CALIFORNIA COASTAL COMMISSION
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REGULAR CALENDAR
STAFF REPORT AND PRELIMINARY RECOMMENDATION

Application No.: 6-01-107

Applicant: City of San Diego Agent: Alvin Papa; Nevien Antoun

Description: Abandonment and demolition of Sewer Pump Station #45 and construction of a new pump station 150 ft. north of Sewer Pump Station #45 and installation of approximately 100 linear feet of two 10-inch force mains including revegetation of both the demolition site and proposed new site.

Site: 9888 Salk Institute Road, North City (University planning area), San Diego, San Diego County. APN 342-03-105

STAFF NOTES:

Summary of Staff's Preliminary Recommendation:

Staff recommends approval of the proposed abandonment/demolition of an existing sewer pump station and the construction of a new sewer pump station with a number of special conditions. The pump station is to be located on a slope currently vegetated with sensitive native habitat. Although the proposal raises concerns regarding permanent impacts to 0.15 acres of Maritime Succulent Scrub and revegetated Coastal Sage Scrub as a result of the proposed location of the new sewer pump station, on balance the project is most protective of coastal resources. While the proposed new pump station will involve impacts to environmentally sensitive habitat area (maritime succulent scrub/coastal sage scrub), it will reduce the potential for a major sewage spill at the existing outdated pump station facility which could result in significant impacts to environmentally sensitive habitat area and water quality. The existing pump station to be replaced is almost 50 years old and does not include any safety features to reduce the potential for a sewage spill. The new pump station will include a number of state-of-the-art safety features that include a two-hour wet-well (that allows for storage of sewage rather than a spill), back-up generators for power and other upgrades to reduce the potential for a sewage spill

should problems occur at the pump station. Most of the impacts are located at the periphery of a contiguous habitat area and the applicant is proposing on-site revegetation and off-site preservation to address the impacts resulting from project construction, such that no significant disruption in habitat values will occur. Upon completion of the improvements, habitat values in the area should be protected by eliminating the potential for additional impacts to vegetation which may result from a sewage spill if the new pump station is not constructed.

The California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS) have determined that the proposed project can be supported with implementation of several mitigation measures. Special Condition #1 requires submittal of a final Maritime Succulent Scrub and Coastal Sage Scrub Mitigation Program. Special Condition #2 requires submittal of a final monitoring program for the revegetation of the area around the new sewer pump station and the area where the existing pump station will be demolished including submittal of annual monitoring reports. Special Condition #3 addresses off-site mitigation and requires submittal of evidence that the off-site mitigation occurs within an approved conservation bank or area that can be shown to have long-term conservation and management. Special Condition #4 requires that mitigation measures such as noise barriers be installed if construction occurs during the breeding season of the California gnatcatcher and that the applicant consult with the U.S. Fish and Wildlife Service on a regular basis during construction activities to assure that no indirect impacts to the California gnatcatcher occurs. Special Condition #5 addresses construction access/staging and timing and prohibits the use of environmentally sensitive areas for construction staging or storage purposes. Special Conditions #6 addresses grading and erosion control; Special Condition #7 addresses polluted runoff control; it requires submittal of runoff control plans which include measures to reduce runoff to downstream resources consistent with Best Management Practices.

Although the proposed development would involve impacts to environmentally sensitive habitat areas ("ESHA") that are inconsistent with Section 30240 of the Coastal Act, the proposed development would also alleviate the threat of serious sewage spills, which could result in serious adverse impacts to ESHA and water quality. Alternative locations for the project are either infeasible or would involve even greater impacts to ESHA than the proposed development. On balance, then, the proposed development, as conditioned, is the alternative that is most protective of significant coastal resources.

Pursuant to Permit Streamlining Act requirements, the Commission must act on this application at the April 2002 hearing.

Substantive File Documents: Mitigated Negative Declaration LDR No. 40-0840 dated 8/17/01; Biological Resources Technical Report Pump Station 45 Project by Ogden Environmental and Energy Services Co., Inc. – March 2001; Certified City of San Diego LCP (University Community Plan segment-1990); Letters dated 10/24/01 and 3/11/02 from City of San Diego.

I. PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

MOTION: ***I move that the Commission approve Coastal Development Permit No. 6-01-107 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and 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. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions.

See attached page.

III. Special Conditions.

The permit is subject to the following conditions:

1. Final Maritime Succulent Scrub and Coastal Sage Scrub Mitigation Program. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a final mitigation program for all impacts to sensitive habitat associated with the proposed project to the Executive Director for review and written approval. The program shall be developed in consultation with the California Department of Fish & Game and U.S. Fish & Wildlife Service and at a minimum shall include:

a. A detailed site plan of the impact area that substantially conforms with the plan by Lee and Ro, Inc. submitted to the Commission on July 5, 2001. The final plan must delineate all impact areas, the types of impact (both permanent and temporary), and the exact acreage of each impact so identified.

b. The baseline ecological assessment of the impact area submitted on July 5, 2001.

c. A detailed final site plan of the project site that substantially conforms with the landscape/site plan submitted to the Commission on July 5, 2001 as shown generally on Exhibit No. 6.

d. The following goals, objectives, and performance standards for the project site:

> Mitigation shall consist of creating in kind at a ratio of 2:1 for Maritime Succulent Scrub and 2:1 for Coastal Sage Scrub and overall goal of 90% coverage in 5 years. Mitigation/revegetation of the site of the new sewer pump station shall occur within 30 days of completion of construction. The existing pump station #45 shall be demolished within 60 days of completion of the new sewer pump station #45. Mitigation/revegetation of the area around the demolished sewer pump station #45 shall commence within 30 days after demolition of the existing sewer pump station.

e. The final design and construction methods that will be used to ensure the mitigation site achieves the defined goals, objectives, and performance standards.

f. Provisions for submittal, within 30 days of completion of initial restoration work, of "as built" plans demonstrating that the mitigation site has been established in accordance with the approved design and construction methods.

The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. Final Monitoring Program. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director in consultation with the U.S. Department of Fish and Game and the Fish and Wildlife Service as appropriate, a final detailed monitoring program for monitoring of the mitigation site. The monitoring program shall at a minimum include the following:

a. Provisions for monitoring the revegetation of the new sewer pump station #45 and the area around the demolished sewer pump station #45.

b. Provisions assessing the initial biological and ecological status of the "as built" mitigation site within 30 days of establishment of the mitigation site in accordance with the approved mitigation program. The assessment shall include an analysis of the performance standards that will be monitored pursuant to the program, with a description of the methods for making that evaluation.

c. Provisions to ensure that remediation will occur within 60 days of a determination by the permittee or the Executive Director that monitoring results indicate that the site does not meet the goals, objectives, and performance standards identified in the approved mitigation program.

d. Provisions for monitoring and remediation of the mitigation site in accordance with the approved final mitigation program for a period of five years.

e. Provisions for submission of annual reports of monitoring results to the Executive Director for the duration of the required monitoring period, with the first annual report due one year after submission of the "as-built" assessment. Each report shall also include a "Performance Evaluation" section evaluating the status of the mitigation project in relation to the performance standards.

f. Provisions for submission of a final monitoring report to the Executive Director at the end of the five-year reporting period. The final report must be prepared in consultation with a qualified biologist. The report must evaluate whether the mitigation site conforms with the goals, objectives, and performance standards set forth in the approved final mitigation program.

If the final report indicates that the mitigation project has not met all approved performance standards, the applicant shall submit a revised or supplemental mitigation program to compensate for those portions of the original program which did not meet the approved performance standards. The revised mitigation program shall be processed as an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

The permittee shall monitor and remediate the mitigation site in accordance with the approved monitoring program. Any proposed changes from the approved monitoring program shall be reported to the Executive Director. No change to the program shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that an amendment is legally required.

3. Off-Site Mitigation. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for the review and written

approval of the Executive Director, evidence of the preservation in perpetuity of 0.25 acres of maritime coastal scrub (as mitigation for impacts from this development), that meets the following criteria:

a. The off-site mitigation site shall be within an approved conservation bank or area that has a long-term conservation and management program. The applicant shall provide written evidence of acceptance of the mitigation site by the U.S. Fish and Wildlife Service.

4. Mitigation Measures for Construction Activities In Proximity to the California Gnatcatcher. If construction occurs during the breeding season of the California gnatcatcher (March 1st to August 15th) of any year, the following measures, as identified in the Mitigated Negative Declaration/LDR No. 40-0840 dated August 17, 2001, shall be implemented:

a) Prior to the commencement of grading, the project biologist shall survey those areas of the MHPA within 500 feet of any construction activity in accordance with the USFWS protocol for determining the presence/absence of the California gnatcatcher and shall notify the Executive Director in writing of the results prior to commencement of grading.

b) If no California gnatcatchers are present, no additional measures are required. If California gnatcatchers are present, construction operations shall be suspended or noise/line of sight barriers shall be constructed to buffer noise at the edge of occupied habitat within the MHPA

c) Construction noise shall be monitored by an acoustical expert on an ongoing basis to verify that noise at the edge of gnatcatcher occupied areas of the MHPA is maintained below 60 dB hourly average. If the level is exceeded, additional alternative measures shall be implemented to the satisfaction of the U.S. Fish and Wildlife Service. If such measures are not effective, construction activities shall cease in the area occupied habitat within the MHPA until further review by the U.S. Fish and Wildlife Service.

d) The applicant shall submit monthly reports during the construction phase of the sewer pump station to the Commission and the U.S. Fish and Wildlife Service with the results of the noise monitoring and an assessment of the breeding/nesting behavior of the gnatcatchers.

The applicant shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plan must be reviewed and approved in writing by the U.S. Fish and Wildlife Service and reported to the Executive Director. No change to the program shall occur without a Coastal Commission-approved amendment to the permit unless the Executive Director determines that no amendment is legally required.

5. Construction Access/Staging Areas. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, construction access and staging plans that include the following:

a) The plans shall indicate the locations, both on- and off-site, which will be used as staging and storage areas for materials and equipment during the construction phase of this project.

b) Staging/storage areas shall not be permitted within any of the areas where sensitive bird species exist as identified in the biological report by Ogden Environmental and Energy Services Co., Inc. or within sensitive habitat areas.

c) Access corridors and staging areas shall be located in a manner that minimizes interference with traffic on North Torrey Pines Road.

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

6. Grading/Erosion Control. PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final site and grading plans approved by the County with plan notes specifically incorporating the following requirements:

a. All areas disturbed by grading shall be planted within 60 days of the initial disturbance and prior to November 15th with temporary or permanent (in the case of finished slopes) erosion control methods. Said planting shall be accomplished under the supervision of a licensed landscape architect, shall provide sufficient coverage to reduce the potential for erosion, and shall utilize species compatible with surrounding native vegetation, subject to Executive Director approval.

b. All permanent runoff and erosion control devices shall be developed and installed prior to or concurrent with any on-site grading activities. All areas disturbed but not completed during the construction season, including graded pads, shall be stabilized in advance of the rainy season. The use of temporary erosion control measures such a berms, interceptor ditches, sandbagging, filtered inlets, debris basins and silt traps shall be utilized in conjunction with plantings to minimize soil loss during construction.

The permittee shall undertake development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without Coastal Commission-approved amendment to

this coastal development permit unless the Executive Director determines that no amendment is legally required.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Project Description. Proposed is the abandonment and demolition of the existing approximately 400 sq.ft. sewer pump station #45 (SPS 45) and replacement with a new, approximately 3,426 sq.ft. single pump station within the existing 400' X 280' easement, approximately 150 feet north of the existing pump station site. The proposed SPS 45 will be built mostly below grade to minimize visual impacts and to muffle the noise produced by the pumps and other equipment. Proposed grading will consist of 5,470 cy. of cut to be exported to other portions of the overall sewer project outside of the coastal zone for trench backfill purposes. Also proposed is installation of two 10-inch sewer force mains for a distance of approximately 100 linear feet in a southerly direction from the proposed location of SPS 45 to the Salk Institute Road. In addition, the application includes installation of a chain link fence around the new sewer pump station to keep people out of the area and installation of bollards to protect the pump station from unauthorized vehicles.

The subject project is part of a larger sewer upgrade project proposed by the City. Only a small portion of the City's overall sewer replacement project is within the Commission's jurisdiction—specifically, the project site where the new SPS 45 will be located and approximately 100 linear feet of two 10-inch sewer force mains (ref. Exhibit No. 8). The overall project also entails the abandonment and eventual demolition of two other sewer pump stations (#s 28 and 29) which represent a combined total of 2,440 sq.ft., located in both the University and Torrey Pines planning communities of the City of San Diego. Both SPS 28 and 29 are located within the City's coastal development permit jurisdiction. SPS 28 is located at the intersection of North Torrey Pines Road and Salk Institute Road, one block east of the proposed project site, and SPS 29 is located in the Torrey Pines Golf Course north of the project site. The pump stations and connecting conveyance systems provide wastewater collection for a service area that includes the La Jolla Farms residential estate subdivision, the Salk Institute, the Torrey Pines Golf Course and the scientific research and medical facilities along North Torrey Pines Road. Sewer pump station #45 and the force mains associated with the subject project were constructed in 1957 at the same time that the La Jolla Farms residential subdivision was constructed. Both sewer pump station #s 28 and 29 were constructed in1941. None of the three sewer pump stations are equipped with standby power or telemetry and do not have wet wells or adequate emergency storage capacity. In addition, the structural, mechanical and electrical components of these pump stations have reached the end of their useful life and need replacement.

The existing pump station (#45) is presently both above-ground and also extends 8 ft. below ground. The City proposes to demolish the pump station in its entirety and then the revegetate the surface with approved native species. In addition, installation of two

10-inch sewer force mains are also proposed. The sewer force mains will run east from the proposed SPS 45 along the length of Salk Institute Road. The project site is located at the western terminus of the Salk Institute Road in the University planning community within the City of San Diego. The existing pump station is located at the western end of the Salk Institute Road immediately adjacent to the cul-de-sac and the new pump station is proposed be located approximately 150 feet north of the existing pump station which is north of the cul-de-sac. The terminus of the road abuts a natively vegetated canyon which descends in elevation toward the coastal bluffs and then down to the ocean. The project site is opposite of, and east of, the Torrey Pines Gliderport. As noted previously, the site is also just north of the La Jolla Farms residential subdivision and to the west of the Salk Institute. The project site is located within an area of deferred certification and as such, is subject to the Commission's jurisdiction. The Chapter 3 policies of the Coastal Act are the standard of review.

2. Environmentally Sensitive Areas/Coastal Sage Scrub and Maritime Succulent Scrub. The following section of the Coastal Act is applicable to the proposed development and states the following.

Section 30240

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

The proposed sewer pump station 45 will be constructed into the side of a hillside just northwest of the terminus of an existing improved roadway, Salk Institute Road. Natively vegetated steep slopes exist to the west and north of the proposed pump station site in two canyons adjacent to the site. These areas are within the City's Multiple Habitat Planning Area (MHPA). In addition, as stated in the mitigated negative declaration, the project was evaluated for consistency with the Multiple Species Conservation Plan (MSCP). The MSCP was developed for the San Diego region to help manage the cumulative impacts resulting from growth in the region. The intent of the program is to identify and preserve core areas of habitat for covered species while allowing development in areas outside the preserve. These core preserve areas comprise the MHPA. In the project vicinity, the MHPA consists of an irregularly shaped strip of coastal sage scrub and maritime succulent scrub vegetation that extend south along the coastal bluffs from the Los Penasquitos Lagoon to La Jolla Shores Drive. The proposed project includes the new SPS 45 site at the northwest end of the Salk Institute Road and installation of approximately 100 linear feet of two 10-inch sewer force mains. The new SPS 45 site is currently vegetated with MSS and revegetated CSS vegetation. The MSS portion of the SPS 45 site is included within the MHPA. Existing utility facilities are

considered a compatible land use with the preserve under the MSCP. Utilities may be located within the MHPA provided they are placed in the least environmentally sensitive area and that impacts to sensitive biological resources are minimized. Furthermore, the MHPA Plan provides that sewer and utility lines should be designed to avoid or minimize intrusion into the MHPA. However, if no other routing is feasible, then the lines should follow previously-existing roads, easements, etc. and disturbed areas to minimize habitat fragmentation. In this case, the overall project has been aligned within existing roadways and the entire project (with the exception of SPS 45) avoids impacts to MSCP preserve areas. As noted before, the site for SPS 45 is located on the boundary between the MHPA and developed areas. Although a portion of the site encroaches onto the preserve, the proposed project does not contribute to habitat fragmentation. As such, the proposed project will not reduce the continuity or integrity of the preserve. Of all potential feasible alternatives, the proposed project results in the least environmental impacts.

In addition, small portions of environmentally sensitive habitat area are also located outside of the MHPA (ref. Exhibit No. 10). According to a biological report submitted by the applicant, the proposed project will result in the permanent loss of .10 acres of Maritime Succulent Scrub (MSS) and 0.05 acres of revegetated Coastal Sage Chaparral (CSS). The "revegetated coastal sage chaparral" refers to Coastal Sage Scrub that was "revegetated" within the last two years as mitigation for Coastal Sage Scrub that was destroyed at another project site. The City considers the revegetated CSS to be sensitive Diegan CSS and impacts have been calculated accordingly.

The biology report also states that a California Gnatcatcher was observed in the MSS approximately 300 ft. north and east of the SPS 45 site. As such, the surrounding habitat area is used for foraging and nesting by this bird species. In addition, the Commission's staff biologist has reviewed the biology report and has visited the site and concurs that although portions of the project site are disturbed, they are immediately adjacent to a relatively large expanse of undisturbed maritime succulent scrub and southern maritime chaparral, and the habitat that will be impacted is an environmentally sensitive habitat area (ESHA). The project site is also within the territory of one pair of California gnatcatchers which is in addition to pair referenced above (ref. Exhibit No. 10). Both MSS and CSS are rare habitat types and in fact, MSS only occurs in a few remaining patches near the coast. This, coupled with the fact that the area is used by the California gnatcatcher, a federally listed threatened species, is further evidence that the area is providing an important ecological function. As such, the area is considered Environmentally Sensitive Habitat Area (ESHA) under the Coastal Act. As noted above, Section 30240 of the Coastal Act prohibits significant disruption of habitat values. In addition, it prohibits any uses within ESHA that are not dependent on ESHA resources In this particular case, the proposed development, by permanently destroying .15 acres of ESHA and temporarily impacting additional ESHA, significantly disrupts habitat values. Furthermore, the proposed new sewer pump station is not a use that is dependent upon the ESHA resources. Therefore, the impacts to ESHA caused by the construction of the new pump station are inconsistent with the requirements of Section 30240 of the Coastal Act. Because the proposal includes impacts to ESHA, the City has conducted an extensive alternatives analysis.

A. Alternative Analysis. The City conducted an analysis of alternative locations for the sewer pump stations which included a total of ten alternatives for the proposed project (reference Exhibit No. 11). The City's biggest concern was to use a single pump station which enhances system reliability. Six of the ten alternatives proposed were to use a single pump station (Alternatives A_1/A_2, B_1/B_2, AA_1/AA_2, BB_1/BB_2, MT_{S1}, and MT_{S2}). The pump station that the City proposes to build in this application is alternative AA_1/AA_2. In addition, another alternative (Alternative MT_D) does not incorporate a pump station in its design, which is also desirable according to the City. Alternatives E, C_1/C_2, and CC_1/CC_2, which involve a combination of construction and/or rehabilitation of two more pump stations, were excluded from the alternatives evaluation because they entailed: increased environmental impacts, increased construction, the need to acquire additional easements, increased visual impacts, increased traffic, increased materials and equipment, increased noise, and increased cost. Because both of these alternatives were considered infeasible, the City did not conduct an analysis to determine the proposed impacts to environmentally sensitive habitat areas that would occur with these alternatives. The City has indicated that the only two remaining feasible options available to the City were the existing SPS 45 site vs. the existing SPS 28 site. To evaluate which site would be the best site, the City further addressed the issues of traffic, noise, visual impacts, maintenance and access, easements and emergency requirements. Another issue the City considered important in its decision is that the existing pump stations and facilities must remain operational at all times. Thus, the city cannot simply demolish the existing SPS 45 and build a new one in its place. The City summarized the reasons why each of the six alternatives cited above was not feasible as follows:

Alternatives B_1/B_2 and BB_1/BB_2 – These alternatives propose a new SPS 28 to be built adjacent to the existing SPS 28 site. These alternatives were found to be infeasible by the City due to siting and engineering constraints as well as adverse impacts on traffic and visual resources. With regard to the engineering constraints, these alternatives involve a deep pump station (+25 ft.) design due to the fact that the gravity flow from SPS 45 would be the reverse of the ground surface gradient which will mean higher maintenance, operation, maintenance and construction involvement because of the depth vs. above ground or sub-grade sewer pump stations. The energy costs will increase because the pump horsepower will increase due to additional 60 feet of static lift. Also, the ventilation system will need to be increased in size about three times and there are also increased lighting requirements with such a design. A deeper pump station is also harder to maintain because of access issues. Additional space may need to be acquired to facilitate the City's maintenance and access requirements for maintenance vehicles. The existing SPS 28 is also located on the 125' X 100' easement which is not large enough to accommodate the construction of the proposed SPS 28. One of the biggest impediments to siting the structure in a different manner is that the existing station must remain operational until the new station is constructed. The existing easement, however, is not large enough to fit both the existing SPS 28 and a new SPS at this location. In addition, existing buildings at the Salk Institute are located immediately next to the City's easement, making it infeasible for the City to obtain additional easement space at this location to accommodate a new pump station. The existing Salk Institute building is less

than one foot away from the easement. It is not feasible to locate the pump station or the associated storage space that is necessary to contain possible sewage spills within or beneath the adjacent roadway because of other necessary utility lines that are located beneath the road. In addition, traffic, visual, and noise impacts are more substantial at this location vs. the SPS 45 location because of its location in the vicinity of the North Torrey Pines Road and Salk Institute Road intersection. However, since this site was infeasible due inadequate room to construct a pump station, no further consideration was given to measures such as construction of a sound wall or other barriers to reduce noise at this site.

Construction of a pump station in this area also produces a negative aesthetic appeal to tourists and locals who drive on North Torrey Pines Road for the scenic view. Although no ocean views are currently visible from North Torrey Pines Road in the vicinity of the subject site, the roadway does provide panoramic views of the ocean further north near Torrey Pines State Beach. It is a major coastal access route that connects to La Jolla Shores Drive to the south of the project site which is a designated scenic roadway providing spectacular views of the ocean and the La Jolla shoreline. As such, North Torrey Pines Road is frequented by numerous coastal visitors as a major coastal access route. The noise associated with the new facility could adversely affect the scientific and medical research operations at the Salk Institute.

Alternative MT_{S1} and MT_{S2} – These alternatives involve rehabilitation of the existing SPS 45 by removing/replacing all pumps, piping, valve vaults, instrumentation and control, other miscellaneous items and the addition of a new wet well. This option was considered infeasible because there is not adequate room in the cul-de-sac of the Salk Institute Road to construct a new wet well (due to the presence of existing sewer lines and a water main) and the existing pump station must remain operational at all times. As such, it would not be possible to simply upgrade the existing station as all of the mechanical appurtenances would need to be replaced in their entirety.

In addition, the Commission staff asked the City to address the feasibility of building a separate wet well at the proposed location of the new SPS 45 and simply rehabilitating the existing SPS 45. This would avoid any impacts to sensitive vegetation. In response to these questions, the City stated that it is not feasible to build a separate wet well at the proposed location of the new pump station 45 and simply rehabilitate the existing pump station. The newly proposed SPS 45 is intended to pump wastewater generated in the service areas of SPS 29, 28 and 45. As such, a new pump station with capacity for this area is needed at the SPS 45 site. The existing SPS 45 site is not large enough to house the new pumping equipment required.

As noted previously, both SPS 28 and 29 do not have overflow capacity or a flood well as they were built back in the 1940's just prior to the onset of WWII when the area was a former army base. These facilities were the bare minimum provided and they do not currently meet the code requirements. Storage capacity was not provided in those days which is the standard now in case of spills or overflow. The Environmental Protection Agency (EPA) has been involved with the City making sure that the potential for sewage

spills is reduced. In addition, the State Regional Water Quality Control Board and the EPA endorse the types of safety measures in sewer upgrade projects as proposed here. Again, assuming that both SPS 28 and SPS 29 are eliminated, SPS 45 must also be replaced because as it exists today it is not large enough to house all of the necessary requirement and storage capacity that is required to meet today's standards. If all three existing pump stations are kept, then they would all have to be upgraded for storage; however, as noted previously there is inadequate room at the SPS 28 to build a larger pump station with emergency storage capacity, as is currently required and all three must remain operational at all times until the new pump station is completed.

Alternatives A_1/A_2, AA_1/AA_2 – These alternatives would construct a new pump station adjacent to the existing SPS 45 location within the existing easement. This allows the City to build a shallow pump station with lower operations, maintenance, design, and construction provisions than a deeper pump station, such as the proposed SPS 28, would entail. This is also the low point in the service area and makes operation more feasible. The proposed SPS 45 site is large enough (44' x 280' easement) to contain two pump stations thus meeting the City's requirements to keep continuous sewer service at all times. In addition, there is enough area next to the SPS 45 site for the installation of the emergency storage necessary thus making it unnecessary to acquire additional easements. for the storage requirements. In addition, the current location of SPS 45 serves as a SCADA relay station. In the event of an emergency, 24-hour standby alarms will notify personnel that can remotely access important equipment functions until an emergency maintenance crew repairs the situation. Moreover, a back-up generator, not included into the design of the existing SPS 45, is integrated into the design of the new SPS 45, which provides an emergency source of power, via natural gas, in the event of a power outage. This precaution will ensure emergency back-up sewer service, thus greatly reducing the potential for sewer overflows and spills.

Aesthetically, this location is hidden from the general public because it is designed as a low profile pump station located sub grade, into the side of the slope, partially hidden by vegetation, with views of the project primarily only observed by those at the glider port half a mile away. As such, this site will result in fewer visual impacts than the other locations the City considered. This location also creates less of an impact in regards to traffic, because it is at the end of Salk Institute Road alongside the cul-de-sac, off the heavily traveled road. The adjacent ground on the sides of the pump station would also attenuate the noise generated inside the facility and as such, would result in less noise impacts to either the Salk Institute or the residents of the La Jolla Farms. Salk Institute Road also serves as an existing 20' sewer, 20' public utility, and also as an access easement for the pump station. The turnaround at the end of Salk Institute Road serves as parking which satisfies the parking requirements for one vacuum truck and one maintenance vehicle. There is no difference in the proposed impacts to environmentally sensitive habitat area associated with these alternatives.

Of these last two alternatives, Alternative AA_1/AA_2 was selected as the preferred alternative although Alternative A_1/A_2 was recommended in City's preliminary design report. Both of these alternatives result in impacts to environmentally sensitive habitat

areas. The complexity of constructing these two alternatives was considered during evaluation and Alternative A_1/A_2 provided a less intensive and less vulnerable design due to the shorter discharge pipeline requirements. However, Alternative AA_1/AA_2 was chosen because it discharges into the Sewer Pump Station 2 service area and while this is a longer discharge pipeline requirement, it avoids the long term pumping costs of pumping at SPS 65 and pumping again at SPS 64. Discharging into this system, instead of into the SPS 65 collection system, which may not be able to accommodate the proposed flow per Alternative A1/A2, allows the City to bypass SPS 64 and 65, which would reduce system energy requirements and improve system reliability.

B. Additional Alternatives Not Initially Reviewed - In response to the alternatives analysis addressed by the City, Commission staff asked the applicant about other alternatives that were not discussed in either the environmental document or in the City's analysis of the project in order to assure that the selected site was the least environmentally damaging alternative. Specifically, Commission staff asked about the possibility of building the sewer pump station underground beneath the cul-de-sac of the Salk Institute Road as means to avoid impacts to sensitive vegetation altogether. The City indicated that because of existing utility lines beneath the cul-de-sac that must remain operational, there is not sufficient space to build the new pump station in the cul-de-sac. There is also a 6-inch force main (the furthest north of all the sewer and/or water mains) which runs in front of the pump station through the middle of the cul-de-sac which must remain in service. Other sewer and water mains in the cul-de-sac include a 4-inch water line and a 6-inch gravity sewer line. All of these must remain in service and cannot be by-passed.

Placing the pump station underground below the cul-de-sac would also locate it too closely to the nearby residential structures to the south on the north side of La Jolla Farms Road. Specifically, the northerly wall of the existing adjacent residence is approximately 8 feet south of the southerly easement line. The cul-de-sac is immediately north of this line. As such, the cul-de-sac area is only 8-10 feet north of the foundation of the existing residence. If a pump station were to be built in the cul-de-sac (assuming there were no other conflicts with this option), the excavation line would have to be within ten feet of the property line to the south which would be about 20 feet away from the house. In addition, the pump station at this location may also cause settlement of the adjacent residential structure due to trenching of soils which the existing mansion foundation may be relying on for support.

In addition, the weight of the adjacent residential mansion would have an impact on the foundation of the proposed pump station in the cul-de-sac because it would be below grade causing additional stresses. The City has also further indicated that the construction of a new pump station in the cul-de-sac would jeopardize the integrity of the existing sewage force main, the incoming gravity sewer line and the existing pump station. As the pump station is currently deficient in its design, any potential damage to the structure could result in a sewage spill which would adversely affect the surrounding native habitat which would drain in a westerly direction along the coastal bluffs and to the beach and ocean resulting in pollution of these coastal resources. The existing cul-de-

sac is also a good turnaround for trucks and needs to be retained for maintenance access and if the SPS 45 was located in the cul-de-sac it would eliminate the use of the cul-de-sac as a turnaround.

Noise would have more impacts on residents to the south of the site. The emergency generator includes a silencer rated "supercritical" for the greatest reduction of noise along the exhaust line. The pumps are "low speed" pumps and any vibration associated with them is negligible (whereas for high speed pumps vibration is a greater concern). The project design also includes sound traps for the air duct work for the pump station which will further reduce noise near the pump station site. However, no impacts to the California gnatcatcher are anticipated to occur in association with the proposed pump. The existing pump station is relatively quiet and the new pump station will be designed to be quieter than the existing one, as described above.

Also, even if the City were to shift the proposed sewer pump station 6-8 ft. in a southerly direction so that part of it is within the cul-de-sac, this would not significantly reduce the impacts to native vegetation. The City has indicated that during the environmental analysis at the City, shifting the pump station one way or the other was thoroughly evaluated. Because the pump station is proposed to be located just north of the cul-de-sac, it is almost entirely surrounded by native vegetation (MSS and CSS). As such, shifting the pump station further north or east would also impact sensitive vegetation as well such that the amount of proposed impacts would essentially be the same.

After reviewing the aforementioned alternatives addressed by the City, Commission staff met with the City to further discuss additional alternatives. Specifically, the City was asked to further explain why they could not locate the sewer pump station at the location of the existing SPS 29 (on the Torrey Pines Golf Course) or SPS 28 (east end of Salk Institute Road) both sites which would appear to avoid impacts to any sensitive vegetation. Also, the City was asked to address why the proposed SPS 45 could not also be sited a little further east in order to avoid impacts to sensitive MSS.

In response to these suggested alternatives, the City stated that it would not be feasible to build a single pump station at the site of SPS 29 because that is the "high point" (in elevation) in the area and as such, from a hydraulics perspective, the other two pump stations (28 and 49) would need to be retained anyway. This would not further the City's goals of trying to reduce and/or consolidate the functions of existing older pump stations, nor address upgrading these other facilities to reduce the potential for sewage spills. In addition, the City stated that SPS 29 is located near a gnatcatcher habitat area and due to the golf tournaments that occur there, construction would be limited to non-breeding season periods for the gnatcatcher and would also have to avoid the golf tournaments which would mean that building a pump station at that location could take up to 10 years due to the very narrow construction windows and night time work that would be necessary for that particular site.

With regard to relocating the proposed pump station further east to pull it away from the MSS, although this may be possible, then the proposed sewer pump station would impact existing CSS which is located further east (ref. Exhibit No. 5).

An additional possible alternative discussed was whether or not the sewer pump station could be located within a "bald" or disturbed area of the Salk Institute Road east of the existing SPS 45 which appears to be devoid of vegetation as shown on an aerial photograph exhibit contained in the project biological report (ref. Exhibit No. 10). The City responded that as soon as they go further east they are within a steep hill which means they would need to install pipes, etc. at tremendous depths. The so-called "bald" spot is 600 feet east of the existing pump station with a ground elevation of 371 feet. If the pump station were to be located in this area the gravity sewer line conveying wastewater flows from the La Jolla Farms subdivision and the pump station would need to be approximately 80 feet deep. Facilities requiring excavation 80 feet deep are not practical or economical. In addition, an extremely deep excavation in this area would directly impact additional areas of MSS. Because in order to excavate at such depths, they could not contain the construction to the roadbed and would need to impact the adjacent sensitive vegetation (MSS). Specifically, the required excavation for building a pump station at this location would require a complex shoring system requiring a minimum area of 60 feet by 105 feet. Due to the depth of the excavation, the shoring system cannot be cantilevered due to the soil loads and will require tiebacks. Tiebacks could range from 50 to 100 feet deep and would need to be spaced every six to ten feet apart depending on soil conditions. Such an extensive shoring system could disturb an area of 260 feet by 305 feet which is much larger than the described "bald" area. Also, a pair of California Gnatcatchers were observed in this area. For this reason, the proposed 24-inch diameter gravity sewer will be micro-tunneled along this stretch of roadway to avoid disturbance of a possible nesting area for this bird species. Constructing a sewer pump station below ground at this same location would result in significant impacts to the California Gnatcatcher.

Another alternative sought by Commission staff was whether or not the pump station could be located anywhere else in the general vicinity at a similar "low point" such that the hydraulics of the pump station would be feasible from an engineering standpoint and avoid the need to impact sensitive native habitat. The City indicated that to locate the pump station anywhere else they would need to build a very, very deep gravity sewer line which is not feasible. For example, if SPS 45 was eliminated, it would require a 35-foot deep tunnel to get the flow over to SPS 28. The flows are coming mostly from the Salk Institute and the University planning area and the along the frontage road of North Torrey Pines Road which collects flows from the science research park along this roadway.

Furthermore, the City's consultant indicated that it may have been possible at one time to build the pump station on a vacant lot in the La Jolla Farms subdivision when the sewer system was originally constructed; however, to do so now would be infeasible. All the residential lots in that subdivision have been developed. Condemnation of property within the subdivision would be a time-consuming and expensive process. Locating a pump station there would also require substantial redesign of the overall sewer upgrade

project, which would itself be time consuming and expensive. In the meantime, the threat of destructive sewage spills from the current system would persist. Although no spills have occurred in the immediate vicinity of this project, serious spills have recently occurred elsewhere.

A final suggested potential alternative raised by Commission staff was whether the City could build a separate wet well within the cul-de-sac of the Salk Institute Road thus minimizing the need for such a large sewer pump station which would reduce or eliminate impacts to ESHA. The City's response was that the overflow storage facility cannot be located within the roadway because of the existing utilities under the roadway, as previously discussed, that are located within the two, 20-foot wide easements. These facilities (6-inch diameter sewer force main, 8-inch diameter gravity sewer, 4-inch diameter water main and un underground electrical conduit) must remain in operation during construction. The existing force main crosses the cul-de-sac area in an east-west direction through the middle of the cul-de-sac approximately six feet deep. The incoming gravity sewer crosses the southerly section on the cul-de-sac and is approximately 12 feet deep. The new pump station will be approximately 28 feet deep. Also, to build a separate wet well would require installation of suction piping to connect it to the pump station. At this location, this would amount to approximately over 50 linear feet of suction piping which is not recommended. In addition, a pipe of this length would require several bends and longer suction pipes are prone to plugging and may increase the chances of damaging cavitation (i.e., pump failure) to occur. In order to reduce this potential of failure, the wet well is built as an integral part of the pump station. For this reason, it is not recommended to build a wet well separate from the proposed pump station.

In addition, because the wet well is an integral part of the pump station and is the deepest section of the pump station, construction of the wet well or any portion of the pump station in the cul-de-sac will jeopardize the integrity of the existing sewage force main, the existing incoming gravity sewer and the existing pump station. Furthermore, the existing sewer pump station 45 has no wet well or standby power and the electrical and structural facilities are nearly 50 years old, thus making them subject to threat due to their age. Adverse impacts from a damage to the existing pump station (from installation of a wet well in the cul-de-sac) would result in significant impacts to nearby coastal resources (i.e., native habitat and potential impacts to the beach and ocean as a result of pollution and/or contamination associated with a sewage spill).

Therefore, in summary, the proposed SPS 45 site was selected as the most feasible site overall for several reasons which include: adequate space to build a second pump station while the primary station remains operational; less visual impacts than the other possible locations; less impacts on traffic; less noise for the adjacent residents and the Salk Institute. Also, the City has stated their goal is to continually look for ways to decrease the number of overall pump stations through upgrades to the sewer system. The City's engineering consultant has stated that Citywide, there are approximately 90 pump stations and whenever any pump stations can be eliminated, it is considered beneficial because they can revegetate the sites of the existing abandoned pump stations (after

removal of the pump station). Decreasing the number of sewer pump stations also improves operating efficiency.

Again, the proposed new pump station will have many new safeguards built into it which include dual force mains. For example, if a force main is lost, they still have another force main. They will also have redundant power, a standby generator and a natural gas generator so that if power is lost, they will still have back-up power. With all these safety features in check, they will also have the two-hour storage which provides enough time for City personnel to arrive on the scene and correct the problem before a sewage spill were to occur. In addition, impacts to sensitive coastal resources have been minimized to the maximum extent feasible. Therefore, for all of the above-cited reasons, the proposed location for SPS 45 is the least-environmentally damaging alternative.

B. Impacts to ESHA and Proposed Mitigation, Consistency with MSCP. Although impacts will occur to sensitive vegetation with the SPS 45 site, the City has documented that the impacts have been minimized (as described above) and mitigation for all unavoidable impacts is proposed. Specifically, all disturbed vegetation is proposed to be replaced-in-kind. Maritime Succulent Scrub is a Multiple Species Conservation Program (MSCP) Tier I habitat and the 0.10 acres of impacts are proposed to be mitigated at a 2:1 ratio per the biology report for a total of 0.20 acres of MSS. The 0.05 acres of impacts to Coastal Sage Scrub (MSCP Tier II) are proposed to be mitigated at a ratio of 1:1. According to the biology report, Maritime Succulent Scrub is a sage scrub habitat that only occurs within a few kilometers of the coast in only a few remaining patches. The City is also revegetating habitats destroyed through construction. The landscaping plans will result in greater vegetation after landscaping is completed. Mitigation consists of 0.15 acres of on-site revegetation where the new sewer pump station will be located.

In addition to on-site revegetation, the City also proposes off-site mitigation consisting of payment into an MHPA Fund, per the Mitigated Negative Declaration (LDR No. 40-0840). Listed below is the proposed mitigation for impacts to sensitive vegetation that will be paid into the MHPA Fund:

Habitat type	Impact Area	Impact Acreage	Mitigation Ratios	Mitigation (Ac.)
MSS (Tier I)	Inside MHPA	0.10	2:1	0.20
CSS (Tier II)	Outside MHPA	0.05	1:1	0.05

In addition to the .15 acres of revegetation on-site and 0.25 acres of mitigation through payment into the MHPA Fund, the City also proposes to revegetate the areas where the existing three sewer pump stations will be demolished (as noted previously, SPS 28 and SPS 29 are outside of the Commission's jurisdiction but are a part of the City's overall sewer upgrade project). This area encompasses an additional 0.07 acres of revegetated area thus bringing the actual total revegetated/mitigated area up to 0.47 acres. As such, there will be no net loss in environmentally sensitive habitat and, in fact, there will be a total of 0.32 acres of additional habitat created as a result of the proposed project.

However, now it must also be determined that for the project site, adverse impacts to sensitive resources have been minimized to the maximum extent feasible. The City has reduced these impacts in a number of ways. First, the pump station has been designed such that it is "tucked" into the hillside and partially located below ground to avoid impacts to additional habitat area. Secondly, the project is located at the periphery of the Multiple Habitat Planning Area (MHPA) as opposed to being located in the middle portion of a contiguous habitat area. Thirdly, the project is located adjacent to the cul-de-sac of the Salk Institute Road and vehicular and maintenance access will be through this roadway rather than having to gain access through any of the adjoining areas that contain sensitive habitat areas. Lastly, the City intends to completely demolish and remove the existing sewer pump station and revegetate the site with native species which will help to compensate for some of the direct impacts to revegetated coastal sage scrub and maritime sage scrub habitats.

In this particular case, the alternative chosen for locating the sewer pump station involves the removal of native vegetation (total of 0.15 acres of CSS and MSS). The City reviewed alternatives that could avoid the need for these impacts, such as an alternative siting of the pump station. The Commission staff biologist has reviewed the biological report and has concurred that the habitat to be impacted is ESHA and known to support the endangered gnatcatcher, as well. The habitat to be removed is contiguous with a larger natively vegetated canyon which is part of the MHPA. The area north of the subject site contained the most critical and sensitive vegetation on the site. The City has thoroughly considered other alternatives that could avoid such encroachment altogether.

As proposed to be mitigated, the project impacts have been reduced to the maximum extent feasible. The Commission finds however, that the proposed mitigation for Coastal Sage Scrub habitat should be provided at a ratio of 2:1 instead of 1:1 as proposed by the City. This is because the identified CSS, although it is revegetated CSS, has been identified to be habitat area occupied by the California gnatcatcher. Special Condition No. 1 therefore requires submittal of a final mitigation plan that outlines the specific mitigation ratios that must be implemented for the proposed impacts which includes that both habitats (MSS and CSS) be mitigated at a ratio of 2:1. Special Condition No. 2 requires submittal of a final monitoring plan for the revegetation of the new sewer pump station and the demolished sewer pump station site including the specific time limits by which such mitigation shall occur as monitoring requirements in the event that such revegetation does not establish itself. The condition requires that the demolition of the existing sewer pump station occur within 60 days of completion of construction of the new pump station and that revegetation occur within 30 days of demolition of the existing pump station. Also, Special Condition No. 3 requires submittal of evidence that the off-site mitigation has been preserved in perpetuity, that it occurs in an approved conservation bank or area with long-term conservation and management and written acceptance of the mitigation site by the U.S. Fish and Wildlife Service. In addition, Special Condition No. 4 requires that construction access and staging materials not occur within any of the adjacent environmentally sensitive habitat areas and that access corridors and staging areas be located in a manner that has the least impact on public

access via the maintenance of vehicular traffic flow on North Torrey Pines Road, a major coastal access route.

Regarding impacts to sensitive bird species, the California gnatcatcher was observed in the MSS approximately 300 ft. north of the SPS 45 site. The development of 0.10 acres of gnatcatcher-occupied MSS and 0.05 acres of revegetated coastal sage scrub is an adverse impact. In addition, indirect impacts to the California gnatcatcher could possibly be affected by noise. This species is considered sensitive to noise levels exceeding 60 decibels during the breeding season (March 1st to August 15th). The California gnatcatcher territory located in the revegetated habitat north of Salk Institute Road and the California gnatcatcher territory north of SPS 45 would potentially be affected by noise and human presence associated with the construction of the proposed new SPS 45 and associated sewer line along the road. Construction during the breeding season could potentially result in significant indirect noise impacts to the species if not mitigated. No impacts from noise associated with the new pump station once it becomes operational are expected to occur. As noted previously, the new pump station will contain many new design features which will include components to muffle the sound generated from the pump station.

However, because of the small size of the impact and location at the periphery of the gnatcatcher pair's territory, the City found that with implementation of mitigation measures, as identified in the mitigated negative declaration, impacts to this sensitive bird species would be reduced to below a level of significance. In addition, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) have reviewed the subject project and have given verbal approval of the project to the City. Special Condition No. 2 requires that the applicant comply with specific measures to reduce these impacts as mirrored in the mitigated negative declaration. Specifically, the special condition requires that a biologist survey the area prior to construction to determine whether or not any California gnatcatchers are present. If gnatcatchers are observed in the area, the City will be required to install sound barriers to mitigate for noise impacts. In addition, construction noise will be required to be continually monitored with monthly reports submitted to the U.S. Fish and Wildlife Service.

Although the applicant is proposing the least-environmentally damaging feasible project alternative and has proposed appropriate and adequate mitigation for all unavoidable impacts, the proposed new sewer pump station project will result in significant impacts to ESHA, inconsistent with Section 30240 of the Coastal Act. However, as described in more detail below, the Commission finds that there is an internal conflict with Section 30240 of the Coastal Act, as well as between Section 30240 and other Coastal Act policies, and that the proposed development, on balance, is more protective of significant coastal resources than its provided by existing conditions. In summary, the proposed sewer pump station replacement project will result in impacts to ESHA (.15 acres of MSS/CSS). The project includes mitigation for these impacts. However, because the project would disrupt habitat value and is not a use that is dependent upon the ESHA, the Commission cannot find the proposed improvements consistent with Section 30240 of the Coastal Act.

3. Water Quality. The following Coastal Act policy is applicable to the proposed development and states:

Section 30231

The biological productivity and the quality of coastal waters, streams, wetlands, 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.

The proposed development will occur within a portion of the MHPA atop a flat inland mesa that borders on the upper edge of a canyon which contains native habitat. The canyon leads down to the ocean which is approximately ½ mile to the west. There is the potential for discharge of additional pollutants into the identified downstream resources associated with the proposed development. Grading is also proposed for the site consisting of 5,470 cy. of cut to be exported to other portions of the overall sewer project for trench backfill purposes for the remainder of the project that is outside of the Commission's permit jurisdiction. As a result of the proposed grading, there is the potential for excavated soils to be temporarily stockpiled on the site during construction activities that could be carried downstream to the ocean particularly during rainy weather. There is also the potential for the runoff to go into the adjacent storm drain system in the street. The City proposes to install erosion control measures to address this concern. In addition, the project site will be fenced and generally inaccessible. The City also proposes to landscape the area after construction. As such, there is little likelihood that significant pollutants would be generated. Site drainage from the proposed pump station would be directed through proposed energy dissipating devices.

As such, no impacts related to post-construction runoff are expected to occur to the adjacent environmentally sensitive habitat areas. As noted above, the City proposes to install erosion control measures, however final grading/erosion plans have not been submitted. In order to avoid impacts to downstream resources from runoff associated with the proposed development, Special Condition #6 requires submittal of a final grading/erosion control plan with implementation of best management practices for the proposed project to further assure that the water quality of the ocean will not be adversely affected. The condition requires implementation of erosion control measures that include stabilization of graded pads prior to the onset of the rainy season and use of temporary erosion control measures such a berms, interceptor ditches, sandbagging, filtered inlets, debris basins and silt traps along with plantings to minimize soil loss during construction.

In this particular case, the proposed project will result in the construction of a new sewer pump station which will replace three existing sewer pump stations in the general area.

The existing sewer pump station is old and no longer meets the City's current design and safety standards. It is important to note that the City has recently had sewer spill problems. Specifically, according to information obtained from the Regional Water Quality Control Board, between February 19-28, 2001 the City discharged 1,500,000 gallons of sewage upstream of the Point Loma Wastewater Treatment Plant to Tecolote Creek, a tributary to Mission Bay. The spill caused pollution and nuisance conditions in Tecolote Creek and Mission Bay. The sewage spill occurred as a result of the City's failure to provide proper preventive maintenance to its sewage collection system. The City was fined as result of that spill. As noted previously, the new sewer pump station is designed to incorporate state-of-the-art safety features to prevent such sewage spills. The subject new facility will incorporate an emergency storage area and will also serve as a Supervisory Control and Data Acquisition (SCADA) relay station cited previously. Currently, the existing sewer pump station handles an average of 57,000 gallons of raw sewage per day (with a maximum of up to 115,000 gallons per day). Without such a station, there is a risk of a sewage spill which could potentially affect the adjacent native habitat areas consisting of maritime succulent scrub, coastal sage scrub as well as adversely affecting the water quality of the ocean (the sewer pump station is adjacent to an inland canyon which drains to the Pacific Ocean). The new sewer pump station will reduce the potential for sewage spills.

Thus, as conditioned, to implement temporary and permanent erosion control measures and best-management practices regarding the management and reduction of non-point source urban pollution and runoff, the proposed development will not adversely impact water quality or have a significant adverse impact to adjacent downstream resources. In summary, while the proposed development is located directly adjacent to ESHA, with required conditions, the potential for sediment and adverse water quality impacts have been reduced to the maximum extent feasible. In addition, once completed, the total new area of impervious surface would be approximately 1,600 sq.ft. All other improvements will be underground. The proposed project will protect water quality by reducing the potential for sewage spills. Therefore, the proposed development is consistent with Section 30231 of the Coastal Act.

4. Growth Inducement. Section 30250 (a) of the Coastal Act is applicable and states, in part:

> (a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources....

The proposed development involves the construction of a new sewer pump station to replace three existing sewer pump stations and the construction of two new sewer force mains. Although the City has indicated that this will essentially increase the service capacity in this area, these improvements are not intended to accommodate new

development, but rather, service the existing development in the area and to provide a more reliable system than that which currently exists. The existing sewer pump station does not meet current standards, is very old and in danger of breaking down. Thus, the proposed new sewer pump station represents a significant upgrade over the existing and obsolete sewer pump station and is not growth inducing. In other words, the upgrades to the existing pump station are being proposed to serve existing development and are not being proposed to accommodate new development. Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section 30250 (a) of the Coastal Act.

5. Visual Resources. Section 30251 of the Act is applicable to the project and states:

Section 30251

> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas....

As described in the project description, the subject site is a vacant site that contains native Maritime Succulent Scrub and Coastal Sage Chaparral. The proposed pump station will be partially buried into the existing hillside which leads down to a canyon which eventually leads to the ocean. The subject site is located at the western terminus of the Salk Institute Road which is off of North Torrey Pines Road, a major coastal access route. However, the subject site is not visible from North Torrey Pines Road itself since there is some distance between the proposed location of the sewer pump station and the road itself as well as existing development (Salk Institute Road) between the subject site and the major coastal access route.

To the west across the canyon is the Torrey Pines Gliderport and unimproved foot trails along the hillsides that are used by member of the public for hiking and gaining access to the ocean to the west. The proposed sewer pump station will be hidden from general public views because it is designed as a low profile pump station located sub grade into the side of the slope and partially hidden by vegetation. It will be primarily visible from those at the glider port about 1/4 miles away. The City proposes to use sacked concrete such that the portion of the sewer pump station that is visible above ground will be beige or another neutral color which will blend in with the surrounding natural hillside. In addition, the City is also proposing to revegetate the area surrounding the pump station which will also help to buffer the structure. In addition, after the new sewer pump station is constructed, the old sewer pump station will be demolished and removed and the area revegetated with native vegetation which will further enhance visual resources in this area.

With regard to potential impacts on public views toward the ocean, at this location, views of the ocean are not visible from the subject site due its distance from the coastal bluffs. However, on the other side of the canyon is the Torrey Pines Gliderport from which views of the ocean exist. As such, none of the proposed improvements will impede or block views toward the ocean. Also, as noted earlier, the City will fence the site to keep people and unauthorized vehicles out of the area.

In addition, the proposed sewer pump station will be visually compatible with the surrounding character and existing uses in the area. Immediately to the south of the site is the La Jolla Farms residential subdivision which is buffered from the subject site due to existing vegetation. Immediately west and north is a canyon containing native vegetation. Further west and northwest is the unimproved parking area used by the public for parking for gaining access to the beach and for glider port activities and the Torrey Pines Gliderport itself. The Pacific Ocean is approximately 1/2 mile to the west. To the east is the Salk Institute. As such, the immediate surrounding area is largely open in nature and the proposed sewer pump station, which will be partially below ground and visually unobtrusive, is compatible with the surrounding uses. Therefore, inasmuch as the proposed development will not adversely impact public views toward the ocean nor result in adverse visual impacts, the Commission finds the proposed development consistent with the Chapter 3 policies of the Coastal Act addressing protection of visual resources.

6. Public Access. Section 30212 of the Act states, in part:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) adequate access exists nearby, or,

(3) agriculture would be adversely affected. Dedicated access way shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the access way....

In this particular case, although the subject site is located between the first coastal road and the sea, the provision of public access at this location is not necessary or feasible. The site is adjacent to an environmentally sensitive habitat area. There are already existing foot trails in the area across the canyon to the west that are used by the public either for hiking or to gain access to the ocean which is some distance to the west (approximately .5 mile). In addition, the closest vertical access to the ocean is located to the south within the La Jolla Farms residential subdivision at the gated emergency roadway and public walkway at Black's Canyon Road. The proposed project will not result in any impacts to existing public access. As such, adequate public access exists in

the area and the proposed project can be found consistent with Section 30212(a) of the Coastal Act.

7. Conflict between Coastal Act Policies. Section 30007.5 of the Coastal Act provides the Commission with the ability to resolve conflicts between Coastal Act policies. This section provides that:

> The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner that on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.

A. Conflict. In order for the Commission to utilize the conflict resolution provision of Section 30007.5, the Commission must first establish that a substantial conflict between two statutory directives contained in Chapter 3 of the Coastal Act exists. The fact that a project is consistent with one policy of Chapter 3 and inconsistent with another policy does not necessarily result in a conflict. Rather, the Commission must find that to deny the project based on the inconsistency with one policy will result in coastal zone effects that are inconsistent with another policy.

In this case, as described above, the proposed project is inconsistent with Section 30240 of the Coastal Act because the construction of the sewer pump station will result in significant impacts to ESHA (0.15 acres of both maritime succulent scrub and coastal sage scrub habitat). In addition, the pump station is not dependent upon the resources within the ESHA and therefore is not an allowable use within the ESHA. However, to deny building the proposed sewer pump station based on this inconsistency with Section 30240 creates a significant possibility of greater adverse impacts to ESHA as well as water quality and, therefore, there is a conflict in the application of Section 30240 and 30231.

A component of the proposed project is to improve the operation and safety of an existing and outdated and structurally obsolete pump station which will significantly reduce the potential for a sewage. As noted previously, the existing pump station does not meet current design standards and is need of replacement. Specifically, the existing pump station does not have a two-hour storage tank (wet well), emergency storage tank, redundant dual force mains and secondary power. The Environmental Protection Agency (EPA) has been very involved with the City and its sewer upgrade project in an effort to reduce the risk of a sewage spill. The EPA has given the City a deadline of this spring to complete its new sewer pump station. According to the City, in the event of a sewage spill, the City could be fined up to $1,000,000 per day.

The proposed sewer pump station improvements are located upstream of the Pacific Ocean, seaward of Torrey Pines State Beach in the City of San Diego. The surrounding

land within the MHPA contains a contiguous habitat area of Coastal Sage Scrub and Maritime Succulent Scrub. Only part of the pump station will be in the MHPA as the project site is at the periphery of the MHPA. If the project is not constructed and the inadequate and structurally obsolete pump station (constructed in 1957) is left in place, the City has indicated there is the potential for a major sewage spill consisting of up to 115,000 gallons per day (maximum). This is an estimate based on conditions where such a spill would go undetected for approximately 24 hours. However, such a spill could go undetected for longer than a day since City personnel check the sewer pump station only once every two weeks. Such a spill could result not only in degradation and impacts to the surrounding environmentally sensitive habitat area (i.e., maritime succulent scrub and coastal sage scrub) but could also eventually lead to, and discharge onto, the public beaches and ocean west of the site thus potentially polluting the ocean waters. Torrey Pines City Beach is a major public recreational facility which is located approximately .5 miles west of the subject site (below the bluff). Thus, the beach and coastal waters along this stretch of shoreline could be significantly affected by a potential sewage spill which would adversely affect marine organisms as well as potential impacts to public access opportunities in this area. In addition, a sewage spill would not only discharge onto the adjacent environmentally sensitive habitat areas, but could also discharge into the existing storm drain system in the roadway which leads to the ocean, as well. Thus, through the proposed upgrades the sewer pump station as well as the proposed two-hour emergency storage tank and SCADA relay station, the potential for a sewage spill will be significantly reduced which will result in the protection of the surrounding ESHA and downstream resources.

If the Commission were to deny the project based on the project's inconsistencies with the resource protection policies of Section 30240, the environmentally sensitive habitat water quality impacts from a potential sewage spill (pollutants and sediments) could be greater than the 0.15 acres of impacts which will occur with project implementation. As discussed previously, there is no other less environmentally-damaging feasible alternative and the "no project" alternative will result in the same effects as those that exist today—the potential for a major sewage spill which could adversely impact ESHA and downstream water quality. Although the proposed project will include impacts to ESHA that are inconsistent with Section 30240 of the Coastal Act, the City has conducted an extensive and thorough alternatives analysis and the proposed impacts cannot be avoided. However, the proposed impacts have been reduced to the maximum extent feasible and the project will result in upgrades to the sewer pump station's operating service that will avert a major sewage spill that could adversely affect environmentally sensitive habitat (Section 30240) areas and the biological productivity and the quality of coastal waters (Section 30231). Therefore, the Commission finds that the proposed project creates a conflict among Coastal Act policies.

B. Conflict Resolution. After establishing a conflict among Coastal Act policies, Section 30007.5 requires the Commission to resolve the conflict in a manner that is on balance most protective of coastal resources. In resolving the identified Coastal Act conflict, the Commission finds that the impacts on coastal resources from not constructing the project will be more significant than the project's resource habitat impacts. As noted previously,

the existing sewer pump station is structurally obsolete and each day that it continues to remain in service until such time that a new sewer pump station is constructed represents a threat of a major sewage spill of up to a maximum of 115,000 gallons per day. In addition, inasmuch as the existing sewer pump station does not have all of the safety controls that are proposed with the new station, there remains the possibility that such a sewage spill could go undetected for several days, thus resulting in much more impacts to coastal resources. One of the new features, as noted previously, will incorporate a two-hour emergency storage tank as well as a SCADA relay station which will enable City personnel to control the sewer pump station from a remote location thus averting a major sewage spill.

In addition, as explained above, the City has limited the impacts to ESHA to the greatest extent feasible, will restore temporarily disturbed ESHA on site, and will provide off-site mitigation for permanent impacts to ESHA caused by the project. All alternatives to the proposed site of the new pump station are either infeasible or would entail larger impacts to ESHA than the proposed development. Finally, the special conditions imposed by the Commission assure that the mitigation will be properly carried out and maintained and that the new pump station will be built and operated in a manner that is protective of the nearby ESHA.

The Commission therefore finds that on balance approving the proposed development, as conditioned, is the alternative that is most protective of significant coastal resources.

8. Local Coastal Planning. Section 30604(a) also requires that a coastal development permit shall be issued only if the Commission finds that the permitted development will not prejudice the ability of the local government to prepare a Local Coastal Program (LCP) in conformity with the provisions of Chapter 3 of the Coastal Act. In this case, such a finding can be made.

The subject site is zoned RS 1-2, RS 1-7 and Open Space within the University (North City) community plan segment of the City of San Diego. The project is consistent with all applicable Chapter 3 policies of the Coastal Act, the certified North City Community Plan and Local Coastal Program Addendum. As such, the Commission finds that approval of the proposal, as conditioned, will not prejudice the ability of the City of San Diego to implement its certified LCP for the University planning area.

9. Consistency with the California Environmental Quality Act (CEQA). Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) 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 effect which the activity may have on the environment.

The proposed project has been conditioned in order to be found consistent with the water quality and the public access policies of the Coastal Act. Mitigation measures, including conditions addressing mitigation and monitoring for impacts to maritime succulent scrub and coastal sage scrub and timing of construction to avoid impacts to the California gnatcatcher, plans for staging and access and final plans for grading and erosion control, will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or additional feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Although denial of the project would avert some environmental impacts associated with the proposed development, denial would also prevent realization of the significant environmental benefits that the project would provide. Therefore, the Commission finds that the proposed project as conditioned is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

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 on which the Commission voted on the application. 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. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. 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.

5. 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.

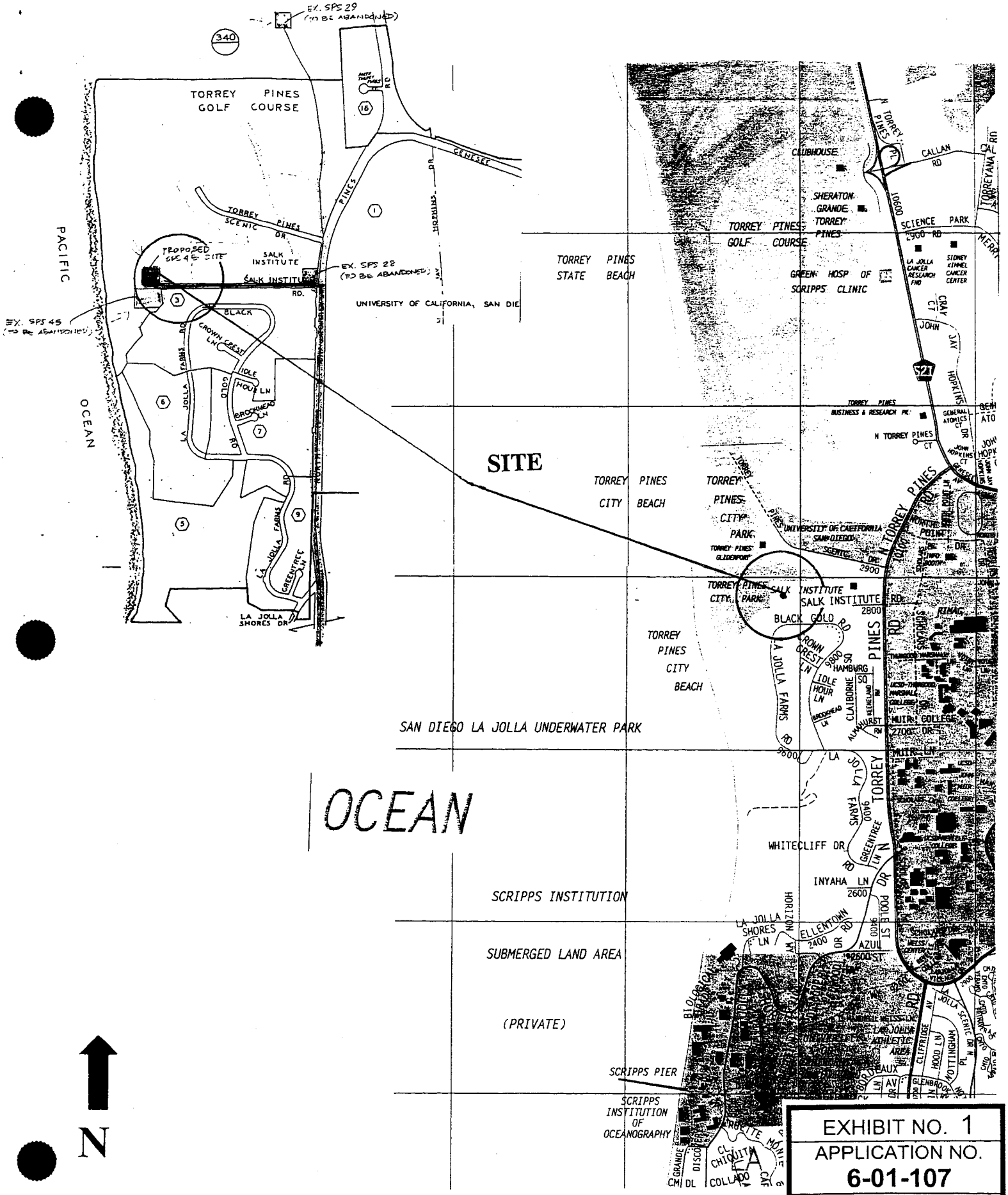
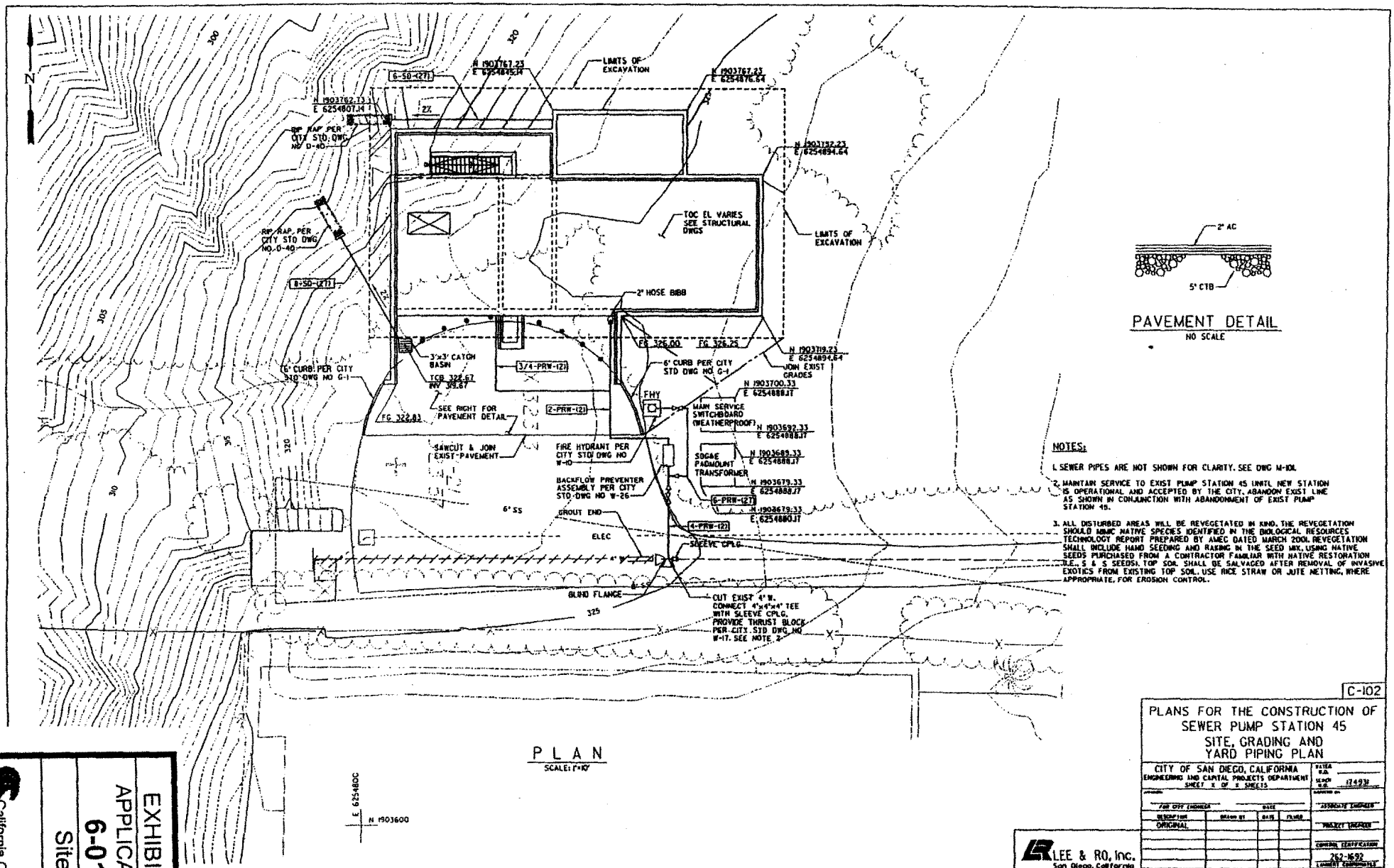


EXHIBIT NO. 1
APPLICATION NO.
6-01-107
Location Map

California Coastal Commission



PLAN
SCALE: 1"=10'

PAVEMENT DETAIL
NO SCALE

NOTES:

1. SEWER PIPES ARE NOT SHOWN FOR CLARITY. SEE DWG W-10L
2. MAINTAIN SERVICE TO EXIST PUMP STATION 45 UNTIL NEW STATION IS OPERATIONAL AND ACCEPTED BY THE CITY. ABANDON EXIST LINE AS SHOWN IN CONJUNCTION WITH ABANDONMENT OF EXIST PUMP STATION 45.
3. ALL DISTURBED AREAS WILL BE REVEGETATED IN KIND. THE REVEGETATION SHOULD MIMIC NATIVE SPECIES IDENTIFIED IN THE BIOLOGICAL RESOURCES TECHNOLOGY REPORT PREPARED BY AMEC DATED MARCH 2001. REVEGETATION SHALL INCLUDE HAND SEEDING AND RAKING IN THE SEED MIX, USING NATIVE SEEDS PURCHASED FROM A CONTRACTOR FAMILIAR WITH NATIVE RESTORATION (I.E., S & S SEEDS). TOP SOIL SHALL BE SALVAGED AFTER REMOVAL OF INVASIVE EXOTICS FROM EXISTING TOP SOIL. USE RICE STRAW OR JUTE NETTING, WHERE APPROPRIATE, FOR EROSION CONTROL.

C-102

PLANS FOR THE CONSTRUCTION OF
SEWER PUMP STATION 45
SITE, GRADING AND
YARD PIPING PLAN

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING AND CAPITAL PROJECTS DEPARTMENT
SHEET X OF X SHEETS

DESCRIPTION	BY/APP'D BY	DATE	FILMED
ORIGINAL			

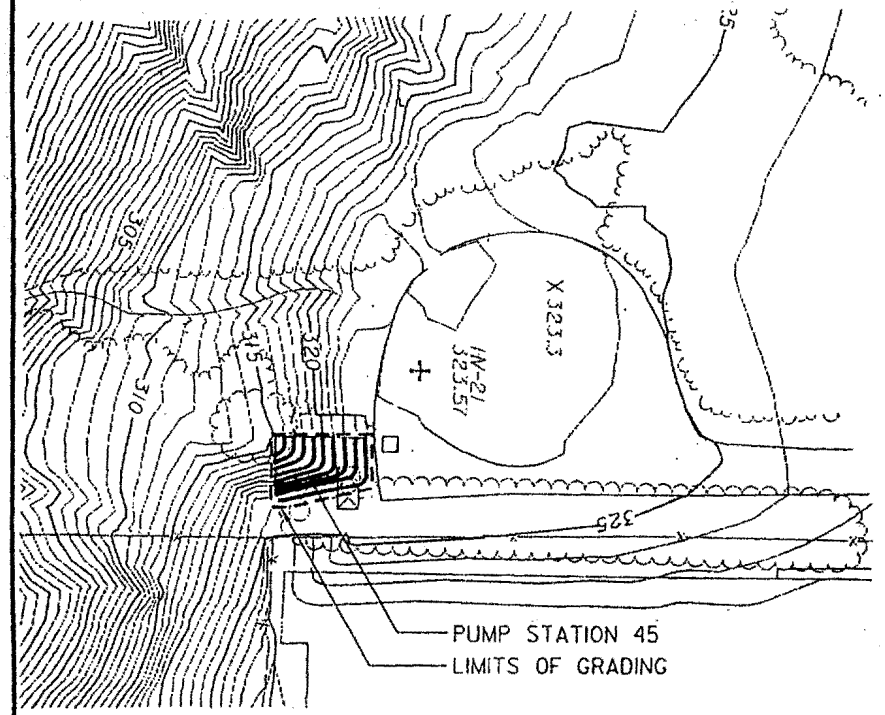
LEE & RO, Inc.
San Diego, California

262-1692

29381-XX-D

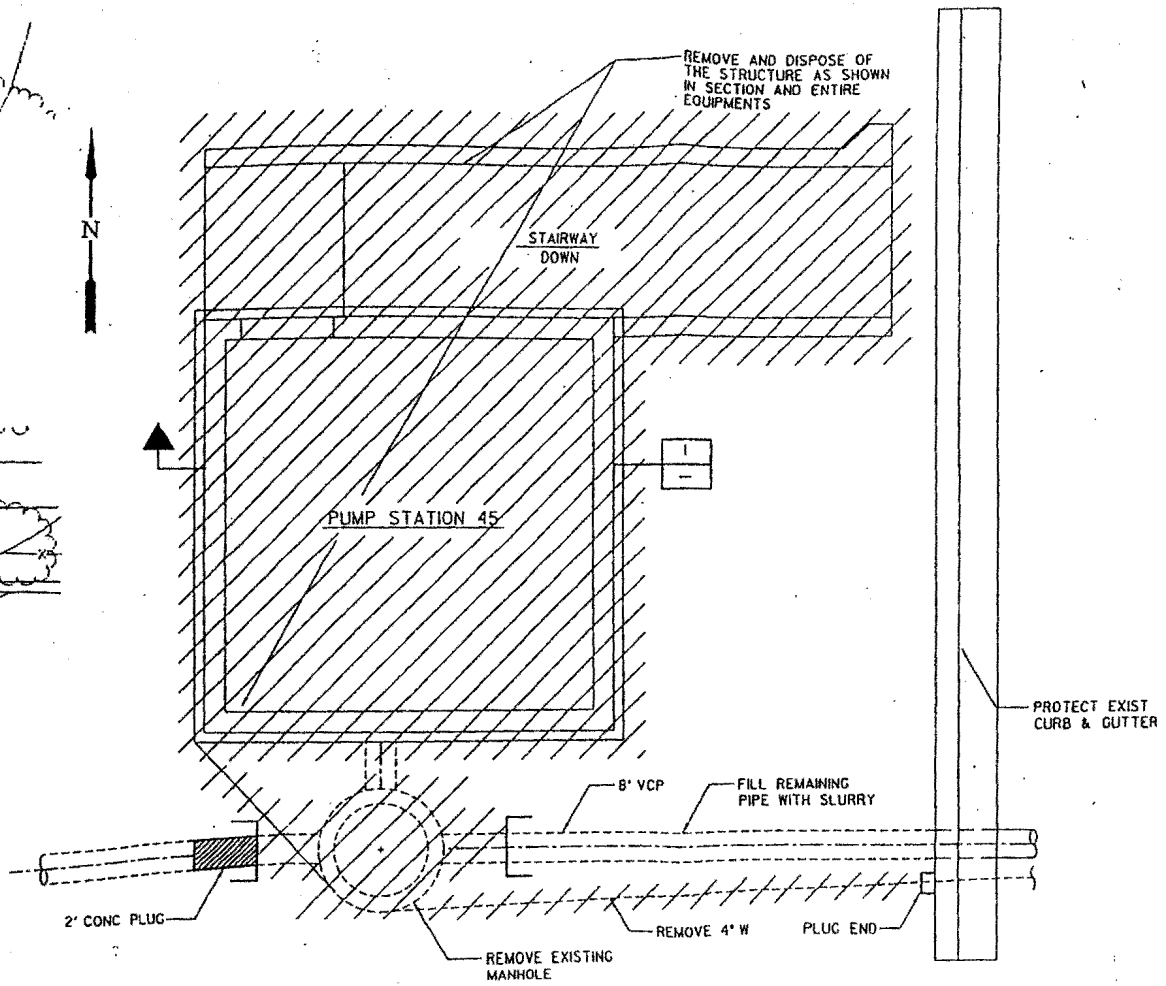
EXHIBIT NO. 2
APPLICATION
6-01-107
Site Plan

California Coastal Commission



SITE PLAN

SCALE: 1"=30'



PUMP STATION 45 DEMOLITION PLAN

40-0840

(257-1696 / 266-1694) 8-7-2001 b

STATION 45 - Site Plan

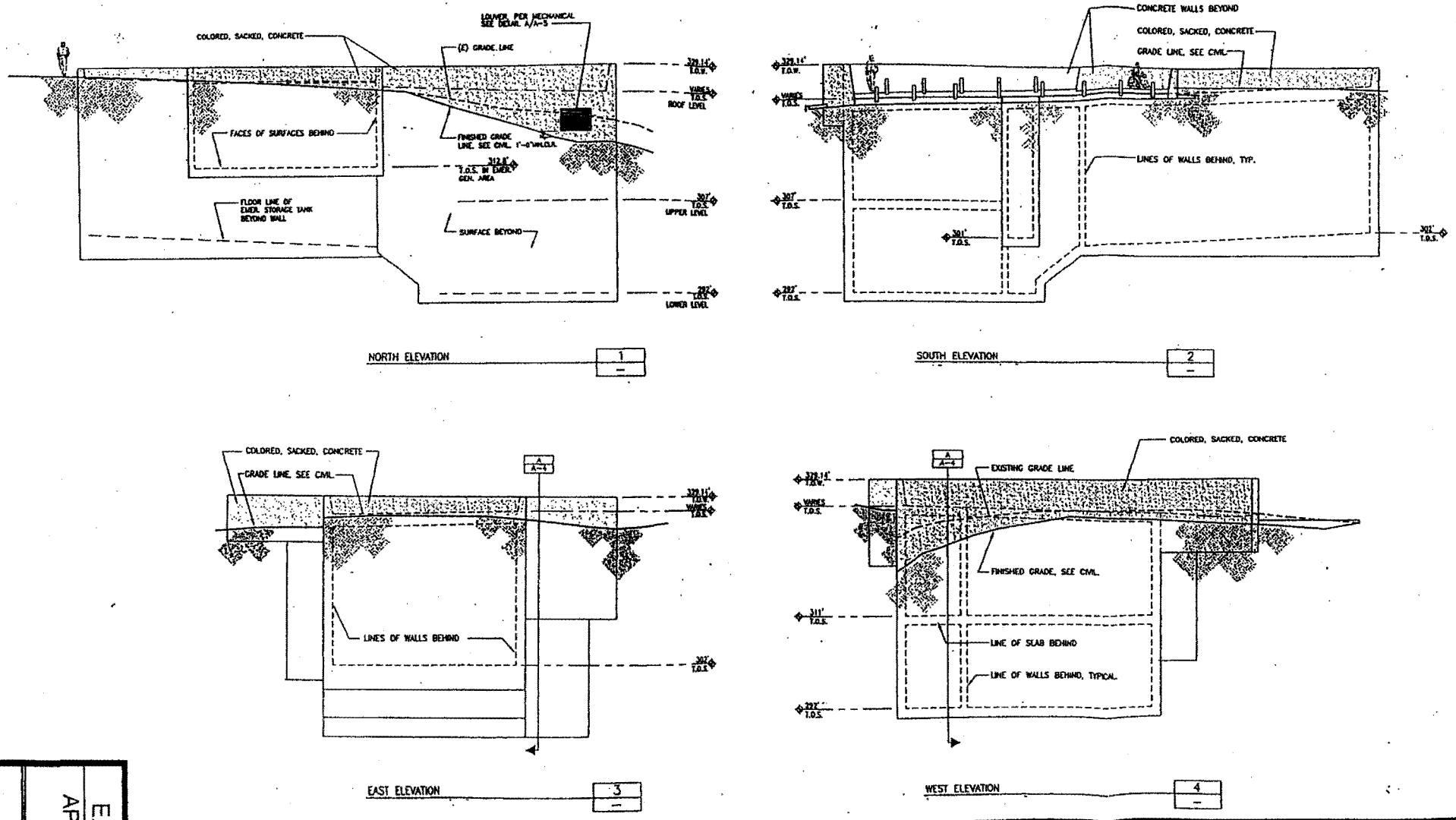
ntal Analysis Section

AN DIEGO • DEVELOPMENT REVIEW

Figure 3

EXHIBIT NO. 3
APPLICATION NO. 6-01-107
Demolition Plan

California Coastal Commission



40-0840

(257-1696 / 286-1694) 8-7-2001 bf.

STATION 45 - Building Elevations

tal Analysis Section

N DIEGO • DEVELOPMENT REVIEW

Figure 4

EXHIBIT NO. 4
APPLICATION 6-01-107
Elevations

California Coastal Commission

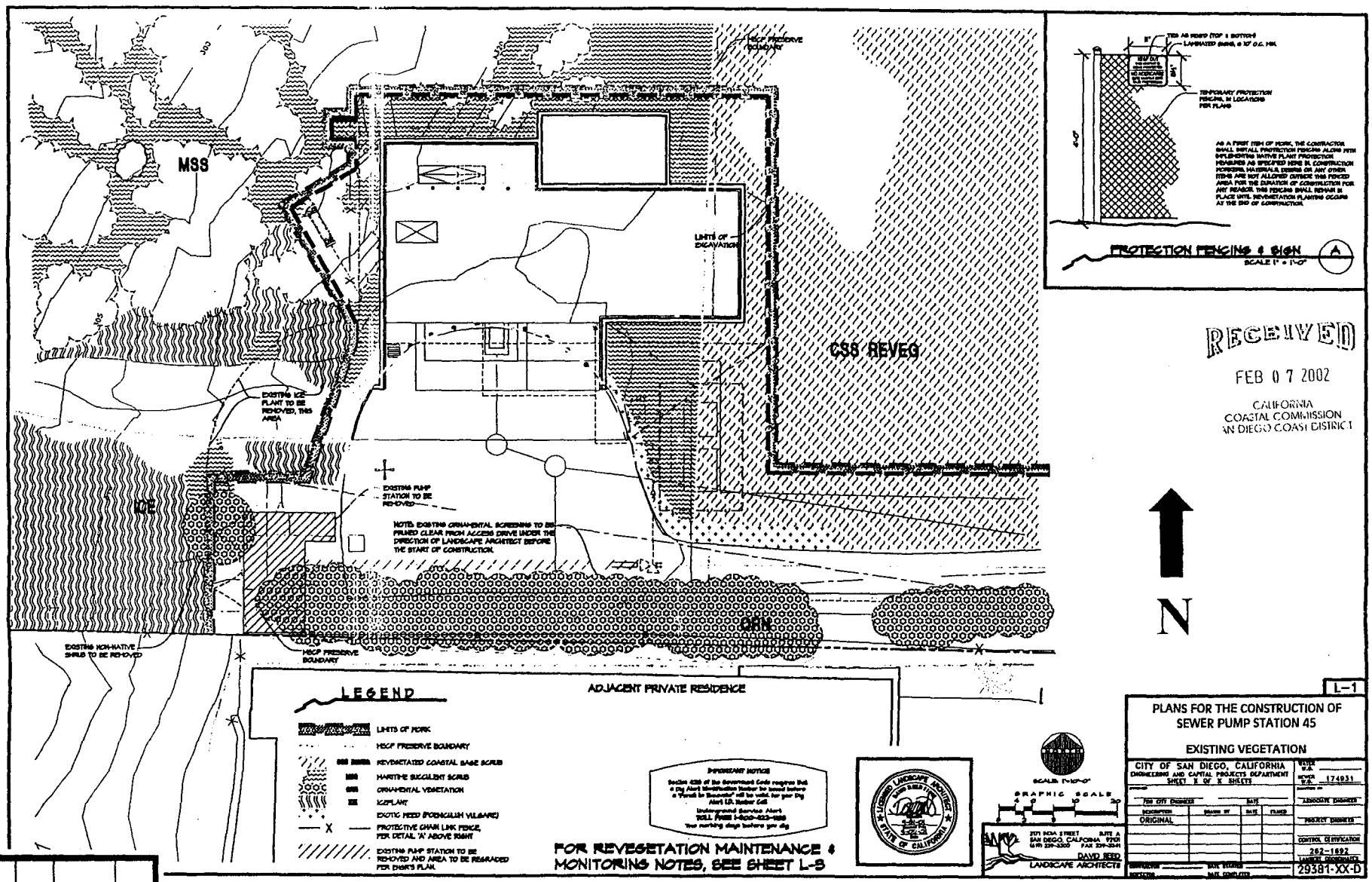
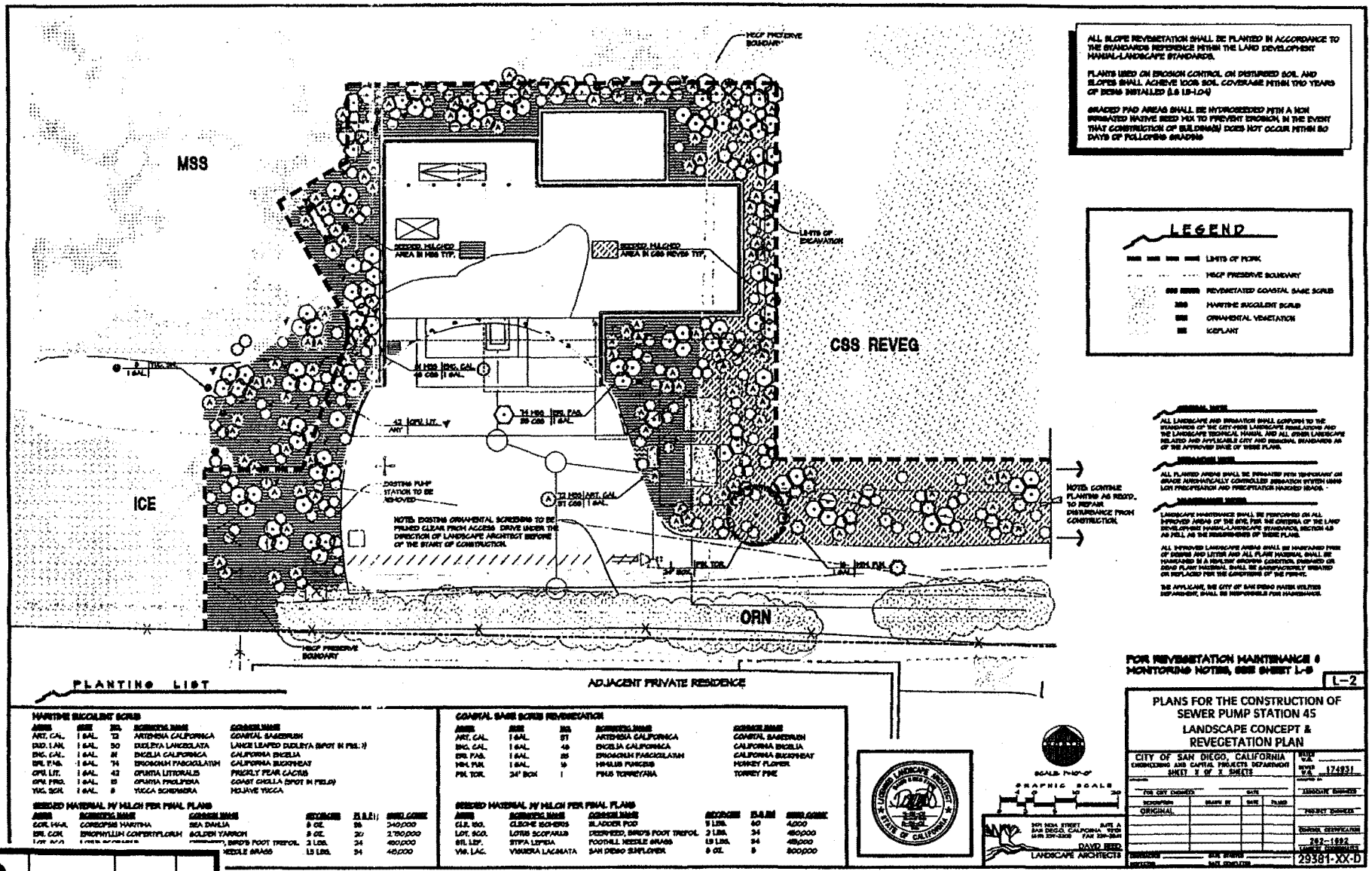


EXHIBIT NO. 5
APPLICATION NO.
6-01-45
Existing Vegetation

California Coastal Commission



ALL SLOPE REVEGETATION SHALL BE PLANTED IN ACCORDANCE TO THE STANDARDS REFERENCE WITHIN THE LAND DEVELOPMENT MANUAL-LANDSCAPE STANDARDS.

PLANTS USED ON EROSION CONTROL OR DISTURBED SOIL AND SLOPES SHALL ACHIEVE 100% SOIL COVERAGE WITHIN TWO YEARS OF BEING INSTALLED (1.5 LB-1.0#)

GRADED PAD AREAS SHALL BE HYDROSEEDED WITH A NON IRRIGATED NATIVE SEED MIX TO PREVENT EROSION, IN THE EVENT THAT CONSTRUCTION OF BUILDINGS DOES NOT OCCUR WITHIN 90 DAYS OF FOLLOWING GRADING

LEGEND

- LIMITS OF WORK
- MHCP PRESERVE BOUNDARY
- REVEGETATED COASTAL SAGE SCRUB
- MARITIME SUCCULENT SCRUB
- ORNAMENTAL VEGETATION
- IRRIGATION

GENERAL NOTES

ALL LANDSCAPE AND IRRIGATION SHALL CONFORM TO THE STANDARDS OF THE CITY-WIDE LANDSCAPE REGULATIONS AND THE LANDSCAPE TECHNICAL MANUAL AND ALL OTHER LANDSCAPE RELATED AND APPLICABLE CITY AND REGIONAL STANDARDS AS OF THE APPROVED DATE OF THESE PLANS.

IRRIGATION NOTES

ALL PLANTED AREAS SHALL BE IRRIGATED WITH TEMPORARY OR GRADE AUTOMATICALLY CONTROLLED IRRIGATION SYSTEM USING LOW PRECIPITATION AND PRECIPITATION MATCHED HEADS.

MAINTENANCE NOTES

LANDSCAPE MAINTENANCE SHALL BE PERFORMED ON ALL IMPROVED AREAS OF THE SITE, PER THE CRITERIA OF THE LAND DEVELOPMENT MANUAL-LANDSCAPE STANDARDS, SECTION 4.8 AS WELL AS THE REQUIREMENTS OF THESE PLANS.

ALL IMPROVED LANDSCAPE AREAS SHALL BE MAINTAINED FREE OF DEBRIS AND LITTER AND ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION. DISEASED OR DEAD PLANT MATERIAL SHALL BE SATISFACTORILY TREATED OR REPLACED PER THE CONDITIONS OF THE PERMIT.

THE APPLICANT, THE CITY OF SAN DIEGO PARKS DEPARTMENT, SHALL BE RESPONSIBLE FOR MAINTENANCE.

FOR REVEGETATION MAINTENANCE & MONITORING NOTES, SEE SHEET L-5

PLANTING LIST

MARITIME SUCCULENT SCRUB

ABBR	SIZE	NO.	BOTANICAL NAME	COMMON NAME
ART. CAL.	1 GAL.	123	ARTEMISIA CALIFORNICA	COASTAL SAGEBRUSH
DUD. LAN.	1 GAL.	50	DUDLEYA LANCEOLATA	LANCE LEAFED DUDLEYA SPOT IN FIEL.)
ENC. CAL.	1 GAL.	31	ENCELIA CALIFORNICA	CALIFORNIA ENCELIA
ERI. FAS.	1 GAL.	74	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT
OPU. LIT.	1 GAL.	43	OPUNTIA LITTORALIS	PRICKLY PEAR CACTUS
OPU. PRO.	1 GAL.	55	OPUNTIA PROLIFERA	COAST CHOLLA SPOT IN FIELD)
YUC. SCH.	1 GAL.	8	YUCCA SCHIDIGERA	MOJAVE YUCCA

SEEDED MATERIAL W/ MULCH PER FINAL PLANS

ABBR	BOTANICAL NAME	COMMON NAME	RECOMMEND	S.A.M.	SEED COUNT
ACH. MAL.	CORESPSIS MARITIMA	SEA DAHLIA	8 OZ.	56	240,000
ERI. CON.	ERIOPHYLLUM CONFERTIFLORUM	GOLDEN YARROW	8 OZ.	30	2,750,000
[illegible]	[illegible]	BIRD'S FOOT TREFOIL	3 LBS.	34	480,000
		NEEDLE GRASS	15 LBS.	34	45,000

COASTAL SAGE SCRUB REVEGETATION

ABBR	SIZE	NO.	BOTANICAL NAME	COMMON NAME
ART. CAL.	1 GAL.	97	ARTEMISIA CALIFORNICA	COASTAL SAGEBRUSH
ENC. CAL.	1 GAL.	49	ENCELIA CALIFORNICA	CALIFORNIA ENCELIA
ERI. FAS.	1 GAL.	25	ERIOGONUM FASCICULATUM	CALIFORNIA BUCKWHEAT
MIM. FUN.	1 GAL.	9	MIMULUS FUNGISIS	MONKEY FLOWER
PIN. TOR.	24" BOX	1	PINUS TORREYANA	TORREY PINE

SEEDED MATERIAL W/ MULCH PER FINAL PLANS

ABBR	BOTANICAL NAME	COMMON NAME	RECOMMEND	S.A.M.	SEED COUNT
CLE. ISO.	CLEOME ISOMERIS	BLADDER POD	9 LBS.	60	4,000
LOT. SCO.	LOTUS SCOPARIUS	DEERWEED, BIRD'S FOOT TREFOIL	2 LBS.	34	480,000
STI. LEP.	STIPA LEPIDA	FOOTHILL NEEDLE GRASS	15 LBS.	34	45,000
VIG. LAC.	VIGUIERA LACINIATA	SAN DIEGO SUNFLOWER	8 OZ.	9	800,000

GRAPHIC SCALE 1" = 20'

DAVID REED LANDSCAPE ARCHITECTS

L-2

PLANS FOR THE CONSTRUCTION OF SEWER PUMP STATION 45
LANDSCAPE CONCEPT & REVEGETATION PLAN

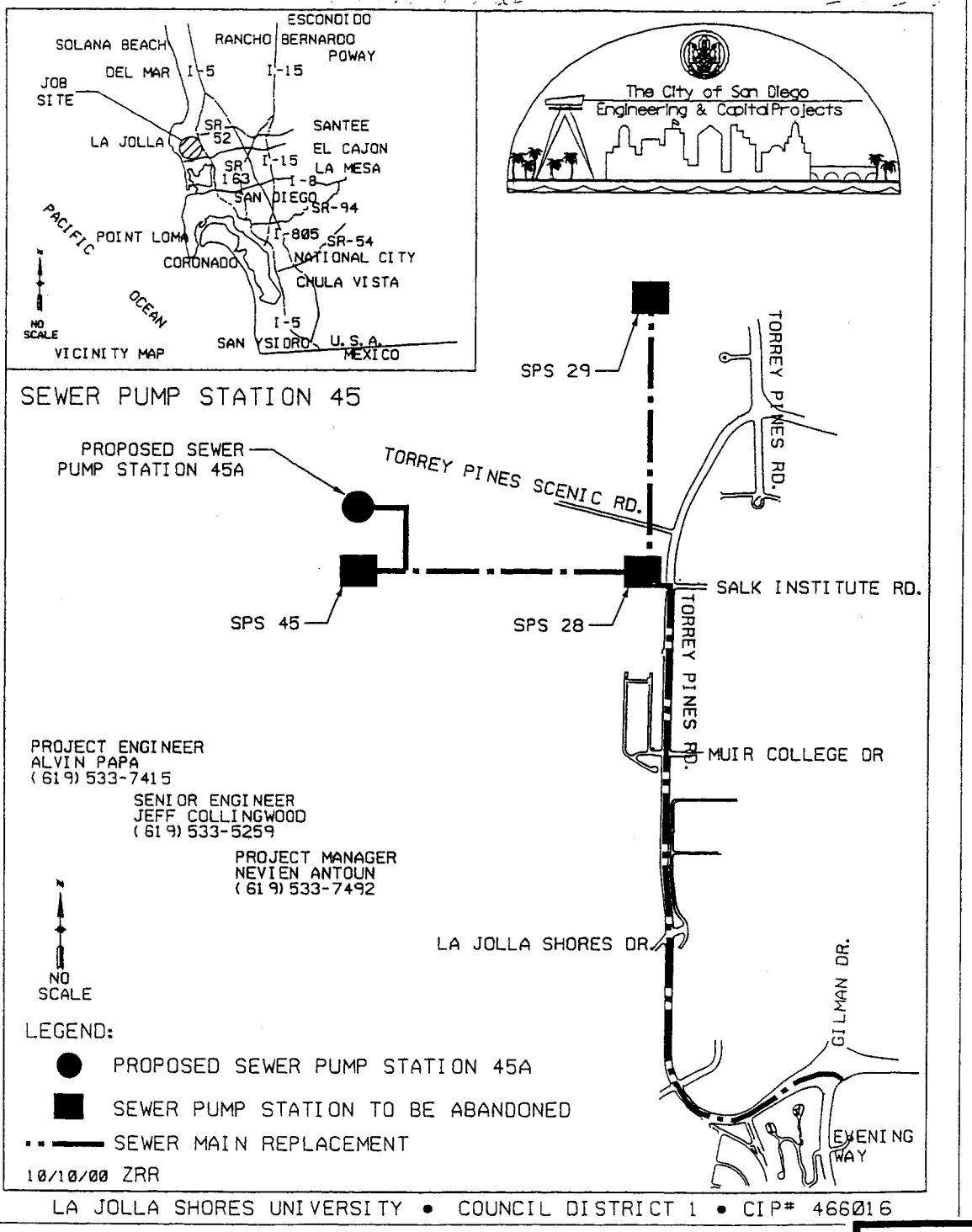
CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING AND CAPITAL PROJECTS DEPARTMENT
SHEET 9 OF X SHEETS

DESCRIPTION	APPR'D BY	DATE	PLANS
ORIGINAL			

WORK ORDER NO. 174931

29381-XX-D

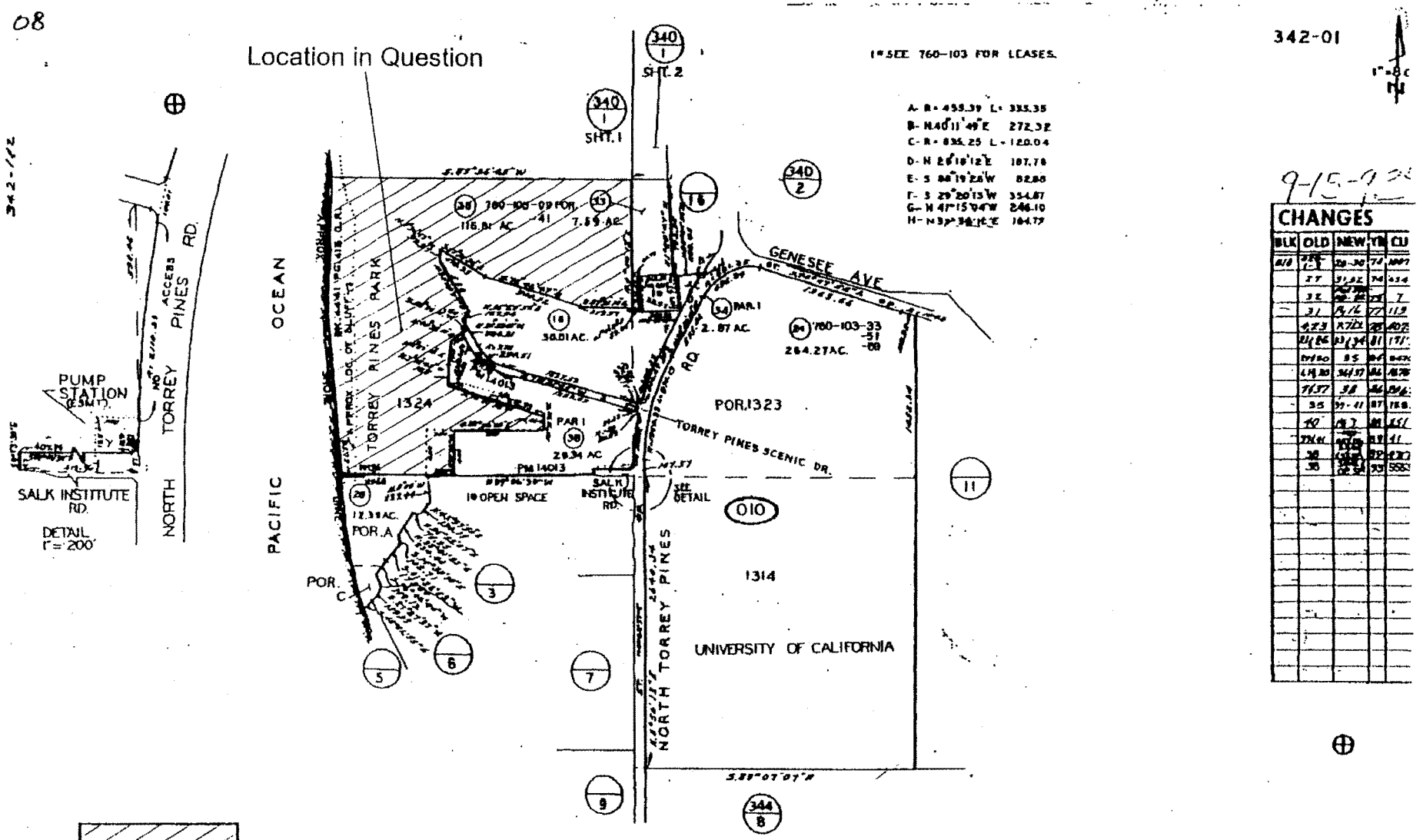
N



LA JOLLA SHORES UNIVERSITY • COUNCIL DISTRICT 1 • CIP# 466016

EXHIBIT NO. 7
APPLICATION NO.
6-01-107
Overall Project Location Map
California Coastal Commission

08



Coastal Commission Permit Jurisdiction

MAP 968 - PARTITION OF PUEBLO LOTS 1312 & 1313 - LOT B & POR LOTS A, C, D & E
MM 36 - PUEBLO LANDS - LOTS 1314, 1324 & POR LOTS 1323 & 1326
ROS 919

COUNTY ASSESSOR'S MAP BK 342 PG 01

2001
-01-36
Diego

EXHIBIT NO. 8
APPLICATION NO.
6-01-107
Jurisdiction Map

California Coastal Commission

Exhibit 2

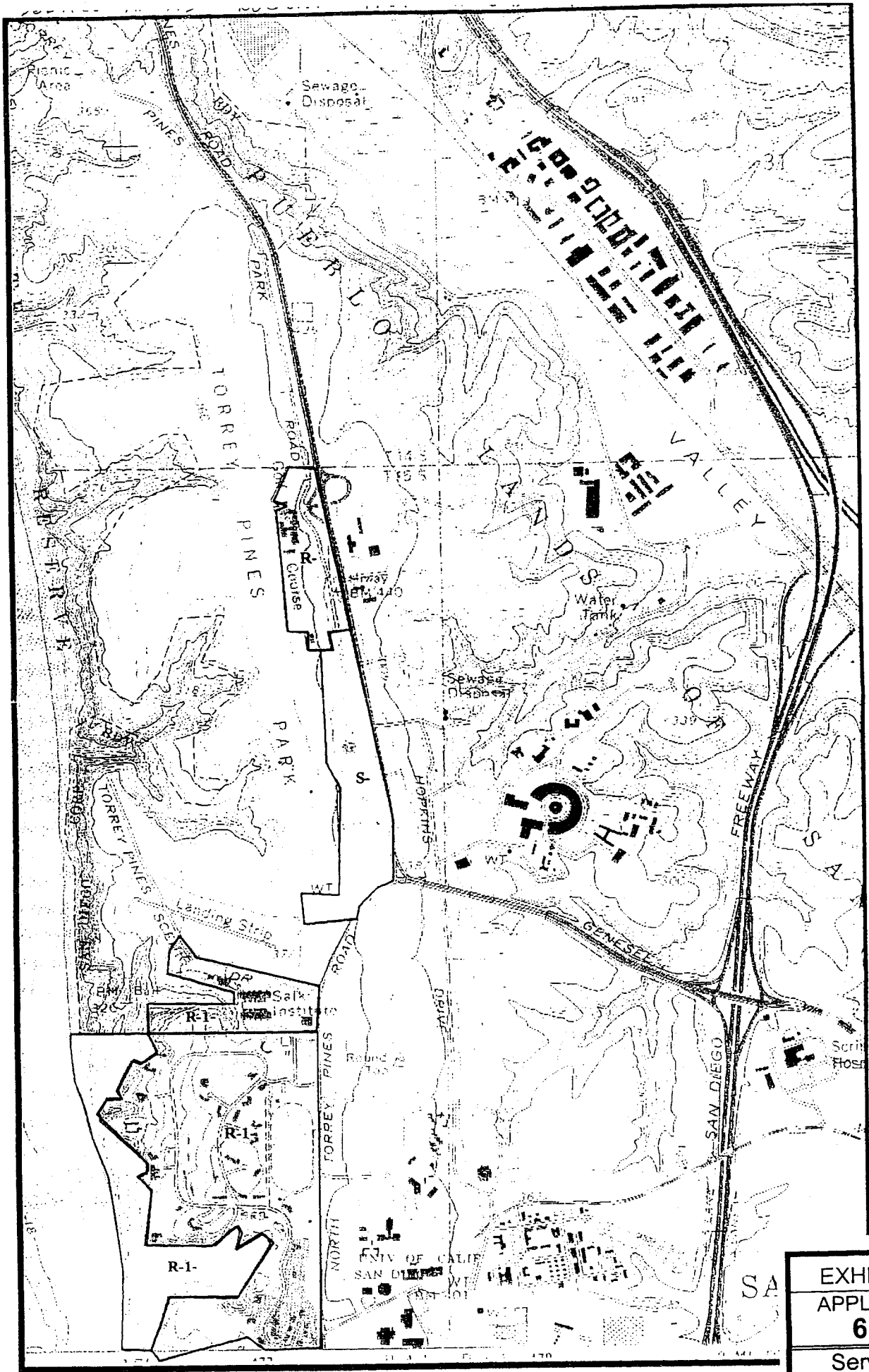
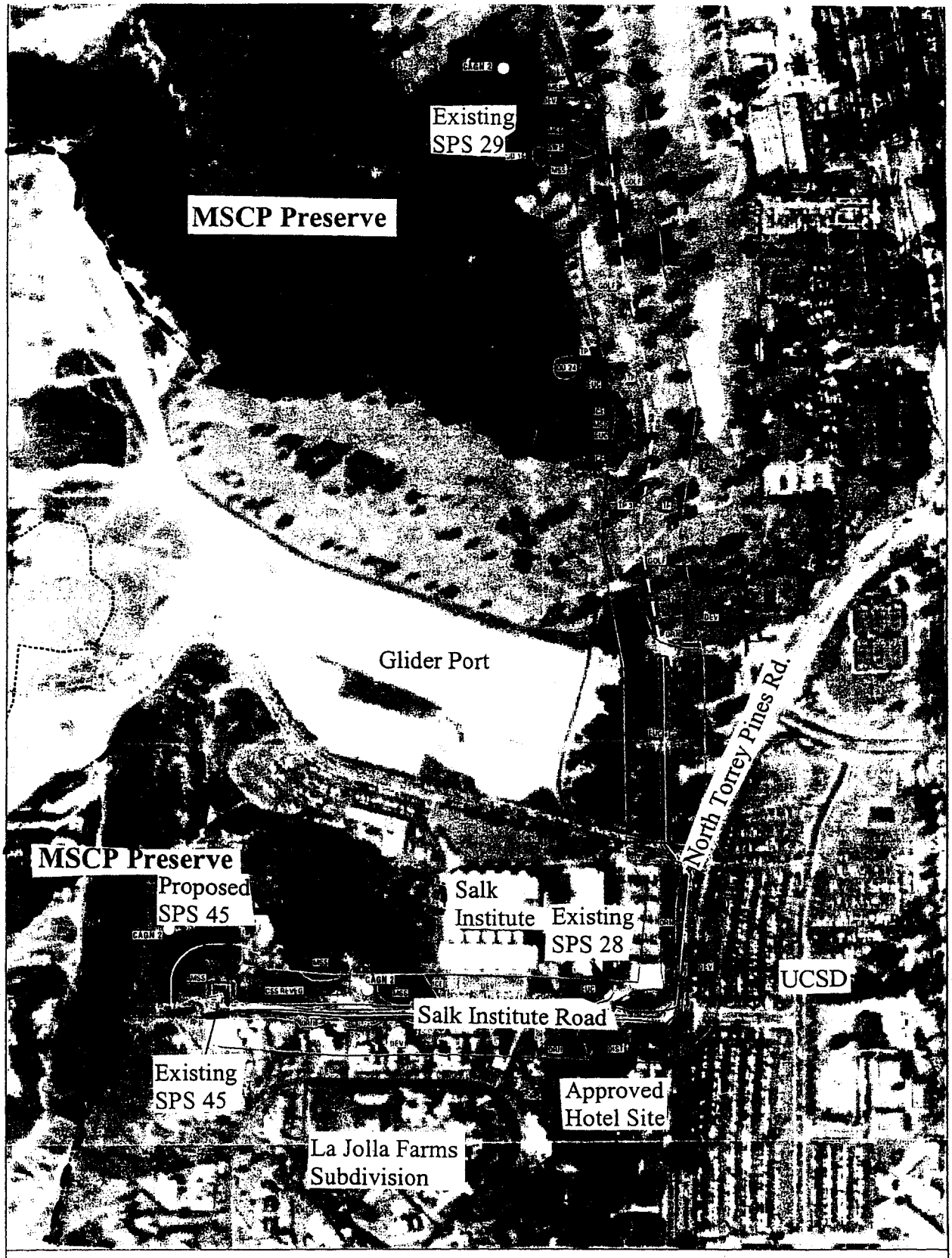


EXHIBIT NO. 9
APPLICATION NO.
6-01-107
Service Area of SPS #45
California Coastal Commission



LEGEND

- MSCP Preserve Boundary
- Pipeline Impacts
- Trenched Pipeline
- Microtunneled Pipeline
- Vegetation
- Pacific Pocket Mouse Trap Lines

IMAGE: 1997 CIR Ortho, 6 ft. resolution

Vegetation

DEV	Developed
DIST	Disturbed
EUC	Eucalyptus Grove
GOLF	Golf Course
MSS	Maritime Succulent Scrub
SWS	Southern Willow Scrub
ORN	Ornamental Vegetation
ICE	Ice Plant

Sensitive Species

TP	Torrey Pines
QD	Scrub Oak (Quercus dumosa)

Indicates Plant

LOCATOR MAP

N

OGDEN

Pump Station 45 Vegetation Impacts

LRO

RECEIVED

EXHIBIT NO. 10
APPLICATION
6-01-107
Aerial Photo of Overall Area

California Coastal Commission

To facilitate the alternative study potential pipeline alignments have been identified and designated. These alignments and designations are summarized in **Figure 4-11.**

Combinations of these segments are used for the various alternatives. The relationship between the segments and the alternatives is shown in **Table 4-1.**

For each of the line segments plans and profiles were developed. These plans and profiles are shown in **Appendix A.**

4.3: PUMPING STATION ALTERNATIVES

Viable pumping station alternatives include:

- Remodel/replacement of all the pumping stations
- Remodel/replacement of SPS 45 and a new pumping station at SPS 28
- A new pumping station at SPS 28
- A new pumping station at SPS 45

Remodeling and/or replacing all of the pumping stations would be required if the existing operational scheme were followed. SPS 45 would be remodeled by adding a wet well with emergency capacity following City standards. New pumps would be installed along with miscellaneous improvements made.

A new pumping station would be required near the SPS 28 site. The existing site does not have room for the installation of a second pumping station and the station is currently in an easement.

A new pumping station would be required at the SPS 29 site. The facility would be built adjacent to the existing facility.

Remodel/replacement of SPS 45 and a new pumping station at SPS 28 would be required for alternatives C_1/C_2 and CC_1/CC_2. The new pumping station would on a new site because the existing site does not have available space. Potential sites include two locations on UCSD property. The first location would be to the northeast of the North Torrey Pines Road and Salk Institute Road intersection. The other location would be to the southeast of the North Torrey Pines Road and Salk Institute Road intersection.

A new pumping station at SPS 28 would be used for alternatives B_1/B_2 and BB_1/BB_2. Due to the utilization of gravity flow from SPS 45 to SPS 28 under this scenario, the pumping station depth would be over 60 feet.

A new pumping station at SPS 45 would be used for alternatives A_1/A_2 and AA_1/AA_2. The pumping station would be built into the side of the bluff similar to the present condition. For each of the pumping station alternatives plans and sections were developed. These are summarized in **Appendix B.**

4.4: PREFERRED PROJECT EVALUATION FACTORS

There are many factors that influence the selection of a preferred alternative. These factors include:

- Operational Reliability
- Construction Costs
- Operation and Maintenance Costs
- Right-of-Way
- Construction Method Complexity
- Community Impacts
- Vulnerability
- Redundancy
- Impact to the Golf Course
- Commercial Impacts

ALTERNATIVES

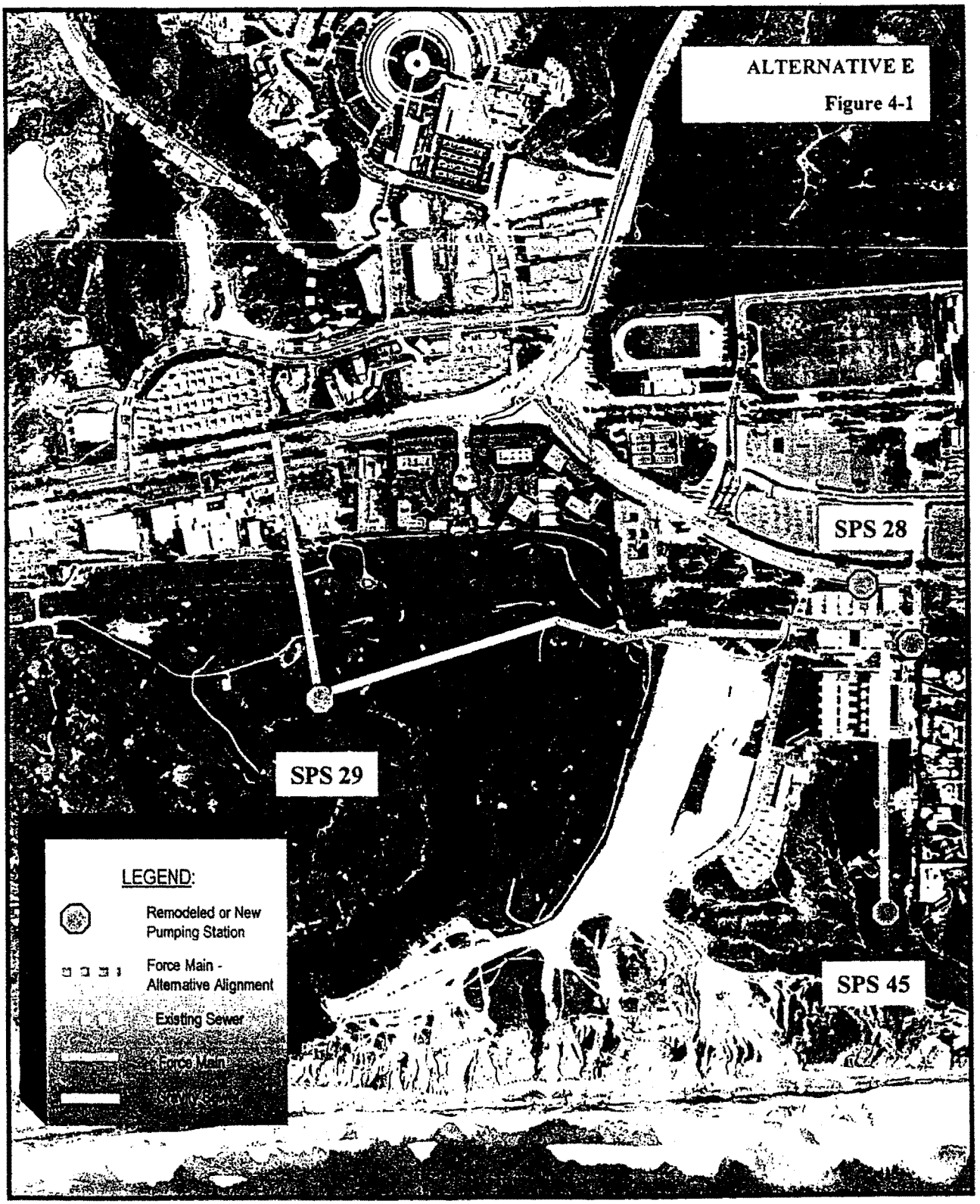
TABLE 4-1

Alternative			Gravity Line Footage					Number of Man Holes	Force Main Footage	Elevation Head	Friction Head (Year 2050) c = 110	Pumping Stations
			Depth of Line									
ID	Description	Line Segments	< 10'	10'-15'	15'-20'	20'-25'	25' +					
E (Fig. 4-1)	A combination of force main and gravity flow from SPS 45 to SPS 28. A combination of force main and gravity flow from SPS 28 to SPS 29. A combination of force main and gravity flow to SPS 65 collection system.	PS (28-29) FM/G	1,480'					5	2,000' (2-6"ø)	35'	44'	New Pumping Station at SPS 29 and SPS 28. Remodel SPS 45.
		PS (29-65CS) FM/G	375'					2	1,150' (2-10"ø)	82'	21'	
		PS (45-28) FM/G							1,050' (1-6"ø)	45'	2'	
A_1/A_2 (Fig. 4-2)	A_1 – Gravity flow from SPS29 to SPS28 (open cut). Gravity flow from SPS28 to SPS45. Force main from SPS45 to the high point at the intersection of North Torrey Pines Road and Genesee Avenue. Gravity flow from intersection to manhole 186 in John Jay Hopkins Drive. A_2 – Identical to A_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 45 conveying entire drainage basin flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (28-45) G	285'	680'	580'	130'	100'	6				
		PS (45-28) FM PS (28-65CS) FM/G	1,680'	800'				7	4,200' (2-10"ø)	120'	76'	
B_1/B_2 (Fig. 4-4)	B_1 – Gravity flow from SPS29 to SPS28 (open cut). Gravity flow from SPS45 to SPS28. Force main from SPS28 to the high point at the intersection of North Torrey Pines Road and Genesee Avenue. Gravity flow from intersection to manhole 186 in John Jay Hopkins Drive. B_2 – Identical to B_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 28 site conveying entire drainage basin flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (45-28) MT			20'	50'	1,380'	4				
		PS (28-65CS) FM/G	1,680	800'				7	2,500' (2-10"ø)	120'	45'	
C_1/C_2 (Fig. 4-6)	C_1 – Gravity flow from SPS29 to SPS28 (open cut). A combination of force main and gravity flow from SPS45 to SPS28. Force main from SPS28 to the high point at the intersection of North Torrey Pines Road and Genesee Avenue. Gravity flow from intersection to manhole 186 in John Jay Hopkins Drive. C_2 – Identical to C_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 28 site. Remodel SPS 45. SPS 28 conveys entire drainage basin flow. SPS 45 conveys SPS 45 drainage flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (45-28) FM/G							1,050' (1-6"ø)	45'	2'	
		PS (28-65CS) FM/G	1,680	800'				7	2,500' (2-10"ø)	75'	45'	
AA_1/AA_2 (Fig. 4-3)	AA_1 – Gravity flow from SPS29 to SPS28 (open cut). Gravity flow from SPS28 to SPS45. Force main from SPS45 south in North Torrey Pines Road to the high point near the North Torrey Pines Road and La Jolla Shores Drive intersection. Gravity flow to the University Trunk Sewer adjacent to the Gilman Drive and La Jolla Village Drive intersection. AA_2 – Identical to AA_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 45 conveying entire drainage basin flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (28-45) G	285'	680 '	580'	130'	100'	6				
		PS (45-28) FM PS (28-2CS) FM/G	1,800'	1,800'				8	6,180' (2-10"ø)	90'	110'	

ALTERNATIVES

TABLE 4-1

Alternative			Gravity Line Footage					Number of Man Holes	Force Main Footage	Elevation Head	Friction Head (Year 2050) c = 110	Pumping Stations
			Depth of Line									
ID	Description	Line Segments	< 10'	10'-15'	15'-20'	20'-25'	25' +					
BB_1/BB_2 (Fig. 4-5)	BB_1 – Gravity flow from SPS29 to SPS28 (open cut). Gravity flow from SPS45 to SPS28. Force main from SPS28 south in North Torrey Pines Road to the high point near the North Torrey Pines Road and La Jolla Shores Drive intersection. Gravity flow to the University Trunk Sewer adjacent to the Gilman Drive and La Jolla Village Drive intersection. BB_2 – Identical to BB_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 28 site conveying entire drainage basin flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (45-28) MT			20'	50'	1,380'	4				
		PS (28-2CS) FM/G	1,800'	1,800'				8	4,430' (2-10"ø)	90'	80'	
CC_1/CC_2 (Fig. 4-7)	CC_1 – Gravity flow from SPS29 to SPS28 (open cut). A combination of force main and gravity flow from SPS45 to SPS28. Force main from SPS28 south in North Torrey Pines Road to the high point near the North Torrey Pines Road and La Jolla Shores Drive intersection. Gravity flow to the University Trunk Sewer adjacent to the Gilman Drive and La Jolla Village Drive intersection. CC_2 – Identical to CC_1 except that a portion of the gravity flow from SPS29 to SPS28 would be microtunneled instead of open cut.	PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				New Pumping Station at SPS 28 site. Remodel SPS 45. SPS 28 conveys entire drainage basin flow. SPS 45 conveys SPS 45 drainage flow.
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
		PS (45-28) FM/G						0	1,050' (1-6"ø)	45'	2'	
		PS (28-2CS) FM/G	1,800'	1,800'				8	4,430' (2-10"ø)	45'	80'	
MT_{S1} Fig. 4-9)	Gravity flow from SPS29 to SPS28 (open cut). A combination of force main and gravity flow from SPS45 to SPS28. Microtunneled segments in North Torrey Pines Boulevard and in easements (that would be acquired) to manhole no. 109.	PS (45-28) FM/G						0	1,050' (1-6"ø)	45'	2'	Remodel PS 45
		PS (28-65CS) MT_S		350'	300'	200'	3,350'	9				
		PS (29-28) G/	520'	200'	1,060'	670'	1,050'	10				
		PS (29-28) MT/G	150'	375'	1,130'	930'	600'	8				
MT_{S2} (Fig. 4-10)	Identical to MT except that the flow from SPS29 would be conveyed to the midpoint of the microtunneled section between SPS28 and the connection to the existing collection system.	PS (45-28) FM/G						0	1,050' (1-6"ø)	45'	2'	Remodel PS 45
		PS (28-65CS) MT_S		350'	300'	200'	3,350'	9				
		PS (29-65CS) MT_S	500'	200'	200'	200'	900'	5				
MT_D Fig. 4-8)	Gravity flow from SPS45 to SPS28. Microtunneled segments in North Torrey Pines Boulevard and in easements (that would be acquired) to manhole no. 109. Flow from SPS29 would be conveyed to the midpoint of the microtunneled section between SPS28 and the connection to the existing collection system.	PS (45-28) MT			20'	50'	1,380'	4				None
		PS (28-65CS) MT_D					4,250'	9				
		PS (29-65CS) MT_D	150'	150'	100'	100'	1,500'	5				



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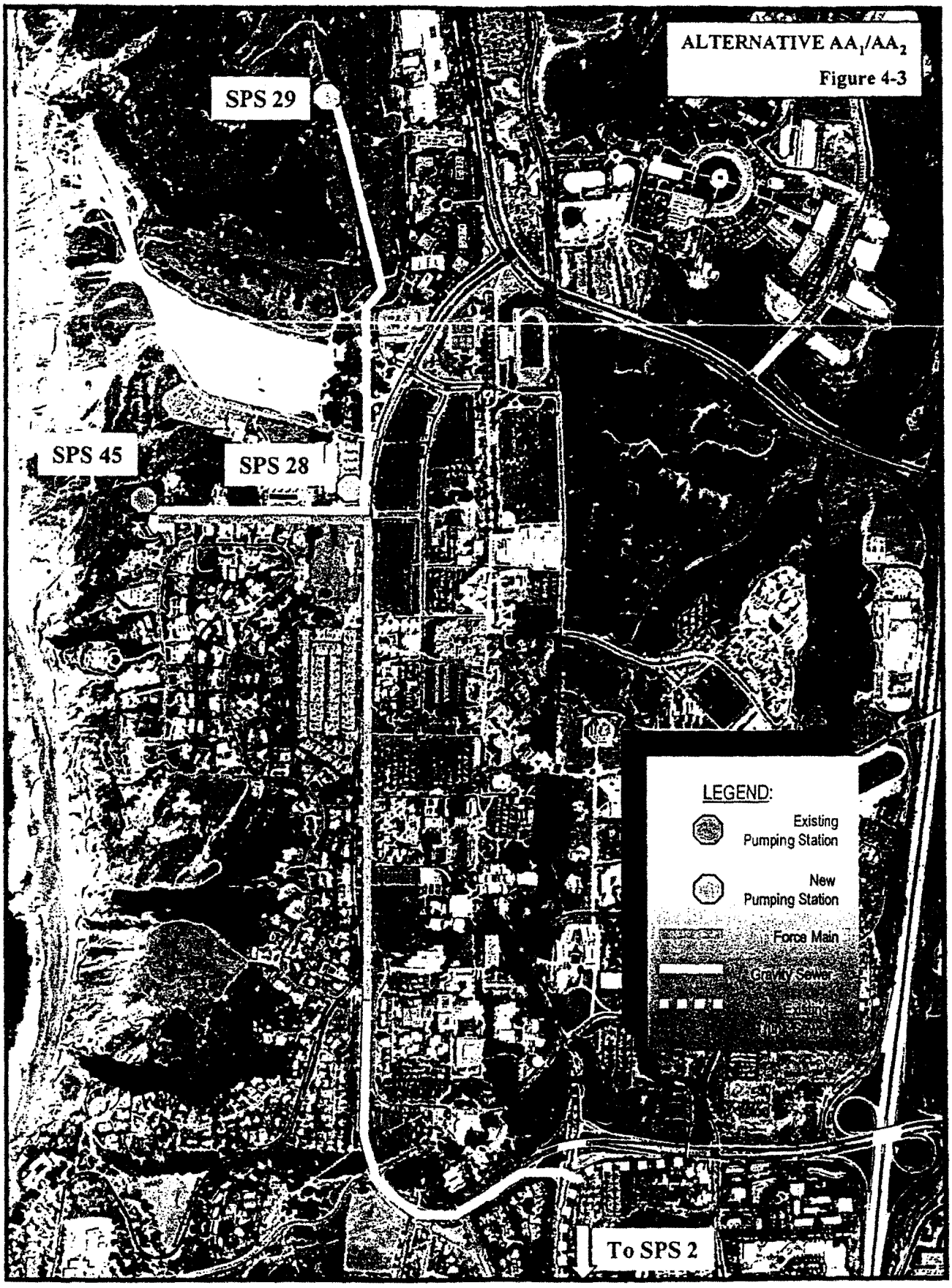

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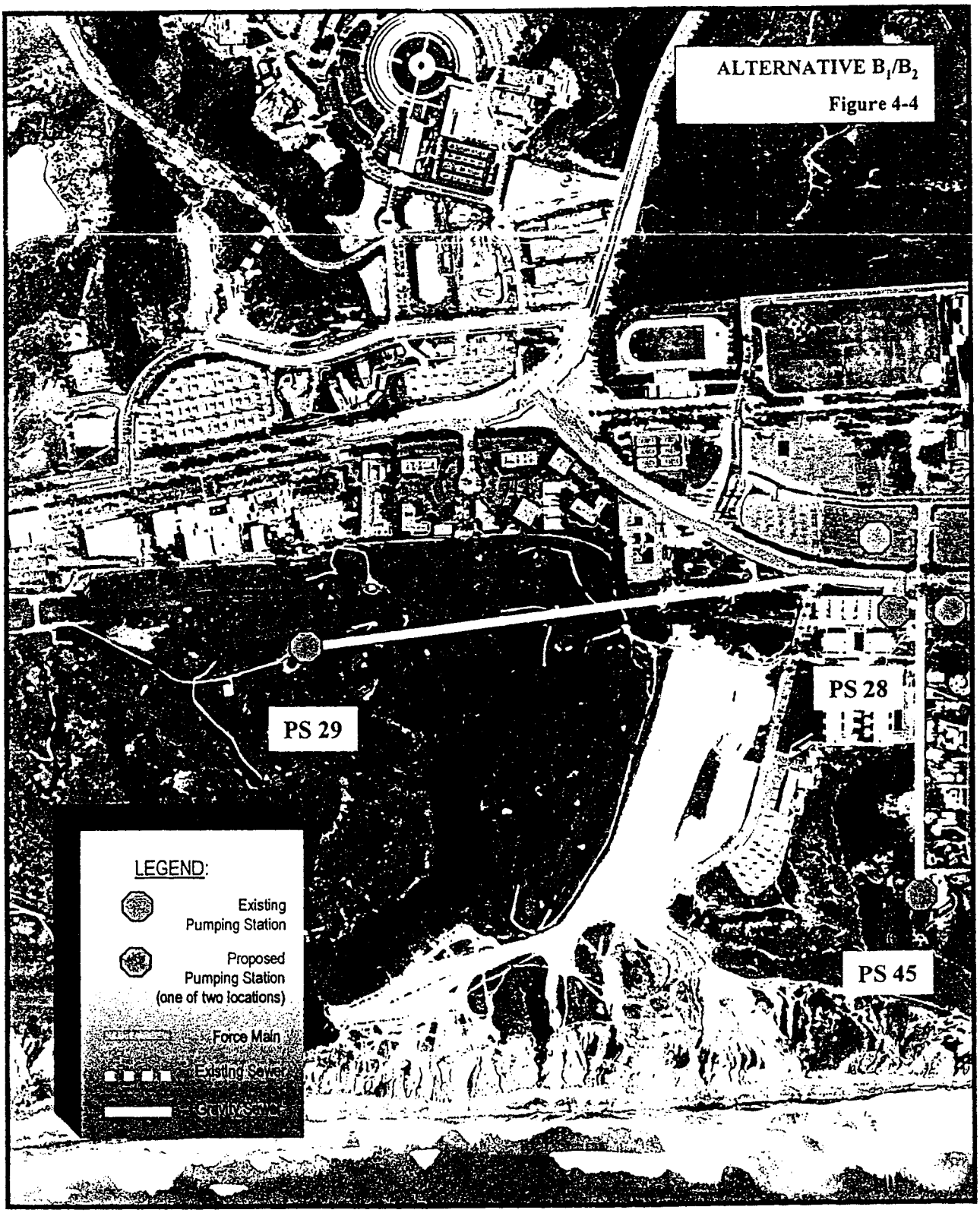

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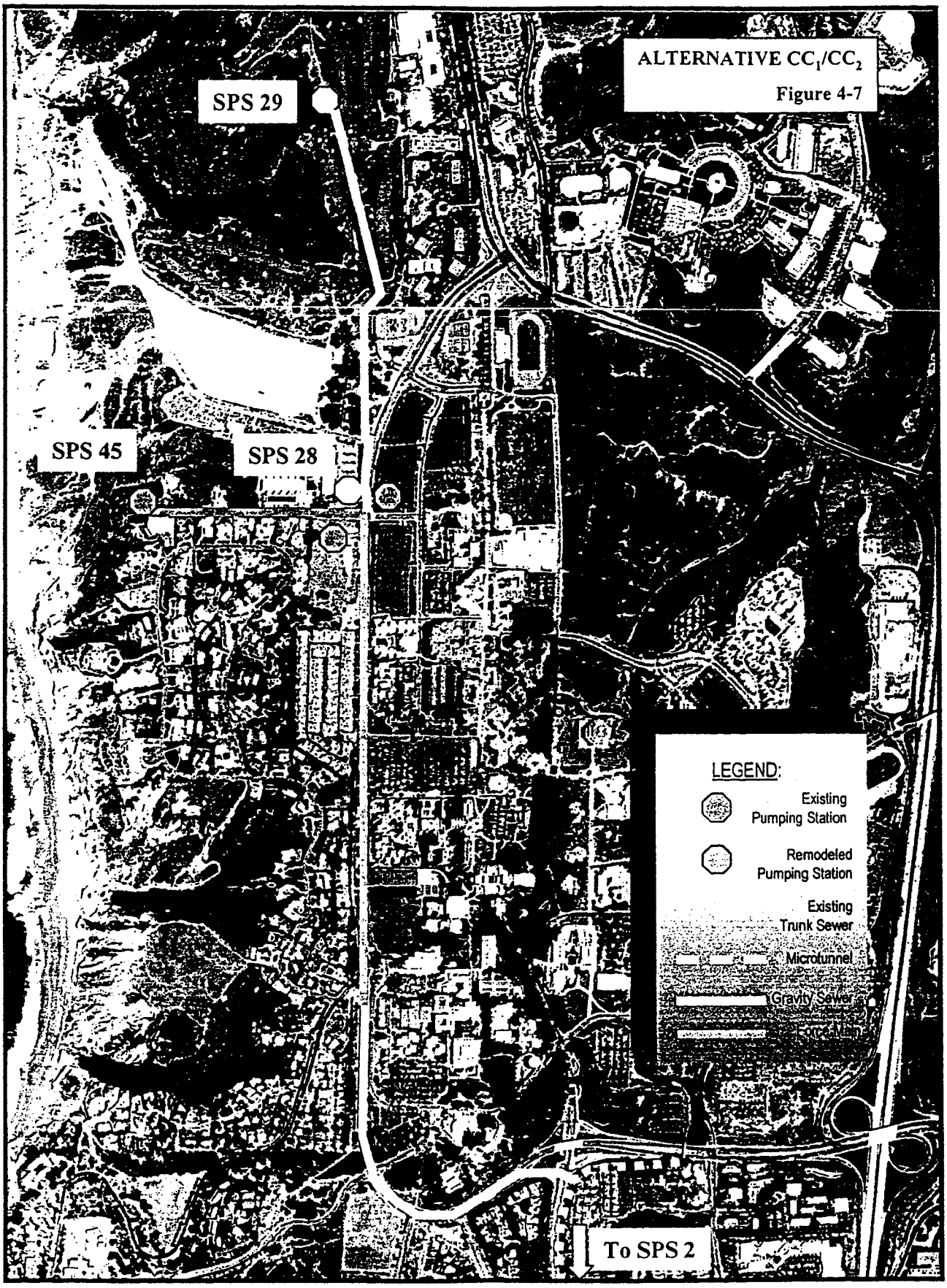

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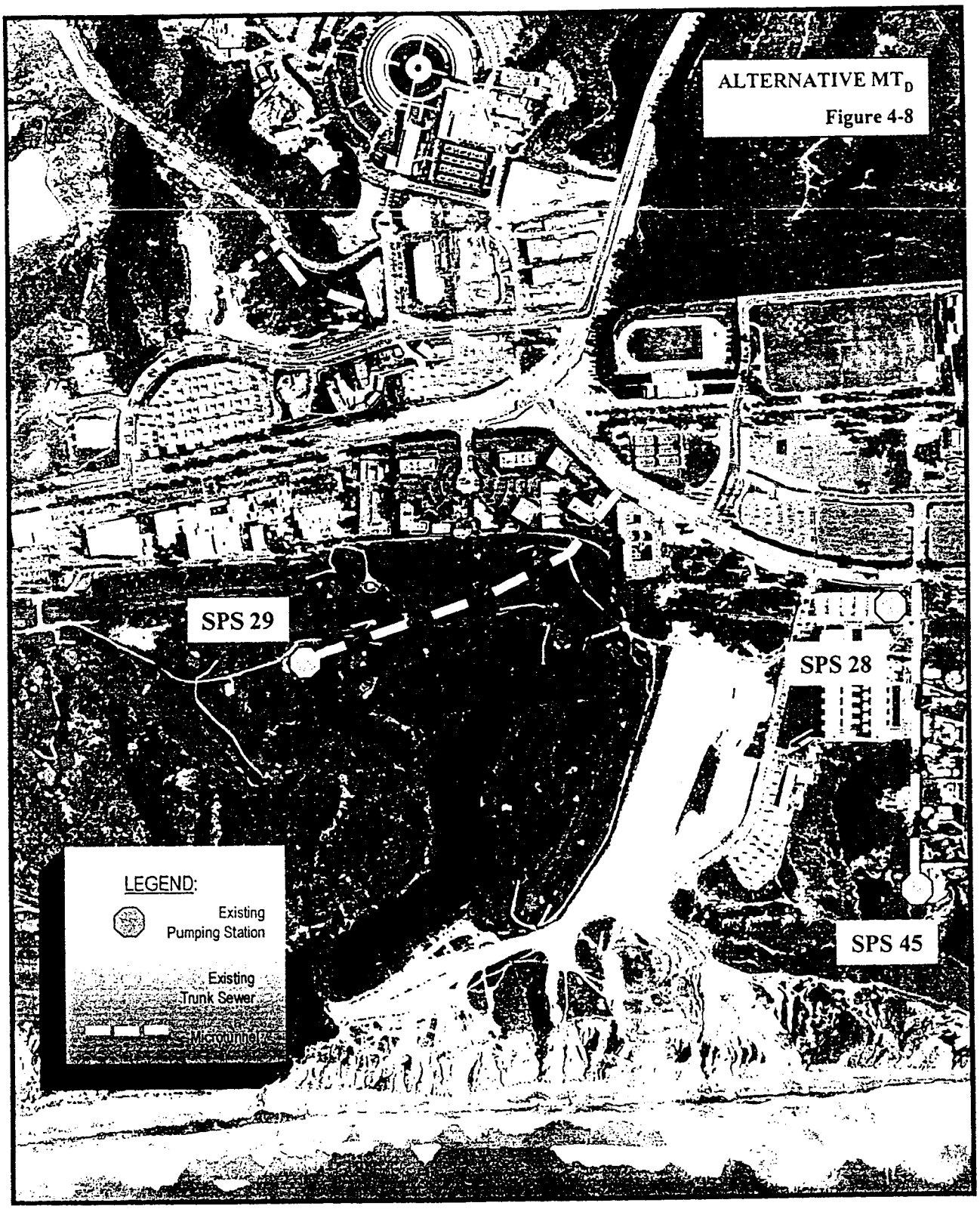

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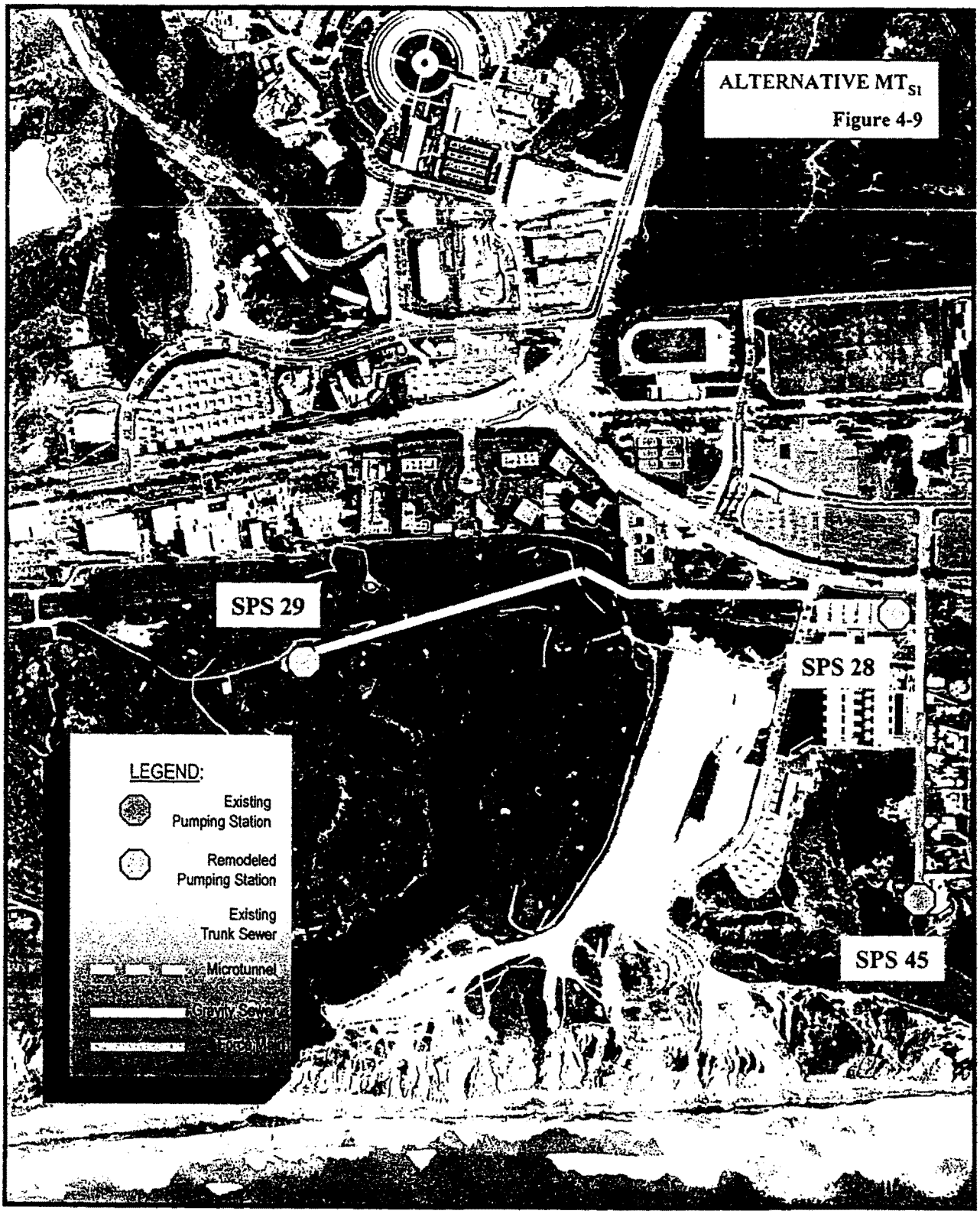

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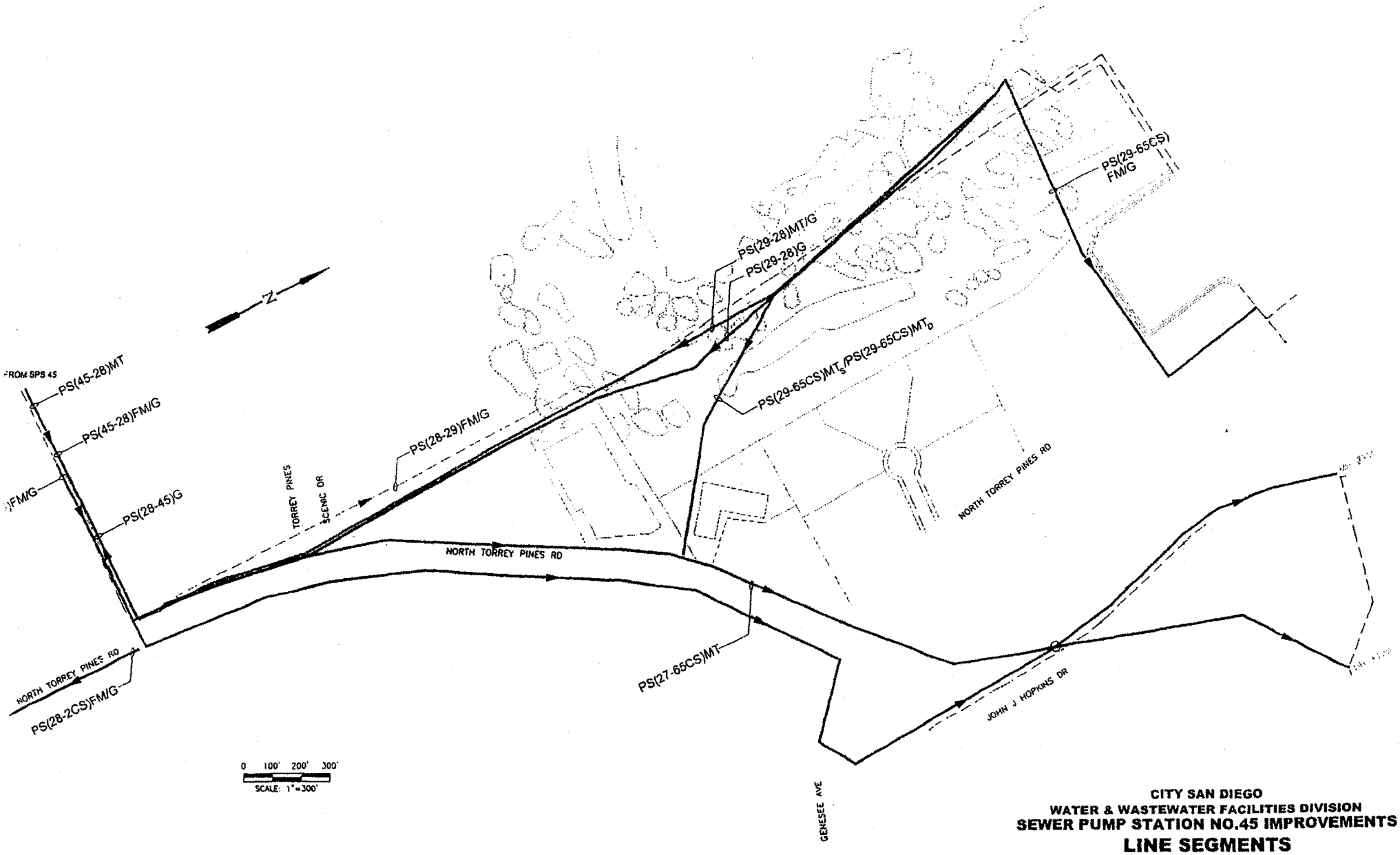

CITY SAN DIEGO
WATER & WASTEWATER FACILITIES DIVISION
SEWER PUMP STATION NO.45 IMPROVEMENTS

LINE SEGMENTS
FIG 4-11

LEE&RO, Inc.

FILE NAME:

- Operational Flexibility
- Traffic Disruption

Operational Reliability involves the reliability of the system. For instance a gravity system is more reliable than a pumped system due to the gravity system's lack of mechanical elements. One pumping station would be more reliable than two pumping stations. A shorter force main or sewer would be more reliable than a longer counterpart.

Construction Costs include all the costs associated with construction including land acquisition costs and the rental associated with temporary easements. The study are is in a prime real estate area and the costs for property acquisition and temporary easements could be significant.

All costs are based on Aprill 1999 dollars (ENR CCI Los Angeles 6833). Costs have not been escalated to an anticipated construction period. These estimates are based on the assumption that the needed labor, materials and equipment are available and that competitive bids are received at the time of bidding.

Operation and Maintenance Costs include the cost of labor to operate and maintain the facilities and energy to operate the equipment and ancillary devices. Specific operation and maintenance costs were not developed for each alternative. A relative factor was used for each alternative considering that:

- A larger station would have a higher operation and maintenance cost than a smaller station.
- Two pumping stations would have greater operation and maintenance costs than a single station.
- Longer force mains and gravity sewers would have higher operation and maintenance costs than shorter segments.
- Gravity sewers will have much lower operation and maintenance costs than a pumping station/force main combination.
- Alternatives that discharge to the SPS 2 collection system will have a lower operation cost than similar alternatives that discharge to the SPS 65 collection system.

Although **Right-of-Way** acquisition costs have been included with the construction costs it is still desirable to utilize existing rights-of-way for the installation of the new facilities. The use of easements could limit access, being that parking and other land uses may obstruct movement. Therefore, alternatives that do not require additional easement acquisition or utilize existing easements are more desirable than alternatives requiring additional easements.

Construction Method Complexity involves the relative complexity of a particular construction method or complexity associated with a particular alignment. For example, with microtunneling, the complexity, unknown subterranean conditions and the associated claim potential make this a much less desirable construction method than conventional cut and cover. Safety issues associated with construction are also considered with this factor.

Community Impacts ask the question: how does a particular alternative affect the neighboring residents? Impacts include:

- Noise during construction and from operation.

- The potential for the general of adverse odors and the proximity of neighbors who could be impacted by those odors.

- Construction activities impacting access to residences.

Vulnerability considers the potential impacts from natural disasters such as earthquakes or flooding. This factor also considers the impact of prolonged loss of power.

Issues associated with **Redundancy** consider to what extent the alternative protects against a spill or upset. Higher values for redundancy will be given to alternatives that discharge to the SPS 2 collection system because they by-pass SPS 64 and 65 and thus lessen the impact of a potential spill at these locations. A gravity system will also receive higher values for redundancy since they don't require mechanical elements, which have an increased potential for failure over non mechanical elements.

Torrey Pines Golf Course is host to numerous rounds of golf each day. The course is the site for a major Professional Golf Association Tour event and brings considerable recognition to the City. Therefore, mitigation of **Impacts to the Golf Course** is an important criterion for evaluation. The greatest impact to the course would be open cut construction with numerous trucks entering and exiting the facility or by an alignment selection that damaged trees, greens or tee boxes. Construction methods that reduce the surface impacts to the course, such as microtunneling are more favorable under this issue.

Commercial Impacts quantifies the relative amounts of business frontage affected by the alternative. Construction could limit consumer or employee access to an establishment.

Operational Flexibility considers how well the alternative provides the City with the flexibility to operate their entire system. For example, alternatives that discharge to the south, to the SPS 2 collection system, by-pass SPS 64 and 65. This reduces the flows at these two pumping stations, thus the City has increased flexibility for operation of these two stations.

The potential for vehicular **Traffic Disruptions** will be quantified for each alternative. The basis for evaluation will be on how a particular alternative would affect the traffic movement through the area when that alternative was under construction. Consideration will also be made for night construction to further reduce traffic impacts.

In addition to the above factors we also considered the environmental issues as well as the potential for encountering hazardous wastes. These issues were evaluated on a program wide basis to determine if there is a "fatal flaw" for a particular alignment. A fatal flaw would be the existence of an environmental or hazardous waste issue that would preclude the use of a particular alternative.

4.5: Evaluation Matrix

Given the twelve different criteria items, we developed the evaluation matrix shown on the following page. As can be seen on the matrix, an importance factor is assigned to each issue. This importance factor was developed with input from the City staff and LEE & RO project personnel. Each team member was asked to indicate how important he or she felt a particular issue was, on a scale from zero to one. The importance factor value shown on the matrix is then the team average.

TABLE 4-1 VIABLE ALTERNATIVES

Issue	Importance Factor	Alternative																			
		Discharge to SPS 65 Collection System						Discharge to SPS 2 Collection System						Microtunneling						Existing	
		A_1/A_2		B_1/B_2		C_1/C_2		AA_1/AA_2		BB_1/BB_2		CC_1/CC_2		MT_D		MT_{S1}		MT_{S2}		E	
		Rating										Adjusted Value									
Operational Reliability	1.0																				
Construction Cost	0.8																				
Operation & Maintenance Cost	0.8																				
Right-of-Way	0.4																				
Construction Method Complexity	0.3																				
Community Impacts	0.7																				
Vulnerability	0.6																				
Redundancy	0.8																				
Impact to Golf Course	0.7																				
Commercial Impacts	0.6																				
Operational Flexibility	0.7																				
Traffic Disruption	0.6																				
Total Adjusted Value																					

The importance factor is multiplied by the numerical rating of each alternative for each issue. For example, if Alternative A_1/A_2 has a rating of 4.1 for operational reliability (and we give operational flexibility an importance factor of 1.0) the factored rating will be 4.1 (4.1 x 1.0). The adjusted values are totaled to determine the preferred alternative based upon the matrix analysis. The importance factor has a maximum value of 1 and a minimum value of 0.1.

SECTION 5: ALTERNATIVE ANALYSIS

Each alternative was evaluated for the criteria set forth in the previous section. The evaluation process identifies the outstanding differences between the alternatives for that particular criterion item. A relative value is then assigned to each alternative for each criterion. These values are then inserted into the matrix shown at the end of the previous section. From the matrix analysis the preferred alternative is identified.

5.1: COMPARATIVE SCREENING AND EVALUATION

Operational Reliability

The highest rated alternative under this criterion item is the deep tunnel alternative (MT_D) considering its continuous gravity flow. Second ranked is either of the two shallow tunnel alternatives (MT_{S1} or MT_{S2}) because they are primarily gravity systems utilizing only a small pumping station at the SPS 45 site. Next ranked is the alternative that utilizes a single pumping station at the SPS 45 site and that discharges to the SPS 2 collection system (AA_1/AA_2). This alternative has a higher ranking than the similar alternative that discharges to the SPS 65 collection system (A_1/A_2) since it bypasses SPS 65 and SPS 64, even though it has a longer force main and gravity line.

Although alternatives B_1/B_2 and BB_1/BB_2 utilize a single pumping station the necessary depth of the station severely reduces their operational reliability. Therefore they have a lower ranking than those presented above. Alternatives C_1/C_2 and CC_1/CC_2 require two pumping stations, which reduces their operational reliability.

The least desirable alternative for this criterion item is alternative E. The utilization of three pumping stations would make this the alternative with the least operational reliability.

For this criterion item there is no advantage for either of the proposed methods of crossing the golf course (either a combination of open cut and tunneling or a totally open cut system). Either of the construction methods will result in the pipe being installed at about the same depth, with similar pipe diameters.

Construction Costs

Construction Costs were prepared for each of the alternatives and are summarized in **Table 5-1**. Detailed cost summarizes for each line segment is presented in **Appendix C.**

Right-of-Way acquisition costs were determined based upon a 20 foot wide easement and a cost of $25 per square foot. The dollar value per area was developed by evaluating recent assessed values and sale prices in the area.

Operation and Maintenance Costs

Under this criterion item gravity systems are again favored. Thus MT_D is highest rated followed by MT_{S1} and MT_{S2}. Since flows directed to the SPS 2 collection system would avoid operation costs associated with pumping at SPS 65 and SPS 64, alternatives that direct their flows to the former location are preferred to their counterparts directing their flows to the latter location.

TOTAL COST (ESTIMATE) FOR ALTERNATIVES

TABLE 5-1

ALTERNATIVE	PIPELINE COSTS	PUMPING STATION COST	RIGHT-OF-WAY ACQUISITION	TOTAL
A_1	$3,954,000	$1,422,000	$400,000	$5,776,000
A_2	$3,892,000	$1,422,000	$400,000	$5,714,000
B_1	$4,326,000	$2,418,000	$600,000	$7,344,000
B_2	$4,287,000	$2,418,000	$600,000	$7,305,000
C_1	$3,072,000	$2,363,000	$600,000	$6,035,000
C_2	$3,032,000	$2,363,000	$600,000	$5,995,000
AA_1	$4,359,000	$1,442,000	$400,000	$6,201,000
AA_2	**$4,320,000**	**$1,442,000**	**$400,000**	**$6,162,000**
BB_1	$4,955,000	$2,418,000	$600,000	$7,973,000
BB_2	$4,916,000	$2,418,000	$600,000	$7,934,000
CC_1	$3,701,000	$2,363,000	$600,000	$6,664,000
CC_2	$3,662,000	$2,363,000	$600,000	$6,625,000
MT_{S1}	$5,323,000	$941,000	$1,000,000	$7,264,000
MT_{S2}	$5,311,000	$941,000	$760,000	$7,012,000
MT_D	$8,172,000		$760,000	$8,932,000
E	$1,226,000	$3,900,000	$700,000	$5,826,000

Alternatives with a single pumping station are preferred to alternatives with two or more pumping stations since both the operation and maintenance requirements will be less for a single station. All other factors being the same a shallow pumping station is more desirable than a deep station since the maintenance demands would be less.

Given the above factors the ranking of the remaining alternatives is as follows:

AA_1/AA_2, A_1/A_2, BB_1/BB_2, B_1/B_2, CC_1/CC_2 and C_1/C_2. Again the alternative similar to the existing conditions (E) is least desirable under this criterion item due to it having the greatest number of pumping stations.

For this criterion item there is no advantage for either the combined gravity and microtunneling or sole gravity option of crossing the golf course.

Right-of-Way

The highest ranked alternatives for this particular criterion item are the two alternatives that utilize a single pumping station at the SPS 45 site (A_1/A_2 and AA_1/AA_2). Easements required for this option are common to nearly all the options. That is, these options require an easement across UCSD property, north from Torrey Pines Scenic Drive to the golf course. Options requiring a new pumping station at the SPS 28 site (all other options except the tunneling options) are next ranked due to the requirement for new land acquisition at this location. Least desirable alternatives under this criterion item are the tunneling options. The extensive right-of-way that would be needed for these options greatly reduces their ranking.

Construction Method Complexity

The two alternatives utilizing a single pumping station at the SPS 45 site are the highest ranked under this criterion item. Of these two A_1/A_2 is higher ranked due to the shorter discharge pipeline requirements. Next ranked would be the two pumping station options (C_1/C_2 and CC_1/CC_2) followed by the option that utilizes three pumping stations (E). A single, deep pumping station at the SPS 28 site would be ranked next.

The tunneling options trail the other options by a considerable margin for this criterion item. The uncertainty of the materials to be encountered and the risks associated with this construction method are considerable.

Community Impacts

There is not a big variation of community impacts for the various alternatives. During construction the alternatives that discharge to the south (AA_1/AA_2, BB_1/BB_2 and CC_1/CC_2), to the SPS 2 collection system, will have the most impacts to local residents and UCSD residents, faculty, employees and visitors. The potential for adverse odor generation is greatest for the alternative with the most pumping stations (E).
The two alternatives with a new, large pumping station at the SPS 45 site have the greatest potential for impacting the adjacent neighbors. Although we don't expect any adverse impacts, the greatest potential impact seems to be noise during construction. The proposal to have a below grade pumping station is expected to mitigate operational noise. The use of properly designed, sealed wet wells will limit adverse odor conditions.

Vulnerability

The least vulnerable system is the total gravity system (MT_D). Slightly greater vulnerability is associated with the combined microtunnel and small pumping station alternatives (MT_{S1}/MT_{S2}).

The greatest vulnerability applies to the option with the most pumping stations (E), as vulnerability is greater for alternatives with multiple pumping stations. As the discharge piping length increases that system's vulnerability also increases. Therefore the remaining alternatives will be ranked, in descending order, as follows: B_1/B_2, A_1/A_2, BB_1/BB_2, AA_1/AA_2, CC_1/CC_2, C_1/C_2.

Redundancy

The greatest redundancy is provided by the three alternatives that discharge to the south, to the SPS 2 collection system (AA_1/AA_2, BB_1/BB_2 and CC_1/CC_2). Of these, the deep wet well associated with BB_1/BB_2 provides considerable storage. Having a pumping station down gradient of the other, even though it will be considerably smaller, does slightly increase the redundancy of CC_1/CC_2 over AA_1/AA_2.

Gravity systems provide a higher level of redundancy over a pumped system due to the lack of mechanical elements that have a greater chance of failing. Once again, alternative E, with the most pumping station is deemed to have the worst redundancy due to the number of pumping stations.

Impacts to the Golf Course

Alternative E, because it would impact the golf course due to construction of a new SPS 29 and a force main east from SPS 29 as well as with a gravity and force main between SPS 28 and 29, clearly has the lowest ranking under this criterion. Impacts to the golf course are fairly consistent for all of the other alternatives dependent, on whether or not microtunneling is used. The utilization of microtunneling will greatly reduce the impact to the golf course.

Commercial Impacts

Commercial impacts are mainly confined to alternatives along North Torrey Pines Road near Genesee Avenue. Although the commercial impact for any alternative is not considered to be significant. The open cut alternatives along the North Torrey Pines Road near Genesee Avenue have the worst ranking.

Operational Flexibility

The greatest operational flexibility will be realized by the alternatives that discharge to the south, to the SPS 2 collection system (AA_1/AA_2, BB_1/BB_2 and CC_1/CC_2). Operational flexibility realized by the other alternatives is negligible.

Traffic Disruptions

Traffic will be disrupted to the greatest degree by the three alternatives that discharge to the south to the SPS 2 collection system (AA_1/AA_2, BB_1/BB_2 and CC_1/CC_2). The microtunneled alternatives will have the fewest traffic disruptions. Because alternative E avoids the North Torrey Pines and Genesee Avenue intersection it too will have limited associated traffic disruptions.

5.2: MATRIX ANALYSIS

Based upon the rankings and analysis of Section 5.1, each alternative item was given a rating from 0 to 5 for each of the criteria items. These ratings were then inserted into the matrix presented at the end of chapter 4. Each rating was multiplied by the criterion item's importance factor. The totals for each alternative were determined. The completed matrix is shown as **Figure 5-1.** The highest rated alternatives, determined from the matrix analysis, are AA_1/AA_2, and MT_{S2}.

Figure 5-1 MATRIX EVALUATION

ISSUE	IMPORTANCE FACTOR	ALTERNATIVE																	
		DISCHARGE TO SPS 65 COLLECTION SYSTEM						DISCHARGE TO SPS 2 COLLECTION SYSTEM						MICROTUNNELING				EXISTING	
		A_1/A_2		B_1/B_2		C_1/C_2		AA_1/AA_2		BB_1/BB_2		CC_1/CC_2		MT_D		MT_{S1}		MT_{S2}		E	
		RATING										ADJUSTED VALUE									
OPERATIONAL RELIABILITY	1.0	4.1	4.1	3.0	3.0	2.1	2.1	4.5	4.5	3.3	3.3	2.3	2.3	5.0	5.0	4.9	4.9	4.9	4.9	1.3	1.3
CONSTRUCTION COST	0.8	5.0	4.0	2.7	2.2	3.9	3.1	4.0	3.2	2.0	1.6	3.3	2.8	0.0	0.0	2.8	2.2	2.8	2.2	4.7	3.8
OPERATION & MAINTENANCE COST	0.8	2.9	2.3	2.3	1.8	2.1	1.7	3.2	2.6	2.6	2.1	2.3	1.8	5.0	4.0	4.0	3.2	4.0	3.2	1.6	1.3
RIGHT-OF-WAY	0.4	4.8	1.9	2.7	1.1	2.7	1.1	4.8	1.9	2.7	1.1	2.7	1.1	0.9	0.4	0.9	0.4	0.9	0.4	2.7	1.1
CONSTRUCTION METHOD COMPLEXITY	0.3	4.8	1.4	3.8	1.1	4.4	1.3	3.8	1.1	3.0	0.9	3.4	1.0	1.5	0.5	2.0	0.6	2.0	0.6	4.0	1.2
COMMUNITY IMPACTS	0.7	5.0	3.5	4.7	3.3	4.7	3.3	4.0	2.8	4.0	2.8	4.0	2.8	4.8	3.4	4.8	3.4	4.8	3.4	4.5	3.2
VULNERABILITY	0.6	3.9	2.3	4.0	2.4	3.5	2.1	3.7	2.2	3.8	2.3	3.6	2.2	5.0	3.0	4.7	2.8	4.7	2.8	3.0	1.8
REDUNDANCY	0.8	4.2	3.4	4.4	3.5	4.3	3.4	4.8	3.8	5.0	4.0	4.9	3.9	4.7	3.8	4.6	3.7	4.6	3.7	4.0	3.2
IMPACT TO GOLF COURSE	0.7	4.5	3.2	4.5	3.2	4.5	3.2	4.5	3.2	4.5	3.2	4.5	3.2	5.0	3.5	4.5	3.2	5.0	3.5	1.5	1.1
COMMERCIAL IMPACTS	0.6	4.5	2.7	4.5	2.7	4.5	2.7	5.0	3.0	5.0	3.0	5.0	3.0	4.5	2.7	4.5	2.7	4.5	2.7	5.0	3.0
OPERATIONAL FLEXIBILITY	0.7	4.0	2.8	4.0	2.8	4.0	2.8	5.0	3.5	5.0	3.5	5.0	3.5	4.0	2.8	4.0	2.8	4.0	2.8	4.0	2.8
TRAFFIC DISRUPTION	0.6	4.8	2.9	4.6	2.8	4.6	2.8	3.6	2.2	3.6	2.2	3.6	2.2	4.8	2.9	4.8	2.9	4.8	2.9	5.0	3.0
TOTAL ADJUSTED VALUE		34.5		29.8		29.5		34.0		29.9		29.6		31.8		32.7		33.0		26.6	

The importance factor is multiplied by the numerical rating of each alternative for each issue. For example, if Alternative A_1/A_2 has a rating of 4.1 for operational reliability (and we give operational flexibility an importance factor of 1.0) the factored rating will be 4.1 (4.1 x 1.0). The adjusted values are totaled to determine the preferred alternative based upon the matrix analysis. The importance factor has a maximum value of 1 and a minimum value of 0.1.

The primary advantage of AA_1/AA_2, when compared to the two remaining alternatives, is that it discharges to the SPS 2 collection system, by-passing SPS 64 and 65. Thus, from an overall perspective, this alternative is energy efficient and improves the operation and reliability of the City's wastewater collection system.

A_2 has the lowest estimated capital improvement cost. Those costs are slightly lower than the estimate for A_1 and about eight percent lower than the estimated capital improvement costs for AA_1 and AA_2.

The matrix analysis included an evaluation criterion for operation and maintenance costs. Therefore, the matrix evaluation has identified and factored in those costs. However, since the matrix evaluation closely ranked A_1/ A_2 and AA_1/AA_2 and their capital improvement costs are close, a present worth analysis was prepared for the alternatives. The present worth analysis for the two alternatives is included in **Appendix J**.

The present worth analysis revealed that there was little cost difference between pumping from the new SPS 45 to the SPS 2 collection system and pumping from the new SPS 45 to the SPS 65 collection system. However significant energy savings will be realized if the SPS 65 and SPS 64 stations are bypassed. The present worth savings associated with bypassing SPS 65 and SPS 64 by utilizing AA_1/AA_2 is estimated to be over $1 million. The result of factoring in the operational cost's present worth into the total cost for the alternative is summarized in **Table 5-2**.

As a result of the present worth factors, from a cost standpoint, either AA_1 or AA_2 is clearly more desirable than either A_1 or A_2. The installation of the relief line for the UCSD Trunk Sewer (currently under design) will eliminate any capacity concerns along the UCSD Trunk Sewer. Therefore, AA_1/AA_2 is recommended over A_1/A_2.

There are considerable advantages to utilizing a gravity system installed by tunneling over a substantial portion of the project. The gravity system is more reliable and requires less maintenance. However, the highest rated microtunneling alternative still requires a pumping station at the SPS 45 site, thus reducing its attractiveness. Microtunneling also involves a great deal of contractor risks, increasing the City's construction claim potential. The microtunneled segments will be deep, making personnel access for maintenance difficult. The amount of easements required also restricts access. All of these factors, along with microtunnelings high initial construction costs reduces its attractiveness.

TOTAL PROJECT COSTS
ALTERNATIVES A_1/A_2 & AA_1/AA_2

TABLE 5-2

ALTERNATIVE	CAPITAL COST	PRESENT WORTH OPERATION COST			TOTAL
		SPS 45 - SPS 2CS	SPS 45 - SPS 65CS	SPS 64 & 65 - SPS 2CS	
A_1	5,776,000		355,194	1,029,484	7,160,678
A_2	5,714,000		355,194	1,029,484	7,098,678
AA_1	6,201,000	311,397			6,512,397
AA_2	6,162,000	311,397			6,473,397

5.3: OTHER EVALUATION FACTORS

Other factors that could impact the alternative selection include geotechnical and environmental considerations. A geotechnical study was prepared to provide an overview of the conditions of the project area. An environmental screening determined the general biological, archeological and paleontological conditions. An environmental site assessment evaluated the potential to encounter hazardous wastes along the various alignments.

Geotechnical Study

A geotechnical study was prepared to develop preliminary geotechnical design requirements. That study is included as **Appendix D**. Furthermore, the geotechnical study was used to determine if existing geotechnical conditions, at any of the alternatives, limits that particular alternative's potential for implementation.

The study found that the geologic units were fairly consistent throughout the study area. The formational soils are anticipated to be excavatable with medium to heavy effort by heavy-duty excavation equipment or by using microtunneling techniques.

The soils were found to have a severe corrosion potential for buried metals. This will be accounted for in the design of buried metallic elements such as pipes and pipeline appurtenances.

Laboratory studies also determined that the soils contained a negligible to moderate sulfide attack hazard exists. This factor will be considered in the concrete mix design.

Two faults, the Salk Fault and the Torrey Pines Fault, are within the project study area. The potential for ground displacement from these two faults is considered to be very low. Special design considerations for the crossing of these two faults are not required.

Generally there are no geological conditions that preclude the adaptation of any of the alternatives. Additional geotechnical studies will be prepared during the design phase to more concisely characterize the conditions likely to be encountered.

Environmental Considerations

Ogden Environmental prepared a preliminary environmental screening of the various alternatives. The screening determined if environmental conditions along a particular alignment made it more or less attractive than other alternatives. Although there are slight nuances of the environmental impacts between the various alternatives, in general, the environmental impacts are comparable. The results of the initial screening are presented in **Appendix E**. A more detailed environmental assessment will be made on the preferred alignment as part of the 30% design.

Environmental Site Assessment

The potential to encounter hazardous wastes along a particular alignment was addressed. The results of that assessment are presented in **Appendix F**. The assessment did not find any evidence of a hazardous material spill or other unauthorized releases along the pipeline alignments. Nor were any reported environmental contamination sites found along any potential align-ments under consideration. All alter-natives are considered equal when considered from a environmental site assessment stand-point. A complete Phase 1 Environmental Assessment will be made on the preferred align-ment as part of the 30% design.

5.4: SURGE ANALYSIS

A surge analysis was performed to determine if any alternative had surge mitigation requirements. The analysis showed that surge is not a problem for any alternative. The results of the surge analysis are presented in **Appendix G.**

The computer program used to analyze both the steady state and transient conditions for the proposed sewage forcemains was SURGE 5, developed by the University of Kentucky. The program uses the familiar KY-PIPES algorithm for the steady-state analysis before passing the results on to the SURGE 5 program.

The SURGE 5 program uses the wave plan method for transient analysis. The wave plan method is based on the concept that the transient pipe flow results from the generation and propagation of pressure waves which occur as a result of a disturbance in the pipe system (valve closure, pump trip, etc.). A pressure wave, which represents a rapid pressure and associated flow change, travels at sonic velocity for the liquid-pipe medium, and the wave is partially transmitted and reflected at all discontinuities in the pipe system (pipe junctions, pumps, opened or closed ends, surge tanks, etc.). Pipe wall resistance can also modify a pressure wave. This description is an accepted one, which closely represents the mechanism of transient pipe flow.

Hydraulic transients are the time varying phenomenon that follow when the equilibrium of steady flow in a system is disturbed by a change of flow that occurs over a relatively short period of time. Transients are important in hydraulic systems because they can cause rupture of pipe and casings, pipe collapse, vibration, excessive pipe displacements, pipe fitting and support deformation and/or failure, and vapor cavity formation (also known as cavitation or water column separation).

There are various ways of preventing water column separation in force mains, including (but not limited to) the following:

1) Install air /vacuum valves or, preferably, a check valve to admit air into the pipeline on the down surge and release air on the up surge.

The transient analysis for the proposed sewage forcemains was performed for the case of a total power failure (pump trip) while experiencing peak flows and simultaneous pumping to the high water level (hwl) in the receiving manhole. Normal pump start-ups or shutdowns can also lead to unwanted surges within the piping system. In this case, there are variable-speed controllers to start at slow speed and power, to bring the pumps to speed, and to slowly decrease their speed upon shutdown. In this way, the potential for surges from these actions will be minimal. So, the worst case appears to be a total power failure.

Valve closures can also cause surges; while the size of the pipeline valves and manual operation will insure slow closure/opening and is not considered the worst case scenario. An analysis on valve closure was done to determine closure time.

For this project the following alternatives were evaluated:

Alternative 1:

Pumping station 45 to the high point in Genesse and North Torrey Pines Road.

Q = 1,500 gpm
D = 10-inches

Alternative 2:

Pumping station 45 to the high point in North Torrey Pines Road north of La Jolla Village Road.

Q = 1,500 gpm
D = 10-inches

Alternative 3:

Pumping station 28 to the high point in Genesse and North Torrey Pines Rd.

Q = 1,500 gpm
D = 10-inches

Alternative 4:

Pumping station 28 to the high point in North Torrey Pines Road north of La Jolla Village Road.

Q = 1,500 gpm
D = 10-inches

Alternative 5:

Pumping station 45 to Pumping station 28.
Q = 80 gpm
D = 6-inches

The results of the surge analysis is as follows:

Pressure, psi

Alternative	Maximum	Minimum
1	68.18	5.25
2	79.61	-2.12
3	38.02	-0.87
4	20.61	3.59
5	20.61	15.02

The results of the analysis indicate that there is a not a potential for adverse water hammer conditions. No special or additional appurtenances are required to protect the system.

In a memorandum by Don J. Wood and James E. Funk of the University of Kentucky (authors of SURGE 5) commented on results which exhibit considerable spiking due to the action of vapor cavity collapse. When numerous short-term cavitation-driven pressure spikes occur, the results must be considered to be more qualitative than quantitative. In other words, the model is correctly predicting when these spikes will occur. However, the phenomenon of cavity collapse is very complex and may be accompanied by gas release and other effects that tend to alleviate and dampen spikes. Wood and Funk are not aware of any model that is capable of accurately predicting the magnitude and frequency of such spikes. SURGE 5 predicts when this phenomenon is likely to occur and probably (but not certainly) over predicts the severity of the spikes; therefore, results of this type have to be viewed as qualitative. Good design and operation of piping systems would avoid situations for which cavitation-driven pressure spiking occur. SURGE 5 will be used in future design and operation studies to determine acceptable means of avoiding cavitation and related pressure spiking.

critical for this project as discussed in detail in the previous section (Section 6.6) of this report.

Therefore, at this time it is our opinion that it would be to the City's advantage to construct this project using one contract.

6.8: RECOMMENDATIONS

The recommendation is to proceed with the design of Alternative AA_2. Alternative AA_2 has the lowest total costs considering the present worth energy savings and reduces the number of sewer pumping stations from three currently operating to one modern up to date pumping station. In addition, Alternative AA_2 will provide redundancy for both the pumping station and force main conveyance system. Another distinct advantage to Alternative AA_2 is that the existing SPS 45 site is adequate to accommodate the construction of a new pumping station which will allow the construction of the new conveyance and pumping system while the existing system continues to provide service. Upon completion of the new facilities the old system is simply abandoned and the new sewers and pump station are placed into service. Also, Alternative AA_2 will not require the acquisition of property or additional easements. However, there may be a need to obtain construction easements and/or widen the existing easements for part of the proposed conveyance system. Finally Alternative AA_2 scored highly in the alternatives comparative screening and evaluation analysis that is described in detail in Section 5 of this report. This analysis evaluates the alternatives based on twelve factors. Alternative AA_2 not only scored the high overall, but scored the highest in three categories and above average in the balance of the categories. The categories that other alternatives scored higher were related to O&M costs, operational reliability and redundancy. The alternatives that scored higher on these categories were generally the microtunneling alternatives which result in an entirely gravity system. However, these alternatives have much higher construction costs and requires extensive easement acquisition.

In summary Alternative AA_2 ranks high in a comparative screening and evaluation; has the lowest total cost and can be constructed within existing easements and right-of-way.

SECTION 4: ALTERNATIVES

The combined sewage flows for the SPS 28, 29 and 45 drainage basin could either be discharged to the SPS 65 collection system or the SPS 2 collection system. For the former case the trunk sewer for the area is in a canyon to the east of John Jay Hopkins Drive north of General Atomics Court. The current discharge for the study area is to this trunk sewer. For the latter case the trunk sewer is the UCSD Trunk Sewer, with the closest point available for discharge being near the intersection of La Jolla Village Drive and Gilman Drive.

The advantage of discharging to the SPS 2 collection system would be to bypass SPS 64 and 65. Not only would by-passing these two pumping stations reduce overall system energy consumption but it would also improve system reliability. However, discharge to this location would require force mains and gravity lines.

4.1: VIABLE ALTERNATIVES

The viable alternative for study are summarized in **Table 4-1** and **Figures 4-1 through 4-10.** Alternatives A, B, and C all discharge to the SPS 65 collection system. Alternatives AA, BB, and CC discharge to the SPS 2 collection system. Alternatives MT are the tunneling alternatives and Alternative E is the same as the existing conditions. The alternatives are described in the following paragraphs.

Potential scenarios for sewage conveyance within and out of the drainage basin would utilize one, two or three pumping stations. A scenario with three pumping stations would be the same as what is being done today. SPS 45 flows would be pumped to SPS 28 where the combined flows would be pumped to SPS 29. From this point the total drainage basin flows are pumped to the SPS 65 collection system. This alternative has been designated as Alternative E **(see Figure 4-1).**

Seeing that the low point of the entire drainage basin is at SPS 45 a single, large pumping station could be installed at this location and utilized to discharge the entire drainage basin's flows into either of the two adjacent sewage collection systems. These are alternatives A_1/A_2 and AA_1/AA_2 **(see Figures 4-2 and 4-3).**

A single, large pumping station could also be utilized at the SPS 28 site. This would be a deep station due to the fact that gravity flow from SPS 45 would be the reverse of the ground surface gradient. Alternatives B_1/B_2 and BB_1/BB_2 address this condition **(see Figures 4-4 and 4-5).**

A scenario utilizing two pumping stations would include remodeling and upgrading the SPS 45 facility and construction of a new pumping station near the SPS 28 site. The new SPS 28 facility would be a large station that would convey the combined drainage basin flows. The point of discharge for the new SPS 28 facility could be either the SPS 65 or SPS 2 collection system. These two alternatives are C_1/C_2 and CC_1/CC_2 **(see Figures 4-6 and 4-7).**

Another possibility for conveyance of flows from the drainage basin into the SPS 65 collection system would be by utilization of a gravity system by tunneling. Either a completely tunneled system or a combination of tunnel and a small pumping station at SPS 45 is considered feasible. Alternative MT_D addresses the former condtion and MT_{S1} and MT_{S2} the latter (**through 4-10).**

4.2: LINE SEGMENTS