RECORD PACKET COPY

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, *Governor*

CALIFORNIA COASTAL COMMISSION
SOUTH COAST AREA
W. BROADWAY, STE. 380
P.O. BOX 1450
LONG BEACH, CA 90802-4416
(310) 590-5071

Tu 15b

Filed: Mar. 4, 1997
49th Day: Apr. 22, 1997
180th Day: Aug. 31, 1997
Staff: JLR-LB
Staff Report: Mar. 18, 1997
Hearing Date: Apr. 8-11, 1997

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 5-96-185

APPLICANT: California Department of Transportation

PROJECT LOCATION: 15040-15054 Corona del Mar, Pacific Palisades

PROJECT DESCRIPTION: Slope stabilization of a landslide adjacent to Pacific Coast Highway to include demolition of two single-family residences, removal of 80,000 cubic yards of soil to be deposited in Potrero Canyon, contour grading and slope reconfiguration, landscaping with native plants and installation of drainage pipes.

LOCAL APPROVALS RECEIVED: 1. Approval in Concept- California Department of Transportation
2. City Adopted Brentwood-Pacific Palisades Community Plan.

SUMMARY OF STAFF RECOMMENDATION:

Staff is recommending approval with no special conditions which address implementation of erosion control and final landscaping plans; and, implementation of urban runoff best management practices.

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development, as conditioned, will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions.

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.

4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

5. Inspections. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.

6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions.

1. Implementation of Erosion Control and Final Landscaping Plans

Prior to issuance of the Coastal Development Permit, the applicant shall submit for review and approval by the Executive Director and agree in writing to abide with revegetation, landscaping and erosion control plans for graded and disturbed areas as depicted and described in the Project Plans.

The final plans agreed to by the applicant shall provide that:

A. All graded areas on the subject site shall be planted and maintained to assure the continued viability of 85-90% coverage as anticipated within a 3-4 year period.

B. All landscaping shall incorporate native plants that are indigenous to the ocean facing slopes of Pacific Palisades that are accepted as part of the Coastal Sage community according to applicant's standard specification plans

C. All cut and fill slopes shall be stabilized with planting at the completion of rough grading.

D. All graded areas on the subject site shall be planted and maintained to protect habitat and to prevent erosion into intertidal areas and along the coastal bluff.

2. Implementation of Urban Runoff Best Management Practices

The project must be constructed as proposed, with implementation of all best management practices to minimize adverse impacts on marine resources and water quality. Such measures include, but are not limited to:

A. Should grading take place during the rainy season (November 1-March 31), sediment basins (including debris basins, desilting basins, or silt traps) shall be required on the project site prior to or concurrent with the initial grading operations and maintained through the development process to minimize sediment from runoff waters during construction. All sediment should be retained on-site unless removed to an appropriate approved dumping location.

B. When grading has been completed, the disturbed area will be protected with sediment source controls such as temporary mulching, seeding, emulsifiers, etc. The temporary measures will remain in place until permanent landscaping is provided,

C. Temporary swales and ditches will be stabilized through temporary check dams and geotextiles,

D. Drainage inlets will be protected from sediment intrusion utilizing straw bales, sand bags, sediment traps or similar devices,

E. All building materials, liquid construction waste (e.g. petroleum products and cement water) and other by-products will be contained and removed to an acceptable offsite disposal location,

F. The construction site will be inspected daily for leaks or inadvertent spills of petrochemical products; if found, spills or leaks will be contained and prevented from reaching storm drain inlets,

G. A detailed plan for clean-up of accidental spill of petroleum-based products, cement, or other construction pollutants will be submitted for approval of RWQCB and kept on site with the General Contractor or Engineer,

H. The contractor will be required to prepare a storm water pollution prevention plan in accordance with guidelines established by the State Water Resources Control Board and Caltrans, and construction activity will be required to comply with the National Pollution Discharge Elimination System regulations.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

A. Project Description and Location and background:

The applicant proposes to stabilize the slope of a landslide adjacent to Pacific Coast Highway to include demolition of two single-family residences, removal of 80,000 cubic yards of soil to be deposited in Potrero Canyon, contour grading and slope reconfiguration, landscaping with native plants and installation of drainage pipes. The proposed development is located on a hillside parcel adjacent and inland of Pacific Coast Highway. The subject parcel is located between PCH and Corona del Mar Street. The site ascends from the highway approximately 170 feet in elevation and 350 feet in linear distance to the top off the slope. The linear length of the site along Corona del Mar is 320 feet and along Pacific Coast Highway, the width is approximately 400 feet.

Originally, the California Department of Transportation (Caltrans) was considering utilizing a three-tier soil-nailed retaining wall design rather than the proposed contour grading. Therefore, in September 1996, the Commission issued an emergency permit to demolish two swimming pools and to grade and remove 9,000 cubic yards of soil and debris in order to reduce the surcharge on the face of the bluff. That proposed emergency work was not completed because Caltrans was in the process of acquiring the two contiguous subject parcels. Subsequently, Caltrans acquired the properties and modified the project design to consist of contour grading rather than retaining walls. The applicant has submitted a more detailed description of the project as now proposed which is as follows:

> As discussed, the California Department of Transportation (Caltrans) has modified the project from the original concept. The applicant requests approval to undertake the process of slope modification designed to eliminate potential landslides from crashing down upon SR1. A major landslide at this location would, at best, severely interfere with vehicular transportation between Santa Monica and points south and Malibu and points north. This means full or partial road closure which could last for a few hours to several weeks. At worst, given the proximity of the slope to the roadway, a large and sudden collapse of the hillside could result in severe or fatal injury to persons unfortunate enough to be on or near the highway at the fateful moment.

As proposed, this project, now to be completed in one phase, would demolish two single family residential structures (street addresses referenced above), remove approximately 80,000 cubic yards of earth, and contour grade the slope at a ratio of 1.5 feet (horizontal) to 1 foot (vertical). Removal of the structures allows an approximately twenty-three foot horizontal plane at grade with Corona del Mar before the hinge-point where the down slope contouring begins. The resulting concave slope configuration and soil removal is expected to relieve the downward pressure adding to landslide potential without activating other geologic forces on the slope. Installation of about two dozen, two-inch diameter, hydraugers (horizontally placed drainage pipes) arranged in a fan-like pattern to a central collection point on the slope face would drain water via a concrete lined channel into the existing drainage system.

The removed soil is to be relocated to the City of Los Angeles Potrero Canyon landfill project.

B. Natural Hazards:

Section 30253 of the Coastal Act provides in part:

New Development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The subject landslide parcel is located in the Huntington Palisades area of Pacific Palisades, a planning subarea of the City of Los Angeles. Numerous past landslides have occurred in the Huntington Palisades area. Major recorded landslides occurred in October 1932, March 1951, February 1974, March 1978, February 1984, November 1989 and March 1995. The landslides that occurred in 1974, 1978, 1984 and 1995 were correlated with rainfall that was much higher than average seasonal amounts. The most recent landslide in 1995 occurred after a total seasonal rainfall that was approximately twice the average cumulative seasonal amount for the area.

Within the surrounding area, some homes that the Commission has approved and older homes constructed prior to the Coastal Act, have been destroyed by landslides. According to a landslide study report prepared by the U.S. Army Corps of Engineers dated September, 1976, this area has historically been subject to heavy winter rains. The effect of these rains "on slope stability was to renew or accelerate movement of many younger landslides including some of the larger active landslides in the study area". According to the study "soil falls from the eastern part of Huntington Palisades repeatedly have blocked the Pacific Coast Highway".

Notwithstanding existence of landslides in the past, the Commission has approved permits for new homes in those cases in which the applicant's geologist has demonstrated that the house can be built safely. In this case, the applicant has provided a Geotechnical Design Report prepared by the California Department of Transportation date March 1996. The Commission, in previous permit actions on development in this area has found that there are certain risks associated with hillside development that can never be entirely eliminated. The applicant's geology report also supports that conclusion because the site contains both older and recent landslide debris. In addition to the general risks associated with hillside development in geologically hazardous areas, the Commission notes that its approval is based on professional reports and professional engineering solutions that are the responsibility of the applicants. Because of the presence of landslides throughout this area and site specific soil/geologic constraints addressed in the applicant's geology report, the Commission, as a condition of approval on previous permits, has required an applicant to assume the risks inherent in potential slope failure from erosion. However, because Caltrans is a State agency, the Commission is not requiring an assumption of risk as a special condition to the permit. Based on stability calculations and site specific constraints discussed in the geotechnical report, Caltrans has determined that the proposed contour grading design will stabilize the bluff and prevent further landsliding at the site. Therefore, the Commission finds that the proposed landslide remediation will minimize risks in this area that may occur as a result of natural hazards, consistent with Section 30253 of the Coastal Act.

C. Erosion Control

The applicant proposes to utilize native plants in order to minimize erosion impacts from irrigation. The native trees or schrubs will be one-gallon in size. The plants also will be grown from seeds or cuttings from plants that grow on western or ocean facing slopes in areas of Los Angeles County that are accepted as Coastal Sage communities. Following is a more detailed description as submitted by the applicant:

> Post-grading mitigation will consists of re-vegetating the slope with appropriate native plants according to Caltrans District Landscape Architecture specifications. Experience suggest two growing season cycles to achieve a minimum 40-50% coverage. Approximately 85-90% coverage is anticipated within a three to four year period, depending on weather and other variables. Re-vegetation contract specifications are included for reference.

Subsurface drainage will be provided through 200 foot long 2" minimum diameter horizontal drains in conjunction with a geocomposite drainage blanket. Drainage will be collected and discharged through a closed system into a drainage inlet on Pacific Coast Highway. The applicant has submitted a landscape Specification Plan. However, the plans do not assure that the proposed landscaping coverage, in the long term, will be successful. Therefore, the Commission is requiring a special condition to assure the continued plant viability of 85-90% coverage as anticipated within a 3-4 year period. Therefore, the Commission finds that the proposed project has been designed to minimize erosion impacts consistent with the natural hazard provisions of Section 30253 of the Coastal Act.

D. Water Quality/Marine Environment:

The following Coastal Act Sections are relevant:

Section 30230 of the Coastal Act states:

> Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 of the Coastal Act States:

> The biological productivity and the quality of coastal waters, streams wetland, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30232 of the Coastal Act states:

> Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

The subject site is located on the inland side of Pacific Coast Highway, which parallels the adjacent Will Rogers State Beach. Runoff from the site connects to an existing storm drain system that ultimately discharges into the Santa Monica Bay. Runoff from construction activities can have negative impacts on the nearby coastal waters. If runoff is potentially toxic, pollution problems are magnified.

The State, Federal and local regulatory and management structure for controlling non-point pollution control is still evolving. The California Coastal Commission will have new responsibilities to implement the Coastal Non-point Pollution Control Program (CNPC) pursuant to Section 6217 of the recent reauthorization of the Coastal Zone Management Act. As part of that program, the Commission will be required to establish mechanisms to improve coordination among State and local agencies responsible for water quality permitting and enforcement, habitat protection and public health and safety.

Best Management Practices (BMPs) have been developed by various federal, state and local agencies in order to reduce the adverse impacts of urban runoff. BMPs relating to construction activities include but are not limited to, structural and non-structural controls and operation and maintenance procedures.

Typical non-structural erosion controls include but are not limited to: planning and designing the development within the natural constraints of the site; minimizing the area of bare soil exposed at one time (phased grading); and stabilizing cut-and-fill slopes caused by construction activities.

Structural controls include but are not limited to: perimeter controls; mulching and seeding exposed areas; sediment basins and traps; and filter fabric, or silt fences.

The proposed construction activities could produce runoff that may have an adverse impact on marine resources and coastal recreation. Such runoff is not consistent with Sections 30220, 30230 and 30231 of the Coastal Act. However, the proposed project can be designed to include temporary erosion control devices to eliminate or minimize polluted runoff from the site. That can be achieved by requiring the applicant to submit an Erosion and Sedimentation Control Plan which staff is recommending as a special condition. As conditioned, to control erosion, retain sediments and contaminated soils on-site, pollutants entering the storm drain system and being discharged into the Bay will be minimized. Therefore, as conditioned, to reduce pollutant discharges by erosion/sedimentation mitigation measures, the Commission finds that the proposed project is consistent with the relevant marine resource provisions of the Coastal Act and will assure the environmental protection of Santa Monica Bay which has received national recognition as an estuary of ecological value. The Commission further finds that, as conditioned, the proposed project will incorporate a Best Management Practice consistent with the marine resource provisions of Coastal Act.

E. Construction Access Impacts

At the toe of the slope, there is an existing soldier pile retaining wall that varies from four to six feet in height. Approximately twenty feet westerly of the retaining wall there is a 3 foot high concrete K barrier that parallels Pacific Coast Highway. Caltrans will be using the area between the existing barriers for construction activities on the lower slope. Therefore, lane closures on Pacific Coast Highway will be minimized. For construction activities on the upper portions of the site, Caltrans will use a local street, Corona del Mar. The applicant anticipates construction to begin in May 1997 and to be completed in approximately four calendar months. Caltrans anticipates a minimum need to require lane closures along Pacific Coast Highway. The purpose of the proposed landslide remediation project is to assure the viability of ensuring the use of Pacific Coast Highway, a major north-south highway that parallels the nearby shoreline. Therefore, the Commission finds that the proposed development will enhance public safety and maintain vehicular access along the coast, consistent with the public access provisions of Chapter 3 of the Coastal Act.

F. Local Coastal Program:

Section 30604 (a) of the Coastal Act states that:

> Prior to certification of the Local Coastal Program, a Coastal Development Permit shall be issued if the issuing agency, or the Commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local coastal program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).

The City of Los Angeles has not prepared a draft Land Use Plan for this planning subarea. However, the City's work program to develop a Local Coastal Program considers natural hazards as an issue for this area of the City. Approval of the proposed development will not prejudice the City's ability to prepare a certifiable Local Coastal Program. The Commission, therefore, finds that the proposed project is consistent with Section 30604 (a) of the Coastal Act.

G. Consistency with the California Environmental Quality Act (CEQA).

Section 13096 of Title 14 of the California Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5 (d) (2) (i) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment.

The proposed project, as submitted, is consistent with the natural hazards policies of the Coastal Act. As submitted, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds that the proposed project can be found consistent with the requirements of the Coastal Act to conform to CEQA.

8616F
JR/lm

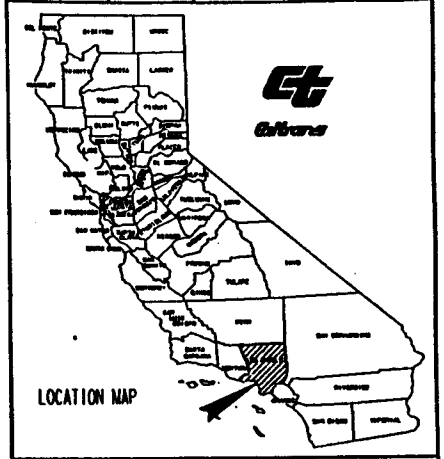
Sheet no INDEX OF SHEETS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY IN LOS ANGELES COUNTY IN LOS ANGELES AT 0.3 MILE NORTH OF CHAUTAUQUA BOULEVARD

To be supplemented by Standard Plans dated July, 1992

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	1	37.3		



The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

RECEIVED
FEB 11 1997
CALIFORNIA
COASTAL COMMISSION

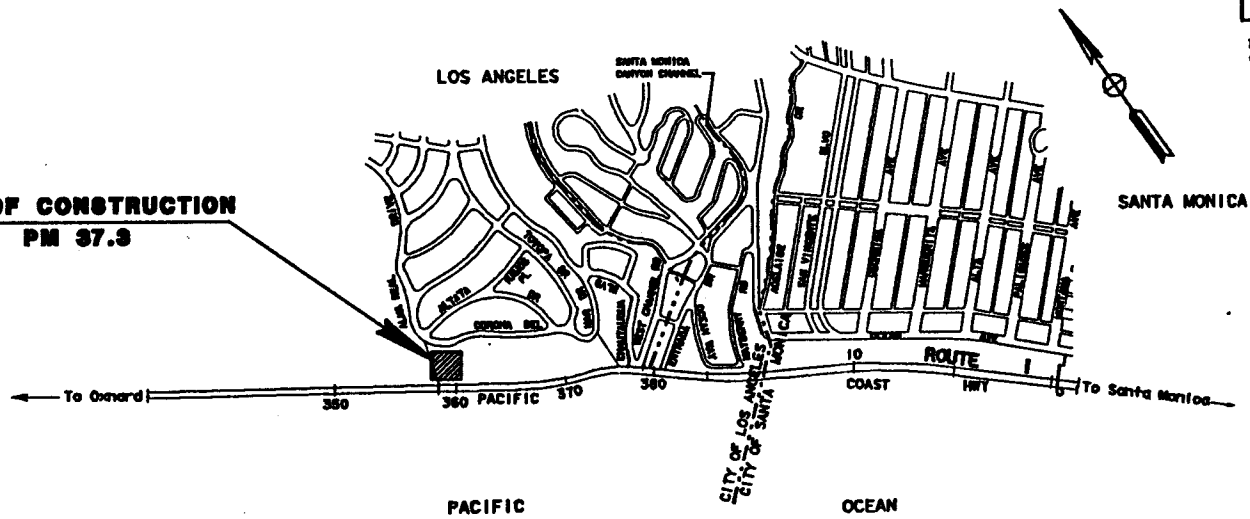
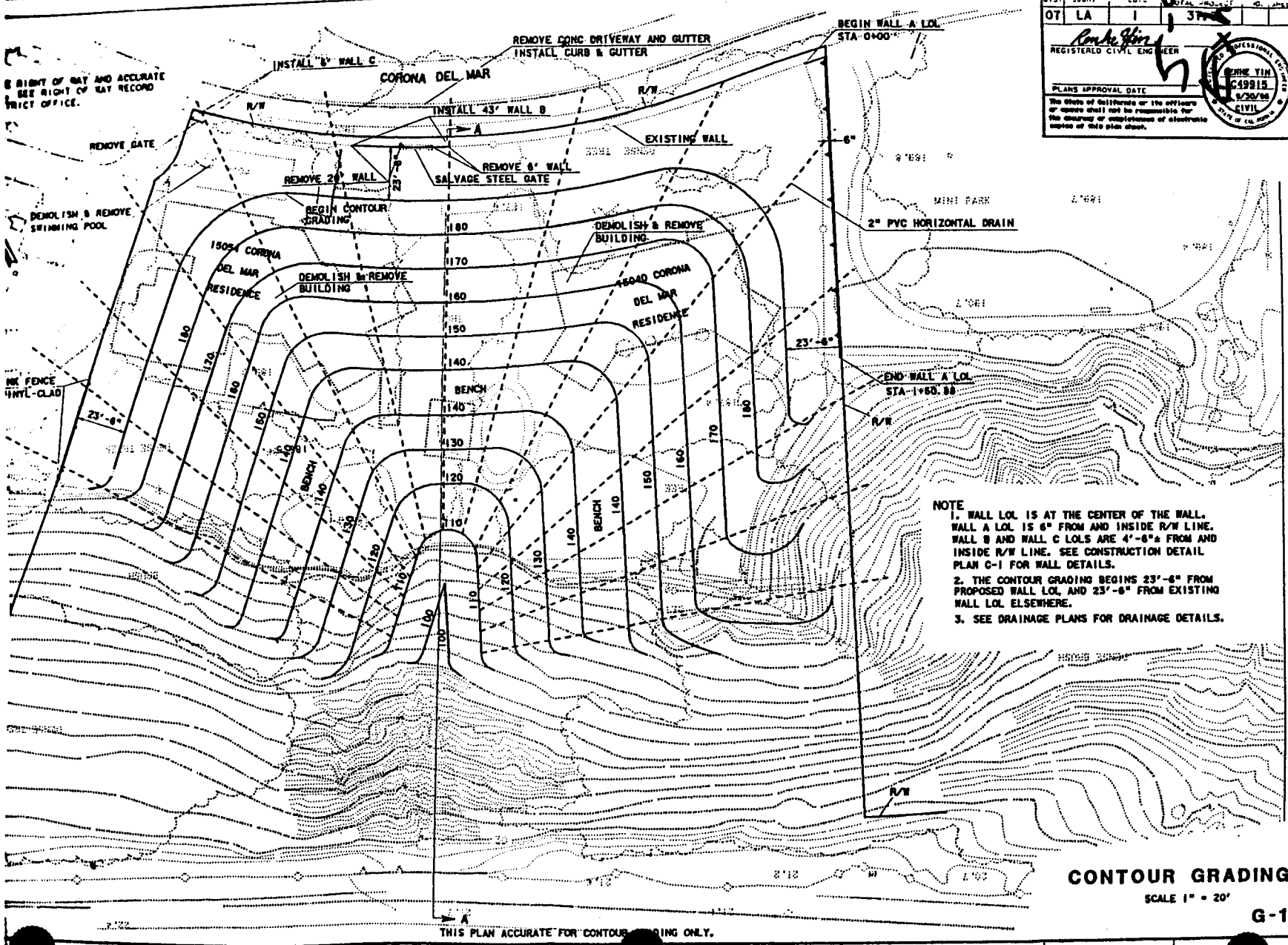


Exhibit A
5-96-185

RENNE YIN
No. C49915
9/30/98
CIVIL

The Contractor shall possess the Class (or Classes) of license as specified in the "Notice of Contractors".

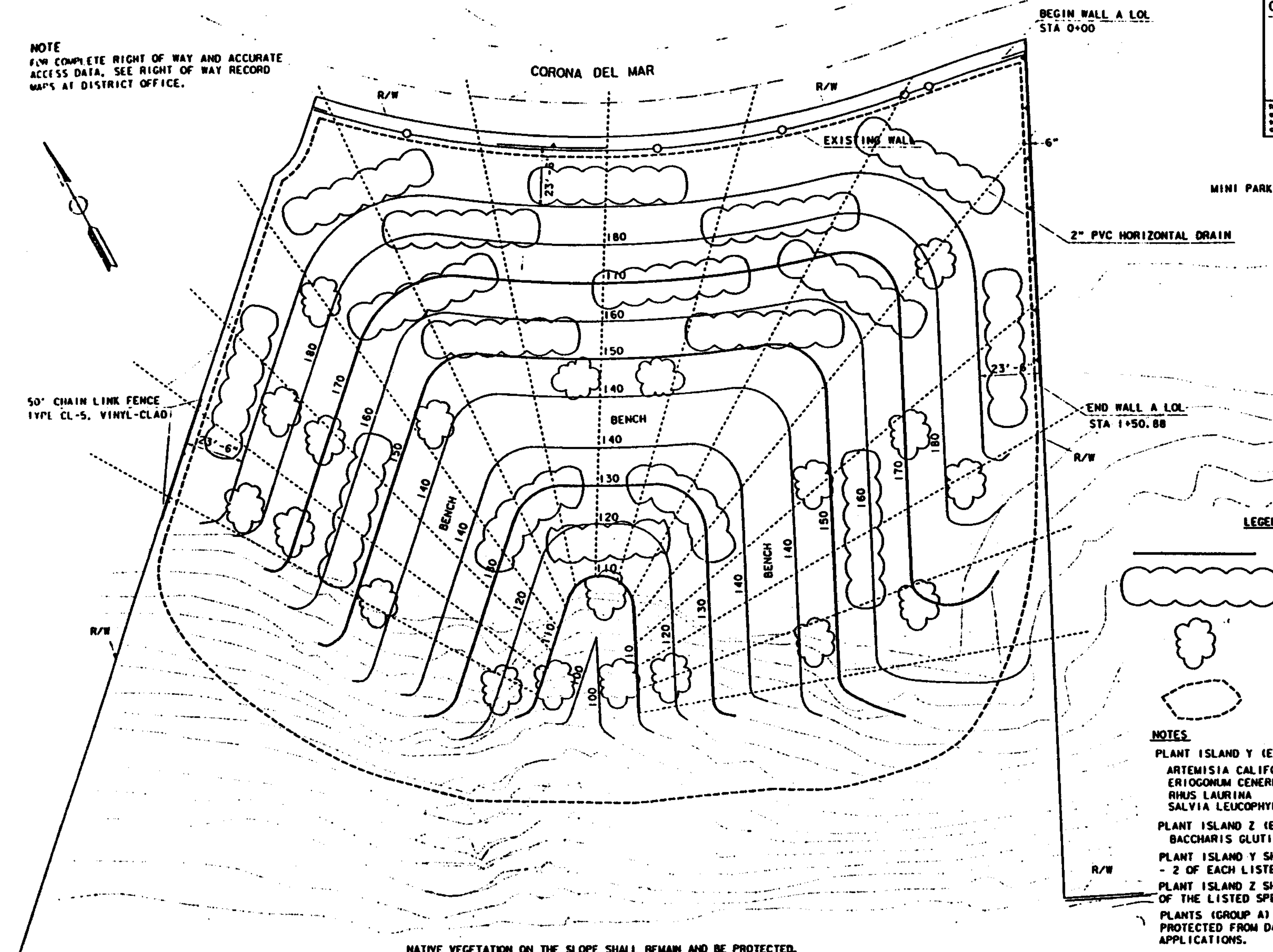
Contract No. 07-4C1904


REMOVE CONC DRIVEWAY AND GUTTER
INSTALL CURB & GUTTER
BEGIN WALL A LOL
STA 0+00
INSTALL 6' WALL C
CORONA DEL MAR
R/W
INSTALL 43' WALL B
EXISTING WALL
REMOVE GATE
REMOVE 6' WALL
SALVAGE STEEL GATE
REMOVE 20' WALL
BEGIN CONTOUR GRADING
DEMOLISH & REMOVE SWIMMING POOL
DEMOLISH & REMOVE BUILDING
2" PVC HORIZONTAL DRAIN
1505A CORONA DEL MAR RESIDENCE
1504D CORONA DEL MAR RESIDENCE
MINI PARK
23'-6"
END WALL A LOL
STA 1+60.88
BENCH
NOTE
1. WALL LOL IS AT THE CENTER OF THE WALL. WALL A LOL IS 6" FROM AND INSIDE R/W LINE. WALL B AND WALL C LOLS ARE 4'-6"± FROM AND INSIDE R/W LINE. SEE CONSTRUCTION DETAIL PLAN C-1 FOR WALL DETAILS.
2. THE CONTOUR GRADING BEGINS 23'-6" FROM PROPOSED WALL LOL AND 23'-6" FROM EXISTING WALL LOL ELSEWHERE.
3. SEE DRAINAGE PLANS FOR DRAINAGE DETAILS.
CONTOUR GRADING
SCALE 1" = 20'
G-1
THIS PLAN ACCURATE FOR CONTOUR GRADING ONLY.
07 LA I 37
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
C49915
9/30/98
CIVIL
USERNAME => USER
DGN FILE => DGNSPEC
CU 07263
EA 4C190
TIME PLOTTED => SYSTIME
00-00-00

DIST	COUNTY	ROUTE		SHEET NO.	TOTAL SHEETS
07	LA	1		37.3	

LICENSED LANDSCAPE ARCHITECT

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



LEGEND

MULCH ROW

PLANT ISLAND Y (EROSION CONTROL)

PLANT ISLAND Z (EROSION CONTROL)

AREA WHERE EROSION CONTROL MATERIALS WILL BE APPLIED

NOTES

PLANT ISLAND Y (EROSION CONTROL)
- ARTEMISIA CALIFORNICA
- ERIOGONUM CENEREUM
- RHUS LAURINA
- SALVIA LEUCOPHYLLUM

PLANT ISLAND Z (EROSION CONTROL)
- BACCHARIS GLUTINOSA

PLANT ISLAND Y SHALL CONSIST OF 8 PLANTS (GROUP A) - 2 OF EACH LISTED SPECIE.

PLANT ISLAND Z SHALL CONSIST OF 4 PLANTS (GROUP A) OF THE LISTED SPECIE.

PLANTS (GROUP A) FOR EROSION CONTROL SHALL BE PROTECTED FROM DAMAGE DURING ALL OTHER EROSION CONTROL APPLICATIONS.

EROSION CONTROL PLAN

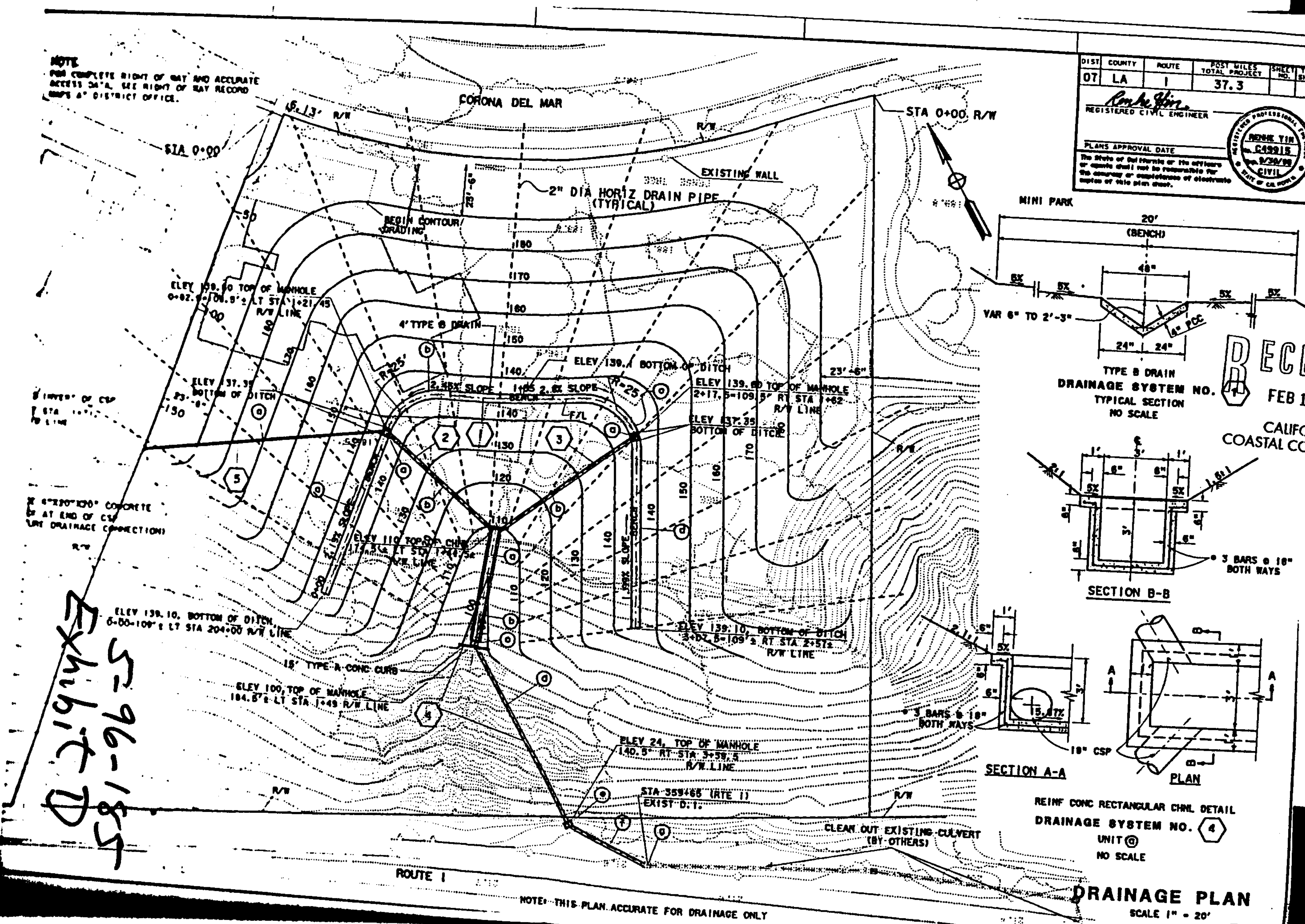
SCALE 1" = 20'

HP-3

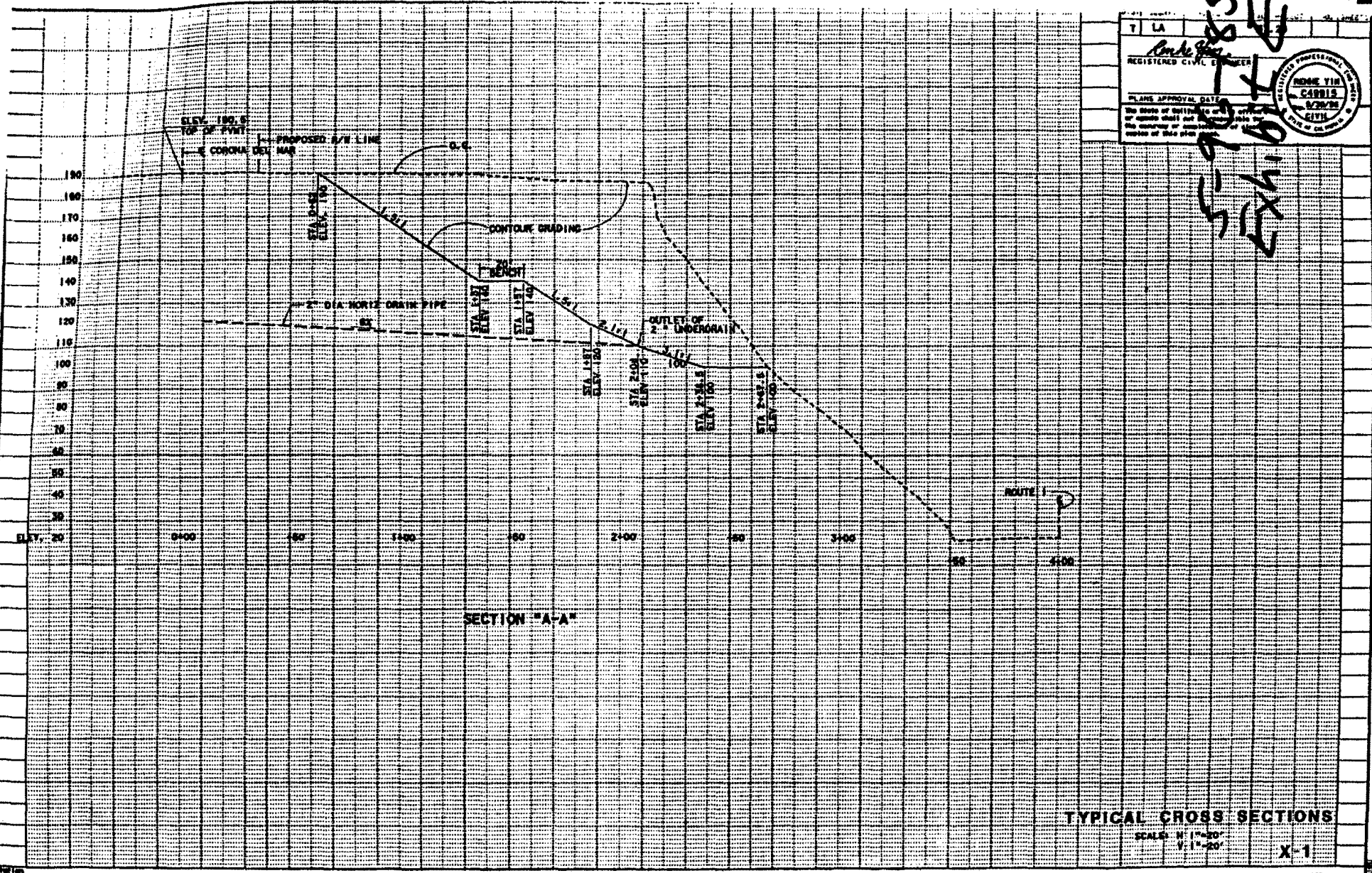
THIS PLAN IS ACCURATE FOR EROSION CONTROL APPLICATIONS ONLY.

Caltrans LANDSCAPE ARCHITECTURE

HELENE R. BELL



NOTE
FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
CORONA DEL MAR
STA 0+00
STA 0+00 R/W
EXISTING WALL
2" DIA HORIZ DRAIN PIPE (TYPICAL)
BEGIN CONTOUR GRADING
4' TYPE B DRAIN
ELEV 139.1 BOTTOM OF DITCH
ELEV 139.60 TOP OF MANHOLE
2.45% SLOPE
2.8% SLOPE
BENCH
F/L
ELEV 137.35 BOTTOM OF DITCH
ELEV 110 TOP OF CHK
15' TYPE A CONC CURB
ELEV 100, TOP OF MANHOLE 184.8'± LT STA 1+49 R/W LINE
ELEV 139.10, BOTTOM OF DITCH
ELEV 24, TOP OF MANHOLE 140.5' RT STA 3+59.5 R/W LINE
STA 359+65 (RTE 1) EXIST D.I.
CLEAN OUT EXISTING CULVERT (BY OTHERS)
ROUTE 1
NOTE: THIS PLAN ACCURATE FOR DRAINAGE ONLY
DIST 07 COUNTY LA ROUTE 1 POST MILES TOTAL PROJECT 37.3
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
MINI PARK
20' (BENCH)
VAR 6" TO 2'-3"
4" PCC
TYPE B DRAIN
DRAINAGE SYSTEM NO. 1
TYPICAL SECTION
NO SCALE
SECTION B-B
3 BARS @ 18" BOTH WAYS
18" CSP
SECTION A-A
PLAN
REINF CONC RECTANGULAR CHNL DETAIL
DRAINAGE SYSTEM NO. 4
UNIT ⓐ
NO SCALE
DRAINAGE PLAN
SCALE 1" = 20'
RECEIVED FEB 1
CALIFORNIA COASTAL COMMISSION
5-96-185
Exhibit D



TYPICAL CROSS SECTIONS

SCALE: H 1"=20'
V 1"=20'

X-1

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

USERNAME => ooooooUSERoooooo
DGN FILE => oooooooooooDGNSPECoooooooooo

CU 07263

EA 4C1901

TIME PLOTTED => ooooooSYSTIMEoooooo

00-00-00

07 | LA | 1 | | 37.3

Helen L Bell

LICENSED LANDSCAPE ARCHITECT

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

ABBREVIATIONS

AMEND	amendment	MIN	minimum
B & B	bared and burlapped	NO	number
DIA	diameter	PLT ESTB	plant establishment
EA	each	PVMT	pavement
FT	foot/feet	R/W	right of way
IN	inches	SF	state furnished
MAX	maximum	TAB	tablet(s)
		TRVD	traveled

ORNAMENTAL PLANT LIST AND PLANTING SPECIFICATIONS

PLANT GROUP	PLANT No	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (IN) DIA	HOLE SIZE (IN) DEPTH	BASIN TYPE	IRON SULFATE ①	SOIL AMEND ①	COMMERCIAL FERTILIZER ① PLANTING	COMMERCIAL FERTILIZER ① PLT ESTB	MULCH ①	STAKING	PLANTING LIMITS: MINIMUM DISTANCE (FT) FROM TRAV WAY	PVMT	FENCE	WALL	PAVED DITCH	EARTH DITCH	ON CENTER (FT)	REMARKS
A	1	(*)	AGAPANTHUS AFRICANUS	LILY-OF-THE-VALLEY	1 GAL	20	②	②	1	½ LB	1 CF	1 TAB	—	⑧	—	—	3.5'	—	1.5'	—	—	6'	PERENNIAL
	2	()	DIETES VEGETA	FORTNIGHT LILY	1 GAL	22	②	②	1	½ LB	1 CF	1 TAB	—	⑧	—	—	3.5'	—	1.5'	—	—	6'	PERENNIAL
	3	•	HEMEROCALLIS HYBRID (YELLOW)	DAY LILY	1 GAL	10	②	②	1	½ LB	1 CF	1 TAB	—	⑧	—	—	2'	—	3'	—	—	④	PERENNIAL
	4	......	DOXANTHA UNGUIS - CATI	CAT'S CLAW	1 GAL	14	②	②	1	½ LB	1 CF	1 TAB	—	⑧	X	—	4.5'	—	6"	—	—	20'	VINE
	5	......	FICUS PUMILA	CREEPING FIG	1 GAL	25	②	②	1	½ LB	1 CF	1 TAB	—	⑧	X	—	4.5'	—	6"	—	—	10'	VINE
	6	[ ]	APTENIA 'RED APPLE'	NCN	IN FLAT	728	—	—	—	—	—	15 LBS PER 1000 SF	—	—	—	—	⑨	—	—	—		18"	GROUNDCOVER

NOTE:
Underlined portions of botanical name indicate abbreviations used on Planting Plans.

APPLICABLE WHEN CIRCLED:

① - Quantities shown are "per plant" unless shown as SQYD or SQFT application rates.
2 - Sufficient to receive root ball.
3 - Does not apply to mulch areas.
④ - As shown on plans.
5 - Unless otherwise shown on plans.
6 - See detail.
7 - See Special Provisions.
⑧ - Mulch shall be placed in plant basins to depth of 2".
⑨ Groundcover plants shall be placed 2' from curb and 18" from sidewalk.

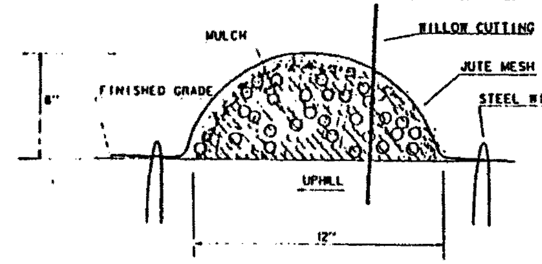
SPRINKLER SCHEDULE

SYMBOL	TYPE	DESCRIPTION	SPRAY PATTERN	OPERATING PRESSURE (PSI)	PLUS/MINUS 5% DISCHARGE GPM	GPH	RADIUS (FT)	W x L (FT)	MATERIAL	NOZZLE SIZE (IN)	INLET CONNECTION (NPT IN)	POSITIVE-LOCKING ADJ ARC STOP ①	BACKSPLASH PREVENTER	DIFFUSER PIN	DISTANCE CONTROL FLAP	ADJ DISCHARGE	RISER TYPE	RISER MATERIAL PLASTIC	RISER MATERIAL GALVANIZED	RISER SIZE (IPS IN)	RISER HEIGHT (IN)	SWING JOINT (TYPE)③	RISER SUPPORT	SPRINKLER PROTECTOR (TYPE)	REMARKS
●	C-2	FLOOD BUBBLER	—	20	0.25	—	—	—	PL	—	½	—	—	—	—	—	IV	X	—	—	—	—	—	—	PRESSURE COMPENSATING
○	C-3	SHRUB SPRAY	Q/H	15	0.2/0.4	—	5	—	PL	—	½	—	—	—	—	X	VIII	X	—	½	4"	—	—	—	PRESSURE COMPENSATING ⑤

X: DENOTES REQUIREMENT

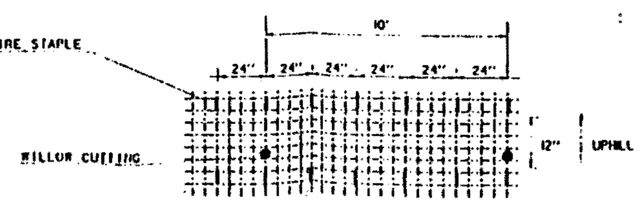
APPLICABLE WHEN CIRCLED:

1 - ARC STOP SHALL BE FITTED WITH A NUT AND BOLT.
2 - VINYL COATED CAST IRON HOUSING
3 - SWING JOINTS REQUIRED ADJACENT TO SHOULDERS, CURBS, SIDEWALKS AND DIKES.
4 - UNLESS OTHERWISE SHOWN ON PLANS
⑤ - SEE SPECIAL PROVISIONS



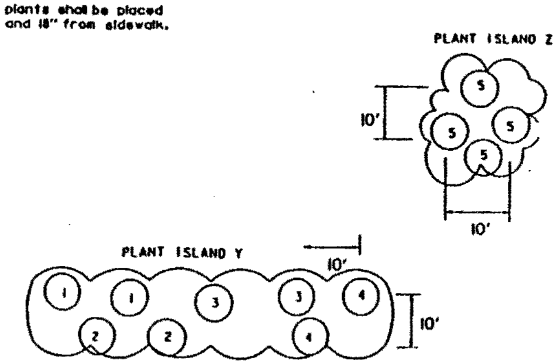
SECTION

MULCH ROW DETAIL
NO SCALE



PLAN
MULCH ROW DETAIL
NO SCALE

NOTES
CUTTING SHALL BE PLANTED THROUGH MULCH ROW IN THE LOWER THIRD OF THE MULCH ROW.
CUTTING SHALL BE PLANTED 10' O.C.



PLANTING PATTERN FOR PLANT ISLANDS

PLANT LIST

NO SCALE

HP

FOR REDUCED PLANS ORIGINAL SCALE IS IN INCHES

CU 07341 | EA 4C1901