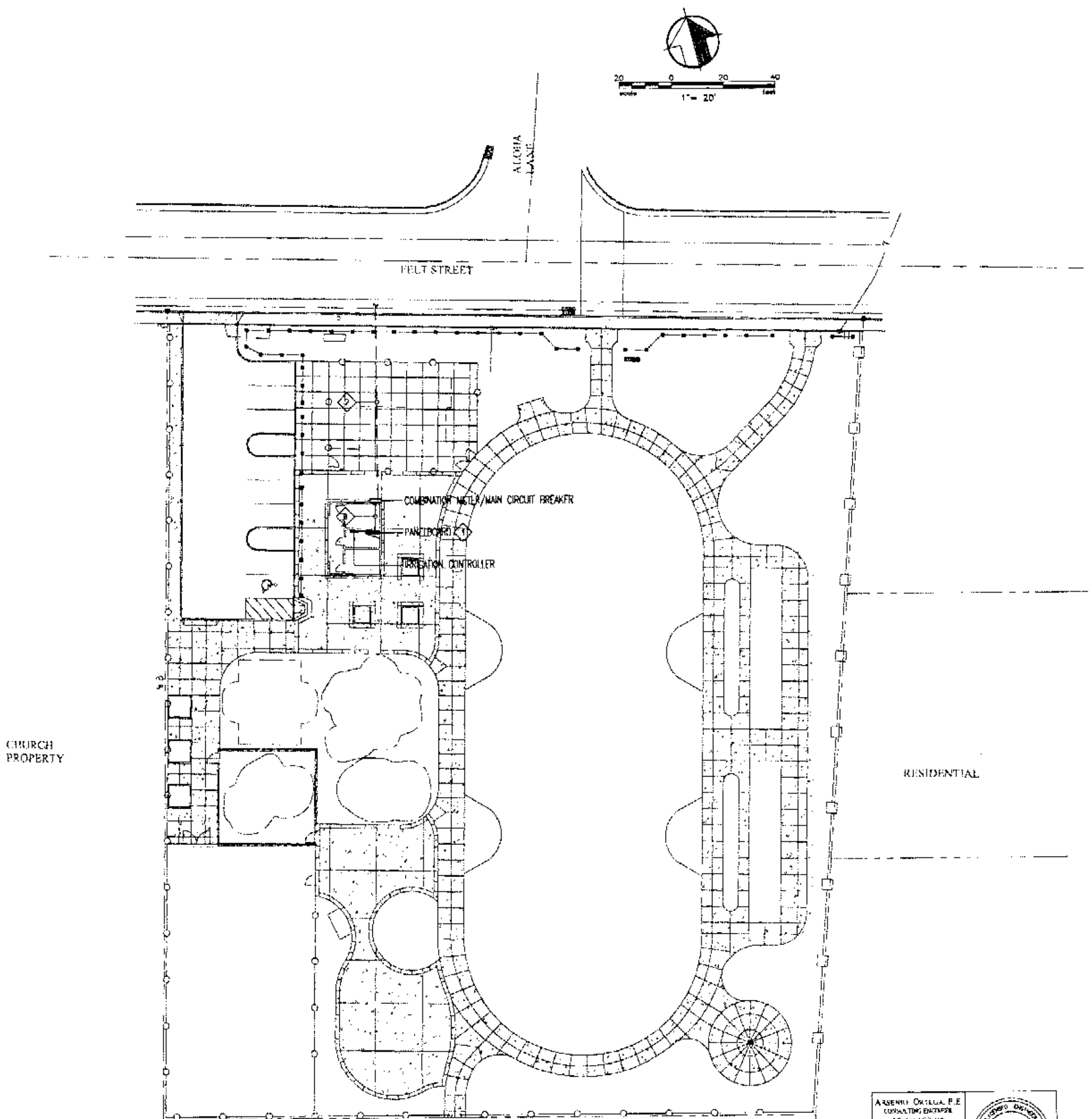
JOHN CAHALAN LANDSCAPE ARCHITECT

IRRIGATION & PLANTING DETAILS

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

SCALE: AS NOTED

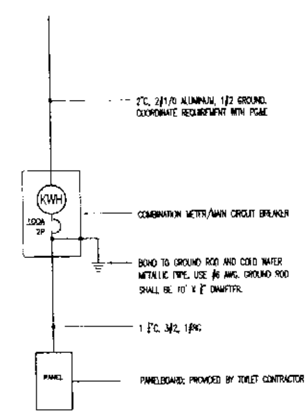
L-14



SHEET NOTES

1. PANELBOARD IS PROVIDED BY TOILET CONTRACTOR. PROVIDE ONE 20A/1P CIRCUIT BREAKER FOR IRRIGATION CONTROLLER. CONNECT TO IRRIGATION CONTROLLER USING 1"C, 2#12, 1#12G.
2. UNDERGROUND SERVICE. SEE SINGLE LINE DIAGRAM BELOW FOR SIZE. COORDINATE SERVICE TERMINATION REQUIREMENT WITH PG&E.
3. CONCEALED FEEDER TO PANELBOARD. SEE SINGLE LINE DIAGRAM BELOW FOR SIZE.

SINGLE LINE DIAGRAM



0' 10' 20' 40' 80'

North

ARSENIO ORTEGA, P.E.
CONSULTING ENGINEER

FELT STREET PARK
1904 Felt Street, Santa Cruz, CA 95062
APN 26-041-02-03
Prepared For:
County of Santa Cruz Department of Parks
Open Space & Cultural Services
979 17th Avenue, Santa Cruz, CA 95062

ELECTRICAL PLAN

SHEET
E-1

UNDERWOOD & ROSENBLUM, INC.
civil engineers and surveyors

June 13, 2008

Robert Olson
Parks, Open Space and Cultural Services
979 17th Ave
Santa Cruz, CA 95062-4170

RE: Felt Street Park
Drainage Study

Dear Mr. Olson:

Attached is the drainage study for the Felt Street Park located in Santa Cruz County, California. The drainage calculations were prepared using software based upon the Haested Method.

The new drainage system will be tied into the existing curb inlet located in the middle front of the property at Felt Street. The existing storm drain pipe is a 15" RCP.

This storm drain system report has been sized for the 5 year storm event per comment #6 in the DPW Discretionary Application Comments, dated 8/3/06. The 5 year storm event data was taken from the Santa Cruz County Precipitation IDF, P60 = 1.4, which is the 10 year storm intensities multiplied by 0.85 (refer to pages 24 thru 27).

Page 1 shows the calculated 5 year storm pre-development runoff flow rate for the entire site (0.94 cfs) and for the portion of the site which currently drains toward the street (0.33 cfs). Page 2 shows the proposed 10 year storm post-development runoff flow rate (1.71 cfs) for the entire site based upon the rational method. The pre-development runoff coefficient is for a park with poorly draining soil (C=0.3); 7 minute time of concentration.

Because the 10 year post-development runoff flow rate is greater than the 5 year pre-development runoff flow rate, a small pipe (4" diameter) was used to connect the new Park drainage system to the existing curb inlet. This small pipe effectively reduces the outfall flow rate from the Felt Street Park to the City storm drain system to 0.32 cfs (see graph on Page 10). This peak outflow occurs 16 minutes after the peak rainfall. However, since all of the runoff on the Park is allowed to sheet flow to swales before entering the new storm drain system, the actual peak outflow will be further delayed.

Page 3 is a diagrammatic plan view of the storm drain system to be installed at the Felt Street Park. This sheet identifies pipes, catch basins, and catchments by label. Catchments are approximations of the drainage areas tributary to each catch basin. The catchments are connected to their outflow catch basins by a dashed line. Pages 4 through 9 are descriptive tables for the system components.

Pages 11 through 18 shows a graphic profile of the main pipe line for the storm drain system. The water level is maintained within the 36" storage pipes as well as the main conveyance piping for the 10 year storm.

Pages 19 through 23 are the Detailed Summary Report. This summary provides the maximum flow, maximum velocity, and the maximum hydraulic grade. (Refer to Page 3 for the label diagram.) The total simulation time was set for 30 minutes.

In compliance with Rachel Fatoohi's latest review comments, we have added off line detention (storage) piping, a silt interceptor positioned upstream of the detention piping, and a weir outlet control structure prior to the point of connection in the street. The weir will allow low flow to bypass through a small orifice pipe and higher flows will be diverted into the detention piping. For high flow bypass, there is a small gap between the top of the weir box and the top of the weir itself. Finally, the conveyance pipe sizes have been reduced in order to increase the pipe slope while maintaining minimal pipe cover.

Since the point of connection in the street (invert) is 51.61', and the distance to the farthest catch basin is about 400', and because the park slopes down from the street toward the school (grade elev. = 54.80'), we are limited to relatively flat pipes with minimum cover. Consequently, regular maintenance of the storm pipes in addition to the detention piping and the silt interceptor will be essential for best performance.

If you have any questions regarding this matter do not hesitate to contact me at (408) 453-1222 x24

Very Truly Yours,

UNDERWOOD & ROSENBLUM, INC.

David B. Voorhies, RCE 26429
Principal Engineer

ATTACHMENT 3

COUNTY OF SANTA CRUZ
DISCRETIONARY APPLICATION COMMENTS

Project Planner: Annette Olson
Application No.: 06-0370
APN: 028-041-02

Date: April 14, 2010
Time: 10:29:07
Page: 1

Environmental Planning Completeness Comments

======== REVIEW ON AUGUST 8, 2006 BY JESSICA L DEGRASSI ========
Please show the trees to be removed under Sig tree permit 06-0014 on the topographic survey. Also the project should be designed to retain the other viable mature trees onsite. If this is not feasible, please replace with 2:1 for those to be removed.
======== UPDATED ON JANUARY 11, 2008 BY JESSICA L DEGRASSI ========

Please submit an arborist report which addresses the condition of the eucalyptus trees to be removed. It appears that these trees are healthy and can remain within the design aspects of the proposed project.

The significant tree removal permit, 06-0014, was approved due to poisoning of three other eucalyptus trees. The remaining trees appear to be healthy and in good condition.

Grading has been reduced from 1200 cubic yards to 600 cubic yards. ======== UPDATED ON MARCH 24, 2010 BY ANTONELLA GENTILE ========
Project complete per Environmental Planning.

Environmental Planning Miscellaneous Comments

======== REVIEW ON AUGUST 8, 2006 BY JESSICA L DEGRASSI ========

Please provide a stockplie location on the erosion control plan.

Please provide a time frame for construction. Will drainage be installed prior to Oct 15.? ======== UPDATED ON AUGUST 8, 2006 BY JESSICA L DEGRASSI ========
======== UPDATED ON MARCH 24, 2010 BY ANTONELLA GENTILE ========
Prior to approval of this project, written permission from the owner of trees 13, 14, and 15 is required to allow the necessary preconstruction treatments as detailed in the arborist's report.

Prior to approval of this project, a plan review letter is required from the project arborist stating that the proposed improvements as shown and as recommended by the soils engineer shall not have a significant negative impact on trees 5, 13, 14, and 15.

Final plans shall include the following:

1. Tree protection measures as recommended by the project arborist.

2. A schedule of inspections to be performed by a qualified certified arborist, as recommended by the project arborist.

3. Cabling details for tree 5.

Additional Conditions:

4. Replacement trees shall be monitored by a qualified professional for five years

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ATTACHMENT 4

at six month intervals. One hundred percent survival rate is required and shall be implemented according to the recommendations in the arborist's report.

Please note that this application includes the removal of the following trees due to construction impacts: a 4.7" oak, a 3.3" oak, a double-trunk (4" and 4") acacia, a double-trunk (33" and 36") eucalyptus, a 3" walnut, a 3" golden rain, two four-trunk walnuts, and a double-trunk (6" and 3") golden rain.

Please note that this application also includes the removal of the following trees due to poor condition: a 4" fruiting pear and a multi-trunk plum.

Proposed replacement trees include 20 24" box western redbuds, 4 24"box tulip trees, 9 24" box purple leaf plums, 10 24" box redwoods, 8 15 gallon cajeput trees, and 3 15 gallon catalpas.

The soils report will be reviewed prior to building/grading permit approval.

Dpw Drainage Completeness Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

========= REVIEW ON AUGUST 3, 2006 BY CARISA R DURAN =========
Not enough drainage information has been given to consider acceptance of this application. To be approved by this division at the discretionary application stage, all potential off-site impacts and mitigations must be determined and compliance with the County Design Criteria (CDC) and County General Plan policies (GPP) demonstrated.

Please address the following items:

1) Please specify on the civil plans the amount of impervious surface that will result from the proposed development.

2) (GPP #7.23.1 - New Development) Projects are required to maintain predevelopment rates where feasible. Mitigating measures should be used on-site to limit increases in post-development runoff leaving the site. Best Management Practices should be employed within the development to meet this goal as much as possible. Such measures include limiting impervious areas, using pervious or semi- pervious pavements, run-off surface spreading, discharging runoff from impervious areas into landscaping, retention facilities, etc. Please show proposed mitigations on the plans and account for the affects in stormwater calculations.

3) (GPP #7.23.2 - Minimizing Impervious Surfaces) Extensive impervious surfaces are proposed by this project. New development is required to limit such coverage to minimize post- development runoff. Consider limiting proposed impervious surfaces and / or using pervious or semi-pervious type surfaces.

4) The submitted drainage design proposes to collect and dispose all runoff generated by the project to an existing off-site system. This does not comply with County requirements to limit runoff leaving the site to pre-development levels.

ATTACHMENT 4

Please show what measures, such as directing runoff into landscaping, vegetated swales to catchbasins, etc., will be taken to mitigate for the increase in runoff by the development and account for the affects in stormwater calculations. (Also see item #2 above.) Consider retention or a combination of retention and detention in addition to BMP methods. Utilizing only detention to meet this requirement is only allowed if other measures are not feasible. If detention is the only method available to meet pre-development requirements, please submit reasons of infeasibility for review.

5) As indicated in the CDC, runoff from parking areas are required to go through water quality treatment prior to discharge. Consider outsloping parking area to drain to landscaped areas for filtering prior to discharge from the site. If use of landscaped areas is not feasible and structural treatment is proposed, recorded maintenance agreements are required. Please clarify on the plans the method to be used for treatment.

6) If it is determined that resulting runoff from the proposed development cannot be completely handled on-site, the project will be limited to a runoff release rate equivalent to a 5-year storm due to downstream restrictions in the existing off-site system proposed for use. (Reference: Zone 5 Master Drainage Plan) Please submit drainage calculations for proposed design.

For your information:

7) A source for BMP style mitigation methods can be found in the following publication: START AT THE SOURCE, Design Guidance Manual for Stormwater Quality Protection, 1999 Edition, Bay Area Stormwater Management Agencies Association, Forbes Custom Publishing.

A free copy may be obtained:
http://www.mcstoppp.org/acrobat/StartattheSourceManual.pdf

A bound version may be ordered: http://www.basmaa.org/

(Additional references can be found in the CDC.)

Until further information is submitted addressing the above comments, including calculations for proposed drainage systems, a thorough review of this application cannot be completed. Once submitted, additional items may need to be addressed before the application can be deemed complete.

This application is for development in the Zone 5 Flood Control & Water Conservation District. For increases in impervious area, a drainage fee of $0.90 per square foot will be assessed.

All subsequent submittals for this application must be done through the Planning Department. Submittals made directly to Public Works will result in delays.

Please call or visit the Dept. of Public Works, Stormwater Management Division, from 8:00 am to 12:00 pm if you have any questions. ========= UPDATED ON JANUARY 17, 2008 BY LOUISE B DION =========

ATTACHMENT 4

We have reviewed the resubmitted plans dated 12/14/07, the drainage study dated August 28,2007 by Underwood & Rosenblum, Inc. and Robert Olsen's response to our first drainge review comments.

Soil data indicates that retention alone will not be feasible to retain post development runoff to predevelopment rates based on a 5 year storm event. This implies that some type of detention will be required. While detailed review of the detention calculations can be performed during building permit stage, a conceptual plan for detention needs to proposed at a minimum to complete the discretionary phase. The proposal to limited discharge from the site by reducing the diameter of the discharge pipe does not adquately address storage required per the County's storm drainage design critiria. Please refer to our previous previous comment (August 3, 2006) for guidance (comments #2-#4,#6 & #7).

We have noted some of the improvements made to the original submittal with the addition of a swale as well as the drainge from the parking lot to the swale. We still want to recommend using the open area in the soccer field as a BMP for filtration and whatever percolation the subsurface will allow.

Please provide a detail of the perimeter swales and an evaluation of of how overflow runoff from the swales will be handled until it reaches a safe point of release such as an adequate drainage system or a water course. Provide downstream impact assessment identifying capacity restrictions in existing drainage facilities receiving site runoff and identify the water body receiving the flow.This applies both to overflow from the swales in addition to the proposed discharge into the existing storm drain system.

According to sheet TS-1,predevelopment drainage is to the south while post development runoff is directed towards the north to Felt Street. Please clarify the reason for the diversion.

For questions regarding this review Public Works stormwater management staff is available from 8-12 Monday through Friday.

If you have questions, please contact me at 831-233-8083.

========= UPDATED ON JANUARY 17, 2008 BY LOUISE B DION =========
========= UPDATED ON JANUARY 17, 2008 BY LOUISE B DION =========
========= UPDATED ON APRIL 28, 2009 BY LOUISE B DION =========

Revised plans dated 06-13-2008 have been received. Our concerns have been addressed and the application is deemed complete with respect to the discretionary permit application stage. Please see miscellaneous comments for additional guidance.

Please note the drainage plan is approved in concept for the discretionary application process; detailed review of the design and calculations will be completed during the building permit stage.

ATTACHMENT 4

========= UPDATED ON MARCH 23, 2010 BY LOUISE B DION =========
Discretionary review approved based on 6-13-2008 schematic plans. As previously stated, while the concept is feasible, detailed review of the calculations and design will occur during building permit application process. Miscellaneous commentsshould also be addressed at that time.

Please note that the SWPPP submitted, is not reviewed by Santa Cruz County County. Applicant will need to submit SWPP to the state when they apply for the contruction permit.

Dpw Drainage Miscellaneous Comments

LATEST COMMENTS HAVE **NOT YET** BEEN SENT TO PLANNER FOR THIS AGENCY

========= REVIEW ON AUGUST 3, 2006 BY CARISA R DURAN =========
No comment. ========= UPDATED ON JANUARY 17, 2008 BY LOUISE B DION =========

Please note that detailed design and design calculations review for drainage system will be left for the building permit application stage however please keep the following comments in mind:

1) Inspection of the drainage related items will be done by a public works inspector. Once all other reviewing have approved the final building permit plans, submit a set of reproducible civil plans sheets to Public Works, with our signature block, for review and signature, along with an engineer-s estimate for the drainage related work. A 2% fee ($560 minimum) will be assessed for inspection.

2) Please add a note to provide signage adjacent to all ets stating "No Dumping - Drains to Bay" or equivalent. This signage is to be maintained by the property owner.

3) Maintenance agreements for proposed water quality treatment and detention/retention facilities will be required. Provide a copy of a notorized, recorded agreement.

4) Please provide measures for preventing debris from entering the detention and retention facilities in order to minimize future clogging and maintenance.

5) This project will result in disturbance of more than an acre. The owner/applicant is responsible for obtaining coverage under the State's general construction storm water permit.

ATTACHMENT 4

========= UPDATED ON MARCH 23, 2010 BY LOUISE B DION =========

Discretionary review complete based on schematic plans dated 6-13-08. Detailed review of design and hydraulic calculations will occur during the building permit application process. Miscellaneous comments should also be addressed at that time.

Please note that Santa Cruz COunty does not review SWPPP. The applicant must submit the SWPPP to the State when they apply for the construction permit.

Dpw Road Engineering Completeness Comments

========= REVIEW ON AUGUST 10, 2006 BY GREG J MARTIN =========
The road should meet County Standards for a 2 lane Urban Collector Street with Parking - No Bike Lanes. This requires two 12 foot travel lanes, 8 feet on each side for parking, and 4 foot separated sidewalks on each side. The right-of-way requirement for this road section is 60 feet. The remainder is 2.75 feet. The structural section shall be a minimum of 3 inches of asphalt concrete over 9 inches of aggregate base.

--- It appears from the plan view that the road is 40 feet wide from curb to curb which meets the above standard. The existing contiguous sidewalk along the frontage of the project was constructed by the County. Please show the existing easement for the sidewalk on the plans. Public Works has no objection to an exception for the proposed road section.

--- Exceptions to the County Standards for streets may be proposed by showing 1) a typical road section of the required standard on the plans crossed out, 2) the reason for the exception below, and 3) the proposed typical road section.

--- The midblock crosswalk should be yellow and either be similar in appearance to piano keys at a minimum or a ladder.

--- The driveway apron is recommended to be 24 feet wide. The parking aisle and parking stalls are 42 feet wide which is less than the 44 feet required (standard 26 foot aisle and 18 foot parking stall).
--- If you have any questions please call Greg Martin at 831-454-2811. ========= UPDATED ON JANUARY 8, 2008 BY GREG J MARTIN =========
No comment.

Dpw Road Engineering Miscellaneous Comments

========= REVIEW ON AUGUST 10, 2006 BY GREG J MARTIN =========

ATTACHMENT 4

========= UPDATED ON JANUARY 8, 2008 BY GREG J MARTIN =========

Dpw Sanitation Completeness Comments

========= UPDATED ON MARCH 24, 2010 BY DIANE ROMEO =========
Sanitation Engineering Division No. 3 Review Summary Statement; Appl. No. 06-0370; APN: 28-041-02, 03: Sewer service is available for this project based upon the plans submitted for the third review dependent upon the following comments being reflected on the building permit plans. (Any future changes to these plans submitted for discretionary review shall be routed to the District for review to determine if additional conditions by the District are required by the plan change. All changes shall be highlighted as plan revisions and changes may cause additional requirements to meet District standards). .This review notice is effective for one year from the issuance date to allow the applicant the time to receive tentative map, development or other discretionary permit approval. If after this time frame this project has not received approval from the Planning Department, a new availability letter must be obtained by the applicant. Once a tentative map is approved this letter shall apply until the tentative map approval expires.

Changes to plans for approval: Put note on plans that uncovered drinking fountain near bocce court shall not be connected to sewer. Omit note no. 15 on sheet C-1. There are no Miscellaneous comments. Any questions regarding the above criteria should be directed to Diane Romeo of the Sanitation Engineering division at (831) 454-2160.

Dpw Sanitation Miscellaneous Comments

========= REVIEW ON JANUARY 7, 2008 BY DIANE ROMEO ========= There are no miscellaneous comments.

ATTACHMENT 4

COUNTY OF SANTA CRUZ
INTER-OFFICE CORRESPONDENCE

DATE: January 3, 2008
TO: Annette Olson, Planning Department, Project Planner
Bob Olson, Parks Department Planner
FROM: Melissa Allen, Planning Liaison to the Redevelopment Agency
SUBJECT: Application #06-0370 **2nd Rtg, Felt Street Park**, APN 028-041-02 & 03, 1904 Felt St, LO

The applicant is proposing to demolish the existing house and garage and construct a park consisting of a parking lot, accessible restroom, accessible play area, bocce courts, skate park, group picnic area, community garden, fences, signage, river-stone archway and other art features, and various drainage and landscaping improvements. The project requires a Master Site Plan Approval, Coastal Development Permit, Preliminary Grading Approval, Design Review and Environmental Review. The property is located on the south side of Felt Street about 400 feet east of 17th Avenue (1904 Felt Street).

The Parks Department is responsible for managing and constructing this project, whereas, RDA is involved in the project funding. RDA supports the provision of additional recreational opportunities and the construction of new parks in Live Oak residential neighborhoods where the historic need for additional park amenities is well established.

This application was considered at Engineering Review Group (ERG) meetings on August 2, 2006 and January 2, 2008. The Redevelopment Agency (RDA) previously commented on this application on 8/21/06. The Redevelopment Agency has no additional comments on this application's second routing.

RDA does not need to see any future routings of revised plans unless there are changes relevant to RDA's previous comments. RDA appreciates this opportunity to comment. Thank you.

cc: *Greg Martin, DPW Road Engineering*
Paul Rodrigues, RDA Program Manager
Betsey Lynberg, RDA Administrator
Jan Beautz, 1st District Supervisor

ATTACHMENT 4

COUNTY OF SANTA CRUZ | Planning Department

INTEROFFICE MEMO

APPLICATION NO: 06-0370

Date: July 20, 2006

To: Annette Olson, Project Planner

From: Larry Kasparowitz, Urban Designer

Re: Design Review for a new park at Felt Street, Santa Cruz

GENERAL PLAN / ZONING CODE ISSUES

Design Review Authority

13.11.040 Projects requiring design review.

(e) All County projects.

Design Review Standards

13.11.072 Site design.

Evaluation Criteria	Meets criteria in code (✔)	Does not meet criteria (✔)	Urban Designer's Evaluation
Compatible Site Design			
Location and type of access to the site	✔		
Building siting in terms of its location and orientation	✔		
Building bulk, massing and scale	✔		
Parking location and layout	✔		
Relationship to natural site features and environmental influences	✔		
Landscaping	✔		
Streetscape relationship			N/A
Street design and transit facilities			N/A
Relationship to existing structures			N/A
Natural Site Amenities and Features			
Relate to surrounding topography	✔		
Retention of natural amenities			N/A
Siting and orientation which takes advantage of natural amenities	✔		
Ridgeline protection			N/A
Views			
Protection of public viewshed	✔		

Minimize impact on private views	✔		
Safe and Functional Circulation			
Accessible to the disabled, pedestrians, bicycles and vehicles	✔		
Solar Design and Access			
Reasonable protection for adjacent properties	✔		
Reasonable protection for currently occupied buildings using a solar energy system	✔		
Noise			
Reasonable protection for adjacent properties	✔		

13.11.073 Building design.

Evaluation Criteria	Meets criteria In code (✔)	Does not meet criteria (✔)	Urban Designer's Evaluation
Compatible Building Design			
Massing of building form			N/A
Building silhouette			N/A
Spacing between buildings			N/A
Street face setbacks			N/A
Character of architecture	✔		
Building scale	✔		
Proportion and composition of projections and recesses, doors and windows, and other features	✔		
Location and treatment of entryways	✔		
Finish material, texture and color	✔		
Scale			
Scale is addressed on appropriate levels	✔		
Design elements create a sense of human scale and pedestrian interest	✔		
Building Articulation			
Variation in wall plane, roof line, detailing, materials and siting.	✔		
Solar Design			
Building design provides solar access that is reasonably protected for adjacent properties.	✔		

ATTACHMENT 4

Building walls and major window areas are oriented for passive solar and natural lighting.	✔		

13.11.074 Access, *circulation and parking.*

Parking			
Minimize the visual impact of pavement and parked vehicles.	✔		
Parking design shall be an integral element of the site design.	✔		
Site buildings toward the front or middle portion of the lot and parking areas to the rear or side of the lot is encouraged where appropriate.	✔		
Lighting			
All site, building, security and landscape lighting shall be directed onto the site and away from adjacent properties.			*Suggest as Condition of Approval*
Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.			*Suggest as Condition of Approval*
All lighted parking and circulation areas shall utilize low-rise light standards or light fixtures attached to the building. Light standards to a maximum height of 15 feet are allowed.			*Suggest as Condition of Approval*
Building and security lighting shall be integrated into the building design.			*Suggest as Condition of Approval*
Light sources shall not be visible form adjacent properties.			*Suggest as Condition of Approval*
Loading areas			
Loading areas shall be designed to not interfere with circulation or parking, and to permit trucks to fully maneuver on the property without backing from or onto a public street.	✔		
Landscape			
A minimum of one tree for each five parking spaces should be planted along each single or double row of parking spaces.	✔		
A minimum of one tree for each five parking spaces shall be planted along rows of parking.	✔		
Trees shall be dispersed throughout the parking lot to maximize shade and visual relief.	✔		

At least twenty-five percent (25%) of the trees required for parking lot screening shall be 24-inch box size when planted; all other trees shall be 15 gallon size or larger when planted.	✔		
Parking Lot Design			
Driveways between commercial or industrial parcels shall be shared where appropriate.			N/A
Avoid locating walls and fences where they block driver sight lines when entering or exiting the site.			N/A
Minimize the number of curb cuts	✔		
Driveways shall be coordinated with existing or planned median openings.	✔		
Entry drives on commercial or industrial projects greater than 10,000 square feet should include a 5-foot minimum net landscaped median to separate incoming and out going traffic, where appropriate.			N/A
Service Vehicles/Loading Space. Loading space shall be provided as required for commercial and industrial uses.			N/A
Where an interior driveway or parking area parallels the side or rear property line, a minimum 5-foot wide net landscape strip shall be provided between the driveway and the property line.	✔		
Parking areas shall be screened form public streets using landscaping, berms, fences, walls, buildings, and other means, where appropriate.	✔		
Bicycle parking spaces shall be provided as required in. They shall be appropriately located in relation to the major activity area.	✔		
Reduce the visual impact and scale of interior driveways, parking and paving.	✔		
Parking Lot Landscaping			
It shall be an objective of landscaping to accent the importance of driveways from the street, frame the major circulation aisles, emphasize pedestrian pathways, and provide shade and screening.	✔		
Parking lot landscaping shall be designed to visually screen parking from public streets and adjacent uses.	✔		
Parking lots shall be landscaped with large canopy trees.	✔		
A landscape strip shall be provided at the end of each parking aisle.	✔		

A minimum 5-foot wide landscape strip (to provide necessary vehicular back-out movements) shall be provided at dead-end aisles.	✔		
Parking areas shall be landscaped with large canopy trees to sufficiently reduce glare and radiant heat from the asphalt and to provide visual relief from large stretches of pavement.	✔		
Variation in pavement width, the use of texture and color variation is paving materials, such as stamped concrete, stone, brick, pavers, exposed aggregate, or colored concrete is encouraged in parking lots to promote pedestrian safety and to minimize the visual impact of large expanses of pavement.	✔		
As appropriate to the site use, required landscaped areas next to parking spaces or driveways shall be protected by a minimum six-inch high curb or wheel stop, such as concrete, masonry, railroad ties, or other durable materials.	✔		
Pedestrian Travel Paths			
On-site pedestrian pathways shall be provided form street, sidewalk and parking areas to the central use area. These areas should be delineated from the parking areas by walkways, landscaping, changes in paving materials, narrowing of roadways, or other design techniques.	✔		
Plans for construction of new public facilities and remodeling of existing facilities shall incorporate both architectural barrier removal and physical building design and parking area features to achieve access for the physically disabled.	✔		
Separations between bicycle and pedestrian circulation routes shall be utilized where appropriate.	✔		

CENTRAL
FIRE PROTECTION DISTRICT
of Santa Cruz County
Fire Prevention Division

930 17th Avenue, Santa Cruz, CA 95062
phone (831) 479-6843 fax (831) 479-6847

Date:	July 25, 2006
To:	County of Santa Cruz Parks
Applicant:	**same**
From:	Tom Wiley
Subject:	**06-0370**
Address	**1904 Felt St.**
APN:	028-041-03 & 03
OCC:	2804102
Permit:	20060240

We have reviewed plans for the above subject project.

The following NOTES must be added to notes on velums by the designer/architect in order to satisfy District requirements when submitting for **Application for Building Permit**:

NOTE on the plans that these plans are in compliance with California Building and Fire Codes (2001) as amended by the Central Fire Protection District.

NOTE on the plans ***construction* classification** as determined by the building official and outlined in Part IV of the California Building Code.

NOTE on the plans the **occupancy classification** as determined by the building official and outlined in Part III of the California Building Code.

NOTE on the plans whether the building will be either **SPRINKLERED** or **NON-SPRINKLERED** as outlined in the 2001 California Building Code and via District Amendment.

*The FIRE FLOW requirement for the subject property is **1500** gallons per minute.*

NOTE, on the plans, the required FIRE FLOW and the available FIRE FLOW. This information can be obtained from the water company upon request.

SHOW on the plans a public fire hydrant meeting the minimum required fire flow for the building, within 150 feet of any portion of the building.

NOTE ON PLANS: New/upgraded hydrants, water storage tanks, and/or upgraded roadways shall be installed PRIOR to and during time of construction (CFC 901.3).

The job copies of the building and fire systems plans and permits must be on-site during inspections.

Submit a check in the amount of $100.00 for this particular plan check, made payable to Central Fire Protection District. A $35.00 **Late Fee** may be added to your plan check fees if payment is not received within 30 days of the date of this Discretionary Letter. INVOICE MAILED TO APPLICANT. Please contact the Fire Prevention Secretary at (831) 479-6843 for total fees due for your project.

ATTACHMENT 4

NEW WATER SERVICE INFORMATION FORM

City of Santa Cruz Water Department 809 Center Street Room 102 Santa Cruz, CA 95060 Phone (831) 420-5210 Fax 831-420-5201

APN: 028-041-02 Multiple APN? Y Project Address: 1904 Felt St

Date: 2/14/2006
Revision 1 : 7/25/2006
Revision 2 : 1/3/2007

PROJECT DESCRIPTION:
Proposed County Park with restrooms. Includes APN 028-041-03.

APPLICANT INFORMATION:

Name: SC County Parks & Rec/Bob Olson
Mailing Address: 979 17th Ave
City/St/Zip: Santa Cruz CA 95062-
EMail:
Phone: (831) 454-7939
Cell:
Fax:

REPRESENTATIVE INFORMATION:

Name:
Mailing Address:
City/St/Zip:
EMail:
Phone:
Cell:
Fax:

SECTION 1 EXISTING MAIN AND SERVICES

Main Size/Type/Age: 10" PVC 2003
Elevation zone: N
No connection fee credit(s) for services inactive over 24 months

Sizes	Account #'s	Old SIO #'s	Status	Date Closed	Type
3/4"	079-0430		Inactive	8/30/2007	SFD

SECTION 2 FIREFLOWS

Hyd # 1456 Size/Type: 6"dbl Static 86 Res 76 Flow 1256 Flow w/20# Res. 3480 FF Date 09/04 Location: on Felt @ 17th
Hyd # 1306 Size/Type: 6"stmr Static 88 Res 76 Flow 1186 Flow w/20# Res. 3026 FF Date 09/04 Location: on Tower @ Felt

SECTION 3 WATER SERVICE FEE Totals (see Page 2 for Details)

Plan Review Fees:		Permit Fees:		Meter Inst Fees:	Water Conn Fees:	Sewer Conn Fees:	Zone Cap Fees:	Credits:	Total Due:
Service/Hydrant Eng	$250	Service/Hydrant Install	$360.00						
Backflow	$50	Backflow	$120.00						
Irrigation	$160	St. Opening	$0.00						
		Misc Fees	$60.00						
Totals	$460		$540.00	$359	$26,120	$0	$0.00	$0	$27,479.00

SECTION 4: BP# PLAN APP # 06-0370 PLANNER Annette Olson REVIEWED BY J. Segal

ADDITIONAL COMMENTS ABOVE FEES ARE ESTIMATES. Fire sprinklers to be determined by Central Fire Protection Dist. Plans show 1-1/2" meters for both domestic and irrigation use. Fees listed above reflect only 1" meters as required based on fixture counts and gpm demands. The existing domestic service is not called out on the Grading and Utility Plan Sheet C-1. Please revise plans to note if the existing service will be retired or remain. If existing service is to be retired the Water Dept will need to witness the retiring (no pipe crimping). No fire sprinkler system connection is shown; please submit Fire Protection Requirements Form (enclosed) completed by Central Fire Protection District and revised plans if necessary.

QUALIFICATIONS

Service will be furnished upon: (1) payment of the required fees due at the time service is requested (a building permit is required), and; (2) installation of the adequately sized water services, water mains and fire hydrants as required for the project under the rules and regulations of the Santa Cruz Water Department and the appropriate Fire District and any restrictions that may be in effect at the time application for service is made. NOTICE: This form does not in any way olligate the city. It is provided only as an estimate to assist you in your planning and as a record for the Water Department. The requirements set forth on this form may be changed or corrected at any time without prior notice. Fees collected by other agencies are not included on this form.

SECTION 5 WATER SERVICE FEE DETAILS APN: 028-041-02

SIO Info		Use Info					SIO Fees				Permit Fees						Totals
Lat	Size / Br Config	Use Type	Mtr ID	Mtr Size	Mtr Type	Num Units	Inst Fee	Water	Sys Dev Chgs Sewer	Zone Capacity	Insp Fee	Eng Rvw Hrs	Eng Rvw Fee	BF Rvw	Backflow Permit Type	Backflow Permit # Dev	Backflow Permit Fee	
6	6" STMR										180							
		Hydrant				0	$0	$0	$0	$0.00		1	$50	$0		0	$0	
						Credits	$0	$0	$0	$0.00								
						Sub total Fees:	$0	$0	$0	$0.00								
						Sub total Credits:	$0	$0	$0	$0.00								
						SIO Totals:	$0	$0	$0	$0.00		1	$50	$0		0	$0	$50.00

SIO Info		Use Info					SIO Fees				Permit Fees						Totals
Lat	Size / Br Config	Use Type	Mtr ID	Mtr Size	Mtr Type	Num Units	Inst Fee	Water	Sys Dev Chgs Sewer	Zone Capacity	Insp Fee	Eng Rvw Hrs	Eng Rvw Fee	BF Rvw	Backflow Permit Type	Backflow Permit # Dev	Backflow Permit Fee	
2	2"x 1-1"D										180							
		Business		1	Disc	0	$311	$16,325	$0	$0.00		2	$100	$0		0	$0	
						Credits	$263	$6,530	$0	$0.00								
		Irrigation		1	Disc	0	$311	$16,325	$0	$0.00		2	$100	$50	RP	1	$120	
						Credits	$0	$0	$0	$0.00								
						Sub total Fees:	$622	$32,650	$0	$0.00								
						Sub total Credits:	$263	$6,530	$0	$0.00								
						SIO Totals:	$359	$26,120	$0	$0.00		4	$200	$50		1	$120	$26,849.00
						Grand Totals:	$359	$26,120	$0	$0.00		5	$250	$50		1	$120	$26,899.00

Total Permit Insp Fees: 360

74 / 115

Water Conservation Office 212 Locust Street, Suite B Santa Cruz, CA 95060
Phone: (831) 420-5230 FAX: (831) 420-5231

County of Santa Cruz

March 22, 2010

Subject Property: Felt Street Park BP#: 06-0370 APN: 028-041-02, -03

Dear Applicant:

Thank you for submitting a landscape plan dated October 22, 2009 for the above project. The Water Conservation Office has reviewed the plan and found much of the plan to be consistent with the City of Santa Cruz's Water Efficient Landscape Ordinance. However, additional information and plan revisions are needed before we can release water service.

Please provide the following information and revisions to the landscape plans:

IRRIGATION PLAN

1. Water and irrigation lines may not cross parcel boundaries. The project site includes two parcels, with proposed irrigation on both parcels. If the parcels are combined into a single lot, one irrigation meter may be used as proposed. If the lots remain as separate parcels, two water meters with separate irrigation systems is required, one for each parcel.

2. The irrigation system must be designed to minimize runoff and overspray on sidewalks, roadways and slopes. Overhead spray irrigation systems shall be separated from adjacent sidewalks, driveways, or **other paved surfaces** by at least two feet in width. The irrigation details and plans indicate a set back of 24" for pop up spray heads and a note is indicated to set back heads along Felt Street. Please extend this note to include the western side of the plan where heads are proposed next to paved surfaces such as the skate, parking, restroom, and picnic areas.

3. Plants must be separately valved according to water use. Low and medium plants may be grouped together, but high water using plants must be separately irrigated. *Sequoia sempervirons* (coast redwood) is listed as "high water use" in the WUCOLS reference listing. The planting plan indicates three separate locations where redwoods are specified. Due to water requirements of established redwoods in this region, we can make an exception for valving *Sequoia sempervirons* with medium water use plants, as is the case for the redwoods specified on the northeast and west portion of the planting plan. The redwoods

located in the southeast corner of the plan are not hydrozoned nor valved separately. Please substitute either a low or medium water requiring species for this location or valve these redwoods separately.

4. The ordinance states that anti-drain valves shall be installed in strategic points to minimize or prevent low-head drainage. If the selected spray heads do not address this in every case, please add check valves to irrigation notes.

5. A rain shut-off device is required.

ADDITIONAL COMMENTS

6. A water audit is required for properties with turf areas over 5,000 square feet. Upon completion of the landscaping installation, an irrigation audit performed by a certified landscape irrigation auditor prior to the final field inspection is required.

7. A landscape review fee of $170 payable to City of Santa Cruz Water is due prior to approval of the landscape plans.

We appreciate your cooperation in meeting the conditions of the City's Water Efficient Landscape Ordinance. The ordinance is available on the City of Santa Cruz website at www.cityofsantacruz.com/index.aspx?page=411 or a copy can be mailed to you on request.

Please submit 3 sets of revised plans to the engineering counter. All revisions must be marked with revision clouds on the plan and noted in the legend. If you have any questions, please call me at (831) 420-5230.

Sincerely,

Aerin Martin
Water Conservation Representative

cc: John Cahalan, Landscape Architect
Water Engineering

CITY OF
SANTA CRUZ

WATER DEPARTMENT

212 Locust Street, Suite C, Santa Cruz CA 95060 Phone (831) 420-5210 Fax (831) 420-5201

April 14, 2010

Annette Olson
Santa Cruz County Planning
701 Ocean St., 4th Floor
Santa Cruz, CA 95060

Re: **APN 028-041-02, 1904 Felt St., Felt Street Park**

Dear Ms. Olson:

This letter is to advise you that the subject parcel is located within the service area of the Santa Cruz Water Department and potable water is currently available for normal domestic use and fire protection. Service will be provided to the parcel upon payment of the fees and charges in effect at the time of service application and upon completion of the installation, at developer expense, of any water mains, service connections, fire hydrants and other facilities required for the development under the rules and regulations of the Santa Cruz Water Department. The development will also be subject to the City's Landscape Water Conservation requirements.

At the present time:

- the required water system improvements are not complete; and
- financial arrangements have not been made to the satisfaction of the City to guarantee payment of all unpaid claims.

This letter will remain in effect for a period of two years from the above date. It should be noted, however, that City Council may elect to declare a moratorium on new service connections due to drought conditions or other water emergency. Such a declaration would supersede this statement of water availability.

If you have any questions regarding service requirements, please call the Engineering Division at (831) 420-5210. If you have questions regarding landscape water conservation requirements, please contact the Water Conservation Office at (831) 420-5230.

Sincerely,

Bill Kocher
Director

ATTACHMENT 5

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED	N/A
Agricultural Policy Advisory Commission (APAC) Review			X
Archaeological Review			X
Biotic Report/Assessment			X
Geologic Hazards Assessment (GHA)			X
Geologic Report			X
Geotechnical (Soils) Report			X
Riparian Pre-Site			X
Septic Lot Check			X
Other:			
Arborist Report		XXX	
Acoustical Study		XXX	

Attachments:

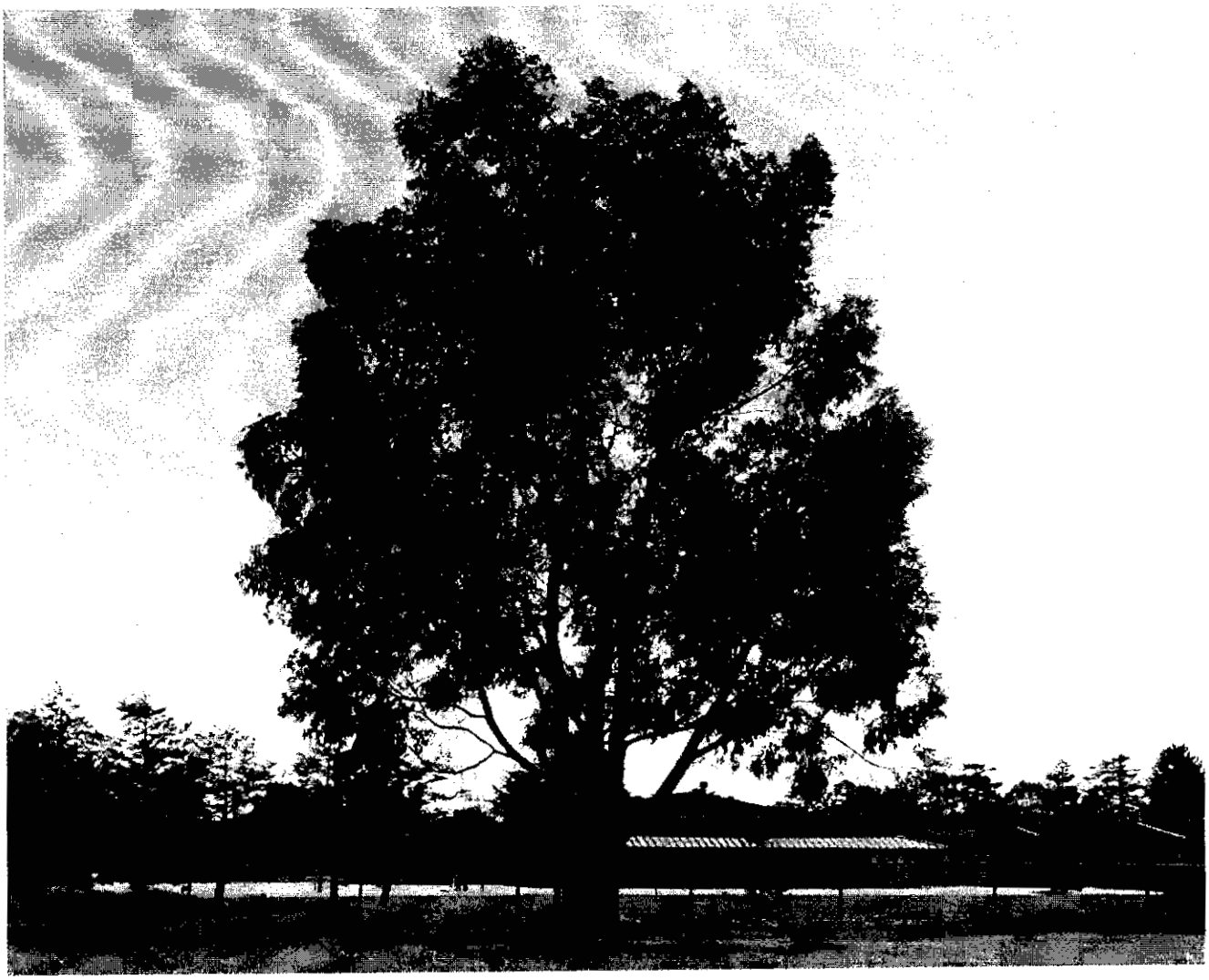
1. Vicinity Map, Map of Zoning Districts, Map of General Plan Designations, Assessors Parcel Map
2. Project Plans prepared by John Cahalan, Landscape Architect, dated 10/22/09; Civil Engineering Plans prepared by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, dated 10/22/09; Survey by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, dated 2/22/06; Restroom design by Romtec; Skate Area Plan by Spohn Ranch.
3. Drainage calculations prepared by David B. Voorhies, Registered Professional Engineer, of Underwood & Rosenblum, Inc, Revised to June 13, 2008.
4. Discretionary Application Comments, dated April 14. 2010
5. Letter from City of Santa Cruz Water District, dated April 14, 2010
6. Arborists Report prepared by James P. Allen, dated April 9, 2008
7. Parking Study (Conclusions and Recommendations) prepared by Robert Olson, Park Planner, dated March 30, 2010
8. Acoustical Study (Conclusions and Recommendations) prepared by Charles M. Salter, Associates, Inc., dated August 18, 2009

Dedicated to the Preservation of Trees

James P. Allen & Associates

Tree Resource Analysis/ Construction Impact Assessment

Felt Street Park
1904 Felt Street, Santa Cruz, CA
APN 028-041-02 & 03



Prepared for
Robert Olson
Santa Cruz County Parks Department

Consulting Arborists
615 Mission Street
Santa Cruz, CA 95060
831.426.6603 office
831.460.1464 fax
jpallen@cruzio.com

ATTACHMENT 5

ASSIGNMENT/SCOPE OF SERVICES

The construction of a public park is proposed for a vacant lot and existing single-family residential parcel at 1904 Felt Street, Santa Cruz, California 95062, APNs 028-041-02 & 03.

The site is populated with mature native/non-native as well as smaller landscape and fruit trees. To insure tree stability, the safe use of the area, and protect tree resources on this site during construction, Robert Olson, County of Santa Cruz Park Planner, has requested a proposal for a Tree Resource Evaluation/Construction Impact Analysis. To complete this assignment the following tasks have been completed:

- Locate, catalog and map trees growing within and immediately adjacent to the property boundary
- Identify each tree as to species and trunk diameter
- Rate individual tree health and structure as "good, fair or poor"
- Determine suitability for incorporation into the developed site
- Define trees that meet "Significant" status as defined by Santa Cruz County ordinances
- Make recommendations for necessary tree maintenance
- Work with project architects to create an effective tree protection plan
- Document findings in the form of a report accompanied by a Tree Location Map and Inventory

SUMMARY

Plans for the proposed demolition and park construction project at this location have been reviewed and impacts to the tree population have been assessed. Twelve trees growing on this property and three trees standing on the neighboring property to the west will be affected by the proposed project. Two of these trees meet 'Significant" criteria as defined by County of Santa Cruz Code.

Construction of the project as currently planned requires the removal of eleven trees. **Trees #1 through 4 and 6 through 11** are in conflict with site improvements and grading requirements. Although **Trees #8, 9 and 10** were considered for retention by the Project Design Team, these trees are recommended to be removed since they were found to be structurally unsound, potentially dangerous to park users and unsuitable for incorporation into this project. One of the trees required to be removed, **Tree #4** meets "Significant" criteria.

Tree #5, a Significant tree also has defined structural defects. It may be retained and incorporated into the park site with the installation of a cable support system and annual monitoring by a qualified arborist.

Mitigation, for the removed trees will be in the form of replacement trees planted as components of the planned landscape. The number of replacement trees required will be determined by the Planning Department.

Trees #13, 14 and 15 grow adjacent to the western boundary on a neighboring property. Canopy clearance and root pruning are required to construct the project as proposed. Permission, from the tree owner will be required prior to the implementation of these procedures.

Three Significant eucalyptus trees previously growing on this site and displayed on some of the project maps died approximately two years ago. A Significant Tree Removal Permit Application #06-0014 was granted on 1/19/06 and the trees were subsequently cut down.

The implementation of the procedures as defined within this document, including *Tree Preservation Specifications*, will decrease the construction related impacts to the tree proposed for retention. Recommendations for cable support system and maintenance pruning have been made for **Tree #5** which has weak stem/trunk attachments.

Monitoring by the Project Arborist should occur at the intervals defined within this report to assure tree protection specifications are adhered to during construction.

BACKGROUND

To complete the assessment, site inspections were performed on February 26, and during the month of March in 2008. For purposes of identification, metal numbered tags have been affixed to tree trunks at 6 feet above natural grade. Tree locations with corresponding numbers are documented on the attached.

Three Significant eucalyptus trees previously growing on this site and displayed on some of the project maps died approximately two and one half years ago. A Significant Tree Removal Permit Application #06-0014 was granted on 1/19/06 and the trees were subsequently cut down.

Construction related impacts were assessed using plans provided by John Cahalan, Landscape Architect.

The trees were evaluated visually from the root crown (where the trunk meets natural grade), to the foliar canopy to determine condition/suitability for preservation.

Project Description

The .8-acre level site is located approximately 400 feet east of the intersection of 17th Avenue and Felt Street in the Live Oak area, APNs 028-041-02 & 03. Program elements include demolition, drainage and utilities, installation of a parking lot, an accessible flush restroom, accessible pre school and school-age play areas, accessible bocce courts with synthetic surfacing, pre-fabricated skate area, accessible group picnic area, accessible community garden, walkways, fences, park signage, accessible site furnishings, automatic irrigation, soil preparation and fine grading, sod turf area, landscaping and landscape maintenance.

TREE DESCRIPTIONS

Tree resources on this site are composed of eucalyptus *Eucalyptus sp.*, acacia *Acacia sp.*, non-native species naturally occurring oak *Quercus sp.*, Golden Rain *Koelreuteria paniculata sp.* planted as street trees, walnut *Juglans sp.*, fruiting pear *pyrus sp.*, plum *Prunus sp.* planted as components of the residential landscape. Two of the fifteen trees evaluated meet "Significant" criteria as defined by the Santa Cruz County Significant Trees Protection Ordinance (Chapter 16.34 of the County Code). All trees are located within the property boundary except for Trees #13, 14 and 15, two willows *Salix sp.* and one Monterey pine *Pinus radiata* tree growing on the neighboring property to the west.

TREE INVENTORY METHODOLOGY

The attached inventory lists information on trees $\geq$ 3 inches in diameter growing within or directly adjacent to the property boundary. Tree locations are documented on the attached Tree Location Map.

The tree inventory lists species, trunk diameter, tree health, structure and suitability for preservation, level/description of construction impacts, observations, recommended procedures whether trees on the site meet Significant status as defined by *Santa Cruz County Significant Trees Protection Ordinance (Chapter 16.34 of the County Code).* Two trees, #4 and #5 meet Significant status.

Diameter: is the width of the trunk measured at 4.5 feet above natural grade (ground level). For trees that were unable to be measured at 4.5 feet above natural grade, measurement heights are provided.

Critical Root Zone: Individual tree root systems provide anchorage, absorption of water/minerals, storage of food reserves and synthesis of certain organic materials necessary for tree health and stability. The Critical Root Zone (CRZ) is the species-specific amount of roots necessary to continue to supply these elements essential for each tree to stand upright and maintain vigor. This distance reflects the minimum footage measurement from the trunk required for the protection of the tree's root zone. Construction activities proposed within these areas are subject to specific review and the implementation of recommended special treatments.

This information is provided only for **Tree #5,** proposed for retention.

Health, Structure and Preservation Suitability Inventory ratings are based on the following criteria:

Tree health and structure are separate issues that are related since both are revealed by tree anatomy. A tree's vascular system is confined in a thin layer of tissue between the bark and wood layers. This thin layer is responsible for transport of nutrients and water between the root system and the foliar canopy. When this tissue layer is functioning properly, a tree has the ability to produce foliage (leaves). As long as the tree maintains a connected vascular system it may appear to be in good health.

When conditions conducive to decay are present, fungi, bacteria or poor compartmentalization, wood strength is degraded. As decay advances, the tree's ability to continue standing is compromised. Thus, a tree can appear to be in good health, but have poor structure.

Tree Health: This rating is determined visually. Annual growth rates, leaf size and coloration are examined. Indications of insect activity, decay and dieback percentages are also used to define health ratings.

Trees in "**good**" health are full canopied, with dark green leaf coloration. Areas of foliar dieback or discoloration are less than 10% of the canopy. Dead material in the tree is limited to small twigs and branches less than one inch in diameter. There is no evidence of insects, disease or decay.

Trees with a "**fair**" health rating have from 10% to 30% foliar dieback, with faded coloration, dead wood larger than one inch, and/or visible insect activity, disease or decay.

Trees rated as having "**poor**" health have greater than 30% foliar dieback, dead wood greater than two inches, severe decay, disease or insect activity.

Tree Structure: This rating is determined by visually assessing the roots, root crown (where the trunk meets the ground), supporting trunk, and branch structure. The presence of decay can affect both health and structural ratings.

Trees that receive a "**good**" structural rating are well rooted, with visible taper in the lower trunk, leading to buttress root development. These qualities indicate that the tree is solidly rooted in the growing site. No structural defects such as codominant stems (two stems of equal sizes that emerge from the same point), poorly attached branches, cavities, or decay are present.

Trees that receive a "**fair**" structural rating may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Decay or previous limb loss (less than 2 inches in diameter) may be present in these trees. Trees with fair structure may be improved through proper maintenance procedures.

Poorly structured trees display serious defects that may lead to limb, trunk or whole tree failure due to uprooting. Trees in this condition may have had root loss or severe decay that has weakened their support structure. Trees in this condition can present a risk to people and structures. Maintenance procedures may reduce, but not eliminate these defects.

Suitability for preservation: This rating evaluates tree health, structure, species characteristics, age and potential longevity.

*Trees with a "**good**" rating have adequate health and structure with the ability to tolerate* moderate impacts and thrive for their safe, useful life expectancy.

A "**fair**" rating indicates health or structural problems have the ability to be corrected. They will require monitoring with an expectation that their lifespan will be shortened by construction impacts.

Trees with a "**poor**" rating possess health or structural defects that cannot be corrected through treatment. Trees with poor suitability can be expected to continue to decline regardless of remedies provided. Species characteristics may not be compatible with redefined use of the area. Species, which are non-native and unusually aggressive, are considered to have a poor suitability rating.

Construction Impacts: This section describes what procedures are proposed near the individual tree. The influences the proposed construction activities will have on the tree are classified as **None, Low, Medium** or **High.** These classifications are defined as follows:

None, the tree is not near the impact area of the proposed construction.

Low, adverse affects from the proposed construction activities are minimal.

Medium, this level of impacts will result in loss in tree vigor and/or stability. Recommended procedures must be implemented to decrease these impacts.

High, requiring tree removal or the understanding that premature tree mortality can be anticipated. Mitigation is required for trees subject to this level of impacts.

DESCRIPTION OF DEVELOPMENT IMPACTS

Site inspections and review of the plans as presented identified numerous construction impacts to individuals.

Impacts to these trees are based on the development plans provided. The exact locations of the proposed improvements must be reviewed and evaluated once the site staking is in place. *There is a possibility that tree classification and recommended procedures will* change once the exact positions of the proposed improvements are known.

The construction of this project as presented requires the following procedures:

Grading for site stabilization as well as trenching for drainage structures and utility *line construction.* *These procedures require alteration of natural grade in the form of cut* and/or fill (described below) at the defined "Limits of Grading". Roots shattered during this process provide openings for opportunistic decay causing organisms degrading tree support systems and vigor.

Alteration of natural grade

- Cuts, lowering of natural grade, require the removal of soil until the desired elevation is reached. A cut within the trees Critical Root Zone can remove non-woody and woody roots. Non-woody (absorbing) roots are responsible for transporting moisture and nutrients necessary for maintaining tree health. More significant cuts remove woody roots that provide structural support, compromising the tree's ability to stand upright.

- Fill, increasing natural grade, often requires an initial cut to "knit in" and stabilize the material. This material is applied in layers and compacted in the process. Compaction breaks down soil structure by removing air and adding moisture. Anaerobic conditions may develop, promoting decay. Absorbing roots can suffocate from lack of oxygen. Structural roots may be compromised as a result of the decay.

Drainage structures and utility line placement. Necessary drainage structures and utility lines are to be consciously placed to avoid the Critical Root Zone of the preserved trees or brought to the attention of the Project Arborist to allow for preconstruction root severance along placement lines.

Parking lot construction requires a "cut" to a depth of six to 18 inches below the existing grade. Soils are then stabilized and by applying base materials and compacted. Asphalt chip seal, decomposed granite or concrete are then applied to create the surface.

Planned Landscape Installation typically requires the import of topsoil, rototilling the top 8 inches of native soils, digging planting holes, trenching for irrigation lines and increased water supply for establishing new plantings. Increased disturbance in the Critical Root Zone and elevated water levels will stress mature trees. It is recommended that landscape features planned within Critical Root Zones avoid the above-described procedures.

RECOMMENDED PROCEDURES

SPECIAL TREATMENTS

Potential construction impacts that dramatically reduce the lifespan of existing trees can be abated with the implementation of pre-construction treatments, modifications to construction methods and needed maintenance pruning/cabling.

Preconstruction root pruning is necessary for Trees #5, 13, 14 and 15. This procedure may be performed by **"Ditchwitch"** type of trencher within areas identified on the attached map under the direction of the Project Arborist. This procedure is defined as follows:

- Establish a "final line of disturbance" with field staking. This line represents the furthest distance from the trees trunk that will allow the proposed construction.
- Determine the depth of the cut required.
- Begin trenching along the "final line of disturbance".
- Trench to the required depth.
- "Clean up" shattered roots using the root pruning techniques defined below.

Roots are to be pruned cleanly. Bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering. The following tools should be used:

- Hand-pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

When completed, the pruned portions should be covered with burlap or similar material and kept moist until backfilled. Supplemental irrigation will be required to retain soil moisture during the summer months.

Maintenance Procedures:

- **Pruning** to remove dead branches and provide adequate vertical clearance has been recommended to reduce potential health and safety hazards that persisting dead branches pose, such as decay, attracting harmful insects and injury from falling branches.
    - **Tree #5** should have dead/broken branches greater than 1-inch diameter removed
    - **Trees #13 and 15** will require pruning to allow clearance for proposed improvements and construction access. Pruning should not remove more foliage than absolutely necessary to accommodate proposed construction as determined by the Project Arborist.

- **Cabling** has been recommended for **Tree # 5**. Simple Direct Cables should be installed between the weakly attached stems. The following or similar hardware should be used:
    - 5/8 inch "eye" through bolts, depending on stem diameter
    - 1/4 inch Extra High Strength cable
    - Pre-formed grips with thimbles

Tree #5, has defined structural defects, codominant stems with included bark. As stem diameters increase bark development between stems creates external forces that "push against" one another. This system is one typical of those prone to failure. This tree can be retained and stabilized for the short term with cable installation and annual monitoring by a qualified arborist.

The installation of cables, bolts and other hardware in trees is intended to reduce hazard potential. Such bracing does not permanently remedy structural weaknesses, and is not a guarantee against failure. The trees and hardware must be inspected periodically for hardware deterioration, adequacy and changes in the tree's and site condition. I recommend inspection by a competent arborist at least every year.

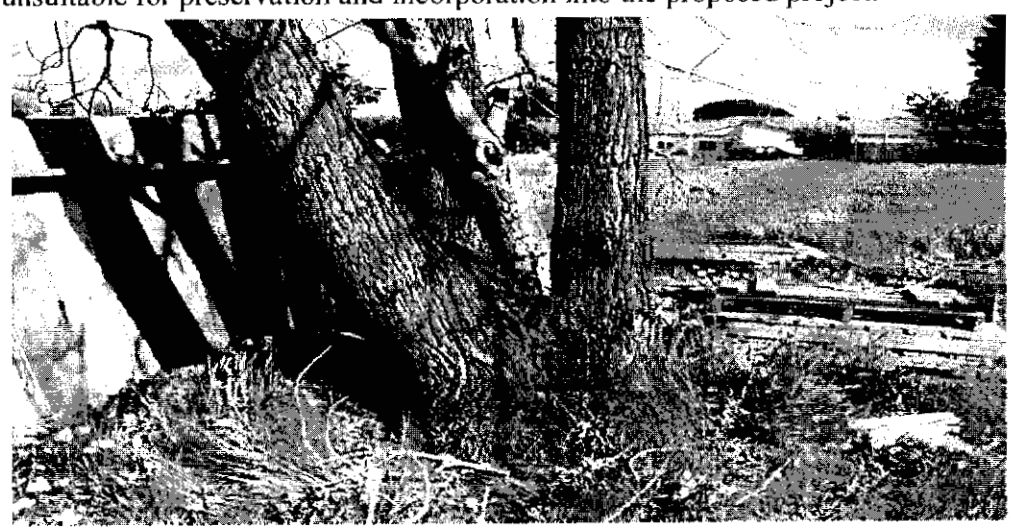
Three of the trees requiring Special Treatments, **Trees #13, 14 and 15** pictured below stand on the neighboring property. Written permission from the tree owner is required to allow the necessary preconstruction treatments.

Tree Removal is to be performed in a sectional manner. Locations of trees to be removed are documented on the attached map (Tree Location/Preservation Map).

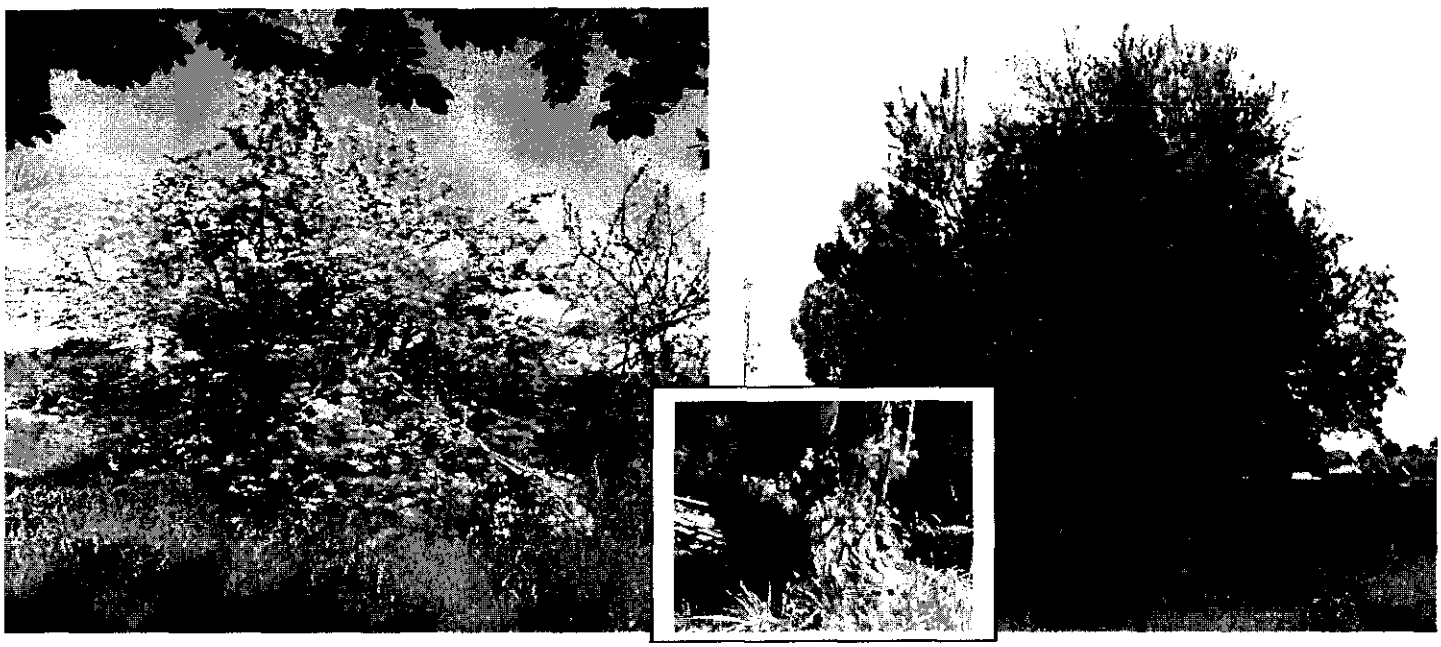
Removal due to Construction Impacts (Trees #**1 through 4 and 6, 7 and 11**) is required for trees that are in direct conflict with the proposed construction where plans cannot be modified.

Removals due to Poor Condition (Trees #**8, 9 & 10**) Recommendations are based upon the combination of health, structure, preservation suitability ratings and general species characteristics.

Tree #**8** exhibits poor trunk/stem attachments that are typical of systems prone to fail. Walnut is a species with low tolerance to minimal construction impacts. It is unsuitable for preservation and incorporation into the proposed project.



Trees #9 and 10, a fruit-bearing pear and fruitless plum are aging individuals with decayed trunks and poor stem attachments. They will present a personal injury risk from stem failure potential or branches jabbing passers by.



A qualified certified arborist, using the following industry guidelines should be contracted to perform all the above-described work.

- American National Standards Institute A300 for Tree Care Operations-
  Tree, Shrub and Other Woody Plant Maintenance-Standard Practices.
  (Part 1)-2001 Pruning
  (Part 3)-2000 (Support Systems a Cabling, Bracing, and Guying)

- International Society of Arboriculture: Best Management Practices

- American National Standards Institute Z133.1-1994 for Tree Care Operations- Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush-Safety Requirements

Tree Preservation Zone: This area is the protected area that allows the majority of the Critical Root Zone to be undisturbed while still facilitating the construction of the building. Tree Preservation Zones are documented in the Tree Preservation map attached to this report.

Tree Preservation Specifications included in this report, outline specifics for tree protection fencing and other procedures that will provide the best opportunity for their long-term survivability. The exact locations for these procedures are documented on an attached map.

ATTACHMENT 6

- **Amended tree chip mulch**, 4-6 inch layer, shall be applied within the Tree Preservation Zones allowing a 12-inch separation between the tree trunks and mulch. Tree chips should be amended with 7 pounds Bloodmeal, 13-0-0, per cubic yard of chips.

- **Supplemental Irrigation** should be provided by a soaker hose delivery method within the designated Tree Preservation Zones. The Project Arborist will determine supplemental irrigation levels.

- **Preservation fencing and straw bales** will be placed end to end inside of the protection fencing. The fencing is to be 48 inches in height and secured with stakes. Straw bales may be secured by driving metal or wooden stakes through the bales to a depth of 12 to 18 inches below natural soil grade. This barricade will prevent damage to the fencing, tree trunks and prevent excess soil from grading and trenching from encroaching into the Tree Preservation Zone of the retained trees. Tree Preservation Zone fencing locations are documented on an attached map (Tree Preservation Map).

These special treatment areas are documented on the attached map.

INSPECTIONS

To ensure the successful implementation of the recommended procedures **Site Inspections** are to be performed by the Project Arborist. Site inspections will take place at the following intervals throughout the course of the project:

- During all tree clearance pruning activities.
- Following on-site placement of grade stakes.
- During preconstruction root exploration and severance procedures.
- After Tree Preservation fencing locations have been staked.
- Following Tree Protection fencing installation and prior to the commencement of driveway demolition.
- As necessary during foundation trenching activities to ensure compliance with all conditions of project approval.

Site monitoring forms will be submitted to the County of Santa Cruz Planning department at regular intervals.

REQUIRED TREE REPLACEMENT: This project was configured to minimize the amount of tree removal.

Significant trees proposed for removal are required to be replaced at a rate of one 24-inch box or three 15-gallon trees. Replacement trees will be nursery grown container trees planted as a component of the planned landscape.

The replacement planting is to be provided adequate space for future growth.

Nursery stock obtained from local nurseries shall be standard (single trunk). The tree planted should be well formed without co-dominant, poorly attached stems. It shall be disease free and absent of swirling or girdling roots.

Qualified professionals adhering to the following guidelines shall plant the replacement tree:

- Prepare the planting site by excavating 3 times the width and 2 inches less than the exact depth of the nursery container.
- Prune any visible matted or circling roots to remove or straighten them. Cut the root ball vertically on opposite sides at least half the distance to the trunk.
- Free roots from the root ball breaking away some of the soil to provide better contact between the root ball and the backfill soil.
- Backfill with native soil.
- After backfilling a two-inch layer of amended tree chip mulch should be applied to the soil layer. Chips should be amended with "Blood meal 13-0-0" at a ratio of 7 pounds per cubic yard of chips. Chips should not be applied within 8 inches of the trunk.
- Stakes, for support, should be installed on opposite sides of the root ball and driven into the soil. The tree can be secured to the stakes using "Arbortape" or by using the "ReadyStake" system.

Supplemental irrigation will be provided the new tree by means of a temporary "drip" emitter system for a period of two (2) years. This system shall be designed, installed and maintained by a qualified professional to provide necessary irrigation at least twice per week to maintain appropriate moisture levels. Appropriate irrigation levels are to be determined by the Project Arborist.

Success Criteria To ensure the survivability and proper growth of the replacement tree success criteria will be defined to meet a 100% survival rate and implemented as follows.

A qualified professional will monitor the newly planted tree at six (6) month intervals for a period of five years.

- Tree health and growth rates will be assessed
- Trees suffering poor growth rates or declining health will be identified.
- Invigoration treatments will be provided
- Dead trees or trees in an irreversible state of decline will be replaced.
- At the end of the five-year period the status of the new plantings will be assessed to make certain that success criteria has been met and all mitigation trees planted are performing well.

Implementation of these success criteria shall be a condition of project approval.

Any questions regarding these trees on this site and the proposed construction may be directed to my office.

James P. Allen
Registered Consulting Arborist #390

Tree Preservation Specifications

Felt Street Park, APNs 028-041-02 & 03

These guidelines should be printed on all pages of the development plans. Contractors and sub contractors should be aware of tree protection guidelines and restrictions. Contracts should incorporate tree protection language that includes "damage to trees will be appraised using the *Guide to Plant Appraisal 9th Edition* and monetary fines assessed".

A pre construction meeting with the Project Arborist

A meeting with the Project Arborist, Project Manager and all contractors involved with the project shall take place prior to mobilization onto the site. Tree preservation specifications will be reviewed and discussed.

Establishment of a tree preservation zone (TPZ)

Fencing with metal stakes embedded in the ground, shall be installed in areas designated by the project arborist. Fencing will be installed prior to the onset of construction, under the supervision of the project arborist and shall not be moved.

Preservation fencing

Straw bales will be placed end to end outside of the protection fencing. The fencing is to be 48 inches in height and secured with stakes. Straw bales may be secured by driving metal or wooden stakes through the bales to a depth of 12 to 18 inches below natural soil grade. This barricade will prevent damage to the fencing and prevent excess soil from grading and trenching from encroaching into the Tree Preservation Zone of the retained trees. The Tree Preservation Zone of each preserved tree is documented on the attached Tree Location/Preservation map.

Restrictions within the TPZ

No storage of construction materials, debris, or excess soil will be allowed within the TPZ. Parking of vehicles or construction equipment in this area is prohibited. Solvents or liquids of any type should be disposed of properly, never within this protected area.

Alteration of grade

Maintain the natural grade. If tree roots are unearthed during the construction process the consulting arborist will be notified immediately. Exposed roots will be covered with moistened burlap until the project arborist makes a determination as to how they should be dealt with.

Tree canopy alterations

Unauthorized pruning of trees will not be allowed. Tree canopy alterations will be performed to the specifications established by the Project Arborist.

Supplemental irrigation

Shall be provided if construction takes place outside of the winter months when normal rainfall occurs. Supplemental irrigation shall be applied using "soaker" hoses or similar method of delivery. Supplemental irrigation requirements shall be determined by the Project Arborist and will be required prior to and after completion of the construction.

Mulch Layer

A 4-6 inch layer of **amended tree chip mulch** shall be applied within the Tree Preservation Zone. Tree chips should be amended with 7 pounds Bloodmeal, 13-0-0, per cubic yard of chips.

James P Allen & Associates

Felt Street Park
1904 Felt Street, APN 028-041-02, 03

DATE: 4/9/08

TREE RESOURCE INVENTORY

Dedicated to the Preservation of Trees

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	IMPACTS Level/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
1	oak	4.7	Poor	Poor	Poor	**HIGH/ Within proposed grading**	•Small street tree in low vigor **•Remove due to Construction Impacts** •No
2	oak	3.3	Poor	Poor	Poor	**HIGH/ Within proposed grading**	•Small street tree in low vigor **•Remove due to Construction Impacts** •No
3	acacia	Double trunk 4 & 4	Fair	Poor	Poor	**HIGH/ Within proposed grading**	•Poor trunk/stem attachments **•Remove due to Construction Impacts** •No
4	eucalyptus	Double trunk 33 & 36	Fair	Poor	Poor	**HIGH/ Within proposed grading**	•Poor trunk/stem attachments Decayed wounds Risk of Failure **•Remove due to Construction Impacts** •Yes
5	eucalyptus	35	Good	Poor	Poor	**MODERATE/ Proximity to proposed drainage swale and irrigation supply line**	•Poor trunk/stem attachments Risk of failure **•Preserve and Protect** Triangular cable syatem Relocate drainage swale and irrigation supply line outside of Critical Root Zone •Yes
6	walnut	3	Poor	Poor	Poor	**HIGH/ Within proposed grading**	•Small sprout **•Remove due to Construction Impacts** •No

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James P Allen & Associates

Felt Street Park
1904 Felt Street, APN 028-041-02, 03

DATE: 4/9/08

TREE RESOURCE INVENTORY

Dedicated to the Preservation of Trees

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	IMPACTS Level/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
7	Golden rain	3	Fair	Poor	Poor	**HIGH/ Within proposed grading**	•Small street tree •**Remove due to Construction Impacts** •No
8	walnut	Four trunks 11.5, 13, 9 & 12	Fair	Poor	Poor	**HIGH/ Proximity to proposed structure. Within proposed grading**	•Poor trunk/stem attachments •**Remove due to Construction Impacts** •No
9	fruiting pear	4	Poor	Poor	Poor	**MODERATE/ Proximity to proposed grading**	•Aging fruit tree with decayed trunk sections •**Remove due to Poor Condition** •No
10	plum	multi-trunk 30 @ grade	Fair	Poor	Poor	**MODERATE/ Proximity to proposed grading**	•Poor trunk/stem attachments Risk of failure •**Remove due to Poor Condition** •No
11	walnut	Four trunks 7.3, 8, 6 & 4.5	Fair	Poor	Fair	**HIGH/ Within proposed parking lot**	•Poor trunk/stem attachments •**Remove due to Construction Impacts** •No
12	Golden rain	Double trunk 6.3 & 3	Fair	Poor	Poor	**HIGH/ Within proposed grading**	•Small street tree •**Remove due to Construction Impacts** •No

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James P Allen & Associates

Felt Street Park
1904 Felt Street, APN 028-041-02, 03

DATE: 4/9/08

TREE RESOURCE INVENTORY

Dedicated to the Preservation of Trees

TREE #	SPECIES	DIAMETER @ 4.5ft ABOVE NATURAL GRADE (INCHES)	HEALTH	STRUCTURE	SUITABILITY	IMPACTS Level/ Description	•OBSERVATIONS •RECOMMENDED PROCEDURES •MEETS "SIGNIFICANT" CRITERIA Yes/No
13	Monterey pine	16.5	Good	Fair	Good	**MODERATE/ Proximity to proposed parking lot, drainage swale and irrigation supply lines**	•Grows on neighboring property Excellent young tree No visible Sequoia Pitch moth activity •Preserve and Protect Pre-construction root and possible canopy clearance pruning •No
14	willow	Double trunk 9 & 4	Fair	Poor	Fair	**MODERATE/ Proximity to proposed parking lot, drainage swale and irrigation supply lines**	•Grows on neighboring property Poor trunk/stem attachments Decay at basal area •Preserve and Protect Pre-construction root pruning construction •No
15	willow	Four trunks 8, 6, 7 & 5	Fair	Poor	Fair	**MODERATE/ Proximity to proposed parking lot, drainage swale and irrigation supply lines**	•Grows on neighboring property Poor trunk/stem attachments **•Preserve and Protect** **Pre-construction root and canopy clearance pruning** •No

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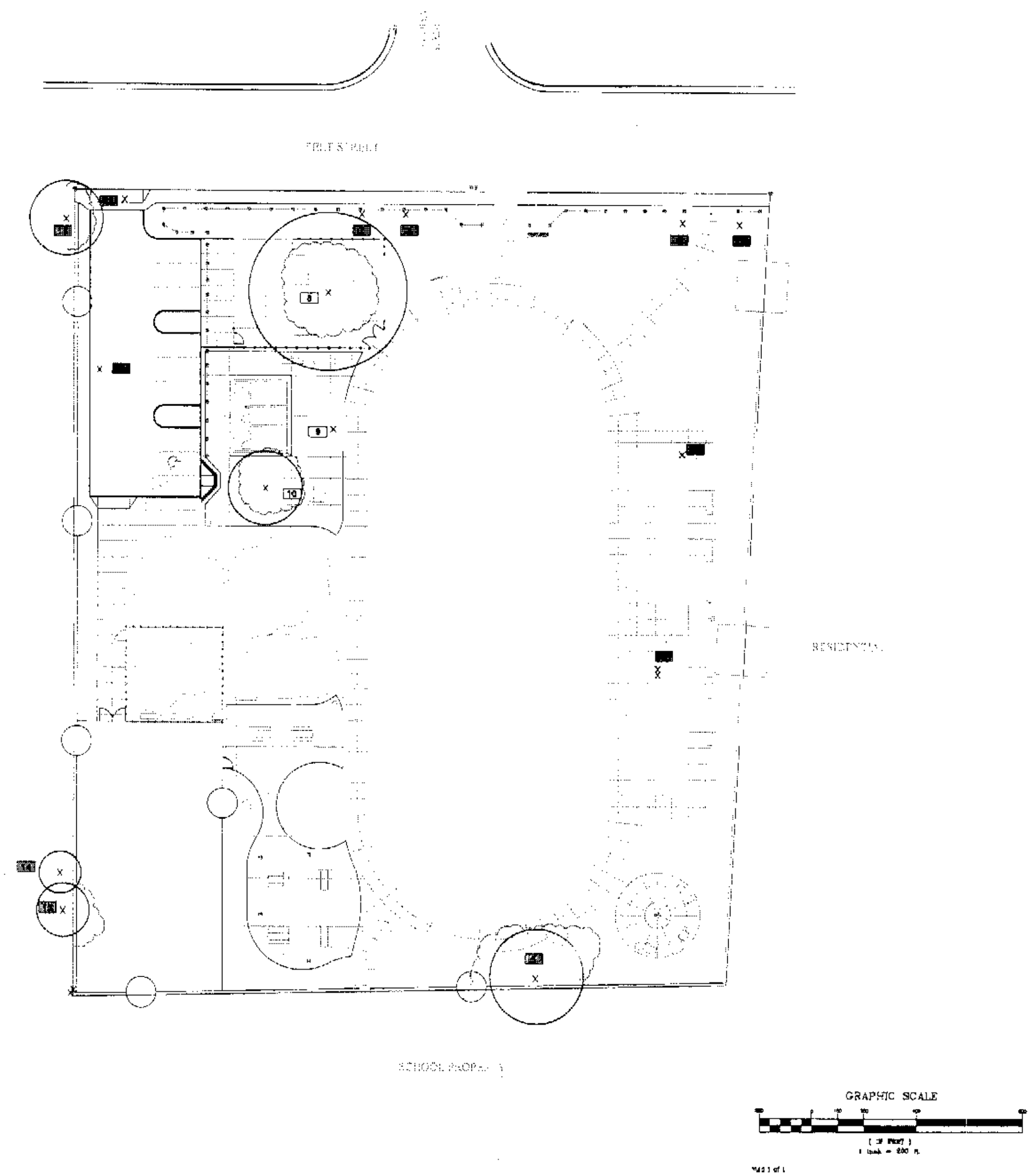


Legend

- X Surveyed Tree Trunk Location
- Preserve and Protect
- Remove due to Construction Impacts
- 2 Remove due to Tree Condition
- Critical Root Zone
- Tree Preservation Zone
- Tree Preservation Fencing With Straw Bales
- Pre-construction Root Pruning

FELT STREET PARK
Santa Cruz, CA
APN 021-041-02 & 03

Tree Location Map And Tree Protection Plan

James P. Allen & Associates

1 of 1

James P. Allen
& Associates

Dedicated to the Preservation of Trees

Felt Street Park
APN's 028-041-02 & 03

Project Arborist Final Plan Review

Prepared for
Robert Olson,
County of Santa Cruz Parks,
Open Space and Cultural Services

Consulting Arborists
611 Mission Street
Santa Cruz, CA 95060
831.426.6603 office
831.460.1464 fax
jpallen@cruzio.com

ATTACHMENT 6

ASSIGNMENT/SCOPE OF SERVICES

The construction of a public park at 1904 Felt Street is proposed. In order to receive project approval, the following information has been requested by the Project Planner:

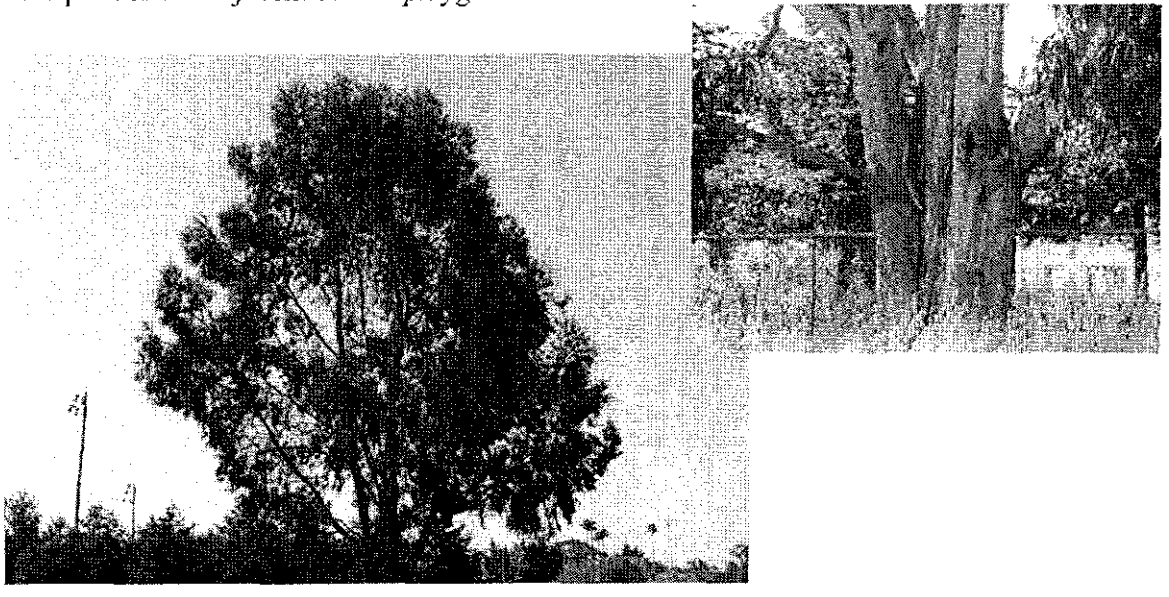
- Project Arborist review of:
  - Soils report
  - Final project plans
  - Required procedures adjacent to Tree #5, 13, 14 and 15

SUMMARY OF FINDINGS

Project plans dated 10/22/09 and the *Limited Geotechnical Investigation* dated 9/6/09 were provided for my review by Robert Olson, Park Planner for County of Santa Cruz Parks, Open Space and Cultural Services. I reviewed these plans and found a few minor changes from the previous plans and one section where adjustments are necessary:

Impacts Adjacent to Tree #5

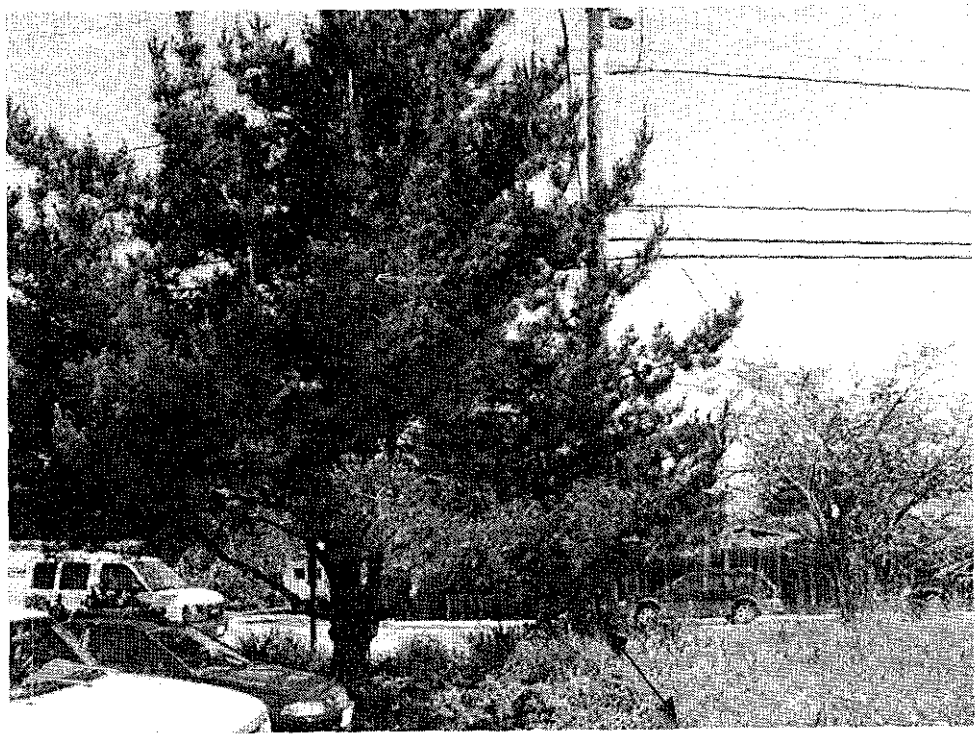
A drainage swale and irrigation lines are proposed within the Critical Root Zone of **Tree #5**. The construction of these elements will result in destruction of major supporting roots and potential destabilization of this tree. Additionally, this tree has a serious structural weakness; codominant stems with included bark, at red arrow. This condition is typical of those prone to failure. Although this condition can be stabilized with the installation of a cable system, it requires frequent monitoring and continued maintenance by qualified personnel. Without the implementation of recommended stabilization procedures and a management commitment, this tree is at risk of falling, potentially injuring persons using the park or the adjacent school playground.



Considering existing tree condition, proposed impacts and diminishing tree maintenance budgets, I modify my original recommendation and suggest the removal of this tree. I further recommend replanting two, 36-inch boxed coast redwoods *Sequoia sempervirens Soquel or Santa Cruz* to restore lost resources and provide large- scale canopy similar to that of Tree #5, recommended for removal.

Site stabilization, Parking Lot Construction adjacent to Tree #13
The geotechnical requirements involve removing existing soils to a depth of 8 to 32 inches and 36 inches beyond the edge of pavement depending on existing soil conditions, determined by the project soils engineer.

These objectives can be met without adverse affects on tree health or structure by performing preconstruction root pruning at the line indicated in blue on the photo below. A "DitchWitch" or similar type trencher is to be used before grading begins to sever roots at this "final line of disturbance".



Roots severed during this trenching operation can be pruned cleanly by hand, bark should adhere to the wood without tearing. Wood fibers should remain intact without shattering. The following tools should be used:

- Hand-pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

When completed, the pruned portions should be covered with burlap or similar material and kept moist.

The tree canopy does not need to be pruned in order to construct the project as proposed. Tree protection fencing should be installed at the property boundary prior to equipment being mobilized on the site.

Site stabilization, Community Garden adjacent to Tree #14 and 15
Since this are is proposed to be a community garden it should not require stabilization. Hopefully the existing nutrient rich soil will remain.

Trees #14 and 15 pictured below will not require root or canopy pruning. Tree protection fencing should be installed at the property boundary, indicated by the red line prior to equipment being mobilized on the site.

The adjacent property owners should be advised of the intended actions and protection strategies proposed in proximity to Tree #13, 14 and 15.

Questions regarding the tree resources on this project may be directed to my office.

James P. Allen
Registered Consulting Arborist #390

County of Santa Cruz

PARKS, OPEN SPACE & CULTURAL SERVICES

979 17TH AVENUE, SANTA CRUZ, CA 95062
(831) 454-7901 FAX: (831) 454-7940 TDD: (831) 454-7978

JOE SCHULTZ, DIRECTOR

DATE: March 30, 2010

TO: Annette Olson, Project Planner Development Review

FROM: Bob Olson, Park Planner

SUBJECT: FELT STREET PARK PARKING ANALYSIS

In response to your request regarding the proposed parking for Felt Street Park, I have prepared a table comparing the parking availability at other neighborhood park sites within the Live Oak Soquel areas. As you take a look at this table, you will find a wide range in the extremes. Brommer Park with 7.6 acres has 38 parking spaces and Winkle Farm Park with 6.3 acres has very limited unmarked parking at the end of a cul-de-sac. I think the difference can be attributed to the type and intensity of the facilities provided. Brommer Park has two tennis courts and a softball field that can be used by "organized sports". Even though Brommer Park is a neighborhood park, the organized sports field can draw uses from outside the immediate neighborhood, therefore creating the demand for more parking.

In looking at Winkle Farm Park, the facility development is limited. There is a large turf area but it is not marked and not rented for organized sports. This park like many other neighborhood parks, are built to serve the immediate neighborhood. Walking and bicycling are encouraged as the means of visiting these parks.

Jose Avenue Park with 2.7 acres and 23 parking spaces is within a mile of Felt Street Park. Jose Avenue Park is heavily programmed with a large playground, basketball court skate park, sand volleyball, turf area, community garden, restroom building and 28' group picnic shelter. The group picnic shelter has a large draw and is used constantly. Jose Avenue Park is also surrounded by a high density of apartment complexes.

With Felt Street Park, the proximity and configuration of the park allows for the design of a small parking area (8 spaces) to accommodate accessibility requirements and provide limited parking for other uses. The provision of a small parking area will discourage park users from using the church parking area next door, therefore suppressing potential conflicts later on.

The Felt Street Park skate area is relatively small and is geared toward the beginner and intermediate level skater. This design should only attract the immediate neighborhood users. In addition, the Jose Avenue Park skate area and the proposed Chanticleer Park skate area are less than a mile away in opposite directions from the proposed Felt Street Park skate area.

The proposed turf area at Felt Street Park is not designed or large enough for organized sports. Its purpose is to provide an area for pick up sports such as throwing a Frisbee or a football to one another. The play area, picnic area and bocce ball courts are intended for use by the immediate neighborhood. Parks feels confident that the small parking area proposed will be adequate for the park users. Limited on-street parking is available on the opposite side of Felt Street.

There are bike lanes on both sides of Felt Street with only one side wide enough for on-street parking. A bike rack will be installed at Felt Street Park, therefore encouraging the use of bicycles as a mode of transportation to visit the park. In addition, the park is served by sidewalks in both directions and has controlled gated access to the Del Mar School property. This arrangement will encourage travel to the park by walking or biking. If you need any additional information about the Felt Strect Park parking, please let me know.

Thanks,

Bob

Attachment: Parking Lot Evaluation for Neighborhood Parks

cc: Joe Schultz, Director POSCS

PARKING LOT EVALUATION
OF EXISTING NEIGHBORHOOD PARKS IN LIVE OAK AND SOQUEL
UNDER THE JURISDICTION OF THE
SANTA CRUZ COUNTY PARKS DEPARTMENT

Number	Park Site	Park Acreage	Parking Spaces	Facilities
	Felt Street Park	1.8	8	Playground, turf, skate area, picnic, community garden, bocce ball
1	Brommer Park	7.6	38	Playground, softball field, other turf, group picnic, tennis courts, restroom
2	Coffee Lane Park	2.7	10	Playground, basketball court, picnic tables, turf
3	Floral Park	.9	Limited street	Playground, turf, future picnic, restroom, dog area
4	Hestwood Park	.6	Limited street	Playground, turf, restroom, picnic
5	Jose Avenue Park	2.7	23	Playground, turf, restroom, picnic shelter, skate park, community garden, sand volleyball, basketball
6	Richard Vessey Park	.5	None	Small playground, picnic area and small turf
7	Santa Cruz Gardens	1.9	Limited street	Small playground, turf
8	Soquel Lions Park	.2	None	Small playground, turf, picnic area, portable toilet
9	Twin Lakes Park	1.4	Limited on street	Playground, tennis court, basketball court, restroom, turf
10	Willowbrook Park	2.7	On street	Playground, tennis court, basketball court, restroom, turf
11	Winkle Farm Park	6.3	Limited on street	Playground, turf, horseshoes, picnic

FELT STREET PARK
ACOUSTICAL REPORT

Santa Cruz County, CA
18 August 2009

Prepared by:

CHARLES M. SALTER ASSOCIATES, INC.
Ethan C. Salter, LEED AP
130 Sutter Street, Suite 500
San Francisco, CA 94104
Email: ethan.salter@cmsalter.com

Prepared for:

JOHN CAHALAN, LANDSCAPE ARCHITECT
15559 Union Avenue, Suite 206
Los Gatos, CA 95032
Email: john.cahalan@comcast.net

CSA Project No. 09-0244

ATTACHMENT 3

Introduction

This report provides our acoustical analysis of the project site for its proposed development as a multi-use neighborhood park with a skateboard area. It summarizes the applicable County of Santa Cruz requirements including the General Plan Noise Element and County Code Noise Ordinance, the results of our July 2009 acoustical measurements, calculated noise effects on surrounding land uses due to future park activities, and project compliance with County acoustical standards.

Executive Summary

Although activity noise at the skateboarding area portion of the proposed Felt Street Park project will be intermittently audible at the surrounding neighbors, the skateboarding area portion of the proposed Felt Street Park project will not cause acoustical impacts on the surrounding land uses, and meets the County of Santa Cruz requirements. Noise due to construction of the park will be mitigated to County policies.

Project Description

The proposed project is an approximately 2 acre park located across from the intersection of Felt Street and Aloha Lane in Santa Cruz County. It will include parking for eight cars, a large central turf area, walking paths, public restrooms, two bocce courts, children's play area, community garden, as well as an approximately 2,200-square foot skateboard area along Felt Street.

According to the proposed skateboarding area manufacturer, Skate Concept/Barkman Concrete, skateboarding areas incorporate design features that help to reduce noise impacts[1], including fabrication techniques that minimize necessary seams and joints, as well as smoother, high-compressive strength concrete.

Per the County Parks Department the skateboarding area area will have enough room for approximately 3 to 5 skateboarders and will be open from 9:00am to dusk[2] (it will not be lighted).

Existing Site

A majority of the site is an unimproved dirt lot surrounded by residences to the north and east, Shoreline Middle School to the south[3], and a church to the west. An abandoned residence takes up the northwest portion of the project site along Felt Street. The residences across Felt Street (north) are one story; the ones to the east are two stories.

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[1] Skate Concept website: http://skateconcept.com/construction/quality.html. Proposed skateboarding area plan shown on Sheet L-15 of the project plans.

[2] Emails from the County Parks Department received on 28 May and 30 July 2009.

[3] Shoreline Middle School was unoccupied during our measurements.

The residences to the east have wooden fences ranging in height from about six to eight feet, sufficient to visually shield the first level of those homes from view at the project site.

ACOUSTICAL CRITERIA

1994 Santa Cruz County General Plan, Chapter 6, Public Safety and Noise

Objective 6.9a states that the purpose of Chapter 6 is to "To promote land uses which are compatible with each other and with the existing and future noise environment. Prevent new noise sources from increasing the existing noise levels above acceptable standards and eliminate or reduce noise from existing objectionable noise sources."

Policy 6.9.1 summarizes the noise levels that would be considered "acceptable" based on their exposure to exterior noise sources. The table below summarizes the applicable levels:

Santa Cruz County General Plan Noise Element Chapter 6, Figure 6-1 – Land Use Compatibility for Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds

Exterior Noise Exposure (dB DNL[4] or CNEL[5])	Category of Acceptability	Definition
Below 65 dB	"Normally Acceptable"	Specified land use is satisfactory, based upon the assumption that any buildings involved are of conventional construction, without any special noise insulation requirements.
65 dB to 80 dB	"Conditionally Acceptable"	Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.
Above 80 dB	"Unacceptable"	New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

Policy 6.9.7 requires that construction noise be mitigated as a condition of future project approvals.

Project Operational Noise – Thresholds of Significance[6]

[4] Day-Night Average Sound Level (DNL) – A descriptor established by the U.S. Environmental Protection Agency to represent a 24-hour average noise level with a penalty applied to noise occurring during the nighttime hours (10 p.m. to 7 a.m.) to account for the increased sensitivity of people during sleeping hours. A 10-dB increase in sound level is perceived by people to be twice as loud.

[5] Community Noise Equivalent Level (CNEL) – A descriptor for the 24-hour A-weighted average noise level. The CNEL concept accounts for the increased acoustical sensitivity of people to noise during the evening and nighttime hours. Sound levels during the hours from 7 p.m. to 10 p.m. are penalized 5 dB; sound levels during the hours from 10 p.m. to 7 a.m. are penalized 10 dB. As noted in the County Noise Element, the DNL and CNEL metrics are considered to be equivalent.

[6] Derived from Jose Avenue Park acoustical report by Illingworth & Rodkin, pages 11-14. Received 28 May 2009 from John Cahalan and the County of Santa Cruz.

For proposed "non-transportation" noise sources such as the skateboarding area, the County thresholds for significance are as follows:

- New project-generated noise sources which would significantly increase existing ambient noise levels

- New project-generated noise sources which would exceed 60 dB DNL at noise-sensitive land uses

ASSESSMENT OF EXISTING NOISE ENVIRONMENT

24-Hour Noise Levels

To quantify the existing noise environment we conducted two 48-hour long-term measurements and two simultaneous spot measurements at the site between 20 and 22 July 2009. These measurements identified existing sources of noise at the project property lines; we compared them to the County Land Use Compatibility requirements in the General Plan. From our measurements we were able to determine the DNL at each location. The measured data is summarized below and also shown in Figure 1:

Felt Street Park: On-Site Acoustical Measurement Locations and DNL		
Monitor	**Measurement Location**	**DNL**
L1	Approximately 20 feet to the south of the centerline of Felt Street, 150 feet to the west of the east property line, 12 feet above grade on a light pole	64 dB
L2	In a tree approximately 40 feet to the west of the east property line, 200 feet south of the centerline of Felt Street, 12 feet above grade	54 dB
S1	At approximately the west property line of the Felt Street property, 140 feet to the south of the centerline of Felt Street, five feet above grade	56 dB*
S2	At south property line of Felt Street property adjacent to Shoreline Middle School track; approximately 80 feet to the east of the existing community garden, 5 feet above grade	48 dB**
** DNL calculated from increased setback distance from Felt Street.*		
*** DNL calculated from 15-minute simultaneous offset from monitor L2.*		

At the project property lines, the DNL is calculated to range from about 64 dB to 48 dB. These levels are within the County's "normally acceptable" range for new land uses.

Those readers not familiar with the fundamental concepts of environmental noise please refer to Appendix A.

Noise from Typically-Occurring Events

While on site we measured typically-occurring maximum noise levels (i.e., Lmax[7]) from various neighborhood sources. The table below summarizes these data and where the maximum levels were measured:

Felt Street Park: Measured Maximum Noise Levels		
Source	**Range of Measured Lmax, dBA**	**Measurement Location**
Cars	76-82	L1
Trucks	75-81	
Motorcycles	74-84	
Dog barks	68-75	L2
Local home maintenance*	67-72	
Train horn**	45	S1
Aircraft	55	S2
People using Shoreline Middle School track	48	S2

**This included hammering and some motor noise*
***Nearest train tracks are about 700-800 feet north of the project site.*

CALCULATIONS AND ANALYSIS

Assumptions

To estimate the change in day-night average noise levels (DNL) due to proposed skateboarding area activities, we calculated the potential effects due to the 2,200 square foot skate area on the neighbors. For our analysis we assumed the following:

- A maximum of 5 skateboarders using the skateboarding area simultaneously
- Noise sources are primarily skateboard wheels and boards impacting the concrete, as well as skateboarders' voices
- Hours of operation from 9:00am to dusk;[8] for this analysis, dusk was assumed to be 8:00pm
- No skateboarder activity when park is closed
- Skateboard noise levels from 2002 Jose Avenue acoustical report from Illingworth & Rodkin, Inc. (I&R)[9], see below
- Noise-reducing features of skateboarding area manufacturer incorporated into the design (e.g., "smooth" concrete, minimal joints)
- No acoustical shielding to homes along east side of the park (second story)

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[7] L_{max} – The maximum A-weighted sound level measured during a period of time.

[8] Park hours of operation from County of Santa Cruz email, received 30 July 2009.

[9] Jose Avenue Park acoustical report by Illingworth & Rodkin, pages 11-14.

Skateboarding Area Noise

The County supplied us with the 2002 I&R Jose Avenue skateboarding area report. This report noted both average (Hourly Leq) and maximum (Lmax) noise levels; the number of skaters that the firm noted in their report is similar to the number planned for the Felt Street skateboarding area. Their data is summarized as follows:

- Hourly Leq: 56 dBA at a distance of 30 feet
- Maximum noise levels as high as 75 dBA at a distance of 30 feet from the "skate pit"; noise sources included wheel-concrete noise, yelling, and wipeouts[10]

These data agree with our noise predictions for similar skateboarding area projects. We understand that the proposed Felt Street skateboarding area will be about half the size of the Jose Avenue site[11].

Construction Noise

The County Parks Department expects that construction will last about 4 months. They stated that typical construction hours will be 8:00am to 5:00pm, Monday through Friday. Construction noise mitigation falls under the purview of the County noise requirements.

The civil engineer foresees the following construction activities[12]:

- Demolition of the abandoned residence on Felt Street
- Rough grading and installation of irrigation piping
- Finish grading of the site
- Concrete work including the skateboarding area
- Construction of the bathroom building

Construction could employ common construction equipment such as a skip loader, backhoe, saws, bulldozer, or other diesel-powered equipment. These types of equipment typically produce noise levels between about 78 to 85 dBA at a distance of 50 feet.

ASSESSMENT OF NOISE ENVIRONMENT AND RECOMMENDATIONS

Measured DNL noise levels at the project property lines are exposed to noise levels that are considered to be "normally acceptable" per the County Noise Element. Therefore, no "special noise insulation requirements" are needed.

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[10] Jose Avenue Park acoustical report by Illingworth & Rodkin, pages 12.

[11] 27 May 2009 email from Bob Olson of the County to John Cahalan, Landscape Architect, received 28 May 2009.

[12] Email from Dave Vorhees of Underwood and Rosenblum, Inc., received 4 August 2009.

Skateboarding area DNL

Under the assumptions noted above, we calculate the following change in DNL at the nearest property lines due to skateboarding area activities:

Felt Street Park: Calculated Change in Future DNL with Project						
Property Line	**Nearest Neighbor**	**Approx. Distance to Nearest Neighbors**	**Calculated Skateboarding area DNL at property lines (dB)**	**DNL at nearest neighbors**	**Change in measured/calculated existing DNL due to skateboarding area (dB)**	**Calculated Future DNL including Skateboarding area (dB)**
North	Residential 1-story	65 feet	51 dB	64 dB	+0.1 dB	64 dB
East	Residential 1 & 2-story	165 feet	37 dB	50 dB	+0.1 dB	50 dB
West	Church	140 feet	48 dB	56 dB	+0.1 dB	57 dB
South	Middle School	270 feet	35 dB	48 dB	+0.2 dB	48 dB

The calculated increase in average noise levels at all four proposed Felt Street Park property lines is expected to be less than 1 dB, and is not significant. Each calculated DNL due to skateboarding area activity also falls below the 60 dB threshold for significance.

Skateboarding Area Maximum Noise Levels

Maximum noise levels from skateboarding area activity (e.g., board slams, wheel-on-concrete noise) are not calculated to be significantly louder than typically-occurring events such as cars, trucks, construction activity in the neighborhood, or dog barks as shown in the table below:

Felt Street Park: Calculated Maximum Noise Levels due to Skateboarding area at Neighbors		
Direction	**Nearest Occupied Area**	**Calculated Maximum Skateboarding Area Noise Levels (Lmax dBA)**
North	Residences – Outside first story of homes	69
East	Residences – Outside second story of homes	60
West	Church façade, north	62
South	Middle School Track area closest to skateboarding area (north property line)	56

A comparison of these values to the measured levels of onsite typically occurring noise sources such as traffic, aircraft overflights, dog barks, or home maintenance (refer to Page 5 above) shows that predicted skateboarding area noise levels are at or below the existing environmental noise sources.

During lulls in traffic or temporary cessation of other sources of environmental noise, skateboarding area noise is expected to be intermittently audible to the nearest receivers.

Construction Noise

The maximum noise level at adjacent noise-sensitive land uses will vary depending on the location of the various pieces of equipment. As stated above, construction noise mitigation is under the purview of County noise requirements (Policy 6.9.7).

Assuming typical construction equipment, we calculate the following skateboarding area construction noise levels at the nearest receivers:

Felt Street Park: Calculated Maximum Noise Levels due to Skateboarding Area Construction at Neighbors

Location(s)	Maximum Calculated Construction Noise Levels (dBA)
Residential to the north	72 to 81
Residential to the east	65 to 74
Church to the west	67 to 76
Middle School track to the south	61 to 70

At the second story of the east single-family homes for example, maximum noise levels are calculated to be as loud as 81 dB from construction approximately 65 feet away. These levels would only occur when construction activity is closest to the property line.

The project should also consider implementing a neighborhood program to educate local residents as to the schedule and duration; also, appointing a "point person" for noise inquiries from neighboring residents during construction should be considered.

* * *

Enclosures as noted

ES/es
2009 08 18 Felt Street Park Acoustical Report

APPENDIX A
FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL NOISE

This section provides background information to aid in understanding the technical aspects of this report.

Three dimensions of environmental noise are important in determining subjective response. These are:

The intensity or level of the sound
The frequency spectrum of the sound
The time-varying character of the sound

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or hertz (Hz). Most of the sounds, which we hear in the environment, do not consist of a single frequency, but of a broad band of frequencies, differing in level. The name of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands, which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into ten segments.

Many rating methods have been devised to permit comparisons of sounds having quite different spectra. Surprisingly, the simplest method correlates with human response practically as well as the more complex methods. This method consists of evaluating all of the frequencies of a sound in accordance with a weighting that progressively de-emphasizes the importance of frequency components below 1000 Hz and above 5000 Hz. This frequency weighting reflects the fact that human hearing is less sensitive at low frequencies and at extreme high frequencies relative to the mid-range.

The weighting system described above is called "A"-weighting, and the level so measured is called the "A-weighted sound level" or "A-weighted noise level." The unit of A-weighted sound level is sometimes abbreviated "dBA." In practice, the sound level is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting characteristic. All U.S. and international standard sound level meters include such a filter. Typical sound levels found in the environment and in industry are shown in Figure A-1.

Although a single sound level value may adequately describe environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise is a conglomeration of distant noise sources, which results in a relatively steady background noise having no identifiable source. These distant sources may include traffic, wind in

trees, industrial activities, etc. and are relatively constant from moment to moment. As natural forces change or as human activity follows its daily cycle, the sound level may vary slowly from hour to hour. Superimposed on this slowly varying background is a succession of identifiable noisy events of brief duration. These may include nearby activities such as single vehicle pass-bys, aircraft flyovers, etc. which cause the environmental noise level to vary from instant to instant.

To describe the time-varying character of environmental noise, statistical noise descriptors were developed. "L10" is the A-weighted sound level equaled or exceeded during 10 percent of a stated time period. The L10 is considered a good measure of the maximum sound levels caused by discrete noise events. "L50" is the A-weighted sound level that is equaled or exceeded 50 percent of a stated time period; it represents the median sound level. The "L90" is the A-weighted sound level equaled or exceeded during 90 percent of a stated time period and is used to describe the background noise.

As it is often cumbersome to quantify the noise environment with a set of statistical descriptors, a single number called the average sound level or "L_{eq}" is now widely used. The term "L_{eq}" originated from the concept of a so-called equivalent sound level which contains the same acoustical energy as a varying sound level during the same time period. In simple but accurate technical language, the L_{eq} is the average A-weighted sound level in a stated time period. The L_{eq} is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

In determining the daily measure of environmental noise, it is important to account for the different response of people to daytime and nighttime noise. During the nighttime, exterior background noise levels are generally lower than in the daytime; however, most household noise also decreases at night, thus exterior noise intrusions again become noticeable. Further, most people trying to sleep at night are more sensitive to noise. To account for human sensitivity to nighttime noise levels, a special descriptor was developed. The descriptor is called the L_{dn} (Day/Night Average Sound Level), which represents the 24-hour average sound level with a penalty for noise occurring at night. The L_{dn} computation divides the 24-hour day into two periods: daytime (7:00 am to 10:00 pm); and nighttime (10:00 pm to 7:00 am). The nighttime sound levels are assigned a 10 dB penalty prior to averaging with daytime hourly sound levels.

For highway noise environments, the average noise level during the peak hour traffic volume is approximately equal to the L_{dn}.

The effects of noise on people can be listed in three general categories:

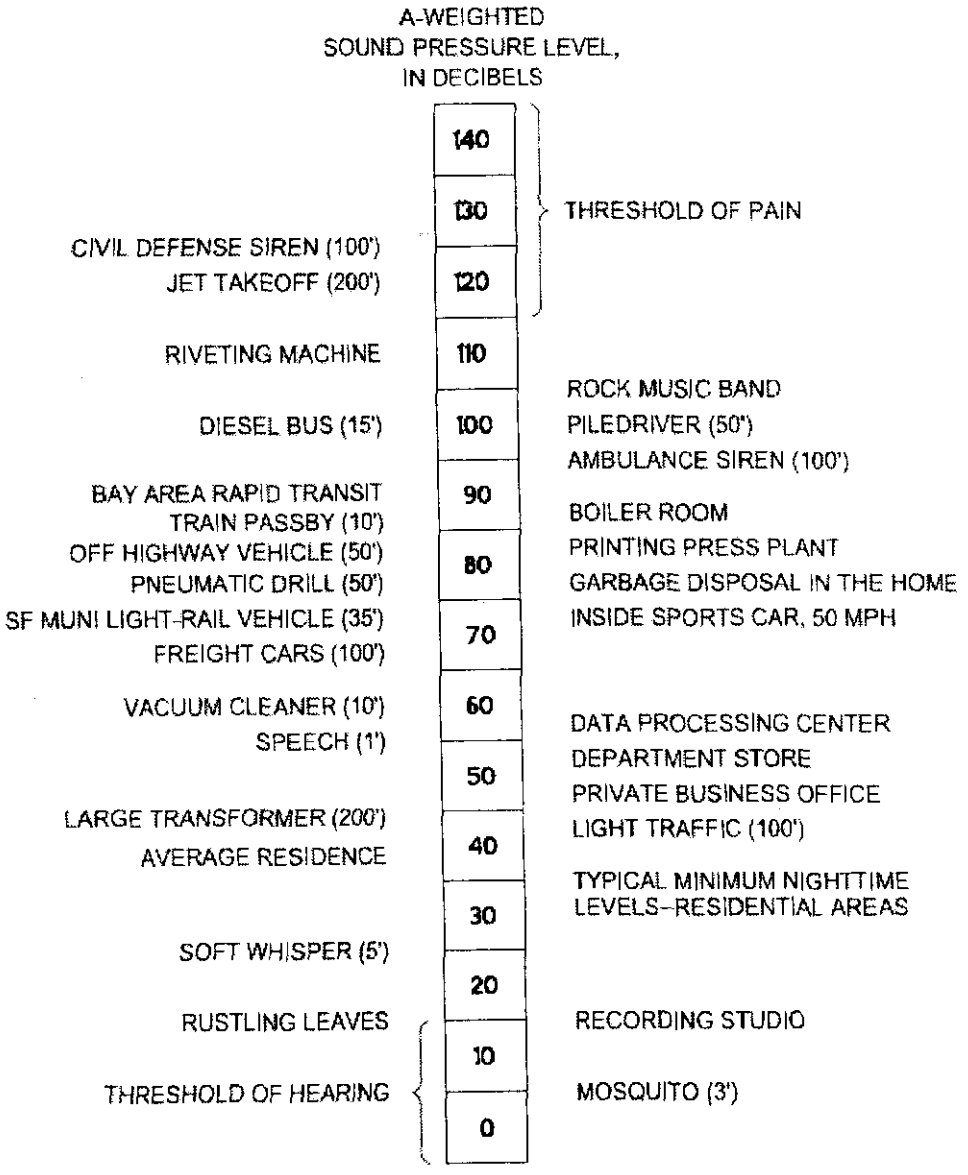
Subjective effects of annoyance, nuisance, dissatisfaction
Interference with activities such as speech, sleep, and learning
Physiological effects such as startle, hearing loss

The sound levels associated with environmental noise usually produce effects only in the first two categories. Unfortunately, there has never been a completely predictable measure for the subjective effects of noise nor of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over time.

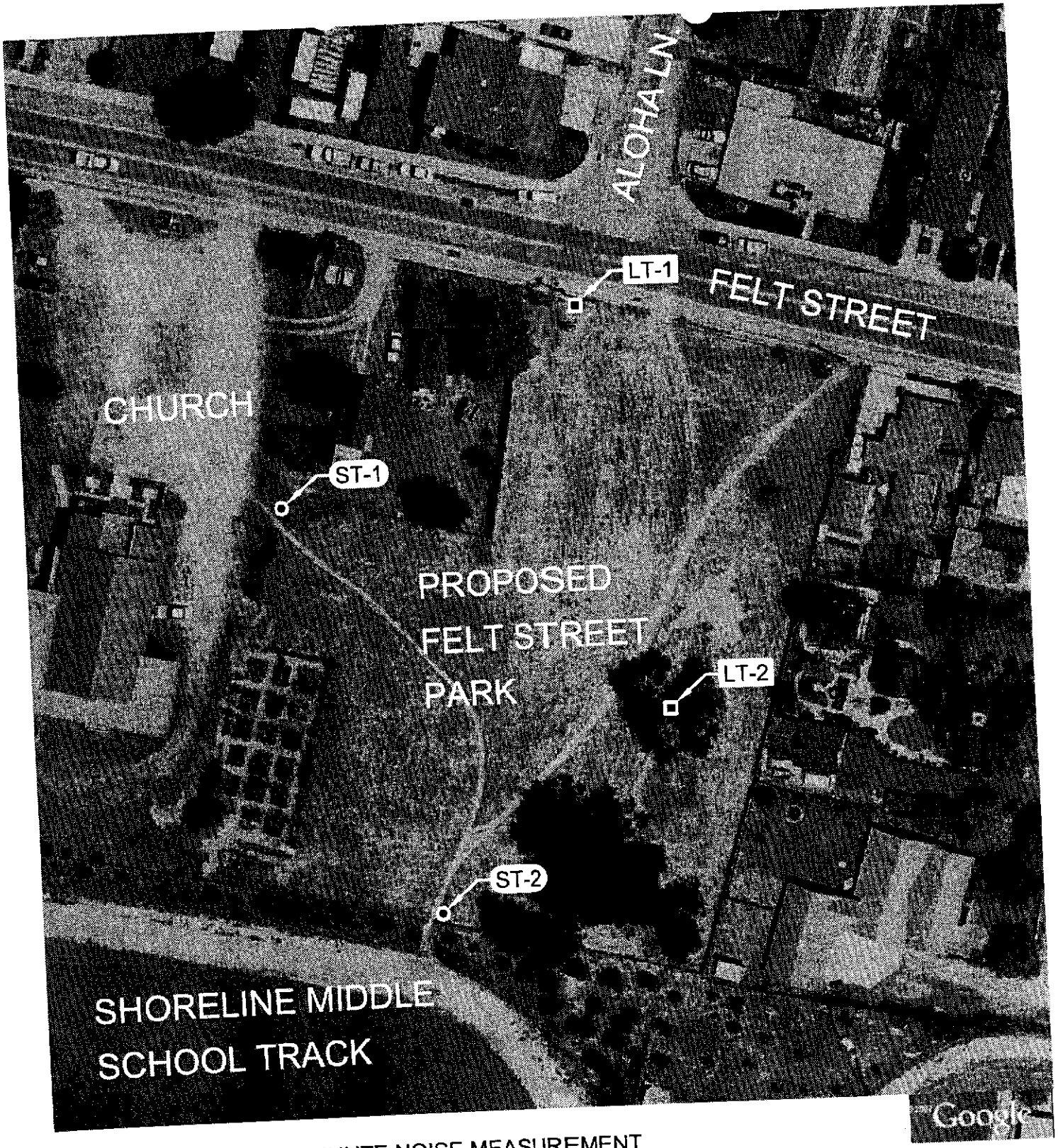
Thus, an important factor in assessing a person's subjective reaction is to compare the new noise environment to the existing noise environment. In general, the more a new noise exceeds the existing, the less acceptable the new noise will be judged.

With regard to increases in noise level, knowledge of the following relationships will be helpful in understanding the quantitative sections of this report:

Except in carefully controlled laboratory experiments, a change of only 1 dB in sound level cannot be perceived. Outside of the laboratory, a 3 dB change is considered a just-noticeable difference. A change in level of at least 5 dB is required before any noticeable change in community response would be expected. A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse community response.



ATTACHMENT 3



◉ = SHORT-TERM 15-MINUTE NOISE MEASUREMENT

▣ = LONG-TERM 48-HOUR NOISE MEASUREMENT

PROPOSED FELT STREET PARK ACOUSTICAL MEASUREMENT LOCATIONS 7/20/09–7/22/09

FIGURE 1

CSA # 09-0244

ECS 07.30.09

Charles M Salter Associates | 115/1150 Sutter Street San Francisco California 94104 Tel: 415 397 0442 Fax: 415 397 0454

ATTACHMENT 3