COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
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TOM BURNS, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: Michael Bethke c/o Slatter Construction, for United Methodist Church of S.C.

APPLICATION NO.: **05-0385**

APN: **026-122-36** (was **026-122-12 & -13)**

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: September 10, 2007

Lawrence Kasparowitz
Staff Planner

Phone: 454-2676

Date: August 15,2007

NAME: Michael Bethke
APPLICATION: 05-0385
A.P.N: 026-122-12, -13

NEGATIVE DECLARATION MITIGATIONS

1. In order to minimize impacts from accelerated erosion, prior to issuing building or grading permits the applicant shall submit a detailed erosion control plan for review and approval of Environmental Planning Staff. Plans shall indicate that the destination of excess fill is either the municipal landfill or a receiving site with valid permit.

2. In order to minimize impacts to air quality

    a. Standard dust control BMPs shall be implemented during all grading and demolition work.

    b. In order to ensure that the one hour air quality threshold for the pollutant acrolein is not exceeded during demolition and paving, prior to the issuance of the grading permit, the applicant shall modify the grading plans to include notes incorporating the construction conditions given by the Monterey Bay Unified Air Pollution Control District (MBUAPCD) as follows:

        i. All pre-1994 diesel equipment shall be retrofitted with EPA certified diesel oxidation catalysts *or* all such equipment shall be fueled with B99 diesel fuel;
        ii. Applicant shall retain receipts for purchases of catalysts or b99 diesel fuel until completion of the project:
        iii. Applicant shall allow MBUAPCD to inspect receipts and equipment throughout the project.

    Alternatively, the applicant may submit a health risk assessment to the MBUAPCD for review and approval. Any recommendations and requirements of the MBUAPCD will become conditions of constructing the project.

3. In order to ensure that there are no significant impacts on the environment from demolishing building(s) that contain lead paint and asbestos containing construction materials, prior to approval of demolition or building permits, or if no permits are issued, prior to beginning demolition, the applicant notify the MBUAPCD of the project. Applicant shall obtain approval of the demolition plan and the plan for disposing of associated waste material, as required by federal regulations (national emissions standards for asbestos) and rules of the MBUAPCD.

4. To prevent drainage discharges from carrying silt, grease, and other contaminants from paved surfaces into nearby waterways, the applicant/owner shall maintain the silt and grease traps in the storm drain system according to the following monitoring and maintenance procedures:

    a. The traps shall be inspected to determine if they need cleaning or repair prior to October 15 each year at a minimum;
    b. A brief annual report shall be prepared by the trap inspector at the conclusion of

each October inspection and submitted to the drainage section of the department of public works within 5 days of inspection. This monitoring report shall specify any repairs that have been done or that are needed to allow the trap to function adequately.

Environmental Review Initial Study

Application Number: 05-0385

Date: August 15, 2007
Staff Planner: Lawrence Kasparowitz

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Michael Bethke
c/o Slatter Construction

APN: 026-122-12 & 13

OWNER: United Methodist Church of S.C.

SUPERVISORAL DISTRICT: First

LOCATION: 2091 Seventeenth Avenue, Santa Cruz

SUMMARY PROJECT DESCRIPTION:

Proposal to demolish an existing 5,500 sq. ft. day care building and construct a 19,726 sq. ft. church to include: sanctuary, social hall with kitchen, community meeting rooms, day care center and administrative offices, with related parking and 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	____ Noise
____ 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
X Transportation/Traffic	

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

____ General Plan Amendment	____ Grading Permit
____ Land Division	____ Riparian Exception
____ Rezoning	____ Other:
__X__ Development Permit	____
____ Coastal Development Permit	____

NON-LOCAL APPROVALS

Other agencies that must issue permits or authorizations: None

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

8/16/07
Date

For: Claudia Slater
Environmental Coordinator

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS
Parcel Size: approx. 1.5 acres
Existing Land Use: church
Vegetation: minimal urban and ruderal plants
Slope in area affected by project: _X_ 0 - 30% ___ 31 – 100%
Nearby Watercourse: Monterey Bay
Distance To: approximately 1300 feet

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: none mapped
Water Supply Watershed: none mapped
Groundwater Recharge: none mapped
Timber or Mineral: none mapped
Agricultural Resource: none mapped
Biologically Sensitive Habitat: none mapped
Fire Hazard: none mapped
Floodplain: none mapped
Erosion: none mapped
Landslide: none mapped
Liquefaction: none mapped
Fault Zone: none mapped
Scenic Corridor: none mapped
Historic: none mapped
Archaeology: none mapped
Noise Constraint: none mapped
Electric Power Lines: none
Solar Access: adequate
Solar Orientation: adequate
Hazardous Materials: none

SERVICES

Fire Protection: Central Fire Protection District
School District: Live Oak
Sewage Disposal: Santa Cruz County Sanitation District
Drainage District: Zone 5
Project Access: Seventeenth Avenue
Water Supply: City of Santa Cruz Water Department

PLANNING POLICIES

Zone District: R-1-6
General Plan: R-UL
Special Designation: none

Urban Services Line:	_X_ Inside	___ Outside
Coastal Zone:	___ Inside	_X_ Outside

PROJECT SETTING AND BACKGROUND:

The project is located on the west side Seventeenth Avenue south **of** the intersection with Mattison Lane. This is within the Live Oak Planning Area.

DETAILED PROJECT DESCRIPTION:

The subject property is a 68,295 sq. **fl.** (1.57 acres) parcel. The parcel is zoned R-1-6 (Attachment 2) single –family residential. A church is allowed in any residential zone.

The applicant is proposing a 19,726 **sq. fl.** single building with both one and two story elements. The one story element is comprised of the "Loving and Learning" day care area. The two-story portion contains the sanctuary, social hall, Sunday school, administrative offices, kitchen and rest rooms.

The proposed improvements are consistent with the development standards for the zoning district, as they relate to setbacks, lot coverage and floor area ratio, however the applicant is seeking a variance to allow the building height to be 34'-I",where 28 feet is the maximum.

The proposed building has been designed with "Mission" style architecture, using tile roofs, cement plaster, arched windows and colonnades. A "bell tower" element is located near the entry and reaches 39'-2"in height. The design also includes a trellis at the rear entry to the sanctuary and a trellis at the upper level balcony.

Access to the parking area is from Seventeenth Avenue. A driveway along the southern side of the building provides access to the rear as well as approximately 20 spaces parallel to the drive. The majority of the parking is located behind the structure. A total of 72 spaces are provided. These include 47 standard spaces, 22 compact spaces and 3 disabled spaces. A Trip Generation Study has been provided (Attachment 15) which indicates that peak hour trips will result in a net increase of +11 in the AM, and + 10 in the PM (20 trips would require a traffic study).

Sufficient landscaping is provided in the parking area to meet the requirements for one tree for each five parking spaces. The narrowest planting strip provided on the perimeter of the parking area is five feet (meeting minimum standards). Trees are shown as both 15 gallon and 2 4 box sizes. Trees to be removed include; 1- 22" Willow, 2- Palms (18"and 2 4) and 1-12"Redwood. Other trees will be maintained or transplanted (see C02 – Existing Conditions and Site Demolition Plan).

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

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?	____	_____	
	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, therefore the potential for ground surface rupture is low. The project site is likely to be subject to strong seismic shaking during the life of the improvements. The improvements will be designed in accordance with the Uniform 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.

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

Following a review of mapped information and a field visit to the site, there **is** no indication that the development site is subject to a significant potential for damage caused by any of these hazards.

3. Develop land with a slope exceeding 30%?				X

There are no slopes that exceed 30% on the property.

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

Some potential for erosion exists during the construction phase of the project, however, this potential is minimal because the site is relatively flat and standard erosion controls are a required condition of the project. Prior to approval of a grading or building permit, the project must have an approved Erosion Control Plan, which will specify detailed erosion and sedimentation control measures. The plan will include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion.

5. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to property?				X

There is no indication that the development site is subject to substantial risk caused by expansive soils.

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

No septic systems are proposed. The project will connect to the Santa Cruz County Sanitation District, and the applicant will 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.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
7. Result in coastal cliff erosion?				X

This site is approximately one mile from Monterey Bay.

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.

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

This site is approximately one mile from Monterey Bay.

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 will obtain water from City of Santa Cruz Water Department and will not rely on private well water. Although the project will incrementally increase water demand, City of Santa Cruz Water Department has indicated that adequate supplies are available to serve the project (Attachment 13). The project is not located in a mapped groundwater recharge area.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
5. Degrade a public or private water supply? (Including the contribution of urban contaminants, nutrient enrichments, or other agricultural chemicals or seawater intrusion).			X	

No commercial or industrial activities are proposed that would generate a significant amount of contaminants to a public or private water supply. The parking and driveway associated with the project will incrementally contribute urban pollutants to the environment; however, the contribution will be minimal given the size of the driveway and parking area. Potential siltation from the proposed project will be mitigated through implementation of erosion control measures.

A silt and grease trap, and a plan for maintenance, will be required to reduce this impact to a less than significant level.

6. Degrade septic system functioning?			X	

There are no existing septic systems in the vicinity would be affected by the project.

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 proposed project is not located near any watercourses, and will not alter the existing overall drainage pattern of the site. Department of Public Works Drainage Section staff has reviewed and approved the proposed drainage plan.

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 Ifland Engineers, Inc. dated June 2007 have been reviewed for potential drainage impacts and accepted by the Department of Public Works (DPW) Drainage Section staff. The calculations show that the system has the capacity to detain runoff from a 25 year event while discharging the runoff a the 5 year pre-development rate. **A** drain rock bed beneath the pavement will control the runoff rate from the property. DPW staff has 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.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or Ne Impact	Not Applicable
9. Contribute to flood levels or erosion in natural watercourses by discharges of newly collected runoff?			X	

Impervious surfaces are proposed as part of the project, however the newly collected runoff will not contribute to flood levels or any erosion in natural watercourses. Surface water is collected and directed to a detention system which then allows water to flow off the property at the current rate of runoff.

10. Otherwise substantially degrade water supply or quality?		X		

A silt and grease trap, and a plan for maintenance, will be required 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

According to the California Natural Diversity Data Base (CNDDB), maintained by the California Department of Fish and Game, there are no known special status plant or animal species in the site vicinity, and there were no special status species observed in the project area.

The lack of suitable habitat and the disturbed nature of the site make it unlikely that any special status plant or animal species occur in the area.

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.

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

The proposed project does not involve any activities that would interfere with the movements or migrations of fish or wildlife, or impede use of a known wildlife nursery site.

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

The subject property is located in an urbanized area and is surrounded by existing residential development that currently generates nighttime lighting. There are no sensitive animal habitats within or adjacent to the project site.

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

Refer to C-1 and C-2 above.

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	

The project will remove the following trees : 1-22" Willow, 1-12 Redwood, 1-18" Palm, and two unidentified 12" trees. Other trees on the site will either remain *or* be transplanted. The landscape plan shows 29 new trees, **13** of which will be 2 4 box and the remainder will be 15 gallon size.

	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

This project is located in an urbanized area and does not effect any habitat conservation plan.

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

The project is far removed from any land designated as Timber Resource.

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	

This development is typical of the area, will have a transportation program and is located on **a** bus route.

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

This is an urbanized area where development would not effect minerals or energy resources.

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

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 will not directly impact any public scenic resources, as designated in the County's General Plan (1994), or obstruct any public views of these visual resources.

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

The project site is not located along a County designated scenic road or within a designated scenic resource area.

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 ridgeline?			X	

The existing visual setting is single-family residences. The proposed project will not degrade this setting given the amount of landscaping proposed and the setback of the building from the street.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
4. Create a new source of light or glare, which would adversely affect day or nighttime views in the area?			X	

The project will contribute an incremental amount of night lighting to the visual environment. However, the following project conditions will reduce this potential impact to a less than significant level. All site, building, security and landscape lighting shall be directed onto the site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Specifically

1. Landscaping, structure, fixture design or other physical means can shield light sources. Building and security lighting shall be integrated into the building design.

2. All lighted parking and circulation area shall utilize low-rise light standards or light fixtures attached to the building. Light standards are allowed to a maximum height of fifteen feet.

3. Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.

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 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 structure on the property is not designated as a historic resource on any federal, State or local inventory.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than significant Or No Impact	Not Applicable
2. Cause an adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines 15064.5?			X	

No archeological resources have been identified in the project area. Pursuant to County Code Section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, any human remains of any age, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, 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	

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	

A review of the GIS for the County of Santa Cruz revealed that no paleontological resource or site is located on this property.

	Significant Or Potentially Significant Impact	Less tbro Significant with Mitigation Incorporation	Less than Significant Or No Impact	not Applicable

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

The project will not involve transportation, storage, use of disposal of hazardous material.

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 July **12,** 2005 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

There is no airport located within two miles of the project site.

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

There are no electrical transmission lines located near the project site.

5. Create **a** potential fire hazard?			X	

The project design incorporates all applicable fire safety code requirements and will include fire protection devices as required by the local fire agency.

	Significant O. Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than significant Or No Impact	Not Applicable
6. Release bio-engineered organisms or chemicals into the air outside of project buildings?				X

The project program is for a church and child care facility. No chemicals or organisms will be released into the air.

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 project will create a small incremental increase in traffic on nearby roads and intersections. However, given the small number of new trips created by the project (+132 weekday, +110 Sundays-regular, +172 Sundays-special occasions), this increase is less than significant. Further, the increase will not cause the Level of Service at any nearby intersection to drop below Level of Service D.

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

The project meets the code requirements for the required number of parking spaces and therefore new parking demand will be accommodated on site.

3. Increase hazards to motorists, bicyclists, or pedestrians?				X

The proposed project will comply with current road requirements to prevent potential hazards **to** motorists, bicyclists, and/or pedestrians.

	Significant Or Potentially Significant Impact	Less thno Significant with Mitigation Incorporation	Less than Significant Or NO Impact	Not Applicable
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	

According to Jack Sohriakoff / Department of Public Works, the proposed project will not reduce operations to a level of service below D (Attachment **16).**

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	

The project will create an incremental increase in the existing noise environment. However, this increase will be small, and will be similar in character to noise generated by the surrounding existing uses.

2. Expose people to noise levels in excess of standards established in the General Plan, or applicable standards of other agencies?			X	

Per County policy, average hourly noise levels shall not exceed the General Plan threshold of 50 **Leq** during the day and 45 **Leq** during the nighttime. Impulsive noise levels shall not exceed 65 db during the day or 60 db at night.

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

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

J. Air Quality

Does the project have the potential to:
(Where available, the significance criteria established by the MBUAPCD may be relied upon to make the following determinations).

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 will be generated by the project there is no indication that new emissions of VOCs or NOx will exceed Monterey Bay Unified Air Pollution Control District (MBUAPCD) thresholds for these pollutants and therefore there will 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. However, standard dust control best management practices, such as periodic watering, will be implemented during construction to reduce impacts to a **less** than significant level.

2. Conflict with or obstruct implementation of an adopted air quality plan?	____	____	X	____

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

3. Expose sensitive receptors to substantial pollutant concentrations?	____	____	____	X

The proposed project **is** for a church and child care facility. Neither will expose sensitive receptors to substantial pollutant concentrations.

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

The proposed project is for a church and child care facility. Neither will create objectionable odors which could affect substantial numbers of people.

K. Public Services and Utilities

Does the project have the potential to:

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
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	
b. Police protection?			X	
c. Schools?				X
d. Parks or other recreational activities?				X
e. Other public facilities; including the maintenance of roads?			**X**	

While the project represents an incremental contribution to the need for services, the increase will be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency or California Department of Forestry, as applicable, and school, park, and transportation fees to be paid by the applicant will be used to offset the incremental increase in demand for school and recreational facilities and public roads.

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

A drainage analysis of the project prepared by Ifland Engineers, dated June 2007. 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 **11).**

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	

The project will connect to an existing municipal water supply. City of Santa Cruz Water Department has determined that adequate supplies are available to serve the project (Attachment 13).

Sewer service is available to serve the project, as reflected in the attached letter from the Santa Cruz County Sanitation District (Attachment 14).

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

The project's wastewater flows will 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, assuring conformity with fire protection standards that include minimum requirements for water supply for fire protection.

	Significant Or Potentially Significant Impact	Less tbro Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
6. Result in inadequate access for fire protection?			X	

The project's driveway access and building location meets the local fire department standards.

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

The project will make an incremental contribution to the reduced capacity of regional landfills. However, this contribution will be relatively small and will be of similar magnitude to that created by existing land uses around the project.

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

The proposed project is for a church and child care facility. Neither will create substantial solid waste.

L. Land **Use,** **a** Housing

)oes the project ve the potential to:

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

The proposed pr je t does not conflict with any policies adopted for the purpose of avoiding or ti an environmental t

2. Conflict with any Cc Code lati p ed t l purpose of avoiding or ti ga an environmental ffe				X

The ropos l p j does not conflict v regulations adopted for the purpose of effect.

	Significant Or Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Or No Impact	Not Applicable
3. Physically divide an established community?				X

The project will not include any element that will physically divide an established community.

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 project does not 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 significant 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 will not entail a net gain or loss in housing units.

M. Non-Local Approvals

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

N. 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

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	X	
Riparian Pre-Site			X
Septic Lot Check			X
Other:			
Trip Generation Analysis	X	X	
Drainage Analysis	X	X	
Parking Demand Study	X	X	

Attachments:

1. Location Map
2. Zoning Map
3. General Plan Map
4. Assessors Parcel Map
5. Architectural Plans prepared by William Bagnall, Architect, dated October 31, 2006.
6. Preliminary Improvement Plans prepared by Ifland Engineers dated November 6, 2006.
7. Landscape Plan prepared by Greg Lewis, Landscape Architect, dated October 24, 2006.
8. Geotechnical Review Letter prepared by Kevin Crawford, Senior Civil Engineer, dated July 7, 2005.
9. Geotechnical Investigation (Conclusions and Recommendations) prepared by Tharp & Associates, dated February 11, 2005.
10. Drainage calculations prepared by Ifland Engineers, dated June 2007.
11. Discretionary Application comments, dated July 18, 2007.
12. Letter from City of Santa Cruz Water Department, dated July 20, 2007.
13. Memo from Santa Cruz County Sanitation District, dated July 19, 2005.
14. Trip Generation Estimates (Conclusions and Recommendations) prepared by Pinnacle Traffic Engineering dated June 20, 2007.
15. E-mails regarding Traffic Study, date June 7, 2007 and Level of Service, dated July 18, 2007 from Jack Sohriakoff, Senior Civil Engineer.
16. Existing Usage Survey, prepared by United Methodist Church of Santa Cruz (no date).
17. Current Peak Parking per Time Slot, prepared by United Methodist Church of Santa Cruz, dated 4/2007.
18. Memo from Lawrence Kasparowitz, Urban Designer, dated November 28, 2006.
19. Construction Impact Assessment/Tree Protection Plan (summary), prepared by James P. Allen & Associates, dated May 24, 2007.

Location Map

Legend

APN 026-122-36

Assessors Parcels

Streets

State Highways

N

W E

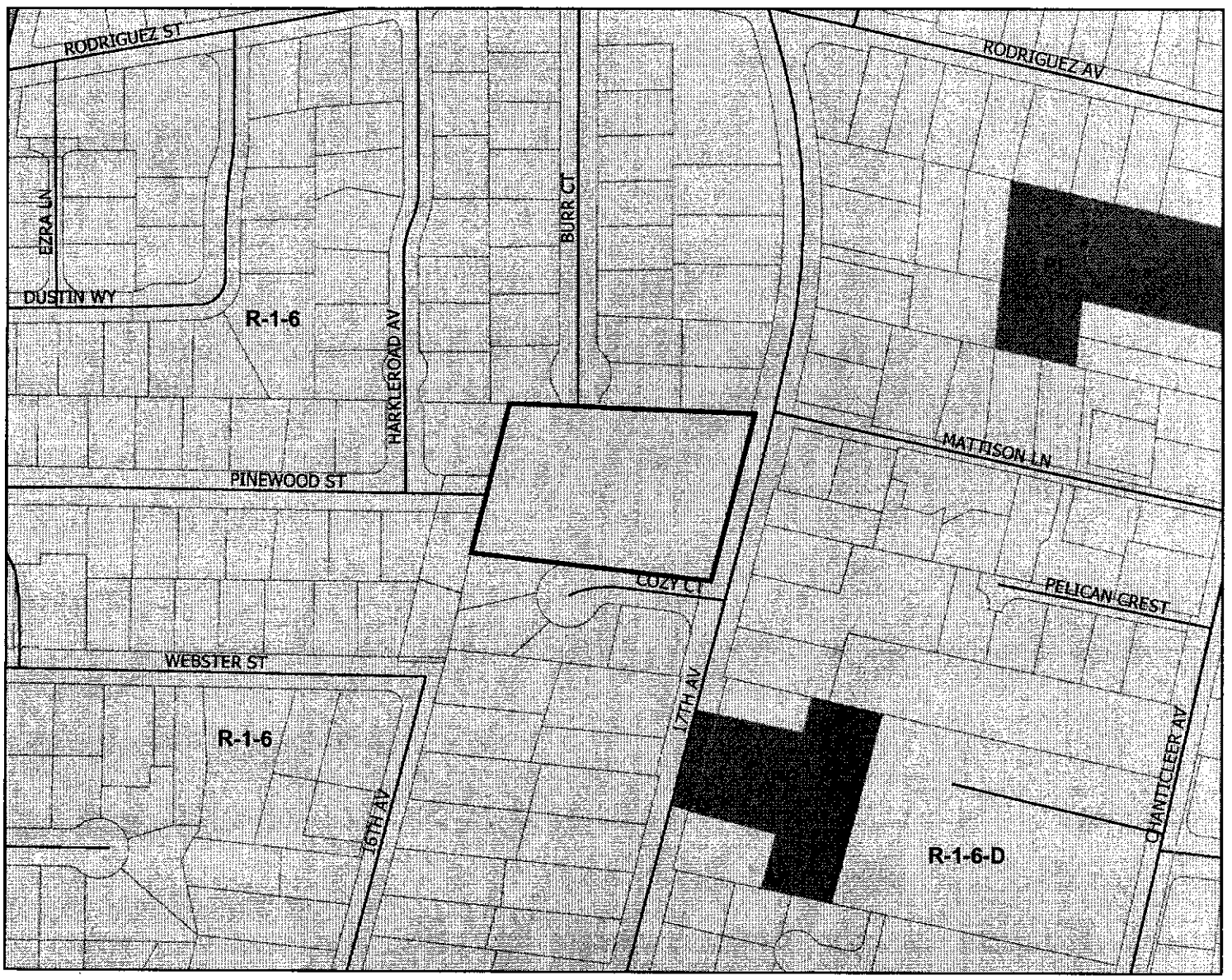
Environmental Review Inital Study

ATTACHMENT 1

APPLICATION 05-0385

Map Created by
County of Santa Cruz
Planning Department
June 2005

Zoning Map



Legend

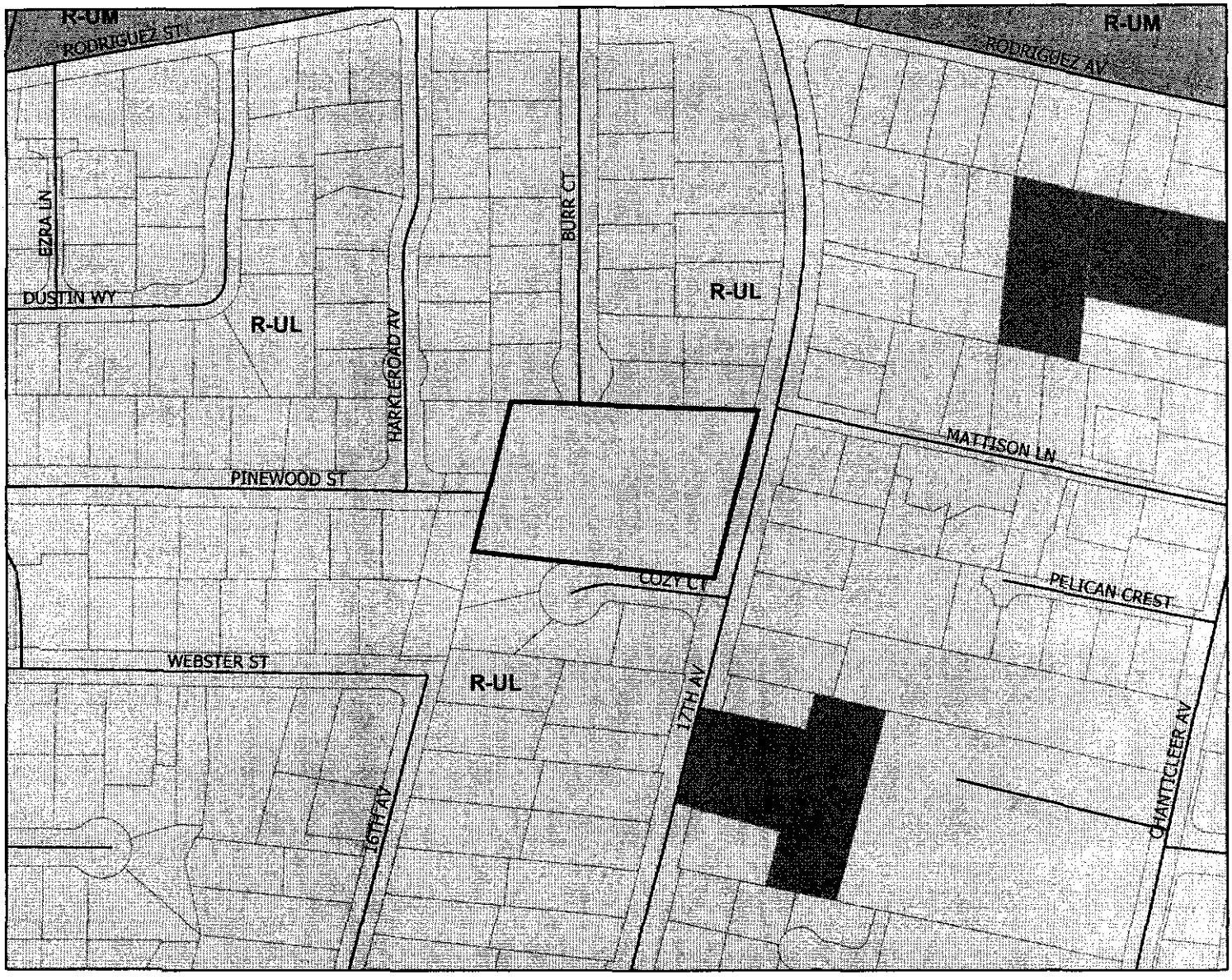
- APN 026-122-36
- Assessors Parcels
- Streets
- RESIDENTIAL-SINGLE FAMILY (R-1)
- PUBLIC FACILITY (PF)

N
W E

Environmental Review Inital Study
ATTACHMENT 2
APPLICATION 05-0385

Map Created by
County of Santa Cruz
Planning Department
June 2005

General Plan Designation Map



0 195 390 780 1,170 1,560 Feet

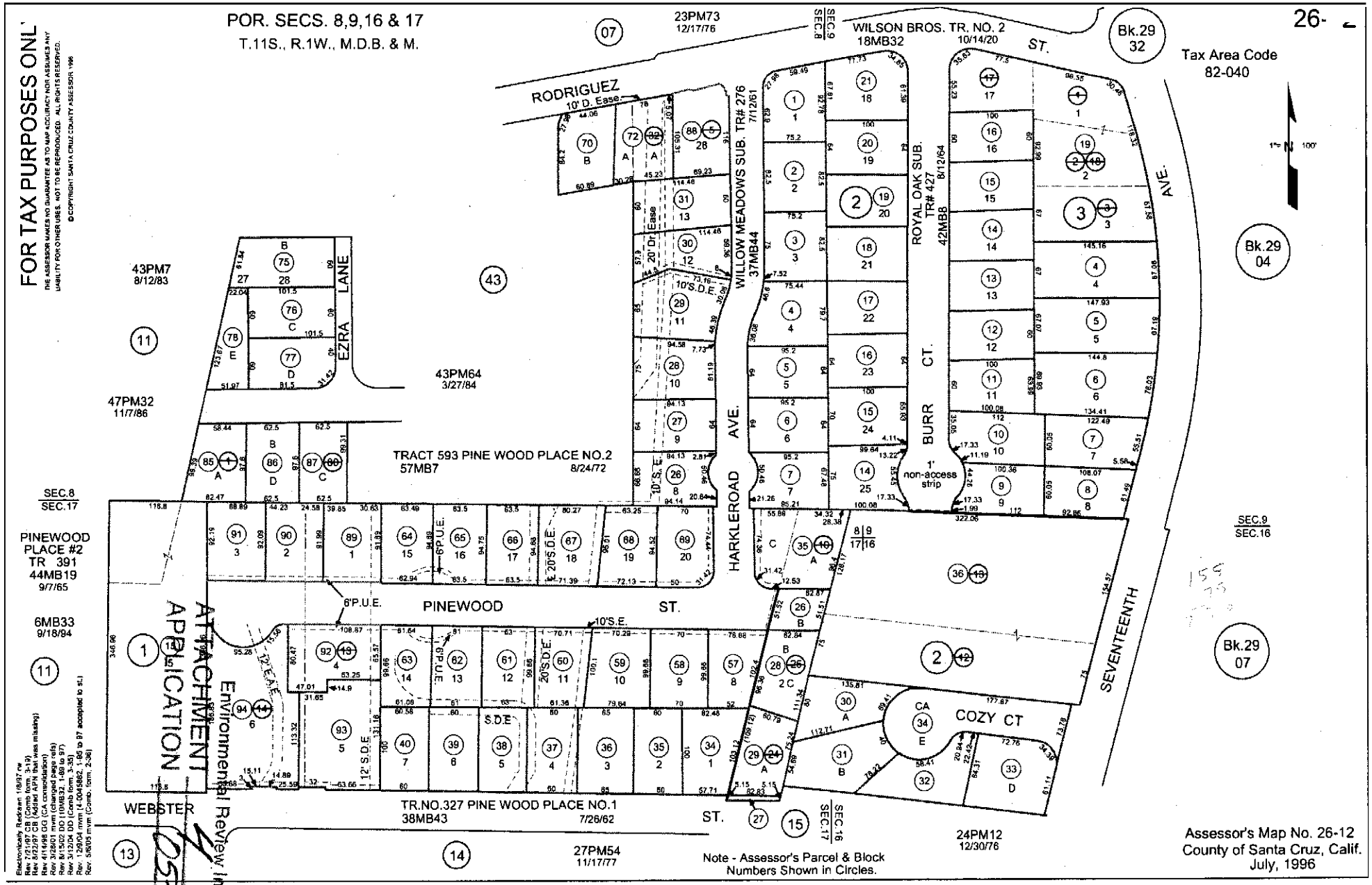
Legend

- APN 026-122-36
- Assessors Parcels
- **Streets**
- Residential - Urban **Low** Density (R-UL)
- Residential - Urban Medium Density (R-UM)
- Public Facilites (P)

N
W E

Environmental Review Inital Study
ATTACHMENT 3
APPLICATION 05-0385

Map Created by
County **of** Santa Cruz
Planning Department
June 2005


FOR TAX PURPOSES ONL
THE ASSESSOR MAKES NO GUARANTEE AS TO MAP ACCURACY NOR ASSUMES ANY LIABILITY FOR OTHER USES. NOT TO BE REPRODUCED. ALL RIGHTS RESERVED.
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POR. SECS. 8,9,16 & 17
T.11S., R.1W., M.D.B. & M.
23PM73
12/17/76
WILSON BROS. TR. NO. 2
18MB32
10/14/20
Bk.29
32
26-
Tax Area Code
82-040
RODRIGUEZ
10' D. Ease.
WILLOW MEADOWS SUB. TR# 276
37MB44
7/12/61
ROYAL OAK SUB.
TR# 427
42MB8
8/12/64
Bk.29
04
43PM7
8/12/83
EZRA LANE
43PM64
3/27/84
47PM32
11/7/86
TRACT 593 PINE WOOD PLACE NO.2
57MB7
8/24/72
HARKLEROAD AVE.
BURR CT.
1' non-access strip
SEVENTEENTH AVE.
SEC.8
SEC.17
SEC.9
SEC.16
PINEWOOD PLACE #2
TR 391
44MB19
9/7/65
6MB33
9/18/94
PINEWOOD ST.
6'P.U.E.
10'S.E.
20'S.D.E.
12'S.D.E.
S.D.E.
COZY CT
WEBSTER ST.
TR.NO.327 PINE WOOD PLACE NO.1
38MB43
7/26/62
27PM54
11/17/77
24PM12
12/30/76
Bk.29
07
ATTACHMENT 1
APPLICATION
Environmental Review Initial Study
EA 0385
Note - Assessor's Parcel & Block Numbers Shown in Circles.
Assessor's Map No. 26-12
County of Santa Cruz, Calif.
July, 1996

WILLIAM S. BAGNALL ARCHITECTS INC.

ARCHITECTURE & PLANNING

125 Mission Street, Santa Cruz, California (831) 426-4877

UNITED METHODIST CHURCH OF SANTA CRUZ

2091 17TH AVENUE SANTA CRUZ CA

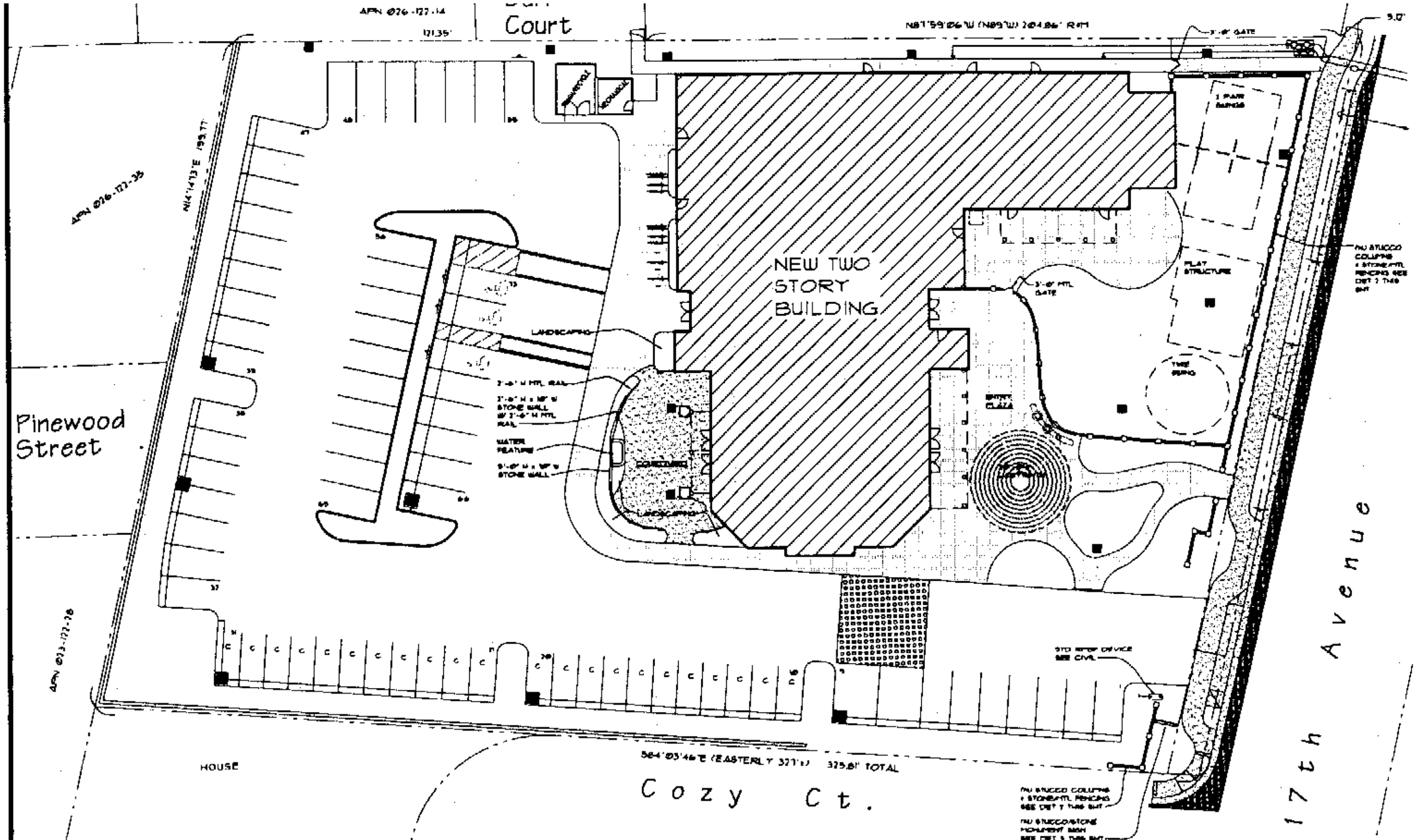
PROJECT DATA / VICINITY MAP / SITE PLAN

DATE 7/23/01

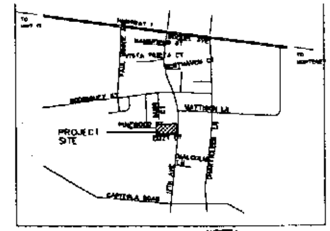
JOB 06109

REVISIONS

SHEET A0 OF



PROPOSED SITE PLAN



VICINITY MAP

SCALE: N.T.S.

PROJECT DATA

APN:	026-122-036
CONSTRUCTION TYPE:	TYPE V, 1 HOUR FIRESPRINKLERED
ZONING:	R-1-6, SINGLE FAMILY RESIDENTIAL
OCCUPANCY:	A2.1, B
SITE AREA:	68,239 sf 1.57 ACRES

(E) BUILDING TO BE REMOVED:	5,500 sf
PROPOSED FIRST FLR AREA:	12,868 sf
PROPOSED SECOND FLR AREA:	6,858 sf
TOTAL PROPOSED AREA:	19,726 sf
SITE COVERAGE:	19%
SANCTUARY AREA:	2,821 sf

PARKING LAYOUT
48 STANDARD
22 COMPACT
3 BARRIER FREE
73 TOTAL
PARKING REQUIRED
SANCTUARY: 0.25 SPACES PER SEAT
175 SEATS x 0.25 = 44 SPACES

PROJECT DESCRIPTION:
DEMO EXISTING CHURCH AND RECONSTRUCT NEW CHURCH FACILITY TO INCLUDE SANCTUARY, SOCIAL HALL WITH KITCHEN, COMMUNITY MEETING ROOMS, DAY-CARE CENTER AND ADMINISTRATIVE OFFICES WITH RELATED PARKING AND SITE IMPROVEMENTS

APPLICABLE CODES AND REGULATIONS:
1997 UBC, AS AMENDED BY STATE OF CALIFORNIA FOR 2001 CALIFORNIA BUILDING CODE (CBC)
2000 UFC, AS AMENDED BY STATE OF CALIFORNIA FOR 2001 CALIFORNIA FIRE CODE (CFC)
2000 UPC, AS AMENDED BY STATE OF CALIFORNIA FOR 2001 CALIFORNIA PLUMBING CODE (CPC)
2000 UMC, AS AMENDED BY STATE OF CALIFORNIA FOR 2001 CALIFORNIA MECHANICAL CODE (CMC)
2002 NEC, AS AMENDED BY STATE OF CALIFORNIA FOR 2004 CALIFORNIA ELECTRICAL CODE (CEC)
2005 CALIFORNIA ENERGY CODE

CALIFORNIA BUILDING AND FIRE CODES (2001) AND THE CENTRAL FIRE DEPARTMENT AMENDMENTS TO THE CALIFORNIA BUILDING AND FIRE CODES (2001)

ALL OTHER APPLICABLE STATE LAWS OR REGULATIONS NOTHING IN THESE PLANS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

SHEET INDEX

ARCHITECTURAL

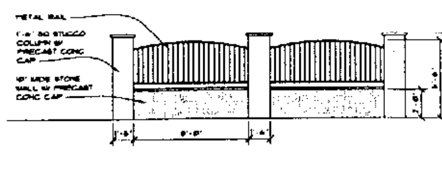
A-0	SITE PLAN / PROJECT DATA / VICINITY MAP
A-1	FIRST FLOOR PLAN
A-2	SECOND FLOOR PLAN
A-3	UPPER ROOF PLAN
A-4	BUILDING ELEVATIONS
A-5	BUILDING ELEVATIONS

CIVIL

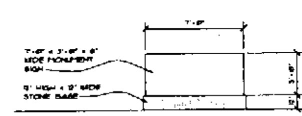
C01	SITE PLAN/GENERAL NOTES + ABBREVIATIONS
C02	EXISTING CONDITIONS/SITE DEMOLITION PLAN
C03	SITE GRADING AND DRAINAGE PLAN
C04	SITE UTILITY PLAN
C05	CONSTRUCTION DETAILS
EC01	EROSION CONTROL PLAN
EC02	EROSION CONTROL NOTES + DETAILS

LANDSCAPE

L1	PRELIMINARY LANDSCAPE PLAN



FENCE ELEVATION (2)



MONUMENT SIGN (3)

PROJECT TEAM

ARCHITECT	WM. BAGNALL ARCHITECTS, INC. 125 MISSION STREET SANTA CRUZ, CALIFORNIA 95060 (831) 426-4877 FAX 426-4877 PETER BAGNALL	GEOTECHNICAL ENGINEER	THARP + ASSOCIATES, INC. 341 SPRECKELS DRIVE APTOS, CA 95003 [illegible] DON THARP
OWNER	UNITED METHODIST CHURCH OF SANTA CRUZ 250 CALIFORNIA ST. SANTA CRUZ, CA 95060 [illegible] REV. MICHAEL LOVE, PASTOR	LANDSCAPE ARCHITECT	GREGORY LEWIS LANDSCAPE ARCHITECT 736 PARK WAY SANTA CRUZ, CA 95060 831/479-4747 [illegible] FAX GREG LEWIS, L.A.
STRUCTURAL AND CIVIL ENGINEERS	PLAND ENGINEERS, INC. [illegible] WATER STREET, SUITE 2 SANTA CRUZ, CA 95062 [illegible] FAX DAVID HENRICHSEN, C.E. JEFF MARTIN	GENERAL CONTRACTOR AND PROJECT MANAGER	SLATTER CONSTRUCTION, INC. [illegible] SANTA CRUZ, CA 95060 831/479-5428 831/479-1406 FAX MICHAEL BETHKE, AIOP

Environmental Review Inital Study

ATTACHMENT 5, 1 of 6

APPLICATION 05-0385

Peter Bagnall William S. Bagnall Architects 7/23/2001 1:31 PM 2609PL.dwg

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4877

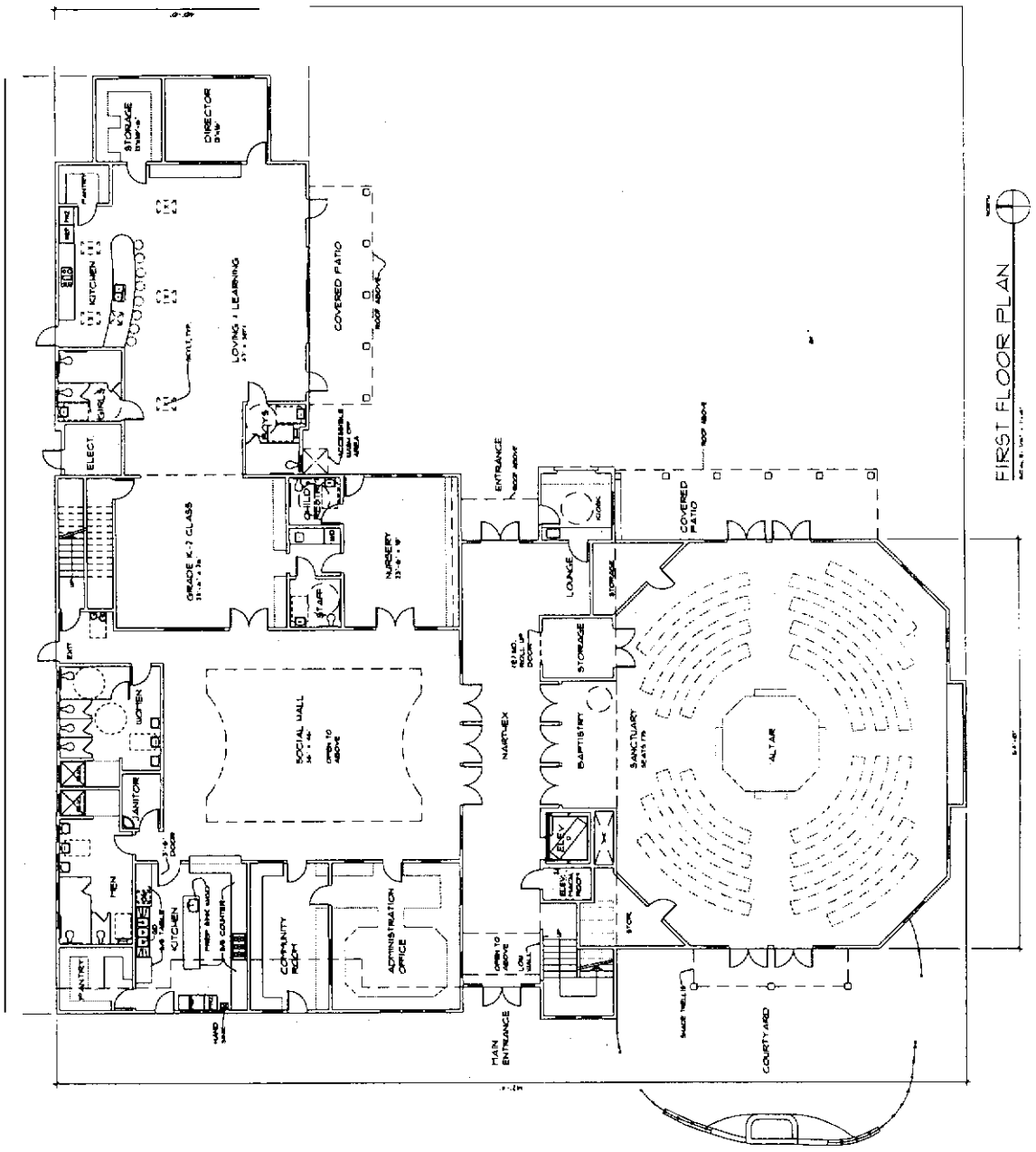
UNITED METHODIST CHURCH
OF SANTA CRUZ
2081 17TH AVENUE SANTA CRUZ, CA.

FIRST FLOOR PLAN

DATE 1/23/01
JOB 9606

REVISIONS

SHEET A-1 OF

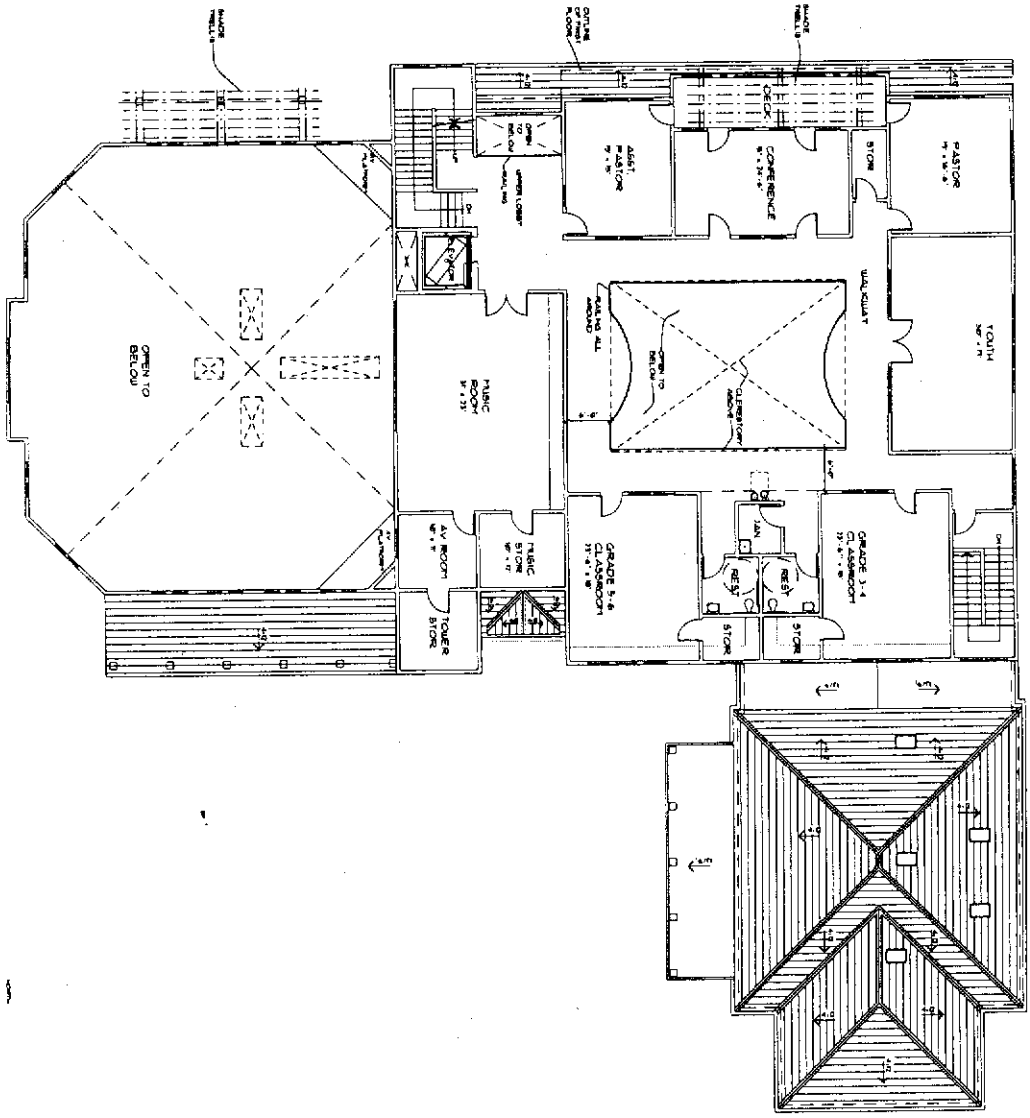


Environmental Review Init Study

ATTACHMENT R6
APPLICATION 05-0 385

Peter Bagnall William S. Bagnall Architects 1/23/2001 1:31 PM 0609PL.dwg

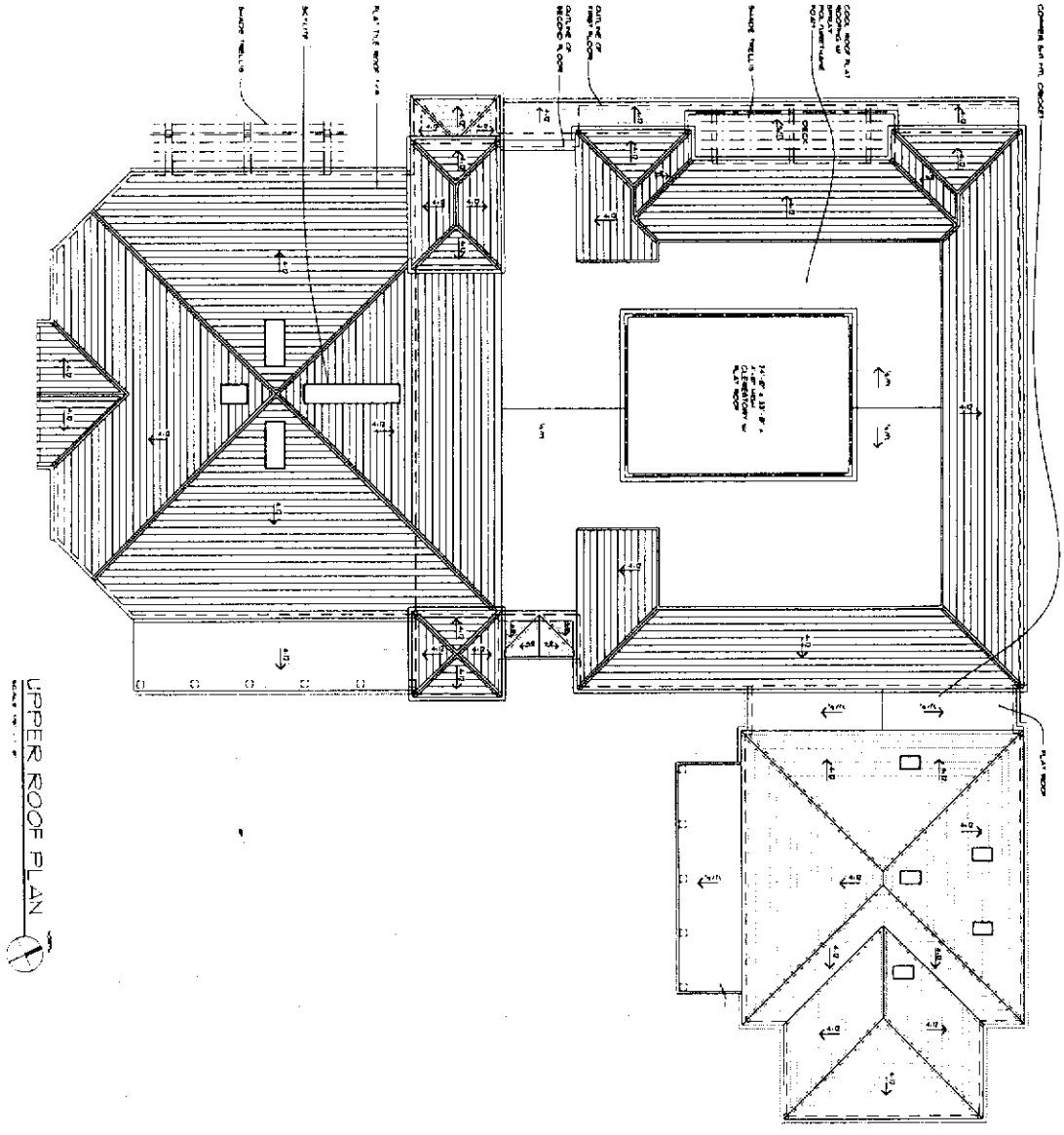
ATTACHMENTS 3 & 4
APPLICATION 05-0385
Environmental Review Initial Study



SECOND FLOOR PLAN

SHEET OF A-2	REVISIONS	DATE: 1/23/01 JOB 0629	UNITED METHODIST CHURCH OF SANTA CRUZ 2001 17TH AVENUE SANTA CRUZ CA SECOND FLOOR PLAN	WILLIAM S. BAGNALL ARCHITECTS INC. AMERICAN INSTITUTE OF ARCHITECTS ARCHITECTURE & PLANNING 125 Mission Street, Santa Cruz California (831) 426-4977

ATTACHMENT 5
APPLICATION 05-0385
Environmental Review Initial Study



SHEET	REVISIONS	JOB	DATE
A-1.0		0609	7/23/07

UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA
UPPER ROOF PLAN

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

EXTERIOR ELEVATIONS

UNITED METHODIST CHURCH
OF SANTA CRUZ
2231 17TH AVENUE SANTA CRUZ CA

DATE 10/24/01
JOB NO. 0109A

REVISIONS

SHEET A-4.1 OF

NORTH ELEVATION

SOUTH ELEVATION

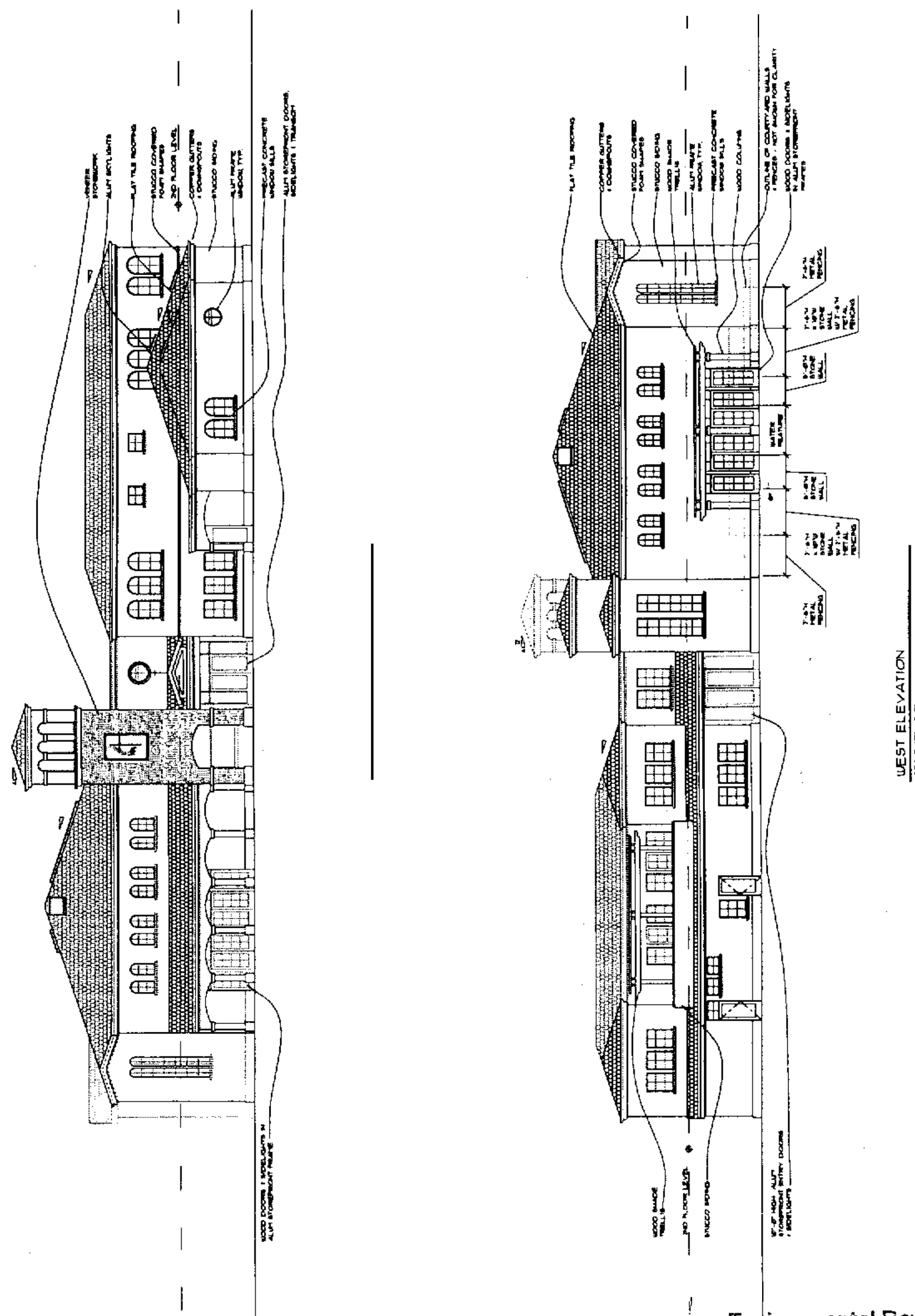
Environmental Review Initial Study
ATTACHMENT 5, 5 of 6
APPLICATION 05-0385

Peter Bagnall, William S. Bagnall Architects 7/23/2001 1:31 PM 0609PL.dwg

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4877

UNITED METHODIST CHURCH OF SANTA CRUZ
EXTERIOR ELEVATIONS

SHEET A-4.2



Environmental Review Inital Study
ATTACHMENT 5, 6 of 6
APPLICATION 05-0385

Peter Bagnall William S. Bagnall Architects 1/23/2001 1:31 PM 0609PL.dwg

Abbreviations

Benchmark

THE BENCHMARK FOR THIS SURVEY IS SANTA CRUZ COUNTY BENCHMARK #17, WHICH IS A STANDARD BRASS DISC STAMPED "C.H." LOCATED ON THE NORTH SIDE OF SOQUEL AVE AND THE INTERSECTION OF SOQUEL AVENUE & 17TH AVENUE.

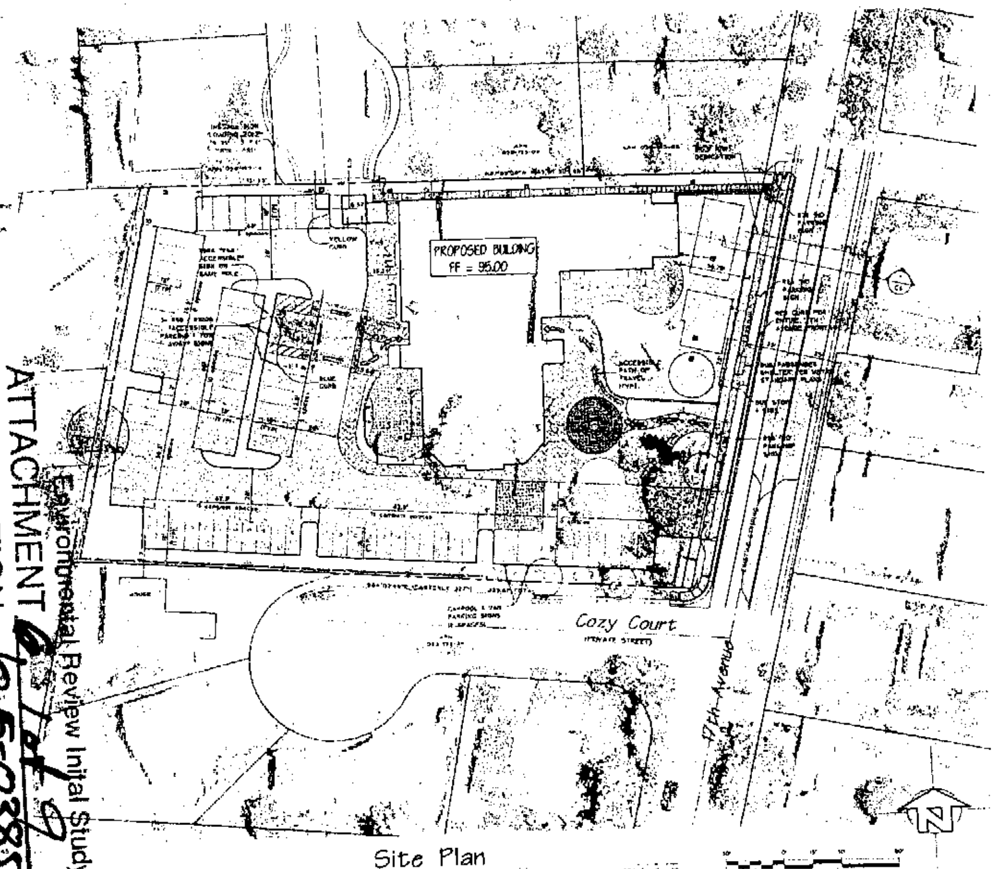
BENCHMARK ELEVATION = 95.619' NGVD '29

Basis of Bearings

BEARINGS AND DISTANCES SHOWN ARE GROUND. DISTANCES (NOT GRID) UNLESS OTHERWISE NOTED.

BASIS OF BEARINGS = N 76°31'36.45" W

General Notes



Site Plan

Environmental Review Inital Study
ATTACHMENT 6, 1 of 9
APPLICATION 05-0385

Location Map

Project Data

Owner

United Methodist Church
2091 17th Avenue
Santa Cruz, CA 95062

Existing Zoning

R-1-6

Existing Use

026-122-15 Church
026-122-12 Single Residential

Proposed Use

026-122-36 Church

Water Supply

CITY OF SANTA CRUZ

Sewer Disposal

SANTA CRUZ COUNTY SANITATION DISTRICT

Total Area of Site

68,294.67 ± S.F. / 1.57 ± ACRES

Index of Sheets

Sheet	Description
C01	SITE PLAN, GENERAL NOTES & ABBREVIATIONS
C02	EXISTING CONDITIONS / SITE DEMOLITION PLAN
C03	SITE GRADING AND DRAINAGE PLAN
C04	SITE UTILITY PLAN
C05	CONSTRUCTION DETAILS
C06	STORM DRAIN DETENTION X-SECTIONS & CALCS
C07	DETENTION/RETENTION DRAINAGE SYSTEM
EC01	EROSION CONTROL PLAN
EC02	EROSION CONTROL NOTES & DETAILS

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA

Site Plan, General Notes & Abbreviations

DATE
JOB
REVISIONS

SHEET
C01

Existing Impervious Surfaces

BUILDINGS, SHEDS & ROOFS	.	6,764 ± SQUARE FEET
CONC. DRIVEWAY, WALKWAYS & STEPS	.	1,500 ± SQUARE FEET
CONCRETE PATIO & COVERED DECKS	.	2,431 ± SQUARE FEET
ASPHALT CONCRETE PAVEMENT	.	15,331 ± SQUARE FEET
TOTAL	.	27,006 ± SQUARE FEET

Notes

1. TOPOGRAPHIC INFORMATION PROVIDED BY BART IFLAND AND ASSOCIATES. UTILITY INFORMATION SHOWN HEREON REFLECTS EVIDENCE OF UTILITIES FOUND ON THE SURFACE ONLY AND DOES NOT INCLUDE ANY UNDERGROUND UTILITIES WITHIN THE PROJECT BOUNDARY. CONTRACTOR SHALL USE CAUTION DURING DEMOLITION OPERATIONS AND SHALL REPAIR ANY UTILITIES DAMAGED DURING DEMOLITION THAT ARE TO REMAIN IN USE FOLLOWING CONSTRUCTION OF THE NEW BUILDING AND SITE IMPROVEMENTS.

2. EXISTING UNDERGROUND UTILITIES NOT REMAINING IN USE SHALL BE ABANDONED IN PLACE IF THEIR LOCATION DOES NOT CONFLICT WITH THE NEW IMPROVEMENTS. WHERE CONFLICTS MAY OCCUR THE EXISTING UTILITIES SHALL BE REMOVED AND ALL PIPE ENDS CAPPED AND SEALED.

3. EXISTING WATER SERVICES SHALL BE SHUT OFF PRIOR TO BEGINNING DEMOLITION OPERATIONS.

4. CONTRACTOR SHALL NOTIFY THE COUNTY OF SANTA CRUZ A MINIMUM OF 48 HOURS PRIOR TO BEGINNING DEMOLITION OPERATIONS. NO TRACKING ONTO PUBLIC STREETS SHALL BE PERMITTED.

5. CONTRACTOR SHALL MAINTAIN A WATER TRUCK ON SITE AND MAINTAIN PROPER DUST CONTROL AT ALL TIMES DURING DEMOLITION OPERATIONS.

Note:

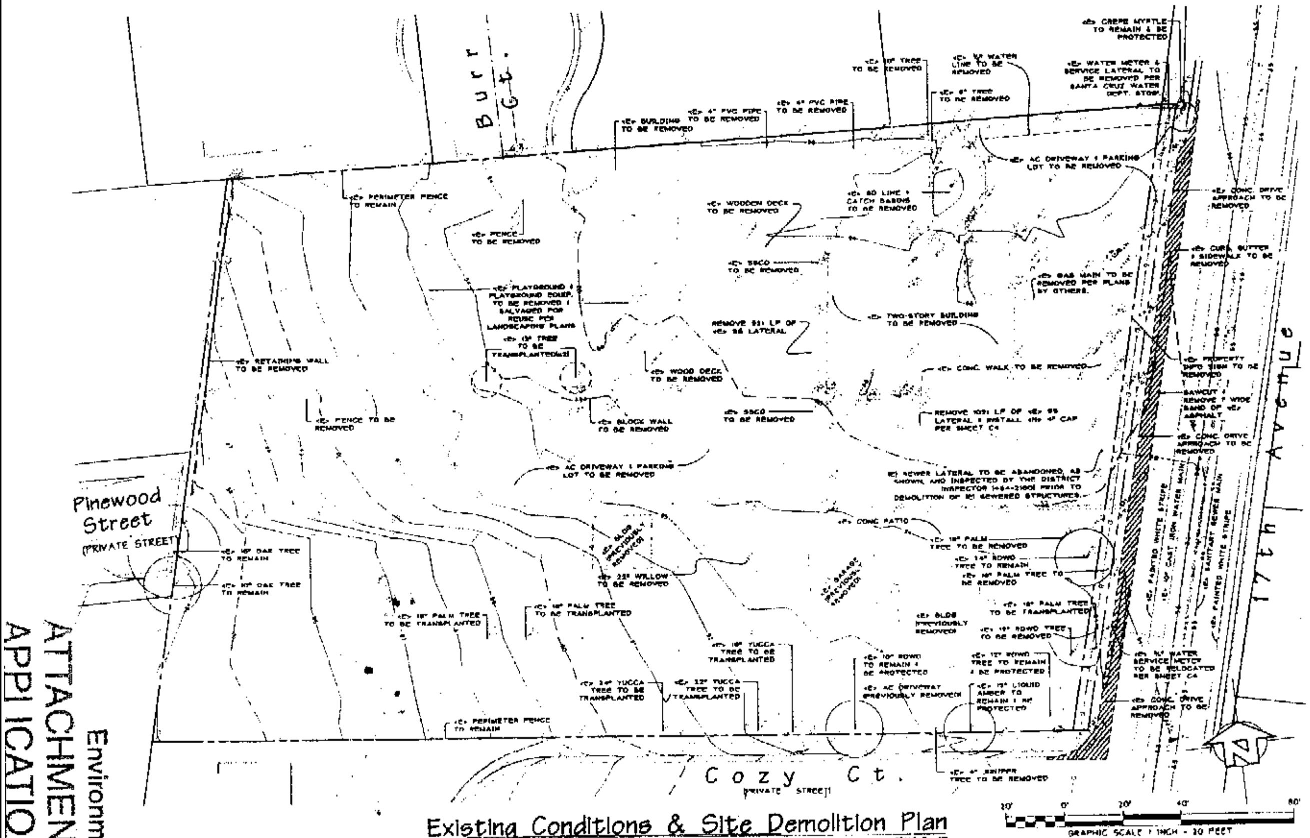
THE BOUNDARY AND/OR TOPOGRAPHIC DATA SHOWN HEREON WAS PROVIDED TO IFLAND ENGINEERS, INC. BY BART IFLAND & ASSOCIATES AND IS BASED UPON A FIELD SURVEY DATED [illegible]

WHILE IFLAND ENGINEERS HAS MADE A SITE VISIT TO FIELD CHECK THE DATA PROVIDED, WE ASSUME NO RESPONSIBILITY FOR THE ACCURACY, COMPLETENESS AND SUFFICIENCY OF THE BOUNDARY AND/OR TOPOGRAPHIC DATA

Note:

ALL EXISTING TREES THAT ARE TO REMAIN SHALL ALSO BE PROTECTED AS PER SANTA CRUZ COUNTY RECOMMENDATIONS.

ALL BUILDING DEMOLITION TO BE COMPLETED UNDER SEPARATE PERMIT.



Existing Conditions & Site Demolition Plan

Building Demolition Notes

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz California (831) 426-4977

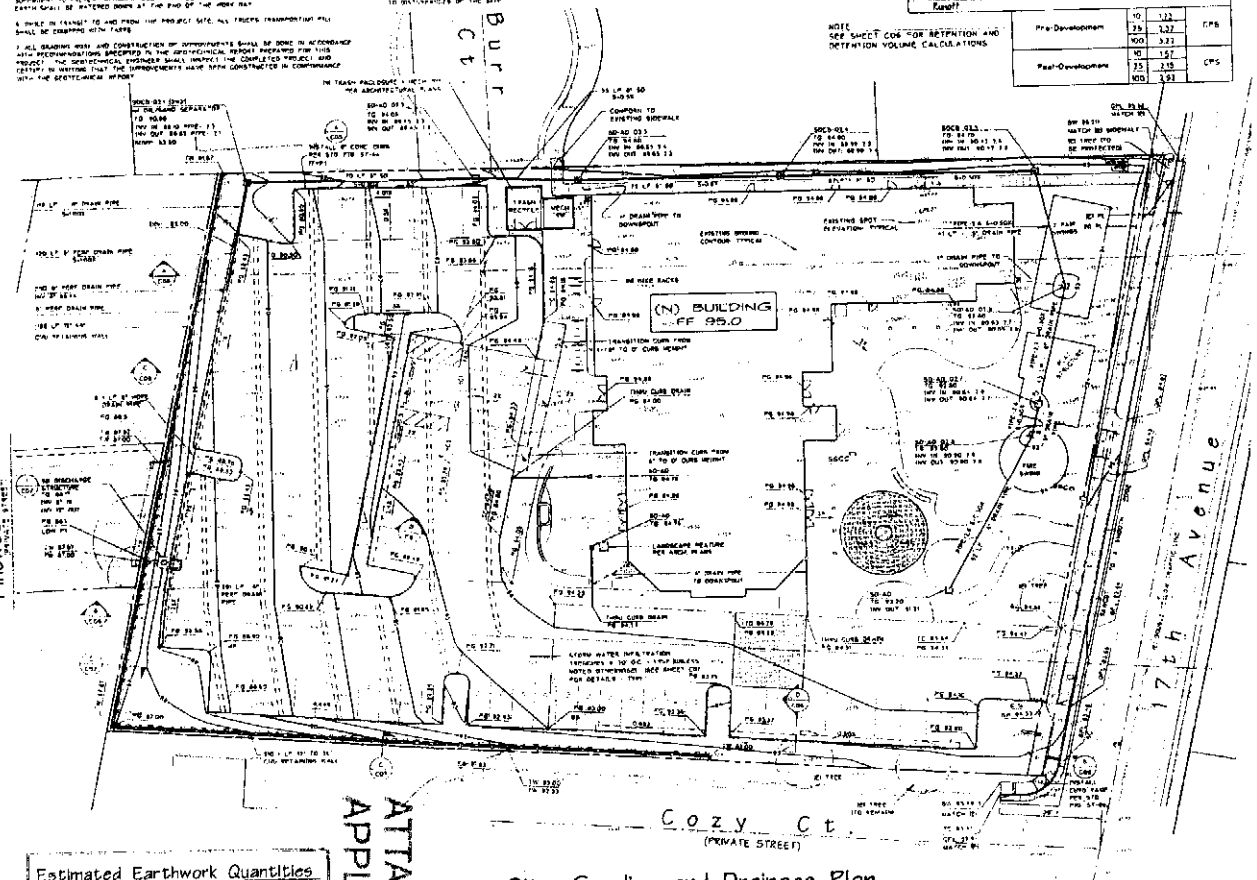
UNITED METHODIST CHURCH OF SANTA CRUZ
2001 17TH AVENUE SANTA CRUZ CA

Existing Conditions & Site Demolition Plan

DATE 6-22-07
JOB 05007
REVISIONS △ 6-22-07
SHEET C02 OF

Ifland Engineers, Inc.

Environmental Review Inital Study
ATTACHMENT 2 of 9
APPLICATION 05-0385



Site Grading and Drainage Plan

Estimated Earthwork Quantities

3,726 CUBIC YARDS EXCAVATION
1,396 CUBIC YARDS EMBANKMENT
1,430 CUBIC YARDS EXPORT

NOTES:

1. DUE TO THE UNKNOWN CONDITION OF SOILS BENEATH THE EXISTING BUILDING AND THEIR SUITABILITY FOR REUSE, NO REMOVAL IS PROVIDED FOR THOSE PORTIONS OF WORK.
2. ESTIMATED VOLUMES DO NOT INCLUDE STRIPPINGS, UTILITY TRENCH VOLUMES OR ANY OVEREXCAVATION, IF ENCOUNTERED BY SITE CONDITIONS.
3. ESTIMATE ASSUMES A 10% COMPACTION FACTOR ON ALL FILL MATERIAL AND A 0% EXPANSION FACTOR ON ALL CUT MATERIAL.
4. PRIOR TO COMMENCEMENT OF WORK CONTRACTOR SHALL CONFIRM THAT ESTIMATES ARE CORRECT.

Notice To Contractor

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONSTRUCTION CONTRACTOR AGREES THAT HE WILL BE REQUIRED TO ASSUME SOLE AND RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE APPLIED CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS. THE CONSTRUCTION CONTRACTOR ALSO AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL

Paving Legend

- PARKING LOT PAVEMENT
  - 6" ASPHALT CONCRETE OVER 8" DRAIN ROCK
- DECORATIVE CONCRETE WALL PER LANDSCAPING PLAN
- CONCRETE PER ACC SIDEWALK, DRIVEWAY CURB & GUTTER
- INTERLOCKING PAVERS
- GRADE BREAK

GRAPHIC SCALE - INCH = 10 FEET

NOTE
SEE SHEET C06 FOR RETENTION AND DETENTION VOLUME CALCULATIONS

Storm Drainage Calculations

Site Area				
	A	=	1.57	Acres
Time of Concentration				
	C	=	10	Minutes

Runoff Coefficient

Pre-Development	(160,148 SQF - 138,444 SQF) / 160,148 SQF	=	0.14	CFS
	68,795 / 160,148 SQF	=		
Post-Development	(124,480 SQF - 105,646 SQF) / 160,148 SQF	=	0.48	CFS
	68,795 / 160,148 SQF	=		

Rainfall Intensity

	10 Yr	=	3.04	Inches Per Hour
	25 Yr	=	3.54	
	100 Yr	=	3.94	

Runoff

Pre-Development	10	1.22	CFS
	25	1.37	
	100	1.53	
Post-Development	10	1.57	CFS
	25	2.15	
	100	2.93	

GENERAL

1. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL MEET WITH A REPRESENTATIVE OF THE COUNTY OF SANTA CRUZ TO ESTABLISH THE LIMITS OF WORK AND DETERMINE THE APPROPRIATE EROSION CONTROL MEASURES REQUIRED FOR THE SITE. THE CONTRACTOR SHALL NOTIFY THE COUNTY INSPECTOR AT LEAST 24 HOURS IN ADVANCE OF BEGINNING WORK.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION, SEDIMENT AND DUST DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL IMPLEMENT THE EROSION CONTROL MEASURES SHOWN ON THE APPROVED PLANS AND SPECIFICATIONS AND SHALL PROVIDE ADDITIONAL MEASURES AS REQUIRED BY THE COUNTY INSPECTOR TO PREVENT EROSION AND SEDIMENT FROM LEAVING THE SITE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL EROSION CONTROL MEASURES DURING THE ENTIRE PERIOD OF CONSTRUCTION, INCLUDING WEEKENDS AND HOLIDAYS WHEN WORK IS NOT BEING PERFORMED. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY.

4. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES DURING THE GRADING AND CONSTRUCTION OPERATIONS. ANY DEBRIS, MUD OR SILT DEPOSITED ON ADJACENT PROPERTIES OR ROADWAYS SHALL BE REMOVED IMMEDIATELY.

5. ALL GRADING AND EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS PRESENTED HEREIN AND THE REQUIREMENTS OF THE APPROVED GRADING PERMIT.

SITE CLEARING

1. PRIOR TO GRADING, THE AREAS TO BE DEVELOPED FOR STRUCTURES, PAVEMENTS AND OTHER IMPROVEMENTS, SHOULD BE STRIPPED OF ANY VEGETATION AND CLEARED OF THE SURFACE OF ANY OBSTRUCTIONS, INCLUDING ANY EXISTING FOUNDATIONS, UTILITY LINES, BASEMENTS, SEPTIC TANKS, PAVEMENTS, UNCONTROLLED FILLS AND MISCELLANEOUS DEBRIS.

2. ALL PIPELINES ENCOUNTERED DURING GRADING SHOULD BE REMOVED OR RELOCATED AS NECESSARY TO BE COMPLETELY REMOVED FROM CONSTRUCTION AREAS OR BE CAPPED AND PLUGGED ACCORDING TO APPLICABLE CODE REQUIREMENTS.

3. ANY WELLS ENCOUNTERED SHALL BE CAPPED IN ACCORDANCE WITH SANTA CRUZ COUNTY HEALTH DEPARTMENT REQUIREMENTS. THE STRENGTH OF THE CAP SHALL BE AT LEAST EQUAL TO THE STRENGTH OF THE SURROUNDING SOILS. WELLS SHALL NOT BE LOCATED WITHIN 5 FEET OF ANY STRUCTURAL ELEMENT.

4. SURFACE VEGETATIVE AND ORGANIC-RICH CONTAMINATED TOPSOIL SHOULD BE REMOVED FROM AREAS TO BE GRADED. THE REMOVED DEPTH OF TOPSOIL SHOULD BE DETERMINED AT THE TIME OF THE WORK IS DONE AND MUST BE OBSERVED BY THE GEOTECHNICAL CONSULTANT. IT IS GENERALLY ANTICIPATED THAT THE REQUIRED DEPTH OF STRIPPING WILL BE 3 TO 6 INCHES.

NOTE: IF THE WORK IS DONE DURING OR SOON AFTER THE RAINY SEASON, OR IN THE RAINY SEASON, THE SOIL MAY BE TOO WET TO BE USED AS ENGINEERED FILL.

5. HOLES RESULTING FROM THE REMOVAL OF BURIED OBJECTS SHALL BE FILLED WITH ENGINEERED SITE GRADE SOILS AND BE BACK FILLED WITH COMPACTED ENGINEERED FILL.

PREPARATION OF ON SITE SOILS

1. LABORATORY COMPACTION TEST RESULTS INDICATE THAT THE NATIVE NEAR SURFACE SOILS ARE MODERATELY COMPACTABLE. WHERE STRUCTURAL FILLS ARE REQUIRED, THEY SHALL CONSIST OF OVER EXCAVATION AND RECOMPACTION OF THE NATIVE SOILS BELOW FILL AND PLACEMENT OF ENGINEERED FILL, SLABS-ON-GRADE, AND PAVEMENTS.

2. WHERE STRUCTURAL FILLS ARE REQUIRED, THE NATIVE SOILS SHALL BE REMOVED TO A DEPTH SUFFICIENT TO PROVIDE A ZONE OF COMPACTED FILL EXTENDING AT LEAST 10 FEET BELOW THE BOTTOM OF THE FOOTING. THE BASE OF THE REMOVAL MUST BELOW THE EXISTING GRADE AND EXTEND AT LEAST 10 FEET BELOW THE ORIGINAL GROUND SURFACE WHICHEVER IS GREATER.

3. THE ZONE OF COMPACTION ENGINEERED FILL SHALL EXTEND A MINIMUM OF 5 FEET LATERALLY BEYOND ALL FOUNDATIONS, SLABS-ON-GRADE, AND PAVEMENTS.

4. THE DEPTHS OF REMOVALS REQUIRED ARE SOLELY TO GUIDE BY THE GEOTECHNICAL CONSULTANT DURING GRADING WHEN ADDITIONAL OR CONDITIONS ARE ENCOUNTERED.

5. PRIOR TO PLACING FILL, THE EXPOSED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6 TO 8 INCHES, MOISTURE CONDITIONED, AND COMPACTED.

FILL PLACEMENT AND COMPACTION

1. WITH THE EXCEPTION OF THE UPPER 6 INCHES OF SUBGRADE SOILS, FILL AND BACKFILL SOILS SHALL BE COMPACTED IN UNIFORM HORIZONTAL LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS.

2. MINIMUM RELATIVE COMPACTION OF 90% FOR LOWER 6 INCHES OF SUBGRADE IN STRUCTURAL AND PAVEMENT AREAS.

3. MINIMUM RELATIVE COMPACTION OF 95% FOR UPPER 6 INCHES OF SUBGRADE IN STRUCTURAL AND PAVEMENT AREAS.

4. AGGREGATE BASE AND SUBBASE SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 95%.

5. A MINIMUM MOISTURE CONTENT OF 2% ABOVE OPTIMUM MOISTURE CONTENT OF SUBGRADE MATERIAL SHOULD BE EVALUATED AND MAINTAINED PRIOR TO PLACEMENT OF FILL.

6. THE RELATIVE COMPACTION AND REQUIRED MOISTURE CONTENT SHALL BE BASED ON THE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557.

7. FILL SHOULD BE COMPACTED BY MECHANICAL MEANS IN UNIFORM HORIZONTAL LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS.

8. IMPORTED FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL CONSULTANT PRIOR TO IMPORTING SOILS HAVING A CHEMICAL OR ENVIRONMENTAL POTENTIAL ABOVE THAT OF USED ON SITE. THE GEOTECHNICAL CONSULTANT SHOULD BE NOTIFIED NOT LESS THAN 3 WORKING DAYS IN ADVANCE OF IMPORT OF FILL OR BASE MATERIAL. RECOMMENDED FOR EACH PROPOSED SOURCE OF IMPORT MATERIAL SHOULD BE SUBMITTED TO THE GEOTECHNICAL CONSULTANT FOR EVALUATION PRIOR TO DELIVERY OF ANY SOILS IMPORTED FOR USE ON THE SITE.

FILL MATERIAL

1. ON THE SITE SOILS MAY BE USED AS COMPACTED FILL.

2. ALL SOILS WITH EXISTING ORGANIC AND IMPORTED (IF ANY) SOILS SHALL CONTAIN LESS THAN 3% BY WEIGHT OF ORGANIC MATTER FREE OF ROOTS AND COBBLES OVER 6 INCHES IN MAXIMUM DIMENSION.

SHRINKAGE AND SUBSIDENCE

1. SHRINKAGE DUE TO THE REMOVAL AND RECOMPACTION OF THE EXISTING ON SITE FILL SOILS (NOT ALLOWING COMPACTION IN EXCESS OF 90%) MAY BE EXPECTED TO REMOVE APPROXIMATELY 10% SUBSIDENCE MAY BE EXPECTED TO BE UP TO 0.1 INCH.

EXCAVATING CONDITIONS

1. GROUNDWATER WAS ENCOUNTERED AT BETWEEN 5.0' AND 10.0' BELOW EXISTING GRADE DURING OUR FIELD EXPLORATORY WORK. EXCAVATION BOTTOMS CAN BE UNSTABLE WHEN SATURATED AND MAY BE DIFFICULT TO COMPACT. IT IS RECOMMENDED THAT EXCAVATIONS BE PLANNED IN DRY WEATHER OR THAT SHORING BE USED TO KEEP EXCAVATIONS DRY. IF EXCAVATIONS ARE UNDERTAKEN DURING THE WINTER MONTHS ADDITIONAL STABILIZATION MEASURES MAY BE REQUIRED. THE GEOTECHNICAL ENGINEER MAY BE CONSULTED FOR RECOMMENDATIONS IF WINTER EXCAVATIONS ARE ENCOUNTERED.

UTILITY TRENCHES

1. MINIMUM HORIZONTAL SPACING FOR UTILITY TRENCHES WITH 8" OR LESS THAN 12 INCHES WIDE MAY BE USED WHERE THE TOP OF THE PIPE IS NOT DEEPER THAN 12 INCHES IN DIAMETER.

2. FOR TRENCHES WIDER THAN 12 INCHES BUT NARROWER THAN 24 INCHES, THE MINIMUM SPACING SHALL BE EQUAL TO THE DIAMETER OF THE PIPE.

3. IN TRENCHES WIDER THAN 24 INCHES, THE MINIMUM SPACING SHALL BE EQUAL TO ONE-HALF THE DIAMETER OF THE PIPE, BUT NOT LESS THAN 24 INCHES.

4. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

5. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

6. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

7. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

8. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

9. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

10. TRENCH BACKFILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS AND SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.

SURFACE DRAINAGE

1. FINISH GRADES SHALL BE DESIGNED TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT A MINIMUM GRADIENT OF 2% FOR PAVED AREAS AND 5% FOR UNPAVED AREAS WITHIN 10 FEET OF STRUCTURES.

2. ROOF DRAINAGE SHALL BE COLLECTED IN GUTTERS AND DOWNSPOUTS AND DISCHARGED INTO SUBSURFACE DRAINAGE FACILITIES OR ONTO HARD SURFACES WHERE IT WILL NOT CAUSE EROSION OR PONDING.

3. ALL PAVED AREAS SHALL BE GRADED TO DRAIN TO APPROVED DRAINAGE FACILITIES.

4. ALL PERVIOUS AREAS SHALL BE GRADED TO DRAIN TO APPROVED DRAINAGE FACILITIES.

5. ALL ROOF DRAINAGE SHALL BE DISCHARGED INTO APPROVED DRAINAGE FACILITIES.

6. ALL ROOF DRAINAGE SHALL BE DISCHARGED INTO APPROVED DRAINAGE FACILITIES.

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9. ALL ROOF DRAINAGE SHALL BE DISCHARGED INTO APPROVED DRAINAGE FACILITIES.

10. ALL ROOF DRAINAGE SHALL BE DISCHARGED INTO APPROVED DRAINAGE FACILITIES.

RIGID WAFFLE OR MAT FOUNDATIONS

1. THE RIGID WAFFLE OR MAT FOUNDATION SYSTEM SHOULD BE DESIGNED WITH SUFFICIENT STIFFNESS TO ACCOMMODATE UP TO 1 INCH OF DIFFERENTIAL SETTLEMENT ACROSS THE LENGTH OF A BUILDING OR THE STRUCTURE, AS WELL AS A TOTAL LOSS OF SOIL SUPPORT BENEATH THE EDGES OF THE PERIMETER FOOTINGS OCCURRING AT ANY POINT BENEATH THE STRUCTURE.

2. THE ALLOWABLE BEARING CAPACITY USED SHOULD NOT EXCEED 1500 PSF.

3. THE COEFFICIENT OF SUBGRADE REACTION MAY BE 100 PCI FOR ON SITE SILTY AND CLAYEY SAND ENCOUNTERED TO BE UNDER 45 WATER SATURATION FILL, AND A MINIMUM ELEVATION OF LIMITED ENGINEERED FILL AND NATIVE THIS VALUE MUST BE RECALCULATED.

4. THE FRICTION FACTOR IS 0.35 BETWEEN THE ENGINEERED FILL AND POURED CONCRETE.

5. THE RIGID WAFFLE OR MAT FOUNDATION SYSTEM USED ON SLOPING GROUND MUST BE CONSTRUCTED WITH FLEXIBLE UTILITY CONNECTIONS IN ORDER TO PREVENT BREAKAGE DUE TO DIFFERENTIAL SETTLEMENT. A MINIMUM OF 12 INCHES OF DIFFERENTIAL SETTLEMENT SHOULD BE ASSUMED FOR DESIGN OF FLEXIBLE CONNECTIONS.

6. MINIMUM EMBEDMENT DEPTH FOR THE ENCLOSED FOOTING SECTIONS OF THE RIGID WAFFLE OR MAT FOUNDATION SHALL BE DETERMINED BY THE STRUCTURAL ENGINEER.

7. IT IS IMPORTANT THAT THE SUBGRADE SOILS BE THOROUGHLY SATURATED FOR 24 TO 48 HOURS PRIOR TO THE PLACEMENT OF CONCRETE. THIS WILL HELP TO REDUCE THE POTENTIAL FOR MINOR CONCRETE SHRINKAGE CRACKS TO DEVELOP AS A RESULT OF EXPANSIVE POTENTIAL. THE EMBEDMENT FILL BENEATH RIGID WAFFLE OR MAT FOUNDATIONS SHOULD BE PREPARED AS A PERCENTAGE OF PRIMARY MOISTURE OPTIMUM AT 1% OF OPTIMUM MOISTURE TO 4% ABOVE TO A DEPTH OF 18 FEET.

SLABS-ON-GRADE

1. CONCRETE FLOOR SLABS MAY BE DESIGNED ON THE REMOVED AND RECOMPACTED NATIVE SOILS. THE SUBGRADE SHOULD BE PROOF-ROLLED AND PRIOR TO CONSTRUCTION TO PROVIDE A UNIFORM AND UNYIELDING SURFACE. IMMEDIATELY PRIOR TO THE PLACEMENT OF CONCRETE, THE SUBGRADE SHOULD BE THOROUGHLY SATURATED TO A DEPTH OF 12 INCHES BELOW THE SUBGRADE ELEVATION.

2. THE SLAB-ON-GRADE SECTION SHOULD INCORPORATE A MINIMUM 4 INCH CAPILLARY BREAK CONSISTING OF CLEAN WELL-GRADED CRUSHED ROCK OR GRAVEL. THE ROCK SHOULD BE 3/4 TO 1-1/2 INCH IN DIAMETER. MINIMUM STRUCTURAL CONSIDERATIONS MAY REQUIRE A THICKER SECTION. THE ROCK SHOULD BE PLACED IN ONE LAYER, FREE OF MUDDY SAND OR FILL OF ANY KIND SO THAT THE UPPER 4 INCHES WILL BE IN CONTACT WITH THE CONCRETE. THE ROCK SHOULD BE COMPACTED. THE CURING TYPE OF THE CONCRETE, AMPLE CONSIDERATION SHOULD BE GIVEN TO THE EFFECTS OF MOISTURE MOVEMENT THROUGH THE SLAB. THE EFFECTIVENESS OF A MOISTURE BARRIER CAN BE REDUCED BY THE PLACEMENT OF CONCRETE ON IT. THE MOISTURE BARRIER SHOULD BE PROTECTED DURING CONSTRUCTION. WHERE THE MOISTURE WILL LESSEN BY REDUCING CONCRETE-WATER RATIO AS MUCH AS POSSIBLE.

3. IT IS IMPORTANT THAT THE SUBGRADE SOILS BE THOROUGHLY SATURATED FOR 24 TO 48 HOURS PRIOR TO THE PLACEMENT OF CONCRETE TO PREVENT SHRINKAGE CRACKS DUE TO EXPANSIVE POTENTIAL. THE EMBEDMENT FILL BENEATH RIGID WAFFLE OR MAT FOUNDATIONS SHOULD BE PREPARED AS A PERCENTAGE OF PRIMARY MOISTURE OPTIMUM AT 1% OF OPTIMUM MOISTURE TO 4% ABOVE TO A DEPTH OF 18 FEET.

SETTLEMENTS

1. THE DESIGN SCHEME, WHICH HAS BEEN CALCULATED TO ACCOMMODATE 1 INCH OF DIFFERENTIAL SETTLEMENT OVER A 40 FOOT CHORD APPROXIMATELY 1 INCH OF TOTAL SETTLEMENT OF THE STRUCTURE. THE PRELIMINARY ESTIMATES BASED ON THE PROPOSED STRUCTURAL LOADS AND THE ASSUMPTION THAT THE FOUNDATION PLANS FOR THE PROPOSED STRUCTURES BECOME AVAILABLE.

PAVEMENT DESIGN

1. PAVEMENT SUBGRADE CONSISTING OF NATIVE AND COMPACTED SOILS SHALL BE PROOF-ROLLED AND BE AT A MOISTURE CONTENT NOT LESS THAN OPTIMUM MOISTURE CONTENT.

2. ASPHALT CONCRETE SHALL CONFORM TO THE LATEST CALTRANS SPECIFICATIONS. AGGREGATE BASE SHALL MEET CALTRANS SPECIFICATIONS FOR CLASS II AGGREGATE BASE. THE MINIMUM R-VALUE SHALL BE 78.

3. CONCRETE FOR SLAB AND SUBBASE UNIFORMLY TO A MINIMUM DENSITY OF 95%.

4. THE FINAL R-VALUE SHALL BE OBTAINED AT THE CONCLUSION OF GRADING AND THE DESIGN PAVEMENT SECTIONS MODIFIED IF NECESSARY.

5. ASPHALT CONCRETE SHALL BE PLACED ON A DENSE, SMOOTH, AND UNIFORM BASE FREE FROM THE INTRUSION AND DETRIMENTAL EFFECTS OF ADVERSE WEATHER.

EXTERIOR CONCRETE FLAT WORK

1. CONCRETE FLAT WORK SHOULD BE DIVIDED INTO AS NEARLY SQUARE AS POSSIBLE PATTERNS. CONTROL JOINTS SHOULD BE PROVIDED TO GIVE MAXIMUM SPACING OF 10 FEET. EXPANSION JOINTS ARE NECESSARY TO CONCRETE FLAT WORK SHOULD BE DESIGNED IN SUCH A MANNER AS TO PREVENT DAMAGE TO ADJACENT STRUCTURES OR LANDSCAPE DETAILS.

Environmental Review Intial Study
ATTACHMENT 4
APPLICATION 05-0385
4 of 9

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA

Grading and Drainage Plan

DATE 06-22-07
JOB 05007
REVISIONS
1 6-22-07

SHEET C03 OF

Maad ENGINEERS, INC.

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-1977

UNITED METHODIST CHURCH
OF SANTA CRUZ
2591 17TH AVENUE SANTA CRUZ CA

Site Utility Plan

DATE 06-22-07
JOB 06007

REVISIONS
1 8-22-07

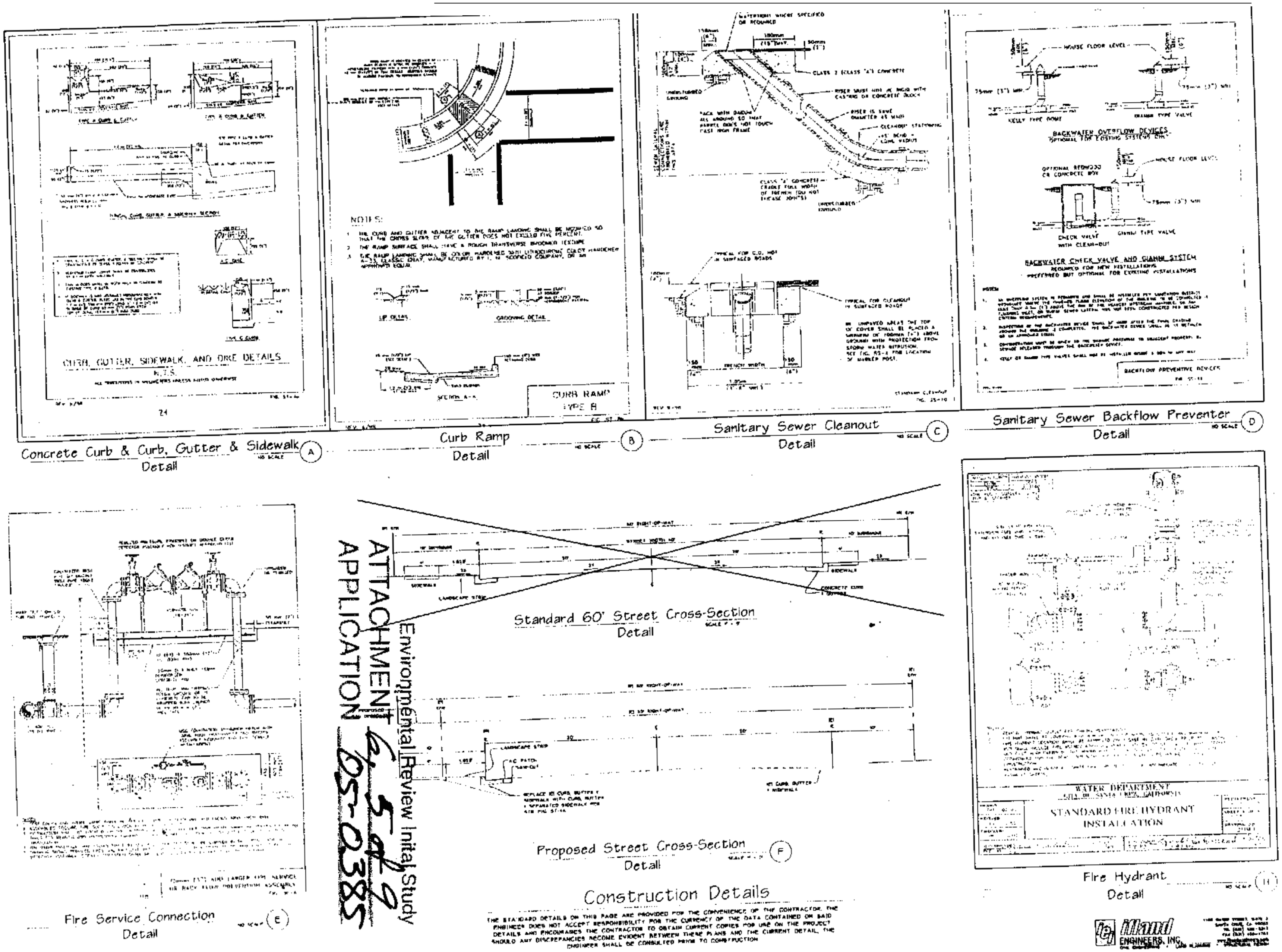
SHEET C04 OF

Sanitation District General Notes

Water System Acceptance
WATER SYSTEM DESIGN ACCEPTED BY CITY OF SANTA CRUZ EXPIRES ONE YEAR AFTER DATE
WATER DEPARTMENT _____ DATE _____

Mid Valley Engineers, Inc.

Environmental Review Inital Study
ATTACHMENT 6, 4 of 9
APPLICATION 05-0385



Environmental Review Inital Study
ATTACHMENT 6, 5 of 9
APPLICATION 05-0385

Construction Details

THE STANDARD DETAILS ON THIS PAGE ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER DOES NOT ACCEPT RESPONSIBILITY FOR THE CURRENCY OF THE DATA CONTAINED ON SAID DETAILS AND ENCOURAGES THE CONTRACTOR TO OBTAIN CURRENT COPIES FOR USE ON THE PROJECT. SHOULD ANY DISCREPANCIES BECOME EVIDENT BETWEEN THESE PLANS AND THE CURRENT DETAIL, THE ENGINEER SHALL BE CONSULTED PRIOR TO CONSTRUCTION

Ifland Engineers, Inc.

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA

Construction Details

DATE 6-22-07
JOB 05007
REVISIONS 6-22-07
SHEET C05

PROJECT: United Methodist Church - APN: 028-122-36 Application: 05-0385 Calc by: [illegible] Date: [illegible]

RUNOFF DETENTION BY THE MODIFIED RATIONAL METHOD

Data Entry: [illegible] SS Ver 1.0

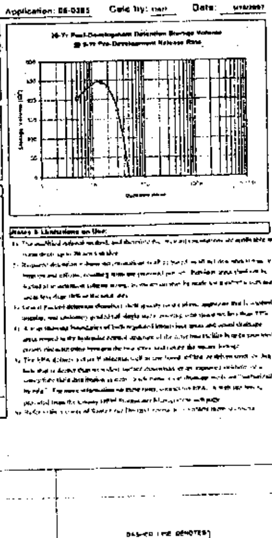
Site Location P60 Isopleth	1.50	Fig. SWM-2 in County Design Criteria	
Rational Coefficients Cpre	0.77		See note # 2
Cpost	0.90		See note # 2
Impervious Area	[illegible]	ft²	See note # 2 and # 4

STRUCTURE DIMENSIONS FOR DETENTION

468	ft³ storage volume calculated		
40	% void space assumed		
1331	ft³ excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	1000.00	1.50	1.50
Dimen. (ft)	144.63	1.48	0.93

*For pipe, use the square root of the sectional area

10 - YEAR DESIGN STORM				DETENTION @ 15 MIN.	
Storm Duration (min)	25-Year Intensity (in/hr)	5-Yr Release Qpre (cfs)	25-Year Qpost (cfs)	Outflow Rate to Storage (cfs)	Specified Storage Volume (cf)
1440	[illegible]	[illegible]	0.165	-2.510	-55054
1200	0.53	[illegible]	0.172	-2.497	-44757
960	0.57	[illegible]	0.180	[illegible]	-34534
720	0.61	[illegible]	0.214	-2.456	-24883
480	0.69	[illegible]	0.254	-2.415	-14956
360	0.66	[illegible]	0.297	-2.342	-10026
240	0.69	[illegible]	0.347	[illegible]	-9544
180	0.74	[illegible]	0.358	[illegible]	-3538
120	0.80	[illegible]	0.434	-0.217	-1954
90	1.05	[illegible]	0.517	0.153	1031
60	1.15	[illegible]	0.614	0.198	254
45	1.34	[illegible]	0.694	0.024	[illegible]
30	1.51	[illegible]	0.824	0.151	347
20	1.69	[illegible]	0.978	0.304	403
15	2.12	0.879	1.106	0.435	468
10	2.54	[illegible]	1.362	0.645	492
5	3.40	[illegible]	1.751	1.081	439



Notes & Limitations on Use:

[illegible]

PROJECT: United Methodist Church of Santa Cruz - APN: 028-122-36 Application: 05-0385 Calc by: DAH Date: [illegible]

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

SS Ver 1.0

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

Notes & Limitations on Use:

[illegible]

Site Location P60 Isopleth	1.50	Fig. SWM-2	
Rational Coefficients Cpre	0.77		
Cpost	0.90		
Impervious Area	24650	ft²	
Saturated Soil Permeability	0.54	in/hr	

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qperc (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.073	2.085	-0.114	-12007	-0.195	-18655
1200	0.18	0.079	2.052	-0.117	-9987	-0.188	-13537
960	0.20	0.087	0.101	-0.109	-7438	-0.179	-10316
720	0.22	0.058	0.112	-0.095	-4981	-0.166	-7170
480	0.26	0.116	0.126	0.073	-2671	-0.146	-4163
360	0.30	0.131	0.153	-0.058	-1601	-0.127	-2742
240	0.34	0.156	0.182	0.027	534	-0.099	-1415
180	0.40	0.176	0.208	0.003	207	-0.075	996
120	0.47	0.209	0.244	0.035	164	-0.036	-340
90	0.53	0.234	0.275	0.067	286	-0.004	-24
60	0.62	0.280	0.323	0.119	385	0.047	120
45	0.72	0.317	0.373	0.181	415	0.090	242
30	0.85	0.376	0.439	0.251	408	0.159	287
20	1.01	0.449	0.522	0.313	376	0.242	288
15	1.14	0.504	0.589	0.381	346	0.309	278
10	1.35	0.593	0.700	0.491	301	0.420	252
5	1.81	0.800	0.938	0.730	226	0.658	198

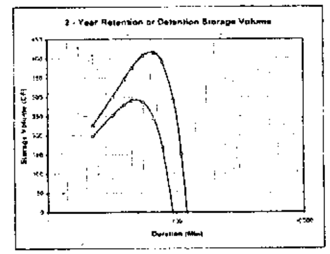
STRUCTURE DIMENSIONS FOR RETENTION

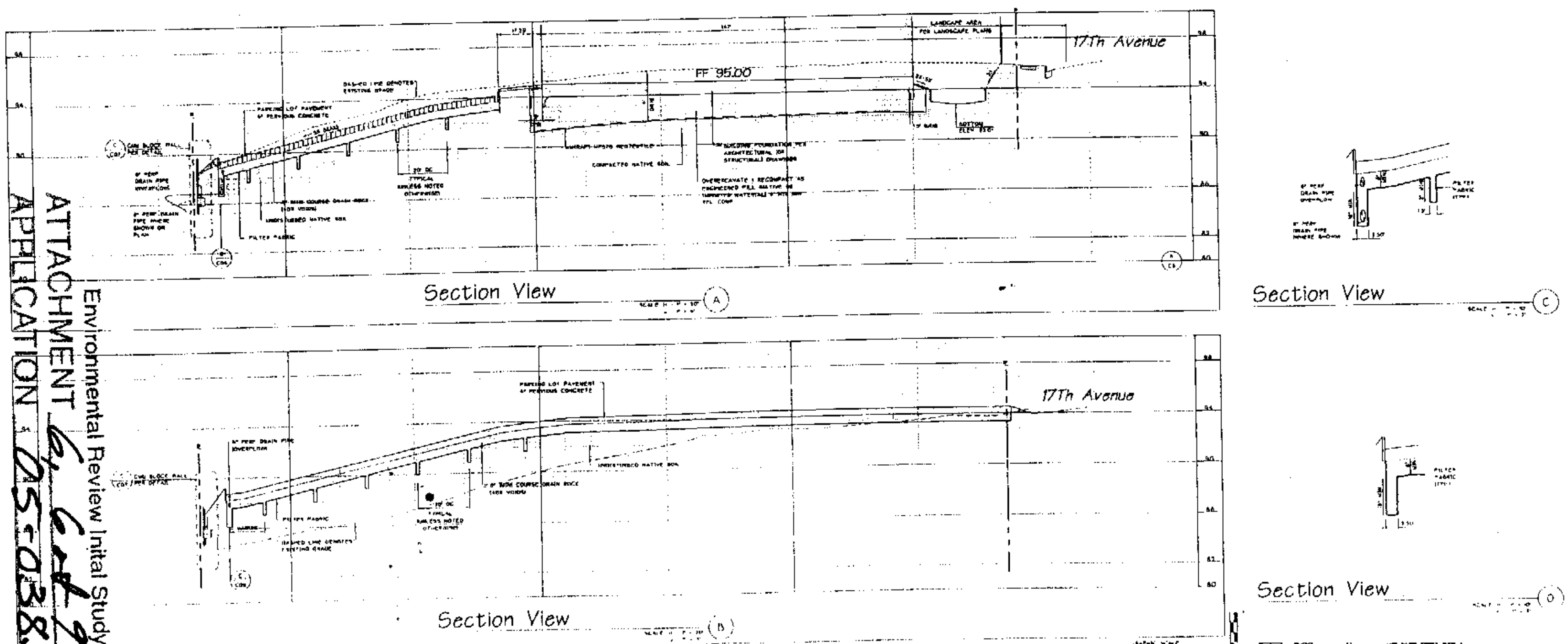
415	ft³ storage volume calculated		
40	% void space assumed		
1038	ft³ excavated volume needed		
Structure	Length	Width*	Depth**
Ratios	1000.00	1.50	1.00
Dimen. (ft)	886.72	1.33	0.88
3742	ft² internal surface area		
1919	ft² effective surface area		
6.5	hrs estimated structure drainage time		

* For pipe, use the square root of the sectional area
* [illegible]
[illegible]

STRUCTURE DIMENSIONS FOR DETENTION

290	ft³ storage volume calculated		
40	% void space assumed		
725	ft³ excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	1000.00	1.53	1.00
Dimen. (ft)	784.87	1.16	0.78





Site Cross Sections

Ifland ENGINEERS, INC.

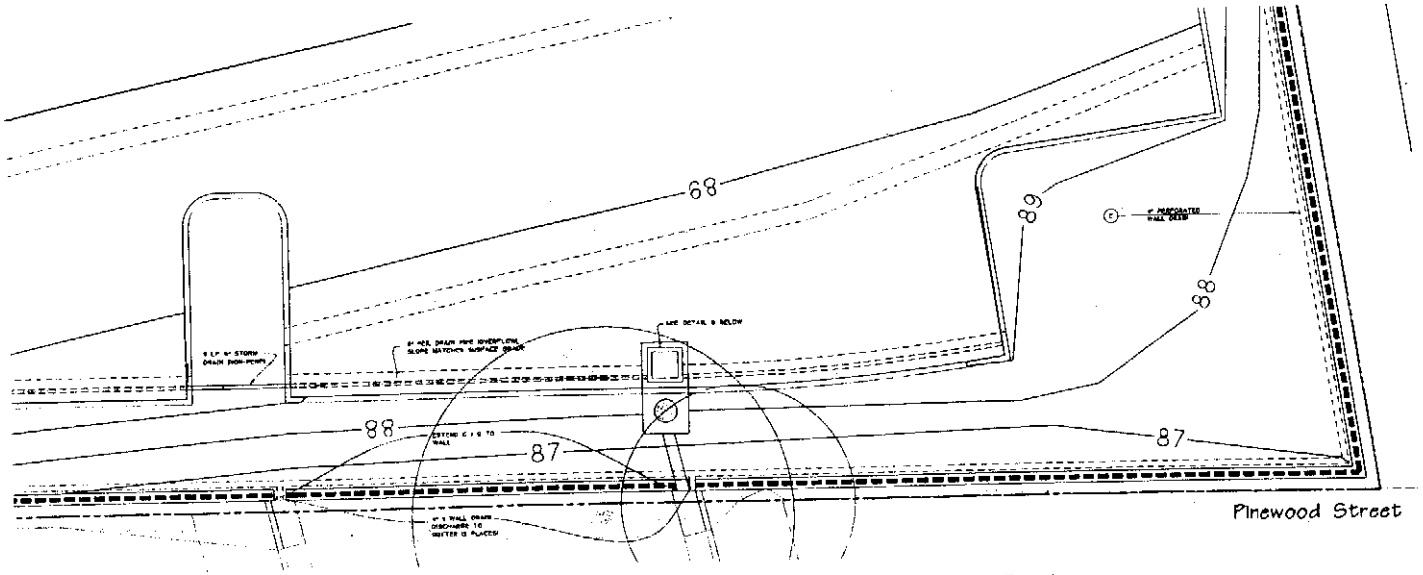
WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

UNITED METHODIST CHURCH OF SANTA CRUZ
2081 17TH AVENUE SANTA CRUZ CA

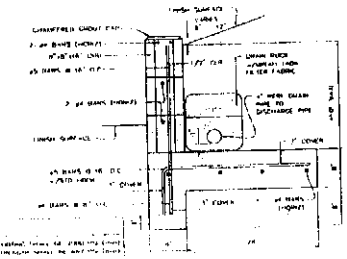
Storm Drain Detention X-Sections & Calc's

DATE 08-22-07
JOB 05007
REVISIONS 6-22-07
SHEET C06

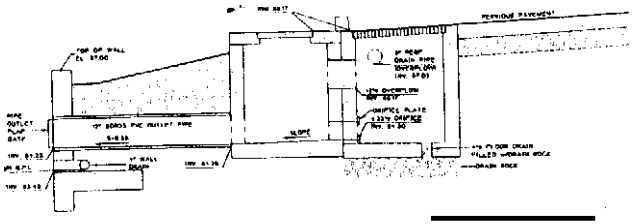
Environmental Review Inital Study
ATTACHMENT 6, 6 of 9
APPLICATION 05-0385



Storm Drain Retention/Detention System Discharge (A)



8" CMU Block Wall Detail (C)



Storm Drain Discharge Structure Detail (B)

Environmental Review Initial Study
ATTACHMENT 6, Pg 9
APPLICATION 05-0385

Maul Engineers, Inc.

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

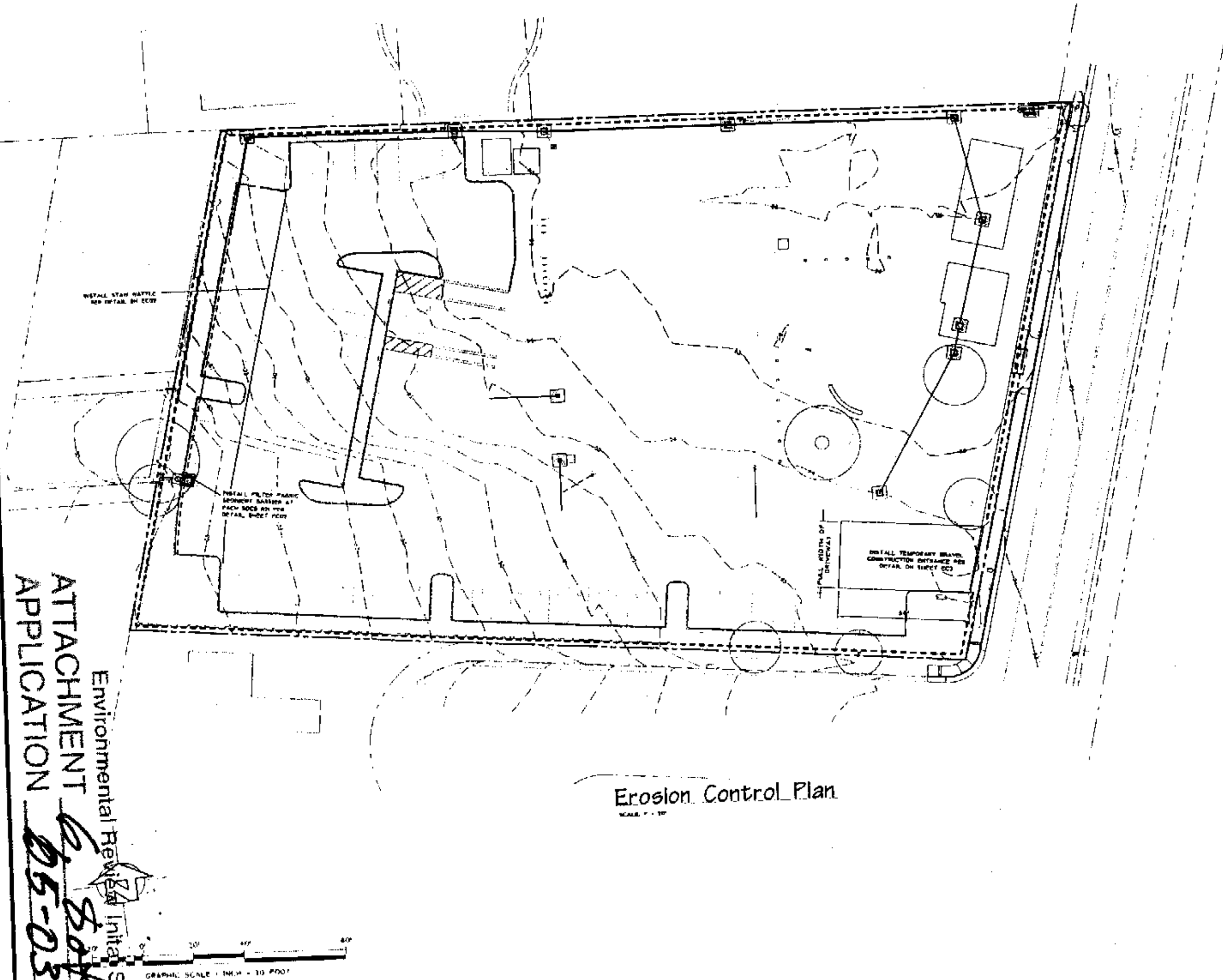
UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA.

Detention/Retention Drainage System

DATE 06-22-07
JOB 05007

REVISIONS
△ 8-22-07

SHEET C07



Erosion Control Plan

Erosion Control Notes

1. NO LAND CLEARING, GRADING OR EXCAVATION SHALL BE DONE BETWEEN OCTOBER 15th AND APRIL 15th. ANY DEVIATION FROM THIS CONDITION REQUIRES REVIEW AND APPROVAL OF A SEPARATE WINTER EROSION CONTROL PLAN BY THE CITY OF CAPITOLA PRIOR TO BEGINNING CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING SITE EROSION CONTROL AT ALL TIMES.

2. UNNECESSARY GRADING AND DISTURBING OF SOIL SHALL BE AVOIDED.

3. BETWEEN OCTOBER 15th AND APRIL 15th EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. HAY BALES, FILTER BERMS, SILT FENCES OR OTHER MEANS SHALL BE EMPLOYED TO PREVENT SEDIMENT FROM LEAVING THE SITE OR ENTERING ANY WATER COURSE.

4. DURING CONSTRUCTION NO TURBID WATER SHALL BE PERMITTED TO ENTER THE CHANNEL OR STORM DRAIN SYSTEM. USE OF SILT AND GREASE TRAPS, FILTER BERMS, HAY BALES OR SILT FENCES SHALL BE USED TO PREVENT SUCH DISCHARGE.

5. ALL AREAS ON- AND OFF-SITE EXPOSED DURING CONSTRUCTION ACTIVITIES, IF NOT PERMANENTLY LANDSCAPED PER PLAN, SHALL BE PROTECTED BY MULCHING AND/OR PLANTING OF THE FOLLOWING SCS APPROVED EROSION CONTROL MIX AT A RATE OF 75 LBS PER ACRE

BLANDO BROME	50%
ROSE CLOVER PELLET INOCULATED	[illegible]
CREEPING RED FESCUE	[illegible]
ZORRO ANNUAL FESCUE	TRACE
WILDFLOWERS	TRACE

6. ALL EXCAVATED MATERIAL SHALL BE REMOVED TO AN APPROVED DISPOSAL SITE OR DISPOSED OF ON-SITE IN A MANNER THAT WILL NOT CAUSE EROSION.

7. ANY MATERIAL STOCKPILED DURING CONSTRUCTION SHALL BE COVERED WITH PLASTIC.

8. UPON COMPLETION OF CONSTRUCTION, ALL REMAINING EXPOSED SOILS SHALL BE PERMANENTLY REVEGETATED PER LANDSCAPING PLAN.

9. EXPOSED SOIL ON SLOPES GREATER THAN 30% SHALL BE SEEDED, COVERED WITH 3 INCHES OF STRAW, AND AN EROSION CONTROL BLANKET. THE EROSION CONTROL BLANKET SHALL BE STAKED IN PLACE.

10. IT IS THE DEVELOPERS RESPONSIBILITY TO SEE THAT ADDITIONAL MEASURES, NECESSARY TO CONTROL SITE EROSION AND PREVENT SEDIMENT TRANSPORT OFF-SITE ARE IMPLEMENTED.

11. THE PROJECT IS SUBJECT TO THE NPDES REGULATIONS, INCLUDING A NOTICE OF INTENT APPLICATION AND PREPARATION OF A SWPPP.

Ifland Engineers, Inc.

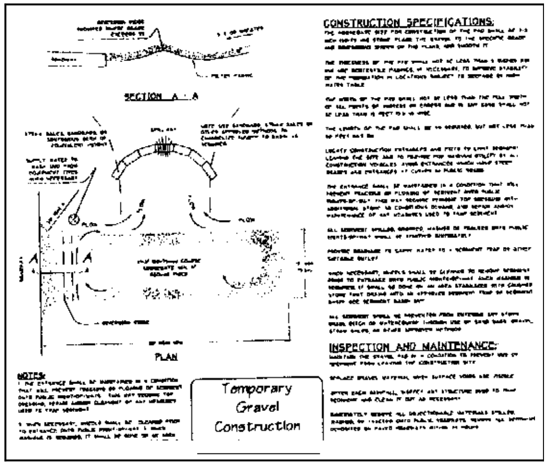
WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

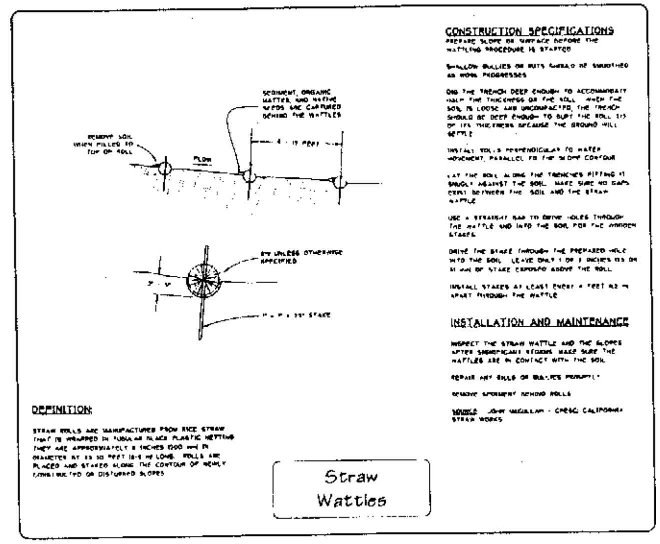
UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA

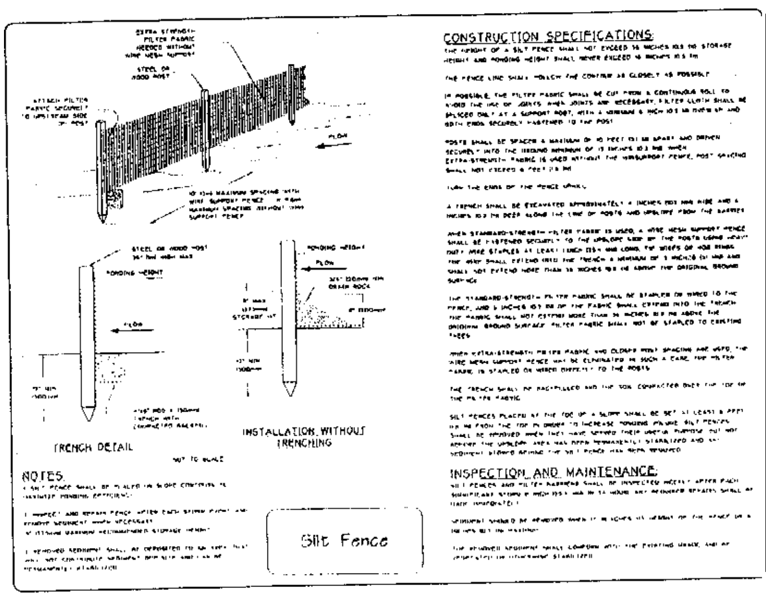
Erosion Control Plan

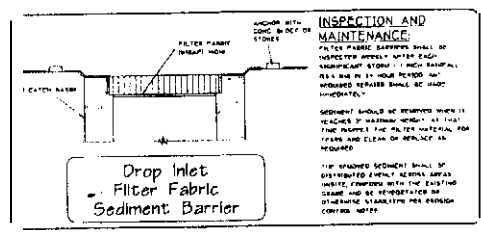
DATE 11-07-06
JOB 05007
REVISIONS A 6-22-07
SHEET EC01

Environmental Review Inital Study
ATTACHMENT 6, 8 of 9
APPLICATION 05-0385









Environmental Review Inital Study
ATTACHMENT 6, 9 of 9
APPLICATION 05-0385

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING

UNITED METHODIST CHURCH OF SANTA CRUZ
2091 17TH AVENUE SANTA CRUZ CA

DATE 11.07.06
JOB 05007
REVISIONS
SHEET ECC

KEY	SIZE	BOTANICAL NAME	COMMON NAME
LI	15 and 24"	Lagerstroemia indica Tuscarora	Crape Myrtle
PK	15 and 24"	Prunus Krauter Vesuvious	Fruitless Plum
PC	15 and 24"	Pistacia chinensis	Chinese Pistache
QA	15 and 24"	Quercus agrifolia	CA Live Oak
TAP		Transplanted Apple from Loving and Learning Garden	
TUP		Transplanted Evergreen Elm from Loving and Learning Garden	
		Existing Yucca and Palms will be transplanted by a neighbor at his property	
PI	5	Pittosporum nigricans	
RC	5	Rhaphiolepis Clara or minor	India Hawthorne
PY	5	Phormium Maori Maiden, Yellow Wave or other bright colored, medium size Flax	
PT	5	Pittosporum tobira	
LC	5	Loropetalum chinense (green)	
NC	5	Nandina compacta	Heavenly Bamboo
SL	5	Salvia leucantha	Mex. Sage
PH	5	Phlomis fruticosa	Jerusalem Sage
BT	5	Berberis thunbergii Crimson Pygmy	Jap. Barberry
EP	5	Euryops pectinatus	
AM	5	Arctostaphylos Howard McMinn	Manzanita
IL	5	Ilex cornuta rotunda	Low Holly
P	5	Parthenocissus tricuspidata	Boston Ivy grown on wall
DB	5	Distictus buccinatoria	Blood Red Trumpet Vine
BO	5	Bougainvillea San Diego Red	Vine trained on column
GROUND COVERS			
SU	4" pot @ 12" O.C.	Succulents	
GI	1	Geranium Cantabrigiense	
PM	1	Penstemon Midnight or Garnet	
PEL	1	Pelargonium hortorum	Common Geranium
P	1	Phormium Tom Thumb	Small Phormium
H	1	Heuchera micrantha Purple Palace	Purple Leaf Coral Bells
FR	1	Festuca idahoensis	Creeping Red Fescue
FC	1	Festuca californica	CA Fescue
MR	1	Muehlenbergia rigens	Deer Grass
AR	1	Artemisia schmidtiana Silver Mound	Angel's Hair
LA	1	Lavandula dentata	French Lavender
LAWN	sod	Turf tall or Dwarf Bonsai Fescues	
AE	1	Arctostaphylos Emerald Carpet	Low Manzanita
EK	1	Erigeron karvinskianus	Santa Barbara Daisy
ID	1	Iris - Pacific Coast -mixed colors	Native Iris
A	1	Agapanthus Queen Anne	Lily of the Nile
LY	1	Lantana Dwarf Yellow	Yellow Lantan

Preliminary Irrigation Concept

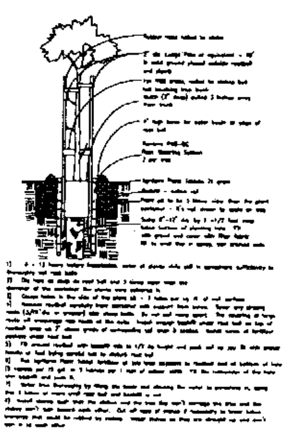
1) Final construction drawings to include detailed Irrigation Plans, Specifications, and Details that meet the Water Conservation requirements of the City of Santa Cruz Water Dept. and County of Santa Cruz.

2) For preliminary bidding purposes assume that the irrigation of all trees and shrubs will be drip irrigation with 3/4" drip tubing running next to all plants and emitters installed directly into 3/4" tubing with a minimum of 1/4" tubing. Valves will be Hunter PGV 1". Drip filters and regulators will be in a separate valve box. Controller will be Hunter Pro C. Drip tubing will be buried 1" deep.

3) Lawns will have 6" Rainbird pop-up heads.

4) The system will have a separate meter with a Febco reduced pressure backflow preventer.

5) Street trees will have a separate bubbler system with Rainbird RWS-BG root watering system - 2 per tree.



Tree Planting
No Scale

1) Final construction drawings to include detailed Irrigation Plans, Specifications.

2) Exact location of plants on site to be adjusted so as to best coordinate with sprinkler head locations, lights, drainage features, and swales

3) Don't put plants in bottom of swales

4) Don't mulch flow lines of swales such that mulch blocks flow of water

5) Use 3 inch deep mulch in all planting areas. Provide owner with different mulch samples and prices. Bid stringy, shredded redwood bark on slopes along edge of parking lot. In areas that are not sloped use a top dress mulch that will not blow away such as Premium Redwood Chips from Vision Recycling at the Buena Vista Landfill.

6) Install plants for all plant circles shown on the plan even if they aren't labeled. Call for clarification. For bidding purposes, if no one is available to answer questions, assume that any plant circle scaled less than 8' wide is 5 gal size and any circle scaled larger is 24" box size

7) The plan is schematic. Don't install plants too close to edges of paving or buildings. Be sure plants are not blocking sprinkler spray excessively. Keep valves and quick couplers away from trees. The contractor is doing a design/build irrigation system.

8) The plants will do much better if efforts are made to dig out any compacted, clay textured soils with slow percolation and replace them with at least 12" deep of sandy loam top soil. You should also provide for removal of any excess water (drain inlets and pipes) that puddles in the planters and does not percolate in a reasonable period of time.

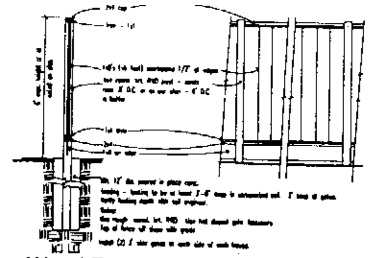
At the least dig down with a power rotospade at least 12" deep mixing in the nitrolized redwood sawdust soil amendment.

4) See specs. concerning soil amendments and fertilizer. For bidding purposes until the soil fertility test is done, bid 6 cubic yards of nitrolized redwood sawdust and 16 pounds of 12-12-12 fertilizer tilled into the top 6" to 8" of soil after ripping soil to 12" deep, except under existing trees or on steep slopes.

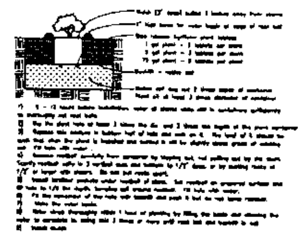
10) The lawn area is less than 25% of the total planting area

11) The 3 trees that are transplanted from the playground are to be dug up, boxed, cared for during construction, and replanted it their new location by someone experienced in transplanting trees successfully. Provide a separate bid price for this. Also provide a separate bid for transplanting the Yuccas and Palms that aren't too large and out of scale and that can be saved.

12) Provide a separate bid price (unit cost per sq. ft. for installing American Green C3125 erosion control fabric on 3:1 or steeper planting areas along the outside edge of the parking lot. See Grading Plan.



Wood Fence
No Scale



Shrub Planting
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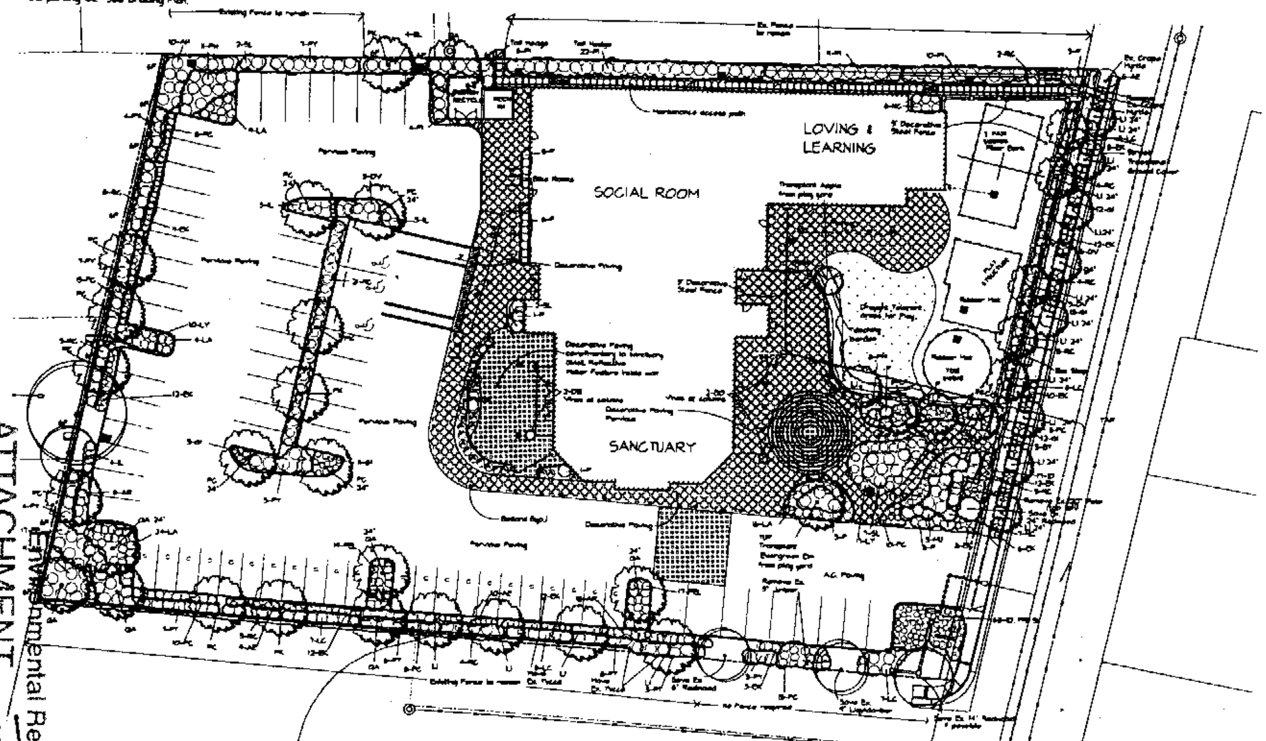

Preliminary Landscape Plan

0 10 20 40
SCALE: 1" = 20'-0"

Gregory Lewis
Landscape
Architect
#2178
736 Park Way
Santa Cruz, CA 95065
(831) 425-4747
FAX (831) 425-1107

4/30/2008
STATE OF CALIFORNIA

WILLIAM S. BAGNALL ARCHITECTS INC.
ARCHITECTURE & PLANNING
125 Mission Street, Santa Cruz, California (831) 426-4977

UNITED METHODIST CHURCH
OF SANTA CRUZ
2081 17TH AVENUE SANTA CRUZ CA

Landscape Plan

DATE
JOB 05007
REVISIONS

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L1
OF

Environmental Review Initial Study
ATTACHMENT 7
APPLICATION 05-0385

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
TOM BURNS, PLANNING DIRECTOR

July 7, 2005

Michael Bethke c/o Slatter Construction
126 Fern Street
Santa Cruz, CA 95060

Subject: **Review of** Geotechnical Investigation **by** Tharp and Associates Dated February **11,2005;** Project **No.** ***05-02***
APN: 026-122-36, Application ***No: 05-0385***

3. Prior to building permit issuance a plan review letter shall be submitted to Environmental Planning. The author of the report shall write the plan review letter. The letter shall state that the project plans conform to the report's recommendations.

Environmental Review Inital Study
ATTACHMENT 8, 1 of 2
APPLICATION 05-0385

NOTICE TO PERMIT HOLDERS WHEN A SOILS REPORT HAS BEEN PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT

After issuance of the building permit, the County requires your soils engineer to be involved during construction. Several letters or reports are required to be submitted to the County at various times during construction. They are as follows:

1. When a project has engineered fills and / or grading, a letter from your soils engineer must be submitted to the Environmental Planning section of the Planning Department prior to foundations being excavated. This letter must state that the grading has been completed in conformance with the recommendations of the soils report. Compaction reports or a summary thereof must be submitted.

2. Prior to placing concrete for foundations, a letter from the soils engineer must be submitted to the building inspector and to Environmental Planning stating that the soils engineer has observed the foundation excavation and that it meets the recommendations of the soils report.

3. **At** the completion ***of*** construction, a *final* ***letter*** from your soils engineer is required to be submitted to Environmental Planning that summarizes the observations and the tests the soils engineer has made during construction. The final letter must also state the following: "Based upon our observations and tests, the project has been completed in conformance with our geotechnical recommendations."

   If the final *soils* letter identifies any items of work remaining to be completed or that any portions ***of*** the project were not observed by the soils engineer, you will be required to complete the remaining items of work and may be required to perform destructive testing in order for your permit to obtain a final inspection.

Environmental Review Inital Study
ATTACHMENT 3, 2 of 2
APPLICATION 05-0385

GEOTECHNICAL INVESTIGATION-DESIGN PHASE
PROPOSED UNITED METHODIST CHURCH
2091 17TH AVENUE, A.P.N. 026-122-12 & 026-122-13
SANTA CRUZ COUNTY, CALIFORNIA

FOR:
Dave Nelson, Chair
United Methodist Church
250 California Street
Santa Cruz, CA **95060**

THARP & ASSOCIATES, INC
PROJECT NO. 05-02
FEBRUARY 11,2005

T H A R P & A S S O C I A T E S , I N C .
SITE **ASSESSMENTS** • FOUNDATION ENGINEERING CONSTRUCTION MONITORING

347 SPRECKELS DRIVE • APTOS • CALIFORNIA • **95003** • PHONE: 831.662.8590 • **FAX831** ***662.8592***

Project No. 05-02
February 11,2005

Dave Nelson, Chair
United Methodist Church
250 California Street
Santa Cruz, CA 95060

SUBJECT: **GEOTECHNICAL WVESTIGATION - DESIGN PHASE**
Proposed United Methodist Church
2091 17* Avenue, A.P.N. 026-122-12 & 026-122-13
Santa Cruz County, California

REF'ERENCES: See Attached List

Dear Mr Nelson

In accordance with your authorization, we have completed a geotechnical investigation for the proposed church on 17th Avenue, in Santa **Cruz,** California This report summarizes the findings, conclusions, and recommendations from our field exploration, laboratory testing, and engineering analysis The conclusions and recommendations included herein are based upon applicable standards at the time this report was prepared

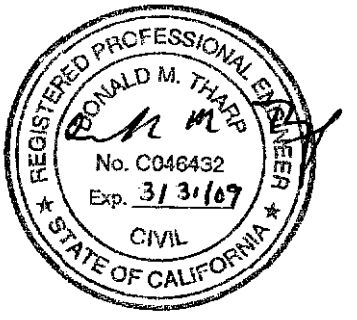
It is a pleasure being associated with you on this project If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office

Sincerely,

THARP & ASSOCIATES, INC.

Shannon Chome
Project Engineer

Reviewed By:



Donald M. Tharp, PE
Principal Engineer
R.C.E. 46432
Expires 03/31/07

Environmental Review Inital Study
ATTACHMENT 9, 2 of 16
APPLICATION 05-0385

Distribution: (6) Addressee

Shannon C:\My Documents\1Current Projects\05-002 17th Avenue\05002 021105SIGPAGE.wpd

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

a. Based on the results of our investigation, it is our opinion that from the geotechnical standpoint, the subject site will be suitable for the proposed development provided the recommendations presented herein are implemented during grading and construction.

b. If these recommendations are implemented in the design and construction, the danger to life and property is considered an ordinary **risk** (General Plan).

c. No active faults are known to exist through the site although published maps indicate the presence of faults nearby.

d. It is our opinion that the subject site will be suitable for the support of the proposed new structures, and additions to existing structures on a **foundation system composed of a rigid, waffle or mat.** This foundation system should be composed of a grade beam waffle, slab-on-grade, or similar construction. Recommendations for this foundation system are provided in section 6.3, Foundations, and recommendations for Preparation of On-site Soils beneath this foundation system are provided in section 6.2.3.

e. Based on the results of our liquefaction analysis, it is our opinion that **all proposed new structures at the subject site, be designed for 1.5 inches of differential settlement across the least dimension of the structure, as** well **as a total loss of soil support over an area with a 10 foot diameter occurring at any point beneath the structure.**

f. Laboratory consolidation test results indicate that the native, near-surface soils are moderately compressible under the anticipated loads. Site preparation, consisting of over excavation and recompaction of the native subgrade will be required prior to placement of foundations, slabs-on-grade, and pavements. See section 6.2.3 for Preparation of On-Site Soil recommendations.

g. The near surface soils are considered to have a medium expansion potential. For engineered fill beneath foundation elements and slabs-on-grade, it is important that the subgrade soils be thoroughly saturated for 24 to 48 hours prior to the time the concrete is poured. Refer to sections 6.3 and 6.5 for Foundation, and Slab-On-Grade recommendations.

h. We consider that the anticipated grading will not adversely affect, nor be adversely affected by, adjoining property, with due precautions being taken.

i. It is assumed that final grades will not vary more than 2± feet from current grades. Significant variations will require that these recommendations be reviewed.

j. The final Grading Plans, Foundation Plans and design loads should be reviewed by this office during their preparation, prior to contract bidding.

k. The design recommendations of this report must be reviewed during the grading phase when subsurface conditions in the excavations become exposed.

l. Field observation and testing must be provided by a representative of Tharp & Associates, Inc. to enable them to form an opinion regarding the adequacy of the site preparation, the adequacy of fill materials, and the extent to which the earthwork is performed in accordance with the geotechnical conditions present, the requirements of the regulating agencies, the project specifications and the recommendations presented in this report. Any earthwork performed in connection with the subject project without the full knowledge of, and not under the direct observation of Tharp & Associates, Inc., the Geotechnical Consultant, will render the recommendations of this report invalid.

m. The Geotechnical Consultant should be notified at least five (5) working days prior to any site clearing or other earthwork operations on the subject project in order to observe the stripping and disposal of unsuitable materials and to ensure coordination with the grading contractor. During this period, a preconstruction conference should be held on the site to discuss project specifications, observation/testing requirements and responsibilities, and scheduling. This conference should include at least the Grading Contractor, the Architect, and the Geotechnical Consultant.

6.2 Grading

6.2.1 General

All grading and earthwork should be performed in accordance with the recommendations presented herein and the requirements of the regulating agencies.

Environmental Review Inital Study
ATTACHMENT 9, 4 of 16
APPLICATION 05-0385

6.2.2 Site Clearing

a. Prior to grading, the areas to be developed for structures, pavements and other improvements, should be stripped of any vegetation and cleared of any surface or subsurface obstructions, including any existing foundations, utility lines, basements, septic tanks, pavements, stockpiled fills, and miscellaneous debris.

b. All pipelines encountered during grading should be relocated as necessary to be completely removed from construction areas or be capped and plugged according to applicable code requirements.

c. Any wells encountered shall be capped in accordance with Santa Cruz County Health Department requirements. The strength of the cap shall be at least equal to the adjacent soil and shall not be located within 5 feet of any structural element.

d. Surface vegetation and organically contaminated topsoil should be removed from areas to be graded. The required depth of stripping will vary with the time of year the work is done and must be observed by the Geotechnical Consultant. It is generally anticipated that the required depth of stripping will be 6 to 12 inches.

Note: If this work is done during or soon after the rainy season, or in the spring, the soil may be too wet to be used as engineered fill.

e. Holes resulting from the removal of buried obstructions that extend below finished site grades should be backfilled with compacted engineered fill.

6.2.3 Preparation of On-Site Soils

a. Laboratory consolidation test results indicate that the native, near-surface soils are moderately compressible under the anticipated loads. Site preparation, consisting of over excavation and recompaction of the native subgrade will be required prior to placement of foundations, slabs-on-grade, and pavements.

b. The native subgrade beneath rigid, waffle or mat foundations should be reworked to a depth sufficient to provide a zone of compacted fill extending at least 1.5 feet below the bottom of the foundations, or 4.0 feet below the original ground surface, whichever is greater. A layer of Mirafi HP 570, or equivalent, shall be placed at the bottom of the excavations, prior to placing fill, in these areas.

c. The native subgrade beneath slabs-on-grade and pavements should be reworked to a depth sufficient to provide a zone of compacted fill extending at least 1.0 feet below the bottom of the aggregate base course, or 2.0 feet below the original ground surface, whichever is greater.

ATTACHMENT 9.5 of 16
APPLICATION 05-0385

d. The **zone** of compacted, engineered fill must extend a minimum of 5 feet laterally beyond all foundations, slabs-on-grade, and pavements,

e. The depths of reworking required are subject to review by the Geotechnical Consultant during grading when subsurface conditions become exposed.

f. Prior to placing fill, the exposed surface should be scarified to a depth of **6** to 8 inches, moisture conditioned, and compacted.

g. Settlements may need to be evaluated should the planned grades result in the ground surface being raised 2± feet above the existing grades. Should this occur, some additional reworking of existing materials may be required.

6.2.4 Fill Placement and Compaction

a. Any fill or backfill required should be placed in accordance with the recommendations presented below.

b. With the exception of the upper ***6*** inches of subgrade in pavement and driveway areas, material to be compacted or reworked should be moisture-conditioned ***or*** dried to achieve near-optimum conditions, and compacted to achieve a minimum relative compaction of 90%. The upper ***6*** inches of subgrade in pavement and drive areas and all aggregate base and subbase shall be compacted to achieve a minimum relative compaction of 95%. The placement moisture content of imported **material** should be **evaluated prior *to*** grading.

c. The relative compaction and required moisture content shall be based on the maximum dry density and optimum moisture content obtained in accordance with **ASTM** D-1557.

d. Fill should be compacted by mechanical means in uniform horizontal loose lifts not exceeding 8 inches in thickness.

e. Imported fill material should be approved by the Geotechnical Consultant prior *to* importing. Soils having a significant expansion potential should not be used as imported fill. The Geotechnical Consultant should be notified not less than ***5*** working days in advance of placing any fill or base course material proposed for import. Each proposed source of import material should be sampled, tested and approved by the Geotechnical Consultant prior to delivery of any soils imported for use **on** the site

Environmental Review Inital Study
ATTACHMENT 9, 6 of 16
APPLICATION 05-0385

f. All fill should be placed and all grading performed in accordance applicable codes and the requirements of the regulating agency.

6.2.5 Fill Material

a. The on-site soils **may** be used as compacted fill

b. All soils, both existing on-site and imported, to be used as **fill,** should contain less than **3%** organics and be free of debris and cobbles over 6 inches in maximum dimension.

6.2.6 Shrinkage and Subsidence

a. Shrinkage due to the removal and recompaction of the existing on-site, fill soils, not already compacted, is estimated to be on the order of **10 percent.** Subsidence may be assumed to be ½ to 1 inch.

b. These are preliminary estimates which may vary with depth of removal, stripping loss, and field conditions at the time of grading. Handling losses are not included.

6.2.7 Excavating Conditions

a. We anticipate that excavation of the on-site soils may be accomplished with standard earthmoving and trenching equipment.

b. Groundwater was encountered at between 8.0± and 10.0± feet below existing grade during the course of our field exploration. Wet **excavation bottoms can be anticipated during grading, and more so during the winter months.** Additional recommendations may be supplied by our office during grading if adverse conditions are encountered.

c. Though not anticipated **at** this time, any excavations adjacent to existing structures should be reviewed, and recommendations obtained to prevent undermining or distress to these structures

6.2.8 Sulfate Content

The results of our laboratory testing indicate that the soluble sulfate content of the on-site soils likely to come into contact with concrete is below the 0.2% generally considered to constitute an adverse sulfate condition. Type II cement is therefore considered adequate for use in concrete in contact with the on-site soils

6.2.9 Expansive Soils

a. The results of our laboratory testing indicate that the expansion potential of the on-site, near-surface soils should be considered **medium.**

b. Expansion testing may be required to evaluate the expansivity of material proposed for imported fill.

6.2.10 Utility Trenches

a. Bedding material should consist of sand with SE not less than **30** which may then bejetted.

b. Existing on-site soils may be utilized for trench backfill, provided they are **free** of organic material and rocks over ***6*** inches in diameter.

c. If sand is used, a **3** foot concrete plug should be placed in each trench where it passes under the exterior footings.

d. Backfill of all exterior and interior trenches should he placed in thin lifts and mechanically compacted to achieve a relative compaction **of** not less than 95% in paved areas and **90%** in other areas **per ASTM** D-1557. Care should be taken not to damage utility lines

e. Utility trenches that are parallel to the sides of a building should be placed **so** that they do not extend below a line sloping down and away at an inclination of 2 horizontal to 1 vertical from the bottom outside edge of all footings.

f. Trenches should be capped with ±1.5 feet of impermeable material Import material must be approved by the Geotechnical Consultant prior to its use.

g. Trenches must be shored as required by the local regulatory agency, the State Of California Division of Industrial Safety Construction Safety Orders, and Federal OSHA requirements.

6 2.11 Surface Drainage

a. Pad drainage should be designed to collect and direct surface water away from structures to approved drainage facilities. **A** minimum gradient of 2± percent should be maintained and drainage should be directed toward approved swales **or** drainage facilities, Concentrations of surface water runoff should be handled by providing the necessary structures, paved ditches, catch basins, etc.

b. Drainage patterns approved at the time of construction should be maintained throughout the life of the structures. The building and surface drainage facilities must not be altered nor any grading, filling, or excavation conducted in the area without prior review by the Geotechnical Consultant.

c. All roof eaves should be guttered with the outlets from the downspouts provided with adequate capacity to carry the storm water away from the structure to reduce the possibility of soil saturation and erosion. The connection should be to a closed conduit which discharges at an approved location away from the structure and the graded area.

d. Irrigation activities at the site should be controlled and reasonable. Planter areas should not be sited adjacent to walls without implementing approved measures to contain irrigation water and prevent it **from** seeping into walls and under foundations and slabs-on-grade.

e. The surface soils are classified as **moderately erodible.** Therefore, the finished ground surface should be planted with erosion resistant landscaping and ground cover and continually maintained to minimize surface erosion.

6.3 Foundations

6.3.1 General

a. It is our opinion that the subject site will be suitable for the support of the proposed new structures, and additions to existing structures on a **foundation system composed of a rigid, waffle or mat.** This foundation system should be composed of a grade beam waffle, slab-on-grade, or similar construction.

b. At the time we prepared this report, the grading plans and foundation details had not been finalized. **We** request an opportunity to review these items during the design stages to determine if supplemental recommendations will be required.

6.3.2 Rigid. **Waffle** or Mat Foundations

a. The rigid, waffle or mat foundation system should be designed with sufficient stiffness to accommodate up to 1 5 inches of differential settlement across the least dimension of the structure, as well as a total loss of soil support over an area with a 10 foot diameter occurring at any point beneath the structure

b. The **allowable bearing capacity** used should **not** exceed **2500 psf**

c. **The modulus of subgrade reaction (k_s) is 200 kcf** for the silty and clayey sand anticipated *to* be used as engineered fill below all foundation elements If another material **is** used this value must **be** reevaluated

d. **The friction factor is 0.40** between the engineered fill and rough concrete.

e. The rigid, waffle or mat foundation systemused on this project should be combined with **flexible utility connections** in order to prevent breakage should the foundation tilt as a result of differential settlement

f. This foundation system has the advantage that should the 'design seismic event produce significant soil deformation beneath the structure, the resulting tilting should produce only moderate architectural damage The damage may be repaired by pressure grouting or other leveling procedures.

g. Minimum embedment depth for the thickened edge sections of the rigid, waffle or mat foundation should be 18 inches, although structural considerations may govern.

h It is important that **the** subgrade soils be thoroughly saturated for 24 to 48 hours prior to the time the concrete is poured. **For near-surface soils with a medium expansion potential, the engineered fill beneath rigid, waffle or mat foundations should be presoaked 5 percentage points above optimum, or 125% of optimum, whichever is greater; to a depth of 1.5 feet.**

6.4 Retaining Structures

6.4.1 General

It is our understanding that all retaining walls will be basement walls and will be incorporated into the rigid waffle **or** mat foundation system Recommendations for this foundation system **are** provided in section 6 3, Foundations.

6.4.2 Lateral Earth Pressures

a. The lateral earth pressures presented in **Table 2** are recommended for the design **of** retaining structures with backfill soils of expansivity not higher than Medium. Should the **slope** behind the retaining walls be other than level or 2:1 horizontal to vertical, supplemental design criteria will **be** provided for **the** active **earth** or at-rest pressures **for** the particular slope **angle.**

Table 2

Lateral Earth Pressures

Type	Soil Profile	Soil Pressure (psf/ft)	
		Unrestrained Wall	Rigidly Supported Wall
Active Pressure	Level 2:1	35 60	-
At-Rest Pressure	Level 2:1	- -	75 105
Passive Pressure (Ignore Upper 2 ft)	Level 2:1	400 200	200 100

b. **The friction factor is 0.40** between the engineered fill and rough concrete.

c. Where both friction and the passive resistance are utilized for sliding resistance, either of the values indicated should be reduced by one-third.

d. These are ultimate values, no factor of safety has been applied.

e. Pressure due to any surcharge loads from adjacent footings, traffic, etc., should be analyzed separately. Pressures due *to* these loading can be supplied upon receipt of the appropriate plans and loads. Refer to Figure **2** for a Surcharge Pressure Diagram.

Environmental Review Inital Study
ATTACHMENT 9, 12 of 16
APPLICATION 05-0385

6.4.3 Backfill

a. Backfill should be placed under engineering control.

b. It is recommended that granular, or relatively low expansivity, backfill be utilized, for a width equal to approximately **1/3 x** wall height, and not less than 2 feet, subject to review during construction.

c. The granular backfill should be capped with at least 12 inches of relatively impermeable material.

d. Backfill should be compacted to achieve a minimum 90 percent relative compaction, the compaction standard being obtained in accordance with **ASTM** D-1557.

e Precautions should be taken to ensure that heavy compaction equipment is not used immediately adjacent to walls, so as to prevent undue pressures against, and movement of, the walls

f The use of water-stopdimpermeable barriers and appropriate waterproofing should be considered for any basement construction, and for building walls which retain earth

6.4.4 Backfill Drainage

a. Backdrains should be provided in the backfill, or weepholes/weepslits should be provided in retaining walls. If *weepholes/weepslits are* used, they should be constructed per CALTRANS Standard Plans. We recommend backdrains be provided for walls over 4± feet high, or for retaining walls which form part of a building structure, and where any staining or efflorescence due to dripping from weepholes/weepslits would **be** aesthetically unacceptable.

b. Backdrains should consist of 4-inch diameter Schedule 40, PVC pipe or equivalent, embedded in approximately 3 ft^3/linear foot of 3/8-inch to 3/4-inch, clean, crushed gravel, enveloped in **Mirafi Filterweave 500** or equivalent. The pipe should be 4± inches above the trench bottom with a gradient of 1± % being provided to the pipe and trench bottom, discharging into suitably protected outlets. See Figure 3 for a Typical Backdrain Configuration.

C. Perforations ***in*** backdrains *are* recommended as follows: 3/8-inch diameter, in **2** rows at the ends of a 120 degree arc, at 3-inch centers in each row, staggered between rows, placed downward.

d. Backdrains placed behind retaining walls should be approved by the Geotechnical Consultant prior to the placement of fill.

e. ***An*** unobstructed outlet should be provided at the lower end of each segment of backdrain. The outlet should consist of an unperforated pipe of the **same** diameter, connected to the perforated pipe and extended to a protected outlet at a lower elevation on a continuous gradient of at least 1 percent.

6.5 Slabs-On-Grade

a. Concrete floor slabs may be founded on the reworked existing soils or on compacted fill. The subgrade should be proof-rolled just prior to construction to provide a firm, relatively unyielding surface, especially if the surface has been loosened by the passage of construction traffic.

b. The slab-on-grade section should incorporate a minimum 4 inch capillary break consisting of clean, open graded, crushed gravel (3/4 inch by No. 4), overlain by a 10 mil waterproof membrane. Structural considerations may govern the thickness of the capillary break. Place a 2-inch layer of moist sand on top of the membrane. This will help protect the membrane and will assist in equalizing the curing rate of the concrete. Where moisture sensitive floor coverings are anticipated or vapor transmission may be a problem, the waterproof membrane will assist in reducing condensation under the floor coverings.

C. It is important that the subgrade soils be thoroughly saturated for 24 to 48 hours prior to the time the concrete is poured. For near-surface soils with a medium expansion potential, the subgrade should be presoaked 5 percentage points above optimum, or 125% of optimum, whichever is greater; to a depth of 15 feet.

d Slab thickness, reinforcement, and doweling should be determined by the Project Structural Engineer, based on the design live and dead loads, including vehicles, however we recommend a minimum reinforcing of #4 steel bars spaced 18 inches on center in both directions. The reinforcing must be firmly held in the vertical center of the slabs during placement and finishing of the concrete with precast concrete dobies.

e. The utilization of post-tensioned concrete slabs may be considered in lieu of conventional concrete slabs. There are inherent advantages with this system, especially the characteristic that the propagation or widening of cracks that may otherwise develop is inhibited. Detailed recommendations, based on UBC 1997, will be provided if required. Tentative, outline geotechnical recommendations for post-tensioned slabs are presented as follows, for purposes of initial planning:

i. Minimum thickness: 4 inches structural/construction considerations would govern.

ii. Substructure: 2 inches sand, over 10-mil plastic sheet, over prepared subgrade.

iii. Minimum embedment of edge beam below lowest adjacent exterior grade: **18** inches.

6.6 Settlements

The design seismic event has been calculated to cause approximately 1.5 inches of differential settlement across the least dimension of the structure. These preliminary estimates should be reviewed by the Geotechnical Consultant when foundation plans for the proposed structures become available.

6.7 Pavement Design

The design of the pavement section was beyond our scope of services for this project. To have the selected pavement sections perform to their greatest efficiency, it is very important that the following items be considered:

a. Properly moisture condition the subgrade and compact it to a minimum relative dry density of 95%, at a moisture content **1-3%** over the optimum moisture content.

b. Provide sufficient gradient to prevent ponding of water.

c. **Use** only quality materials of the type and thickness (minimum) specified. All baserock must meet Cal-Trans Standard Specifications for Class II Aggregate Base, and be angular in shape.

d. Compact the base and subbase uniformly to a minimum relative dry density of 95%.

e. The R-Value should be obtained at the conclusion of grading and the design pavement sections reviewed at that time.

f. Asphalt concrete should be placed only during periods **of** fair weather when the ambient air temperature is within prescribed limits.

g. Maintenance should be undertaken on a routine basis.

h. If concrete slabs are **required,** a design will be provided upon receipt of traffic loads and volume.

6 8 Exterior Concrete Flatwork

a Concrete flatwork should **be** divided into as nearly square panels as possible Frequent joints should **be** provided to give articulation to the panels Landscaping and planters adjacent to concrete flatwork should be designed in **such** a manner as to direct drainage away from concrete areas to approved outlets

b. It is assumed that concrete flatwork **will be** subjected **only** to pedestrian traffic.

DRAINAGE STUDY

FOR

United Methodist Church of Santa Cruz

17th Avenue

APN 026-1.22-036

June 2007 .

IFLAND ENGINEERS, INC.
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Environmental Review Inital Study
ATTACHMENT 10, 1 of 13
APPLICATION 05-0385

Pre-Develoument Calculations

The project site has existing improvements, including a church and attached day care center and associated parking areas, which were constructed many years ago. The southern third of the 1.57 acre site was previously a separate residential lot. The home, other structures and paving on the residential lot, which were also constructed many years ago, were removed just a few years ago. From aerial photos taken before the improvements on the residential lot were demolished we were able to determine the total area of impervious improvements constructed on the project site. The total area was calculated to he approximately 27,000 square feet, consisting of the following:

- Buildings – 6,764 **sq.** ft.
- Concrete Driveway, Walks & Steps – 2,500 sq. ft.
- Concrete Patio & Covered Decks – 2,421 **sq.** ft.
- Asphalt Concrete Pavement – 15.321 **sq.** ft.

However, a search of County of Santa Cruz records has been able to substantiate a total of just 4,946 sq. ft. of "permitted" buildings and paving on the former residential parcel and a total of 14,940 **sq.** ft. of "permitted" buildings and paving on the church/day care center parcel. The grand total of "permitted" impervious improvements on the combined parcel is just 19,886 sq. ft. Therefore, that will be the value used in the storm runoff calculations.

Total Site Area, **A** = 68,295 sq. ft. = 1.57 acres
"Existing" Impervious Area = 19,886 sq. ft. = 0.46 acres
"Existing" Pervious Area = 48,409 sq. ft. = 1.11 acres

"Predevelopment" Runoff Coefficient, $C = [(A_{Imp})(C_{Imp}) + (A_{Perv})(C_{Perv})] / \mathbf{A}$
$= [(19,886)(0.90) + (48,409)(0.25)] / 68,295$
$= 0.44$

Time of Concentration, T_c = 10 minutes
P_{60} = 1.50 ((Fig. SWM-2), and thus
Rainfall Intensity, I_{10} (10-year Storm) = 2.04 Inches per Hour
I_{25} (25-year Storm) = 2.54 Inches per How
I_{100} (100-year Storm) = 3.04 Inches per Hour

Since Runoff Volume, Q = CIA, calculation of Predevelopment Runoff for each storm intensity yields,

Q_{10} = 1.41 cu. ft. / sec
Q_{25} = 1.93 cu. ft. / sec
Q_{100} = 2.63 cu. ft. / sec

Environmental Review Inital Study
ATTACHMENT 10, 2 of 13
APPLICATION 05-0385

Post-Development Calculations

All existing site improvements will be demolished and removed from the site. A new, larger church and day care center building, new parking, landscaping and other site improvements *are* proposed to be constructed on the 1.57 acre site. The parking lot is proposed to be constructed of pervious concrete or other porous pavement over a bed of drain rock. Rain falling on the pervious pavement will pass through the pavement and will be held in the underlying drain rock for percolation into the native soil. Use of porous pavement will substantially reduce the increase in impervious surfaces common when a site is redeveloped.

The Post-Development impervious surface area, shown on the Site Grading and Drainage Plan, totals 24,849 square feet or 0.57 acres. That means that the Post-Development pervious portion of the 1.57 acre site totals 43,446 square feet or approximately 1.00 acres.

Post-Development Runoff Coefficient, $C = [(24,849)(0.90) + (43,446)(0.25)] / 68,295$
$= 0.48$

With Time of Concentration and Rainfall Intensity values for 10-year, 25-year and 100-year storms as calculated above, the Post-Development Runoff Volume calculation for each storm intensity yields,

$Q_{10} = 1.87$ cu. ft. / sec
$Q_{25} = 2.18$ cu. ft. / sec
$Q_{100} = 2.86$ cu. ft. / sec

Drainage from Adjacent Sites

Natural drainage in the vicinity of the project site is from north to south or northeast to southwest. Without some barrier to interrupt the flow, drainage from the north or northeast would flow across the project site. Fortunately, those barriers exist. 17th Avenue intercepts flow from the northeast and directs it southerly around the site. The adjacent land north of the project site has been developed with single-family homes. The yards for those homes have been graded to direct any site drainage toward the fronting street, 17th Avenue for one lot and Bubb Court for the other two adjacent lots. Therefore, no runoff from the adjacent area drains onto the project site.

Existing Drainage Patterns & Public Infrastructure

The project site drainage is currently limited to surface runoff. A small portion of the site currently drains toward 17th Avenue. Drainage from the parking lot at the northeast comer of the property is collected in shallow area drains and is released via "thru-curb" drains to 17" Avenue. The rest of the site drains toward Pinewood Street. There is a significant elevation drop across the site toward Pinewood Street. There are no public storm drainage facilities fronting the project site at the present time. The closest drainage facilities in 17th Avenue are at the intersection of Capitola Road. Underground drainage

facilities in Pinewood Street are about 1 ½ to 2 blocks to the west. The closest underground facilities are located in the back yard of one of the homes at the end of *Cozy* Court, a private street. This system, while closest to the project site, is not accessible to the project.

Stormwater Retention and Detention

In order to comply with stormwater design criteria adopted in 2006, the pervious pavement over drain rock system has been designed to meet or exceed the requirements of the criteria for this project. The system is designed so that all rainfall landing on the site is directed to the drain rock bed beneath the pavement. Rainfall landing on the pavement will flow down through the porous pavement structure and into the rock bed. Rain water landing on nearby non-pervious walks or courtyards will flow toward the porous parking lot pavement. Roof drainage, runoff from the preschool play area and from more remote sections of the site will be collected in an underground system that will release the runoff into the rock bed at the bottom of the site.

Runoff collected in the bed of drain rock under the pervious pavement will slowly infiltrate into the soil at a rate of between 0.06 and 0.6 inches per square foot per day. (See the attached sheets copied from the Santa Cruz County Soils Study.) Since portions of the parking lot pavement is graded at slopes of up to 5%, 1 ½ foot wide by 1 foot deep interceptor trenches have been included in the design to catch the water at approximately 1-foot (vertical) intervals. At the outermost edges of the site and at the landscaped island in the parking lot, where water would tend to collect, larger trenches (2 ½ feet wide by 1 ½ foot deep) will have the capacity to catch and hold more water for an extended period to encourage infiltration. This system will distribute and hold the water for infiltration over a much broader area. Without these trenches, the water would tend to flow through the drain rock to the lowest portion of the site, which is at the western boundary. Concentration of the runoff all in this one area would be a less effective way to infiltrate the stormwater into the soil. The total length of these trenches is greater than 1000 feet, so using the maximum value of 1000 feet allowed in the spread sheet provided by County of Santa Cruz Public Works – Drainage provides a very conservative determination of the stormwater retention capacity of the proposed system. (See attached Retention Spreadsheet.)

In extreme rainfall events, should the holding capacity of the **rock** bed be exceeded, a perforated pipe is proposed along the western and lowest edge of the site that will collect excessive accumulations of water and discharge it through the discharge structure shown on the plans. The attached detention calculations show that the system has the capacity to detain runoff from a 25-year event while discharging the runoff at the 5-year pre-development rate. (See attached Detention Spreadsheet and Orifice Calculations.)

Any site runoff that exceeds the capacity of the soil to absorb the stored water will be discharged to the gutter flowline of Pinewood Street. Drainage from behind the perimeter retaining wall will also be discharged to the Pinewood Street gutters. The existing concrete curb and gutter are proposed to be extended to the face of the perimeter

retaining wall. This will eliminate concerns previously raised about maintenance of the area between the proposed wall and the existing curb and gutter. This drainage pattern is similar to the existing way runoff exits the site, except that the total **volume** is significantly reduced during major rain events.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Environmental Review Inital Study
ATTACHMENT 10 6 of 13
APPLICATION 05-0385

TABLE 12.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erasion factors	
	In	In/hr	In/in	pH		K	T
161, 166, 169---- Santa Lucia	0-5	1.6-2.0	0.10-0.14	5.1-7.3	Low	0.15	2
	5-36	1.6-2.0	0.08-0.11	5.1-6.5	Low	0.10	
	38	---	---	---	---	---	
170, 171, 172---- Soquel	0-21	1.6-2.0	0.14-0.18	5.6-6.5	Moderate	0.43	5
	21-37	1.2-0.6	0.14-0.17	5.6-7.3	Moderate	0.43	
	37-51	1.2-0.6	0.17-0.19	5.6-7.3	Moderate	0.28	
	51-62	1.2-0.6	0.13-0.17	5.6-7.3	Moderate	0.37	
173*:							
Sur----------	0-18	2.0-6.0	0.05-0.10	6.1-7.3	Low	0.10	
	18-35	2.0-6.0	0.05-0.08	5.1-7.3	Low	0.10	
	35	---	---	---	---	---	
Catelli----------	0-7	2.0-6.0	0.10-0.13	5.6-7.3	Low	0.20	2
	7-37	2.0-6.0	0.10-0.13	5.6-6.5	Low	0.20	
	37	---	---	---	---	---	
174*, 175*:							
Tierra----------	0-14	0.6-2.0	0.09-0.13	5.6-7.3	Low	0.32	1
	14-66	(0.06	0.02-0.04	5.1-7.3	High	0.28	
Watsonville-----	0-18	1.6-2.0	0.14-0.17	5.6-7.3	Low	0.26	3
	18-39	<0.06	0.02-0.04	5.6-8.4	High	0.26	
	39-63	.06-0.2	0.04-0.06	5.6-8.4	Moderate	0.24	
116, 177--------- Watsonville	0-18	0.6-2.0	0.14-0.17	5.6-7.3	Low	0.26	3
	18-39	<0.06	0.02-0.04	5.6-8.4	High	0.28	
	39-63	.06-0.2	0.04-0.06	5.6-8.4	Moderate	0.24	
178, 179, 180---- Watsonville	0-26	0.6-2.0	0.14-0.17	5.6-7.3	Low	0.28	3
	26-41	<0.06	0.02-0.04	5.6-8.4	High	0.26	
	41-63	.06-0.2	0.04-0.06	5.6-8.4	Moderate	0.24	
181*:							
Xerorthents.							
Rock outcrop.							
182, 183--------- Zayante	0-30	6.0-20	0.04-0.08	5.1-6.0	Low	0.10	5
	30-60	6.0-20	0.04-0.08	4.5-7.3	Low	0.10	
184*:							
Zayante----------	0-30	6.0-20	0.04-0.08	5.1-6.0	Low	0.10	5
	30-60	6.0-20	0.04-0.08	4.5-7.3	Low	0.10	
Rock outcrop.							

* See description of the map unit for composition and behavior characteristics of the map unit

PROJECT: United Methodist Church - APN: 026-122-36 Application: 05-0385 **Calc by:** DAH **Date:** 5/16/2007

RUNOFF DETENTION BY THE MODIFIED RATIONAL METHOD

Data Entry: PRESS TAB & ENTER DESIGN VALUES SS Ver: 1.0

Site Location P60 Isopleth:	1.50		Fig. SWM-2 in County Design Criteria
Rational Coefficients Cpre:	0.77		See note # 2
Cpost:	0.90		See note # 2
Impervious Area:	24850	ft^2	See note # 2 and # 4

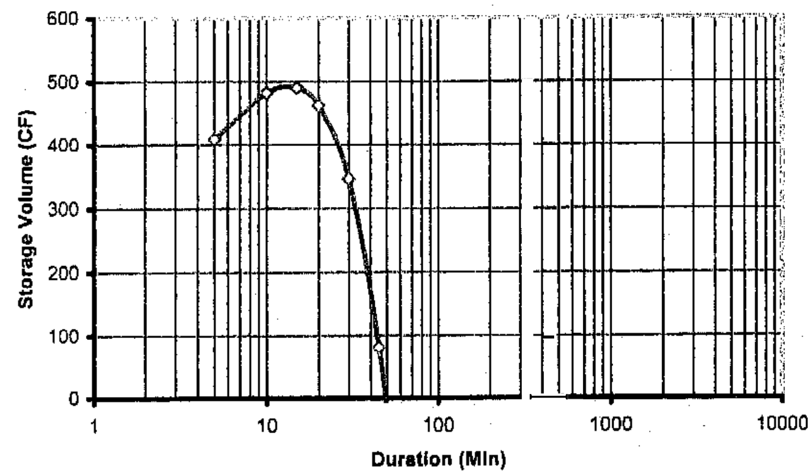
STRUCTURE DIMENSIONS FOR DETENTION

490	ft^3 storage volume calculated		
40	% void space assumed		
1225	ft^3 excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	1000.00	1.50	1.00
Dimen. (ft)	**934.63**	**1.40**	**0.93**

*For pipe, use the square root of the sectional area

25 - YEAR DESIGN STORM				DETENTION @ 15 MIN.	
Storm Duration (min)	25 - Year Intensity (in/hr)	5 - Yr. Release Qpre (cfs)	25 - Year Qpost (cfs)	Detention Rate To Storage (cfs)	Specified Storage Volume (cf)
1440	0.31	0.097	0.160	-0.510	-55094
1200	0.33	0.105	0.172	-0.497	-44757
960	0.37	0.115	0.190	-0.480	-34574
720	0.41	0.130	0.214	-0.456	-24603
480	0.49	0.154	0.254	-0.415	-14956
360	0.55	0.174	0.287	-0.382	-10326
240	0.66	0.207	0.341	-0.329	-5914
180	0.74	0.234	0.385	-0.284	-3838
120	0.88	0.277	0.458	-0.212	-1908
90	1.00	0.313	0.517	-0.153	-1031
60	1.19	0.372	0.614	-0.056	-251
45	1.34	0.420	0.694	0.024	81
30	1.59	0.499	0.824	0.154	347
20	1.89	0.593	0.978	0.309	463
15	2.13	**0.670**	1.105	0.435	490
10	2.54	0.795	1.312	0.643	482
5	3.40	1.067	**1.761**	1.091	409

25-Yr Post-Development Detention Storage Volume @ 5-Yr Pre-Development Release Rate



Notes & Limitations on Use:

1) The modified rational method, and therefore the standard calculations are applicable in watersheds up to 20 acres in size.
2) Required detention volume determinations shall be based on all net new impervious area both on and off-site, resulting from the proposed project. Pervious areas shall not be included in detention volume sizing; an exception may be made for incidental pervious areas less than 10% of the total area.
3) Gravel packed detention chambers shall specify on the plans, aggregate that is washed, angular, and uniformly graded (of single size), assuring void space not less than 35%.
4) A map showing boundaries of both regulated impervious areas and actual drainage areas routed to the hydraulic control structure of the detention facility is to be provided, clearly distinguishing between the two areas, and noting the square footage.
5) The EPA defines a class V injection well as any bored, drilled, or driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system. Such storm water drainage wells are "authorized by rule". For more information on these rules, contact the EPA. A web site link is provided from the County DPW Stormwater Management web page.
6) Refer to the County of Santa Cruz Design Criteria, for complete method criteria.

Environmental Review Inital Study
ATTACHMENT 10, Sept 13
APPLICATION 05-0385

PROJECT: United Methodist Church of Santa Cruz - APN: 026-122-36 Application: 05-0385 **Calc by:** DAH **Date:** 6/7/2007

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

SS Ver:1.0

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.77	
Cpost:	0.90	
Impervious Area:	24850	ft^2
Saturated Soil Permeability:	0.60	in/hr

Notes & Limitations on Use:

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)
1440	0.16	0.073	0.085	-0.124	-12607
1200	0.18	0.079	0.092	-0.117	-9987
960	0.20	0.087	0.101	-0.108	-7436
720	0.22	0.098	0.114	-0.095	-4981
480	0.26	0.116	0.136	-0.073	-2671
360	0.30	0.131	0.153	-0.056	-1604
240	0.35	0.156	0.182	-0.027	-634
180	0.40	0.176	0.206	-0.003	-207
120	0.47	**0.209**	0.244	0.035	154
90	0.53	0.236	0.276	0.067	296
60	0.63	**0.280**	0.328	0.119	393
45	0.71	0.317	0.370	0.161	**415**
30	0.85	0.376	0.439	0.231	408
20	1.01	0.446	0.522	0.313	376
15	1.14	0.504	0.589	0.381	346
10	1.35	0.599	0.700	0.491	301
5	1.81	0.803	**0.939**	0.730	226

STRUCTURE DIMENSIONS FOR RETENTION

415	ft^3 storage volume calculated			
40	% void space assumed			
1039	ft^3 excavated volume needed			
Structure Ratios	Length	Width*	Depth*#	
	1000.00	1.50	1.00	
Dimen. (ft)	**884.72**	**1.33**	**0.88**	
2742	ft^2 internal surface area			
1919	ft^2 effective surface area			
4.3	hrs estimated structure drainage time			

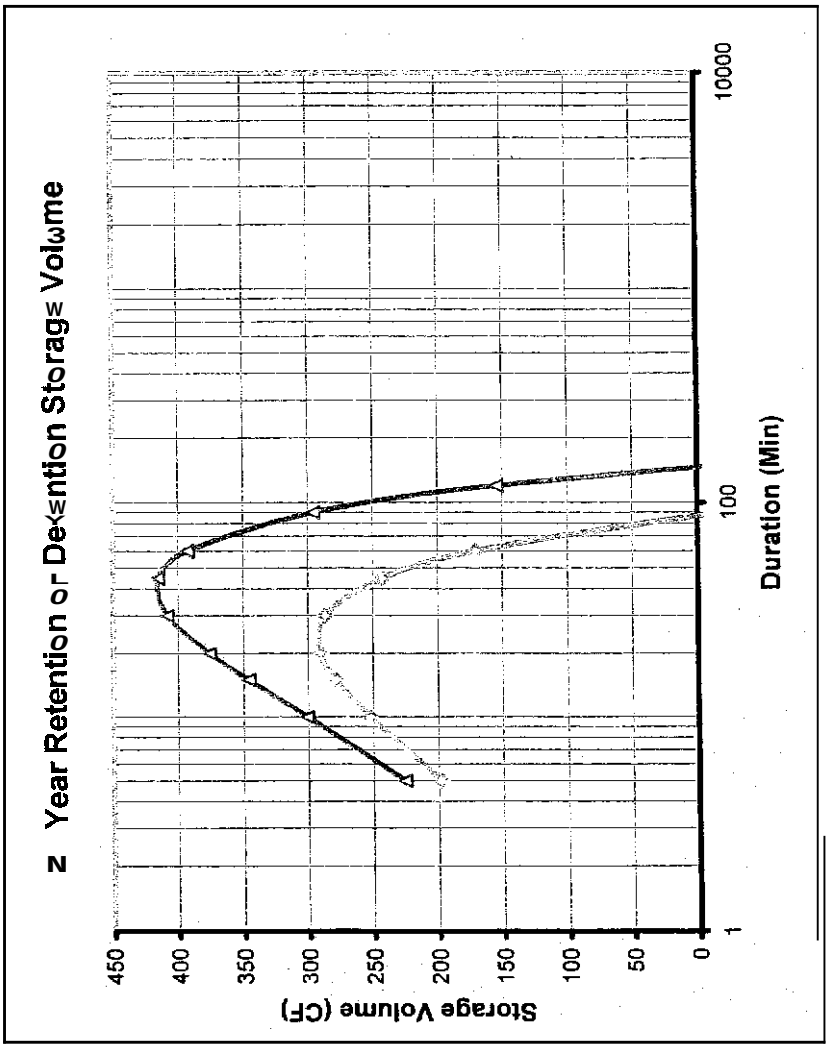
* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

290	ft^3 storage volume calculated		
40	% void space assumed		
725	ft^3 excavated volume needed		
Structure Ratios	Length	Width*	Depth*
	1000.00	1.50	1.00
Dimen. (ft)	**784.67**	**1.18**	**0.78**

DETENTION @ 60 MIN.	
Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
-0.195	-16853
-0.188	-13552
-0.179	-10316
-0.166	-7170
-0.145	-4163
-0.127	-2742
-0.098	-1415
-0.075	-806
-0.036	-260
-0.004	-24
0.047	170
0.090	242
0.159	287
0.242	**290**
0.309	278
0.420	252
0.659	198

ATTACHMENT 10 2 of 13
APPLICATION 05-0385
Environmental Review Initial Study



Environmental Review Inital Study
ATTACHMENT 10, 10 of 13
APPLICATION 05-0385

PROJECT: United Methodist Church of Santa Cruz - APN: 026-122-36 Application: 05-0385 **Calc by:** DAH **Date:** 6/22/2007

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

SS Ver:1.0

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.77	
Cpost:	0.90	
Impervious Area:	24850	ft^2
Saturated Soil Permeability:	0.06	in/hr

Notes & Limitations on Use:

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.073	0.085	-0.124	-10517	-0.195	-16853
1200	0.18	0.079	0.092	-0.117	-8243	-0.188	-13552
960	0.20	0.087	0.101	-0.108	-6038	-0.179	-10316
720	0.22	0.098	0.114	-0.095	-3929	-0.166	-7170
480	0.26	0.116	0.136	-0.073	-1966	-0.145	-4163
360	0.30	0.131	0.153	-0.056	-1073	-0.127	-2742
240	0.35	0.156	0.182	-0.027	-277	-0.098	-1415
180	0.40	0.176	0.206	-0.003	62	-0.075	-806
120	0.47	**0.209**	0.244	0.035	335	-0.036	-260
90	0.53	0.236	0.276	0.067	432	-0.004	-24
60	0.63	**0.280**	0.328	0.119	485	0.047	170
45	0.71	0.317	0.370	0.161	**485**	0.090	242
30	0.85	0.376	0.439	0.231	456	0.159	287
20	1.01	0.446	0.522	0.313	408	0.242	**290**
15	1.14	0.504	0.589	0.381	371	0.309	278
10	1.35	0.599	0.700	0.491	317	0.420	252
5	1.81	0.803	**0.939**	0.730	235	0.659	198

STRUCTURE DIMENSIONS FOR RETENTION

485	ft^3 storage volume calculated			
40	% void space assumed			
1213	ft^3 excavated volume needed			
Structure Ratios	Length	Width*	Depth*#	
	1000.00	1.50	1.00	
Dimen. (ft)	**931.66**	**1.40**	**0.93**	
3041	ft^2 internal surface area			
2128	ft^2 effective surface area			
45.6	hrs estimated structure drainage time			

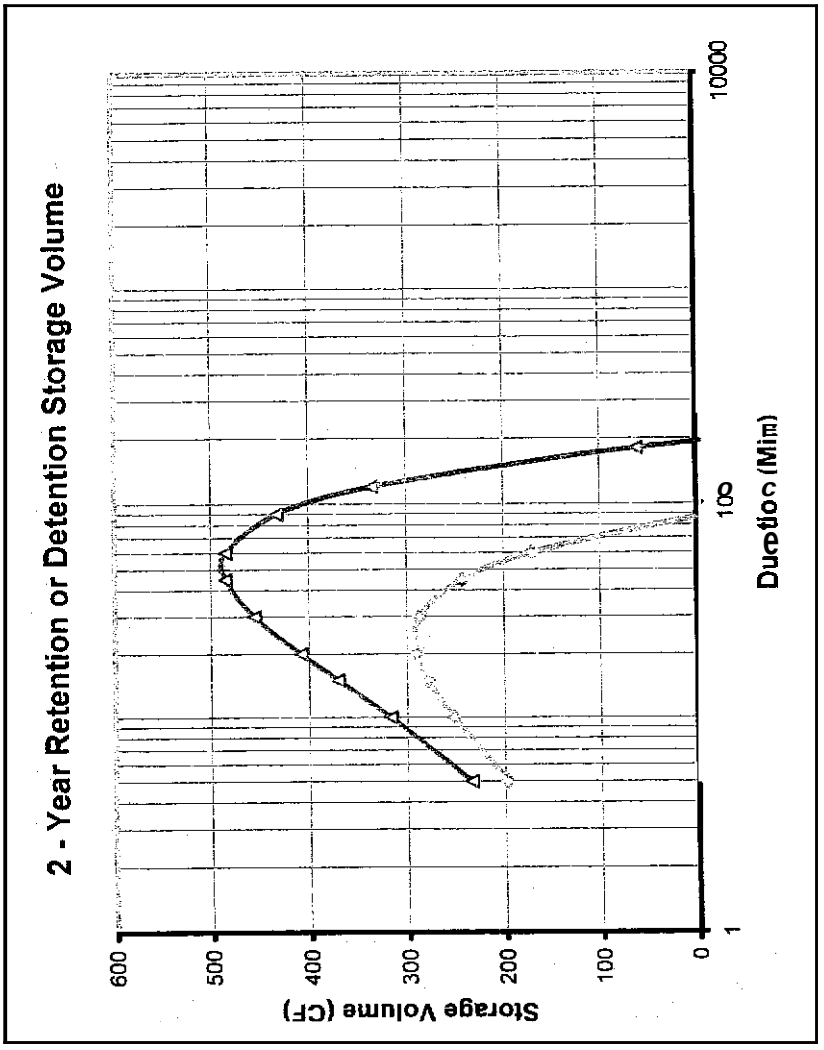
* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

290	ft^3 storage volume calculated		
40	% void space assumed		
725	ft^3 excavated volume needed		
Structure Ratios	Length	Width*	Depth*
	1000.00	1.50	1.00
Dimen. (ft)	**784.67**	**1.18**	**0.78**

ATTACHMENT 10 APPLICATION 05-0385

Environmental Review Initial Study



Environmental Review Inital Study
ATTACHMENT 10, 12 of 13
APPLICATION 05-0385

[illegible] - Discharge [illegible] ifice

Orifices -- English Units

Civil Tools for Windows
(06-22-2007, 18:48:26)

Flowrate cfs	Area sf	Coeff ---	Headwater ft	Center ft	Tailwater ft
0.670	0.102	0.620	2.000	0.250	0.000

= 4.32" ϕ Orifice

Environmental Review Inital Study
ATTACHMENT 10, 13 of 13
APPLICATION 05-0385

COUNTY OF SANTA CRUZ
DISCRETIONARY APPLICATION COMMENTS

Project Planner: Larry Kasparowitz
Application No.: 05-0385
APN: 026-122-36

Date: July 18, 2007
Time: 15:48:59
Page: 1

Environmental Planning Completeness Comments

========= UPDATED ON JULY 8, 2005 BY KEVIN D CRAWFORD =========
07/08/05- Project application is complete from a grading standpoint. Comments under Miscellaneous provide revisions necessary prior to permit issuance. ========= UPDATED ON JULY 8, 2005 BY KEVIN D CRAWFORD =========
07/08/05- Soil Report by Tharp & Associates has been reviewed and accepted.
========= UPDATED ON JULY 14, 2005 BY ANDREA M KOCH =========

See Kevin Crawford's comments. ========= UPDATED ON JANUARY 5, 2006 BY ANDREA M KOCH =========
1) No additional comments. ========= UPDATED ON JANUARY 5, 2006 BY ANDREA M KOCH =========

========= UPDATED ON DECEMBER 12, 2006 BY ANDREA M KOCH =========

Environmental Planning Miscellaneous Comments

========= REVIEW ON JUNE 28. 2005 BY KEVIN D CRAWFORD =========
06/28/05- APN's listed for this project (037-151-12 & -13) have been combined (new APN: 037-151-36). ALUS does not yet list this new APN. RECOMMENDATION: Prior to approval of application, change this application to reflect current APN. Kevin Crawford ========= UPDATED ON JUNE 28, 2005 BY KEVIN D CRAWFORD =========
========= UPDATED ON JULY 8. 2005 BY KEVIN D CRAWFORD =========
07/08/05- Review of civil plans by Ifland Engrs. dated 5/26/05: Sht C1--Remove reference to Application 04-0528. Remove Approval Block for DPW; Verify from Sanitation District the necessity of their approval block. Change Notes 6, 16 & 17 to refer to Planning Dept rather than DPW. Remove Note 35. Sht C2--Remove 04-0528 reference (typical all sheets). Specify exact limits for removal of curb, gutter & sidewalk. Add prominent note specifying all building demo to be completed under separate permit. Correct note at NE corner specifying removal of water service (arrow points to nothing). Correct Note 4 to reference County, not City. Sht C3--Specify limits of proposed new curb, gutter & sidewalk. Change Notes 2, 9 & 10 to reference Planning Dept instead of DPW. Provide accurate typical sections at all project boundaries where grading or construction will occur. Provide top and bottom elevations at ends and all height changes for proposed retaining wall on W&N boundaries. Provide at least 20 ft of offsite topo for properties to north and west. Clarify how proposed new sidewalk will conform at north and south end. Provide detail at south end if necessary. Clarify purpose of small area of concrete adjacent to sidewalk next to "sawcut" note. Provide invert elevations for all proposed drainage structures. Complete design of drainage system and show all proposed pipes and their flowlines, including existing gutter flowlines at discharge points. Move F/C5 reference to actual discharge location. Sht C5--Add Property line to Detail D. Add Detail E (referenced on C3). Consistently label all details and provide specific references on C3 and other sheets. Sht EC1--Provide Legend. Correct note re DI sediment barriers, should be 5 not 4. ========= UPDATED ON JULY 8, 2005 BY KEVIN D CRAWFORD =========
========= UPDATED ON JULY 14, 2005 BY ANDREA M KOCH =========

See Kevin Crawford's comments. ========= UPDATED ON JANUARY 5, 2006 BY ANDREA M KOCH =========

ATTACHMENT 6 1 of 9
APPLICATION 05-0385

1) No additional comments. ========= UPDATED ON DECEMBER 14, 2006 BY KEVIN D CRAWFORD =========
12/14/06 - Review of updated plans by Ifland (Bagnall) dated 11/07/06: My previous Misc. Comments (dated 7/8/05) have been addressed except: Sht C3: Provide two typical cross sections perpendicular to those already provided. All cross sections shall include property or R/W lines and adequate offsite topo data to determine proper matching of proposed to existing grades. Plan views must also include offsite topo to the north and west (none provided). Show all proposed retaining wall elevations at top & bottom of wall for beginning, end, angle points and changes in elevation.

Information requested this date may be postponed to the building permit stage
========= UPDATED ON DECEMBER 14, 2006 BY ANDREA M KOCH =========

1) At the building permit stage, after the final plans have been prepared. provide a plan review letter from the soils engineer. The plan review letter must state that the final project plans conform to the recommendations in the soils report.

2) At the building permit stage, show temporary construction fencing around trees to be retained to protect them from damage during construction.

3) Ensure that Sheets L1 and C02 are consistent with regards to tree retention and removal

On Sheet L1, clearly identify the oaks to be retained at the western property line.

Historical Completeness Comments

========= REVIEW ON JULY 8, 2005 BY STEVE D GUINEY ========= The existing church was reveiwed in 1986 for historic signficance and at that time was determined to not be historically significant, The Historic Resources Commission informally discussed this project with church representatives in 2004. The Commission's only concern was that the new building be constructed as soon as possible after demolition. No further review for historic significance is required.

Historical Miscellaneous Comments

========= REVIEW ON JULY 8, 2005 BY STEVE D GUINEY ========= No comment

Dpw Drainage Completeness Comments

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

========= REVIEW ON JULY 15, 2005 BY ALYSON B TOM ========= Application with civil plans prepared by Ifland Engineers dated 6/17/05 has been received. Please address the following items:

1) Provide documentation that the existing impervious areas are either permitted. or were installed prior to 1969 for fee and impact analysis.

2) Please describe how the existing site drains. Sheet C02 shows existing catch basins on site, where do these lead? Do the existing 4" pvc pipes shown near the

ATTACHMENT 11, 2 of 9
APPLICATION 05-0385

northern property boundary serve any drainage purposes?

3) Does this site receive currently receive drainage from offsite? Provide topographic information for adjacent sites demonstrating drainage patterns. If this site does receive offsite runoff, show the extent of the area draining to the site and describe how the proposed site will accommodate this runoff.

4) How and where will the proposed system outlet? Will the proposed 18" pipe day light directly onto Pinewood Road?

5) Provide a description and an assessment of the downstream drainage path., including open channel sections. Based on the results of the assessment this project may be required to upgrade downstream facilities and/or provide additional on-site mitigations. Private easement(s) may be required.

6) This project is required to minimize impervious area. Describe how this is being accomplished. Consider the following measures in order to meet this requirement: utilize pervious surfacing instead of conventional asphalt or concrete: eliminate directly connected impervious areas by sending runoff from roof areas to landscaping prior to discharge from the site, provide flush or slotted curbs and grade the driveway and parking areas to drain to landscaped swales prior to entering the pipe system, design landscaped islands and strips to be depressed in order to accept runoff.

7) The proposed landscape plan and civil plans are not in agreement for proposed impervious areas. Please update.

8) Detention as a means for maintaining pre-development runoff rates is only acceptable if there are no other methods available. Pervious surfacing should be considered at least for the parking aisles. Given the percolation rate for the site, the underlying soils should be adequate for pervious surfacing.

9) If detention is determined to be the allowable the following items should be addressed: - the allowable release rate should take into account areas that do not drain to the detention facility. - The rising limb of the allowable release rate should be taken into account when determining required storage volume.

10) The analysis refers to attached soils data that was not actually attached

11) All parking and driveway areas should go through water quality treatment prior to discharge from the site. A silt and grease trap detail was included on sheet C5, but it is unclear where these are proposed. Please update the silt and grease trap detail to include a perforated stand pipe and drain rock at the bottom of the structure.

See miscellaneous comments for issues to be addressed in the building permit stage

For questions regarding this review Public Works storm water management staff is available from 8-12 Monday through Friday. All submittals for this project should be made through the Planning Department.
======== UPDATED ON JANUARY 12, 2006 BY ALYSON B TOM ======== Application with

civil plans prepared by Ifland Engineers dated 12/15/05 and memo dated 12/21/05 has been received. Please address the following items:

1) Provide documentation that the existing impervious areas are either permitted, or were installed prior to 1969 for fee and impact analysis. This information is needed.

2) The memo dated 12/15/05 states that this site does not receive any runoff from offsite. This is contrary to existing County contour information. Please include on the plans the information used to determine that this site does not receive runoff from parcels to the north.

3) How and where will the proposed system outlet? Will the proposed 18 inch pipe daylight directly onto Pinewood Road? Demonstrate adequacy of the gutter flow path

4) Based on further investigation of downstream flow path, no additional information is required at this time.

5) The memo states that percolation test information from the geotechnical engineer was included as an attachment, however, this information was not attached. Please submit this information. Results from falling head tests in borings should be converted to volume per surface area for use in designing the proposed retention system

6) The pre and post project C values are inconsistent from sheet C03 to C06. If the underlying layers of the pervious asphalt will be used for required storage areas, the C values used for these areas should correspond with other impervious areas.

7) Is there a proposed 4 inch drain line at the southwest corner of the parking area? If so, where does it lead? Will it impact off site properties?
---------- UPDATED ON DECEMBER 6. 2006 BY ALYSON B TOM ========= Application with civil plans prepared by Ifland Engineers dated 11/7/06 and preliminary drainage study dated November 2006 has been received. Please address the following items:

1) Previous comment No. 1 has not been addressed. Provide documentation that the existing impervious areas are either permitted, or were installed prior to 1969 for fee and impact analysis.

2) Previous comment No. 2 has not been addressed. Please include on the plans or study the information used to determine that this site does not receive runoff from parcels to the north.

3) Previous comment No. 3 has not been fully addressed. The proposed outlet of the 18" discharge pipe to a gravel area between the project site and the downstream gutter line presents some maintenance issues. Who will maintain this gravel area? Does the applicant have an easement for installation and maintenance? Consider discharge directly to the gutter section and eliminating the I foot drop between the outlet pipe and gutter flow line. There was a printout titled 10 year discharge gutter flow calculations included in the preliminary drainage study, but the information provided did not clearly demonstrate adequacy. Provide analysis for the downstream

ATTACHMENT 11, 4 of 9
APPLICATION 05-0385

private gutter flow path demonstrating adequacy for both the design storm and safe overflow storm events. The analysis should assume no detention or retention on the project site and should take into account the entire drainage area draining to the gutter (provide a watershed map depicting this area). What width of travel way will be available for safe travel under the two different (design and safe overflow) storm scenarios? This off-site analysis should be stamped and signed.

4) Previous comment No. 5 has not been fully addressed. The summary infiltration test information from the geotechnical engineer was included as an attachment, however the conversion data from the summary infiltration test results to the volume per surface area used in evaluating the retention design was not included as was requested in the previous comment. The drain time for the retention volume below the discharge pipe elevation is critical information for understanding what treatment volumes will be expected to be available during storm events. The analysis submitted use a value of 0.6 in/hr and it is not clear how this value was obtained. This value is not consistent with County soil survey data for depths of the proposed facility. The analysis of drain time should use an permeability rate based on conservative soil survey data or the site specific data obtained by thegeotechnical engineer with accurate conversion based on testing procedure.

5) Sheet C03 provides a legend for permeable AC. however it is unclear where this is proposed. Please provide hatching that clearly shows this area and update pavement design and site clearing notes that are applicable for the permeable pavement areas. Please clearly label all proposed impervious areas consistent with other plan sheets and analysis.

6) The predevelopment impervious area shown on sheet C02 and in the drainage calculations on sheet C03 are inconsistent.

For questions regarding this review Public Works stormwater management staff is available from 8-12 M-F by appointment. All submittals for this project should be made through the Planning Department.
======== UPDATED ON JULY 12, 2007 BY ALYSON B TOM ======== Application with plans dated 11/7/06 and drainage study dated June 2007 by Ifland Engineers has been recieved. Please see miscellaneous comments for issues to be addressed with the building permit application.

Dpw Drainage Miscellaneous Coments

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

======== REVIEW ON JULY 15, 2005 BY ALYSON B TOM ======== The following comments should be addressed prior to building permit issuance:

1) 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.

2) Add a note that calls for returning the soils in the landscaped areas to pre disturbance densities.

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

4) Provide a parking lot maintenance plan that describes sweeping intervals.

5) Show all trash and storage areas and describe how these will be designed to prevent storm water pollution.

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

7) Inspection of the drainage related items will be done by a public works inspector. Once all other reviewing agencies 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 ($525 minimum) will be assessed for inspection.

8) Zone 5 fees will be assessed on the net increase in impervious area coverage ========== UPDATED ON JANUARY 12. 2006 BY ALYSON B TOM ========== Address the following in addition to previous miscellaneous comments prior to building permit issuance:

1) Will runoff actually be stored in the proposed subgrade or will it flow through to the proposed B inch outlet pipe. Provide addition details describing how this runoff will be retained in the subgrade system.

2) Provide silt traps in the last catch basins prior to discharge to the retention system for maintenance. ========== UPDATED ON DECEMBER 6. 2006 BY ALYSON B TOM ========== Address the following in addition to previous miscellaneous comments made on 7/15/05 with building permit submittal:

1) Provide a final drainage study for the project that is stamped and signed and includes all final analysis provided for this project.

2) Provide an analysis for the onsite drainage system consistent with SWM-6 and showing system compliance with design criteria requirements. Include watershed area map(s) showing how the site will drain.

3) Provide a final detention system analysis demonstrating that the predevelopment runoff rates are maintained, accounting for areas bypassing the system.

4) Include traps in the inlets along. the western parking strip to remove debris prior to discharge to the gravel storage area.

5) Provide construction details. specifications and maintenance requirements for the permeable paving areas on the project plans.

6) Provide drainage for surface runoff collected behind the retaining wall at the west of the site. ========== UPDATED ON JULY 12. 2007 BY ALYSON B TOM ==========

Please address the following in addition to miscellaneous comments from 7/15/05 and comment No. 5 from 12/6/06 with the building permit application:

1) Submit documentation for permitted impervious areas used in the drainage calculations dated June 2007.

2) The civil plan sheets should be signed and stamped by the civil engineer

Dpw Driveway/Encroachment Completeness Comments

========== REVIEW ON JULY 5. 2005 BY DEBBIE F LOCATELLI ==========
========== UPDATED ON JANUARY 6. 2006 BY DEBBIE F LOCATELLI ==========
Reviewed documentation submitted, no further comments. ========== UPDATED ON NOVEMBER 30. 2006 BY DEBBIE F LOCATELLI ==========
Since the application had been submitted 17th Avenue has been paved, therefore, the following pertains: Excavation in newly renovated Public right-of-ways is prohibit for three (3) years. (Ordinance 9.80.085 Moratorium) The moritorium hasan exception that states "service for buildings or parcels where no other reasonable means of providing service exists, as determined by the Director." In this project. it has been determined that sewer and water could possibly be obtained off of Burr Court, county maintained road. Please obtain verification from City of Santa Crur Water Department and County of Santa Cruz Sanitation prior to redesigning utility connections. If not feasible, and utilities are required to be constructed on 17th Avenue, the following shall be required as conditions of application 05-0385: In addition to encroachment permit fee, a repair trench cut fee shall also be required to be paid. Trenches shall meet the County of Santa Cruz Design Criteria, paving shall be required to be a "mix design" for rubberized overlay and a black rock slurry for finished coat. The area for paving shall incorporate the entire area from sewer trench to water trenches. (Mix Design criteria shall be provided to owner by Public Works). All striping shall be replaced in-kind. If sewer lateral is deemed to be functional and no trenching is required, the paving and slurry section shall only include the water trenches unless otherwise directed by Public Works. Also the area of asphalt to be removed for the construction of driveway approach, curb, gutter and sidewalk (or due to any damage to the road) shall be replaced with "mix design" for patching rubberized overlay roads. Prior to any work to be completed on 17th Avenue. a meeting shall be scheduled with Public Work's Encroachment Section to discuss the conditions and any concerns that Public Works may have.

Dpw Driveway/Encroachment Miscellaneous Comments

========== REVIEW ON JULY 5. 2005 BY DEBBIE F LOCATELLI ==========
Driveways to conform to County Design Criteria Standards, which includes ADA requirements.
Encroachment permit required for all off-site work in the County road right-of-way, to be applied for at the time of building permit application submittal. Landscaping within the County right-of-way shall be maintained by the property owner. Landscaping shall not obstruct vehicle or pedestrian view or obstruct sidewalk access.
========== UPDATED ON JANUARY 6, 2006 BY DEBBIE F LOCATELLI ==========
No further comments.
========== UPDATED ON NOVEMBER 30. 2006 BY DEBBIE F LOCATELLI ==========

Dpw Road Engineering Completeness Comments

========= REVIEW ON JULY 12, 2005 BY GREG J MARTIN =========
Public Works does not support the proposed exception which calls for only five feet to be dedicated along the frontage of the project. The right-of-way width recommended for an Urban Arterial Street with Bike Lanes and Parcking is 72 feet. This would require a dedication of 11 feet for the entire length of the project.

Please provide a typical cross section for 17th Avenue and actual cross sections. Please show 100 feet in either direction from the property boundaries and both sides of the street. 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.

Please contact Metro regarding the existing bus stop. A bus turnout may be required as part of the right-of-way dedication and frontage improvements.

A traffic study is required. Please contact Public Works to discuss the scope of work prior to beginning the study.

The accessible ramp and pedestrian access at the corner of 17th Avenue and Cozy Court is required to meet County Standards.

If you have any questions please call Greg Martin at 831-454-2811

========= UPDATED ON JANUARY 18, 2006 BY GREG J MARTIN ========= Public Works does not support the proposed exception which calls for approximately nine feet to be dedicated along the frontage of the project. The right-of-way width recommended for an Urban Arterial Street with Bike Lanes and Parking is 72 feet. This would require a dedication of 11 feet for the entire length of the project.

Please provide a typical cross section for 17th Avenue and actual cross sections. Please show 100 feet in either direction from the property boundaries and both sides of the street. 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 site plan does not show how the proposed frontage improvements shall tie into adjacent frontage improvements

It is our understanding Metro approves of this location as a bus stop. There must be ten feet from the travel lane to the curb of the bus stop.

A traffic study is required. Please contact Public Works to discuss the scope of work prior to beginning the study.

If you have any questions please call Greg Martin at 831-454-2811. ========= UPDATED ON DECEMBER 18, 2006 BY GREG J MARTIN =========
========= UPDATED ON DECEMBER 22, 2006 BY GREG J MARTIN =========
========= UPDATED ON JULY 13, 2007 BY RODOLFO N RIVAS =========
I. Applicant submitted a Trip Generation Analysis prepared by Pinnacle Traffic Engineering, dated June 20, 2007. The analysis has been review and is accepted. The

analysis showed that vehicular trip-ends at peak hour will not exceed the 20 trip-ends threshold to require a comprehensive analysis. The development will be subject to Live Oak Transportation Improvement Area (TIA) fees at a rate of $440 per daily trip-end generated by the proposed use. The proposed church project will result in a net increase of 132 daily trip-ends. The fee is calculated as 132 trip-ends multiplied by $440 per trip-end equals $58.080. The total TIA fee of $58.080 is to be split evenly between transportation improvement fees and roadside improvement fees
----------II
Recently submitted plans indicating a separated sidewalk with landscaping strip and bus stop along the 17th Avenue frontage is acceptable. ========= UPDATED ON JULY 13, 2007 BY RODOLFO N RIVAS =========

Dpw Road Engineering Miscellaneous Conments

========= REVIEW ON JULY 12, 2005 BY GREG J MARTIN =========
========= UPDATED ON JANUARY 18, 2006 BY GREG J MARTIN =========
========= UPDATED ON JULY 13, 2007 BY RODOLFO N RIVAS =========
NO COMMENT
========= UPDATED ON JULY 13, 2007 BY RODOLFO N RIVAS =========
NO COMMENT

Dpw Sanitation Completeness Comments

========= REVIEW ON MAY 4. 2007 BY CONRAD A YUMANG =========
Sewer service is currently available. See other comments

Dpw Sanitation Miscellaneous Comments

========= REVIEW ON MAY 4. 2007 BY CONRAD A YUMANG =========
1. Video existing lateral and submit to Sanitation Engineering for review.2. Engineering may require replacement of lateral depending on current condition.3. Grease trap required for kitchen. Request details from Sanitation Engineering.

Environmental Health Completeness Comments

========= REVIEW ON JULY 13, 2005 BY JIM G SAFRANEK =========
NO COMMENT

Environmental Health Miscellaneous Comments

========= REVIEW ON JULY 13, 2005 BY JIM G SAFRANEK =========
Applicant must obtain approval for an Environmental Health Plan Review prior to submittal of building plans. Applicant must obtain Environ- mental Health Plan Check approval, a construction inspection final and a Food Establishment Health Permit prior to opening. Contact Roger Houston of Environmental Health at 454-2734.

Environmental Review Initial Study
ATTACHMENT 4 9 of 9
APPLICATION 05-0385

SANTACRUZ

WATER DEPARTMENT

809 Center Street, Room 102 Santa Cruz CA 95060 Phone (831) 420-5200 Fax (831) 420-5201

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 complete; and
financial arrangements have 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 the 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

Environmental Review Inital Study
ATTACHMENT 12, 1 of 2
APPLICATION 05-0385

BK/sr
P:\WTEN\EngTech\Sherry's\Water Availability 026-122-36.doc
Cc SCWD Engineering

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: 026-122-36 Multiple APN? N Project Address: 2091 17th Ave

Date: 6/28/2005
Revision 1 : 4/26/2007
Revision 2 :

PROJECT DESCRIPTION:
Demolish existing and construct new church building

APPLICANT INFORMATION:

Name: United Methodist Church Phone:
Mailing Address: 250 California Street Cell:
City/St/Zip: Santa Cruz CA 95060- Fax:
EMail:

REPRESENTATIVE INFORMATION:

Name: Michael Bethke/Slatter Const Phone:(831) 425-5425
Mailing Address: 126 Fern Street Cell:
City/St/Zip: Santa CruZ CA 95060- Fax:
EMail:

SECTION 1 EXISTING MAIN AND SERVICES

Main Size/Type/Age: 10" CI 1914
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"	074-4940		Active		business
3/4"	074-4950		Inactive		sfd

SECTION 2 FIREFLOWS

Hyd # 1719 Size/Type: 6" stmr Static 74 Res 56 Flow 1210 Flow w/20# Res. 2190 FF Date 07/03 Location: on Cozy Ct @ 17th Ave
Hyd # Size/Type: Static Res Flow Flow w/20# Res. FF Date Location:

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	$540.00						
Backflow	$150	Backflow	$360.00						
Irrigation	$160	St. Opening	$0.00						
		Misc Fees	$0.00						
Totals	$560		$900.00	$574	$9,795	$0	$0.00	$0	$11,829.00

SECTION 4: EIR Environmental Review Initial Study PLAN APP # 05-0385 PLANNER Larry Kasparowitz REVIEWED BY M. Fisher

ADDITIONAL COMMENTS: Fees listed above are for 1" domestic meter, based on fixture unit count. 1.5" meter (shown on plans) would be $32,650. List of SCWD approved service installation contractors enclosed for your use. One existing 3/4" service to be retired by contractor.

ATTACHMENT 1 APPLICATION 05-0385

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.

SANTA CRUZ COUNTY SANITATION DISTRICT

INTER-OFFICE CORRESPONDENCE

DATE: July 19,2005

TO: Planning Department, ATTENTION: LARRY KASPAROWITZ

FROM: Santa Cruz County Sanitation District

SUBJECT: SEWER AVAILABILITY AND DISTRICT'S CONDITIONS OF SERVICE FOR THE FOLLOWING PROPOSED DEVELOPMENT

APN: 26-122-036 APPLICATION NO.: 05-0385

PARCEL ADDRESS: 2091 17TH AVENUE, SANTA CRUZ

PROJECT DESCRIPTION: DEMOLISH EXISTING 5,500 SF CHURCH, CONSTRUCT NEW 22,000 SF CHURCH FACILITY

Sewer service is available for the subject development upon completion of the following conditions. This 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 sewer service availability letter must be obtained by the applicant. Once a tentative map is approved this letter shall apply until the tentative map approval expires.

Proposed location of on-site sewer lateral(s), clean-out(s), and connection(s) to existing public sewer must be shown on the plot plan of the building permit application.

Existing lateral(s) must be properly abandoned (including inspection by District) prior to issuance of demolition permit or relocation or disconnection of structure. An abandonment permit for disconnection work must be obtained from the District.

Water use data (actual and/or projected), and other information as may be required for this project, must be submitted to the District for review and use in fee determination and waste pretreatment requirements before sewer connection permits can be approved.

The plan shall show all existing and proposed plumbing fixtures on floor plans of building application. Completely describe all plumbing fixtures according to table 7-3 of the uniform plumbing code.

Environmental Review Inital Study
ATTACHMENT 13, 1 of 2
APPLICATION 05-0385

Other: Kitchen wastewater may require a grease trap. Please contact Jo Fleming at (831) 464-5462 *for* the requirements for commercial kitchens.

CONRAD YUMANG
Sanitation Engineering

CAY:dls/447

copy: Applicant: Michael Bethke
c/o Slatter Construction
126 Fern Street
Santa Cruz, CA 95060

Property Owner: United Methodist Church of Santa Cruz
250 California Street
Santa Cruz, CA 95060

(Rev. 3-96)

Environmental Review Inital Study
ATTACHMENT 13, 2 of 2
APPLICATION 05-0385

PINNACLE TRAFFIC ENGINEERING
930 San Benito Street
Hollister, California 95023
(831) 638-9260 / FAX **(831) 638-9268**
PinnacleTE.com

June 20,2007

Mr Michael D Bethke, AICP
Slatter Construction, Inc
126 Fern Street
Santa Cruz, CA 95060

RE United Methodist Church Project; Santa Cruz County, California
Trip Generation Estimate Calculations

Dear Mr Bethke,

Per your request, I have calculated the trip generation estimates for the United Methodist Church project in Santa Cruz County (2091 17th Avenue; Santa Cruz, CA). Based on information provided by your office, it is my understanding that the existing facility has a total of 5,300 square feet (SF). Approximately 3,100 SF is devoted to the church/sanctuary operations (108 seat *sanctuary)* and 2,200 SF is used for the existing day care center (45 children). The proposed project will remove the existing facility and construct a new facility with a total of 19,726 SF. The proposed church/sanctuary will use approximately 17,526 SF (180 seat sanctuary) and the day care center will essentially remain unchanged (2,200 SF with 45 children). In addition, the new sanctuary will have an ultimate capacity of 220 seats for special holiday (ie: Easter, Christmas, etc.) and/or event services. These special services will only occur a few times a year and will not take place on a regular basis. The project trip generation estimate calculations have been completed at the request of Santa Cruz County Public Works. The scope of the trip generation calculations was developed in consultation with County staff (Jack Sohriakoff).

The project trip generation estimates were derived using data contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual (7th Edition). The project trip estimates were derived for both a typical weekday (including AM and PM peak hour period on adjacent street) and a Sunday (mid-day peak period). The weekday trip generation estimates for the church/sanctuary were calculated using the respective size (number trips per 1,000 SF); while the trips associated with the day care center were calculated using the number of children (number of trips per child). The Sunday trip generation estimates for the church/sanctuary facility were calculated using the number of seats in the *sanctuary.* The project trip generation estimates and ITE trip generation rates for a typical weekday are presented in Table 1A. The project trip generation estimates and ITE trip generation rates associated with a typical Sunday are displayed in Table 1B. Table 1C presents the Sunday project trip generation quantities associated with the special holiday / event services that will only occur a few times a year.

Table 1A -Weekday Project Site Trip Generation Estimates

Facility Component	Number of Vehicle Trips				
	AM Peak Hour		PM Peak Hour		Daily
	IN				
Existing Site Uses :					
3,100 SF Church Facility (a) (ITE Trip Rates-Code #560)	1 (0.39)	1 (0.33)	1 (0.34)	1 (0.32)	28 (9 11)
2,200 SF / 45 Child Day Care Facility (b) (ITE Trip Rates-Code #565)	19 (0.42)	17 (0.38)	18 (0.39)	19 (0.43)	202 (4.48)
Existing Site Totals (Weekday) :	20	18	19	20	230
Proposed Site Uses :					
17,526 SF Church Facility (a) (ITE Trip Rates-Code #560)	7 (0.39)	6 (0.33)	6 (0.34)	6 (0.32)	160 (9.11)
2,200 SF / 45 Child Day Care Facility (b) (ITE Trip Rates-Code #565)	19 (0.42)	17 (0.38)	18 (0.39)	19 (0.43)	202 (4.48)
Proposed Site Totals (Weekday) :	26	23	24	25	362
Net Change (Proposed - Existing) :	+6	+5	+5	+5	+132

(a) Weekday Trip Ends Based on Square Footage (

Table 1B - Sunday Project Trip Generation Estimates

Facility Component	Number of Vehicle Trips		
	Mid-Day Peak Hour		Daily
	IN	OUT	
_____	36 (0.33)	32 (0.30)	166 (1.53)
Proposed Site Uses : 180 Seat Sanctuary (a) (ITE Trip Rates-Code #560)	59 (0.33)	54 (030)	276 (1 53)
Sunday Net Change (Proposed - Existing) :	+23	+22	+110

Environmental Review Inital Study
ATTACHMENT 14, 2 of 3
APPLICATION 05-0385

Facility Component	Number of Vehicle Trips		
	Mid-Day Peak Hour		Daily
	IN	OUT	
Existing Site Uses :			
108 Seat Sanctuary (a)	36	32	166
(ITE Trip Rates-Code #560)	(0.33)	(0.30)	(1.53)
Proposed Site Uses :			
220 Seat Sanctuary (a)	73	66	338
(ITE Trip Rates-Code #560)	(0.33)	(0.30)	(1.53)
Sunday Net Change (Proposed - Existing) :	+37	+34	+172

Larry D. Hail, CE, TE, PTOE
President

Environmental Review Inital Study
ATTACHMENT 14, 3 of 3
APPLICATION 05-0385

ldh:msw

Methodist Church SC Trip Gen L01R.doc

Lawrence Kasparowitz

From: Jack Sohriakoff
Sent: Thursday, June 07, 2007 3:34 PM
To: Lawrence Kasparowitz
Cc: Greg Martin; Melissa Allen
Subject: Methodist Church - 17th Avenue

Hello, Larry.

I met with Mike Bethke today to discuss our previous comments for right-of-way dedications and frontage improvements. I also discussed these issues with John Presleigh before the meeting. We have agreed to keep the current flow line where it is but will require separated sidewalks and a landscaping strip with the appropriate right-of-way dedication. No traffic study will be required but if they want they can submit a trip generation analysis for **TIA** fee purposes. Otherwise, we will generate a TIA fee based upon our current fee schedule. They will revise plans and submit changes to you. Please let me know if you have any questions. Jack.

Environmental Review Inital Stud
ATTACHMENT 15, 1 of 2
APPLICATION 05-0385

Lawrence Kasparowitz

From: Jack Sohriakoff
Sent: Wednesday, July 18, 2007 2:22 PM
To: Lawrence Kasparowitz
Subject: Methodist Church on 17th Avenue, **Appl.** No. 05-0385

Hello, Larry.

Per our conversation and review of trip generation analysis, the project noted above is not expected to negatively impact intersections on the nearby street network. Please contact me if you have any questions.

Jack Sohriakoff
Senior Civil Engineer
454-2392

Environmental Review Inital Study
ATTACHMENT 15, 2 of 2
APPLICATION 05-0385

Existing Usage Survey of the United Methodist Church of Santa Cruz
2091 17th Avenue - Santa Cruz, CA 95062

Since the beginning of the planning for a new building redevelopment of the site on 17th Avenue, we have continued a ministry presence and usage of the grounds as a vital community center of sacred worship, childcare, administration functions, community outreach and service, and various spiritual classes and fellowship groups. It is the purpose of this narrative to demonstrate how current usage reflects growth and vitality of a positive presence in the Live Oak neighborhood.

Worship

Sacred worship accounts for the largest current building usage. A Traditional worship service is held on Sundays at 10:30 am and will likely occupy the same time slot when the building is opened. Current attendance averages 80 on non-holiday Sundays and 130 on special Sundays such as Christmas and Easter. A Spanish Language Worship Service is held on Sunday evenings at 7:00pm and is growing. Current attendance is 20-30. A Contemporary Worship Service is also held on Sunday, at 5:00pm. That too is growing with attendance ranging between 12 and 20. We expect continued growth such that Sunday morning worship will reach 150 on a regular basis, the Spanish Language Service will reach 150 regularly and the Contemporary Service will reach 50. The car parking load is currently accommodated by our small parking lot. (The existing parking total is up to 40 cars during worship.) The proposed lot will be more than adequate to serve these Worship gatherings. (The proposed parking total is up to 70 cars during worship.)

ESL Classes

The next largest current building usage, in terms of parking impact, is the English as a Second Language classes that are hosted at the church. Over 100 students pass through this free program that is a partnership with the Live Oak Family Resource Center, COPA Live Oak Parent Leaders, and the Santa Cruz Schools. Even at that number of attendees, the limited current parking lot size still is fully adequate to the task. The new building design, with it's larger parking capacity will more than suffice for the continuation of this current level of usage as a community outreach and service. Many participants live nearby and walk to classes or take public transportation.

Administration, meetings, youth group and church classes

Staff currently uses the parking lot daily and accounts for between 3 and 8 cars on site. In addition, church meetings, bible study classes, youth group, adult discipleship classes and prayer groups meet here. The current usage is that up to three of these events may be happening in the building at once, yielding a parking lot load of under 20 cars.

Loving & Learning

While one of our most visible and important ministries, Loving and Learning actually impacts parking the least. At current levels, which reflect future levels as well due to licensing limitations, this program adds 3 to 10 cars to the parking lot. This is possible because, at the start of the day, all of our children are either picked up from their schools in our vans or walked under adult supervision from their school. In the afternoon, parental pickups are random due to their work schedules, making the guest car traffic on the lot in the afternoons limited and spread out. We typically have less than 4 guest cars on the lot at any one time picking up children. Once again, the existing rather small parking lot has proved very adequate to this task. We are excited about the new parking lot design which will more than suit our use, even with growth of program.

no Sunday School -

Environmental Review Inital Study
ATTACHMENT 16
APPLICATION 05-0385

07/10/07

Current Peak Parking per Time Slot *
New United Methodist Church of Santa Cruz
2091 17th Avenue

	8 AM – 1 PM	1 – 5 PM	5 – 7 PM	7 – 10 PM
Sunday	Up to 73 Cars	Up to 73 Cars	Up to 50 Cars	Up to 50 Cars
Monday	Up to 20 Cars	Up to 20 Cars	Up to 20 Cars	Up to 50 Cars
Tuesday	Up to 20 Cars	Up to 20 Cars	Up to 20 Cars	Up to 50 Cars
Wednesday	Up to 20 Cars	Up to 20 Cars	Up to 20 Cars	Up to 50 Cars
Thursday	Up to 20 Cars	Up to 20 Cars	Up to 20 Cars	Up to 50 Cars
Friday	Up to 20 Cars	Up to 20 Cars	Up to 20 Cars	Up to 50 Cars
Saturday	Up to 73 Cars	Up to 73 Cars	Up to 73 Cars	Up to 50 Cars

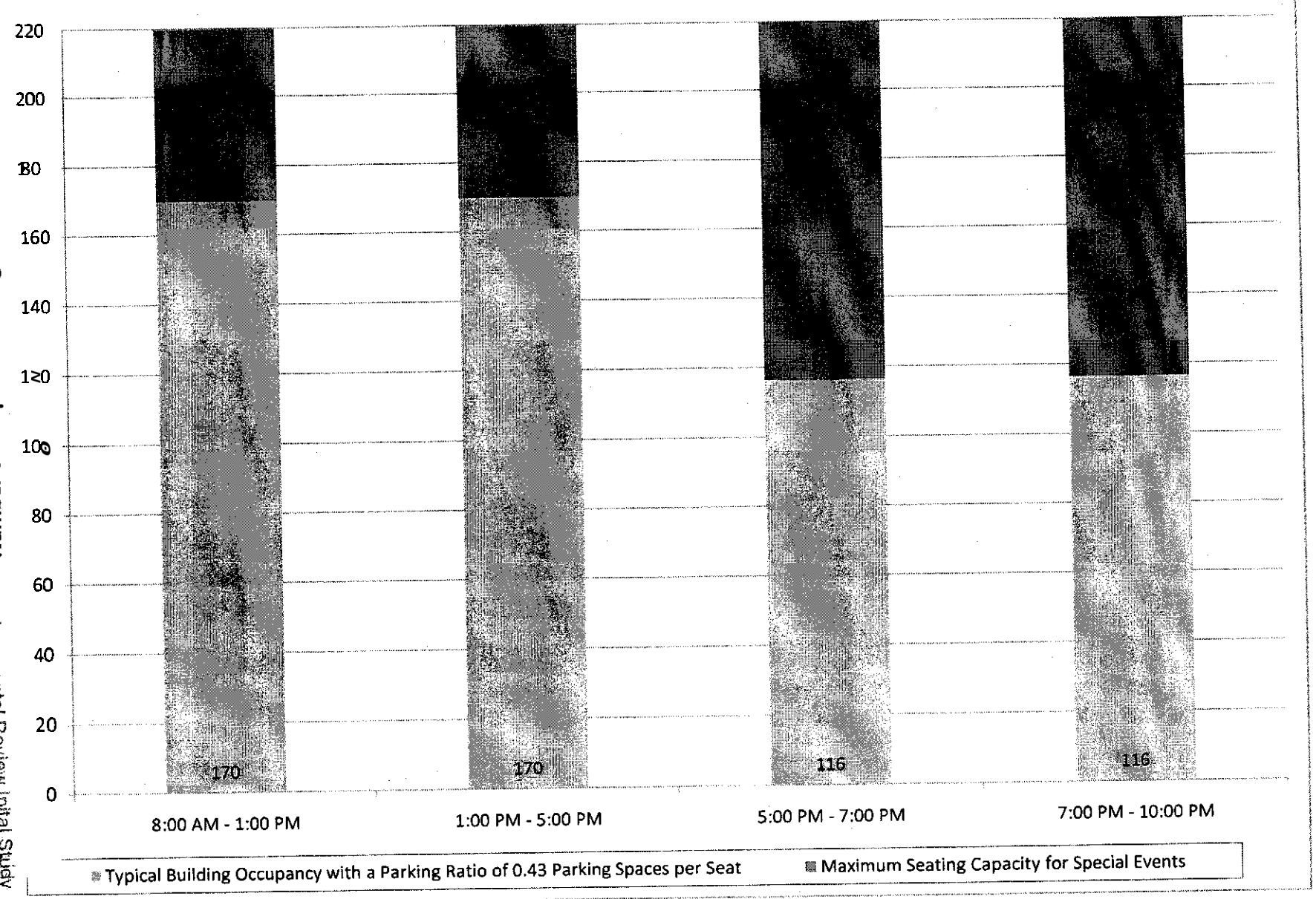
*** Including Worship Attendance from Usage Prior to Project Start**

Key -
- **Worship Service One**
- **Worship Service Two**
- **Worship Service Three**
- **Staff Parking/Community Events/Classes**
- **Meetings/Classes/Fellowship Events**
- **Meetings & Community Events**

Conclusion: Given the maximum seating capacity of 220, parking lot load will not exceed 73 cars during any of our hours of operation; Daily 8am - 10pm

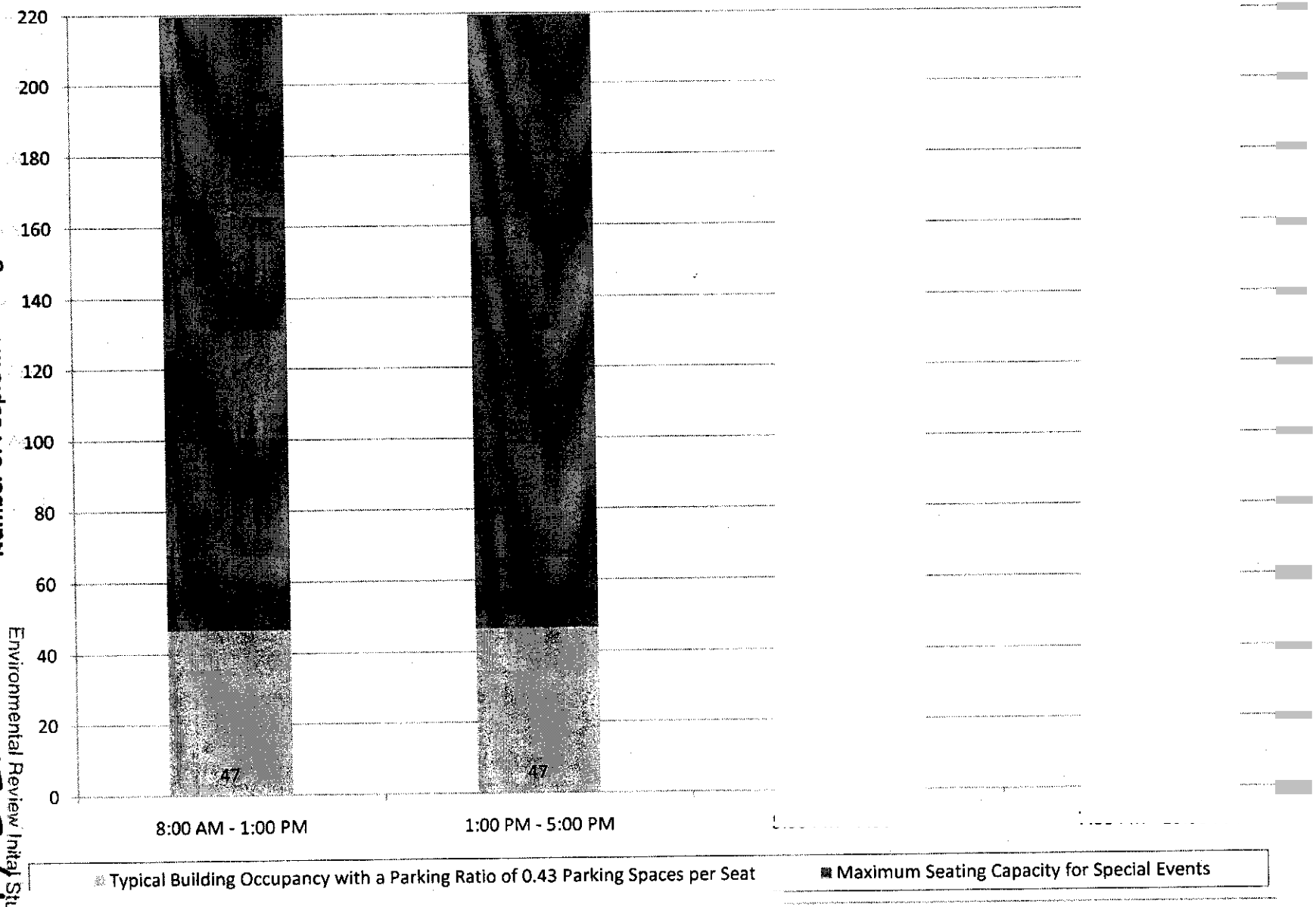
Environmental Review Initial Study
ATTACHMENT 17, 1 of 4
APPLICATION 05-0385

Sunday



ATTACHMENT 12 Rev 2
APPLICATION 05-0385

Environmental Review Initial Study

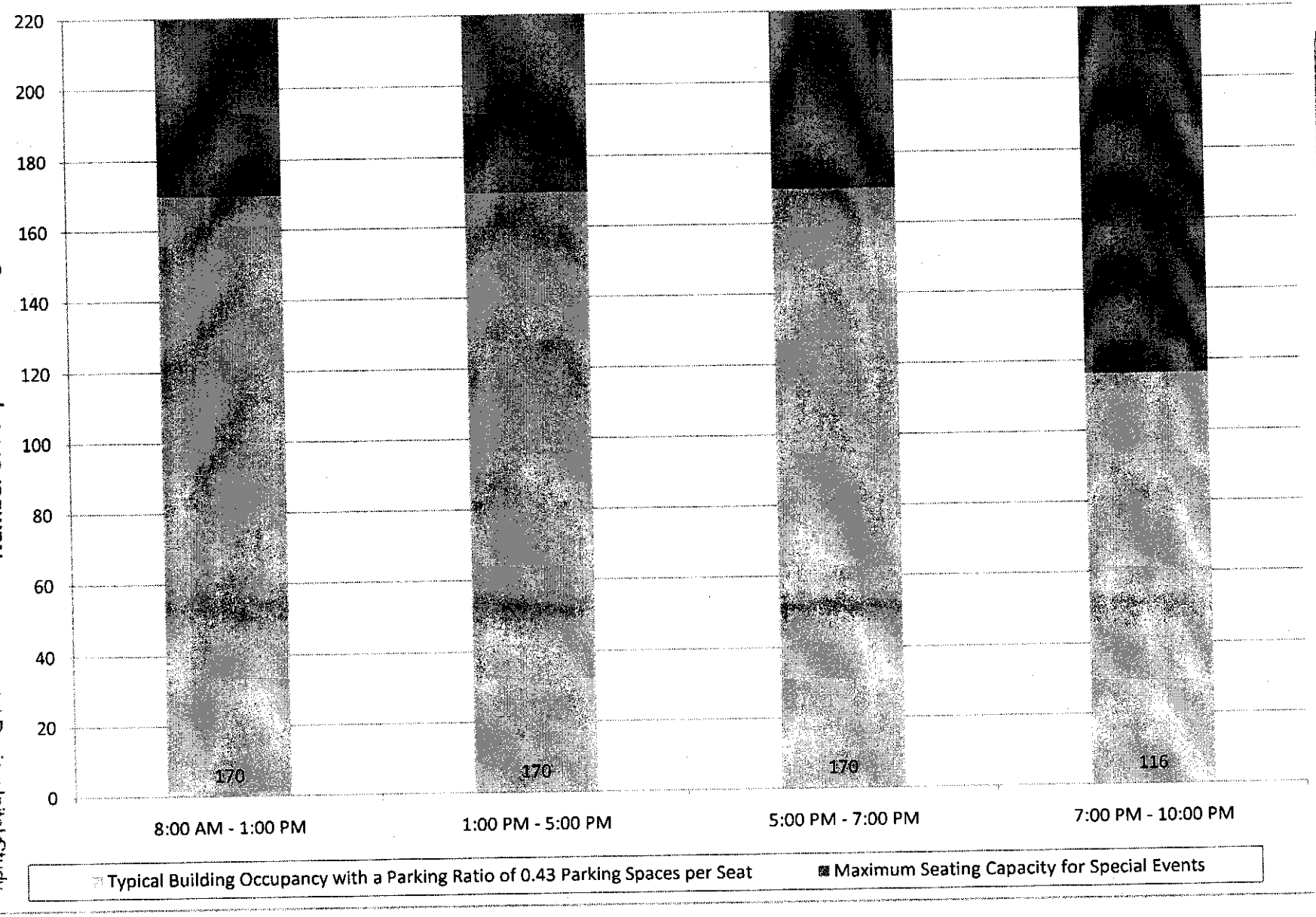


ATTACHMENT 23 of 27
APPLICATION 05-0385

Environmental Review Initial Study

United Methodist Church of Santa Cruz

Saturday



ATTACHMENT 12 of 14
APPLICATION 05-0385

Environmental Review Initial Study

Lawrence Kasparowitz

From: James Campbell [camkids4@hotmail.com]
Sent: Wednesday, July 11,2007 5:39 PM
To: Lawrence Kasparowitz
Subject: **MOU** for United Methodist Church application

Dear Larry,
here are the details of the MOU. Our church has already sign off and Harbor light may also do so in the next couple of days.
The Pastor also reminded me that we already have a verbal arrangement in place with "The Grange" for overflow parking as well, so that might just about cover it, don't you think?
regards,

James Campbell
UMCSC
831 239 6383 (cell)

Memorandum of Understanding

This Memorandum of Understanding is between the United Methodist Church of Santa Cruz at **2091** 17th Avenue, Santa Cruz and Harbor Light Church at **2008** 17th Avenue, Santa Cruz.
It is hereby agreed that for special events at either church where parking exceeds the capacity of the parking lot for that church, then that church will be allowed to use the other church's parking lot for overflow parking, subject to program and space requirements.
This MOU is to remain in force until revoked after **30** days written notice by either of the two signatories.

For the United Methodist Church of Santa Cruz _____
Date _____

For Harbor Light Church
_____ Date _____

Environmental Review Inital Study
ATTACHMENT 18, 1 of 7
APPLICATION 05-0385

COUNTY OF SANTA CRUZ | Planning Department

MEMORANDUM

Application No: 050385 (new design)

Date: November 28, 2006

To: Lawrence Kasparowitz, Project Planner

From: Urban Designer

Re: Design Review for a new church to include: sanctuary, social hall with kitchen, community meeting rooms, day care center and administrative offices with related parking and site improvements at 2091 Seventeenth Avenue, Santa Cruz

COMPLETENESS ISSUES

- *Two photomontages should be prepared (looking each way down 17th Avenue).*
- *A color and materials board is required*

GENERAL PLAN / ZONING CODE ISSUES

Desian Review Authority

13.11.040 Projects requiring design review.

(e) All commercial remodels or new commercial construction.

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		✔	*See comments below.*
Building siting in terms of its location and orientation		✔	*See comments below.*
Building bulk, massing and scale		✔	*See comments below.*
Parking location and layout	✔		
Relationship to natural site features and environmental influences	✔		
Landscaping	✔		
Streetscape relationship	✔		

Environmental Review Inital Study
ATTACHMENT 6, 2 of 7
APPLICATION 05-0385

Street design and transit facilities			**NIA**
Relationship to existing structures			**N/A**

Natural Site Amenities and Features			
Relate to surrounding topography	✔		
Retention of natural amenities	✔		
Siting and orientation which takes advantage of natural amenities	✔		
Ridgeline protection			**N/A**
Protection of public viewshed	✔		
Minimize impact on private views	3		
Safe and Functional Circulation			
Accessible to the disabled, pedestrians, bicycles and vehicles			*See comments from County Plan checker.*
Solar Design and Access			
Reasonable protection for adjacent	3		
Reasonable protection for adjacent properties	✔		

13.11.073 Building design.

Evaluation Criteria	Meets criteria Incode (✔)	Does not meet criteria (✔)	Urban Designer's Evaluation
Massing of building form		✔	*See comments below.*
Building silhouette	✔		
			N/A
Street face setbacks	✔		
Character of architecture	✔		
Building scale	✔		*See comments below.*
Proportion and composition of projections and recesses, doors and		✔	*See comments below.*
Location ano treatmeni of entryways		✔	*See comments below.*

Finish material, texture and color		✔	*See comments below.*
Scale is addressed on appropriate levels		✔	*See comments below.*
Design elements create a sense	✔		
Building Articulation			
Variation in wall plane, roof line, detailing, materials and siting.		✔	*See comments below.*
Solar Design			
Building design provides solar access that is reasonably protected for adjacent properties...		✔	
Building walls and major window areas are oriented for passive solar and natural lighting.			**N/A**
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*
shall utilize low-rise light standards or light fixtures attached to the building. Light standards to a maximum height of 15 feet are allowed.			*of Approval*
Building and security lighting shall be integrated into the building design.			*Suggest as Condition of Approval*

Environmental Review Inital Study
ATTACHMENT 8, 4 of 7
APPLICATION 05-0385

Light sources shall not be visible form adjacent properties.			*Suggest* as *Condition of Approval*

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	✔		
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.	✔		
'arking Lot Design			
Driveways between commercial or industrial parcels shall be shared			**NIA**
Avoid locating walls and fences where they block driver sight lines when entering or exiting the site.		✔	
Minimize the number of curb cuts	✔		
Driveways shall be coordinated with existing or planned median openings.			**NIA**
Service Vehicles/Loading Space. Loading space shall be provided as required for commercial and industrial **uses.**	✔		
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	✔		
Parking areas shall be screened form public streets using landscaping, berms, fences, walls, buildings, and other means, where appropriate.	✔		

Environmental Review Inital Study
ATTACHMENT 18, 5 of 7
APPLICATION 05-0385

Bicycle parking spaces shall be provided as required. 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,	✔		

Environmental Review Inital Study
ATTACHMENT 18, 6 of 7
APPLICATION 05-0385

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.	✔		

URBAN DESIGNER's COMMENTS:

Site Design:

- *Please insure that site design will comply with Title 24 disabled requirements and not need redesign at the construction documentphase (see comments from Plan Checker).*

Architectural Design:

- *The North Elevation must be broken up. I would suggest looking ai thefollowing:*

    1. *consider moving the entire one story wing to the south two feet.*
    2. *consider making the roof of the one story section at the South Elevation symmetrical around the portico and using a small section of flat roof w join the two.*

  I suggest using the same window scheme throughout the complex, i.e. use square topped windows ai all lower levelfloor windows

  The arches appear odd when they reach the wall. Perhaps they should land on a half column ?

- *I would suggest deleting the stone at thefence and using the stone at the projection ai the south elevation where the circular window is.*

  Eaeh section of this complex should have it's own base color.

  If possible the architect should attempt to align the doors, trellis and upper windows on both sides of the narthex elevations

  The small roof over the main entry (triangular) is out of charaeier and unnecessary.

Landscape Design:

Remove the detention system design in the rear of the lot on the landscape plan for clarity.

The entry drive should have a textured concrete band.

Environmental Review Inital Study
ATTACHMENT 18 7 of 7
APPLICATION 05-0385

Dedicated to the Preservation of Trees

James P. Allen & Associates

Construction Impact Assessment/ Tree Protection Plan

United Methodist Church Reconstruction
APN 026-122-36

Consulting Arborists

611 Mission Street
Santa Cruz, CA 95060

831.426.6603 office
831.234.7739 mobile
831.460.1464 fax
jpallen@consultingarborists.com
www.consultingarborists.com

Prepared for
Michael Bethke, Project Planner
Slatter Construction

Environmental Review Inital Study
ATTACHMENT 19, 1 of 6
APPLICATION 05-0385

ASSIGNMENT/SCOPE OF SERVICES

The demolition and reconstruction of an existing church facility, United Methodist Church is proposed at 2091 17th Avenue, Santa Cruz (APN 026-122-36). The property is populated with 23 mature native and non-native trees that will be impacted by the proposed development of this site. To ensure the protection of the tree resources, Michael Bethke, Project Planner has requested our firm provide a Construction Impact Assessment and Tree Protection Plan. To accomplish this assignment, the following tasks have been completed:

- Evaluate condition and preservation/relocation suitability for each tree ≥ 5 inches in diameter.
- Map approximate tree locations on a base map provided by Ifland Engineers.
- Review development plans as provided **by** Ifland Engineers Inc and William Bagnell, Architects to evaluate potential impacts.
- Make recommendations for alternative construction methods and preconstruction treatments to facilitate tree retention.
- Create preservation specifications, including a Tree Location/Preservation Map.
- Identify individual trees suitable for relocation.
- Determine the quantity of trees to be removed.
- Define appropriate replacement strategy for trees cited for removal.
- Document findings in the form of a report.

This assignment is limited to assessing the potential construction influences upon trees within the property boundary.

SUMMARY

Plans for this proposed project have been reviewed and the impacts to 23 inventoried trees have been assessed. The construction of plans as presented will require the removal of 18 trees. Of this number, five trees are recommended for removal due to their poor health/structural condition and high level of risk they will present to the redefined use of the site.

Five trees **(Trees # 4, 5, 15, 16 and 19)** meet suitability for relocation criteria. The feasibility of transplanting these candidates within this site may **he** constrained by equipment access, storage capabilities or budget constraints.

One, 24-inch **box** replacement tree will he planted per tree removed as components of the planned landscape.

The implementation of the procedures as defined within this document, including Demolition/Preconstruction Treatment Sequence, alternative construction methods and adherence to the Tree Preservation Specifications are required to safeguard trees proposed for retention.

James P. Allen & Associates

United Methodist Church
APN 026-122-36
TREE INVENTORY

Dedicated to the Preservation of Trees

TREE #	SPECIES	DIAMETER @4.5 feet above grade (INCHES)	HEALTH	STRUCTURE	PRESERVATION/ RELOCATION SUITABILITY	CRZ (RADIAL FEET)	IMPACT SEVERITY & DESCRIPTION	• OBSERVATIONS • RECOMMENDATIONS
1	Crepe Myrtle	5.3	Fair	Fair	Good	6	**MEDIUM** Proximity to street and sidewalk improvements	• Sreet tree Poor trunk/stem attachments Crossing branches • **Preserve and Protect** On Grade sidewalk Provide invigoration treatments
2	Palm	20	Fair	Fair	Fair	6	**MEDIUM** Proximity to playground	• Tall tree Crooked trunk Dead fronds • **Remove due to Condition**
3	Redwood	25.2	Fair	Fair	Fair	16	**MEDIUM/HIGH** Within 8' of storm drain Within 2 feet of sidewalk	• Crowded by adjacent palm trees • **Preserve and Protect** Move storm drain to allow 15' separation from tree trunk Preconstruction root pruning for storm drain On-grade system for sidewalk construction Canopy clearance pruning required Provide invigoration treatments
	Palm	18	Fair	Fair	Fair	6	**HIGH** Within proposed sidewalk	• Suppressed by Tree #3 • **Remove due to Construction Impacts** Suitable relocation candidate
	Palm	18.5	Fair	Fair	Fair	6	**HIGH** Within proposed sidewalk	• Suppressed by Tree #6 • **Remove due to Construction Impacts** Suitable relocation candidate
	Redwood	16.5	Poor	Fair	Poor	11	**HIGH** Within proposed sidewalk and parking lot	• Canopy suppressed to north • **Remove due to Construction Impacts**

ATTACHMENT 4 Environmental Review Inital Study
APPLICATION 05-0385

United Methodist Church
APN 026-122-36
TREE INVENTORY

Dedicated to the Preservation of Trees

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TREE #	SPECIES	DIAMETER @4.5 feet above grade (INCHES)	HEALTH	STRUCTURE	PRESERVATION/ RELOCATION SUITABILITY	CRZ (RADIAL FEET)	IMPACT SEVERITY & DESCRIPTION	• OBSERVATIONS • RECOMMENDATIONS
7	Redwood	16.5	Poor	Fair	Poor	15	**MEDIUM** Within 8' of storm drain Within 2 feet of sidewalk	• Dead top • **Preserve and Protect** Move storm drain to allow 15' separation from tree trunk Preconstruction root pruning On-grade system for sidewalk construction Provide invigoration treatments
8	Liquidambar	10.5	Fair	Poor	Poor	8	**MEDIUM** Proximity to street and parking lot improvements	• Canopy suppressed to north Girdlig roots Surface root damage from existing drieway Poorly developed root system will not support future growth Unstable tree • **Remove due to Condition**
9	Hollywood juniper	6	Fair	Poor	Poor	8	**MEDIUM** Proximity to street and sidewalk improvements	• Decay in basal area • **Remove due to Condition**
10	Redwood	6	Fair	Poor	Poor	12	**MEDIUM** Proximity to street and sidewalk improvements	• Lower branches develop in trunk-like manner Poor trunk/stem attachments • **Preserve and Protect** Remove two lower stems Canopy clearance pruning required Provide invigoration treatments
11	Yucca	12	Fair	Poor	Poor	15	**HIGH** Within proposed grading	• None • **Remove due to Construction Impacts**

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APPLICATION 05-0385

United Methodist Church
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TREE #	SPECIES	DIAMETER @4.5 feet above grade (INCHES)	HEALTH	STRUCTURE	PRESERVATION/ RELOCATION SUITABILITY	CRZ (RADIAL FEET)	IMPACT SEVERITY & DESCRIPTION	• OBSERVATIONS • RECOMMENDATIONS
12	Yucca	Multi 34" @ 6" above natural grade	Fair	Poor	Poor	17	**HIGH** Within proposed grading	• None • **Remove due to Construction Impacts**
13	Yucca	Multi 6" @ 54" above natural grade	Poor	Poor	Poor	13.2	**HIGH** Within proposed grading	• Growing out of plasic barrel container • **Remove due to Construction Impacts**
14	Willow	17.5	Poor	Poor	Poor	30	**HIGH** Within proposed building footprint	• Large dead and broken portions • **Remove due to Condition**
15	Palm	18	Fair	Fair	Good	6	**HIGH** Within proposed parking lot	• Dead fronds • **Remove due to Construction Impacts** Good relocation candidate
16	Palm	17	Fair	Fair	Good	6	**HIGH** Within proposed parking lot	• Dead fronds • **Remove due to Construction Impacts** Good relocation candidate
17	Coast live oak	Multi 6" @ 54" above natural grade	Fair	Poor	Poor	8	**LOW** Major canopy conflicts with bldg to east 13ft from patio to northeast	• Divides into multiple stems @ 5' above grade Supressed tree Conflicts with proper growth of Tree #18 • **Remove due to Condition**

ATTACHMENT 14 Environmental Review Inital Study
APPLICATION 05-0385

United Methodist Church
APN 026-122-36
TREE INVENTORY

Dedicated to the Preservation of Trees

James P. Allen & Associates

TREE #	SPECIES	DIAMETER @4.5 feet above grade (INCHES)	HEALTH	STRUCTURE	PRESERVATION/ RELOCATION SUITABILITY	CRZ (RADIAL FEET)	IMPACT SEVERITY & DESCRIPTION	• OBSERVATIONS • RECOMMENDATIONS
18	Coast live oak	15.8	Fair	Fair	Fair	18	**MEDIUM** **Proximity to parking lot improvements**	• Poor trunk/stem attachments Low growing, wide spreading canopy • **Preserve and Protect** Provide invigoration treatments Canopy clearance pruning required Remove minimum amount of tree canopy as described in report text to provide adequate clearance while maintaining tree form and structure
19	London plane	13" @ 36" above natural grade	Fair	Poor	Good	18	**High** Within proposed parking lot	• Poor trunk/stem attachments Crossing branches • **Remove due to Construction Impacts** Good relocation candidate
20	Camphor	11	Fair	Poor	Poor	15	**HIGH** Within proposed sidewalk	• Previously topped at 5 feet Poor trunk/stem attachments • **Remove due to Construction Impacts**
21	Chinese elm	15	Fair	Poor	Poor	5	**HIGH** Within proposed trash enclosure	• Poor trunk/stem attachments • **Remove due to Construction Impacts**
22	Birch	10.5	Fair	Fair	Poor	12	**HIGH** Within proposed building foundation	• Poor trunk/stem attachments • **Remove due to Construction Impacts**
23	Birch	7	Fair	Poor	Poor	14	**HIGH** n proposed building foundation	• Within patio Leans to the north • **Remove due to Construction Impacts**

ATTACHMENT 12
APPLICATION 05-0385

Environmental Review Initial Study