8.3. Bluff Evaluation

Based on our bluff retreat analysis, including review of aerial photographs since 1929, topographic maps, geologic data, and site reconnaissance, we conclude that the rate of retreat of the natural coastal bluffs at the site is relatively low. In general, it is our opinion that the natural bluffs at the site should not retreat more than 25 feet in the next 50 years. In our opinion, retreat of the natural bluffs should not impact the proposed bungalows and infill improvements on the south side of the hotel and the setback need not be increased beyond 25 feet that is recommended by the City of Dana Point (City of Dana Point, 2007).

In general, the 25-foot setback is an appropriate mitigative measure for the potential hazard associated with retreat of the natural bluffs. The potential retreat of the natural bluffs is mitigated by landscaping plants and improved surface drainage conditions that exist on the bluff top (i.e., the landscaped berm). A mitigative measure which improves stability of the natural bluffs at the site includes the rip-rap revetment at the toe of the bluff.

In our opinion, retreat of the modified bluff areas on the north and west sides of the hotel is not significant since they are landscaped, maintained slopes. Based on current site improvement plans, the proposed infill construction on the north and west sides of the hotel will be constructed within the City-recommended 25-foot setback. The interpreted bluff edge is approximately 20 feet from the proposed infill construction on the north side of the hotel, and the interpreted bluff edge is coincident with the location of the proposed infill on the west side of the hotel. In our opinion, since retreat of these modified bluff areas is not anticipated to be significant, retreat of these bluffs will not impact the proposed infill construction. Mitigative measures for the modified bluff areas at the site include the approximate 2:1 slope gradient, vegetation on the slopes, drainage devices, and maintenance activities.

8.4. Groundwater

During the design phase of the project, site specific geotechnical evaluation will be performed to further evaluate the potential for shallow groundwater that may affect proposed construction. Site-specific geotechnical evaluation to assess the groundwater characteristics would include drilling of exploratory borings, evaluation of groundwater depths, and possible installation of groundwater monitoring wells, if appropriate.

Measures to mitigate potential shallow groundwater conditions may include shoring/casing of excavations below the groundwater table, pumping groundwater from excavations to maintain stable conditions, using dewatering wells to lower the groundwater table at construction locations, and/or use of subsurface grout curtains or soil/cement walls to reduce groundwater infiltration.

8.5. Site Drainage

Surface drainage for the proposed improvement areas should be appropriately designed. Positive drainage should be provided and maintained so that surface water flows away from the new structures and foundations and away from the coastal bluff edges. Positive drainage should be established and maintained adjacent to flatwork. Positive drainage is defined as a slope of 2 percent or more for a distance of 5 feet or more away from foundations, flatwork, and tops of bluffs. Runoff should then be carried by the use of swales or pipes into a collective drainage system. Surface water should not be allowed to pond. Downspouts should discharge to a system of closed pipes that transport the collected water to a suitable discharge facility. We recommend that drought tolerant vegetation be used for site landscaping. Irrigation should be kept at levels just sufficient to maintain plant vigor.

8.6. Soil Settlement

During the design phase of the project, a site-specific geotechnical evaluation will be performed to evaluate the presence of settlement-prone soils at the site. The settlement potential of the materials will be evaluated in areas of proposed structures. If the settlement potential exceeds acceptable tolerances for the structure, then remedial measures should be incorporated into the design and construction. Possible mitigation measures include overexcavation and recompaction, compaction grouting, deep foundations, and specialized foundation design.

8.7. Corrosive Soils

The project site is located in a geologic environment that could potentially contain soil conditions that are corrosive to concrete and metals. The degree of potential corrosivity of soils will be evaluated by site-specific analysis during design of the project. Typical mitigation measures for corrosive soil include epoxy and metallic protective coatings, the use of alternative (corrosion resistant) materials, and selection of the type of cement and water/cement ratio. Concrete resistant to sulfate exposure and corrosion protection for metals will be used where appropriate for underground structures in areas where corrosive groundwater or soil could potentially cause deterioration. Specific measures to mitigate the potential effects of corrosive soils will be developed in the design phase.

8.8. Construction Impact

In our opinion, the proposed new wing infills and bungalows, constructed in accordance with design recommendations and applicable codes, may be performed without adverse affect on bluff stability. No proposed construction is planned on the bluff faces; construction is planned inland of the interpreted bluff edge. No protective devices will be used on the bluff faces as part of the proposed expansion. During construction of the proposed improvements, prudent construction methods to mitigate erosion and protect the bluff areas can be performed. When constructed, drainage facilities (including roof drainage and surface drainage) emptying away from the bluff faces, as is currently provided at the site, should adequately mitigate potential increased bluff erosion due to the new structures.

Implementation of the proposed hotel expansion project is not anticipated to significantly change the existing topography or accelerate existing erosional processes. Construction of the proposed project is anticipated to create the potential for soil erosion during excavation, grading, and trenching activities. However, with the implementation of appropriate procedures during construction, soil erosion can be limited to within the construction area boundaries. Examples of these procedures would include surface drainage measures for erosion due to water, such as the use of sandbags and plastic sheeting, and wetting of soil surfaces to mitigate wind-related erosion.

Earthwork associated with construction of the proposed project is anticipated to include excavations for the creation of building pads, foundations, and trench excavations for utility lines. Potential deeper excavations may be anticipated for deeper foundation work for structures, if needed. Based on our background review and site reconnaissance, we anticipate that the materials encountered in excavations will be comprised predominantly of sandy terrace deposit soils. We anticipate that excavations within these materials at the project site will be feasible with conventional grading equipment, and excavation difficulty is not anticipated.

Excavations for proposed project improvements adjacent to existing structures or improvements will need to be performed with care to reduce the potential for differential movement of existing improvements located near the excavations. With appropriate mitigation incorporation during construction, excavations at the project site would result in a less than significant impact to surrounding improvements.

9. LIMITATIONS

The geotechnical analyses presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No other warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Our preliminary conclusions and recommendations are based on a review of aerial photographs and readily available geotechnical literature, and an analysis of the observed conditions. Variations may exist and conditions not observed or described in this report may be encountered.

The purpose of this study was to evaluate geologic and geotechnical conditions at the site using readily available data and to provide a preliminary geotechnical report which can be utilized in the preparation of planning and environmental documents for the project. A more detailed geologic evaluation, including subsurface exploration and laboratory testing, should be performed prior to design and construction of the proposed improvements.

Existing landslides, gross bluff instability, or accelerated bluff retreat were not observed on site during our evaluation. Natural steep coastal bluffs, however, are subject to some risk of earth movement due to the steep slope conditions, potential variations in geologic structure, and environmental variations. Although our evaluation did not indicate potential bluff instability, it does not preclude the possibility of bluff failure. The conclusions and recommendations presented herein are consistent with the current standard of practice in engineering geology and geotechnical engineering.

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AERIAL PHOTOGRAPHS				
Source	**Date**	**Flight**	**Numbers**	**Scale**
Fairchild Aerial Photography Collection	1929	C-703	22 and 23	1:18,000
Fairchild Aerial Photography Collection	9-1-47	C-11730	15:144 and 145	1:14,400
USDA	12-12-52	AXJ-2K	127 and 128	1:20,000
Continental Aerial Photo, Inc.	1-13-75	157-11	26	1:6,000
Continental Aerial Photo, Inc.	11-14-87	C-1	0014	1:6,000
Robert J. Lung & Associates	10-27-06	1 (W.O. 40846)	1-1, 1-1 and 1-3	1:2400
Californiacoastline.org	1972	Image 7238117		Oblique photo
Californiacoastline.org	5-3-79	Image 7953070		Oblique photo
Californiacoastline.org	9-23-02	Images 5006 and 5007		Oblique photo
Californiacoastline.org	9-16-06	Images 200603318 and 200603320		Oblique photo

REFERENCE: 2005 THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

APPROXIMATE SCALE IN FEET

0 2400 4800

N

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–A1.DWG

Ninyo & Moore

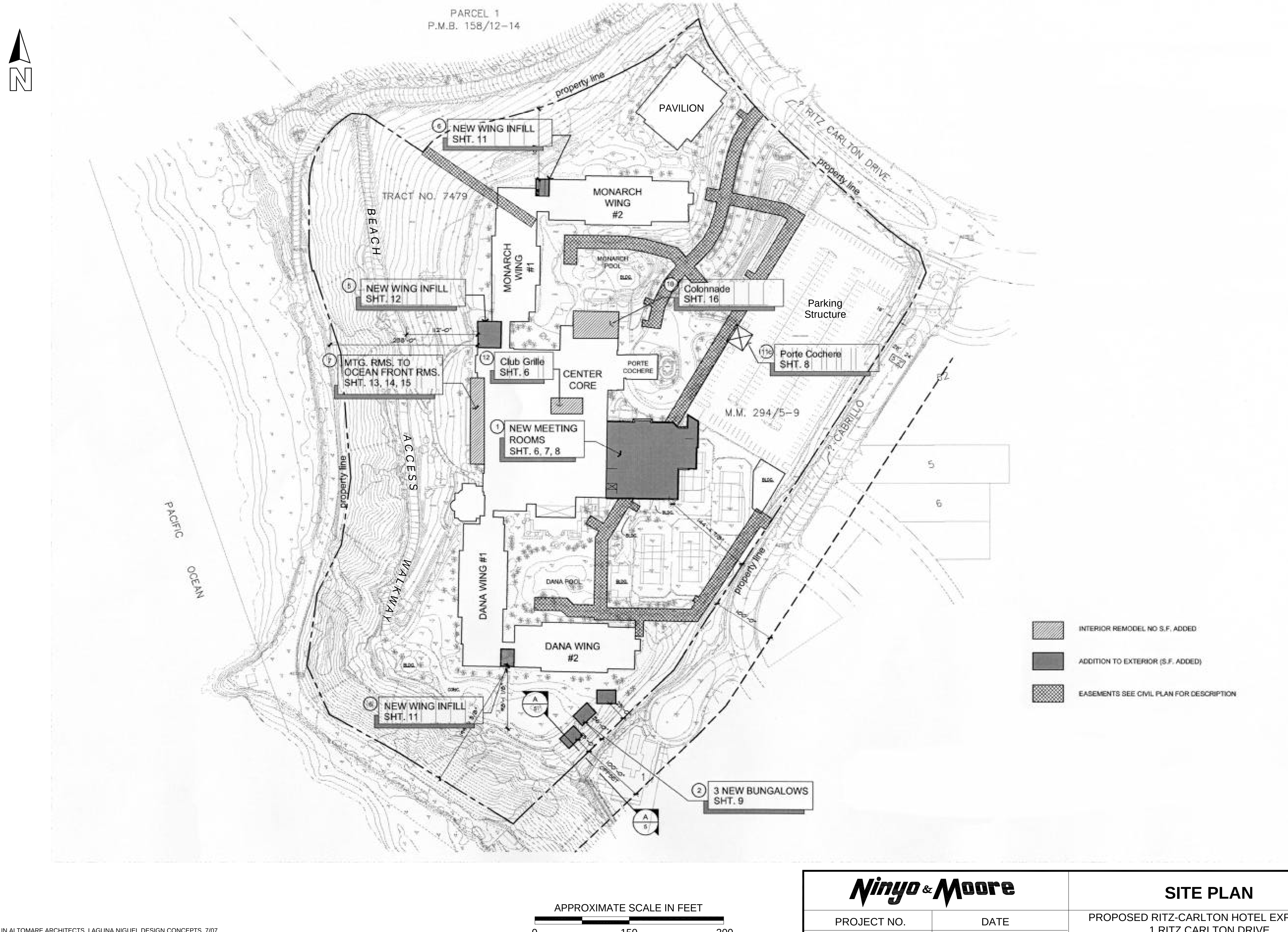
PROJECT NO.	DATE
207118001	7/07

SITE LOCATION MAP

PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

FIGURE

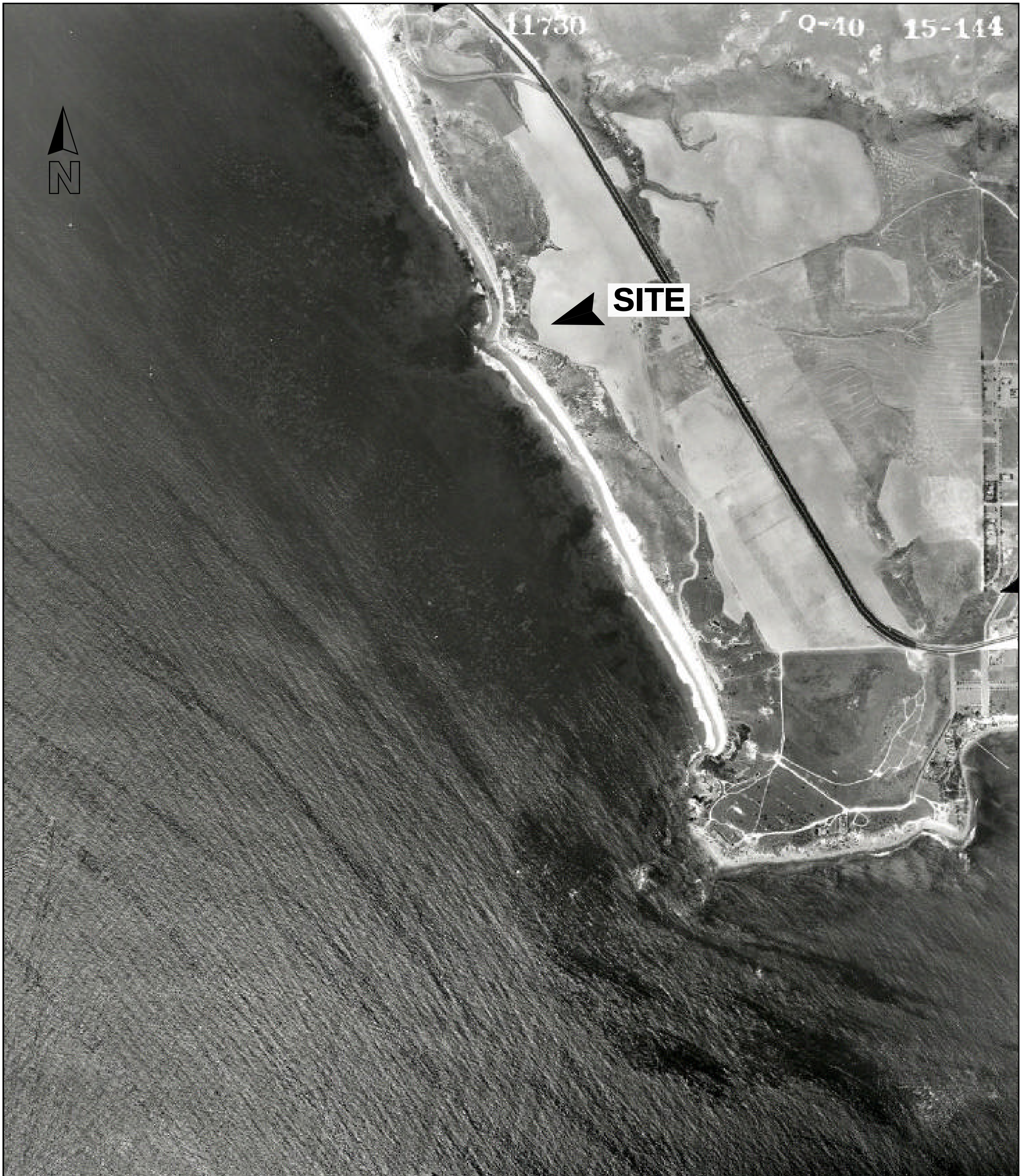
1



REFERENCE: KOLLIN ALTOMARE ARCHITECTS, LAGUNA NIGUEL DESIGN CONCEPTS, 7/07.
NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118-B1.DWG

Ninyo & Moore		SITE PLAN	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	2
207118001	7/07		



REFERENCE: FAIRCHILD AERIAL PHOTOGRAPHY COLLECTION AT WHITTIER COLLEGE, DATED 9/1/1947.

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 1200 2400

207118–A2.DWG

Ninyo & Moore

1947 AERIAL PHOTOGRAPH

PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

PROJECT NO.	DATE
207118001	7/07

FIGURE 3

Ninyo & Moore

PROJECT NO.	DATE
207118001	7/07

1972 AERIAL PHOTOGRAPH

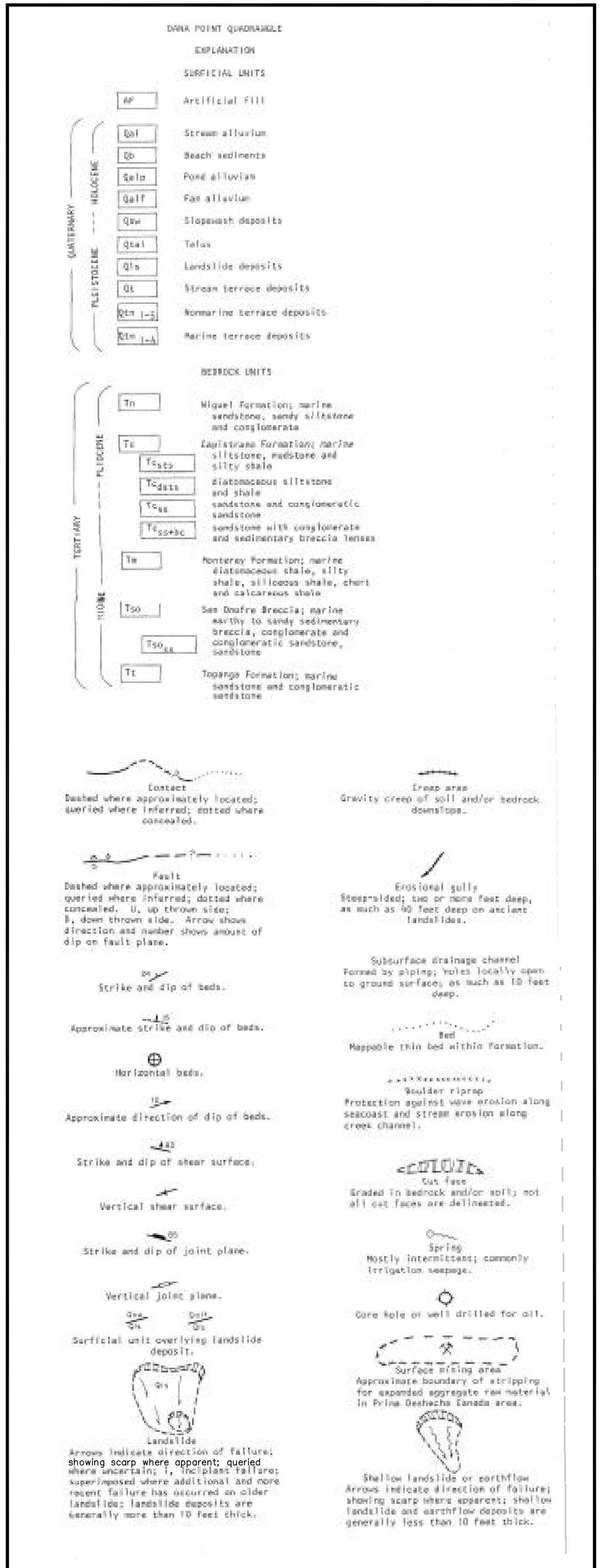
PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

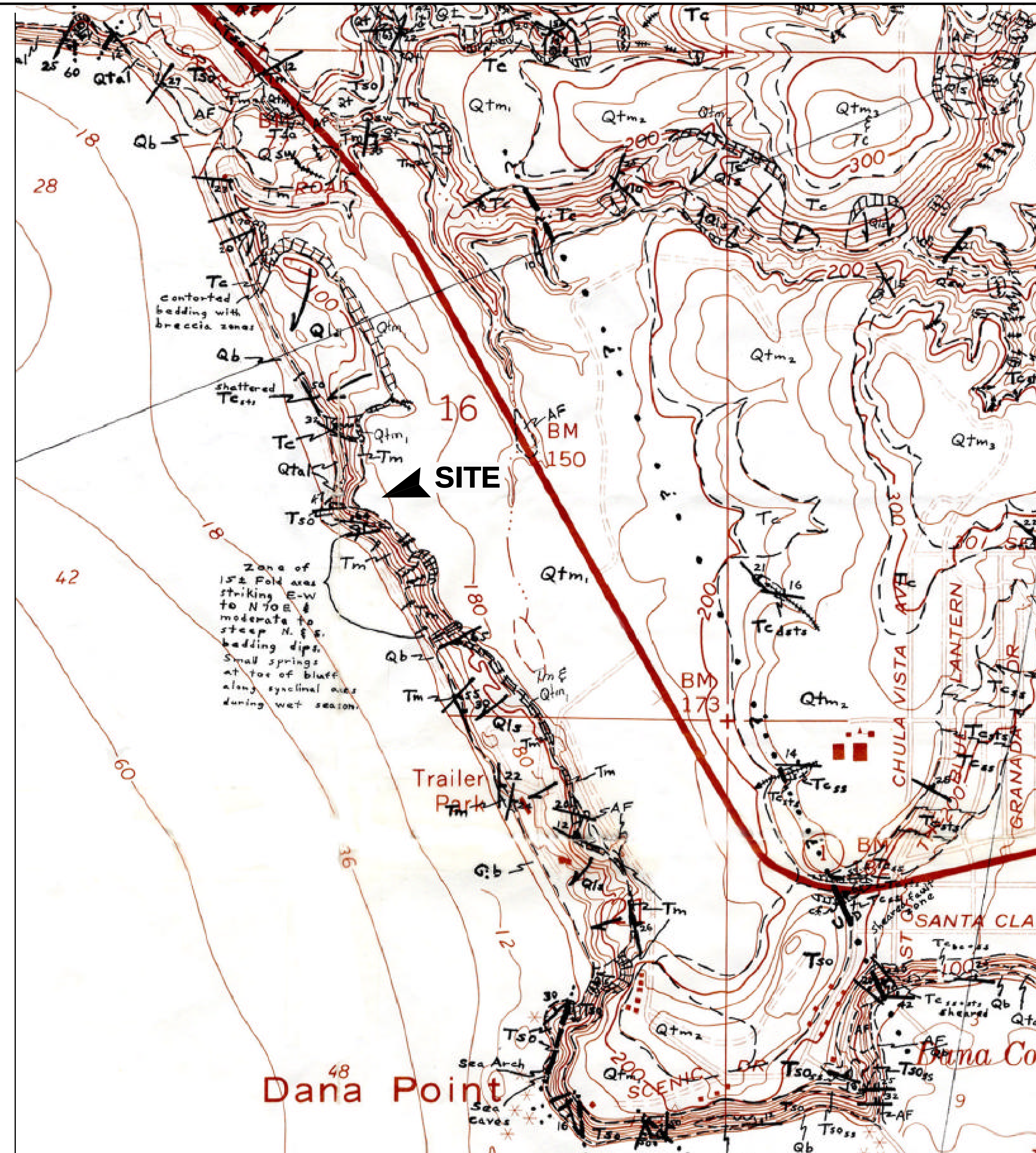
FIGURE

4

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–A5.DWG





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APPROXIMATE SCALE IN FEET

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REFERENCE: EDINGTON, W.J., 1974, GEOLOGY OF THE DANA POINT QUADRANGLE, ORANGE COUNTY, CALIFORNIA, CALIFORNIA DIVISION OF MINES AND GEOLOGY SPECIAL REPORT 109.
NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–B2.DWG

Ninyo & Moore

PROJECT NO.	DATE
207118001	7/07

REGIONAL GEOLOGIC MAP

PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

FIGURE
5

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
207118001	7/07

SITE GEOLOGIC MAP

PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

FIGURE 6

207118-E1.DWG

APPROXIMATE SCALE IN FEET

0 200 400

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REFERENCE: AERIAL PHOTOGRAPHY BY ROBERT J. LUNG & ASSOCIATES, 2006. AERIAL PHOTO TAKEN 10-27-06.

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118-A4.DWG

Ninyo & Moore		2006 AERIAL PHOTOGRAPH	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	7
207118001	7/07		

APPROXIMATE SCALE IN FEET

0 500 1000

N

REFERENCE: CONTINENTAL AERIAL PHOTO, INC., 1/13/75.

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–A3.DWG

Ninyo & Moore		1975 AERIAL PHOTOGRAPH	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	8
207118001	7/07		

REFERENCE: COPYRIGHT (C) 2002-2007 KENNETH AND GABRIELLE ADLEMAN, CALIFORNIA COASTAL RECORDS PROJECT, www.Californiacoastline.org
DATE OF PHOTOGRAPH: 9/16/06.

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		2006 AERIAL PHOTOGRAPH WEST BLUFF	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	9
207118001	7/07		

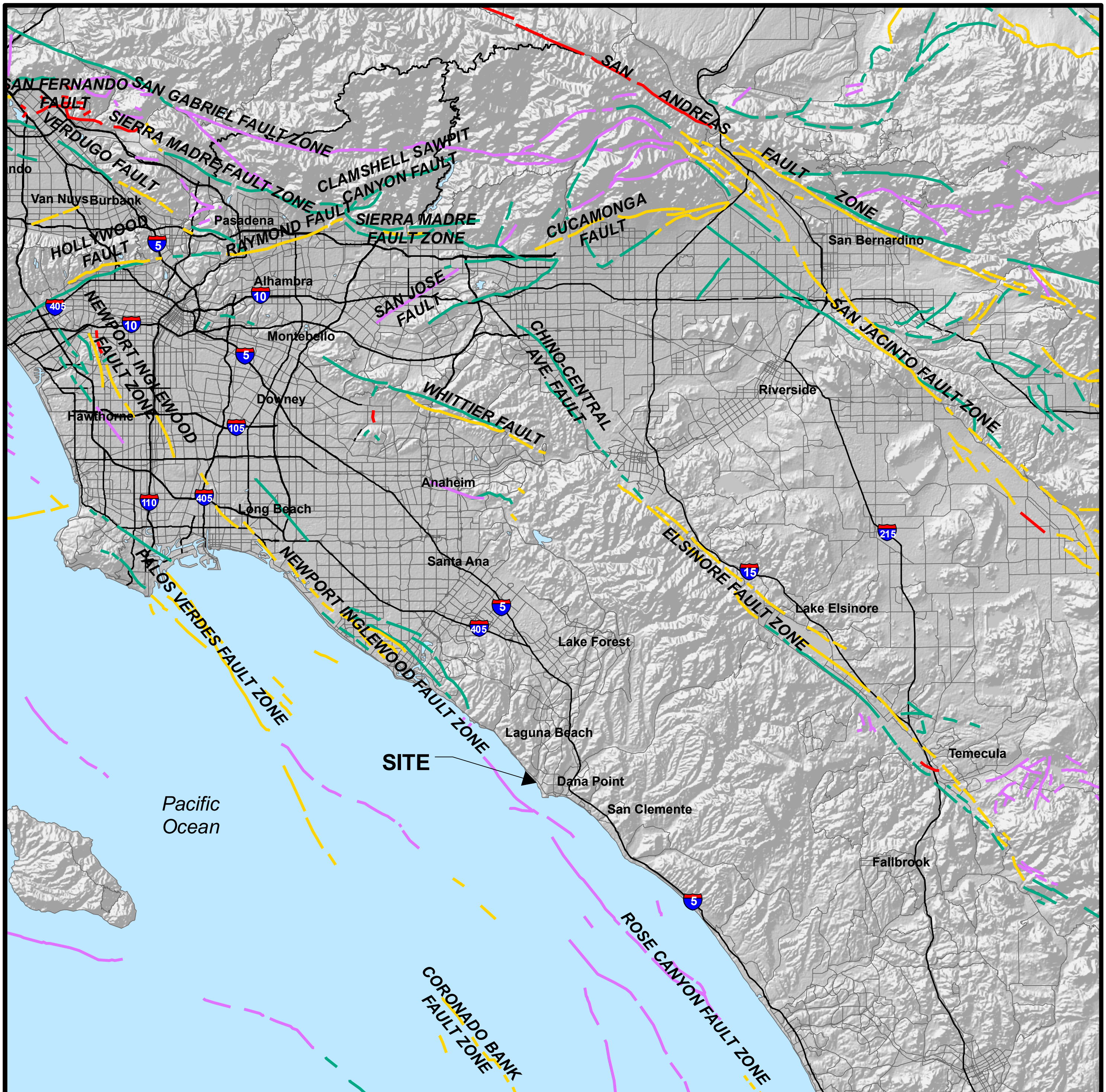
207118–A6.DWG

REFERENCE: COPYRIGHT (C) 2002-2007 KENNETH AND GABRIELLE ADLEMAN, CALIFORNIA COASTAL RECORDS PROJECT, www.Californiacoastline.org
DATE OF PHOTOGRAPH: 9/16/06.

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		2006 AERIAL PHOTOGRAPH SOUTHWEST BLUFF	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	10
207118001	7/07		

207118–A7.DWG



GIS DATA SOURCE: CALIFORNIA GEOLOGICAL SURVEY (CGS); ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
REFERENCE: JENNINGS, 1994, FAULT ACTIVITY MAP OF CALIFORNIA AND ADJACENT AREAS

LEGEND

FAULT ACTIVITY:

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)

N

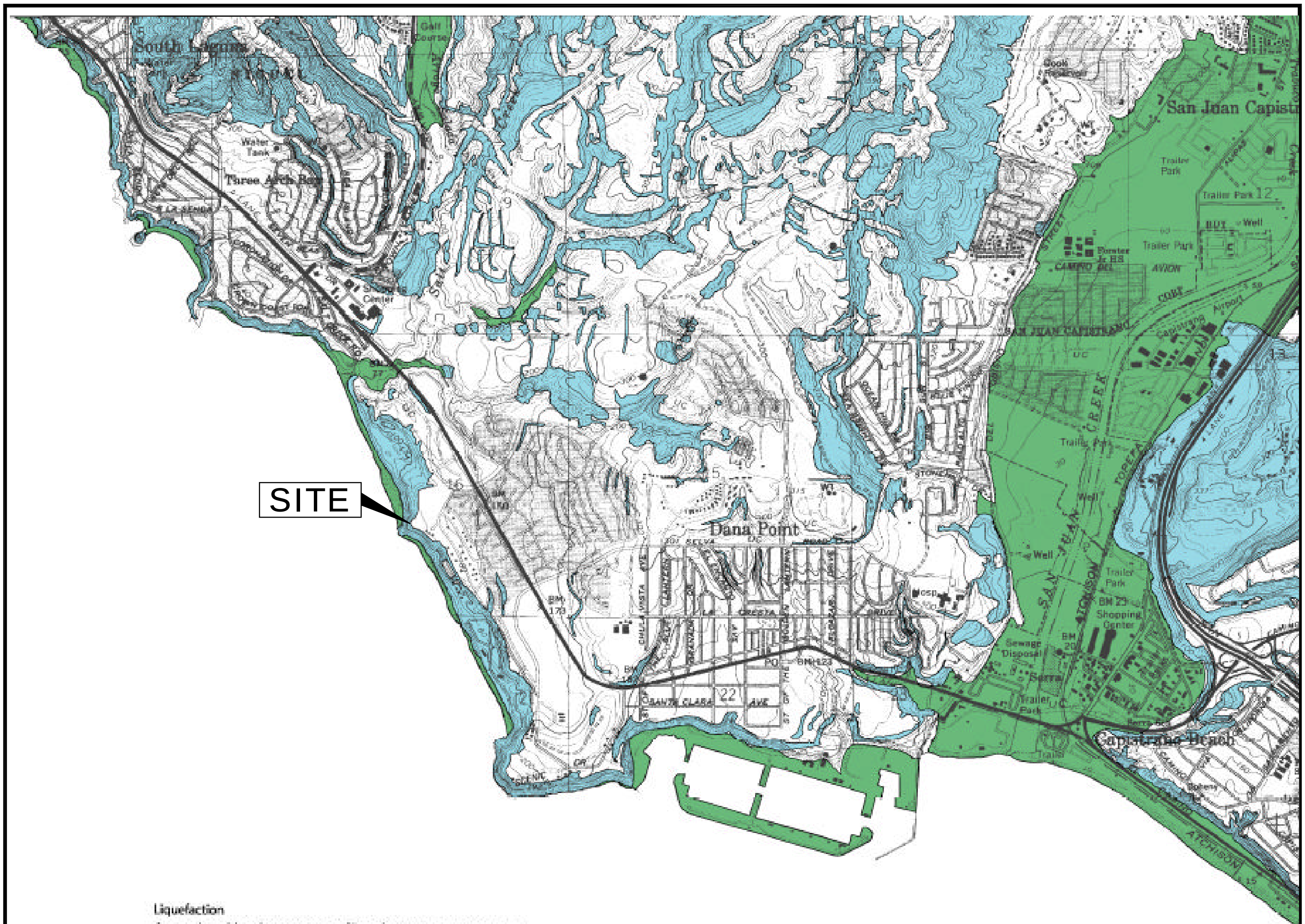
Miles: 0 12 24

NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

Ninyo & Moore

FAULT LOCATION MAP

PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	FIGURE 11
207118001	7/07		



Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

NOTE: Seismic hazard Zones identified on this map may include developed land where delineated hazards have already been mitigated to city or county standards. Check with your local building/planning department for information regarding the location of such mitigated areas.

DATA AND METHODOLOGY USED TO DEVELOP THIS MAP ARE PRESENTED IN THE FOLLOWING:

Seismic Hazard Zone Report of the Dana Point 7.5-minute quadrangle, Orange County, California
California Division of Mines and Geology, Seismic Hazard Zone Report 049

For additional information on seismic hazards in this map area, the rationale used for zoning, and additional references consulted, refer to DMG's World Wide Web site.

REFERENCE: SEISMIC HAZARD ZONES MAP OF THE DANA POINT QUADRANGLE, CALIFORNIA DEPARTMENT OF CONSERVATION, DIVISION OF MINES AND GEOLOGY, STATE OF CALIFORNIA , 2001.

APPROXIMATE SCALE

0 2000 4000 FEET

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NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118-A8.CDR

Ninyo & Moore

SEISMIC HAZARDS ZONES MAP

PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	FIGURE
207118001	7/07		12

March 11, 2008
Project No. 207118001

Mr. Ashley Ewer
Strategic Hotels Capital, LLC
200 W. Madison Street, Suite 1700
Chicago, Illinois 60606

Subject: Response to City Review Comments
Proposed Hotel Expansion
The Ritz-Carlton Laguna Niguel
1 Ritz Carlton Drive
Dana Point, California

Dear Mr. Ewer:

In accordance with your request, Ninyo & Moore has reviewed the comments prepared by Zeiser Kling Consultants, Inc., on behalf of the City of Dana Point regarding our referenced geotechnical evaluation report dated August 9, 2007, for the Ritz-Carlton Hotel Expansion project. Our responses to the City comments requesting response/further evaluation are presented below. A copy of the City of Dana Point Geotechnical Report Review checklist is included in Attachment A for reference.

Please note that our geotechnical evaluation for the project is for preliminary planning purposes. Subsurface exploration and laboratory testing were not within the scope of services for this preliminary evaluation and will be performed where appropriate prior to design of new foundations for proposed hotel improvements.

Response to Comment No. 2:

We have performed additional review of background documents pertaining to previous development at the site. These documents include reports by the California Coastal Commission (CCC) and hotel development plans and are included in our Selected References. During early development of the site as part of a larger master plan/subdivision map, the upper portion of the bluff was graded, creating an approximate 2:1 (horizontal to vertical) manufactured slope separated from the lower, natural bluff by a pathway. The manufactured slope was an existing condition at the time the initial coastal development permit application was submitted for the original hotel. The documents show that the top of the natural bluff was considered to be the bluff edge at the site. Based on our recent document review, we have revised the line delineating the top of the bluff to reflect the "natural bluff" edge which was previously established at the site. Further explanation is provided below.

Our mapping of the natural bluff edge follows and is consistent with the CCC's repeated delineations of the natural bluff edge, beginning as early as the Commission's approval of Coastal Development Permit (CDP) 5-82-291. There, the CCC first delineated the bluff edge as being at the location of the bluff path that winds below the hotel and provides public access to the shoreline. The CCC, in approving CDP 5-82-291, noted that:

> In this project the very extensive geologic investigations indicate that with proper foundation design this project can be safely built out to the bluff edge, which is only proposed in one area. The remainder of the proposed project is set back well behind the 25 foot minimum from the natural bluff, although it does cascade down the previously heavily altered bluff portion of the site, generally located above the bluff trail on (staff's) Exhibit 3 (CCC 1982).

The relevant pages from the CDP 5-82-291 approval are attached as Attachment B, including the document marked Exhibit 5 from CDP 5-82-291, which shows the demarcation between the natural bluff and the manufactured slope. The portion of the project referenced as being "built out to the bluff edge" – a sundeck and snack shop served by an elevator from the bluff trail – is shown on Exhibit 3 from CDP 5-82-291 in Attachment B. The project was modified shortly after approval of the permit to delete that portion of the project. The project design plans showing the modification to delete the sundeck, snack shop, and elevator that were to be constructed on the top of the natural bluff are provided as Attachment C (AVCO, 1982). The data cited above indicates that the original CDP 5-82-291 delineated the top of the natural bluff as it is now shown on our revised figures.

In 2003, using the City of Dana Point's Local Coastal Program (LCP) as its standard of review, the CCC again delineated the bluff edge approximately at the seaward edge of the bluff trail, approximately 70 feet from the edge of the existing hotel footprint. In evaluating the construction of the fitness center (constructed at the top of the existing modified slope), the CCC stated that: "The southern (downcoast) wing of the hotel is currently sited approximately 60 feet from the bluff edge. The proposed fitness center will be set back approximately 70 feet from the bluff edge (CCC, 2003)." That CCC bluff edge discussion from the 2003 approvals is enclosed in Attachment D.

Thus, our mapping of the bluff edge on the west side of the hotel is consistent with the CCC's continuing delineation of the natural bluff edge seaward of the bluff path, marked "Access Walkway," as shown on Figure 1. The bluff edge along the south side of the hotel site is mapped at the top of the natural bluff on the seaward edge of the landscape berm as shown on Figure 1. This man-made berm was created as a landscape feature within the manufactured bluff top area. A line delineating the edge of the bluff at the project site is included in the geologic map and cross sections shown on Figures 1 through 4.

Response to Comment No. 3:

We have reviewed the bluff setback line and have made adjustments to reflect a more accurate depiction of the setback in relation to the top of bluff as revised per our response to Comment No. 2. The corrected setback line is shown on Figure 1.

Response to Comment No. 4:

In general, the proposed infill construction and bungalows should have no adverse geotechnical impact on adjacent properties. The "infill construction" proposed on the south, west, and north sides of the hotel will be limited within the confines of the existing building, and, in our opinion, will have no geotechnical impact on adjacent properties. Based on our review of the proposed site development construction plans prepared by Kollin-Altomare, the distance between the proposed bungalows and the adjacent residential structure to the southwest is approximately 50 feet

(Figure 1). This adjacent property is separated from the hotel site by a masonry fence wall. The bungalows will be single-story, at-grade structures. Grading is anticipated to be minimal to achieve planned finish grades. Based on this information, it is our opinion that the proposed bungalow construction will not have an impact on adjacent properties. The design and construction of future improvements should include a detailed geotechnical evaluation with recommendations for site earthwork, foundations and drainage.

Response to Comment No. 5:

Following discussion with the project architect, Kollin-Altomare, we understand that new foundations are not planned for the meeting room conversion in the "center core" area of the hotel building. The proposed meeting room conversion area is shown on Figure 1.

Response to Comment No. 6:

Following discussion with the project architect, Kollin-Altomare, we understand that new foundations are not planned for the planned interior remodeling area of the hotel. We understand the interior remodeling will generally entail conversion of six existing ground floor meeting rooms to create eight new ground floor, ocean front guestrooms. An additional six second floor, ocean front guestrooms will be provided by extending the existing second floor over the existing meeting rooms below. The extent of this remodel will be contained within the existing building envelope. The proposed meeting room conversion area is shown on Figure 1.

Response to Comment No. 7:

Geologic Cross Sections A-A', B-B', and C-C' were prepared in order to perform preliminary slope stability analysis in the vicinity of the proposed bungalows and infill construction on the south, west, and north sides of the hotel (Figures 2, 3, and 4). Slope stability analysis was performed using the GSTABL7 computer program and the Modified Bishop Method. Our analysis included evaluation of the global stability (top to bottom of bluff) and separate evaluations of the stability of the upper terrace deposits for Sections A and B. An evaluation of both static and pseudostatic stability was performed. The shear strength parameters used in the slope stability analysis were based on our review of data from the Pacific Soils Engineering (PSE) preliminary geotechnical investigation report dated May 28, 1981, our observations of the geologic materials on site, and our engineering experience. Perched groundwater levels indicated in the PSE borings were introduced as a variable in the calculations. Strength parameters utilized in our analyses are presented in Table 1.

Table 1 – Strength Parameters

Geologic Unit	Cohesion (psf)	Friction Angle (degrees)
Tm/Tc	800	26
Tmbc	1,000	36
Qt	150	34
Fill	200	32
Beach Sand	0	34

Notes:
psf – pounds per square foot
Qt – Terrace Deposits
Tc – Capistrano Formation
Tm – Monterey Formation
Tmbc – Monterey Formation Breccia

In our opinion, these strength parameters are generally appropriate for the materials at the site. Shear testing on the Monterey Formation Breccia (Tmbc) was not performed by PSE and strength data for this unit is not available. The Breccia unit is described by PSE as a moderately soft to hard, moderately well cemented, massive breccia with a sand to sandy clay matrix supporting metamorphic rock clasts. The Breccia unit is relatively more resistant to erosion and has formed the topographic point at the site. We have selected the above-listed strength parameters for the Breccia unit based on the higher strength values (for the Capistrano Formation [Tc] unit) available from the PSE report. It is our opinion that the strength parameters selected for the Breccia unit are relatively conservative.

The results of our stability analysis are summarized in Table 2. Detailed analysis results are presented in Attachment E. Shear testing data and logs of selected borings by PSE are included in Attachment F. The locations of selected borings by PSE are shown on Figure 1.

Table 2 – Preliminary Slope Stability Analyses

Section	Factor of Safety*	
	Static	Pseudo-Static
A-A' (Global)	1.2	1.0
A-A' (Terrace)	1.1	0.9
B-B' (Global)	1.5	1.1
B-B' (Terrace)	2.1	1.5
C-C'	1.9	1.4

Note:
*Factor of Safety results rounded to nearest tenth. See Attachment E for analysis results.

The results of the preliminary stability analysis are presented in terms of a factor of safety, which is a ratio between the resisting forces and the driving forces. A factor of safety more than 1.0 indicates relatively stable conditions. A factor of safety of 1.5 is the common industry standard for design of engineered structures and engineered slopes. A factor of safety of 1.1 is the common industry standard for pseudo-static design conditions. Our preliminary stability analyses indicate that Section A-A' has a factor of safety less than 1.5. Sections B-B' and C-C' have factors of safety of approximately 1.5 or more.

The stability analysis results are preliminary and are based, in part, on data presented by PSE that is over 25 years old. Prior to design of the planned improvements, a detailed geotechnical evaluation should be performed that includes subsurface exploration and laboratory testing to further evaluate the bluff stability and to provide appropriate recommendations for locating structures and/or providing mitigation methods. The additional exploration should include further evaluation of the appropriate strength parameters of the geologic materials on site, particularly the upper terrace deposits and the breccia of the Monterey Formation.

Although the results of our stability analyses are preliminary, the data does indicate a potential for having inadequate factor of safety for engineered structures along Section A-A'. To evaluate mitigation measures for this condition, we have performed stability analysis along Section A-A' considering a cast-in-drilled-hole (CIDH) concrete pile and tie-back anchor retaining system to reach a static factor of safety of 1.5 and a pseudo-static factor of safety of 1.1. The key design parameters and considerations for the CIDH pile and tie-back system evaluated are shown in Attachment E and include approximately 55-foot-long, 30-inch-diameter piles spaced 7½ feet on center with tie-back anchors approximately 90 feet long (approximate 60-foot-long bonded length). The CIDH piles and tie-back anchors would support approximately 200 kips load each. The need for these or other mitigation measures and design details would be based on a detailed geotechnical evaluation, once construction drawings have been prepared and the decision as to which of the above-described measures would achieve the static factor of safety of 1.5 and the pseudo-static factor of safety of 1.1.

Response to Comment No. 8:

As requested in Comment No. 9 below, the approximate locations of the 1989 surficial slope failure and subsequent repair areas are shown on Figure 1. The shallow slump occurred on the modified westerly facing bluff below the spa area and was described as approximately 35 feet wide and 27 feet long and 4 to 5 feet deep (Moore & Taber, 1989a). The slump was reportedly repaired by excavating a base keyway into the bluff, removing the slide debris, and replacing with a geogrid-reinforced compacted fill (Moore & Taber, 1989b). The bluff was restored, and re-occurrence of slumping in this area has not been reported by the Ritz-Carlton. During our site reconnaissance, we made observations of the area of the manufactured slope where the 1989 slump and slope repair reportedly occurred. The slope in this area is vegetated with landscape plants, and surface drainage devices are provided in this area. We did not observe indications of recent slope instability or increased erosion in this area. In our opinion, the reported shallow slump and repair area has not had significant impact on the stability of this bluff area and should not contribute to additional retreat of the bluff.

Response to Comment No. 9:

The approximate limits of the reported 1989 surficial slope failure and geogrid-reinforced repair area (Moore & Taber, 1989b) and area of the shallow debris slide that reportedly occurred a few years ago (approximately in 2004 to 2005) are indicated on the Geologic Map, Figure 1. These areas are not in close proximity to the proposed wing infills or bungalows, and, as such, have not been depicted in cross section view.

Response to Comment No. 10:

Subsurface exploration and laboratory testing were not within the scope of services for this preliminary evaluation and will be performed where appropriate prior to design of new foundations for proposed hotel improvements. It would be premature to conduct the exploration prior to design of the proposed improvements; however, site-specific evaluation at that time would be designed to obtain data for appropriate geotechnical recommendations for implementation of various mitigative measures discussed. With regard to the items requested on the Geotechnical Report Review checklist, the following seismic design consideration is provided from evaluation performed by Ninyo & Moore. Other information that is requested on the checklist is provided from existing geotechnical studies performed at the hotel site, as referenced. As requested on checklist, recommendations for earthwork, foundations, Uniform Building Code (UBC) structural setback, retaining walls, and slabs will be provided, as appropriate, following subsurface evaluation and laboratory testing.

The site for the proposed hotel expansion is located in Seismic Zone 4 and should be designed in accordance with the requirements of governing jurisdictions and applicable building codes. Table 3 presents the seismic design parameters for the site in accordance with California Building Code (CBC, 2007) guidelines and mapped spectral acceleration parameters published by United States Geologic Survey (USGS, 2007).

Table 3 – Seismic Design Parameters

Parameters	Values
Site Class	D
Site Coefficient, F_a	1.0
Site Coefficient, F_v	1.5
Mapped Short Period Spectral Acceleration, S_S	1.665g
Mapped One-Second Period Spectral Acceleration, S_1	0.615g
Short Period Spectral Acceleration Adjusted For Site Class, S_{MS}	1.665g
One-Second Period Spectral Acceleration Adjusted For Site Class, S_{M1}	0.923g
Design Short Period Spectral Acceleration, S_{DS}	1.110g
Design One-Second Period Spectral Acceleration, S_{D1}	0.615g

Shear strength parameters used in our slope stability analysis were based on our review of data from the PSE preliminary geotechnical investigation report dated May 28, 1981, our observations of the geologic materials on site, and our engineering experience. Strength parameters utilized in our analyses are presented in Table 1. More detailed discussion of shear strength parameters is presented in our Response to Comment No. 7 above.

Background materials reviewed for our evaluation and observations at the site indicate that much of the near-surface, terrace deposit soils at the project site consist of coarse, sandy materials, and we consider the potential for expansive soils at the project site to be low. During geotechnical investigation for the Pavilion in 1999, MTGL, Inc. (MTGL), performed expansion index laboratory testing and reported test results that showed an Expansion Index of zero. During geotechnical investigation for the Fitness Center in 2002, GeoSoils, Inc. (GeoSoils), performed expansion index laboratory testing and reported test results that showed an Expansion Index of zero. Site specific expansion index testing will be performed prior to design and construction of project improvements.

Evaluation of the presence of sulfate-bearing soils at the site was conducted by MTGL during their 1999 investigation and by GeoSoils during their 2002 investigation. MTGL and GeoSoils reported soluble sulfate contents in the range of 0.052 to 0.082 percent by weight (52 to 82 parts per million [ppm]). Based on the American Concrete Institute (ACI) criteria (2005), the potential for sulfate attack is considered negligible for water-soluble sulfate contents in soil ranging from

0.00 percent to 0.10 percent by weight (0 to 1,000 ppm), indicating that soils from the site tested by MTGL and GeoSoils may be considered to have a negligible potential for sulfate attack. Assessment of the potential for corrosive soils would be evaluated during the design phase of the project.

We appreciate the opportunity to provide geotechnical services on this project.

Sincerely,
NINYO & MOORE

Michael E. Rogers, C.E.G.
Senior Project Geologist

Soumitra Guha, Ph.D., G.E.
Principal Engineer

MER/SG/LTJ/jad

Attachments: Figure 1 – Geologic Map
Figure 2 – Cross Section A-A'
Figure 3 – Cross Section B-B'
Figure 4 – Cross Section C-C'
Attachment A – City of Dana Point Geotechnical Report Review Checklist
Attachment B – Excerpts from California Coastal Commission CDP 5-82-291
Attachment C – 1982 AVCO Community Developers Modified Hotel Plans
Attachment D – Excerpts from California Coastal Commission CDP 5-82-291-A3
Attachment E – Results of Slope Stability Analysis
Attachment F – Logs of Selected Borings and Summary of Laboratory Test Data by Pacific Soils Engineering, Inc. (1981)

Distribution: (1) Addressee
(2) Mr. Kurth B. Nelson III, City of Dana Point (2 wet-signed originals)
(1) Ms. Donna Jones, Sheppard Mullin

SELECTED REFERENCES

American Concrete Institute, 2005, Building Code Requirements for Structural Concrete (ACI 318-05) and Commentary (ACI 318R-05).

AVCO Community Developers, 1982, Laguna Niguel Coastal Resort Hotel, Exhibits 1, 5, and 9B.

California Building Standards Commission, 2007, California Building Code, Title 24, Part 2, Volumes 1 and 2, dated June.

California Coastal Commission (CCC), 1982, South Coast District, Staff Report and Recommendation, Application No. 5-82-291, dated June 7.

California Coastal Commission (CCC), 2003, South Coast Area Office, Staff Report: Material Amendment, Amendment No. 5-82-291-A3, dated September 18.

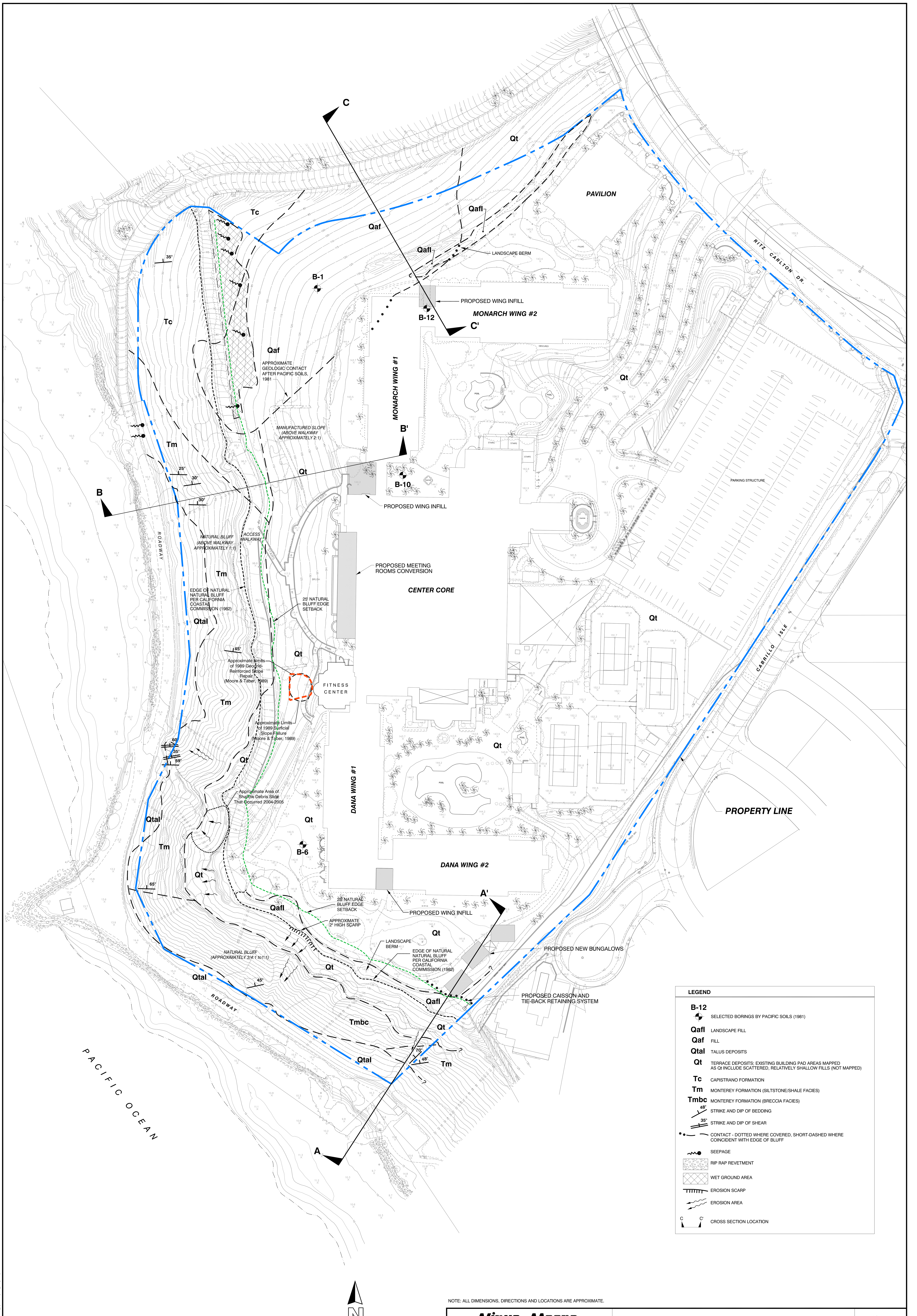
City of Dana Point, 2007, Geotechnical Report Review Checklist, Ritz-Carlton Laguna Niguel, 1 Ritz Carlton Drive, Dana Point, California, PN 95101-89, dated September 18.

Moore & Taber, 1989a, County of Orange EMA Review, Proposed Terrace Expansion, Ritz-Carlton, 33533 Ritz-Carlton Drive, Laguna Niguel, California, Job No. 188-115, dated March 8.

Moore & Taber, 1989b, Report of Geotechnical Services, Slope Repair, Ritz-Carlton Hotel, 33533 Ritz-Carlton Drive, Laguna Niguel, California, Job No. 289-250, dated December 1.

Ninyo & Moore, 2007a, Preliminary Geotechnical Evaluation, Proposed Hotel Expansion, Ritz-Carlton Laguna Niguel, 1 Ritz Carlton Drive, Dana Point, California, dated August 9.

United States Geological Survey, 2007, Ground Motion Parameter Calculator v. 5.0.8, World Wide Web, http://earthquake.usgs.gov/research/hazmaps/design/.



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCES:
TOPOGRAPHIC SURVEY BY STANTEC CONSULTING INC., DATED 12-31-06.
KOLLIN - ALTOMARE ARCHITECTS, 2007, THE RITZ-CARLTON LAGUNA NIGUEL MASTER PLAN.
PACIFIC SOILS ENGINEERING, 1981, PRELIMINARY GEOTECHNICAL INVESTIGATION.

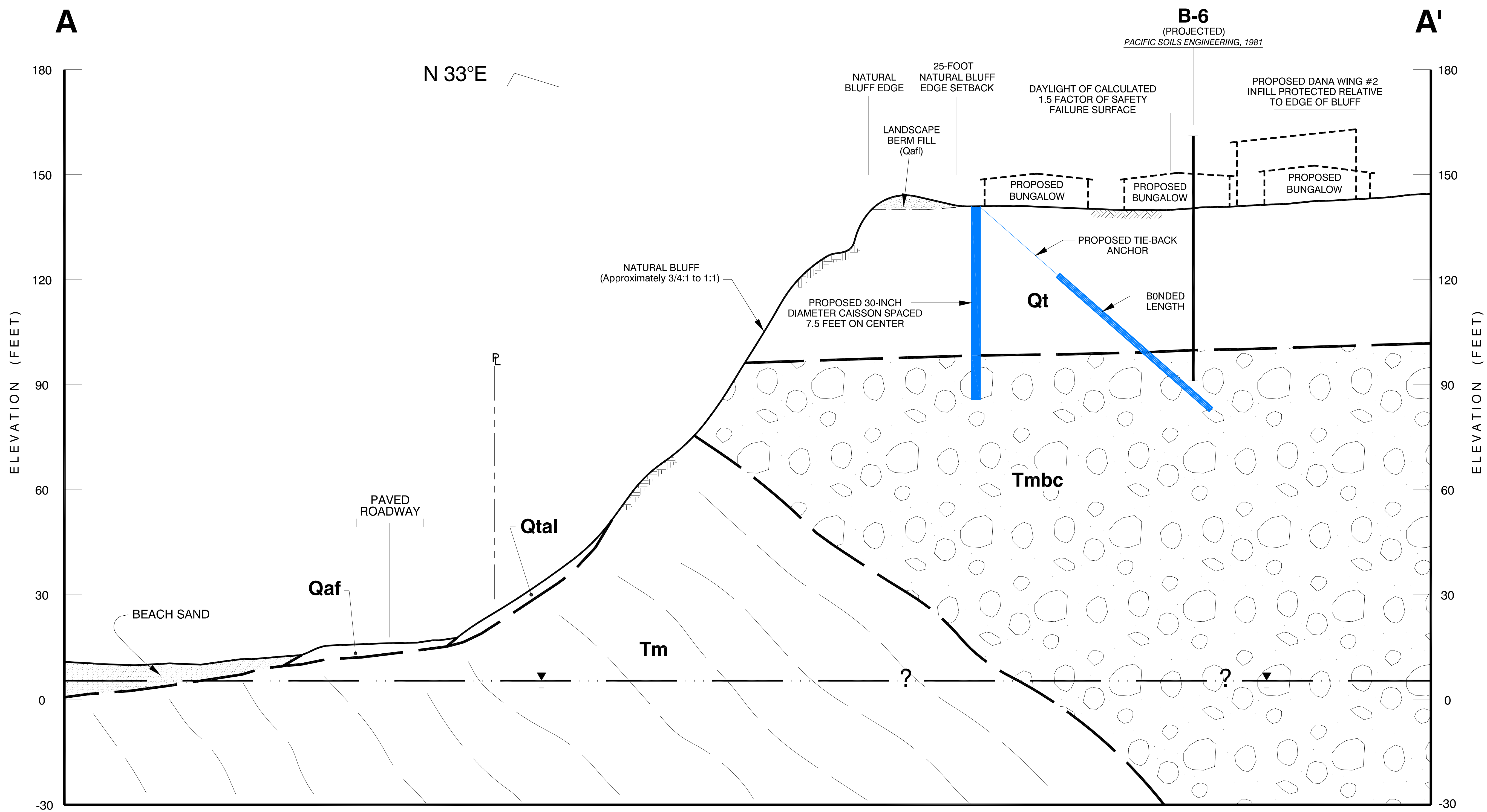
Ninyo & Moore

SITE GEOLOGIC MAP

PROJECT NO.	DATE
207118001	3/08

PROPOSED RITZ-CARLTON HOTEL EXPANSION
1 RITZ CARLTON DRIVE
DANA POINT, CALIFORNIA

FIGURE
1



LEGEND

Qaf	Fill
Qtal	Talus Deposits
Qt	Terrace Deposits
Tm	Monterey Formation (Siltstone / Shale Facies)
Tmbc	Monterey Formation (Breccia Facies)
— —	Approximate Geologic Contact
▼	Groundwater Level

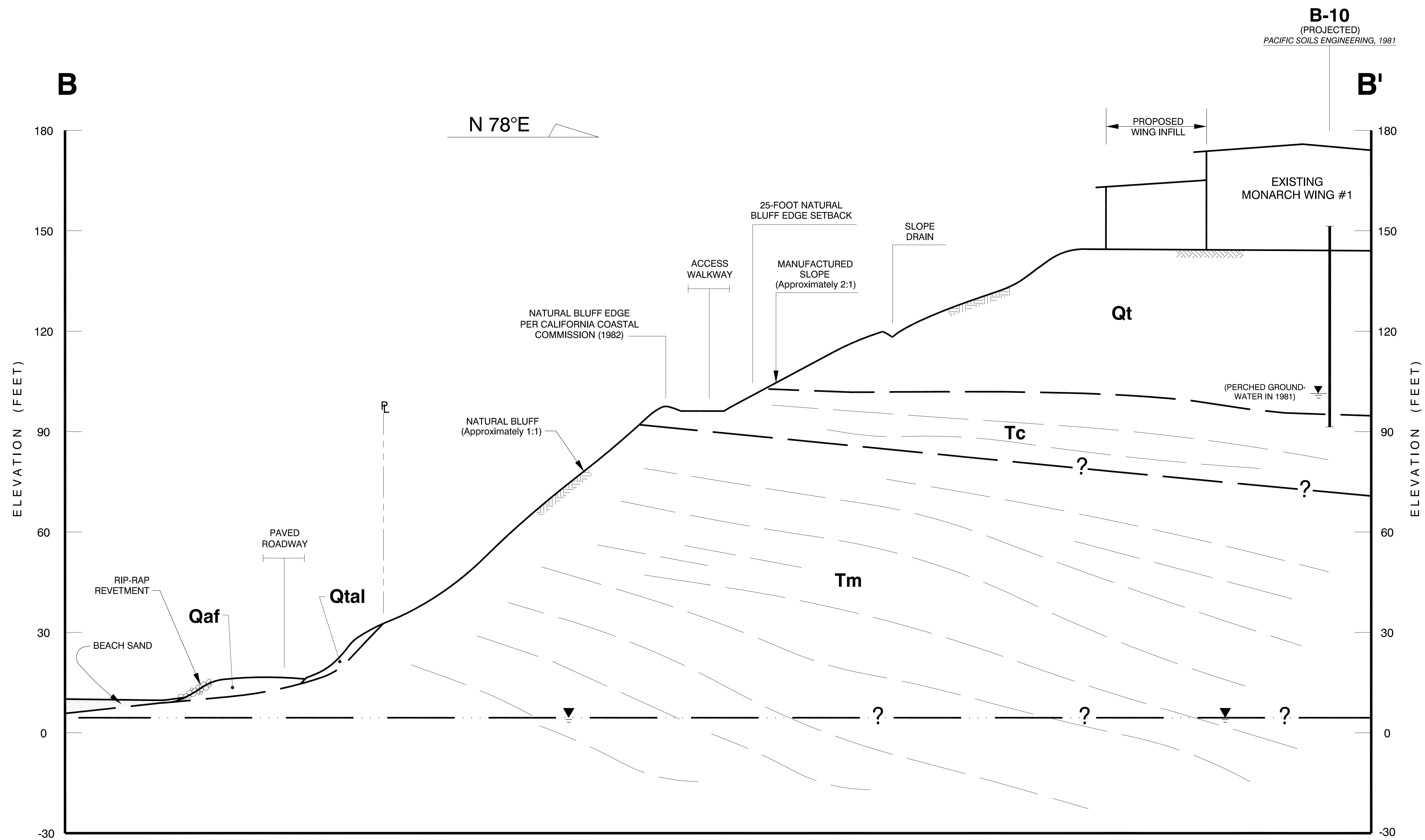
APPROXIMATE SCALE IN FEET

0 30 60

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–B3.DWG

Ninyo & Moore		CROSS SECTION A-A'	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	2
207118001	3/08		



LEGEND	
Qaf	Fill
Qtal	Talus Deposits
Qt	Terrace Deposits
Tc	Capistrano Formation
Tm	Monterey Formation (Siltstone / Shale Facies)
— —	Approximate Geologic Contact
▼	Groundwater Level

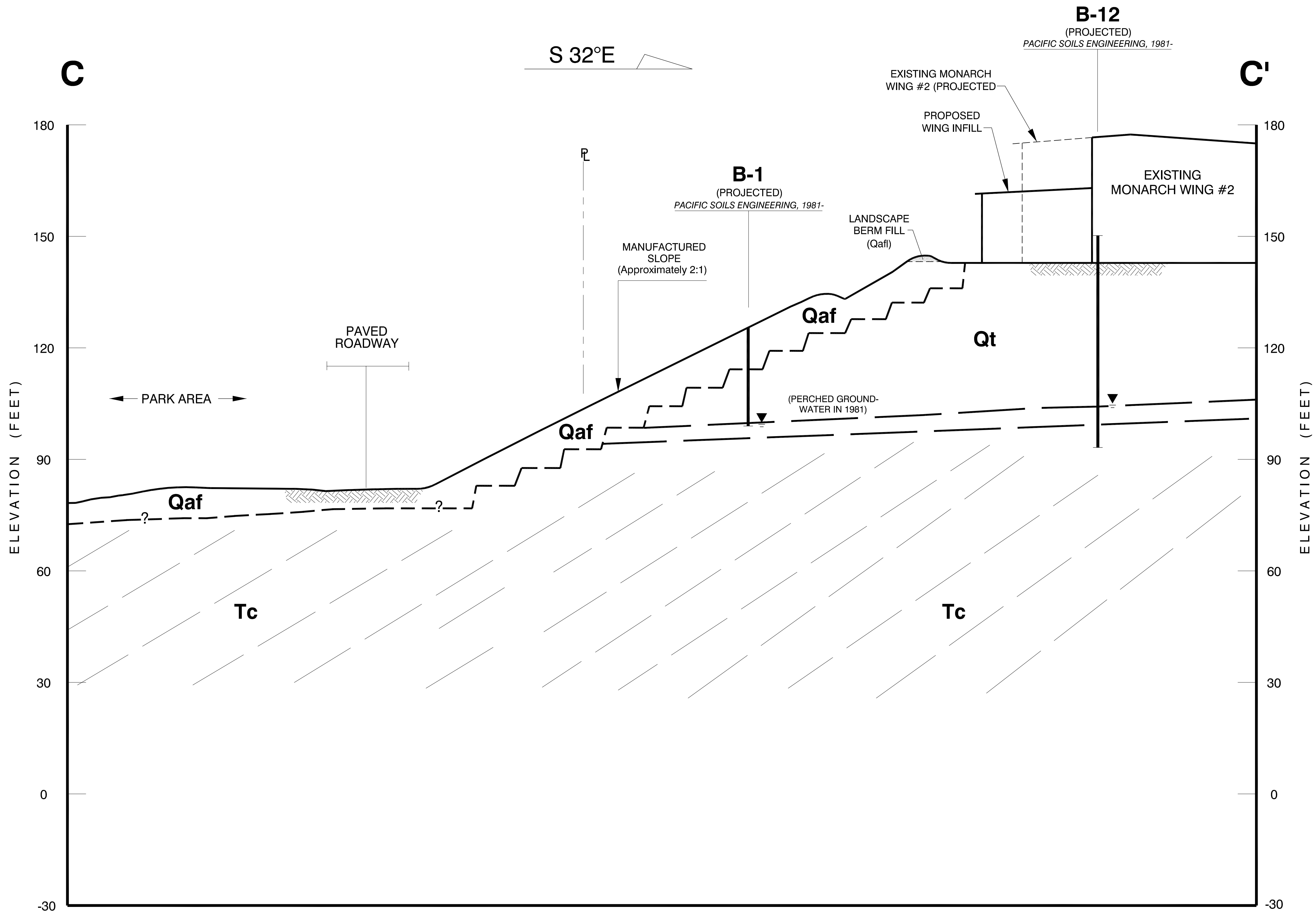
APPROXIMATE SCALE IN FEET

0 30 60

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–B4.DWG

Ninyo & Moore		CROSS SECTION B-B'	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	3
207118001	3/08		



LEGEND	
	Approximate Geologic Contact
Qaf	Fill
Qt	Terrace Deposits
Tc	Capistrano Formation
▼	Perched Groundwater Level

APPROXIMATE SCALE IN FEET

0 30 60

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

207118–B5.DWG

Ninyo & Moore		CROSS SECTION C-C'	FIGURE
PROJECT NO.	DATE	PROPOSED RITZ-CARLTON HOTEL EXPANSION 1 RITZ CARLTON DRIVE DANA POINT, CALIFORNIA	4
207118001	3/08		

ATTACHMENT A

CITY OF DANA POINT GEOTECHNICAL REPORT REVIEW CHECKLIST

CITY OF DANA POINT
GEOTECHNICAL REPORT REVIEW CHECKLIST

Date Received:	August 30, 2007	Date Completed:	September 18, 2007
Date of Report:	August 9, 2007		
Consultant:	Ninyo & Moore	Their Job No.:	207118001
Applicant Name:	Dudek/Ritz-Carlton Laguna Niguel		
Site Address:	1 Ritz Carlton Drive Dana Point, CA	**LEGEND:**	**N = No**
Lot/Tract No.:			**Y = Yes**
A.P.N.:			**NA = Not Applicable**

Proposed Project: Proposed 30,000 sq. ft. Hotel Expansion Including Additions on the East and Infills Between the North, West and South Wings; 3 Bungalows on the South; Interior Remodeling; Access Easements

- **Project Information /Background:**

Y/N	Review of Existing City Files	Y/N	Reference to Grading/Foundation Plans by Date
Y/N	Reference to Site(s) by Street Address	Y/N	Subsurface Investigation
Y/N	Aerial Photograph		

- **Geologic Hazards**:

Hazard	Discussion of Hazard	Mitigation Required	Recommendations for Mitigation
Adverse Geologic Structure	Y/N/NA	Y/N/NA	Y/N/NA
Bluff Retreat	Y/N/NA	Y/N/NA	Y/N/NA
Debris/Mud Flow	Y/N/NA	Y/N/NA	Y/N/NA
Differential Settlement	Y/N/NA	Y/N/NA	Y/N/NA
Erosion	Y/N/NA	Y/N/NA	Y/N/NA
Expansive Soils	Y/N/NA	Y/N/NA	Y/N/NA
Faulting	Y/N/NA	Y/N/NA	Y/N/NA
Fractured Bedrock	Y/N/NA	Y/N/NA	Y/N/NA
Groundwater	Y/N/NA	Y/N/NA	Y/N/NA
Landslide	Y/N/NA	Y/N/NA	Y/N/NA
Liquefaction	Y/N/NA	Y/N/NA	Y/N/NA
Settlement/Collapsible Soils	Y/N/NA	Y/N/NA	Y/N/NA
Slump	Y/N/NA	Y/N/NA	Y/N/NA
Soil/Rock Creep	Y/N/NA	Y/N/NA	Y/N/NA
Sulfate Rich Soils	Y/N/NA	Y/N/NA	Y/N/NA

- **Supporting Analysis/Data:**

Y/N/NA	Slope Stability Calculations
Y/N/NA	Shear Strength Values
Y/N/NA	Other Laboratory Data
Y/N/NA	Seismicity
Y/N/NA	Boring/Trench Logs
Y/N/NA	Liquefaction Study
Y/N/NA	Calculations Supporting Recommendations

- **Recommendations For:**

Y/N/NA	Foundations
Y/N/NA	Retaining Walls
Y/N/NA	Foundation Setbacks
Y/N/NA	Slabs
Y/N/NA	Flatwork
Y/N/NA	Grading
Y/N/NA	Pools/Spas
Y/N/NA	Slope/Bluff Setbacks

- **Geologic Map/Cross-Sections:**

Y/N	Accurate topographic base extending sufficiently offsite	Y/N	Proposed topography
Y/N	Surficial drainage	Y/N	Slope gradients
Y/N	Existing structures	Y/N	Proposed structures
Y/N	Boring/trenches plotted	Y/N	Legend, scale, north arrow
Y/N	Geologic contacts/data illustrated	Y/N	Location of cross-section(s) shown
Y/N	Consistency with adjoining data/maps	Y/N	Illustrate setbacks, if any
Y/N	Cross-Sections sufficient in number, location and detail?	Y/N	Top of Bluff Designation

CITY OF DANA POINT
GEOTECHNICAL REPORT REVIEW CHECKLIST

- **Report Closure:**

Y/N Statement as to the adequacy of the site for the intended use.
Y/N Statement that proposed development will not adversely impact adjoining sites.
Y/N Signature of C.E.G.
Y/N Signature of R.C.E. or G.E.

____ Report Approved ____ Conditional Approval (See Below) X Additional Input Required

Note to City Staff:

1. Proposed additions and new bungalow buildings for the existing resort fall within the coastal bluff setback zone. Although the new construction may prove to be geotechnically feasible, a variance will most likely be required for the improvements as currently proposed. Site specific testing and stability analysis will be required for justification of such.

Items Requiring Response/Further Evaluation:

2. The line delineating the top of bluff on the topographic map provided in the subject report does not comply with the City of Dana Point or California Coastal Commission Criteria particularly in the southernmost, northernmost, and area adjacent to the spa and Dana Wing #1. This could particularly impact the proposed development near the proposed bungalows. The California Coastal Act definition calls for, "the upper termination of a bluff, cliff, or seacliff. In cases where the top edge of the cliff is rounded away from the face of the cliff as a result of erosional processes related to the presence of the steep cliff face, the bluff line or edge shall be defined as that point nearest the cliff beyond which the downward gradient of the surface in creases more or less continuously until it reaches the general gradient of the cliff..." Please revise the map to reflect the correct definition. Revise the bluff setback line accordingly.

3. The bluff setback line does not appear to correspond to a 25 foot setback from the top of bluff line particularly in the "center core" area as shown on figure 6. Please review the setback line in relation to the top of bluff line and correct accordingly.

4. Please provide a statement regarding the impact of the proposed development on adjacent properties.

5. Please indicate if any new foundations will be constructed within the meeting room conversion in the "center core" area of the resort. New foundations within existing structures are subject to blufftop setback regulations contained in the City of Dana Point Coastal Development Ordinance.

6. Please provide clarification of the extent of interior remodeling (ie. will foundations be added/modified, etc.?). Provide recommendations as warranted.

7. Please provide geologic cross-sections and slope stability analyses through portions of the proposed additions. Prior geotechnical data may be utilized at this stage to evaluate slope stability and geologic conditions. This information will be used to evaluate a variance to the coastal bluff setback. Logs of all relevant exploration points should be included.

8. The statement on page 21 that "... no significant changes in the bluff conditions were observed..." and later statements contained within section 8.3 of the "Conclusions and Discussion" section of the report appears inconsistent with the repaired 1989 surficial failure experienced in the southern portion of the property. Please revise the bluff erosion analyses incorporating the 1989 failure and re-evaulate conclusions regarding bluff erosion in this area.

9. Please identify the approximate limits of historical surficial failures, repair areas and the limits of geogrid on the site geologic map. If these areas are near proposed site improvements, depict such in cross section view as they relate to proposed structures, footings, setbacks, etc.

CITY OF DANA POINT
GEOTECHNICAL REPORT REVIEW CHECKLIST

10. Subsurface exploration, laboratory testing and geotechnical analyses will be required prior to final geotechnical approval of the proposed resort additions. Please refer to the checklist above for specific geotechnical issues and required geotechnical information and analyses. Near Source Factors, Seismic Coefficients, shear testing, expansion testing and sulfate testing should be included, along with the items indicated by shading.

Additional comments/Conditions of Approval (no response required):

11. Note to City Staff: Staff should confirm that the Consultants (C.E.G. and R.C.E.) have signed the final dated grading, foundation/construction, and landscaping plans, per City Code, thereby verifying the plans' geotechnical conformance with the Consultant's original report and associated addenda.

12. An as built geotechnical report should be prepared by the project geotechnical consultant following grading/construction of the subject site improvements. The report should include the results of all field density testing, depth of reprocessing and recompaction, depth of footings, as well as a map depicting the limits of grading, locations of all density testing, and geologic conditions exposed during grading/construction. The report should include conclusions and recommendations regarding applicable setbacks, foundation recommendations, erosion control and any other relevant geotechnical aspects of the site.

Limitations:

Our review is intended to determine if the submitted report(s) comply with City Codes and generally accepted geotechnical practices within the local area. The scope of our services for this third party review has been limited to a brief site visit and a review of the above referenced report and associated documents, as supplied by the City of Dana Point. Re-analysis of reported data and/or calculations and preparation of amended construction or design recommendations are specifically not included within our scope of services. Our review should not be considered as a certification, approval or acceptance of the consultant's work, nor is it meant as an acceptance of liability for final design or construction recommendations made by the geotechnical consultant of record or the project designers or engineers.

BY: Gail T. Cosulich

Gail T. Cosulich, C.E.G. 1674
ZEISER KLING CONSULTANTS, INC.

BY: Matthew G. Rogers

Matthew G. Rogers, G.E. 2495
ZEISER KLING CONSULTANTS, INC.

ATTACHMENT B

EXCERPTS FROM CALIFORNIA COASTAL COMMISSION CDP 5-82-291

trail to the vista park from Shoreline Drive and a portion of the hotel extending out over the bluff access trail. The Commission relied heavily on these exhibits in determining compliance of the project with the Coastal Act. Any substantial deviation from the basic concepts of this design in regards to public access and recreation can only be made if there is a finding of overriding public benefit under the policies of the Coastal Act. This finding cannot be made in the case of the visitor park or the access trail to the park from Shoreline Drive, as the original concept allowed a much larger area, provided both up and down coast views, where only down coast (southerly) views are now being proposed, and was visible from the adjacent park and beach thereby providing an inviting, visable goal for the public using the bluff access trail. Therefore, Condition 3b will provide for incorporation of those access amenities in the revised design and is essential to bring the project up to the same level of public access that was approved by the Regional Commission in their original approval of permit P-79-5539, and to provide access opportunities consistent with Sections 30212 and 30252 of the Coastal Act. The Commission therefore finds that the project, as conditioned, is consistent with the public access policies of Chapter 3 of the Coastal Act.

6. Bluff Protection. Coastal bluffs are required to be protected under the Coastal Act for two major reasons.

Under Section 30253:

> **"New development shall: Assure stability and structural integrity ... or (not) in anyway, require the construction of protective devices that would substantially alter natural landform along bluffs and cliffs."**

As one method to partially insure stability, the Commission Guidelines require a minimum 25 foot setback from coastal bluffs. In this project the very extensive geologic investigations indicate that with proper foundation design this project can safely be built out to the bluff edge, which is only proposed in one area. The remainder of the proposed project is set back well behind the 25 foot minimum from the natural bluff, although it does cascade down the previously heavily altered bluff portion of the site, generally located above the bluff trail on (staff's) Exhibit 3. Therefore, the Commission finds that the project, as conditioned, along with the increased public access provided by the development and because the extensive geologic investigation of the site, is consistent with Section 30253 of the Coastal Act.

The second major reason for protecting bluffs is to protect public views. Section 30251 of the Coastal Act states:

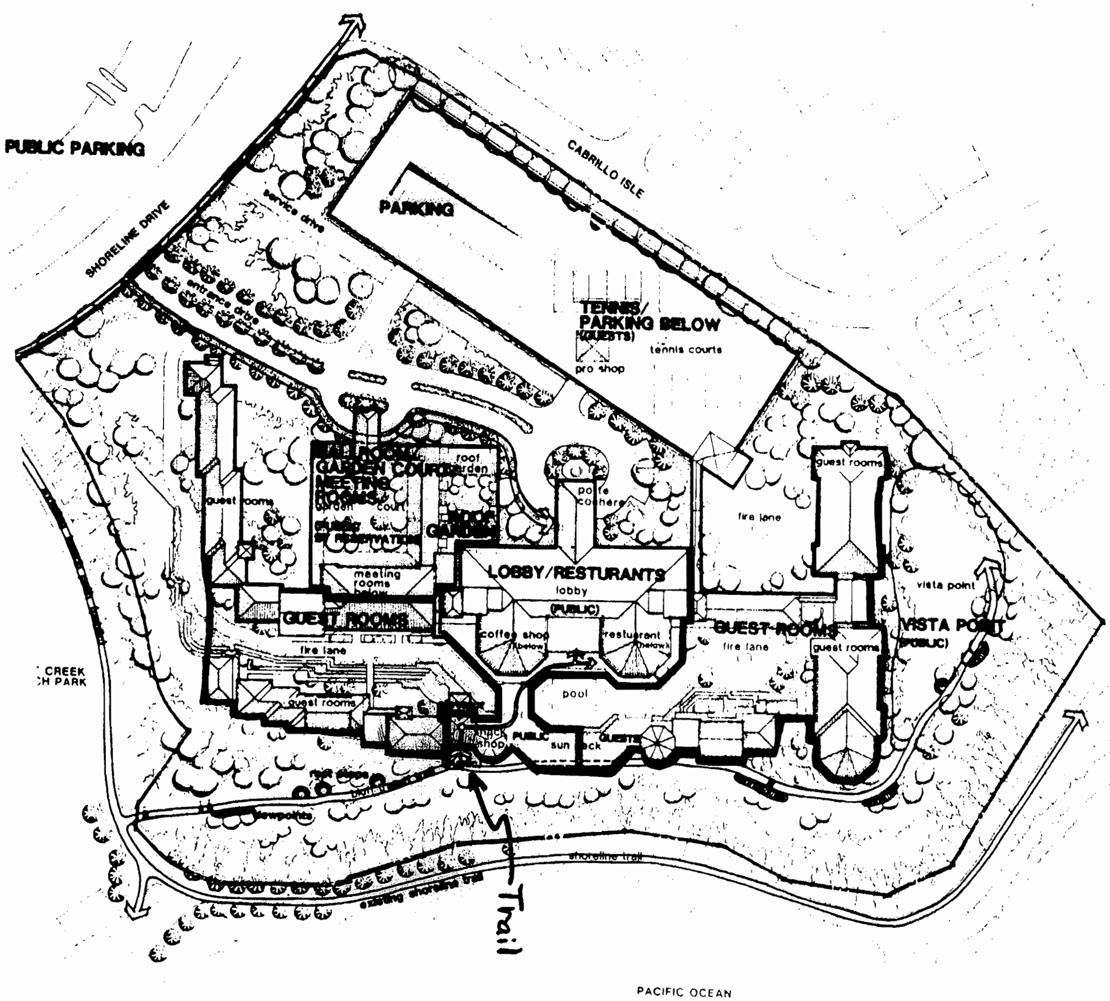
> Section 30251.
>
> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. . .

The project site is surrounded on two sides by a public beach so a substantial public view is involved. For almost ten years the site has existed, essentially vacant in a partially graded condition, and it constitutes a visually degraded area as defined by Section 30251. Therefore, the project with its landscaping will enhance, and partially restore this area. However, the Commission finds that visual enhancement only occurs on this site because of the substantially, unmitigated grading that occured in 1973 and the subsequent erosion of the site. The visual enhancement will occur because of the landscaping and regrading and not the structure itself, per se.

Section 30251 also requires that permitted development minimize the alteration of natural landforms, and this is the case in this development where no part of the remaining natural bluff will be effected by the project. Therefore, no natural landforms will be altered and the existing uncontrolled erosion from the denuded slopes will be controlled purusant to the drainage control plan in P-79-5539. Therefore, the alteration of the natural landforms that is presently occurring because of slope wash will be stopped and the remaining natural landforms protected, consistent with Section 30251 of the Coastal Act.

The project is providing increased access, over and above the access dedicated by the applicant to the County before 1973 which included the beach and park areas, in the form of a bluff access trail, a substantial vista point park and public facilities in the hotel. These hotel facilities include the use of a sundeck and snack shop at the bluff edge, served by an elevator from the bluff trail, which will provide a spectacular public viewing area with vistas north to Newport Beach and beyond and offshore to Catalina and San Clemente Islands. To allow views of the beach below the bluffs and to provide access to the bluff trail the sundeck portion of the development is proposed seaward to the bluff edge and at this location will provide for substantial public use. Condition 4 assures that the design of the structure adjacent to the bluff edge protects and enhances coastal views to and along the ocean, consistent with Section 30251.

The Commission finds with no further grading of the bluffs, engineered foundations, significant landscaping, setbacks for much of the project from the natural bluff edge, and a revised design along that portion of the structure extending to the bluff edge, that the project is both consistent with Section 30253 and Section 30251 of the Coastal Act.



PUBLIC ACCESS

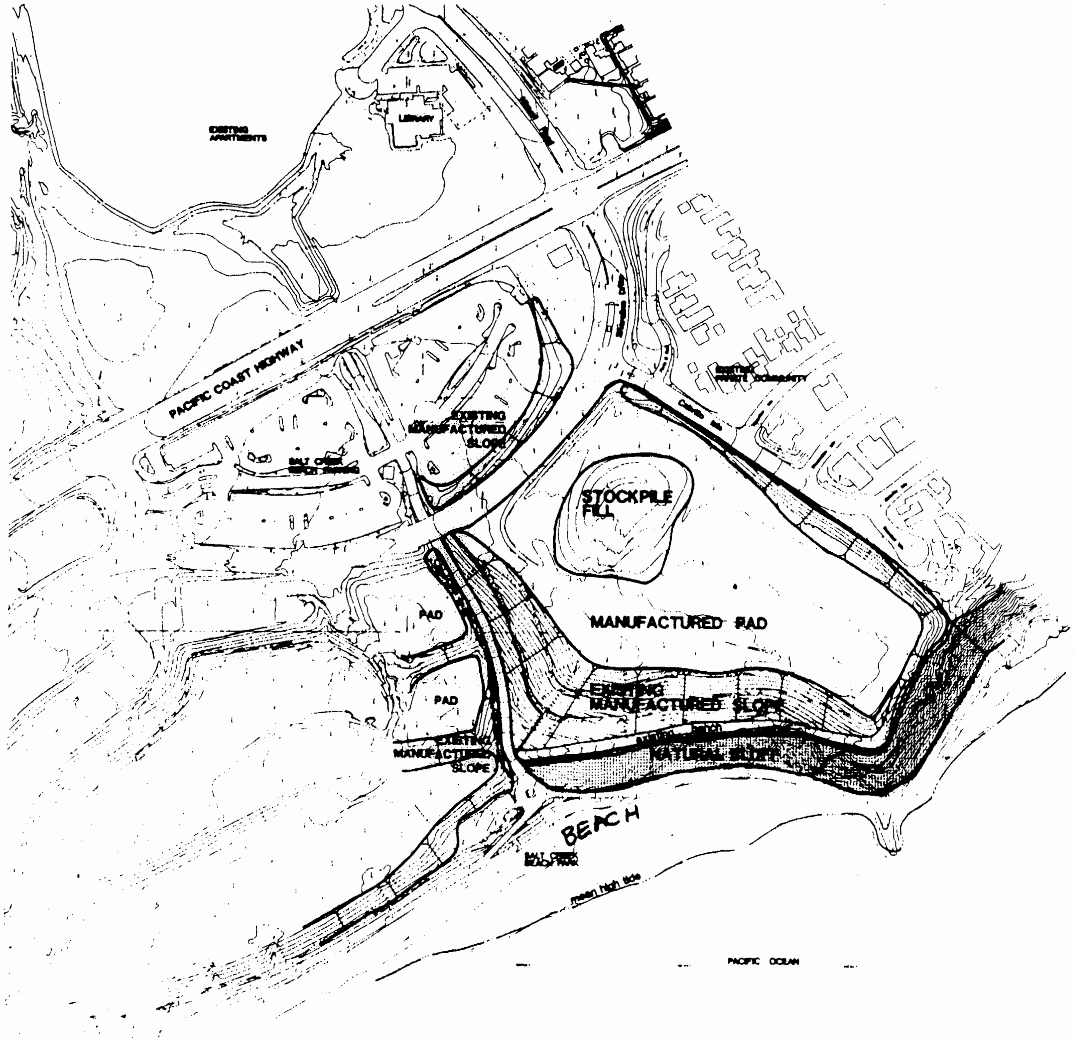
AVCO COMMUNITY DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

FEET 0 30 60 120

EXHIBIT 16

5-82-291
Exhibit 3



PHYSICAL FEATURES

AVCO COMMUNITY DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

ARCHITECT: WIMBERLY, WHISENAND, ALLISON, TONG & GOO Honolulu, Hawaii

LANDSCAPE ARCHITECT: PERIDIAN GROUP Irvine, California

ENGINEER: HUNSAKER & ASSOCIATES, INC. Costa Mesa, California

FEET 0 40 80 160 240

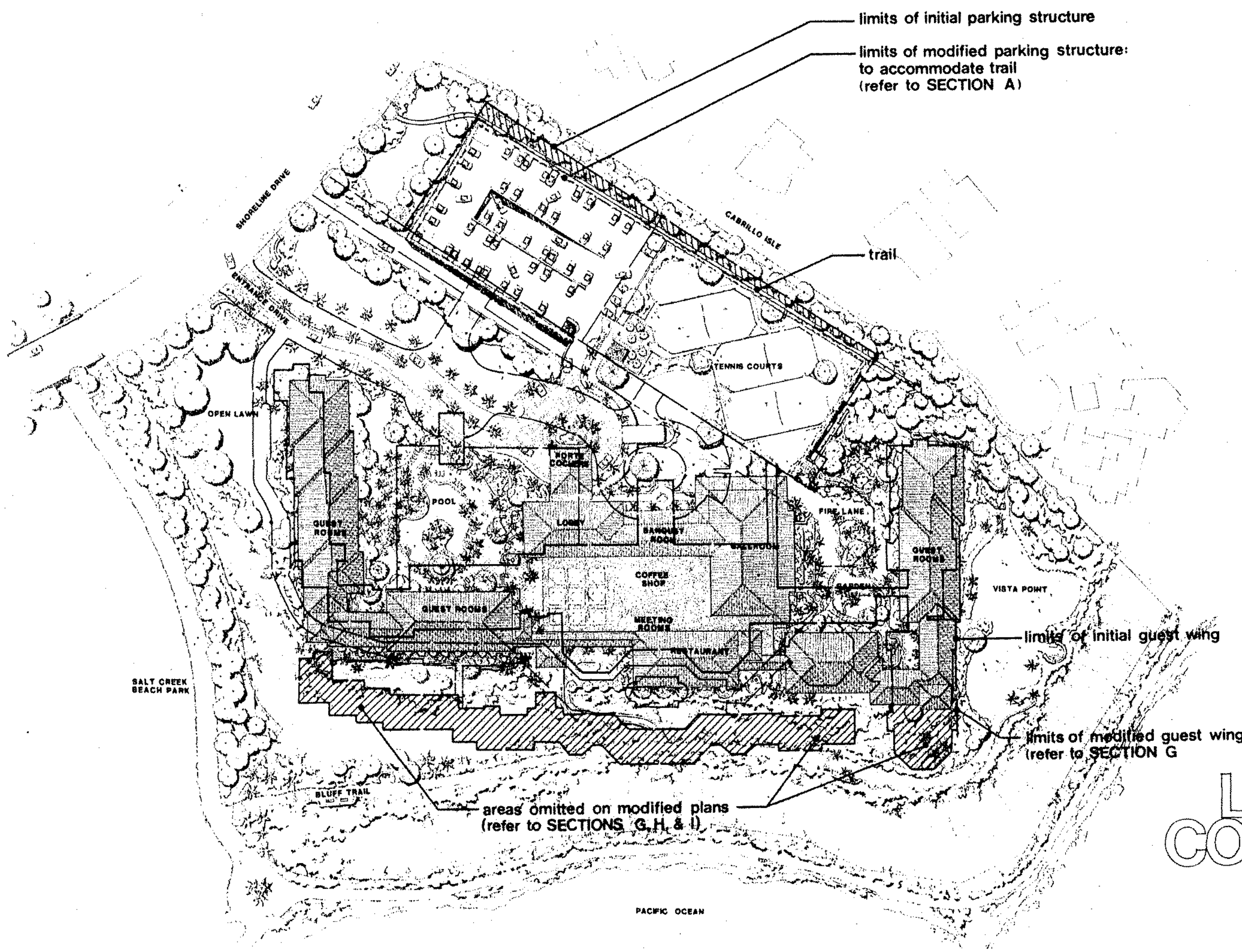
DATE

EXHIBIT 13

5-82-291
Exhibit 5

ATTACHMENT C

1982 AVCO COMMUNITY DEVELOPERS MODIFIED HOTEL PLANS



Limits of Modified Plans

Limits of Initial Plans

Plan Modifications

AVCO COMMUNITY DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

ARCHITECT: WIMBERLY, WHISENAND, ALLISON, TONG & GOO Honolulu, Hawaii; Newport Beach, California

LANDSCAPE ARCHITECT: PERIDIAN GROUP Irvine, California

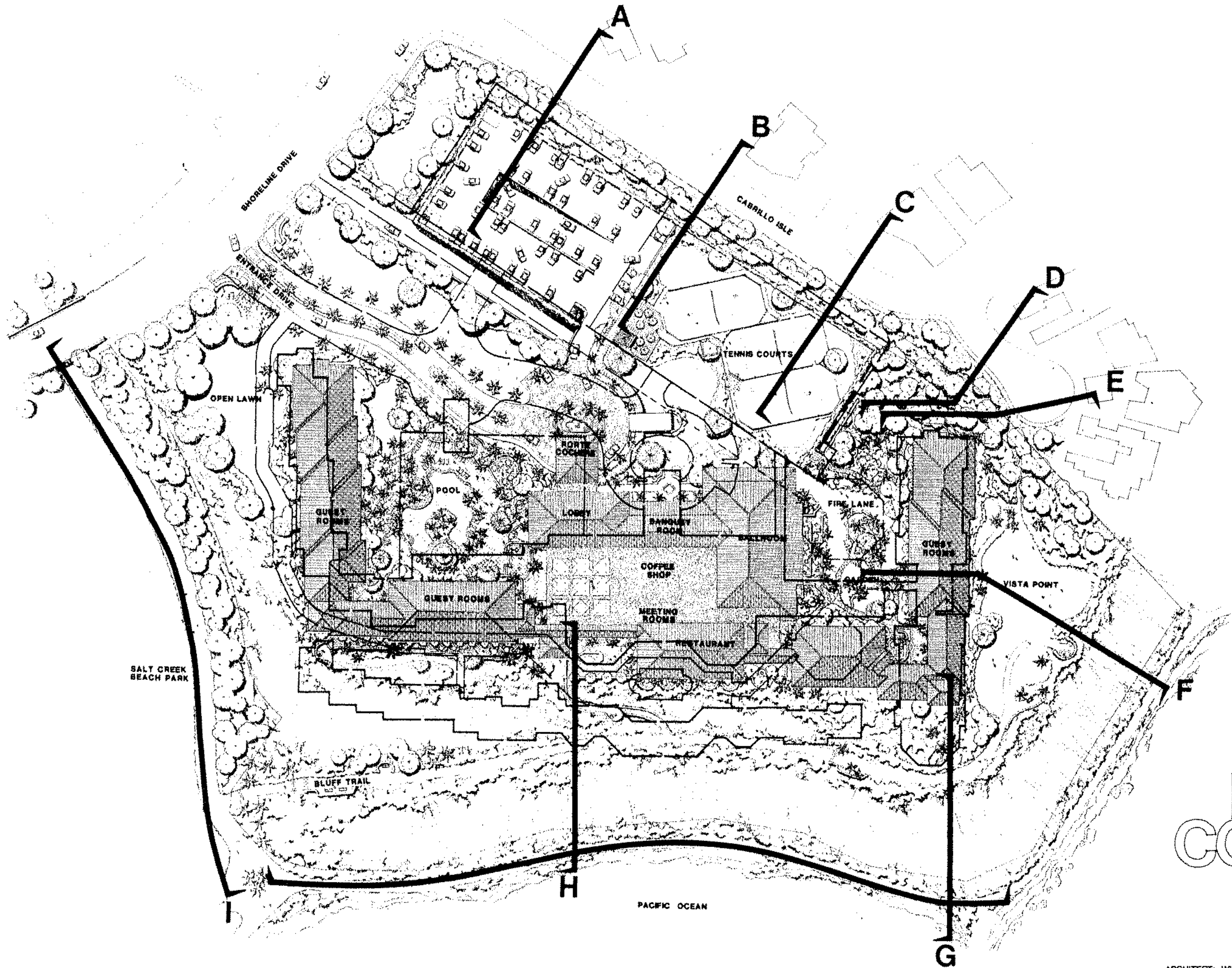
ENGINEER: HUNSAKER & ASSOCIATES, INC. Costa Mesa, California

0 40 80 120

DATE 8/26/82

EXHIBIT 1

Exhibits by Marsha Lee



Plan Modifications sections key

AVCO COMMUNITY DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

ARCHITECT: WIMBERLY, WHISENAND, ALLISON, TONG & GOO
Honolulu, Hawaii; Newport Beach, California

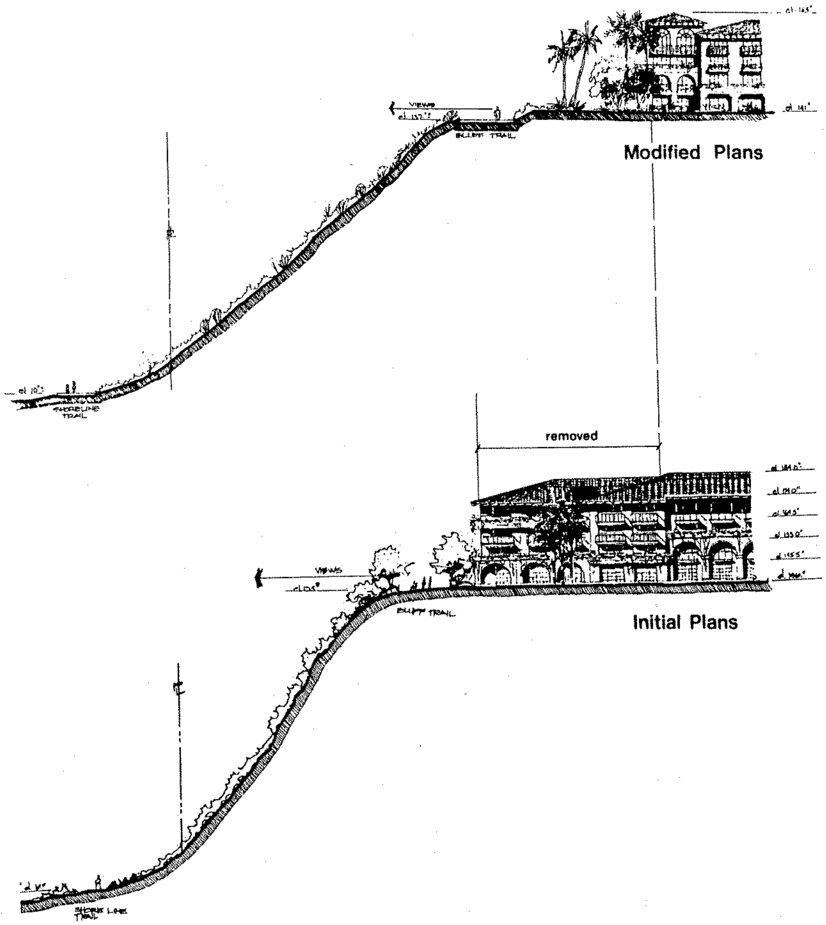
LANDSCAPE ARCHITECT: PERIDIAN GROUP
Irvine, California

ENGINEER: HUNSAKER & ASSOCIATES, INC.
Costa Mesa, California

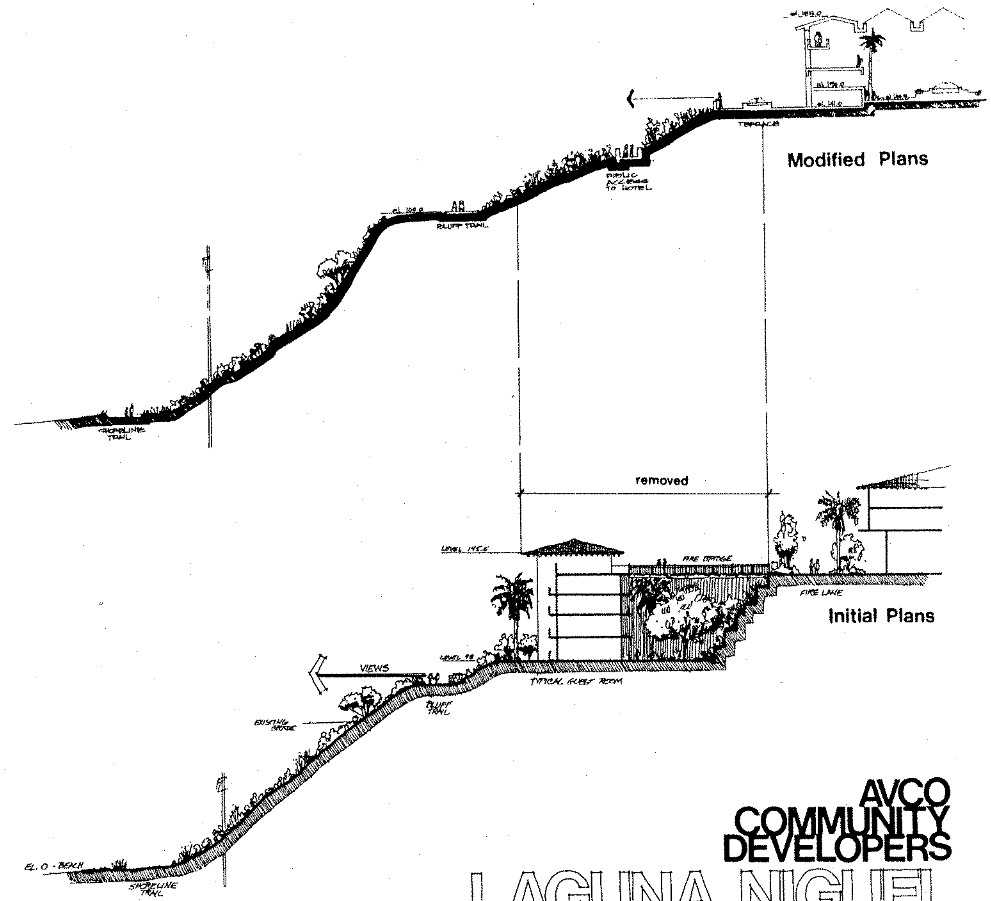
0 40 80 120

DATE 8/26/82

EXHIBIT 2



G SOUTH SECTION



H MIDDLE SECTION

AVCO COMMUNITY DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

ARCHITECT: WIMBERLY, WHISENAND, ALLISON, TONG & GOO Honolulu, Hawaii; Newport Beach, California

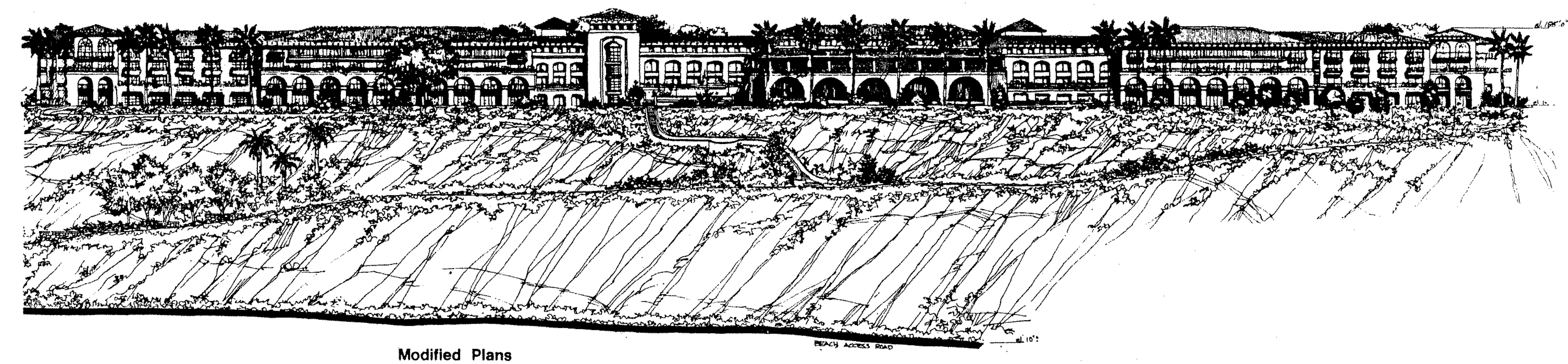
LANDSCAPE ARCHITECT: PERIDIAN GROUP Irvine, California

ENGINEER: HUNSAKER & ASSOCIATES, INC. Costa Mesa, California

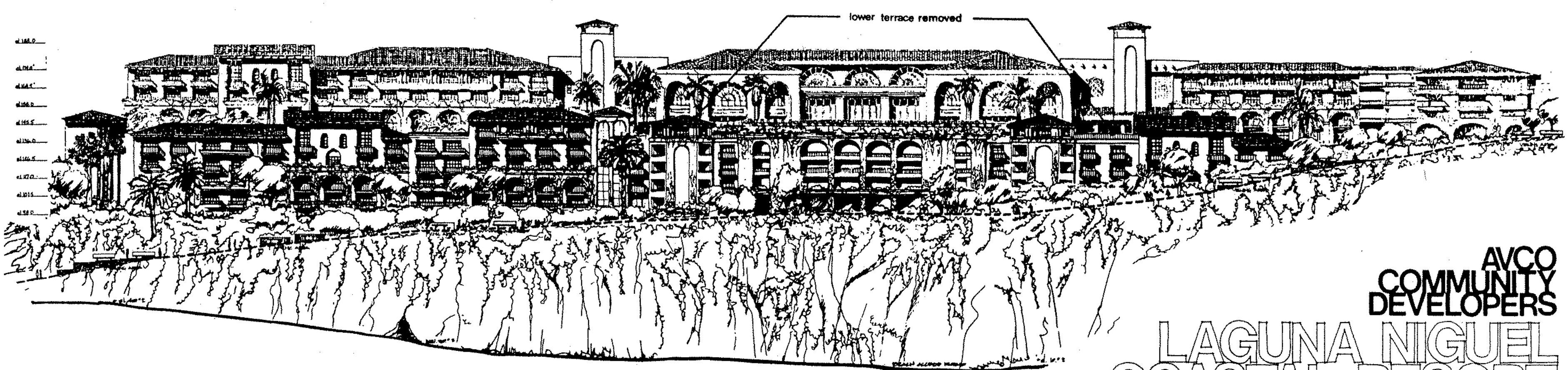
FEET 0 8 16 32 64

DATE 6/26/82

EXHIBIT 5



Modified Plans



Initial Plans

J WEST SECTION

AVCO
COMMUNITY
DEVELOPERS

LAGUNA NIGUEL COASTAL RESORT HOTEL

ARCHITECT: WIMBERLY, WHISENAND, ALLISON, TONG & GOO
Honolulu, Hawaii; Newport Beach, California

LANDSCAPE ARCHITECT: PERIDIAN GROUP
Irvine, California

ENGINEER: HUNSAKER & ASSOCIATES, INC.
Costa Mesa, California

FEET 0 8 16 32 64

DATE 8/26/82

EXHIBIT 7

ATTACHMENT D

EXCERPTS FROM CALIFORNIA COASTAL COMMISSION CDP 5-82-291-A3

public in conjunction with spa use. In addition, the roof terrace could be interpreted to be associated with a formal restaurant use, whereas the terrace is only to be used for occasional dining and beverage service.

Such use would lessen or avoid the intended effect of Special Condition 1 of Coastal Commission-issued Coastal Development Permit 5-82-291 and P-79-5539. Therefore, the Commission imposes Special Condition No. 5, which requires the applicant to record a deed restriction specifying that the fitness center shall not be operated as a "membership only" facility and that the roof terrace shall not be operated as a formal restaurant service area.

As conditioned for recordation of an updated public access map, maintenance of public access during construction, and restriction of private facility establishment, the Commission finds the project consistent with the public access policies of the City of Dana Point certified LCP and the public access and recreation policies of the Coastal Act.

D. Parking

The City of Dana Point certified LCP contains policies requiring adequate parking to be provided to serve new development. The applicant submitted a *Parking Demand Study* for the Ritz Carlton prepared by Linscott, Law & Greenspan Engineers dated April 12, 1999. A shared parking model was developed and utilized to forecast the parking requirements for the hotel and its associated facilities. The study evaluated the proposed spa expansion (approved by 5-82-291-A2) and determined that there would be an excess of 77 parking spaces after the new spa is built. The applicant anticipates that the number of people using the new fitness center (proposed by 5-82-291-A3) and the expanded spa facility is expected to remain the same as the number of people using the current spa and fitness center. As such, the applicant contends that no additional demand for parking is generated by construction of the new fitness center. However, the new fitness center may attract a greater number of visitors than anticipated and therefore must provide adequate parking. Applying the City's parking standard of 1 space per 100 square feet of gross floor area, the new fitness center would require 27 parking spaces. Subtracting the parking required for the fitness center (27) from the surplus listed in the parking study (77), the hotel will till have 50 parking spaces above their minimum requirement. Therefore, the Commission finds the proposed project consistent with the certified LCP.

E. Geologic Stability

The City of Dana Point certified LCP requires new development to minimize risks to life and property in areas of high geologic, flood, and fire hazard and assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The proposed project involves development on the seaward side of the existing hotel. Although the project will result in a seaward encroachment of the central portion of the hotel structure, the resultant fitness center will not be the seawardmost point of the hotel. The southern (downcoast) wing of the hotel is currently sited approximately 60 feet from the bluff edge. The proposed fitness center will be set back approximately 70 feet from the bluff edge.

The applicant submitted a geotechnical report prepared by GeoSoils, Inc., which concludes that the project is feasible from a geotechnical engineering viewpoint, provided that the recommendations presented in their report are implemented in design and construction. The report includes recommendations for site preparation and foundation design. A caisson and grade beam system is proposed to support the new fitness center. To ensure that the project is carried out in conformance with the geotechnical recommendations, the Commission imposes Special Condition No. 6. Special Condition No. 6 requires the applicant to submit final project plans, which have been reviewed, signed and stamped by a geotechnical consultant. Therefore, as conditioned for conformance to geotechnical recommendations, the Commission finds that the proposed project is consistent with the geologic hazard policies of the certified LCP.

F. Scenic and Visual Resources

The City's certified LCP requires new development to be designed to protect scenic ocean views and to be consistent with the character of the surrounding area. The proposed project involves construction of new enclosed building area on the seaward side of the existing hotel. The new spa structure will not result in an adverse visual impact from the ocean or park, nor will the project obstruct existing public views of the ocean. As such, the proposed project will not adversely affect existing public coastal views. Additionally, the new development is designed to continue the architectural theme of the Ritz Carlton hotel and will not adversely affect the surrounding environment.

As proposed by the applicant, the proposed project will meet the scenic and visual resource protection policies of the City's LCP. Therefore, the Commission finds the proposed project consistent with the certified LCP.

G. Water Quality

The City of Dana Point LCP requires new development to meet specific water quality standards. As new development may potentially impact water quality through construction activities and post-construction stormwater runoff, the Commission must ensure that appropriate measures are taken to maintain and enhance water quality to the maximum extent feasible, consistent with the certified LCP.

The proposed project involves new construction on a blufftop property between the first public road and the sea. The applicant proposes to construct a new fitness center in the footprint of an existing terrace. In this instance, the project will conform with the City of Dana Point's extensive local water quality provisions concerning stormwater and urban runoff pollution controls.

As proposed by the applicant, the proposed expansion project will meet the water quality standards of the City's LCP. Therefore, the Commission finds the proposed project consistent with the certified LCP.

H. California Environmental Quality Act (CEQA)

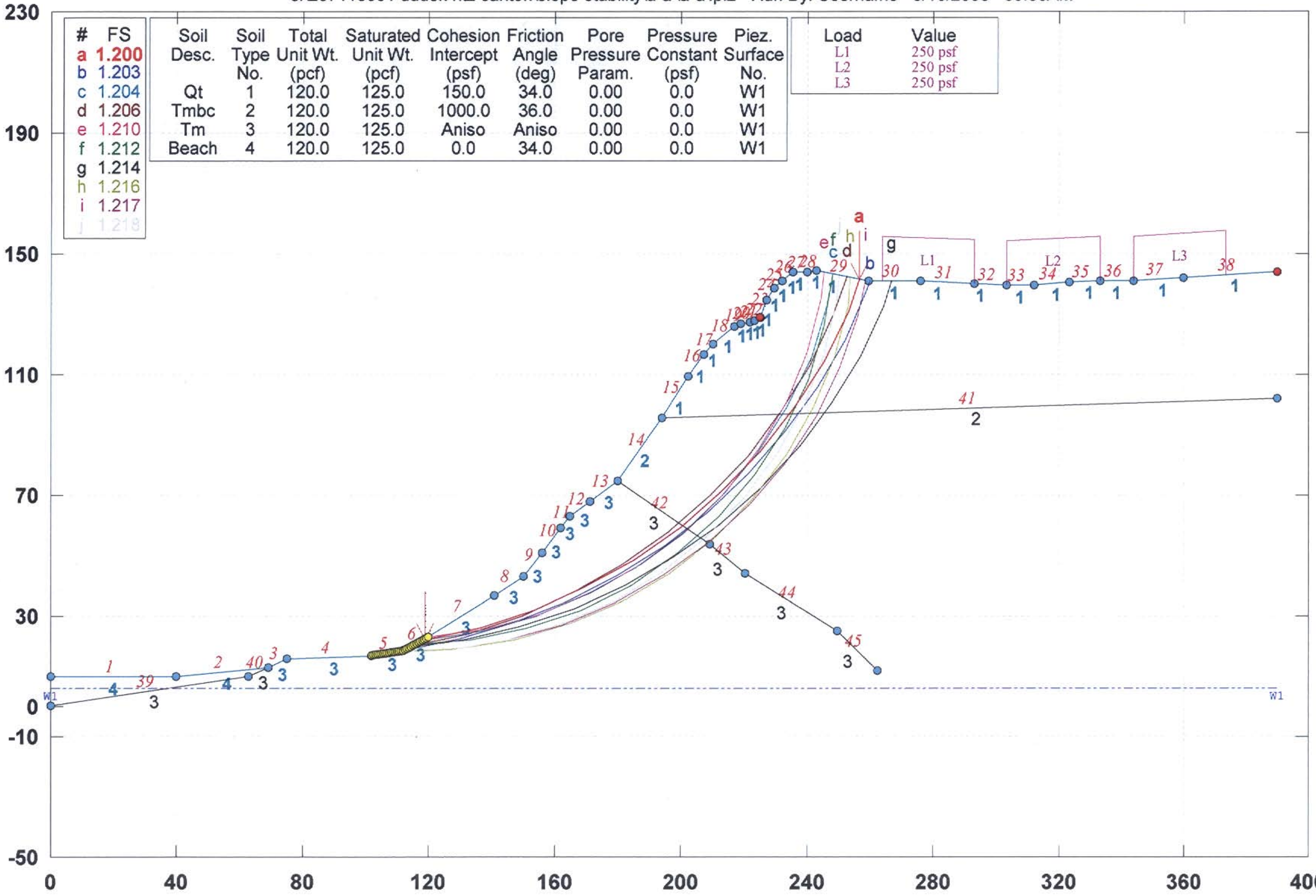
Section 13096(a) of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California 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.

ATTACHMENT E

RESULTS OF SLOPE STABILITY ANALYSES

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a'.pl2 Run By: Username 3/10/2008 09:38AM



#	FS
a	1.200
b	1.203
c	1.204
d	1.206
e	1.210
f	1.212
g	1.214
h	1.216
i	1.217
j	1.218

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qt	1	120.0	125.0	150.0	34.0	0.00	0.0	W1
Tmbc	2	120.0	125.0	1000.0	36.0	0.00	0.0	W1
Tm	3	120.0	125.0	Aniso	Aniso	0.00	0.0	W1
Beach	4	120.0	125.0	0.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	250 psf
L3	250 psf

GSTABL7 v.2 FSmin=1.200

Safety Factors Are Calculated By The Modified Bishop Method

```
                              ***  GSTABL7  ***
                    ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **
               (All Rights Reserved-Unauthorized Use Prohibited)
*********************************************************************************
                    SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*********************************************************************************
Analysis Run Date:         3/10/2008
Time of Run:               09:38AM
Run By:                    Username
Input Data Filename:       c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.in
Output Filename:           c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.OU
T
Unit System:               English
Plotted Output Filename:   c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.PL
T
PROBLEM DESCRIPTION:  Dudek/Ritz Carlton (A-A')
                      207118001
BOUNDARY COORDINATES
   38 Top   Boundaries
```

45 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	259.50	141.00	1
30	259.50	141.00	276.00	141.00	1
31	276.00	141.00	293.00	140.00	1
32	293.00	140.00	303.00	139.50	1
33	303.00	139.50	312.00	139.50	1
34	312.00	139.50	323.00	140.50	1
35	323.00	140.50	333.00	141.00	1
36	333.00	141.00	343.50	141.25	1
37	343.50	141.25	360.00	142.00	1
38	360.00	142.00	390.00	144.00	1
39	0.00	0.00	63.00	10.00	3
40	63.00	10.00	69.00	13.00	3
41	194.00	96.00	390.00	102.00	2
42	180.00	75.00	209.00	54.00	3
43	209.00	54.00	220.50	44.00	3
44	220.50	44.00	249.50	25.00	3
45	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 3 Is Anisotropic

Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)

1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)
3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.
Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
EARTHQUAKE DATA HAS BEEN SUPPRESSED

TIEBACK LOAD(S)
1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.64	200000.0	7.5	25.00	28.0	2

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks Assuming A Uniform Distribution Of Load Horizontally Between Individual Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces. Force Method 2 Considers Both Tangential and Normal Tieback Forces. Force Method 3 Considers Only Normal Tieback Forces. Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.
TIEBACK ANCHOR LOAD DATA HAS BEEN SUPPRESSED

PIER/PILE LOAD(S)
1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.64	200000.0	7.5	90.00	68.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.
PIER/PILE LOAD DATA HAS BEEN SUPPRESSED
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.
1200 Trial Surfaces Have Been Generated.
40 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced
Along The Ground Surface Between X = 102.00(ft)
and X = 120.00(ft)
Each Surface Terminates Between X = 225.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
18.00(ft) Line Segments Define Each Trial Failure Surface.

Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1200
Number of Trial Surfaces With Valid FS = 1200
Statistical Data On All Valid FS Values:
FS Max = 2.385 FS Min = 1.200 FS Ave = 1.732
Standard Deviation = 0.278 Coefficient of Variation = 16.06 %
Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	118.759	22.302
2	136.310	26.293
3	153.367	32.043
4	169.754	39.492
5	185.301	48.562
6	199.850	59.162
7	213.249	71.180
8	225.362	84.495
9	236.063	98.969
10	245.242	114.452
11	252.806	130.786
12	256.545	141.627

Circle Center At X = 88.542 ; Y = 196.407 ; and Radius = 176.708
Factor of Safety
*** 1.200 ***
Individual data on the 36 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	1.2	31.0	0.0	0.0	0.	0.	0.0	0.0	0.0
2	16.3	7825.2	0.0	0.0	0.	0.	0.0	0.0	0.0
3	4.7	4700.6	0.0	0.0	0.	0.	0.0	0.0	0.0
4	9.0	11457.6	0.0	0.0	0.	0.	0.0	0.0	0.0
5	3.4	5564.1	0.0	0.0	0.	0.	0.0	0.0	0.0
6	2.6	5245.2	0.0	0.0	0.	0.	0.0	0.0	0.0
7	6.0	14685.5	0.0	0.0	0.	0.	0.0	0.0	0.0
8	3.0	8766.4	0.0	0.0	0.	0.	0.0	0.0	0.0
9	4.8	15157.4	0.0	0.0	0.	0.	0.0	0.0	0.0
10	1.2	4130.6	0.0	0.0	0.	0.	0.0	0.0	0.0
11	9.0	30948.5	0.0	0.0	0.	0.	0.0	0.0	0.0
12	5.3	20332.5	0.0	0.0	0.	0.	0.0	0.0	0.0
13	8.7	39399.3	0.0	0.0	0.	0.	0.0	0.0	0.0
14	5.8	30616.8	0.0	0.0	0.	0.	0.0	0.0	0.0
15	0.9	5034.4	0.0	0.0	0.	0.	0.0	0.0	0.0
16	1.7	9927.0	0.0	0.0	0.	0.	0.0	0.0	0.0
17	4.5	26699.3	0.0	0.0	0.	0.	0.0	0.0	0.0
18	3.0	18478.6	0.0	0.0	0.	0.	0.0	0.0	0.0
19	3.2	20146.6	0.0	0.0	0.	0.	0.0	0.0	0.0
20	3.8	23022.2	0.0	0.0	0.	0.	0.0	0.0	0.0
21	2.0	12023.3	0.0	0.0	0.	0.	0.0	0.0	0.0
22	3.0	17315.7	0.0	0.0	0.	0.	0.0	0.0	0.0
23	1.5	8302.6	0.0	0.0	0.	0.	0.0	0.0	0.0
24	1.5	8140.8	0.0	0.0	0.	0.	0.0	0.0	0.0
25	0.4	1964.9	0.0	0.0	0.	0.	0.0	0.0	0.0
26	1.6	9227.1	0.0	0.0	0.	0.	0.0	0.0	0.0
27	2.5	14504.5	0.0	0.0	0.	0.	0.0	0.0	0.0
28	2.5	14390.1	0.0	0.0	0.	0.	0.0	0.0	0.0
29	2.8	15686.5	0.0	0.0	0.	0.	0.0	0.0	0.0
30	0.7	3910.5	0.0	0.0	0.	0.	0.0	0.0	0.0
31	0.6	3067.9	0.0	0.0	0.	0.	0.0	0.0	0.0
32	3.9	19705.9	0.0	0.0	0.	0.	0.0	0.0	0.0
33	3.0	12999.6	0.0	0.0	0.	0.	0.0	0.0	0.0
34	2.2	8530.2	0.0	0.0	0.	0.	0.0	0.0	0.0
35	7.6	18698.8	0.0	0.0	0.	0.	0.0	0.0	0.0

```
36      3.7    2609.9     0.0      0.0       0.      0.      0.0      0.0      0.0
        Failure Surface Specified By 13 Coordinate Points
          Point       X-Surf       Y-Surf
           No.         (ft)         (ft)
            1        112.552       18.810
            2        130.167       22.511
            3        147.350       27.872
            4        163.944       34.847
            5        179.798       43.371
            6        194.768       53.366
            7        208.717       64.742
            8        221.519       77.396
            9        233.057       91.212
           10        243.226      106.064
           11        251.934      121.817
           12        259.102      138.328
           13        259.970      141.000
        Circle Center At X =    82.609 ; Y =   205.132 ; and Radius =   188.712
               Factor of Safety
             ***    1.203   ***
        Failure Surface Specified By 12 Coordinate Points
          Point       X-Surf       Y-Surf
           No.         (ft)         (ft)
            1        118.759       22.302
            2        136.536       25.123
            3        153.830       30.115
            4        170.377       37.201
            5        185.923       46.273
            6        200.233       57.193
            7        213.087       69.794
            8        224.289       83.883
            9        233.669       99.246
           10        241.082      115.648
           11        246.417      132.839
           12        248.305      143.375
        Circle Center At X =   105.105 ; Y =   166.754 ; and Radius =   145.096
               Factor of Safety
             ***    1.204   ***
        Failure Surface Specified By 12 Coordinate Points
          Point       X-Surf       Y-Surf
           No.         (ft)         (ft)
            1        115.034       20.207
            2        132.559       24.317
            3        149.576       30.185
            4        165.909       37.750
            5        181.389       46.934
            6        195.857       57.643
            7        209.163       69.765
            8        221.170       83.176
            9        231.753       97.736
           10        240.803      113.295
           11        248.227      129.693
           12        252.514      142.482
        Circle Center At X =    83.661 ; Y =   193.906 ; and Radius =   176.509
               Factor of Safety
             ***    1.206   ***
        Failure Surface Specified By 12 Coordinate Points
          Point       X-Surf       Y-Surf
           No.         (ft)         (ft)
            1        120.000       23.000
            2        137.812       25.595
            3        155.133       30.493
            4        171.666       37.610
            5        187.128       46.825
            6        201.255       57.980
            7        213.805       70.884
            8        224.563       85.315
```

9	233.345	101.028
10	240.000	117.752
11	244.415	135.202
12	245.446	143.981

Circle Center At X = 109.375 ; Y = 159.545 ; and Radius = 136.958

Factor of Safety

*** 1.210 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.655	20.556
2	133.596	22.008
3	151.185	25.836
4	168.107	31.972
5	184.061	40.307
6	198.763	50.691
7	211.952	62.941
8	223.392	76.838
9	232.880	92.134
10	240.246	108.558
11	245.361	125.816
12	248.103	143.418

Circle Center At X = 113.777 ; Y = 155.402 ; and Radius = 134.859

Factor of Safety

*** 1.212 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	113.793	19.509
2	131.611	22.062
3	149.083	26.392
4	166.030	32.456
5	182.283	40.191
6	197.677	49.521
7	212.055	60.350
8	225.272	72.569
9	237.195	86.054
10	247.703	100.669
11	256.689	116.265
12	264.062	132.686
13	266.831	141.000

Circle Center At X = 97.356 ; Y = 197.680 ; and Radius = 178.928

Factor of Safety

*** 1.214 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	111.931	18.490
2	129.919	19.161
3	147.669	22.149
4	164.885	27.403
5	181.278	34.837
6	196.575	44.324
7	210.518	55.708
8	222.875	68.796
9	233.439	83.370
10	242.033	99.186
11	248.513	115.979
12	252.771	133.468
13	253.732	142.224

Circle Center At X = 115.748 ; Y = 157.562 ; and Radius = 139.125

Factor of Safety

*** 1.216 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	109.448	18.117

2	127.428	18.980
3	145.173	21.998
4	162.426	27.128
5	178.937	34.296
6	194.467	43.398
7	208.789	54.301
8	221.696	66.847
9	233.000	80.855
10	242.538	96.120
11	250.171	112.422
12	255.788	129.523
13	258.134	141.290

Circle Center At X = 111.293 ; Y = 167.511 ; and Radius = 149.405

Factor of Safety

*** 1.217 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	109.448	18.117
2	127.432	18.884
3	145.165	21.974
4	162.347	27.337
5	178.690	34.881
6	193.918	44.479
7	207.773	55.970
8	220.022	69.159
9	230.459	83.824
10	238.908	99.718
11	245.225	116.573
12	249.305	134.105
13	250.184	142.976

Circle Center At X = 112.549 ; Y = 156.691 ; and Radius = 138.609

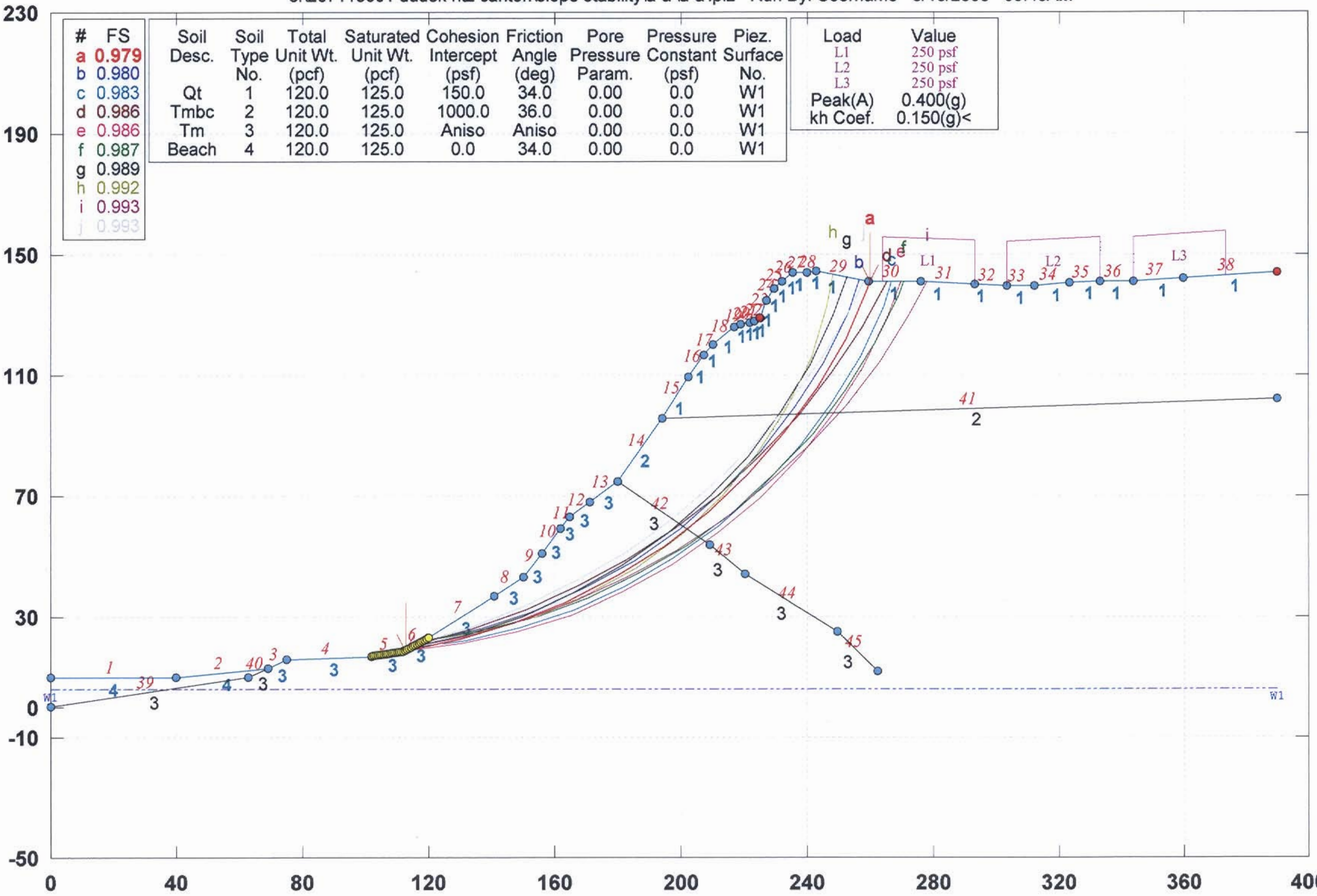
Factor of Safety

*** 1.218 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a'.pl2 Run By: Username 3/10/2008 09:40AM



GSTABL7 v.2 FSmin=0.979

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** **GSTABL7** ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 3/10/2008
Time of Run: 09:40AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.PL
T
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (A-A')
207118001

BOUNDARY COORDINATES
38 Top Boundaries
45 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	259.50	141.00	1
30	259.50	141.00	276.00	141.00	1
31	276.00	141.00	293.00	140.00	1
32	293.00	140.00	303.00	139.50	1
33	303.00	139.50	312.00	139.50	1
34	312.00	139.50	323.00	140.50	1
35	323.00	140.50	333.00	141.00	1
36	333.00	141.00	343.50	141.25	1
37	343.50	141.25	360.00	142.00	1
38	360.00	142.00	390.00	144.00	1

39	0.00	0.00	63.00	10.00	3
40	63.00	10.00	69.00	13.00	3
41	194.00	96.00	390.00	102.00	2
42	180.00	75.00	209.00	54.00	3
43	209.00	54.00	220.50	44.00	3
44	220.50	44.00	249.50	25.00	3
45	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)
3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

TIEBACK LOAD(S)
1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.64	200000.0	7.5	25.00	28.0	2

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks Assuming A Uniform Distribution Of Load Horizontally Between Individual Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces. Force Method 2 Considers Both Tangential and Normal Tieback Forces.

Force Method 3 Considers Only Normal Tieback Forces.
Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.
TIEBACK ANCHOR LOAD DATA HAS BEEN SUPPRESSED
PIER/PILE LOAD(S)
1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.64	200000.0	7.5	90.00	68.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.
PIER/PILE LOAD DATA HAS BEEN SUPPRESSED
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.
1200 Trial Surfaces Have Been Generated.
40 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced
Along The Ground Surface Between X = 102.00(ft)
and X = 120.00(ft)
Each Surface Terminates Between X = 225.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
18.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1200
Number of Trial Surfaces With Valid FS = 1200
Statistical Data On All Valid FS Values:
FS Max = 1.771 FS Min = 0.979 FS Ave = 1.328
Standard Deviation = 0.183 Coefficient of Variation = 13.74 %
Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	112.552	18.810
2	130.167	22.511
3	147.350	27.872
4	163.944	34.847
5	179.798	43.371
6	194.768	53.366
7	208.717	64.742
8	221.519	77.396
9	233.057	91.212
10	243.226	106.064
11	251.934	121.817
12	259.102	138.328
13	259.970	141.000

Circle Center At X = 82.609 ; Y = 205.132 ; and Radius = 188.712
Factor of Safety
*** 0.979 ***
Individual data on the 38 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.4	1173.1	0.0	0.0	0.	0.	176.0	0.0	0.0
2	10.2	6034.8	0.0	0.0	0.	0.	905.2	0.0	0.0
3	10.8	11944.1	0.0	0.0	0.	0.	1791.6	0.0	0.0
4	6.4	9323.3	0.0	0.0	0.	0.	1398.5	0.0	0.0
5	2.6	4352.3	0.0	0.0	0.	0.	652.9	0.0	0.0
6	6.0	12062.1	0.0	0.0	0.	0.	1809.3	0.0	0.0
7	6.0	16006.3	0.0	0.0	0.	0.	2400.9	0.0	0.0
8	1.9	6032.1	0.0	0.0	0.	0.	904.8	0.0	0.0
9	1.1	3442.4	0.0	0.0	0.	0.	516.4	0.0	0.0

10	6.0	20500.1	0.0	0.0	0.	0.	3075.0	0.0	0.0
11	8.8	32111.3	0.0	0.0	0.	0.	4816.7	0.0	0.0
12	0.2	763.6	0.0	0.0	0.	0.	114.5	0.0	0.0
13	14.0	62698.1	0.0	0.0	0.	0.	9404.7	0.0	0.0
14	0.8	4006.6	0.0	0.0	0.	0.	601.0	0.0	0.0
15	7.1	39731.6	0.0	0.0	0.	0.	5959.7	0.0	0.0
16	0.6	3731.2	0.0	0.0	0.	0.	559.7	0.0	0.0
17	4.5	27806.0	0.0	0.0	0.	0.	4170.9	0.0	0.0
18	1.7	11013.4	0.0	0.0	0.	0.	1652.0	0.0	0.0
19	1.3	8295.9	0.0	0.0	0.	0.	1244.4	0.0	0.0
20	7.0	44965.1	0.0	0.0	0.	0.	6744.8	0.0	0.0
21	2.0	12619.7	0.0	0.0	0.	0.	1893.0	0.0	0.0
22	2.5	15432.3	0.0	0.0	0.	0.	2314.8	0.0	0.0
23	0.5	2874.7	0.0	0.0	0.	0.	431.2	0.0	0.0
24	1.5	8798.4	0.0	0.0	0.	0.	1319.8	0.0	0.0
25	1.5	8610.1	0.0	0.0	0.	0.	1291.5	0.0	0.0
26	2.0	11817.2	0.0	0.0	0.	0.	1772.6	0.0	0.0
27	2.5	15388.2	0.0	0.0	0.	0.	2308.2	0.0	0.0
28	2.5	15390.2	0.0	0.0	0.	0.	2308.5	0.0	0.0
29	1.1	6452.0	0.0	0.0	0.	0.	967.8	0.0	0.0
30	2.4	14646.4	0.0	0.0	0.	0.	2197.0	0.0	0.0
31	1.7	10022.7	0.0	0.0	0.	0.	1503.4	0.0	0.0
32	2.8	14781.8	0.0	0.0	0.	0.	2217.3	0.0	0.0
33	3.0	14654.7	0.0	0.0	0.	0.	2198.2	0.0	0.0
34	0.2	1047.2	0.0	0.0	0.	0.	157.1	0.0	0.0
35	8.7	30918.6	0.0	0.0	0.	0.	4637.8	0.0	0.0
36	7.2	10125.1	0.0	0.0	0.	0.	1518.8	0.0	0.0
37	0.4	100.4	0.0	0.0	0.	0.	15.1	0.0	0.0
38	0.5	40.8	0.0	0.0	0.	0.	6.1	0.0	0.0

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	118.759	22.302
2	136.310	26.293
3	153.367	32.043
4	169.754	39.492
5	185.301	48.562
6	199.850	59.162
7	213.249	71.180
8	225.362	84.495
9	236.063	98.969
10	245.242	114.452
11	252.806	130.786
12	256.545	141.627

Circle Center At X = 88.542 ; Y = 196.407 ; and Radius = 176.708

Factor of Safety

*** 0.980 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	113.793	19.509
2	131.611	22.062
3	149.083	26.392
4	166.030	32.456
5	182.283	40.191
6	197.677	49.521
7	212.055	60.350
8	225.272	72.569
9	237.195	86.054
10	247.703	100.669
11	256.689	116.265
12	264.062	132.686
13	266.831	141.000

Circle Center At X = 97.356 ; Y = 197.680 ; and Radius = 178.928

Factor of Safety

*** 0.983 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	116.897	21.254
2	134.228	26.115
3	151.105	32.374
4	167.414	39.989
5	183.048	48.911
6	197.901	59.079
7	211.874	70.425
8	224.875	82.874
9	236.816	96.343
10	247.618	110.742
11	257.208	125.974
12	265.034	141.000

Circle Center At X = 66.201 ; Y = 235.473 ; and Radius = 220.136
Factor of Safety
*** 0.986 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	112.552	18.810
2	130.420	20.987
3	147.978	24.948
4	165.051	30.652
5	181.463	38.043
6	197.050	47.045
7	211.654	57.568
8	225.127	69.505
9	237.333	82.734
10	248.147	97.123
11	257.462	112.526
12	265.181	128.787
13	269.538	141.000

Circle Center At X = 99.875 ; Y = 197.305 ; and Radius = 178.944
Factor of Safety
*** 0.986 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	118.759	22.302
2	136.502	25.332
3	153.870	30.057
4	170.704	36.432
5	186.845	44.398
6	202.145	53.880
7	216.460	64.792
8	229.659	77.031
9	241.618	90.484
10	252.227	105.026
11	261.386	120.521
12	269.011	136.826
13	270.492	141.000

Circle Center At X = 96.223 ; Y = 207.693 ; and Radius = 186.756
Factor of Safety
*** 0.987 ***

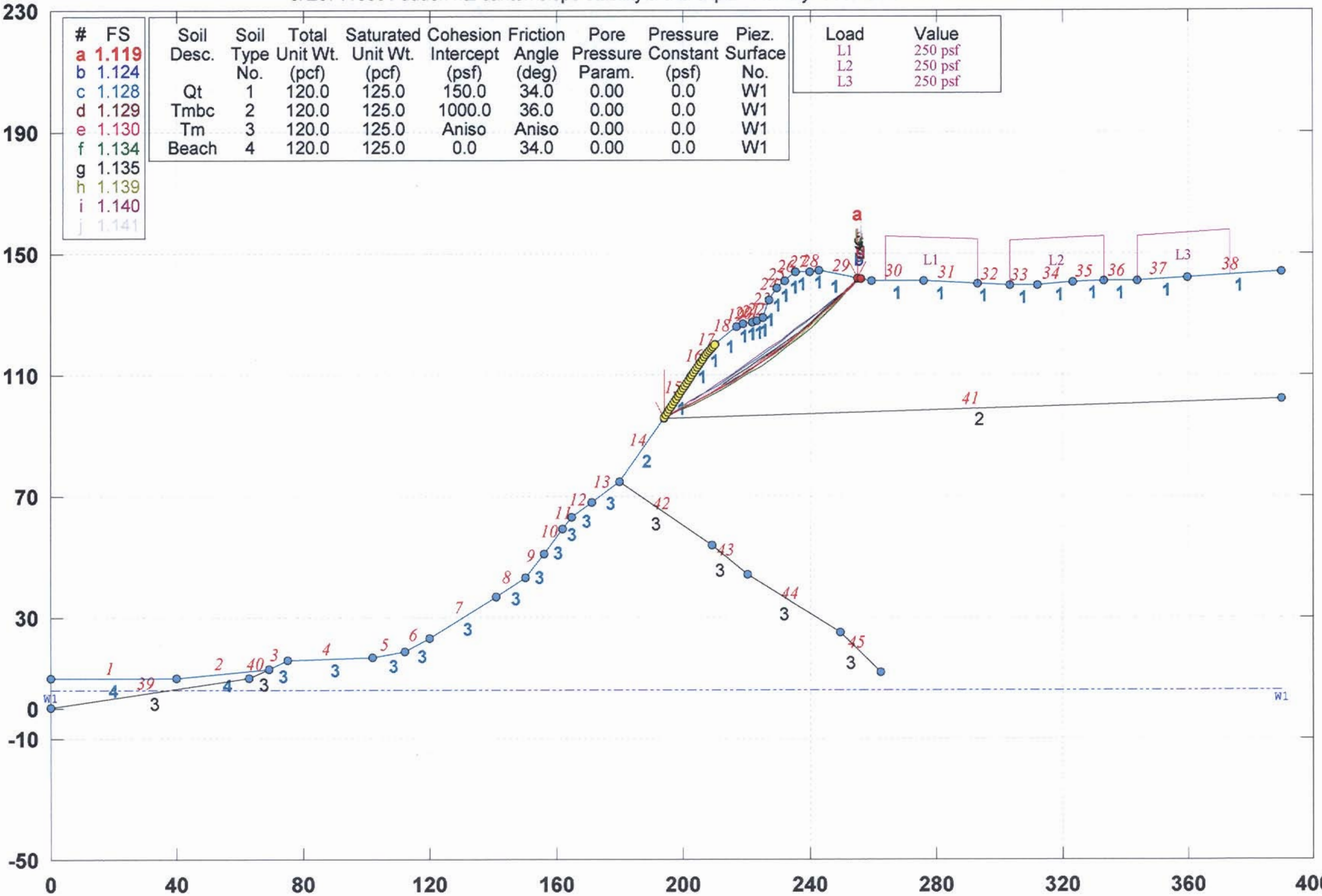
Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.034	20.207
2	132.559	24.317
3	149.576	30.185
4	165.909	37.750
5	181.389	46.934
6	195.857	57.643
7	209.163	69.765
8	221.170	83.176
9	231.753	97.736

```
   10        240.803      113.295
   11        248.227      129.693
   12        252.514      142.482
Circle Center At X =    83.661 ; Y =   193.906 ; and Radius =   176.509
       Factor of Safety
      ***    0.989    ***
Failure Surface Specified By 12 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1        118.759       22.302
    2        136.536       25.123
    3        153.830       30.115
    4        170.377       37.201
    5        185.923       46.273
    6        200.233       57.193
    7        213.087       69.794
    8        224.289       83.883
    9        233.669       99.246
   10        241.082      115.648
   11        246.417      132.839
   12        248.305      143.375
Circle Center At X =   105.105 ; Y =   166.754 ; and Radius =   145.096
       Factor of Safety
      ***    0.992    ***
Failure Surface Specified By 13 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1        115.034       20.207
    2        132.679       23.766
    3        149.973       28.759
    4        166.799       35.152
    5        183.045       42.902
    6        198.602       51.957
    7        213.364       62.256
    8        227.233       73.730
    9        240.115       86.302
   10        251.924       99.887
   11        262.580      114.394
   12        272.011      129.725
   13        277.681      140.901
Circle Center At X =    80.491 ; Y =   236.978 ; and Radius =   219.507
       Factor of Safety
      ***    0.993    ***
Failure Surface Specified By 12 Coordinate Points
  Point       X-Surf       Y-Surf
   No.         (ft)         (ft)
    1        117.517       21.603
    2        134.692       26.992
    3        151.356       33.797
    4        167.393       41.970
    5        182.692       51.454
    6        197.145       62.184
    7        210.651       74.083
    8        223.115       87.069
    9        234.452      101.050
   10        244.580      115.930
   11        253.430      131.604
   12        257.899      141.340
Circle Center At X =    62.126 ; Y =   228.708 ; and Radius =   214.384
       Factor of Safety
      ***    0.993    ***
          **** END OF GSTABL7 OUTPUT ****
```

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a'.pl2 Run By: Username 3/10/2008 10:10AM



#	FS
a	1.119
b	1.124
c	1.128
d	1.129
e	1.130
f	1.134
g	1.135
h	1.139
i	1.140
j	1.141

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qt	1	120.0	125.0	150.0	34.0	0.00	0.0	W1
Tmbc	2	120.0	125.0	1000.0	36.0	0.00	0.0	W1
Tm	3	120.0	125.0	Aniso	Aniso	0.00	0.0	W1
Beach	4	120.0	125.0	0.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	250 psf
L3	250 psf

GSTABL7 v.2 FSmin=1.119

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** GSTABL7 ***
** GSTABL7 by Garry H. Gregory, P.E. **
** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****
SLOPE STABILITY ANALYSIS SYSTEM
Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
****

Analysis Run Date: 3/10/2008
Time of Run: 10:10AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.PL
T
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (A-A')
207118001

BOUNDARY COORDINATES
38 Top Boundaries
45 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	259.50	141.00	1
30	259.50	141.00	276.00	141.00	1
31	276.00	141.00	293.00	140.00	1
32	293.00	140.00	303.00	139.50	1
33	303.00	139.50	312.00	139.50	1
34	312.00	139.50	323.00	140.50	1
35	323.00	140.50	333.00	141.00	1
36	333.00	141.00	343.50	141.25	1
37	343.50	141.25	360.00	142.00	1
38	360.00	142.00	390.00	144.00	1

39	0.00	0.00	63.00	10.00	3
40	63.00	10.00	69.00	13.00	3
41	194.00	96.00	390.00	102.00	2
42	180.00	75.00	209.00	54.00	3
43	209.00	54.00	220.50	44.00	3
44	220.50	44.00	249.50	25.00	3
45	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 3 Is Anisotropic

Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)

Piezometric Surface No. 1 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)

3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

EARTHQUAKE DATA HAS BEEN SUPPRESSED

TIEBACK LOAD(S)

1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.64	200000.0	7.5	25.00	28.0	2

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks Assuming A Uniform Distribution Of Load Horizontally Between Individual Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces.

Force Method 2 Considers Both Tangential and Normal Tieback Forces.
Force Method 3 Considers Only Normal Tieback Forces.
Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.

TIEBACK ANCHOR LOAD DATA HAS BEEN SUPPRESSED

PIER/PILE LOAD(S)

1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.64	200000.0	7.5	90.00	68.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.

PIER/PILE LOAD DATA HAS BEEN SUPPRESSED

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1200 Trial Surfaces Have Been Generated.

40 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced Along The Ground Surface Between X = 194.00(ft) and X = 210.00(ft)

Each Surface Terminates Between X = 255.00(ft) and X = 256.00(ft)

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 0.00(ft)

5.00(ft) Line Segments Define Each Trial Failure Surface.

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Total Number of Trial Surfaces Attempted = 1200
Number of Trial Surfaces With Valid FS = 1200
Statistical Data On All Valid FS Values:
FS Max = 2.967 FS Min = 1.119 FS Ave = 1.753
Standard Deviation = 0.390 Coefficient of Variation = 22.22 %

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.486	98.209
3	202.913	100.533
4	207.278	102.970
5	211.579	105.520
6	215.813	108.181
7	219.976	110.950
8	224.066	113.826
9	228.080	116.806
10	232.016	119.890
11	235.871	123.074
12	239.642	126.358
13	243.327	129.737
14	246.923	133.211
15	250.428	136.777
16	253.840	140.432
17	255.159	141.921

Circle Center At X = 110.913 ; Y = 270.409 ; and Radius = 193.189

Factor of Safety
*** 1.119 ***

Individual data on the 30 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.5	1323.1	0.0	0.0	0.	0.	0.0	0.0	0.0
2	4.0	3396.0	0.0	0.0	0.	0.	0.0	0.0	0.0
3	0.4	465.5	0.0	0.0	0.	0.	0.0	0.0	0.0
4	4.1	5712.5	0.0	0.0	0.	0.	0.0	0.0	0.0

5	0.3	459.9	0.0	0.0	0.	0.	0.0	0.0	0.0
6	2.7	4779.9	0.0	0.0	0.	0.	0.0	0.0	0.0
7	1.6	2961.0	0.0	0.0	0.	0.	0.0	0.0	0.0
8	4.2	8289.6	0.0	0.0	0.	0.	0.0	0.0	0.0
9	1.2	2410.0	0.0	0.0	0.	0.	0.0	0.0	0.0
10	2.0	4047.5	0.0	0.0	0.	0.	0.0	0.0	0.0
11	1.0	1927.2	0.0	0.0	0.	0.	0.0	0.0	0.0
12	2.0	3806.0	0.0	0.0	0.	0.	0.0	0.0	0.0
13	1.5	2673.0	0.0	0.0	0.	0.	0.0	0.0	0.0
14	0.6	989.2	0.0	0.0	0.	0.	0.0	0.0	0.0
15	0.9	1626.8	0.0	0.0	0.	0.	0.0	0.0	0.0
16	2.0	4017.2	0.0	0.0	0.	0.	0.0	0.0	0.0
17	1.1	2509.0	0.0	0.0	0.	0.	0.0	0.0	0.0
18	1.4	3431.4	0.0	0.0	0.	0.	0.0	0.0	0.0
19	2.5	6255.6	0.0	0.0	0.	0.	0.0	0.0	0.0
20	0.0	41.5	0.0	0.0	0.	0.	0.0	0.0	0.0
21	3.5	8853.2	0.0	0.0	0.	0.	0.0	0.0	0.0
22	0.4	938.7	0.0	0.0	0.	0.	0.0	0.0	0.0
23	3.8	8726.5	0.0	0.0	0.	0.	0.0	0.0	0.0
24	0.4	750.5	0.0	0.0	0.	0.	0.0	0.0	0.0
25	3.0	5827.8	0.0	0.0	0.	0.	0.0	0.0	0.0
26	0.3	583.8	0.0	0.0	0.	0.	0.0	0.0	0.0
27	3.6	5426.6	0.0	0.0	0.	0.	0.0	0.0	0.0
28	3.5	3491.9	0.0	0.0	0.	0.	0.0	0.0	0.0
29	3.4	1620.3	0.0	0.0	0.	0.	0.0	0.0	0.0
30	1.3	140.0	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.471	98.239
3	202.886	100.586
4	207.242	103.039
5	211.538	105.598
6	215.770	108.261
7	219.936	111.026
8	224.033	113.892
9	228.060	116.856
10	232.013	119.918
11	235.890	123.075
12	239.689	126.325
13	243.408	129.667
14	247.045	133.098
15	250.597	136.617
16	254.062	140.222
17	255.543	141.839

Circle Center At X = 104.280 ; Y = 280.758 ; and Radius = 205.390

Factor of Safety

*** 1.124 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.276	98.591
3	202.517	101.240
4	206.722	103.945
5	210.890	106.707
6	215.021	109.524
7	219.113	112.397
8	223.167	115.324
9	227.180	118.306
10	231.154	121.341
11	235.086	124.429
12	238.977	127.570
13	242.825	130.762
14	246.629	134.007
15	250.390	137.302

16	254.106	140.647
17	255.423	141.865

Circle Center At X = 3.229 ; Y = 415.609 ; and Radius = 372.214
Factor of Safety
*** 1.128 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.427	98.324
3	202.804	100.741
4	207.128	103.251
5	211.398	105.853
6	215.612	108.544
7	219.767	111.325
8	223.863	114.194
9	227.896	117.149
10	231.866	120.189
11	235.770	123.313
12	239.606	126.519
13	243.374	129.806
14	247.071	133.172
15	250.695	136.617
16	254.246	140.137
17	255.831	141.778

Circle Center At X = 86.985 ; Y = 305.256 ; and Radius = 235.032
Factor of Safety
*** 1.129 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.429	98.320
3	202.808	100.734
4	207.135	103.240
5	211.407	105.837
6	215.623	108.525
7	219.782	111.301
8	223.880	114.166
9	227.916	117.116
10	231.889	120.152
11	235.797	123.271
12	239.637	126.473
13	243.409	129.756
14	247.110	133.118
15	250.738	136.558
16	254.293	140.074
17	255.925	141.758

Circle Center At X = 87.012 ; Y = 305.637 ; and Radius = 235.360
Factor of Safety
*** 1.130 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.565	98.040
3	203.067	100.215
4	207.503	102.522
5	211.868	104.961
6	216.158	107.528
7	220.370	110.222
8	224.501	113.041
9	228.545	115.980
10	232.500	119.039
11	236.363	122.214
12	240.129	125.503
13	243.796	128.902

```
   14        247.360      132.409
   15        250.818      136.021
   16        254.167      139.733
   17        255.893      141.765
Circle Center At X =   127.746 ; Y =   250.404 ; and Radius =   168.019
       Factor of Safety
      ***    1.134   ***
Failure Surface Specified By 17 Coordinate Points
  Point      X-Surf       Y-Surf
   No.        (ft)         (ft)
    1        194.552       96.876
    2        198.988       99.183
    3        203.372      101.588
    4        207.701      104.088
    5        211.975      106.683
    6        216.191      109.372
    7        220.346      112.153
    8        224.439      115.025
    9        228.468      117.986
   10        232.430      121.036
   11        236.324      124.172
   12        240.149      127.393
   13        243.901      130.698
   14        247.579      134.084
   15        251.182      137.551
   16        254.708      141.096
   17        255.437      141.862
Circle Center At X =    92.091 ; Y =   299.292 ; and Radius =   226.870
       Factor of Safety
      ***    1.135   ***
Failure Surface Specified By 17 Coordinate Points
  Point      X-Surf       Y-Surf
   No.        (ft)         (ft)
    1        194.552       96.876
    2        199.106       98.940
    3        203.597      101.137
    4        208.022      103.465
    5        212.377      105.923
    6        216.657      108.507
    7        220.859      111.217
    8        224.980      114.049
    9        229.015      117.001
   10        232.962      120.071
   11        236.817      123.255
   12        240.576      126.552
   13        244.237      129.957
   14        247.796      133.469
   15        251.249      137.085
   16        254.595      140.800
   17        255.487      141.851
Circle Center At X =   126.739 ; Y =   252.577 ; and Radius =   169.827
       Factor of Safety
      ***    1.139   ***
Failure Surface Specified By 17 Coordinate Points
  Point      X-Surf       Y-Surf
   No.        (ft)         (ft)
    1        194.000       96.000
    2        198.200       98.713
    3        202.375      101.463
    4        206.526      104.251
    5        210.652      107.075
    6        214.753      109.937
    7        218.828      112.834
    8        222.876      115.768
    9        226.899      118.738
   10        230.895      121.743
   11        234.864      124.784
```

12	238.805	127.860
13	242.719	130.972
14	246.606	134.118
15	250.464	137.298
16	254.293	140.513
17	255.785	141.788

Circle Center At X = -108.194 ; Y = 568.414 ; and Radius = 560.800
Factor of Safety
*** 1.140 ***

Failure Surface Specified By 17 Coordinate Points

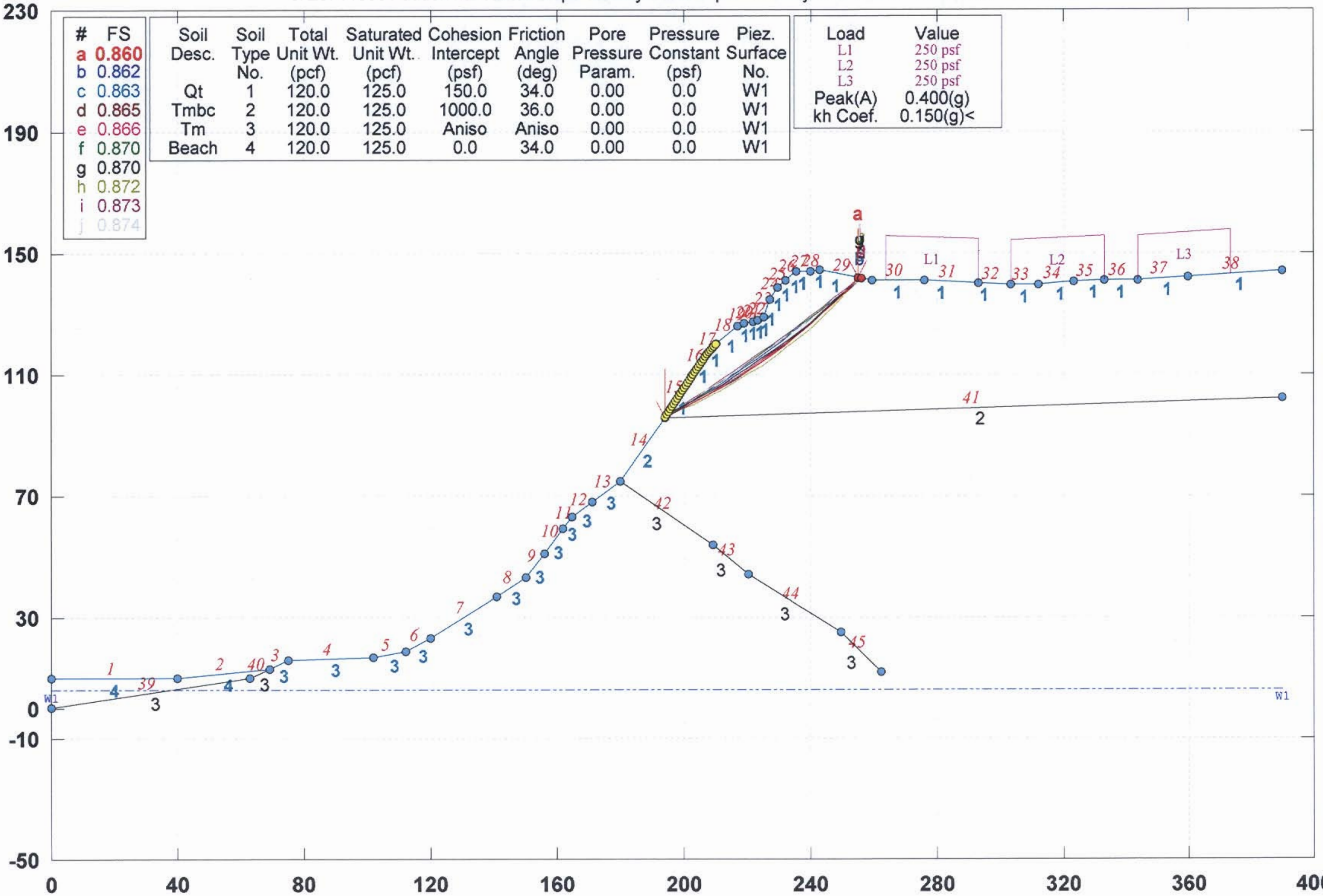
Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.552	96.876
2	199.019	99.122
3	203.433	101.472
4	207.790	103.924
5	212.089	106.478
6	216.326	109.131
7	220.501	111.883
8	224.610	114.732
9	228.651	117.677
10	232.622	120.715
11	236.520	123.846
12	240.345	127.067
13	244.093	130.376
14	247.762	133.773
15	251.351	137.254
16	254.857	140.818
17	255.770	141.791

Circle Center At X = 100.887 ; Y = 288.772 ; and Radius = 213.535
Factor of Safety
*** 1.141 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a'.pl2 Run By: Username 3/10/2008 10:14AM



#	FS
a	0.860
b	0.862
c	0.863
d	0.865
e	0.866
f	0.870
g	0.870
h	0.872
i	0.873
j	0.874

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qt	1	120.0	125.0	150.0	34.0	0.00	0.0	W1
Tmbc	2	120.0	125.0	1000.0	36.0	0.00	0.0	W1
Tm	3	120.0	125.0	Aniso	Aniso	0.00	0.0	W1
Beach	4	120.0	125.0	0.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	250 psf
L3	250 psf
Peak(A)	0.400(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=0.860

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** **GSTABL7** ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 3/10/2008
Time of Run: 10:12AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a'.PL
T
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (A-A')
207118001

BOUNDARY COORDINATES
38 Top Boundaries
45 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	259.50	141.00	1
30	259.50	141.00	276.00	141.00	1
31	276.00	141.00	293.00	140.00	1
32	293.00	140.00	303.00	139.50	1
33	303.00	139.50	312.00	139.50	1
34	312.00	139.50	323.00	140.50	1
35	323.00	140.50	333.00	141.00	1
36	333.00	141.00	343.50	141.25	1
37	343.50	141.25	360.00	142.00	1
38	360.00	142.00	390.00	144.00	1

39	0.00	0.00	63.00	10.00	3
40	63.00	10.00	69.00	13.00	3
41	194.00	96.00	390.00	102.00	2
42	180.00	75.00	209.00	54.00	3
43	209.00	54.00	220.50	44.00	3
44	220.50	44.00	249.50	25.00	3
45	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)

3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

TIEBACK LOAD(S)

1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.64	200000.0	7.5	25.00	28.0	2

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks Assuming A Uniform Distribution Of Load Horizontally Between Individual Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces. Force Method 2 Considers Both Tangential and Normal Tieback Forces.

Force Method 3 Considers Only Normal Tieback Forces.
Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.

TIEBACK ANCHOR LOAD DATA HAS BEEN SUPPRESSED

PIER/PILE LOAD(S)

1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.64	200000.0	7.5	90.00	68.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.

PIER/PILE LOAD DATA HAS BEEN SUPPRESSED

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1200 Trial Surfaces Have Been Generated.

40 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced
Along The Ground Surface Between X = 194.00(ft)
and X = 210.00(ft)
Each Surface Terminates Between X = 255.00(ft)
and X = 256.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)

5.00(ft) Line Segments Define Each Trial Failure Surface.

Following Are Displayed The Ten Most Critical Of The Trial Failure Surfaces Evaluated. They Are Ordered - Most Critical First.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Total Number of Trial Surfaces Attempted = 1200
Number of Trial Surfaces With Valid FS = 1200
Statistical Data On All Valid FS Values:
FS Max = 2.331 FS Min = 0.860 FS Ave = 1.367
Standard Deviation = 0.315 Coefficient of Variation = 23.03 %

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.486	98.209
3	202.913	100.533
4	207.278	102.970
5	211.579	105.520
6	215.813	108.181
7	219.976	110.950
8	224.066	113.826
9	228.080	116.806
10	232.016	119.890
11	235.871	123.074
12	239.642	126.358
13	243.327	129.737
14	246.923	133.211
15	250.428	136.777
16	253.840	140.432
17	255.159	141.921

Circle Center At X = 110.913 ; Y = 270.409 ; and Radius = 193.189

Factor of Safety
*** 0.860 ***

Individual data on the 30 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.5	1323.1	0.0	0.0	0.	0.	198.5	0.0	0.0
2	4.0	3396.0	0.0	0.0	0.	0.	509.4	0.0	0.0
3	0.4	465.5	0.0	0.0	0.	0.	69.8	0.0	0.0
4	4.1	5712.5	0.0	0.0	0.	0.	856.9	0.0	0.0
5	0.3	459.9	0.0	0.0	0.	0.	69.0	0.0	0.0

6	2.7	4779.9	0.0	0.0	0.	0.	717.0	0.0	0.0
7	1.6	2961.0	0.0	0.0	0.	0.	444.1	0.0	0.0
8	4.2	8289.6	0.0	0.0	0.	0.	1243.4	0.0	0.0
9	1.2	2410.0	0.0	0.0	0.	0.	361.5	0.0	0.0
10	2.0	4047.5	0.0	0.0	0.	0.	607.1	0.0	0.0
11	1.0	1927.2	0.0	0.0	0.	0.	289.1	0.0	0.0
12	2.0	3806.0	0.0	0.0	0.	0.	570.9	0.0	0.0
13	1.5	2673.0	0.0	0.0	0.	0.	400.9	0.0	0.0
14	0.6	989.2	0.0	0.0	0.	0.	148.4	0.0	0.0
15	0.9	1626.8	0.0	0.0	0.	0.	244.0	0.0	0.0
16	2.0	4017.2	0.0	0.0	0.	0.	602.6	0.0	0.0
17	1.1	2509.0	0.0	0.0	0.	0.	376.4	0.0	0.0
18	1.4	3431.4	0.0	0.0	0.	0.	514.7	0.0	0.0
19	2.5	6255.6	0.0	0.0	0.	0.	938.3	0.0	0.0
20	0.0	41.5	0.0	0.0	0.	0.	6.2	0.0	0.0
21	3.5	8853.2	0.0	0.0	0.	0.	1328.0	0.0	0.0
22	0.4	938.7	0.0	0.0	0.	0.	140.8	0.0	0.0
23	3.8	8726.5	0.0	0.0	0.	0.	1309.0	0.0	0.0
24	0.4	750.5	0.0	0.0	0.	0.	112.6	0.0	0.0
25	3.0	5827.8	0.0	0.0	0.	0.	874.2	0.0	0.0
26	0.3	583.8	0.0	0.0	0.	0.	87.6	0.0	0.0
27	3.6	5426.6	0.0	0.0	0.	0.	814.0	0.0	0.0
28	3.5	3491.9	0.0	0.0	0.	0.	523.8	0.0	0.0
29	3.4	1620.3	0.0	0.0	0.	0.	243.0	0.0	0.0
30	1.3	140.0	0.0	0.0	0.	0.	21.0	0.0	0.0

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.276	98.591
3	202.517	101.240
4	206.722	103.945
5	210.890	106.707
6	215.021	109.524
7	219.113	112.397
8	223.167	115.324
9	227.180	118.306
10	231.154	121.341
11	235.086	124.429
12	238.977	127.570
13	242.825	130.762
14	246.629	134.007
15	250.390	137.302
16	254.106	140.647
17	255.423	141.865

Circle Center At X = 3.229 ; Y = 415.609 ; and Radius = 372.214

Factor of Safety

*** 0.862 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.471	98.239
3	202.886	100.586
4	207.242	103.039
5	211.538	105.598
6	215.770	108.261
7	219.936	111.026
8	224.033	113.892
9	228.060	116.856
10	232.013	119.918
11	235.890	123.075
12	239.689	126.325
13	243.408	129.667
14	247.045	133.098
15	250.597	136.617
16	254.062	140.222

17	255.543	141.839

Circle Center At X = 104.280 ; Y = 280.758 ; and Radius = 205.390

Factor of Safety

*** 0.863 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.427	98.324
3	202.804	100.741
4	207.128	103.251
5	211.398	105.853
6	215.612	108.544
7	219.767	111.325
8	223.863	114.194
9	227.896	117.149
10	231.866	120.189
11	235.770	123.313
12	239.606	126.519
13	243.374	129.806
14	247.071	133.172
15	250.695	136.617
16	254.246	140.137
17	255.831	141.778

Circle Center At X = 86.985 ; Y = 305.256 ; and Radius = 235.032

Factor of Safety

*** 0.865 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.429	98.320
3	202.808	100.734
4	207.135	103.240
5	211.407	105.837
6	215.623	108.525
7	219.782	111.301
8	223.880	114.166
9	227.916	117.116
10	231.889	120.152
11	235.797	123.271
12	239.637	126.473
13	243.409	129.756
14	247.110	133.118
15	250.738	136.558
16	254.293	140.074
17	255.925	141.758

Circle Center At X = 87.012 ; Y = 305.637 ; and Radius = 235.360

Factor of Safety

*** 0.866 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.200	98.713
3	202.375	101.463
4	206.526	104.251
5	210.652	107.075
6	214.753	109.937
7	218.828	112.834
8	222.876	115.768
9	226.899	118.738
10	230.895	121.743
11	234.864	124.784
12	238.805	127.860
13	242.719	130.972
14	246.606	134.118

15	250.464	137.298
16	254.293	140.513
17	255.785	141.788

Circle Center At X = -108.194 ; Y = 568.414 ; and Radius = 560.800

Factor of Safety

*** 0.870 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.552	96.876
2	198.988	99.183
3	203.372	101.588
4	207.701	104.088
5	211.975	106.683
6	216.191	109.372
7	220.346	112.153
8	224.439	115.025
9	228.468	117.986
10	232.430	121.036
11	236.324	124.172
12	240.149	127.393
13	243.901	130.698
14	247.579	134.084
15	251.182	137.551
16	254.708	141.096
17	255.437	141.862

Circle Center At X = 92.091 ; Y = 299.292 ; and Radius = 226.870

Factor of Safety

*** 0.870 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.000	96.000
2	198.565	98.040
3	203.067	100.215
4	207.503	102.522
5	211.868	104.961
6	216.158	107.528
7	220.370	110.222
8	224.501	113.041
9	228.545	115.980
10	232.500	119.039
11	236.363	122.214
12	240.129	125.503
13	243.796	128.902
14	247.360	132.409
15	250.818	136.021
16	254.167	139.733
17	255.893	141.765

Circle Center At X = 127.746 ; Y = 250.404 ; and Radius = 168.019

Factor of Safety

*** 0.872 ***

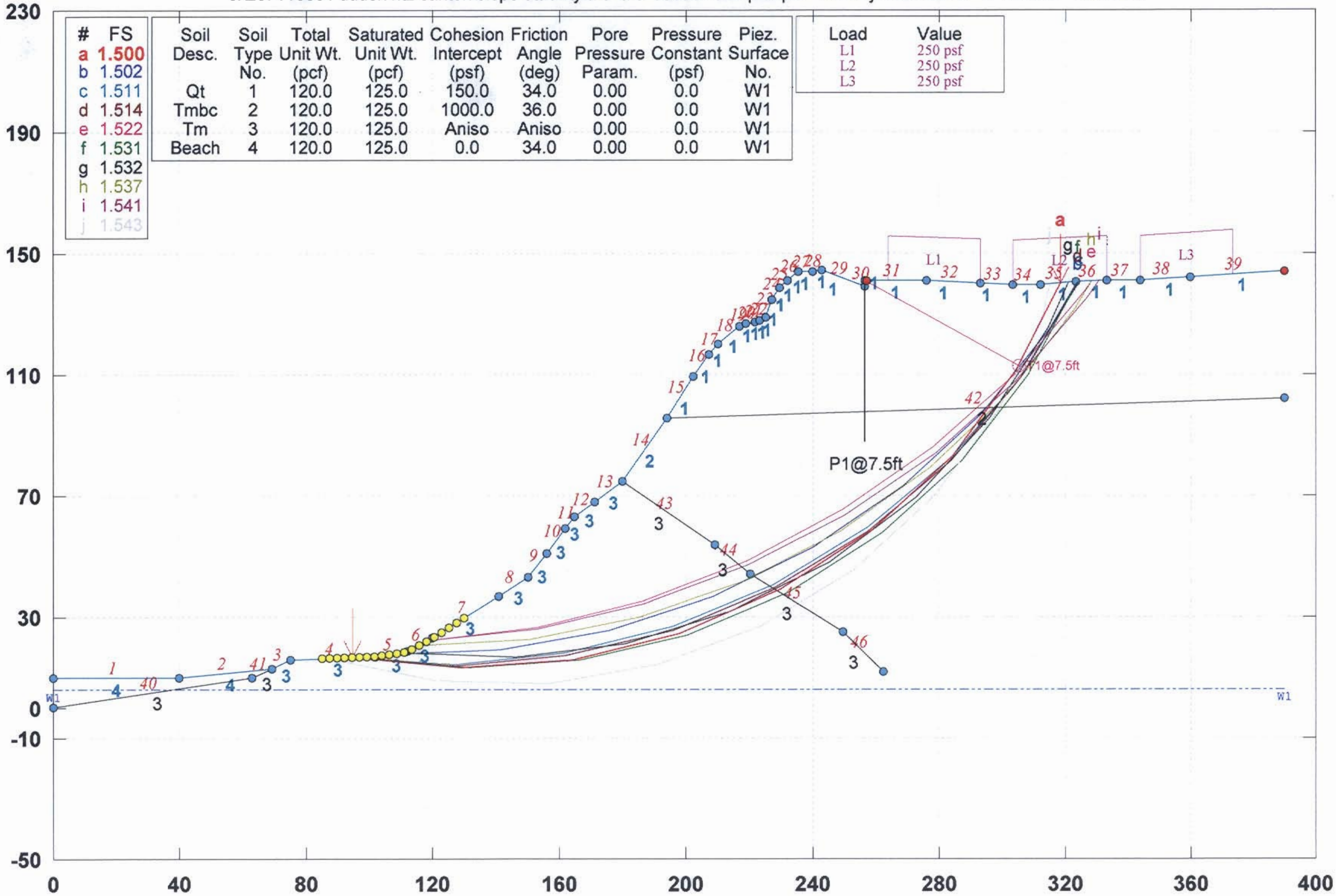
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	194.552	96.876
2	198.766	99.568
3	202.952	102.301
4	207.112	105.075
5	211.244	107.891
6	215.348	110.747
7	219.423	113.644
8	223.469	116.582
9	227.486	119.559
10	231.473	122.576
11	235.430	125.633
12	239.356	128.728

```
   13        243.252      131.863
   14        247.116      135.036
   15        250.949      138.247
   16        254.749      141.496
   17        255.221      141.908
Circle Center At X =   -74.538 ; Y =   522.830 ; and Radius =   503.831
       Factor of Safety
      ***   0.873   ***
Failure Surface Specified By 17 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        194.552       96.876
    2        198.822       99.477
    3        203.060      102.130
    4        207.265      104.835
    5        211.436      107.592
    6        215.573      110.401
    7        219.674      113.261
    8        223.739      116.172
    9        227.768      119.133
   10        231.760      122.144
   11        235.715      125.204
   12        239.631      128.312
   13        243.508      131.470
   14        247.345      134.675
   15        251.143      137.927
   16        254.900      141.226
   17        255.574      141.833
Circle Center At X =   -12.870 ; Y =   442.355 ; and Radius =   402.963
       Factor of Safety
      ***   0.874   ***
         **** END OF GSTABL7 OUTPUT ****
```

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a' tieback and pier.pl2 Run By: Username 3/10/2008 09:33AM



GSTABL7 v.2 FSmin=1.500

Safety Factors Are Calculated By The Modified Bishop Method

*** **GSTABL7** ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 11/21/2007
Time of Run: 03:09PM
Run By: RAH
Input Data Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.in
Output Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.OUT
Unit System: English
Plotted Output Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.PLT
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (A-A')
207118001

BOUNDARY COORDINATES
39 Top Boundaries
46 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	256.49	139.00	1
30	256.49	139.00	256.50	141.00	1
31	256.50	141.00	276.00	141.00	1
32	276.00	141.00	293.00	140.00	1
33	293.00	140.00	303.00	139.50	1
34	303.00	139.50	312.00	139.50	1
35	312.00	139.50	323.00	140.50	1
36	323.00	140.50	333.00	141.00	1
37	333.00	141.00	343.50	141.25	1

38	343.50	141.25	360.00	142.00	1
39	360.00	142.00	390.00	144.00	1
40	0.00	0.00	63.00	10.00	3
41	63.00	10.00	69.00	13.00	3
42	194.00	96.00	390.00	102.00	2
43	180.00	75.00	209.00	54.00	3
44	209.00	54.00	220.50	44.00	3
45	220.50	44.00	249.50	25.00	3
46	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)

3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
EARTHQUAKE DATA HAS BEEN SUPPRESSED

TIEBACK LOAD(S)

1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.00	200000.0	7.5	30.00	56.0	1

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks

Assuming A Uniform Distribution Of Load Horizontally Between Individual Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces.
Force Method 2 Considers Both Tangential and Normal Tieback Forces.
Force Method 3 Considers Only Normal Tieback Forces.
Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.

PIER/PILE LOAD(S)

1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.00	200000.0	7.5	90.00	53.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.
1000 Trial Surfaces Have Been Generated.
50 Surface(s) Initiate(s) From Each Of 20 Points Equally Spaced
Along The Ground Surface Between X = 85.00(ft)
and X = 130.00(ft)
Each Surface Terminates Between X = 257.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
35.00(ft) Line Segments Define Each Trial Failure Surface.

WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.15	8.72
3	154.14	7.86
4	188.63	13.81
5	221.31	26.34
6	250.93	44.99
7	276.36	69.04
8	296.64	97.57
9	310.98	129.49
10	313.32	139.62

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.78	12.44
3	154.65	15.46
4	188.23	25.31
5	219.21	41.60
6	246.35	63.70
7	268.60	90.72
8	285.06	121.60
9	290.61	140.14

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.03	8.20
3	154.03	8.39
4	187.98	16.93
5	218.90	33.32

```
    6       245.02      56.61
    7       264.83      85.47
    8       277.17     118.22
    9       279.88     140.77
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points
  Point     X-Surf      Y-Surf
   No.       (ft)        (ft)
    1        85.00      16.37
    2       118.37       5.81
    3       153.23       2.66
    4       187.95       7.08
    5       220.91      18.86
    6       250.57      37.44
    7       275.54      61.96
    8       294.66      91.28
    9       307.04     124.02
   10       309.30     139.50
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point     X-Surf      Y-Surf
   No.       (ft)        (ft)
    1        85.00      16.37
    2       119.66      11.48
    3       154.60      13.49
    4       188.47      22.30
    5       219.96      37.58
    6       247.84      58.74
    7       271.03      84.96
    8       288.63     115.21
    9       297.04     139.80
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point     X-Surf      Y-Surf
   No.       (ft)        (ft)
    1        85.00      16.37
    2       117.54       3.48
    3       152.37       0.01
    4       186.81       6.23
    5       218.23      21.65
    6       244.20      45.11
    7       262.75      74.79
    8       272.45     108.42
    9       272.53     141.00
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points
  Point     X-Surf      Y-Surf
   No.       (ft)        (ft)
    1        85.00      16.37
    2       118.57       6.46
    3       153.50       4.28
    4       188.04       9.92
    5       220.46      23.11
    6       249.14      43.18
    7       272.62      69.13
    8       289.74      99.65
    9       299.64     133.23
   10       300.04     139.65
Factor of Safety for the Preceding Surface is Between NaN   and NaN
```

WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.98	4.64
3	152.87	1.89
4	187.28	8.28
5	218.85	23.40
6	245.41	46.20
7	265.13	75.11
8	276.67	108.15
9	279.07	140.82

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.81	4.17
3	152.57	0.14
4	187.30	4.50
5	219.99	17.01
6	248.76	36.94
7	271.96	63.15
8	288.24	94.13
9	296.68	128.09
10	296.72	139.81

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.55	10.79
3	154.53	12.17
4	188.53	20.46
5	220.22	35.31
6	248.34	56.15
7	271.77	82.15
8	289.59	112.28
9	299.12	139.69

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.95	14.47
3	154.60	19.41
4	187.62	31.02
5	217.75	48.83
6	243.82	72.17
7	264.85	100.15
8	280.03	131.69
9	282.33	140.63

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37

2	119.67	11.59
3	154.63	13.36
4	188.64	21.61
5	220.51	36.07
6	249.13	56.22
7	273.49	81.35
8	292.73	110.59
9	304.77	139.50

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.98	7.99
3	153.98	8.45
4	187.73	17.72
5	218.06	35.19
6	243.00	59.75
7	260.94	89.80
8	270.73	123.40
9	271.24	141.00

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.78	4.10
3	152.64	0.98
4	187.07	7.25
5	218.61	22.44
6	244.96	45.46
7	264.25	74.67
8	275.09	107.95
9	276.59	140.97

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.15	5.14
3	153.06	2.61
4	187.48	8.93
5	219.21	23.70
6	246.22	45.97
7	266.75	74.31
8	279.51	106.90
9	283.54	140.56

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.07	4.92
3	152.90	1.39
4	187.60	5.95
5	220.32	18.37
6	249.31	37.97
7	273.02	63.72
8	290.17	94.23

```
   9        299.86      127.86
  10        300.42      139.63
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        119.41        9.95
    3        154.38       11.26
    4        188.21       20.24
    5        219.24       36.44
    6        245.93       59.07
    7        267.00       87.02
    8        281.39      118.93
    9        285.79      140.42
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        118.31        5.63
    3        153.27        3.94
    4        187.46       11.42
    5        218.53       27.54
    6        244.32       51.20
    7        263.06       80.76
    8        273.46      114.18
    9        274.48      141.00
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        118.70        6.92
    3        153.69        5.91
    4        187.87       13.40
    5        219.23       28.95
    6        245.89       51.63
    7        266.27       80.09
    8        279.15      112.63
    9        282.87      140.60
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points
  ################### SOME LINES SKIPPED ###################
      Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Attempted =  1000
      WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
      Did Not Converge in 20 Iterations.
      Number of Trial Surfaces with Non-Converged FS =  309
      Number of Trial Surfaces With Valid FS =  691
      Percentage of Trial Surfaces With Non-Valid FS Solutions
      of the Total Attempted =  30.9 %
      Statistical Data On All Valid FS Values:
         FS Max =   2.919   FS Min =   1.500   FS Ave =   1.943
         Standard Deviation =    0.260   Coefficient of Variation =   13.38 %
      Failure Surface Specified By  9 Coordinate Points
```

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.474	16.721
2	129.304	13.283
3	164.204	15.935
4	198.115	24.595
5	230.013	39.003
6	258.930	58.721
7	283.991	83.153
8	304.438	111.559
9	318.196	140.063

Circle Center At X = 131.573 ; Y = 214.428 ; and Radius = 201.158

Factor of Safety

*** 1.500 ***

Individual data on the 44 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	7.5	461.3	0.0	0.0	0.	0.	0.0	0.0	0.0
2	10.0	2718.2	0.0	0.0	0.	0.	0.0	0.0	0.0
3	8.0	5907.3	0.0	0.0	0.	0.	0.0	0.0	0.0
4	9.3	13799.2	0.0	0.0	0.	0.	0.0	0.0	0.0
5	11.7	27190.6	0.0	0.0	0.	0.	0.0	0.0	0.0
6	9.0	27525.1	0.0	0.0	0.	0.	0.0	0.0	0.0
7	6.0	22979.8	0.0	0.0	0.	0.	0.0	0.0	0.0
8	6.0	28411.6	0.0	0.0	0.	0.	0.0	0.0	0.0
9	2.2	11799.9	0.0	0.0	0.	0.	0.0	0.0	0.0
10	0.8	4436.0	0.0	0.0	0.	0.	0.0	0.0	0.0
11	6.0	34988.9	0.0	0.0	0.	0.	0.0	0.0	0.0
12	9.0	56894.8	0.0	0.0	0.	0.	0.0	0.0	0.0
13	14.0	107088.9	0.0	0.0	0.	0.	0.0	0.0	0.0
14	4.1	37137.0	0.0	0.0	0.	0.	0.0	0.0	0.0
15	4.4	42319.3	0.0	0.0	0.	0.	0.0	0.0	0.0
16	4.5	46120.3	0.0	0.0	0.	0.	0.0	0.0	0.0
17	2.0	21265.6	0.0	0.0	0.	0.	0.0	0.0	0.0
18	1.0	10761.5	0.0	0.0	0.	0.	0.0	0.0	0.0
19	7.0	76822.8	0.0	0.0	0.	0.	0.0	0.0	0.0
20	2.0	22301.5	0.0	0.0	0.	0.	0.0	0.0	0.0
21	1.5	16696.4	0.0	0.0	0.	0.	0.0	0.0	0.0
22	1.5	16619.4	0.0	0.0	0.	0.	0.0	0.0	0.0
23	1.5	16565.0	0.0	0.0	0.	0.	0.0	0.0	0.0
24	1.5	16578.0	0.0	0.0	0.	0.	0.0	0.0	0.0
25	2.0	22754.3	0.0	0.0	0.	0.	0.0	0.0	0.0
26	1.9	22363.2	0.0	0.0	0.	0.	0.0	0.0	0.0
27	0.6	7199.8	0.0	0.0	0.	0.	0.0	0.0	0.0
28	0.5	6142.7	0.0	0.0	0.	0.	0.0	0.0	0.0
29	2.0	23927.0	0.0	0.0	0.	0.	0.0	0.0	0.0
30	3.5	42398.4	0.0	0.0	0.	0.	0.0	0.0	0.0
31	4.5	53849.4	0.0	0.0	0.	0.	0.0	0.0	0.0
32	3.0	35069.1	0.0	0.0	0.	0.	0.0	0.0	0.0
33	13.5	144545.6	0.0	0.0	0.	0.	0.0	0.0	0.0
34	0.0	99.6	0.0	0.0	0.	0.	0.0	0.0	0.0
35	2.4	24229.5	0.0	0.0	0.	0.	0.0	0.0	0.0
36	4.6	43904.5	0.0	0.0	0.	0.	0.0	0.0	0.0
37	12.5	107595.5	0.0	0.0	0.	0.	0.0	0.0	3125.0
38	8.0	58980.4	0.0	0.0	0.	0.	0.0	0.0	1997.7
39	9.0	54977.4	0.0	0.0	0.	0.	0.0	0.0	2252.3
40	2.5	12634.9	0.0	0.0	0.	0.	0.0	0.0	0.0
41	7.5	31927.2	0.0	0.0	0.	0.	0.0	0.0	0.0
42	1.4	4994.7	0.0	0.0	0.	0.	0.0	0.0	359.6
43	7.6	18245.9	0.0	0.0	0.	0.	0.0	0.0	1890.4
44	6.2	4563.3	0.0	0.0	0.	0.	0.0	0.0	1549.1

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	106.316	17.647

2	141.289	19.029
3	175.693	25.457
4	208.806	36.795
5	239.930	52.805
6	268.409	73.150
7	293.645	97.401
8	315.107	125.049
9	323.874	140.544

Circle Center At X = 114.302 ; Y = 258.769 ; and Radius = 241.254
Factor of Safety
*** 1.502 ***
Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.105	16.634
2	127.046	14.591
3	161.879	18.006
4	195.757	26.796
5	227.856	40.747
6	257.396	59.519
7	283.658	82.656
8	306.003	109.595
9	323.887	139.681
10	324.239	140.562

Circle Center At X = 122.666 ; Y = 238.761 ; and Radius = 224.220
Factor of Safety
*** 1.511 ***
Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.105	16.634
2	127.013	14.090
3	161.880	17.135
4	195.818	25.690
5	227.962	39.539
6	257.492	58.326
7	283.655	81.575
8	305.785	108.691
9	323.317	138.983
10	323.913	140.546

Circle Center At X = 125.493 ; Y = 232.956 ; and Radius = 218.884
Factor of Safety
*** 1.514 ***
Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	118.158	21.964
2	152.860	26.521
3	186.720	35.382
4	219.206	48.408
5	249.808	65.393
6	278.045	86.073
7	303.475	110.121
8	325.699	137.160
9	327.961	140.748

Circle Center At X = 99.209 ; Y = 300.657 ; and Radius = 279.336
Factor of Safety
*** 1.522 ***
Failure Surface Specified By 9 Coordinate Points

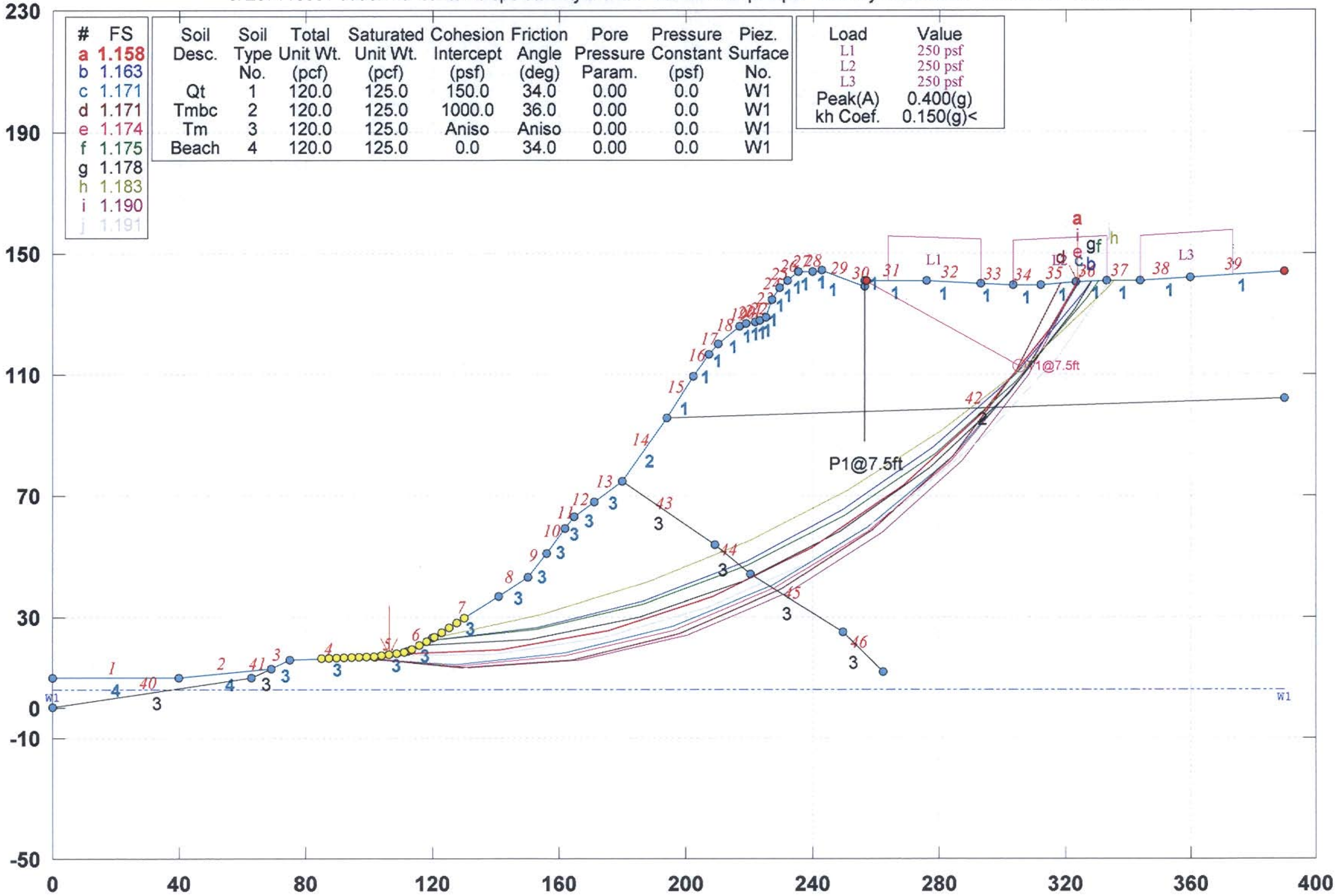
Point No.	X-Surf (ft)	Y-Surf (ft)
1	96.842	16.809
2	131.660	13.240
3	166.574	15.693
4	200.549	24.098
5	232.581	38.204
6	261.719	57.594

```
    7        287.101       81.693
    8        307.974      109.788
    9        323.457      140.523
Circle Center At X =   134.913 ; Y =   216.564 ; and Radius =   203.350
       Factor of Safety
      ***    1.531   ***
Failure Surface Specified By  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        111.053       18.358
    2        146.015       16.735
    3        180.718       21.286
    4        214.079       31.869
    5        245.060       48.154
    6        272.693       69.635
    7        296.118       95.640
    8        314.604      125.360
    9        320.557      140.278
Circle Center At X =   137.691 ; Y =   214.794 ; and Radius =   198.234
       Factor of Safety
      ***    1.532   ***
Failure Surface Specified By  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        115.790       20.632
    2        150.728       22.699
    3        185.007       29.769
    4        217.913       41.693
    5        248.763       58.223
    6        276.916       79.018
    7        301.787      103.644
    8        322.860      131.589
    9        327.882      140.744
Circle Center At X =   118.951 ; Y =   263.427 ; and Radius =   242.816
       Factor of Safety
      ***    1.537   ***
Failure Surface Specified By  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        118.158       21.964
    2        152.926       25.984
    3        186.903       34.385
    4        219.539       47.031
    5        250.305       63.716
    6        278.705       84.172
    7        304.279      108.068
    8        326.613      135.016
    9        330.319      140.866
Circle Center At X =   103.997 ; Y =   296.784 ; and Radius =   275.185
       Factor of Safety
      ***    1.541   ***
Failure Surface Specified By 10 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         87.368       16.458
    2        121.540        8.888
    3        156.531        8.112
    4        191.005       14.160
    5        223.643       26.799
    6        253.198       45.548
    7        278.540       69.689
    8        298.700       98.300
    9        312.908      130.286
   10        315.052      139.777
Circle Center At X =   143.074 ; Y =   185.454 ; and Radius =   177.940
       Factor of Safety
      ***    1.543   ***
```

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (A-A') 207118001

c:\207118001 dudek ritz carlton\slope stability\a-a'\a-a' tieback and pier.pl2 Run By: Username 3/10/2008 09:32AM



#	FS
a	1.158
b	1.163
c	1.171
d	1.171
e	1.174
f	1.175
g	1.178
h	1.183
i	1.190
j	1.191

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qt	1	120.0	125.0	150.0	34.0	0.00	0.0	W1
Tmbc	2	120.0	125.0	1000.0	36.0	0.00	0.0	W1
Tm	3	120.0	125.0	Aniso	Aniso	0.00	0.0	W1
Beach	4	120.0	125.0	0.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	250 psf
L3	250 psf
Peak(A)	0.400(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=1.158

Safety Factors Are Calculated By The Modified Bishop Method

*** **GSTABL7** ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 11/21/2007
Time of Run: 03:15PM
Run By: RAH
Input Data Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.in
Output Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.OUT
Unit System: English
Plotted Output Filename: C:\Documents and Settings\rhandapangoda\My Documents\207118001 Dudek Ritz Carlton\Slope Stability\A-A'\a-a' tieback and pier.PLT
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (A-A')
207118001

BOUNDARY COORDINATES
39 Top Boundaries
46 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	40.00	10.00	4
2	40.00	10.00	69.00	13.00	4
3	69.00	13.00	75.00	16.00	3
4	75.00	16.00	102.00	17.00	3
5	102.00	17.00	112.00	18.50	3
6	112.00	18.50	120.00	23.00	3
7	120.00	23.00	141.00	37.00	3
8	141.00	37.00	150.00	43.00	3
9	150.00	43.00	156.00	51.00	3
10	156.00	51.00	162.00	59.00	3
11	162.00	59.00	165.00	63.00	3
12	165.00	63.00	171.00	68.00	3
13	171.00	68.00	180.00	75.00	3
14	180.00	75.00	194.00	96.00	2
15	194.00	96.00	202.50	109.50	1
16	202.50	109.50	207.00	116.50	1
17	207.00	116.50	210.00	120.00	1
18	210.00	120.00	217.00	126.00	1
19	217.00	126.00	219.00	127.00	1
20	219.00	127.00	222.00	127.50	1
21	222.00	127.50	223.50	128.00	1
22	223.50	128.00	225.00	129.00	1
23	225.00	129.00	227.00	135.00	1
24	227.00	135.00	229.50	138.50	1
25	229.50	138.50	232.00	141.00	1
26	232.00	141.00	235.50	144.00	1
27	235.50	144.00	240.00	144.00	1
28	240.00	144.00	243.00	144.50	1
29	243.00	144.50	256.49	139.00	1
30	256.49	139.00	256.50	141.00	1
31	256.50	141.00	276.00	141.00	1
32	276.00	141.00	293.00	140.00	1
33	293.00	140.00	303.00	139.50	1
34	303.00	139.50	312.00	139.50	1
35	312.00	139.50	323.00	140.50	1
36	323.00	140.50	333.00	141.00	1
37	333.00	141.00	343.50	141.25	1

38	343.50	141.25	360.00	142.00	1
39	360.00	142.00	390.00	144.00	1
40	0.00	0.00	63.00	10.00	3
41	63.00	10.00	69.00	13.00	3
42	194.00	96.00	390.00	102.00	2
43	180.00	75.00	209.00	54.00	3
44	209.00	54.00	220.50	44.00	3
45	220.50	44.00	249.50	25.00	3
46	249.50	25.00	262.50	12.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	1
2	120.0	125.0	1000.0	36.0	0.00	0.0	1
3	120.0	125.0	800.0	26.0	0.00	0.0	1
4	120.0	125.0	0.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-50.0	800.00	26.00
3	-42.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	6.00
2	390.00	6.00

BOUNDARY LOAD(S)
3 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	263.50	293.00	250.0	0.0
2	303.00	333.00	250.0	0.0
3	343.50	373.50	250.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

TIEBACK LOAD(S)
1 Tieback Load(s) Specified

Tieback No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)	Force Method
1	256.50	141.00	200000.0	7.5	30.00	56.0	1

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Tiebacks Assuming A Uniform Distribution Of Load Horizontally Between Individual

Tiebacks. Force Method 1 Considers Only Tangential Tieback Forces.
Force Method 2 Considers Both Tangential and Normal Tieback Forces.
Force Method 3 Considers Only Normal Tieback Forces.
Force Method 4 Limits Normal and Tangential Tieback-Force Distribution to 1.5 Times the Tieback Inclination, or to 30 Degrees Below (Left of) the Tieback-Failure Surface Intersection, Whichever is Greater.

PIER/PILE LOAD(S)

1 Pier/Pile Load(s) Specified

Pier/Pile No.	X-Pos (ft)	Y-Pos (ft)	Load (lbs)	Spacing (ft)	Inclination (deg)	Length (ft)
1	256.50	141.00	200000.0	7.5	90.00	53.0

NOTE - An Equivalent Line Load Is Calculated For Each Row Of Piers/Piles Assuming A Uniform Distribution Of Load Horizontally Between Individual Piers/Piles.

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1000 Trial Surfaces Have Been Generated.

50 Surface(s) Initiate(s) From Each Of 20 Points Equally Spaced Along The Ground Surface Between X = 85.00(ft) and X = 130.00(ft)

Each Surface Terminates Between X = 257.00(ft) and X = 390.00(ft)

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 0.00(ft)

35.00(ft) Line Segments Define Each Trial Failure Surface.

WARNING! The factor of safety calculation did not converge in 20 iterations.

The Trial Failure Surface In Question Is Defined By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.15	8.72
3	154.14	7.86
4	188.63	13.81
5	221.31	26.34
6	250.93	44.99
7	276.36	69.04
8	296.64	97.57
9	310.98	129.49
10	313.32	139.62

Factor of Safety for the Preceding Surface is Between NaN and NaN

WARNING! The factor of safety calculation did not converge in 20 iterations.

The Trial Failure Surface In Question Is Defined By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.78	12.44
3	154.65	15.46
4	188.23	25.31
5	219.21	41.60
6	246.35	63.70
7	268.60	90.72
8	285.06	121.60
9	290.61	140.14

Factor of Safety for the Preceding Surface is Between NaN and NaN

WARNING! The factor of safety calculation did not converge in 20 iterations.

The Trial Failure Surface In Question Is Defined By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.03	8.20
3	154.03	8.39
4	187.98	16.93
5	218.90	33.32
6	245.02	56.61

7	264.83	85.47
8	277.17	118.22
9	279.88	140.77

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.37	5.81
3	153.23	2.66
4	187.95	7.08
5	220.91	18.86
6	250.57	37.44
7	275.54	61.96
8	294.66	91.28
9	307.04	124.02
10	309.30	139.50

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.66	11.48
3	154.60	13.49
4	188.47	22.30
5	219.96	37.58
6	247.84	58.74
7	271.03	84.96
8	288.63	115.21
9	297.04	139.80

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.54	3.48
3	152.37	0.01
4	186.81	6.23
5	218.23	21.65
6	244.20	45.11
7	262.75	74.79
8	272.45	108.42
9	272.53	141.00

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.57	6.46
3	153.50	4.28
4	188.04	9.92
5	220.46	23.11
6	249.14	43.18
7	272.62	69.13
8	289.74	99.65
9	299.64	133.23
10	300.04	139.65

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.

The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.98	4.64
3	152.87	1.89
4	187.28	8.28
5	218.85	23.40
6	245.41	46.20
7	265.13	75.11
8	276.67	108.15
9	279.07	140.82

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.81	4.17
3	152.57	0.14
4	187.30	4.50
5	219.99	17.01
6	248.76	36.94
7	271.96	63.15
8	288.24	94.13
9	296.68	128.09
10	296.72	139.81

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.55	10.79
3	154.53	12.17
4	188.53	20.46
5	220.22	35.31
6	248.34	56.15
7	271.77	82.15
8	289.59	112.28
9	299.12	139.69

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.95	14.47
3	154.60	19.41
4	187.62	31.02
5	217.75	48.83
6	243.82	72.17
7	264.85	100.15
8	280.03	131.69
9	282.33	140.63

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	119.67	11.59

3	154.63	13.36
4	188.64	21.61
5	220.51	36.07
6	249.13	56.22
7	273.49	81.35
8	292.73	110.59
9	304.77	139.50

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.98	7.99
3	153.98	8.45
4	187.73	17.72
5	218.06	35.19
6	243.00	59.75
7	260.94	89.80
8	270.73	123.40
9	271.24	141.00

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	117.78	4.10
3	152.64	0.98
4	187.07	7.25
5	218.61	22.44
6	244.96	45.46
7	264.25	74.67
8	275.09	107.95
9	276.59	140.97

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.15	5.14
3	153.06	2.61
4	187.48	8.93
5	219.21	23.70
6	246.22	45.97
7	266.75	74.31
8	279.51	106.90
9	283.54	140.56

Factor of Safety for the Preceding Surface is Between NaN and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.00	16.37
2	118.07	4.92
3	152.90	1.39
4	187.60	5.95
5	220.32	18.37
6	249.31	37.97
7	273.02	63.72
8	290.17	94.23
9	299.86	127.86

```
   10        300.42      139.63
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        119.41        9.95
    3        154.38       11.26
    4        188.21       20.24
    5        219.24       36.44
    6        245.93       59.07
    7        267.00       87.02
    8        281.39      118.93
    9        285.79      140.42
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        118.31        5.63
    3        153.27        3.94
    4        187.46       11.42
    5        218.53       27.54
    6        244.32       51.20
    7        263.06       80.76
    8        273.46      114.18
    9        274.48      141.00
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following  9 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1         85.00       16.37
    2        118.70        6.92
    3        153.69        5.91
    4        187.87       13.40
    5        219.23       28.95
    6        245.89       51.63
    7        266.27       80.09
    8        279.15      112.63
    9        282.87      140.60
Factor of Safety for the Preceding Surface is Between NaN   and NaN
WARNING! The factor of safety calculation did not converge in 20 iterations.
The Trial Failure Surface In Question Is Defined
By The Following 10 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
  #################### SOME LINES SKIPPED ###################
      Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Attempted =  1000
      WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
      Did Not Converge in 20 Iterations.
      Number of Trial Surfaces with Non-Converged FS =  309
      Number of Trial Surfaces With Valid FS =  691
      Percentage of Trial Surfaces With Non-Valid FS Solutions
      of the Total Attempted =  30.9 %
      Statistical Data On All Valid FS Values:
         FS Max =   2.115   FS Min =   1.158   FS Ave =   1.460
         Standard Deviation =    0.183   Coefficient of Variation =   12.56 %
```

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	106.316	17.647
2	141.289	19.029
3	175.693	25.457
4	208.806	36.795
5	239.930	52.805
6	268.409	73.150
7	293.645	97.401
8	315.107	125.049
9	323.874	140.544

Circle Center At X = 114.302 ; Y = 258.769 ; and Radius = 241.254

Factor of Safety

*** 1.158 ***

Individual data on the 44 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	5.7	214.2	0.0	0.0	0.	0.	32.1	0.0	0.0
2	8.0	2611.2	0.0	0.0	0.	0.	391.7	0.0	0.0
3	21.0	28720.6	0.0	0.0	0.	0.	4308.1	0.0	0.0
4	0.3	625.7	0.0	0.0	0.	0.	93.9	0.0	0.0
5	8.7	21172.2	0.0	0.0	0.	0.	3175.8	0.0	0.0
6	6.0	18563.6	0.0	0.0	0.	0.	2784.5	0.0	0.0
7	6.0	23516.6	0.0	0.0	0.	0.	3527.5	0.0	0.0
8	3.0	13615.6	0.0	0.0	0.	0.	2042.3	0.0	0.0
9	6.0	29865.9	0.0	0.0	0.	0.	4479.9	0.0	0.0
10	4.7	25234.8	0.0	0.0	0.	0.	3785.2	0.0	0.0
11	4.3	24357.7	0.0	0.0	0.	0.	3653.7	0.0	0.0
12	14.0	94368.4	0.0	0.0	0.	0.	14155.3	0.0	0.0
13	8.5	70961.0	0.0	0.0	0.	0.	10644.1	0.0	0.0
14	4.5	41900.7	0.0	0.0	0.	0.	6285.1	0.0	0.0
15	1.8	17568.3	0.0	0.0	0.	0.	2635.2	0.0	0.0
16	0.2	1906.8	0.0	0.0	0.	0.	286.0	0.0	0.0
17	1.0	9871.8	0.0	0.0	0.	0.	1480.8	0.0	0.0
18	7.0	70384.0	0.0	0.0	0.	0.	10557.6	0.0	0.0
19	2.0	20394.2	0.0	0.0	0.	0.	3059.1	0.0	0.0
20	1.5	15246.1	0.0	0.0	0.	0.	2286.9	0.0	0.0
21	1.0	10285.7	0.0	0.0	0.	0.	1542.9	0.0	0.0
22	0.5	4866.5	0.0	0.0	0.	0.	730.0	0.0	0.0
23	1.5	15080.8	0.0	0.0	0.	0.	2262.1	0.0	0.0
24	1.5	15076.9	0.0	0.0	0.	0.	2261.5	0.0	0.0
25	2.0	20726.5	0.0	0.0	0.	0.	3109.0	0.0	0.0
26	2.5	26985.9	0.0	0.0	0.	0.	4047.9	0.0	0.0
27	2.5	27500.1	0.0	0.0	0.	0.	4125.0	0.0	0.0
28	3.5	39007.1	0.0	0.0	0.	0.	5851.1	0.0	0.0
29	4.4	49080.4	0.0	0.0	0.	0.	7362.1	0.0	0.0
30	0.1	770.4	0.0	0.0	0.	0.	115.6	0.0	0.0
31	3.0	32516.4	0.0	0.0	0.	0.	4877.5	0.0	0.0
32	13.5	132633.7	0.0	0.0	0.	0.	19895.1	0.0	0.0
33	0.0	90.5	0.0	0.0	0.	0.	13.6	0.0	0.0
34	7.0	62040.4	0.0	0.0	0.	0.	9306.1	0.0	0.0
35	4.9	41003.7	0.0	0.0	0.	0.	6150.6	0.0	1227.3
36	7.6	58482.4	0.0	0.0	0.	0.	8772.4	0.0	1897.7
37	17.0	105850.2	0.0	0.0	0.	0.	15877.5	0.0	4250.0
38	0.6	3321.6	0.0	0.0	0.	0.	498.2	0.0	0.0
39	1.3	6560.4	0.0	0.0	0.	0.	984.1	0.0	0.0
40	8.0	34196.6	0.0	0.0	0.	0.	5129.5	0.0	0.0
41	9.0	26190.6	0.0	0.0	0.	0.	3928.6	0.0	2250.0
42	3.1	6186.5	0.0	0.0	0.	0.	928.0	0.0	776.7
43	7.9	7688.2	0.0	0.0	0.	0.	1153.2	0.0	1973.3
44	0.9	78.7	0.0	0.0	0.	0.	11.8	0.0	218.4

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)

1	118.158	21.964
2	152.860	26.521
3	186.720	35.382
4	219.206	48.408
5	249.808	65.393
6	278.045	86.073
7	303.475	110.121
8	325.699	137.160
9	327.961	140.748

Circle Center At X = 99.209 ; Y = 300.657 ; and Radius = 279.336

Factor of Safety

*** 1.163 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.105	16.634
2	127.046	14.591
3	161.879	18.006
4	195.757	26.796
5	227.856	40.747
6	257.396	59.519
7	283.658	82.656
8	306.003	109.595
9	323.887	139.681
10	324.239	140.562

Circle Center At X = 122.666 ; Y = 238.761 ; and Radius = 224.220

Factor of Safety

*** 1.171 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	94.474	16.721
2	129.304	13.283
3	164.204	15.935
4	198.115	24.595
5	230.013	39.003
6	258.930	58.721
7	283.991	83.153
8	304.438	111.559
9	318.196	140.063

Circle Center At X = 131.573 ; Y = 214.428 ; and Radius = 201.158

Factor of Safety

*** 1.171 ***

Failure Surface Specified By 10 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	92.105	16.634
2	127.013	14.090
3	161.880	17.135
4	195.818	25.690
5	227.962	39.539
6	257.492	58.326
7	283.655	81.575
8	305.785	108.691
9	323.317	138.983
10	323.913	140.546

Circle Center At X = 125.493 ; Y = 232.956 ; and Radius = 218.884

Factor of Safety

*** 1.174 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	118.158	21.964
2	152.926	25.984
3	186.903	34.385
4	219.539	47.031
5	250.305	63.716

6	278.705	84.172
7	304.279	108.068
8	326.613	135.016
9	330.319	140.866

Circle Center At X = 103.997 ; Y = 296.784 ; and Radius = 275.185
Factor of Safety
*** 1.175 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	115.790	20.632
2	150.728	22.699
3	185.007	29.769
4	217.913	41.693
5	248.763	58.223
6	276.916	79.018
7	301.787	103.644
8	322.860	131.589
9	327.882	140.744

Circle Center At X = 118.951 ; Y = 263.427 ; and Radius = 242.816
Factor of Safety
*** 1.178 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	120.526	23.351
2	154.715	30.844
3	188.061	41.477
4	220.275	55.159
5	251.081	71.772
6	280.213	91.172
7	307.418	113.193
8	332.461	137.643
9	335.363	141.056

Circle Center At X = 57.063 ; Y = 394.678 ; and Radius = 376.712
Factor of Safety
*** 1.183 ***

Failure Surface Specified By 9 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	96.842	16.809
2	131.660	13.240
3	166.574	15.693
4	200.549	24.098
5	232.581	38.204
6	261.719	57.594
7	287.101	81.693
8	307.974	109.788
9	323.457	140.523

Circle Center At X = 134.913 ; Y = 216.564 ; and Radius = 203.350
Factor of Safety
*** 1.190 ***

Failure Surface Specified By 9 Coordinate Points

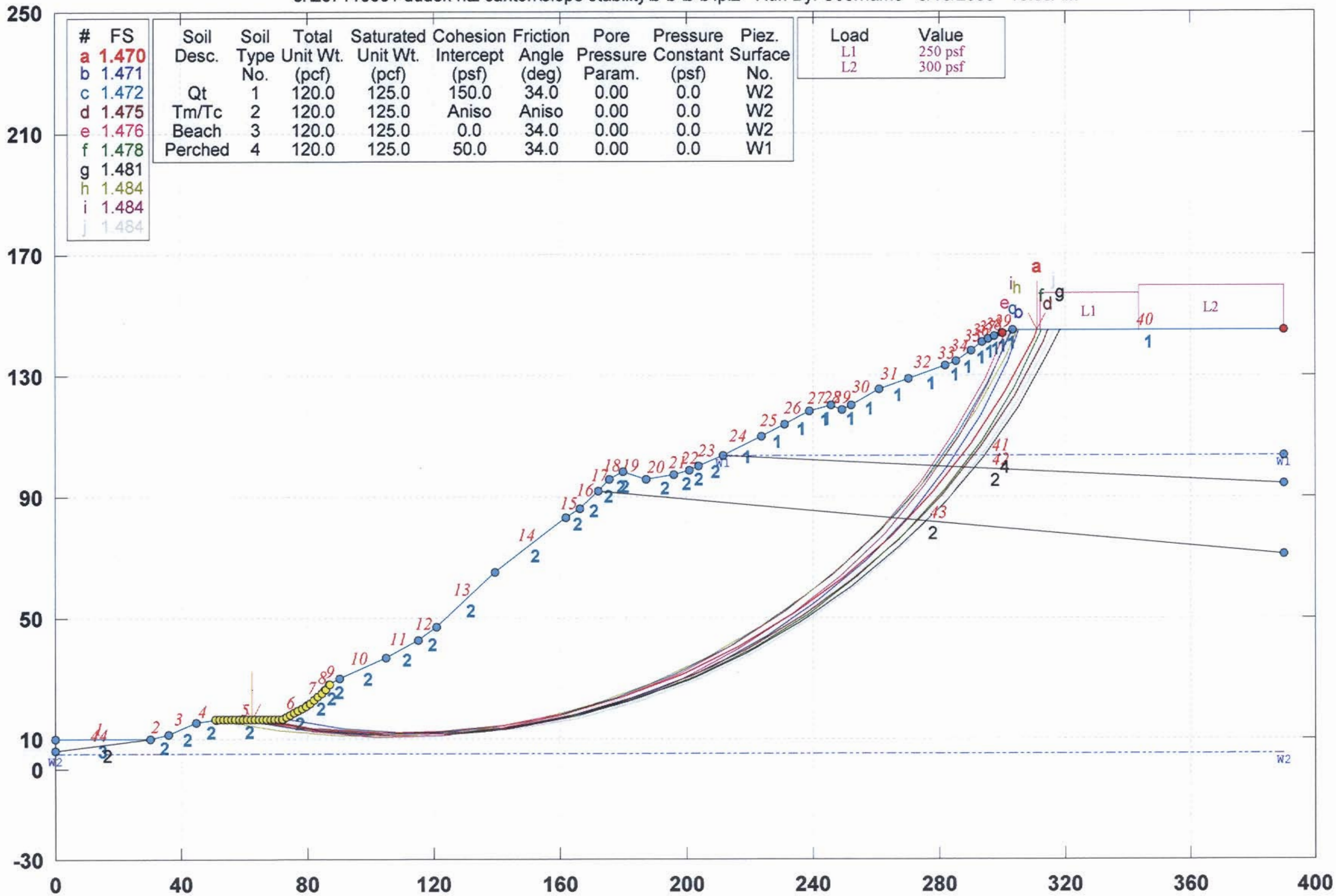
Point No.	X-Surf (ft)	Y-Surf (ft)
1	103.947	17.292
2	138.944	17.771
3	173.533	23.122
4	207.037	33.242
5	238.805	47.934
6	268.214	66.910
7	294.692	89.799
8	317.721	116.156
9	333.952	141.023

Circle Center At X = 118.030 ; Y = 267.396 ; and Radius = 250.500
Factor of Safety
*** 1.191 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (B-B') 207118001

c:\207118001 dudek ritz carlton\slope stability\b-b'\b-b'.pl2 Run By: Username 3/10/2008 10:39AM



GSTABL7 v.2 FSmin=1.470

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 3/10/2008
Time of Run: 10:24AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.PL
T

PROBLEM DESCRIPTION: Dudek/Ritz Carlton (B-B')
207118001

BOUNDARY COORDINATES
40 Top Boundaries
44 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	30.00	10.00	3
2	30.00	10.00	36.00	11.50	2
3	36.00	11.50	45.00	15.50	2
4	45.00	15.50	51.00	16.50	2
5	51.00	16.50	72.00	16.50	2
6	72.00	16.50	80.00	21.00	2
7	80.00	21.00	85.50	26.00	2
8	85.50	26.00	87.00	28.00	2
9	87.00	28.00	90.00	30.00	2
10	90.00	30.00	105.00	37.00	2
11	105.00	37.00	115.00	42.50	2
12	115.00	42.50	121.00	47.00	2
13	121.00	47.00	139.50	65.00	2
14	139.50	65.00	162.00	83.00	2
15	162.00	83.00	166.00	86.00	2
16	166.00	86.00	172.00	92.00	2
17	172.00	92.00	175.50	96.00	2
18	175.50	96.00	180.00	98.00	2
19	180.00	98.00	187.00	96.00	2
20	187.00	96.00	196.00	97.00	2
21	196.00	97.00	201.00	98.50	2
22	201.00	98.50	204.00	100.00	2
23	204.00	100.00	211.50	103.50	2
24	211.50	103.50	224.00	110.00	1
25	224.00	110.00	231.00	114.00	1
26	231.00	114.00	239.00	118.00	1
27	239.00	118.00	245.50	120.00	1
28	245.50	120.00	249.00	118.50	1
29	249.00	118.50	252.00	120.00	1
30	252.00	120.00	261.00	125.50	1
31	261.00	125.50	270.00	129.00	1
32	270.00	129.00	282.00	133.50	1
33	282.00	133.50	285.00	135.00	1
34	285.00	135.00	290.00	138.00	1
35	290.00	138.00	293.50	141.00	1
36	293.50	141.00	295.50	142.00	1
37	295.50	142.00	297.50	143.00	1
38	297.50	143.00	300.00	144.00	1

39	300.00	144.00	303.00	145.00	1
40	303.00	145.00	390.00	145.00	1
41	211.50	103.50	390.00	103.50	4
42	211.50	103.50	390.00	94.50	2
43	172.00	92.00	390.00	71.00	2
44	0.00	6.00	30.00	10.00	2

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	2
2	120.0	125.0	800.0	26.0	0.00	0.0	2
3	120.0	125.0	0.0	34.0	0.00	0.0	2
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-12.0	800.00	26.00
3	-4.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.

(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.

(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

2 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)

Piezometric Surface No. 1 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	211.50	103.50
2	390.00	103.50

Piezometric Surface No. 2 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	5.00
2	390.00	5.00

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	312.00	343.00	250.0	0.0
2	343.01	390.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

EARTHQUAKE DATA HAS BEEN SUPPRESSED

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1350 Trial Surfaces Have Been Generated.

45 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced

Along The Ground Surface Between X = 51.00(ft)
and X = 87.00(ft)
Each Surface Terminates Between X = 300.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1350
Number of Trial Surfaces With Valid FS = 1350
Statistical Data On All Valid FS Values:
FS Max = 2.403 FS Min = 1.470 FS Ave = 1.655
Standard Deviation = 0.105 Coefficient of Variation = 6.33 %
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	62.172	16.500
2	81.914	13.294
3	101.864	11.879
4	121.860	12.265
5	141.740	14.449
6	161.343	18.414
7	180.510	24.128
8	199.084	31.543
9	216.916	40.601
10	233.860	51.226
11	249.778	63.334
12	264.542	76.826
13	278.032	91.591
14	290.138	107.512
15	300.762	124.457
16	309.817	142.289
17	310.899	145.000

Circle Center At X = 107.583 ; Y = 233.766 ; and Radius = 221.961
Factor of Safety
*** 1.470 ***
Individual data on the 54 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	9.8	941.0	0.0	0.0	0.	0.	0.0	0.0	0.0
2	8.0	4315.5	0.0	0.0	0.	0.	0.0	0.0	0.0
3	1.9	1933.8	0.0	0.0	0.	0.	0.0	0.0	0.0
4	3.6	4821.0	0.0	0.0	0.	0.	0.0	0.0	0.0
5	1.5	2522.4	0.0	0.0	0.	0.	0.0	0.0	0.0
6	3.0	5822.2	0.0	0.0	0.	0.	0.0	0.0	0.0
7	11.9	29139.7	0.0	0.0	0.	0.	0.0	0.0	0.0
8	3.1	9167.7	0.0	0.0	0.	0.	0.0	0.0	0.0
9	10.0	33256.9	0.0	0.0	0.	0.	0.0	0.0	0.0
10	6.0	23442.9	0.0	0.0	0.	0.	0.0	0.0	0.0
11	0.9	3628.6	0.0	0.0	0.	0.	0.0	0.0	0.0
12	17.6	91412.9	0.0	0.0	0.	0.	0.0	0.0	0.0
13	2.2	13864.0	0.0	0.0	0.	0.	0.0	0.0	0.0
14	19.6	136911.6	0.0	0.0	0.	0.	0.0	0.0	0.0
15	0.7	5060.8	0.0	0.0	0.	0.	0.0	0.0	0.0
16	4.0	31341.0	0.0	0.0	0.	0.	0.0	0.0	0.0
17	6.0	49178.4	0.0	0.0	0.	0.	0.0	0.0	0.0
18	3.5	30192.7	0.0	0.0	0.	0.	0.0	0.0	0.0
19	4.5	39795.3	0.0	0.0	0.	0.	0.0	0.0	0.0
20	0.5	4520.2	0.0	0.0	0.	0.	0.0	0.0	0.0
21	6.5	55688.2	0.0	0.0	0.	0.	0.0	0.0	0.0
22	9.0	73423.4	0.0	0.0	0.	0.	0.0	0.0	0.0
23	3.1	24625.8	0.0	0.0	0.	0.	0.0	0.0	0.0

24	1.9	15214.2	0.0	0.0	0.	0.	0.0	0.0	0.0
25	3.0	23749.8	0.0	0.0	0.	0.	0.0	0.0	0.0
26	7.5	59224.6	0.0	0.0	0.	0.	0.0	0.0	0.0
27	5.4	42691.1	0.0	0.0	0.	0.	0.0	0.0	0.0
28	7.1	55558.2	0.0	0.0	0.	0.	0.0	0.0	0.0
29	7.0	54428.2	0.0	0.0	0.	0.	0.0	0.0	0.0
30	2.9	22109.7	0.0	0.0	0.	0.	0.0	0.0	0.0
31	5.1	39222.2	0.0	0.0	0.	0.	0.0	0.0	0.0
32	6.5	47936.0	0.0	0.0	0.	0.	0.0	0.0	0.0
33	3.5	24323.9	0.0	0.0	0.	0.	0.0	0.0	0.0
34	0.8	5205.4	0.0	0.0	0.	0.	0.0	0.0	0.0
35	2.2	14710.7	0.0	0.0	0.	0.	0.0	0.0	0.0
36	9.0	57637.4	0.0	0.0	0.	0.	0.0	0.0	0.0
37	3.5	21717.4	0.0	0.0	0.	0.	0.0	0.0	0.0
38	5.3	30473.5	0.0	0.0	0.	0.	0.0	0.0	0.0
39	0.2	1121.7	0.0	0.0	0.	0.	0.0	0.0	0.0
40	8.0	41871.5	0.0	0.0	0.	0.	0.0	0.0	0.0
41	4.0	18426.6	0.0	0.0	0.	0.	0.0	0.0	0.0
42	2.3	9894.6	0.0	0.0	0.	0.	0.0	0.0	0.0
43	0.7	2926.6	0.0	232.7	0.	0.	0.0	0.0	0.0
44	2.1	8405.8	0.0	295.4	0.	0.	0.0	0.0	0.0
45	2.9	11083.1	0.0	0.0	0.	0.	0.0	0.0	0.0
46	0.1	507.1	0.0	0.0	0.	0.	0.0	0.0	0.0
47	3.4	11847.7	0.0	0.0	0.	0.	0.0	0.0	0.0
48	2.0	6487.4	0.0	0.0	0.	0.	0.0	0.0	0.0
49	2.0	5961.8	0.0	0.0	0.	0.	0.0	0.0	0.0
50	2.5	6675.6	0.0	0.0	0.	0.	0.0	0.0	0.0
51	0.8	1853.2	0.0	0.0	0.	0.	0.0	0.0	0.0
52	2.2	4825.9	0.0	0.0	0.	0.	0.0	0.0	0.0
53	6.8	7708.1	0.0	0.0	0.	0.	0.0	0.0	0.0
54	1.1	175.9	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	72.103	16.558
2	91.817	13.185
3	111.768	11.781
4	131.759	12.360
5	151.595	14.916
6	171.081	19.424
7	190.024	25.840
8	208.238	34.100
9	225.545	44.123
10	241.774	55.811
11	256.766	69.050
12	270.373	83.707
13	282.461	99.641
14	292.912	116.693
15	301.623	134.697
16	305.400	145.000

Circle Center At X = 115.998 ; Y = 212.926 ; and Radius = 201.214

Factor of Safety

*** 1.471 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	59.690	16.500
2	79.388	13.041
3	99.325	11.454
4	119.323	11.752
5	139.204	13.932
6	158.791	17.975
7	177.910	23.846
8	196.391	31.492
9	214.069	40.844
10	230.788	51.821
11	246.398	64.323

12	260.762	78.241
13	273.750	93.449
14	285.248	109.814
15	295.153	127.189
16	303.188	145.000

Circle Center At X = 106.176 ; Y = 223.368 ; and Radius = 212.026
Factor of Safety
*** 1.472 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	64.655	16.500
2	84.382	13.206
3	104.325	11.699
4	124.323	11.992
5	144.213	14.083
6	163.835	17.954
7	183.029	23.574
8	201.640	30.898
9	219.516	39.867
10	236.514	50.406
11	252.494	62.432
12	267.328	75.847
13	280.896	90.542
14	293.086	106.397
15	303.801	123.284
16	312.954	141.067
17	314.549	145.000

Circle Center At X = 111.072 ; Y = 233.728 ; and Radius = 222.132
Factor of Safety
*** 1.475 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.931	16.500
2	80.599	12.872
3	100.527	11.169
4	120.525	11.405
5	140.407	13.578
6	159.984	17.669
7	179.072	23.638
8	197.492	31.430
9	215.070	40.971
10	231.640	52.170
11	247.046	64.923
12	261.144	79.110
13	273.800	94.597
14	284.895	111.237
15	294.324	128.874
16	300.708	144.236

Circle Center At X = 108.127 ; Y = 216.821 ; and Radius = 205.806
Factor of Safety
*** 1.476 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	67.138	16.500
2	86.836	13.035
3	106.770	11.422
4	126.769	11.673
5	146.657	13.788
6	166.261	17.747
7	185.410	23.517
8	203.939	31.047
9	221.685	40.271
10	238.494	51.109
11	254.219	63.466

12	268.724	77.236
13	281.882	92.298
14	293.579	108.521
15	303.713	125.763
16	312.195	143.876
17	312.599	145.000

Circle Center At X = 114.076 ; Y = 225.617 ; and Radius = 214.320

Factor of Safety

*** 1.478 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	63.414	16.500
2	83.126	13.117
3	103.059	11.483
4	123.058	11.612
5	142.969	13.501
6	162.636	17.137
7	181.906	22.491
8	200.629	29.522
9	218.661	38.174
10	235.860	48.381
11	252.094	60.063
12	267.235	73.130
13	281.167	87.479
14	293.780	103.000
15	304.978	119.572
16	314.672	137.065
17	318.195	145.000

Circle Center At X = 111.603 ; Y = 238.167 ; and Radius = 226.845

Factor of Safety

*** 1.481 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	51.000	16.500
2	70.652	12.785
3	90.560	10.865
4	110.559	10.754
5	130.487	12.454
6	150.179	15.951
7	169.473	21.216
8	188.212	28.206
9	206.241	36.864
10	223.413	47.118
11	239.586	58.884
12	254.627	72.065
13	268.414	86.554
14	280.832	102.232
15	291.780	118.969
16	301.169	136.628
17	304.689	145.000

Circle Center At X = 101.779 ; Y = 231.306 ; and Radius = 220.726

Factor of Safety

*** 1.484 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	62.172	16.500
2	81.792	12.619
3	101.698	10.683
4	121.698	10.712
5	141.599	12.704
6	161.207	16.642
7	180.334	22.486
8	198.795	30.180
9	216.411	39.650

10	233.012	50.804
11	248.436	63.535
12	262.537	77.719
13	275.175	93.220
14	286.231	109.886
15	295.596	127.558
16	302.704	144.901

Circle Center At X = 111.419 ; Y = 213.739 ; and Radius = 203.294

Factor of Safety

*** 1.484 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	67.138	16.500
2	86.820	12.947
3	106.745	11.218
4	126.745	11.326
5	146.650	13.271
6	166.292	17.037
7	185.505	22.591
8	204.127	29.887
9	222.000	38.862
10	238.973	49.442
11	254.902	61.536
12	269.652	75.042
13	283.100	89.847
14	295.130	105.824
15	305.642	122.838
16	314.547	140.747
17	316.194	145.000

Circle Center At X = 115.568 ; Y = 228.514 ; and Radius = 217.475

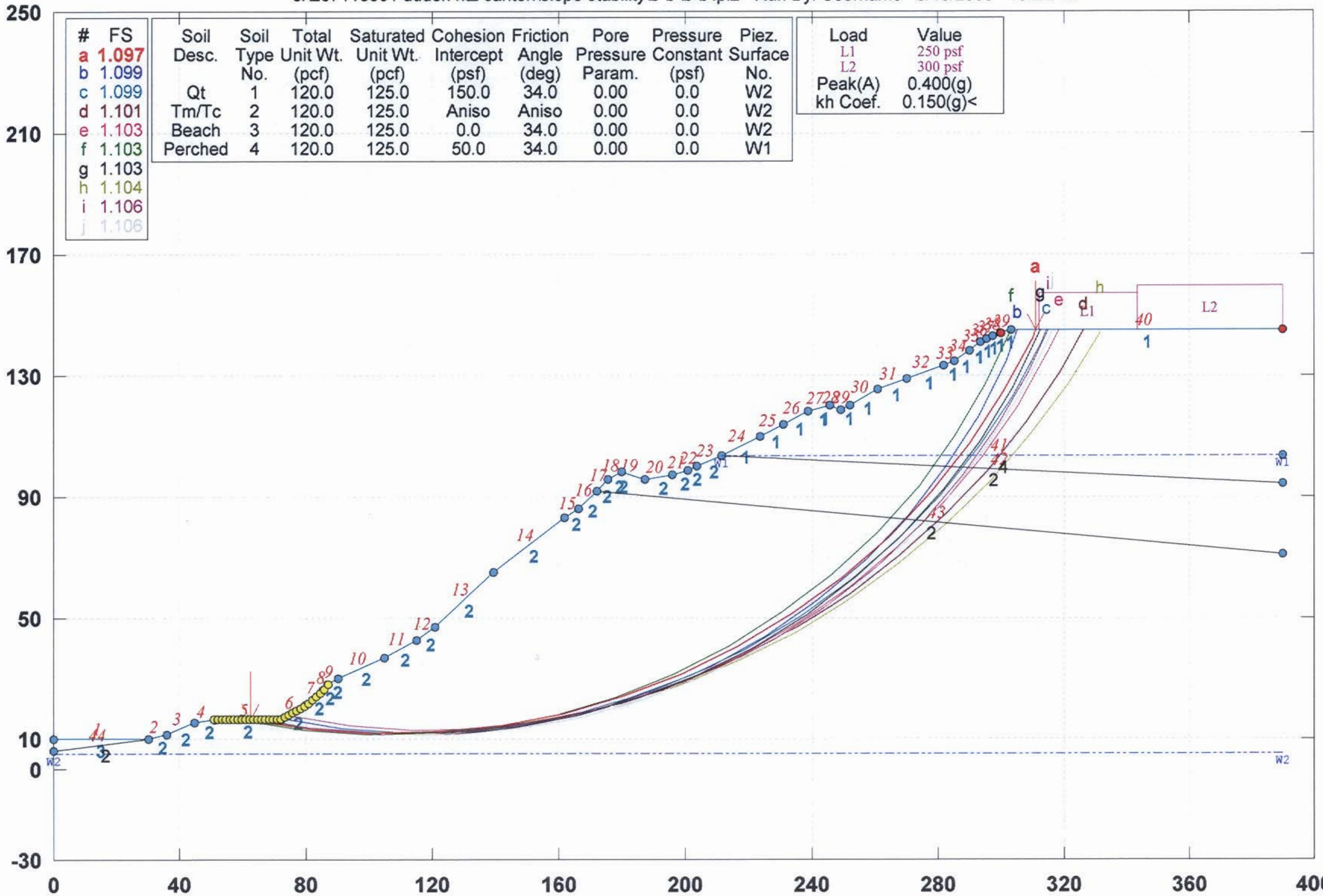
Factor of Safety

*** 1.484 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (B-B') 207118001

c:\207118001 dudek ritz carlton\slope stability\b-b'\b-b'.pl2 Run By: Username 3/10/2008 10:24AM



GSTABL7 v.2 FSmin=1.097

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

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                         ***  GSTABL7  ***
              ** GSTABL7 by Garry H. Gregory, P.E. **
   ** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **
            (All Rights Reserved-Unauthorized Use Prohibited)
*********************************************************************************
                    SLOPE STABILITY ANALYSIS SYSTEM
       Modified Bishop, Simplified Janbu, or GLE Method of Slices.
       (Includes Spencer & Morgenstern-Price Type Analysis)
       Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
       Nonlinear Undrained Shear Strength, Curved Phi Envelope,
       Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
       Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
*********************************************************************************
Analysis Run Date:          3/10/2008
Time of Run:                10:24AM
Run By:                     Username
Input Data Filename:        c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.in
Output Filename:            c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.OU
T
Unit System:                English
Plotted Output Filename:    c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.PL
T
PROBLEM DESCRIPTION:    Dudek/Ritz Carlton (B-B')
                        207118001
BOUNDARY COORDINATES
   40 Top   Boundaries
   44 Total Boundaries
```

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	30.00	10.00	3
2	30.00	10.00	36.00	11.50	2
3	36.00	11.50	45.00	15.50	2
4	45.00	15.50	51.00	16.50	2
5	51.00	16.50	72.00	16.50	2
6	72.00	16.50	80.00	21.00	2
7	80.00	21.00	85.50	26.00	2
8	85.50	26.00	87.00	28.00	2
9	87.00	28.00	90.00	30.00	2
10	90.00	30.00	105.00	37.00	2
11	105.00	37.00	115.00	42.50	2
12	115.00	42.50	121.00	47.00	2
13	121.00	47.00	139.50	65.00	2
14	139.50	65.00	162.00	83.00	2
15	162.00	83.00	166.00	86.00	2
16	166.00	86.00	172.00	92.00	2
17	172.00	92.00	175.50	96.00	2
18	175.50	96.00	180.00	98.00	2
19	180.00	98.00	187.00	96.00	2
20	187.00	96.00	196.00	97.00	2
21	196.00	97.00	201.00	98.50	2
22	201.00	98.50	204.00	100.00	2
23	204.00	100.00	211.50	103.50	2
24	211.50	103.50	224.00	110.00	1
25	224.00	110.00	231.00	114.00	1
26	231.00	114.00	239.00	118.00	1
27	239.00	118.00	245.50	120.00	1
28	245.50	120.00	249.00	118.50	1
29	249.00	118.50	252.00	120.00	1
30	252.00	120.00	261.00	125.50	1
31	261.00	125.50	270.00	129.00	1
32	270.00	129.00	282.00	133.50	1
33	282.00	133.50	285.00	135.00	1
34	285.00	135.00	290.00	138.00	1
35	290.00	138.00	293.50	141.00	1
36	293.50	141.00	295.50	142.00	1
37	295.50	142.00	297.50	143.00	1
38	297.50	143.00	300.00	144.00	1

39	300.00	144.00	303.00	145.00	1
40	303.00	145.00	390.00	145.00	1
41	211.50	103.50	390.00	103.50	4
42	211.50	103.50	390.00	94.50	2
43	172.00	92.00	390.00	71.00	2
44	0.00	6.00	30.00	10.00	2

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	2
2	120.0	125.0	800.0	26.0	0.00	0.0	2
3	120.0	125.0	0.0	34.0	0.00	0.0	2
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 2 Is Anisotropic
Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-12.0	800.00	26.00
3	-4.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

2 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	211.50	103.50
2	390.00	103.50

Piezometric Surface No. 2 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	5.00
2	390.00	5.00

BOUNDARY LOAD(S)
2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	312.00	343.00	250.0	0.0
2	343.01	390.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.
Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000
A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.
1350 Trial Surfaces Have Been Generated.
45 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced
Along The Ground Surface Between X = 51.00(ft)

and X = 87.00(ft)
Each Surface Terminates Between X = 300.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
20.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1350
Number of Trial Surfaces With Valid FS = 1350
Statistical Data On All Valid FS Values:
FS Max = 1.818 FS Min = 1.097 FS Ave = 1.211
Standard Deviation = 0.074 Coefficient of Variation = 6.14 %
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	62.172	16.500
2	81.914	13.294
3	101.864	11.879
4	121.860	12.265
5	141.740	14.449
6	161.343	18.414
7	180.510	24.128
8	199.084	31.543
9	216.916	40.601
10	233.860	51.226
11	249.778	63.334
12	264.542	76.826
13	278.032	91.591
14	290.138	107.512
15	300.762	124.457
16	309.817	142.289
17	310.899	145.000

Circle Center At X = 107.583 ; Y = 233.766 ; and Radius = 221.961
Factor of Safety
*** 1.097 ***
Individual data on the 54 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	9.8	941.0	0.0	0.0	0.	0.	141.1	0.0	0.0
2	8.0	4315.5	0.0	0.0	0.	0.	647.3	0.0	0.0
3	1.9	1933.8	0.0	0.0	0.	0.	290.1	0.0	0.0
4	3.6	4821.0	0.0	0.0	0.	0.	723.1	0.0	0.0
5	1.5	2522.4	0.0	0.0	0.	0.	378.4	0.0	0.0
6	3.0	5822.2	0.0	0.0	0.	0.	873.3	0.0	0.0
7	11.9	29139.7	0.0	0.0	0.	0.	4371.0	0.0	0.0
8	3.1	9167.7	0.0	0.0	0.	0.	1375.2	0.0	0.0
9	10.0	33256.9	0.0	0.0	0.	0.	4988.5	0.0	0.0
10	6.0	23442.9	0.0	0.0	0.	0.	3516.4	0.0	0.0
11	0.9	3628.6	0.0	0.0	0.	0.	544.3	0.0	0.0
12	17.6	91412.9	0.0	0.0	0.	0.	13711.9	0.0	0.0
13	2.2	13864.0	0.0	0.0	0.	0.	2079.6	0.0	0.0
14	19.6	136911.6	0.0	0.0	0.	0.	20536.7	0.0	0.0
15	0.7	5060.8	0.0	0.0	0.	0.	759.1	0.0	0.0
16	4.0	31341.0	0.0	0.0	0.	0.	4701.2	0.0	0.0
17	6.0	49178.4	0.0	0.0	0.	0.	7376.8	0.0	0.0
18	3.5	30192.7	0.0	0.0	0.	0.	4528.9	0.0	0.0
19	4.5	39795.3	0.0	0.0	0.	0.	5969.3	0.0	0.0
20	0.5	4520.2	0.0	0.0	0.	0.	678.0	0.0	0.0
21	6.5	55688.2	0.0	0.0	0.	0.	8353.2	0.0	0.0
22	9.0	73423.4	0.0	0.0	0.	0.	11013.5	0.0	0.0
23	3.1	24625.8	0.0	0.0	0.	0.	3693.9	0.0	0.0
24	1.9	15214.2	0.0	0.0	0.	0.	2282.1	0.0	0.0

25	3.0	23749.8	0.0	0.0	0.	0.	3562.5	0.0	0.0
26	7.5	59224.6	0.0	0.0	0.	0.	8883.7	0.0	0.0
27	5.4	42691.1	0.0	0.0	0.	0.	6403.7	0.0	0.0
28	7.1	55558.2	0.0	0.0	0.	0.	8333.7	0.0	0.0
29	7.0	54428.2	0.0	0.0	0.	0.	8164.2	0.0	0.0
30	2.9	22109.7	0.0	0.0	0.	0.	3316.5	0.0	0.0
31	5.1	39222.2	0.0	0.0	0.	0.	5883.3	0.0	0.0
32	6.5	47936.0	0.0	0.0	0.	0.	7190.4	0.0	0.0
33	3.5	24323.9	0.0	0.0	0.	0.	3648.6	0.0	0.0
34	0.8	5205.4	0.0	0.0	0.	0.	780.8	0.0	0.0
35	2.2	14710.7	0.0	0.0	0.	0.	2206.6	0.0	0.0
36	9.0	57637.4	0.0	0.0	0.	0.	8645.6	0.0	0.0
37	3.5	21717.4	0.0	0.0	0.	0.	3257.6	0.0	0.0
38	5.3	30473.5	0.0	0.0	0.	0.	4571.0	0.0	0.0
39	0.2	1121.7	0.0	0.0	0.	0.	168.3	0.0	0.0
40	8.0	41871.5	0.0	0.0	0.	0.	6280.7	0.0	0.0
41	4.0	18426.6	0.0	0.0	0.	0.	2764.0	0.0	0.0
42	2.3	9894.6	0.0	0.0	0.	0.	1484.2	0.0	0.0
43	0.7	2926.6	0.0	232.7	0.	0.	439.0	0.0	0.0
44	2.1	8405.8	0.0	295.4	0.	0.	1260.9	0.0	0.0
45	2.9	11083.1	0.0	0.0	0.	0.	1662.5	0.0	0.0
46	0.1	507.1	0.0	0.0	0.	0.	76.1	0.0	0.0
47	3.4	11847.7	0.0	0.0	0.	0.	1777.2	0.0	0.0
48	2.0	6487.4	0.0	0.0	0.	0.	973.1	0.0	0.0
49	2.0	5961.8	0.0	0.0	0.	0.	894.3	0.0	0.0
50	2.5	6675.6	0.0	0.0	0.	0.	1001.3	0.0	0.0
51	0.8	1853.2	0.0	0.0	0.	0.	278.0	0.0	0.0
52	2.2	4825.9	0.0	0.0	0.	0.	723.9	0.0	0.0
53	6.8	7708.1	0.0	0.0	0.	0.	1156.2	0.0	0.0
54	1.1	175.9	0.0	0.0	0.	0.	26.4	0.0	0.0

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	72.103	16.558
2	91.817	13.185
3	111.768	11.781
4	131.759	12.360
5	151.595	14.916
6	171.081	19.424
7	190.024	25.840
8	208.238	34.100
9	225.545	44.123
10	241.774	55.811
11	256.766	69.050
12	270.373	83.707
13	282.461	99.641
14	292.912	116.693
15	301.623	134.697
16	305.400	145.000

Circle Center At X = 115.998 ; Y = 212.926 ; and Radius = 201.214

Factor of Safety

*** 1.099 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	64.655	16.500
2	84.382	13.206
3	104.325	11.699
4	124.323	11.992
5	144.213	14.083
6	163.835	17.954
7	183.029	23.574
8	201.640	30.898
9	219.516	39.867
10	236.514	50.406
11	252.494	62.432
12	267.328	75.847

13	280.896	90.542
14	293.086	106.397
15	303.801	123.284
16	312.954	141.067
17	314.549	145.000

Circle Center At X = 111.072 ; Y = 233.728 ; and Radius = 222.132

Factor of Safety

*** 1.099 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	62.172	16.500
2	81.926	13.371
3	101.871	11.883
4	121.870	12.047
5	141.788	13.860
6	161.488	17.312
7	180.835	22.377
8	199.699	29.023
9	217.950	37.203
10	235.463	46.861
11	252.120	57.932
12	267.805	70.340
13	282.413	84.000
14	295.844	98.820
15	308.005	114.697
16	318.815	131.525
17	325.974	145.000

Circle Center At X = 109.894 ; Y = 253.847 ; and Radius = 242.097

Factor of Safety

*** 1.101 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	63.414	16.500
2	83.126	13.117
3	103.059	11.483
4	123.058	11.612
5	142.969	13.501
6	162.636	17.137
7	181.906	22.491
8	200.629	29.522
9	218.661	38.174
10	235.860	48.381
11	252.094	60.063
12	267.235	73.130
13	281.167	87.479
14	293.780	103.000
15	304.978	119.572
16	314.672	137.065
17	318.195	145.000

Circle Center At X = 111.603 ; Y = 238.167 ; and Radius = 226.845

Factor of Safety

*** 1.103 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	59.690	16.500
2	79.388	13.041
3	99.325	11.454
4	119.323	11.752
5	139.204	13.932
6	158.791	17.975
7	177.910	23.846
8	196.391	31.492
9	214.069	40.844
10	230.788	51.821

11	246.398	64.323
12	260.762	78.241
13	273.750	93.449
14	285.248	109.814
15	295.153	127.189
16	303.188	145.000

Circle Center At X = 106.176 ; Y = 223.368 ; and Radius = 212.026
Factor of Safety
*** 1.103 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	67.138	16.500
2	86.836	13.035
3	106.770	11.422
4	126.769	11.673
5	146.657	13.788
6	166.261	17.747
7	185.410	23.517
8	203.939	31.047
9	221.685	40.271
10	238.494	51.109
11	254.219	63.466
12	268.724	77.236
13	281.882	92.298
14	293.579	108.521
15	303.713	125.763
16	312.195	143.876
17	312.599	145.000

Circle Center At X = 114.076 ; Y = 225.617 ; and Radius = 214.320
Factor of Safety
*** 1.103 ***

Failure Surface Specified By 18 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	60.931	16.500
2	80.698	13.454
3	100.644	11.982
4	120.643	12.094
5	140.571	13.787
6	160.303	17.053
7	179.714	21.870
8	198.683	28.208
9	217.091	36.027
10	234.823	45.279
11	251.766	55.905
12	267.816	67.839
13	282.871	81.005
14	296.836	95.322
15	309.625	110.699
16	321.156	127.040
17	331.358	144.242
18	331.730	145.000

Circle Center At X = 109.250 ; Y = 264.261 ; and Radius = 252.429
Factor of Safety
*** 1.104 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	74.586	17.955
2	94.298	14.573
3	114.243	13.081
4	134.238	13.490
5	154.105	15.797
6	173.662	19.982
7	192.733	26.006
8	211.145	33.816

9	228.732	43.340
10	245.335	54.491
11	260.802	67.170
12	274.995	81.262
13	287.784	96.638
14	299.055	113.160
15	308.704	130.678
16	314.900	145.000

Circle Center At X = 119.984 ; Y = 222.887 ; and Radius = 209.901

Factor of Safety

*** 1.106 ***

Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	67.138	16.500
2	86.820	12.947
3	106.745	11.218
4	126.745	11.326
5	146.650	13.271
6	166.292	17.037
7	185.505	22.591
8	204.127	29.887
9	222.000	38.862
10	238.973	49.442
11	254.902	61.536
12	269.652	75.042
13	283.100	89.847
14	295.130	105.824
15	305.642	122.838
16	314.547	140.747
17	316.194	145.000

Circle Center At X = 115.568 ; Y = 228.514 ; and Radius = 217.475

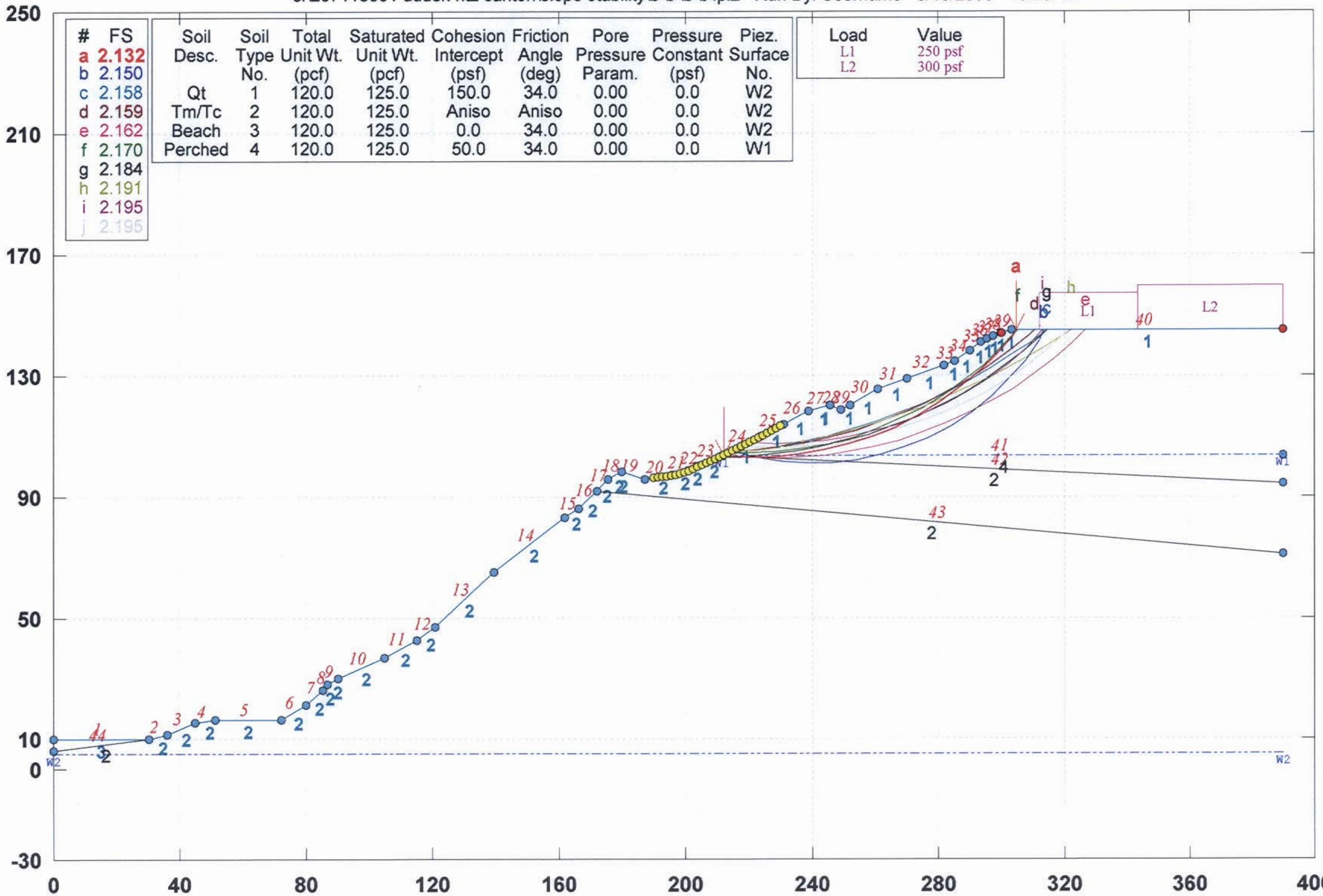
Factor of Safety

*** 1.106 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (B-B') 207118001

c:\207118001 dudek ritz carlton\slope stability\b-b'\b-b'.pl2 Run By: Username 3/10/2008 10:20AM



#	FS
a	2.132
b	2.150
c	2.158
d	2.159
e	2.162
f	2.170
g	2.184
h	2.191
i	2.195
j	2.195

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qt	1	120.0	125.0	150.0	34.0	0.00	0.0	W2
Tm/Tc	2	120.0	125.0	Aniso	Aniso	0.00	0.0	W2
Beach	3	120.0	125.0	0.0	34.0	0.00	0.0	W2
Perched	4	120.0	125.0	50.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	300 psf

GSTABL7 v.2 FSmin=2.132

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** GSTABL7 ***
** GSTABL7 by Garry H. Gregory, P.E. **
** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****
SLOPE STABILITY ANALYSIS SYSTEM
Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
****

Analysis Run Date: 3/10/2008
Time of Run: 10:23AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.PL
T
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (B-B')
207118001

BOUNDARY COORDINATES
40 Top Boundaries
44 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	30.00	10.00	3
2	30.00	10.00	36.00	11.50	2
3	36.00	11.50	45.00	15.50	2
4	45.00	15.50	51.00	16.50	2
5	51.00	16.50	72.00	16.50	2
6	72.00	16.50	80.00	21.00	2
7	80.00	21.00	85.50	26.00	2
8	85.50	26.00	87.00	28.00	2
9	87.00	28.00	90.00	30.00	2
10	90.00	30.00	105.00	37.00	2
11	105.00	37.00	115.00	42.50	2
12	115.00	42.50	121.00	47.00	2
13	121.00	47.00	139.50	65.00	2
14	139.50	65.00	162.00	83.00	2
15	162.00	83.00	166.00	86.00	2
16	166.00	86.00	172.00	92.00	2
17	172.00	92.00	175.50	96.00	2
18	175.50	96.00	180.00	98.00	2
19	180.00	98.00	187.00	96.00	2
20	187.00	96.00	196.00	97.00	2
21	196.00	97.00	201.00	98.50	2
22	201.00	98.50	204.00	100.00	2
23	204.00	100.00	211.50	103.50	2
24	211.50	103.50	224.00	110.00	1
25	224.00	110.00	231.00	114.00	1
26	231.00	114.00	239.00	118.00	1
27	239.00	118.00	245.50	120.00	1
28	245.50	120.00	249.00	118.50	1
29	249.00	118.50	252.00	120.00	1
30	252.00	120.00	261.00	125.50	1
31	261.00	125.50	270.00	129.00	1
32	270.00	129.00	282.00	133.50	1
33	282.00	133.50	285.00	135.00	1
34	285.00	135.00	290.00	138.00	1
35	290.00	138.00	293.50	141.00	1
36	293.50	141.00	295.50	142.00	1
37	295.50	142.00	297.50	143.00	1
38	297.50	143.00	300.00	144.00	1

39	300.00	144.00	303.00	145.00	1
40	303.00	145.00	390.00	145.00	1
41	211.50	103.50	390.00	103.50	4
42	211.50	103.50	390.00	94.50	2
43	172.00	92.00	390.00	71.00	2
44	0.00	6.00	30.00	10.00	2

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	2
2	120.0	125.0	800.0	26.0	0.00	0.0	2
3	120.0	125.0	0.0	34.0	0.00	0.0	2
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-12.0	800.00	26.00
3	-4.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

2 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)

Piezometric Surface No. 1 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	211.50	103.50
2	390.00	103.50

Piezometric Surface No. 2 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	5.00
2	390.00	5.00

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	312.00	343.00	250.0	0.0
2	343.01	390.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

EARTHQUAKE DATA HAS BEEN SUPPRESSED

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1350 Trial Surfaces Have Been Generated.

45 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced

Along The Ground Surface Between X = 190.00(ft)
and X = 230.00(ft)
Each Surface Terminates Between X = 300.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
8.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1350
Number of Trial Surfaces With Valid FS = 1350
Statistical Data On All Valid FS Values:
FS Max = 4.619 FS Min = 2.132 FS Ave = 3.059
Standard Deviation = 0.515 Coefficient of Variation = 16.83 %
Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	212.069	103.796
2	220.050	103.241
3	228.049	103.319
4	236.018	104.030
5	243.905	105.369
6	251.661	107.327
7	259.238	109.894
8	266.589	113.051
9	273.667	116.780
10	280.427	121.058
11	286.828	125.857
12	292.829	131.147
13	298.393	136.895
14	303.485	143.066
15	304.839	145.000

Circle Center At X = 223.063 ; Y = 204.241 ; and Radius = 101.045
Factor of Safety
*** 2.132 ***
Individual data on the 32 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	4.3	640.1	0.0	0.0	0.	0.	0.0	0.0	0.0
2	3.7	1615.2	0.0	30.2	0.	0.	0.0	0.0	0.0
3	4.0	2712.9	0.0	59.1	0.	0.	0.0	0.0	0.0
4	4.0	3822.1	0.0	50.7	0.	0.	0.0	0.0	0.0
5	2.0	2309.7	0.0	11.5	0.	0.	0.0	0.0	0.0
6	0.9	1128.1	0.0	0.0	0.	0.	0.0	0.0	0.0
7	5.0	6893.1	0.0	0.0	0.	0.	0.0	0.0	0.0
8	3.0	4642.4	0.0	0.0	0.	0.	0.0	0.0	0.0
9	4.9	8123.5	0.0	0.0	0.	0.	0.0	0.0	0.0
10	1.6	2715.4	0.0	0.0	0.	0.	0.0	0.0	0.0
11	3.5	5475.3	0.0	0.0	0.	0.	0.0	0.0	0.0
12	2.7	3887.7	0.0	0.0	0.	0.	0.0	0.0	0.0
13	0.3	509.4	0.0	0.0	0.	0.	0.0	0.0	0.0
14	7.2	11764.5	0.0	0.0	0.	0.	0.0	0.0	0.0
15	1.8	3105.1	0.0	0.0	0.	0.	0.0	0.0	0.0
16	5.6	9883.1	0.0	0.0	0.	0.	0.0	0.0	0.0
17	3.4	5888.9	0.0	0.0	0.	0.	0.0	0.0	0.0
18	3.7	6104.1	0.0	0.0	0.	0.	0.0	0.0	0.0
19	6.8	10322.0	0.0	0.0	0.	0.	0.0	0.0	0.0
20	1.6	2181.5	0.0	0.0	0.	0.	0.0	0.0	0.0
21	3.0	3919.8	0.0	0.0	0.	0.	0.0	0.0	0.0
22	1.8	2276.3	0.0	0.0	0.	0.	0.0	0.0	0.0
23	3.2	3727.9	0.0	0.0	0.	0.	0.0	0.0	0.0
24	2.8	3161.7	0.0	0.0	0.	0.	0.0	0.0	0.0
25	0.7	742.1	0.0	0.0	0.	0.	0.0	0.0	0.0

26	2.0	2070.5	0.0	0.0	0.	0.	0.0	0.0	0.0
27	2.0	1814.6	0.0	0.0	0.	0.	0.0	0.0	0.0
28	0.9	722.8	0.0	0.0	0.	0.	0.0	0.0	0.0
29	1.6	1120.3	0.0	0.0	0.	0.	0.0	0.0	0.0
30	3.0	1382.3	0.0	0.0	0.	0.	0.0	0.0	0.0
31	0.5	129.6	0.0	0.0	0.	0.	0.0	0.0	0.0
32	1.4	157.1	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	214.827	105.230
2	222.533	103.079
3	230.410	101.684
4	238.386	101.061
5	246.384	101.213
6	254.330	102.141
7	262.149	103.836
8	269.766	106.280
9	277.111	109.452
10	284.113	113.321
11	290.706	117.851
12	296.830	123.000
13	302.425	128.718
14	307.439	134.951
15	311.825	141.642
16	313.587	145.000

Circle Center At X = 240.817 ; Y = 183.199 ; and Radius = 82.186

Factor of Safety
*** 2.150 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	213.448	104.513
2	221.400	105.388
3	229.308	106.600
4	237.157	108.147
5	244.933	110.026
6	252.622	112.234
7	260.211	114.767
8	267.685	117.620
9	275.031	120.788
10	282.236	124.265
11	289.286	128.045
12	296.170	132.122
13	302.874	136.487
14	309.386	141.133
15	314.346	145.000

Circle Center At X = 196.842 ; Y = 291.997 ; and Radius = 188.218

Factor of Safety
*** 2.158 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	214.827	105.230
2	222.813	105.717
3	230.760	106.637
4	238.645	107.988
5	246.444	109.766
6	254.136	111.967
7	261.696	114.582
8	269.103	117.605
9	276.335	121.026
10	283.370	124.836
11	290.186	129.022
12	296.765	133.574
13	303.087	138.477
14	309.133	143.716

15	310.460	145.000

Circle Center At X = 209.886 ; Y = 252.123 ; and Radius = 146.976
Factor of Safety
*** 2.159 ***
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	212.069	103.796
2	220.037	103.085
3	228.034	102.844
4	236.030	103.073
5	244.000	103.774
6	251.914	104.941
7	259.746	106.573
8	267.468	108.662
9	275.054	111.203
10	282.477	114.185
11	289.712	117.599
12	296.734	121.433
13	303.518	125.673
14	310.040	130.305
15	316.279	135.313
16	322.212	140.680
17	326.457	145.000

Circle Center At X = 228.128 ; Y = 238.736 ; and Radius = 135.893
Factor of Safety
*** 2.162 ***
Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	213.448	104.513
2	221.447	104.401
3	229.434	104.859
4	237.368	105.887
5	245.208	107.478
6	252.915	109.625
7	260.448	112.316
8	267.771	115.539
9	274.844	119.275
10	281.633	123.507
11	288.103	128.213
12	294.220	133.369
13	299.954	138.948
14	305.274	144.922
15	305.335	145.000

Circle Center At X = 219.022 ; Y = 216.385 ; and Radius = 112.011
Factor of Safety
*** 2.170 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	210.690	103.122
2	218.688	103.282
3	226.666	103.876
4	234.600	104.903
5	242.466	106.360
6	250.241	108.241
7	257.903	110.543
8	265.429	113.257
9	272.796	116.376
10	279.982	119.891
11	286.967	123.791
12	293.730	128.065
13	300.250	132.700
14	306.509	137.683
15	312.488	142.998
16	314.507	145.000

Circle Center At X = 211.806 ; Y = 249.976 ; and Radius = 146.859
Factor of Safety
*** 2.184 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	213.448	104.513
2	221.388	105.492
3	229.290	106.741
4	237.144	108.261
5	244.942	110.048
6	252.674	112.101
7	260.331	114.418
8	267.905	116.995
9	275.385	119.831
10	282.765	122.920
11	290.034	126.260
12	297.185	129.848
13	304.208	133.677
14	311.097	137.745
15	317.842	142.047
16	322.141	145.000

Circle Center At X = 188.947 ; Y = 336.436 ; and Radius = 233.213
Factor of Safety
*** 2.191 ***
Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	220.345	108.099
2	228.332	107.646
3	236.331	107.774
4	244.299	108.482
5	252.195	109.768
6	259.977	111.624
7	267.604	114.040
8	275.034	117.004
9	282.230	120.499
10	289.153	124.509
11	295.766	129.010
12	302.035	133.980
13	307.927	139.392
14	313.204	145.000

Circle Center At X = 230.578 ; Y = 217.637 ; and Radius = 110.015
Factor of Safety
*** 2.195 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	217.586	106.665
2	225.578	106.299
3	233.577	106.414
4	241.555	107.008
5	249.483	108.080
6	257.332	109.625
7	265.074	111.639
8	272.682	114.113
9	280.128	117.040
10	287.384	120.408
11	294.425	124.205
12	301.226	128.418
13	307.762	133.032
14	314.009	138.029
15	319.945	143.392
16	321.524	145.000

Circle Center At X = 227.707 ; Y = 239.295 ; and Radius = 133.016
Factor of Safety
*** 2.195 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (B-B') 207118001

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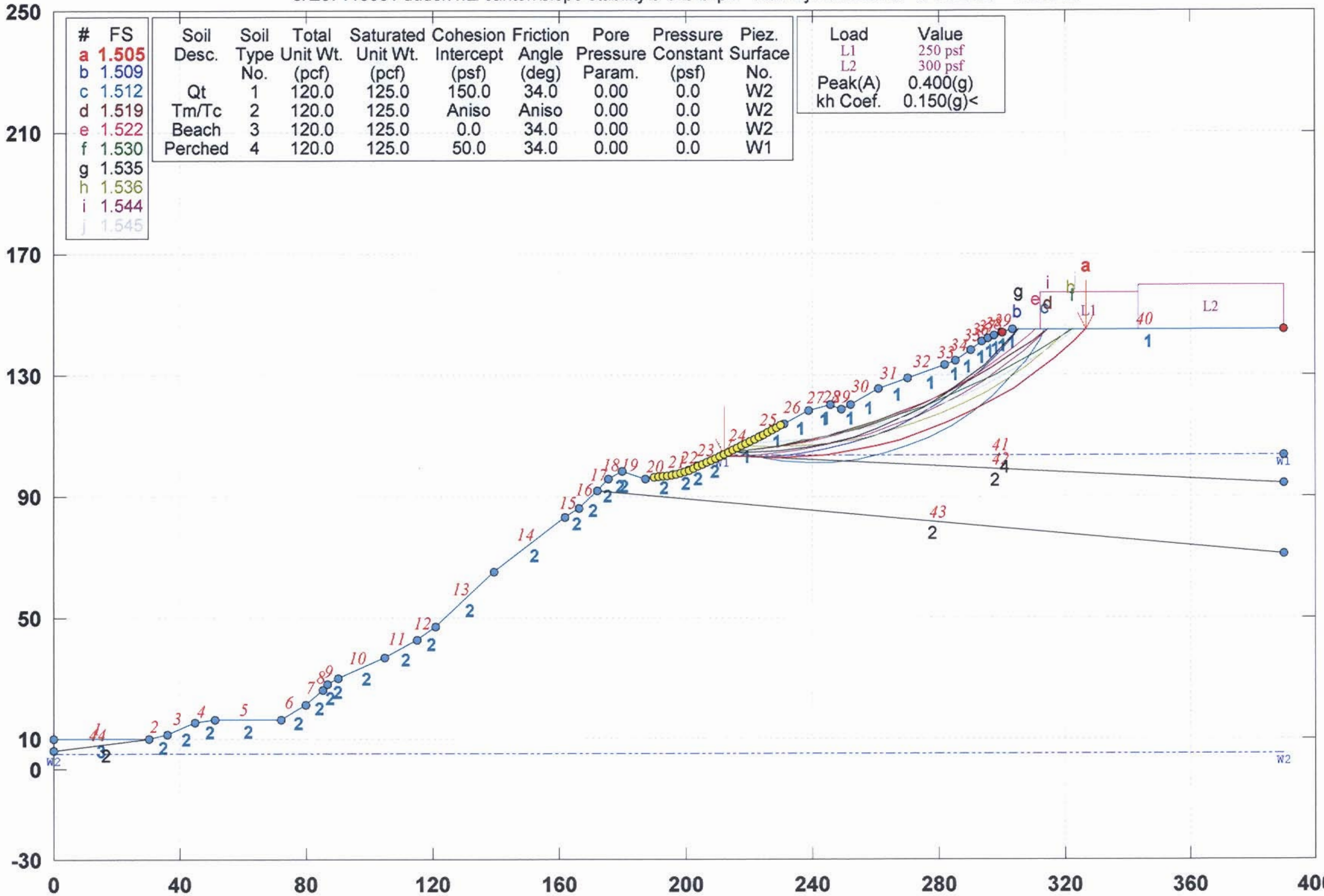

GSTABL7 v.2 FSmin=1.505

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 3/10/2008
Time of Run: 10:21AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\B-B'\b-b'.PL
T

PROBLEM DESCRIPTION: Dudek/Ritz Carlton (B-B')
207118001

BOUNDARY COORDINATES
40 Top Boundaries
44 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	10.00	30.00	10.00	3
2	30.00	10.00	36.00	11.50	2
3	36.00	11.50	45.00	15.50	2
4	45.00	15.50	51.00	16.50	2
5	51.00	16.50	72.00	16.50	2
6	72.00	16.50	80.00	21.00	2
7	80.00	21.00	85.50	26.00	2
8	85.50	26.00	87.00	28.00	2
9	87.00	28.00	90.00	30.00	2
10	90.00	30.00	105.00	37.00	2
11	105.00	37.00	115.00	42.50	2
12	115.00	42.50	121.00	47.00	2
13	121.00	47.00	139.50	65.00	2
14	139.50	65.00	162.00	83.00	2
15	162.00	83.00	166.00	86.00	2
16	166.00	86.00	172.00	92.00	2
17	172.00	92.00	175.50	96.00	2
18	175.50	96.00	180.00	98.00	2
19	180.00	98.00	187.00	96.00	2
20	187.00	96.00	196.00	97.00	2
21	196.00	97.00	201.00	98.50	2
22	201.00	98.50	204.00	100.00	2
23	204.00	100.00	211.50	103.50	2
24	211.50	103.50	224.00	110.00	1
25	224.00	110.00	231.00	114.00	1
26	231.00	114.00	239.00	118.00	1
27	239.00	118.00	245.50	120.00	1
28	245.50	120.00	249.00	118.50	1
29	249.00	118.50	252.00	120.00	1
30	252.00	120.00	261.00	125.50	1
31	261.00	125.50	270.00	129.00	1
32	270.00	129.00	282.00	133.50	1
33	282.00	133.50	285.00	135.00	1
34	285.00	135.00	290.00	138.00	1
35	290.00	138.00	293.50	141.00	1
36	293.50	141.00	295.50	142.00	1
37	295.50	142.00	297.50	143.00	1
38	297.50	143.00	300.00	144.00	1

39	300.00	144.00	303.00	145.00	1
40	303.00	145.00	390.00	145.00	1
41	211.50	103.50	390.00	103.50	4
42	211.50	103.50	390.00	94.50	2
43	172.00	92.00	390.00	71.00	2
44	0.00	6.00	30.00	10.00	2

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	150.0	34.0	0.00	0.0	2
2	120.0	125.0	800.0	26.0	0.00	0.0	2
3	120.0	125.0	0.0	34.0	0.00	0.0	2
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 4

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-90.0	800.00	26.00
2	-12.0	800.00	26.00
3	-4.0	100.00	12.00
4	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

2 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)

Piezometric Surface No. 1 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	211.50	103.50
2	390.00	103.50

Piezometric Surface No. 2 Specified by 2 Coordinate Points

Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	5.00
2	390.00	5.00

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	312.00	343.00	250.0	0.0
2	343.01	390.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

1350 Trial Surfaces Have Been Generated.

45 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced Along The Ground Surface Between X = 190.00(ft)

and X = 230.00(ft)
Each Surface Terminates Between X = 300.00(ft)
and X = 390.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
8.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1350
Number of Trial Surfaces With Valid FS = 1350
Statistical Data On All Valid FS Values:
FS Max = 2.857 FS Min = 1.505 FS Ave = 2.036
Standard Deviation = 0.278 Coefficient of Variation = 13.66 %
Failure Surface Specified By 17 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	212.069	103.796
2	220.037	103.085
3	228.034	102.844
4	236.030	103.073
5	244.000	103.774
6	251.914	104.941
7	259.746	106.573
8	267.468	108.662
9	275.054	111.203
10	282.477	114.185
11	289.712	117.599
12	296.734	121.433
13	303.518	125.673
14	310.040	130.305
15	316.279	135.313
16	322.212	140.680
17	326.457	145.000

Circle Center At X = 228.128 ; Y = 238.736 ; and Radius = 135.893
Factor of Safety
*** 1.505 ***
Individual data on the 35 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	3.3	401.5	0.0	0.0	0.	0.	60.2	0.0	0.0
2	4.7	1924.3	0.0	60.6	0.	0.	288.6	0.0	0.0
3	4.0	2836.4	0.0	117.5	0.	0.	425.5	0.0	0.0
4	4.0	4004.3	0.0	150.0	0.	0.	600.6	0.0	0.0
5	3.0	3663.6	0.0	113.7	0.	0.	549.5	0.0	0.0
6	5.0	7410.8	0.0	156.6	0.	0.	1111.6	0.0	0.0
7	3.0	5012.7	0.0	55.1	0.	0.	751.9	0.0	0.0
8	1.9	3365.9	0.0	9.8	0.	0.	504.9	0.0	0.0
9	3.1	5763.2	0.0	0.0	0.	0.	864.5	0.0	0.0
10	1.5	2860.2	0.0	0.0	0.	0.	429.0	0.0	0.0
11	3.5	6298.7	0.0	0.0	0.	0.	944.8	0.0	0.0
12	2.9	5070.8	0.0	0.0	0.	0.	760.6	0.0	0.0
13	0.1	155.4	0.0	0.0	0.	0.	23.3	0.0	0.0
14	7.7	15430.1	0.0	0.0	0.	0.	2314.5	0.0	0.0
15	1.3	2765.5	0.0	0.0	0.	0.	414.8	0.0	0.0
16	6.5	14724.1	0.0	0.0	0.	0.	2208.6	0.0	0.0
17	2.5	5900.9	0.0	0.0	0.	0.	885.1	0.0	0.0
18	5.1	11881.6	0.0	0.0	0.	0.	1782.2	0.0	0.0
19	6.9	16336.7	0.0	0.0	0.	0.	2450.5	0.0	0.0
20	0.5	1118.7	0.0	0.0	0.	0.	167.8	0.0	0.0
21	2.5	5930.0	0.0	0.0	0.	0.	889.5	0.0	0.0
22	4.7	11267.9	0.0	0.0	0.	0.	1690.2	0.0	0.0
23	0.3	698.7	0.0	0.0	0.	0.	104.8	0.0	0.0
24	3.5	8731.1	0.0	0.0	0.	0.	1309.7	0.0	0.0

25	2.0	5108.8	0.0	0.0	0.	0.	766.3	0.0	0.0
26	1.2	3140.7	0.0	0.0	0.	0.	471.1	0.0	0.0
27	0.8	1943.3	0.0	0.0	0.	0.	291.5	0.0	0.0
28	2.5	6242.1	0.0	0.0	0.	0.	936.3	0.0	0.0
29	3.0	7231.7	0.0	0.0	0.	0.	1084.8	0.0	0.0
30	0.5	1210.5	0.0	0.0	0.	0.	181.6	0.0	0.0
31	6.5	13314.3	0.0	0.0	0.	0.	1997.1	0.0	0.0
32	2.0	3271.0	0.0	0.0	0.	0.	490.6	0.0	0.0
33	4.3	5855.4	0.0	0.0	0.	0.	878.3	0.0	1069.7
34	5.9	4986.3	0.0	0.0	0.	0.	747.9	0.0	1483.3
35	4.2	1100.4	0.0	0.0	0.	0.	165.1	0.0	1061.3

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	212.069	103.796
2	220.050	103.241
3	228.049	103.319
4	236.018	104.030
5	243.905	105.369
6	251.661	107.327
7	259.238	109.894
8	266.589	113.051
9	273.667	116.780
10	280.427	121.058
11	286.828	125.857
12	292.829	131.147
13	298.393	136.895
14	303.485	143.066
15	304.839	145.000

Circle Center At X = 223.063 ; Y = 204.241 ; and Radius = 101.045

Factor of Safety

*** 1.509 ***

Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	214.827	105.230
2	222.533	103.079
3	230.410	101.684
4	238.386	101.061
5	246.384	101.213
6	254.330	102.141
7	262.149	103.836
8	269.766	106.280
9	277.111	109.452
10	284.113	113.321
11	290.706	117.851
12	296.830	123.000
13	302.425	128.718
14	307.439	134.951
15	311.825	141.642
16	313.587	145.000

Circle Center At X = 240.817 ; Y = 183.199 ; and Radius = 82.186

Factor of Safety

*** 1.512 ***

Failure Surface Specified By 15 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	213.448	104.513
2	221.400	105.388
3	229.308	106.600
4	237.157	108.147
5	244.933	110.026
6	252.622	112.234
7	260.211	114.767
8	267.685	117.620
9	275.031	120.788
10	282.236	124.265

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   11        289.286      128.045
   12        296.170      132.122
   13        302.874      136.487
   14        309.386      141.133
   15        314.346      145.000
Circle Center At X =   196.842 ; Y =   291.997 ; and Radius =   188.218
       Factor of Safety
      ***    1.519    ***
Failure Surface Specified By 15 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        214.827      105.230
    2        222.813      105.717
    3        230.760      106.637
    4        238.645      107.988
    5        246.444      109.766
    6        254.136      111.967
    7        261.696      114.582
    8        269.103      117.605
    9        276.335      121.026
   10        283.370      124.836
   11        290.186      129.022
   12        296.765      133.574
   13        303.087      138.477
   14        309.133      143.716
   15        310.460      145.000
Circle Center At X =   209.886 ; Y =   252.123 ; and Radius =   146.976
       Factor of Safety
      ***    1.522    ***
Failure Surface Specified By 16 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        213.448      104.513
    2        221.388      105.492
    3        229.290      106.741
    4        237.144      108.261
    5        244.942      110.048
    6        252.674      112.101
    7        260.331      114.418
    8        267.905      116.995
    9        275.385      119.831
   10        282.765      122.920
   11        290.034      126.260
   12        297.185      129.848
   13        304.208      133.677
   14        311.097      137.745
   15        317.842      142.047
   16        322.141      145.000
Circle Center At X =   188.947 ; Y =   336.436 ; and Radius =   233.213
       Factor of Safety
      ***    1.530    ***
Failure Surface Specified By 15 Coordinate Points
  Point      X-Surf      Y-Surf
   No.        (ft)        (ft)
    1        213.448      104.513
    2        221.447      104.401
    3        229.434      104.859
    4        237.368      105.887
    5        245.208      107.478
    6        252.915      109.625
    7        260.448      112.316
    8        267.771      115.539
    9        274.844      119.275
   10        281.633      123.507
   11        288.103      128.213
   12        294.220      133.369
   13        299.954      138.948
```

14	305.274	144.922
15	305.335	145.000

Circle Center At X = 219.022 ; Y = 216.385 ; and Radius = 112.011
Factor of Safety
*** 1.535 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	217.586	106.665
2	225.578	106.299
3	233.577	106.414
4	241.555	107.008
5	249.483	108.080
6	257.332	109.625
7	265.074	111.639
8	272.682	114.113
9	280.128	117.040
10	287.384	120.408
11	294.425	124.205
12	301.226	128.418
13	307.762	133.032
14	314.009	138.029
15	319.945	143.392
16	321.524	145.000

Circle Center At X = 227.707 ; Y = 239.295 ; and Radius = 133.016
Factor of Safety
*** 1.536 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	210.690	103.122
2	218.688	103.282
3	226.666	103.876
4	234.600	104.903
5	242.466	106.360
6	250.241	108.241
7	257.903	110.543
8	265.429	113.257
9	272.796	116.376
10	279.982	119.891
11	286.967	123.791
12	293.730	128.065
13	300.250	132.700
14	306.509	137.683
15	312.488	142.998
16	314.507	145.000

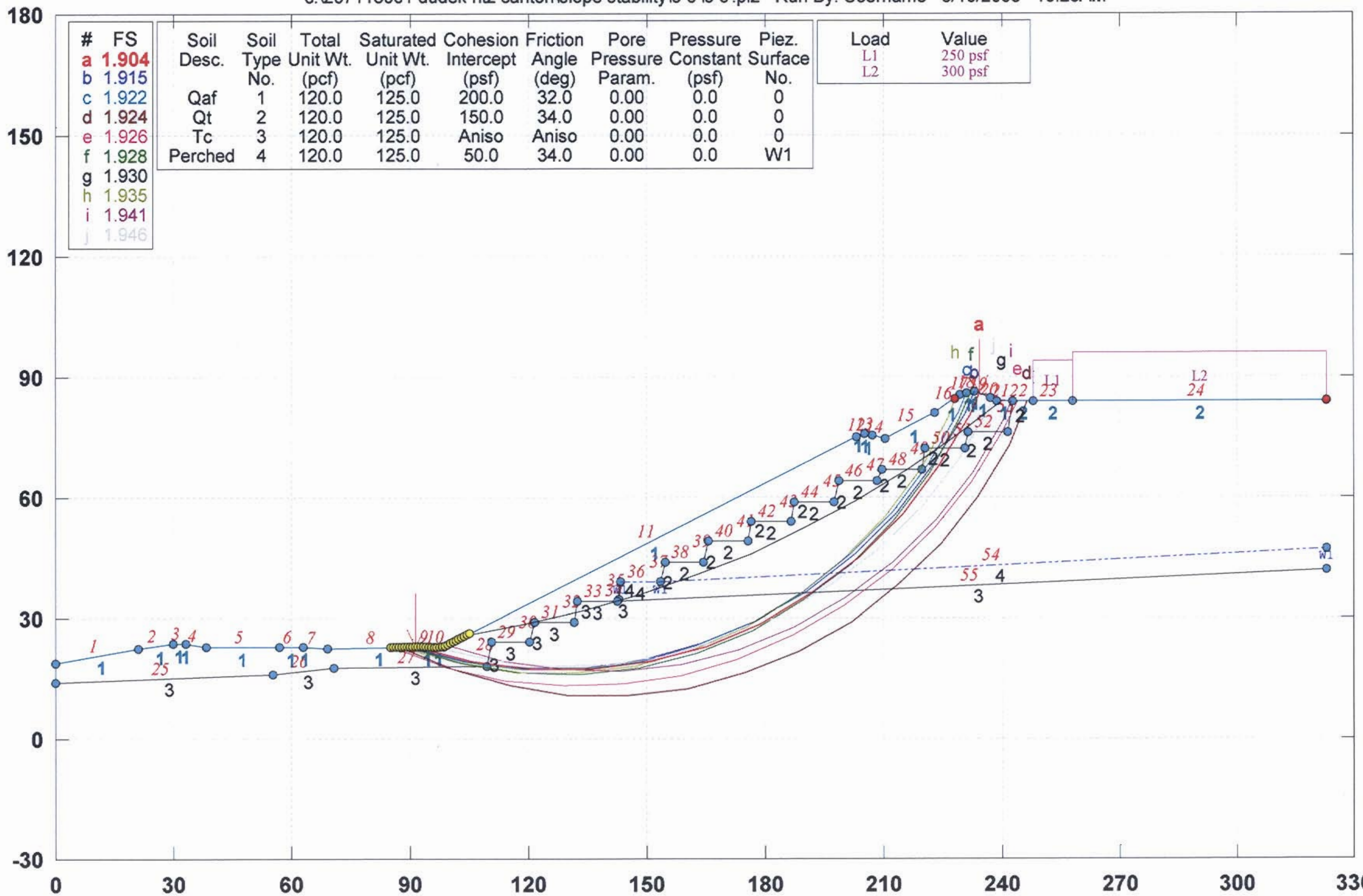
Circle Center At X = 211.806 ; Y = 249.976 ; and Radius = 146.859
Factor of Safety
*** 1.544 ***
Failure Surface Specified By 16 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	218.965	107.382
2	226.956	107.771
3	234.920	108.524
4	242.842	109.640
5	250.705	111.117
6	258.492	112.951
7	266.187	115.138
8	273.774	117.675
9	281.237	120.555
10	288.562	123.773
11	295.731	127.322
12	302.732	131.195
13	309.548	135.383
14	316.166	139.878
15	322.571	144.670

```
   16        322.973       145.000
Circle Center At X =   214.467 ; Y =   282.411 ; and Radius =   175.086
       Factor of Safety
      ***    1.545   ***
          **** END OF GSTABL7 OUTPUT ****
```

Dudek/Ritz Carlton (C-C') 207118001

c:\207118001 dudek ritz carlton\slope stability\c-c'\c-c'.pl2 Run By: Username 3/10/2008 10:26AM



Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qaf	1	120.0	125.0	200.0	32.0	0.00	0.0	0
Qt	2	120.0	125.0	150.0	34.0	0.00	0.0	0
Tc	3	120.0	125.0	Aniso	Aniso	0.00	0.0	0
Perched	4	120.0	125.0	50.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	300 psf

GSTABL7 v.2 FSmin=1.904

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** GSTABL7 ***
** GSTABL7 by Garry H. Gregory, P.E. **
** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****
SLOPE STABILITY ANALYSIS SYSTEM
Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.
****

Analysis Run Date: 3/10/2008
Time of Run: 10:28AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.PL
T
PROBLEM DESCRIPTION: Dudek/Ritz Carlton (C-C')
207118001

BOUNDARY COORDINATES
24 Top Boundaries
55 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	19.00	21.00	22.50	1
2	21.00	22.50	30.00	23.50	1
3	30.00	23.50	33.00	23.50	1
4	33.00	23.50	38.50	23.00	1
5	38.50	23.00	57.00	23.00	1
6	57.00	23.00	63.00	23.00	1
7	63.00	23.00	69.00	22.50	1
8	69.00	22.50	93.00	23.00	1
9	93.00	23.00	96.00	22.75	1
10	96.00	22.75	98.50	23.00	1
11	98.50	23.00	203.00	75.00	1
12	203.00	75.00	205.00	75.75	1
13	205.00	75.75	207.00	75.50	1
14	207.00	75.50	210.50	74.50	1
15	210.50	74.50	223.00	81.00	1
16	223.00	81.00	229.50	85.50	1
17	229.50	85.50	231.00	86.00	1
18	231.00	86.00	233.00	86.25	1
19	233.00	86.25	237.00	84.50	1
20	237.00	84.50	238.50	84.00	1
21	238.50	84.00	242.50	84.00	1
22	242.50	84.00	248.00	84.00	2
23	248.00	84.00	258.00	84.00	2
24	258.00	84.00	323.00	84.00	2
25	0.00	14.00	55.50	16.00	3
26	55.50	16.00	70.50	17.50	3
27	70.50	17.50	109.50	18.00	3
28	109.50	18.00	110.50	24.00	3
29	110.50	24.00	120.50	24.00	3
30	120.50	24.00	121.50	29.00	3
31	121.50	29.00	131.50	29.00	3
32	131.50	29.00	132.50	34.00	3
33	132.50	34.00	142.50	34.00	3
34	142.50	34.00	143.00	34.50	3
35	143.00	34.50	143.50	39.00	4
36	143.50	39.00	153.50	39.00	4
37	153.50	39.00	154.50	44.00	2
38	154.50	44.00	164.50	44.00	2

39	164.50	44.00	165.50	49.00	2
40	165.50	49.00	175.50	49.00	2
41	175.50	49.00	176.50	54.00	2
42	176.50	54.00	186.50	54.00	2
43	186.50	54.00	187.50	59.00	2
44	187.50	59.00	197.50	59.00	2
45	197.50	59.00	198.50	64.00	2
46	198.50	64.00	208.50	64.00	2
47	208.50	64.00	209.50	67.00	2
48	209.50	67.00	219.50	67.00	2
49	219.50	67.00	220.50	72.00	2
50	220.50	72.00	230.50	72.00	2
51	230.50	72.00	231.50	76.00	2
52	231.50	76.00	241.50	76.00	2
53	241.50	76.00	242.50	84.00	2
54	153.50	39.00	323.00	47.00	4
55	142.50	34.00	323.00	42.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS

4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	200.0	32.0	0.00	0.0	0
2	120.0	125.0	150.0	34.0	0.00	0.0	0
3	120.0	125.0	800.0	26.0	0.00	0.0	0
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	29.0	800.00	26.00
2	37.0	100.00	12.00
3	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:

(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED

Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 3 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	143.50	39.00
2	153.50	39.00
3	323.00	47.00

BOUNDARY LOAD(S)

2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	248.00	258.00	250.0	0.0
2	258.01	323.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

```
EARTHQUAKE DATA HAS BEEN SUPPRESSED
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1500 Trial Surfaces Have Been Generated.
  50 Surface(s) Initiate(s) From Each Of    30 Points Equally Spaced
Along The Ground Surface Between  X =  85.00(ft)
                               and  X = 105.00(ft)
Each Surface Terminates Between   X = 228.00(ft)
                              and   X = 323.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =      0.00(ft)
15.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
      Failure Surfaces Evaluated. They Are
      Ordered - Most Critical First.
      * * Safety Factors Are Calculated By The Modified Bishop Method * *
      Total Number of Trial Surfaces Attempted =  1500
      Number of Trial Surfaces With Valid FS = 1500
      Statistical Data On All Valid FS Values:
         FS Max =   3.002   FS Min =   1.904   FS Ave =   2.393
         Standard Deviation =    0.214   Coefficient of Variation =    8.94 %
      Failure Surface Specified By 13 Coordinate Points
```

Point No.	X-Surf (ft)	Y-Surf (ft)
1	91.207	22.963
2	105.709	19.129
3	120.584	17.196
4	135.584	17.194
5	150.459	19.124
6	164.962	22.953
7	178.851	28.618
8	191.895	36.025
9	203.876	45.050
10	214.595	55.543
11	223.874	67.329
12	231.557	80.212
13	233.985	85.819

```
      Circle Center At X =   128.099 ; Y =   133.184 ; and Radius =   116.231
             Factor of Safety
            ***    1.904    ***
           Individual data on the     49  slices
```

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	1.8	55.0	0.0	0.0	0.	0.	0.0	0.0	0.0
2	3.0	281.8	0.0	0.0	0.	0.	0.0	0.0	0.0
3	2.5	452.9	0.0	0.0	0.	0.	0.0	0.0	0.0
4	7.2	4075.7	0.0	0.0	0.	0.	0.0	0.0	0.0
5	3.9	4057.1	0.0	0.0	0.	0.	0.0	0.0	0.0
6	0.9	1095.1	0.0	0.0	0.	0.	0.0	0.0	0.0
7	10.0	16323.3	0.0	0.0	0.	0.	0.0	0.0	0.0
8	0.1	168.3	0.0	0.0	0.	0.	0.0	0.0	0.0
9	0.9	1871.7	0.0	0.0	0.	0.	0.0	0.0	0.0
10	10.0	23685.7	0.0	0.0	0.	0.	0.0	0.0	0.0
11	1.0	2697.1	0.0	0.0	0.	0.	0.0	0.0	0.0
12	3.1	8692.9	0.0	0.0	0.	0.	0.0	0.0	0.0
13	6.9	21190.3	0.0	0.0	0.	0.	0.0	0.0	0.0
14	0.5	1613.7	0.0	0.0	0.	0.	0.0	0.0	0.0
15	0.5	1631.6	0.0	0.0	0.	0.	0.0	0.0	0.0
16	7.0	23914.9	0.0	0.0	0.	0.	0.0	0.0	0.0
17	3.0	11047.6	0.0	0.0	0.	0.	0.0	0.0	0.0
18	1.0	3689.5	0.0	0.0	0.	0.	0.0	0.0	0.0
19	10.0	38437.4	0.0	0.0	0.	0.	0.0	0.0	0.0
20	0.5	1843.2	0.0	0.0	0.	0.	0.0	0.0	0.0
21	0.5	2152.2	0.0	0.0	0.	0.	0.0	0.0	0.0
22	10.0	40566.2	0.0	0.0	0.	0.	0.0	0.0	0.0

23	1.0	4115.9	0.0	0.0	0.	0.	0.0	0.0	0.0
24	2.4	9718.6	0.0	0.0	0.	0.	0.0	0.0	0.0
25	7.6	31472.1	0.0	0.0	0.	0.	0.0	0.0	0.0
26	1.0	4078.1	0.0	0.0	0.	0.	0.0	0.0	0.0
27	4.4	17822.1	0.0	0.0	0.	0.	0.0	0.0	0.0
28	0.2	933.6	0.0	0.0	0.	0.	0.0	0.0	0.0
29	5.4	21162.1	0.0	1143.3	0.	0.	0.0	0.0	0.0
30	1.0	3828.9	0.0	37.2	0.	0.	0.0	0.0	0.0
31	0.2	664.6	0.0	0.8	0.	0.	0.0	0.0	0.0
32	4.3	16175.3	0.0	0.0	0.	0.	0.0	0.0	0.0
33	0.9	3199.8	0.0	0.0	0.	0.	0.0	0.0	0.0
34	1.1	4038.6	0.0	0.0	0.	0.	0.0	0.0	0.0
35	2.0	6838.9	0.0	0.0	0.	0.	0.0	0.0	0.0
36	1.5	4759.8	0.0	0.0	0.	0.	0.0	0.0	0.0
37	1.0	2983.5	0.0	0.0	0.	0.	0.0	0.0	0.0
38	1.0	2831.8	0.0	0.0	0.	0.	0.0	0.0	0.0
39	4.1	10823.8	0.0	0.0	0.	0.	0.0	0.0	0.0
40	4.9	11328.4	0.0	0.0	0.	0.	0.0	0.0	0.0
41	1.0	2043.8	0.0	0.0	0.	0.	0.0	0.0	0.0
42	2.5	4715.6	0.0	0.0	0.	0.	0.0	0.0	0.0
43	0.9	1523.2	0.0	0.0	0.	0.	0.0	0.0	0.0
44	2.8	4314.3	0.0	0.0	0.	0.	0.0	0.0	0.0
45	2.8	3454.6	0.0	0.0	0.	0.	0.0	0.0	0.0
46	1.5	1391.4	0.0	0.0	0.	0.	0.0	0.0	0.0
47	0.6	420.6	0.0	0.0	0.	0.	0.0	0.0	0.0
48	1.4	741.4	0.0	0.0	0.	0.	0.0	0.0	0.0
49	1.0	160.0	0.0	0.0	0.	0.	0.0	0.0	0.0

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.828	22.934
2	104.376	19.281
3	119.270	17.504
4	134.270	17.631
5	149.132	19.662
6	163.616	23.563
7	177.487	29.270
8	190.522	36.692
9	202.510	45.709
10	213.256	56.174
11	222.587	67.919
12	230.352	80.752
13	232.773	86.222

Circle Center At X = 125.767 ; Y = 135.262 ; and Radius = 117.938

Factor of Safety

*** 1.915 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.138	22.920
2	103.656	19.147
3	118.540	17.287
4	133.540	17.369
5	148.403	19.392
6	162.879	23.322
7	176.724	29.093
8	189.706	36.609
9	201.605	45.741
10	212.222	56.338
11	221.377	68.219
12	228.918	81.186
13	230.925	85.975

Circle Center At X = 125.410 ; Y = 132.700 ; and Radius = 115.618

Factor of Safety

*** 1.922 ***

Failure Surface Specified By 14 Coordinate Points

Point X-Surf Y-Surf

No.	(ft)	(ft)
1	87.069	22.876
2	100.889	17.045
3	115.347	13.049
4	130.200	10.956
5	145.200	10.800
6	160.093	12.584
7	174.631	16.278
8	188.570	21.820
9	201.675	29.118
10	213.727	38.048
11	224.523	48.461
12	233.883	60.183
13	241.650	73.016
14	246.484	84.000

Circle Center At X = 138.884 ; Y = 126.186 ; and Radius = 115.575

Factor of Safety

*** 1.924 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.000	22.833
2	99.136	17.815
3	113.779	14.562
4	128.709	13.123
5	143.704	13.519
6	158.538	15.746
7	172.988	19.768
8	186.839	25.527
9	199.882	32.936
10	211.921	41.883
11	222.777	52.234
12	232.286	63.835
13	240.306	76.511
14	243.846	84.000

Circle Center At X = 132.959 ; Y = 135.127 ; and Radius = 122.106

Factor of Safety

*** 1.926 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.138	22.920
2	103.526	18.679
3	118.351	16.391
4	133.348	16.095
5	148.251	17.797
6	162.795	21.466
7	176.722	27.037
8	189.784	34.411
9	201.749	43.458
10	212.404	54.016
11	221.560	65.897
12	229.055	78.891
13	232.027	86.128

Circle Center At X = 128.064 ; Y = 128.478 ; and Radius = 112.507

Factor of Safety

*** 1.928 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	104.310	25.891
2	119.104	28.370
3	133.744	31.636
4	148.189	35.678
5	162.398	40.485
6	176.330	46.045
7	189.945	52.340

8	203.205	59.353
9	216.071	67.064
10	228.507	75.450
11	239.830	84.000

Circle Center At X = 65.304 ; Y = 304.043 ; and Radius = 280.874
Factor of Safety
*** 1.930 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	87.759	22.891
2	102.164	18.710
3	117.001	16.506
4	132.000	16.320
5	146.888	18.154
6	161.393	21.976
7	175.251	27.716
8	188.211	35.269
9	200.035	44.498
10	210.510	55.234
11	219.444	67.283
12	226.675	80.426
13	228.315	84.680

Circle Center At X = 125.879 ; Y = 127.324 ; and Radius = 111.173
Factor of Safety
*** 1.935 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	99.483	23.489
2	113.897	19.338
3	128.730	17.107
4	143.728	16.835
5	158.632	18.525
6	173.188	22.150
7	187.144	27.646
8	200.263	34.920
9	212.317	43.846
10	223.102	54.272
11	232.430	66.019
12	240.144	78.884
13	242.361	84.000

Circle Center At X = 138.304 ; Y = 131.195 ; and Radius = 114.489
Factor of Safety
*** 1.941 ***

Failure Surface Specified By 13 Coordinate Points

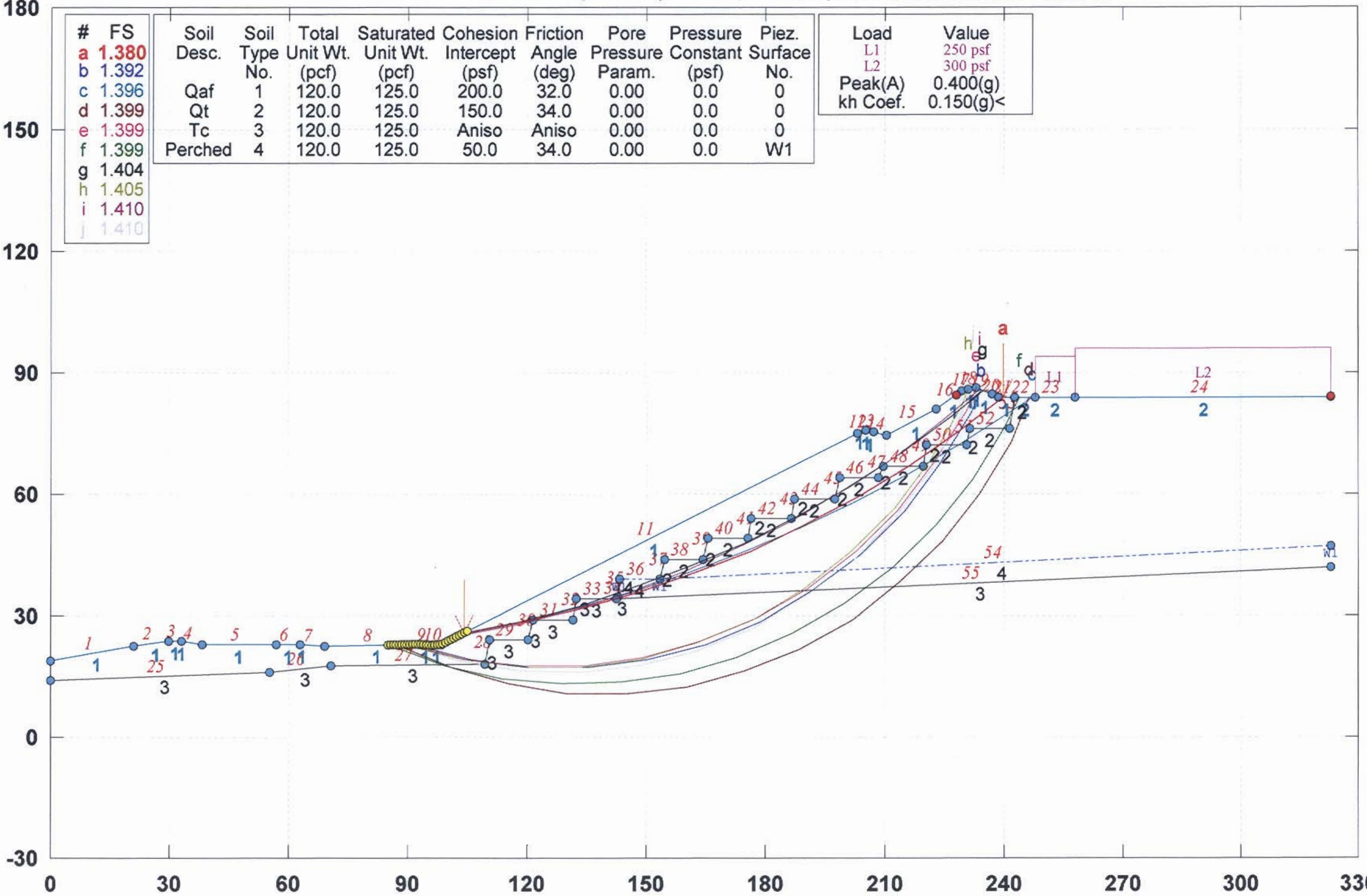
Point No.	X-Surf (ft)	Y-Surf (ft)
1	96.034	22.753
2	110.677	19.497
3	125.608	18.068
4	140.603	18.488
5	155.431	20.751
6	169.868	24.822
7	183.694	30.639
8	196.699	38.114
9	208.685	47.133
10	219.469	57.559
11	228.888	69.233
12	236.798	81.978
13	237.833	84.222

Circle Center At X = 129.707 ; Y = 139.616 ; and Radius = 121.617
Factor of Safety
*** 1.946 ***

**** END OF GSTABL7 OUTPUT ****

Dudek/Ritz Carlton (C-C') 207118001

c:\207118001 dudek ritz carlton\slope stability\c-c'\c-c'.pl2 Run By: Username 3/10/2008 10:27AM



Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
Qaf	1	120.0	125.0	200.0	32.0	0.00	0.0	0
Qt	2	120.0	125.0	150.0	34.0	0.00	0.0	0
Tc	3	120.0	125.0	Aniso	Aniso	0.00	0.0	0
Perched	4	120.0	125.0	50.0	34.0	0.00	0.0	W1

Load	Value
L1	250 psf
L2	300 psf
Peak(A)	0.400(g)
kh Coef.	0.150(g)<

GSTABL7 v.2 FSmin=1.380

Safety Factors Are Calculated By The Modified Bishop Method

GSTABL7

*** **GSTABL7** ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.004, June 2003 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static & Newmark Earthquake, and Applied Forces.

****

Analysis Run Date: 3/10/2008
Time of Run: 10:27AM
Run By: Username
Input Data Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.in
Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.OU
T
Unit System: English
Plotted Output Filename: c:\207118001 Dudek Ritz Carlton\Slope Stability\C-C'\c-c'.PL
T

PROBLEM DESCRIPTION: Dudek/Ritz Carlton (C-C')
207118001

BOUNDARY COORDINATES
24 Top Boundaries
55 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	19.00	21.00	22.50	1
2	21.00	22.50	30.00	23.50	1
3	30.00	23.50	33.00	23.50	1
4	33.00	23.50	38.50	23.00	1
5	38.50	23.00	57.00	23.00	1
6	57.00	23.00	63.00	23.00	1
7	63.00	23.00	69.00	22.50	1
8	69.00	22.50	93.00	23.00	1
9	93.00	23.00	96.00	22.75	1
10	96.00	22.75	98.50	23.00	1
11	98.50	23.00	203.00	75.00	1
12	203.00	75.00	205.00	75.75	1
13	205.00	75.75	207.00	75.50	1
14	207.00	75.50	210.50	74.50	1
15	210.50	74.50	223.00	81.00	1
16	223.00	81.00	229.50	85.50	1
17	229.50	85.50	231.00	86.00	1
18	231.00	86.00	233.00	86.25	1
19	233.00	86.25	237.00	84.50	1
20	237.00	84.50	238.50	84.00	1
21	238.50	84.00	242.50	84.00	1
22	242.50	84.00	248.00	84.00	2
23	248.00	84.00	258.00	84.00	2
24	258.00	84.00	323.00	84.00	2
25	0.00	14.00	55.50	16.00	3
26	55.50	16.00	70.50	17.50	3
27	70.50	17.50	109.50	18.00	3
28	109.50	18.00	110.50	24.00	3
29	110.50	24.00	120.50	24.00	3
30	120.50	24.00	121.50	29.00	3
31	121.50	29.00	131.50	29.00	3
32	131.50	29.00	132.50	34.00	3
33	132.50	34.00	142.50	34.00	3
34	142.50	34.00	143.00	34.50	3
35	143.00	34.50	143.50	39.00	4
36	143.50	39.00	153.50	39.00	4
37	153.50	39.00	154.50	44.00	2
38	154.50	44.00	164.50	44.00	2

39	164.50	44.00	165.50	49.00	2
40	165.50	49.00	175.50	49.00	2
41	175.50	49.00	176.50	54.00	2
42	176.50	54.00	186.50	54.00	2
43	186.50	54.00	187.50	59.00	2
44	187.50	59.00	197.50	59.00	2
45	197.50	59.00	198.50	64.00	2
46	198.50	64.00	208.50	64.00	2
47	208.50	64.00	209.50	67.00	2
48	209.50	67.00	219.50	67.00	2
49	219.50	67.00	220.50	72.00	2
50	220.50	72.00	230.50	72.00	2
51	230.50	72.00	231.50	76.00	2
52	231.50	76.00	241.50	76.00	2
53	241.50	76.00	242.50	84.00	2
54	153.50	39.00	323.00	47.00	4
55	142.50	34.00	323.00	42.00	3

Default Y-Origin = 0.00(ft)
Default X-Plus Value = 0.00(ft)
Default Y-Plus Value = 0.00(ft)

ISOTROPIC SOIL PARAMETERS
4 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	120.0	125.0	200.0	32.0	0.00	0.0	0
2	120.0	125.0	150.0	34.0	0.00	0.0	0
3	120.0	125.0	800.0	26.0	0.00	0.0	0
4	120.0	125.0	50.0	34.0	0.00	0.0	1

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)
Soil Type 3 Is Anisotropic
Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	29.0	800.00	26.00
2	37.0	100.00	12.00
3	90.0	800.00	26.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and C equal to zero, with water weight in the tension crack.

1 PIEZOMETRIC SURFACE(S) SPECIFIED
Unit Weight of Water = 62.40 (pcf)
Piezometric Surface No. 1 Specified by 3 Coordinate Points
Pore Pressure Inclination Factor = 0.50

Point No.	X-Water (ft)	Y-Water (ft)
1	143.50	39.00
2	153.50	39.00
3	323.00	47.00

BOUNDARY LOAD(S)
2 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	248.00	258.00	250.0	0.0
2	258.01	323.00	300.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.
Specified Peak Ground Acceleration Coefficient (A) = 0.400(g)
Specified Horizontal Earthquake Coefficient (kh) = 0.150(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
Specified Seismic Pore-Pressure Factor = 0.000

A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
1500 Trial Surfaces Have Been Generated.
50 Surface(s) Initiate(s) From Each Of 30 Points Equally Spaced
Along The Ground Surface Between X = 85.00(ft)
and X = 105.00(ft)
Each Surface Terminates Between X = 228.00(ft)
and X = 323.00(ft)
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = 0.00(ft)
15.00(ft) Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Evaluated. They Are
Ordered - Most Critical First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Total Number of Trial Surfaces Attempted = 1500
Number of Trial Surfaces With Valid FS = 1500
Statistical Data On All Valid FS Values:
FS Max = 2.163 FS Min = 1.380 FS Ave = 1.670
Standard Deviation = 0.130 Coefficient of Variation = 7.77 %
Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	104.310	25.891
2	119.104	28.370
3	133.744	31.636
4	148.189	35.678
5	162.398	40.485
6	176.330	46.045
7	189.945	52.340
8	203.205	59.353
9	216.071	67.064
10	228.507	75.450
11	239.830	84.000

Circle Center At X = 65.304 ; Y = 304.043 ; and Radius = 280.874
Factor of Safety
*** 1.380 ***
Individual data on the 46 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	14.8	4333.8	0.0	0.0	0.	0.	650.1	0.0	0.0
2	2.4	1485.1	0.0	0.0	0.	0.	222.8	0.0	0.0
3	0.0	13.3	0.0	0.0	0.	0.	2.0	0.0	0.0
4	0.4	287.2	0.0	0.0	0.	0.	43.1	0.0	0.0
5	10.0	8456.3	0.0	0.0	0.	0.	1268.4	0.0	0.0
6	0.6	563.1	0.0	0.0	0.	0.	84.5	0.0	0.0
7	1.2	1303.7	0.0	0.0	0.	0.	195.6	0.0	0.0
8	8.4	9959.4	0.0	0.0	0.	0.	1493.9	0.0	0.0
9	0.4	550.3	0.0	0.0	0.	0.	82.6	0.0	0.0
10	0.4	497.3	0.0	0.0	0.	0.	74.6	0.0	0.0
11	0.5	664.5	0.0	136.6	0.	0.	99.7	0.0	0.0
12	4.7	6577.1	0.0	1097.8	0.	0.	986.6	0.0	0.0
13	5.3	8008.4	0.0	803.2	0.	0.	1201.3	0.0	0.0
14	1.0	1563.7	0.0	90.8	0.	0.	234.6	0.0	0.0
15	4.2	6824.6	0.0	172.1	0.	0.	1023.7	0.0	0.0
16	3.7	6155.7	0.0	0.0	0.	0.	923.4	0.0	0.0
17	2.1	3635.8	0.0	0.0	0.	0.	545.4	0.0	0.0
18	1.0	1748.1	0.0	0.0	0.	0.	262.2	0.0	0.0
19	10.0	18131.3	0.0	0.0	0.	0.	2719.7	0.0	0.0
20	0.8	1557.7	0.0	0.0	0.	0.	233.7	0.0	0.0
21	0.2	320.4	0.0	0.0	0.	0.	48.1	0.0	0.0
22	10.0	19039.6	0.0	0.0	0.	0.	2855.9	0.0	0.0
23	1.0	1927.2	0.0	0.0	0.	0.	289.1	0.0	0.0
24	2.4	4729.8	0.0	0.0	0.	0.	709.5	0.0	0.0
25	7.6	14547.2	0.0	0.0	0.	0.	2182.1	0.0	0.0

26	1.0	1909.4	0.0	0.0	0.	0.	286.4	0.0	0.0
27	4.5	8546.0	0.0	0.0	0.	0.	1281.9	0.0	0.0
28	0.2	386.4	0.0	0.0	0.	0.	58.0	0.0	0.0
29	1.8	3344.4	0.0	0.0	0.	0.	501.7	0.0	0.0
30	2.0	3503.3	0.0	0.0	0.	0.	525.5	0.0	0.0
31	1.5	2377.6	0.0	0.0	0.	0.	356.6	0.0	0.0
32	1.0	1452.3	0.0	0.0	0.	0.	217.8	0.0	0.0
33	1.0	1346.1	0.0	0.0	0.	0.	201.9	0.0	0.0
34	5.5	6923.9	0.0	0.0	0.	0.	1038.6	0.0	0.0
35	0.1	131.6	0.0	0.0	0.	0.	19.7	0.0	0.0
36	4.0	4786.6	0.0	0.0	0.	0.	718.0	0.0	0.0
37	0.5	523.8	0.0	0.0	0.	0.	78.6	0.0	0.0
38	2.5	2837.0	0.0	0.0	0.	0.	425.5	0.0	0.0
39	0.4	434.7	0.0	0.0	0.	0.	65.2	0.0	0.0
40	5.1	5720.0	0.0	0.0	0.	0.	858.0	0.0	0.0
41	1.0	1111.6	0.0	0.0	0.	0.	166.7	0.0	0.0
42	1.5	1617.1	0.0	0.0	0.	0.	242.6	0.0	0.0
43	2.0	1929.0	0.0	0.0	0.	0.	289.3	0.0	0.0
44	4.0	2410.7	0.0	0.0	0.	0.	361.6	0.0	0.0
45	1.5	327.8	0.0	0.0	0.	0.	49.2	0.0	0.0
46	1.3	80.2	0.0	0.0	0.	0.	12.0	0.0	0.0

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	91.207	22.963
2	105.709	19.129
3	120.584	17.196
4	135.584	17.194
5	150.459	19.124
6	164.962	22.953
7	178.851	28.618
8	191.895	36.025
9	203.876	45.050
10	214.595	55.543
11	223.874	67.329
12	231.557	80.212
13	233.985	85.819

Circle Center At X = 128.099 ; Y = 133.184 ; and Radius = 116.231

Factor of Safety

*** 1.392 ***

Failure Surface Specified By 12 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	102.931	25.205
2	117.630	28.195
3	132.200	31.762
4	146.618	35.898
5	160.863	40.599
6	174.911	45.856
7	188.742	51.662
8	202.334	58.007
9	215.666	64.882
10	228.717	72.276
11	241.467	80.177
12	247.125	84.000

Circle Center At X = 34.741 ; Y = 398.652 ; and Radius = 379.622

Factor of Safety

*** 1.396 ***

Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	87.069	22.876
2	100.889	17.045
3	115.347	13.049
4	130.200	10.956
5	145.200	10.800
6	160.093	12.584

7	174.631	16.278
8	188.570	21.820
9	201.675	29.118
10	213.727	38.048
11	224.523	48.461
12	233.883	60.183
13	241.650	73.016
14	246.484	84.000

Circle Center At X = 138.884 ; Y = 126.186 ; and Radius = 115.575
Factor of Safety
*** 1.399 ***
Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.828	22.934
2	104.376	19.281
3	119.270	17.504
4	134.270	17.631
5	149.132	19.662
6	163.616	23.563
7	177.487	29.270
8	190.522	36.692
9	202.510	45.709
10	213.256	56.174
11	222.587	67.919
12	230.352	80.752
13	232.773	86.222

Circle Center At X = 125.767 ; Y = 135.262 ; and Radius = 117.938
Factor of Safety
*** 1.399 ***
Failure Surface Specified By 14 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	85.000	22.833
2	99.136	17.815
3	113.779	14.562
4	128.709	13.123
5	143.704	13.519
6	158.538	15.746
7	172.988	19.768
8	186.839	25.527
9	199.882	32.936
10	211.921	41.883
11	222.777	52.234
12	232.286	63.835
13	240.306	76.511
14	243.846	84.000

Circle Center At X = 132.959 ; Y = 135.127 ; and Radius = 122.106
Factor of Safety
*** 1.399 ***
Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	103.621	25.548
2	118.316	28.554
3	132.836	32.319
4	147.141	36.832
5	161.192	42.083
6	174.952	48.056
7	188.382	54.735
8	201.448	62.103
9	214.114	70.139
10	226.345	78.822
11	234.760	85.480

Circle Center At X = 53.121 ; Y = 309.873 ; and Radius = 288.774
Factor of Safety
*** 1.404 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.138	22.920
2	103.656	19.147
3	118.540	17.287
4	133.540	17.369
5	148.403	19.392
6	162.879	23.322
7	176.724	29.093
8	189.706	36.609
9	201.605	45.741
10	212.222	56.338
11	221.377	68.219
12	228.918	81.186
13	230.925	85.975

Circle Center At X = 125.410 ; Y = 132.700 ; and Radius = 115.618

Factor of Safety

*** 1.405 ***

Failure Surface Specified By 11 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	102.241	24.862
2	116.978	27.661
3	131.535	31.280
4	145.866	35.708
5	159.928	40.931
6	173.675	46.932
7	187.064	53.693
8	200.055	61.193
9	212.605	69.408
10	224.677	78.312
11	233.827	85.888

Circle Center At X = 59.625 ; Y = 289.431 ; and Radius = 267.980

Factor of Safety

*** 1.410 ***

Failure Surface Specified By 13 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	89.138	22.920
2	103.526	18.679
3	118.351	16.391
4	133.348	16.095
5	148.251	17.797
6	162.795	21.466
7	176.722	27.037
8	189.784	34.411
9	201.749	43.458
10	212.404	54.016
11	221.560	65.897
12	229.055	78.891
13	232.027	86.128

Circle Center At X = 128.064 ; Y = 128.478 ; and Radius = 112.507

Factor of Safety

*** 1.410 ***

**** END OF GSTABL7 OUTPUT ****

ATTACHMENT F

LOGS OF SELECTED BORINGS AND SUMMARY OF LABORATORY TEST DATA BY PACIFIC SOILS ENGINEERING, INC. (1981)

TABLE II
SUMMARY OF LABORATORY TEST DATA

			MAXIMUM DENSITY ASTM: D 1557-70T		HYDROMETER ANALYSIS			EXPAN. INDEX	DIRECT SHEAR:			
Boring No.	Depth (ft.)	Soil Description	Max. Dens. (lb./cu.ft.)	Opt. Moist. (%)	Percentage of sand	silt	clay	UBC 29-2	Cohesion (psf)	Ø degrees	Test* condition	OTHER TESTS
3	10.0	GR BRN CLAYEY SILTSTONE			36	46	18		800	27°	U/S	
	22.0	DK GR. BRN CLAYEY SILTSTONE			47	38	15		630	25°	U/S	
4	25.0	GR BRN MED SAND			98	0	2					CONSOL
6	30.0	LT BRN FN-MED							15	38°	U/S	
8	45.0	GR. FN SAND ?							0	37°	U/S	
	55.0	GR FN SAND							100	35°	U/S	
9	40.0	LT BRN MED SAND							50	37°	U/S	
10	20.0	TAN MED SAND							0	37°	U/S	
	50.0	GRAY FN-MED SAND							75	40°	U/S	
11	5.0	TAN MED SAND	106.3	14.9	98	0	2		0	37°	R/S	SE = 78
	20.0	TAN MED SAND			98	0	2					CONSOL
	30.0	TAN MED SAND			99	0	1		0	39°	U/S	
12	15.0	LT. BRN. MED SAND			98	1	1		0	37°	U/S	
	20.0	LT. BRN. MED SAND			98	0	2					CONSOL
	30.0	LT. BRN. FN-MED SAND			98	0	2					CONSOL
	51.0	DK BRN CLAYEY SILTSTONE			27	59	14					CONSOL
	56.0	DK BRN CLAYEY SILTSTONE			46	41	13		1000	36°	U/S	
14	70.0	DK GR BRN SILTSTONE							950	29°	U/S	
16	14.0	TAN FN-MED SAND			99	0	1		0	39°	U/S	
	24.0	TAN FN-MED SAND			98	1	1		0	44°	U/N	
	35.0	TAN FN-MED SAND			98	0	2					CONSOL

* TEST CONDITIONS: R - Remolded, U - Undisturbed
S - Saturated, N - Natural Moisture

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 1 DATE 4/22/81

W.O. 100945 SURFACE EL. 125

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SM	FILL: Silty sand, with intermixed clayey silt, light brown, moist, loose to medium dense		
				@ 2 ft. Predominantly clayey silt, dark brown, moist to very moist, moderately firm, with intermixed sand		
				@ 4.5 ft. Sand content increasing, clayey sand predominant		
5				@ 5 ft. sand, medium grained, light brown, soft moist, medium dense		
				@ 8 ft. Sandy clay, dark brown, moist to very moist, moderately firm		
10				@ 9.5 ft. predominantly clayey silt, dark brown, moist to very moist, moderately firm, intermixed clayey sand		
			SP	TERRACE DEPOSITS: (Qt.) Sand, medium grained, light brown, slightly moist, medium dense, sub-angular		
15	R				102.6	2.1
	R		SM	@ 18.5 ft. Silty sand, fine to medium grained, gray tan, very moist, dense	99.0	10.7
20						
			SP	@ 21 ft. Sand, medium grained, gray moist, dense yellow rust pigment veins		
				@ 22 ft. yellow tan, very moist		
				@ 23 ft. Gray, moist, medium dense to dry		
25						

Continued on next page

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 1 con't

DATE 4/22/81

W.O. 100945

SURFACE EL. 125

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				~~(Terrace Deposits cont. from 10.0 ft.)~~ @ 25.5 ft. Yellow tan, very moist to wet, clayey silt intermixed; @ 26 ft. brown saturated		
			SP/ML	@ 26 ft. Sand, fine to medium grained gray brown, saturated, medium dense intermixed tan clayey silt, saturated, occasional sub-angular gravel with occasional siltstone chunks to 1 inch		
				TOTAL DEPTH 26.5 Water @ 26 ft. Severe caving @ 26 ft.		

PLATE A-1

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 3

W.O. 100945

Logged by TCS

DATE 4/31/81

SURFACE EL. 97±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS: (Qt) Sand, fine grained tan, dry, loose		
			SM	@ 1/2 ft. Silty sand, tan, moist, medium dense, scattered sub-angular gravel to 1 inch.		
				MONTEREY FORMATION: (Tm) @ 1 ft. Clayey siltstone, dark brown, moist moderately hard, yellow pigment, highly weathered		
5	R			@ 2.5 to 3 ft. Sand lense, gray, fine to medium	87.5	22.0
				@ 5 ft. Clayey siltstone, dark brown moist to very moist, soft to medium hard, odiferous, rust pigment, sandy, intermixed @ 7 ft. Clayey siltstone, gray brown, moist, moderately hard, highly fractured		
10	R			@ 10 ft. predominantly siltstone, dark gray brown, hard, rust veins	92.3	23.5
15				@ 15 ft. very hard		
20				@ 20 to 20.5 ft. Sandy lense, gray, very moist		
	R				88.3	23.3
				TOTAL DEPTH 22.5 ft. No Water No Caving		
25						

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 6

W.O. 100945

Logged by TCS

DATE 5/5/81

SURFACE EL. 161±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SM	FILL: Silty sand, brown, medium dense		
			SP/SC	@ 1 ft. Sand, fine to medium grained, light brown, slightly moist, medium dense, sub-angular with intermixed clayey sand @ 2.5 ft. Brown, red brown		
5			SM	TERRACE DEPOSITS: (Qt) Silty sand, brown, red brown, slightly moist to moist, medium dense		
10	R	28				
			SP	@ 12 ft. Sand, fine-medium, light brown, moist, medium dense		
15						
20	R	32			99.7	5.8
25						

Continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 6 con't

DATE 5/5/81

W.O. 100945

SURFACE EL. 161±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				(Terrace Deposits con't from 5.0 ft.)		
30	R	50		@ 30 ft. dense		
35				@ 35 ft. medium sub-angular grained		
40	R	67			103.0	4.1
45						
50	R	52			93.0	19.2

Continued on next page

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

BORING NO. 6 con't

W.O. 100945

Logged by TCS

DATE 5/5/81

SURFACE EL. 161±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS (Terrace Deposits con't from 5.0 ft.)	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50			SP	@ 50 ft. Sand, intermixed with clayey sand and clayey silt mottled gray brown, tan, sub-rounded gravel with siltstone chunks, rust pigment, very moist to wet		
			SP	@ 53.5 ft. Sand, fine grained, gray, very moist to wet, dense		
55						
60	R	67				
				MONTEREY FORMATION: (Tm) @ 60.5 ft. Clayey siltstone, gray brown, moist, moderately hard rust pigment, highly weathered		
65						
70	R	77				
				TOTAL DEPTH 70.5 ft. No Water No Caving		

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 8 DATE 5/7/81

W.O. 100945 SURFACE EL. 156

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS (Qt): Sand, red-brown, dry, loose; @ 0.5 ft. slightly moist, medium dense;		
5						
10				@ 10.0 ft. intermixed light brown & red-brown, occasional cementation		
15	R	55			107.7	2.8
20						
25						

continued on next page

PLATE A-8

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 8 cont. DATE 5/7/81

W.O. 100945 SURFACE EL. 156

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25	R	46		(Terrace Deposit cont. from 0.0 ft.)	104.1	1.6
30				@ 30.0 ft. light brown, dense		
35	R	61		@ 35.0 ft. gray, fine-grained, slightly moist;	NO Recovery	
40						
45	R	77				
50						

continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 8 cont.

W.O. 100945

Logged by TCS

DATE 5/7/81

SURFACE EL. 156

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50				(Terrace Deposits cont . from 0.0 ft.) @ 50.0 ft. sub-rounded gravel @ 52.5 ft. water @ 54.0 ft. gray, fine-grained, saturated, dense		
55	R	77				
				MONTEREY FORMATION(Tm): Siltstone, dark brown, slightly moist, very hard		
60	R	85		TOTAL DEPTH 60.0 ft. Water At 52.5 ft. No Caving		

PLATE A-8

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 9

DATE 5/5/81

W.O. 100945

SURFACE EL. 166

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS (Qt): Sand, fine to medium grained, light brown, moist, medium dense;		
				@ 2.0 ft. slightly moist;		
5						
				@ 7.0 ft. medium grained, subangular;		
10	R	27			101.7	2.9
15						
20	R	34			100.2	2.0
25						

continued on next page

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

BORING NO. 9 cont.
W.O. 100945

Logged by TCS
DATE 5/5/81
SURFACE EL. 166

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				(Terrace Deposits cont.from 0.0 ft.)		
30	R	39			98.7	3.4
35						
40	R	44				
45						
50						

continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 9 cont.

DATE 5/5/81

W.O. 100945

SURFACE EL. 166

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50	R	50		(Terrace Deposits cont. from 0.0 ft.) @ 50.0 ft. dense;	103.0	3.3
55						
60	R	73		@ 60.0 ft. water;		
65						
70	R	50/3"			No Recovery	
75						

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PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 9 cont.

DATE 5/5/81

W.O. 100945

SURFACE EL. 166

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
75	R	58		MONTEREY FORMATION (Tm): Siltstone, dark brown, moist, medium hard	64.6	54.9
				TOTAL DEPTH 75.5 ft. Water @ 60.0 ft. No Caving		

PLATE A-9

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 10

W.O. 100945

Logged by TCS

DATE 5/6/81

SURFACE EL. 152±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS(Qt): Sand, fine to medium grained, tan, dry, loose; @ 0.5 ft. light brown, slightly moist, medium dense;		
5						
10						
15						
20	R	44		@ 20.0 ft. medium grained, dense;		
25						

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PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 10 cont.
DATE 5/6/81
W.O. 100945
SURFACE EL. 152±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				(Terrace Deposit cont. from 0.0 ft.)		
30	R	48				
35						
40	R	71				
45						
				@ 49.0 ft. water		
50						

continued on next page

PLATE A-10

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 10 cont.

DATE 5/6/81

W.O. 100945

SURFACE EL. 152±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50	R	78		(Terrace Deposits cont. from 0.0 ft.) @ 50.0 ft. fine to medium grained, gray; @ 52.0 ft. gray subrounded gravel		
55						
				CAPISTRANO FORMATION (Tc): Siltstone, dark brown, moist, hard		
60	R	31		TOTAL DEPTH 60.0 ft. Water @ 49.0 ft. No Caving	No Recovery	

PLATE A-10

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 11
W.O. 100945

Logged by TCS
DATE 4/28/81
SURFACE EL. 156±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	FILL: Sand, fine to medium grained, light brown, dry, dense; @ 2.5 ft. slightly moist with occasional clayey sand lumps		
			SP	TERRACE DEPOSITS (Qt): Sand, medium grained, tan-light brown, slightly moist, medium dense		
5	Bulk					
10	R	5			99.2	2.4
15				@ 15.0 ft. moist increasing to very moist		
20	R	3			96.8	2.5
25						

continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 11 cont.
W.O. 100945

Logged by TCS
DATE 4/28/81
SURFACE EL. 156±

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				(Terrace Deposits cont. from 2.5 ft)		
30	R	5			90.6	1.9
40	R	6			98.4	3.2
				@ 43.0 ft. fine to medium grained, brown		
			SM	Silty sand, gray-brown, moist to very moist		
45	R	12		TOTAL DEPTH 44.0 ft. Severe Caving, unable to proceed No Water	112.6	10.3

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS
BORING NO. 12
DATE 4/27/81
W.O. 100945
SURFACE EL. 151

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SC	FILL: Clayey sand, brown, slightly moist to moist, dense; @1.0 ft. sand, medium grained slightly moist to moist, dense with occasionally intermixed clayey silt chunks		
5	R	4			82.4	16.6
				@ 7.0 ft. sand, dark gray, moist to very moist, medium dense, odiferous		
10	R	4			101.6	3.8
			SP	TERRACE DEPOSITS(Qt): Sand, medium grained, light brown, slightly moist, dense;		
15	R	4			74.2	21.1
20	R	5			93.8	3.0
				@ 22.0 ft. brown;		
				@ 23.0 ft. light brown, slightly moist to moist		
25						

continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 12 cont.

W.O. 100945

Logged by TCS

DATE 4/27/81

SURFACE EL. 151

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25	R	6		(Terrace Deposits cont. from 12.0 ft.)	99.2	4.8
				@ 27.0 ft. fine to medium grained;		
30	R	3			98.9	3.0
35				@ 35.0 ft. brown, moist		
40	R	7			100.9	4.7
				@ 43.0 ft. gray-brown, very moist		
45				@ 46.0 ft. red-brown and gray, medium to coarse grained, saturated, medium dense, scattered subrounded gravel to 2"; water		
				@ 48.0 ft. gray, fine to medium grained		
50						

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PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 12 cont.

DATE 4/27/81

W.O. 100945

SURFACE EL. 151

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50				(Terrace Deposits cont. from 12.0 ft.)		
	R	50		CAPISTRANO FORMATION (Tc): Siltstone, dark brown, moist, very hard	91.3	29.9
55						
	R	50			98.4	22.5
				TOTAL DEPTH 56.5 ft. Water @ 46.0 ft. Caving from 46.0 ft.		

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

BORING NO. 14

W.O. 100945

Logged by TCS

DATE 5/5/81

SURFACE EL. 160

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS (Qt): Sand, fine to medium grained, tan, dry, loose; @1.0 ft. light brown-tan, slightly moist, medium dense;		
5						
7				@7.0 ft. medium grained, subangular;		
10						
15						
20	R	29				
25						

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PLATE A-14

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 14 cont. DATE 5/5/81

W.O. 100945 SURFACE EL. 160

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25	R	32		(Terrace Deposits cont. from 0.0 ft.)	115.5	1.9
				@ 28.0 ft. dense		
30	R	63			102.5	2.6
35	R	57			103.5	2.4
40	R	55			100.3	2.8
45	R	61			No Recovery	
50						

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PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 14 cont. DATE 5/5/81

W.O. 100945 SURFACE EL. 160

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50				(Terrace Deposits cont. from 0.0 ft.)		
55	R	39		@ 55.0 ft. water, gray with intermixed clayey sand with scattered siltstone chunks, rust pigment present;	82.4	35.9
60						
65	R	90		@ 65.0 ft. gravelly subrounded #4 material		
				MONTEREY FORMATION (Tm): Siltstone, gray-brown/dark brown, moist, very hard		
70	R	50				
75	R	65				

TOTAL DEPTH 75.0 ft. Water @ 55.0 ft.
No Caving

PLATE A-14

PACIFIC SOILS ENGINEERING, INC.
BORING LOG

Logged by TCS

BORING NO. 16

DATE 5/4/81

W.O. 100945

SURFACE EL. 163

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
0			SP	TERRACE DEPOSITS (Qt): Sand, fine to medium grained, tan, dry, loose; @ 1.0 ft. slightly moist, medium dense, subangular		
5						
10						
	R	39			98.5	2.3
15						
20						
	R	77			99.7	3.1
25						

continued on next page

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. 16 cont.

DATE 5/4/81

W.O. 100945

SURFACE EL. 163

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
25				(Terrace Deposits cont. from 0.0 ft.)		
30						
35	R	100			103.8	3.3
40						
45	R	120			103.7	2.9
50						

PLATE A-16

PACIFIC SOILS ENGINEERING, INC.

BORING LOG

Logged by TCS

BORING NO. A-16 cont.

DATE 5/4/81

W.O. 100945

SURFACE EL. 163

Depth ft.	SAMPLE	BLOWS/ft.	GROUP SYB.	DESCRIPTION and REMARKS	Unit Dry Wt. (lbs/cu.ft.)	% Moisture
50				(Terrace Deposits cont.from 0.0 ft.)		
55	R	160		@ 55.0 ft. medium to coarse grained, slightly moist to moist, dense, water	101.7	4.7
60						
65	R				No Recovery	
70						
75						

TOTAL DEPTH 75.0 ft. Water @ 55.0 ft.
No Caving

PLATE A-16

APPENDIX D

Traffic Impact Analysis

Traffic Impact Analysis

For the

RITZ CARLTON EXPANSION

Prepared for:
DUDEK & ASSOCIATES, INC.

February 2007

TRAFFIC IMPACT ANALYSIS
FOR THE RITZ CARLTON EXPANSION
IN THE CITY OF DANA POINT

Prepared for:

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February, 2007

TRAFFIC IMPACT ANALYSIS
FOR THE RITZ CARLTON EXPANSION
IN THE CITY OF DANA POINT

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TRAFFIC IMPACT ANALYSIS FOR THE PROPOSED RITZ CARLTON LAGUNA NIGUEL EXPANSION IN THE CITY OF DANA POINT

EXECUTIVE SUMMARY

- The Ritz Carlton is proposing an expansion of the existing hotel, resulting in 32 additional rooms and 41,000 square feet of additional amenities.

- The proposed addition of 32 rooms is estimated to generate 261 trips on a daily basis, with 18 trips during the morning peak hour and 19 trips during the evening peak hour.

- Project traffic will not result in a significant impact on daily roadway operation on the study roadway segments.

- Project traffic will not result in a significant impact on peak hour intersection operation at the study intersections.

INTRODUCTION

The Ritz Carlton Laguna Niguel is an existing hotel located on Ritz Carlton Drive in the City of Dana Point, California. The existing hotel development consists of 17.7 acres including 393 rooms and various meeting/banquet facilities and guest amenities. The hotel underwent a major renovation in 2004. The Ritz Carlton is currently proposing an expansion of the existing hotel, resulting in 32 additional rooms and 41,000 square feet of additional amenities. A vicinity map is presented on **Figure 1** and the site plan is shown on **Figure 2**.

Access to the site is currently provided via a driveway off Ritz Carlton Drive. Ritz Carlton Drive is a loop road that connects to Pacific Coast Highway on its south end via a signalized, full-movement intersection (aligning with Niguel Road) and on its north end also to Pacific Coast Highway via an unsignalized T-intersection. Ritz Carlton Drive also provides access to residential communities and the Salt Creek Beach Park.

An environmental review is required for the project, with a traffic impact analysis to address transportation impacts. Since the project site is located in the City of Dana Point, the environmental review and traffic analysis will be processed through the City.

The scope of the analysis in this report was developed with direction from City of Dana Point engineering staff and is in accordance with circulation system performance standards set forth in the Circulation Element section of the General Plan. The analysis will focus on off-site traffic impacts on five roadway segment and at three city intersections and the Ritz Carlton Main Entrance. The traffic analysis will analyze and report the project impact on the following roadway segments and at the following intersections in the vicinity of the project.

Roadway Segments

Pacific Coast Highway between Crown Valley Parkway and Ritz Carlton Dr South/Niguel Rd
Pacific Coast Highway south of Niguel Road
Niguel Road east of Pacific Coast Highway
Ritz Carlton Drive North west of Pacific Coast Highway
Ritz Carlton Drive South west of Pacific Coast Highway

Intersections

Pacific Coast Highway at Crown Valley Parkway
Pacific Coast Highway at Ritz Carlton Drive North
Pacific Coast Highway at Ritz Carlton Dr South/Niguel Rd
Ritz Carlton Drive at Ritz Carlton Main Entrance

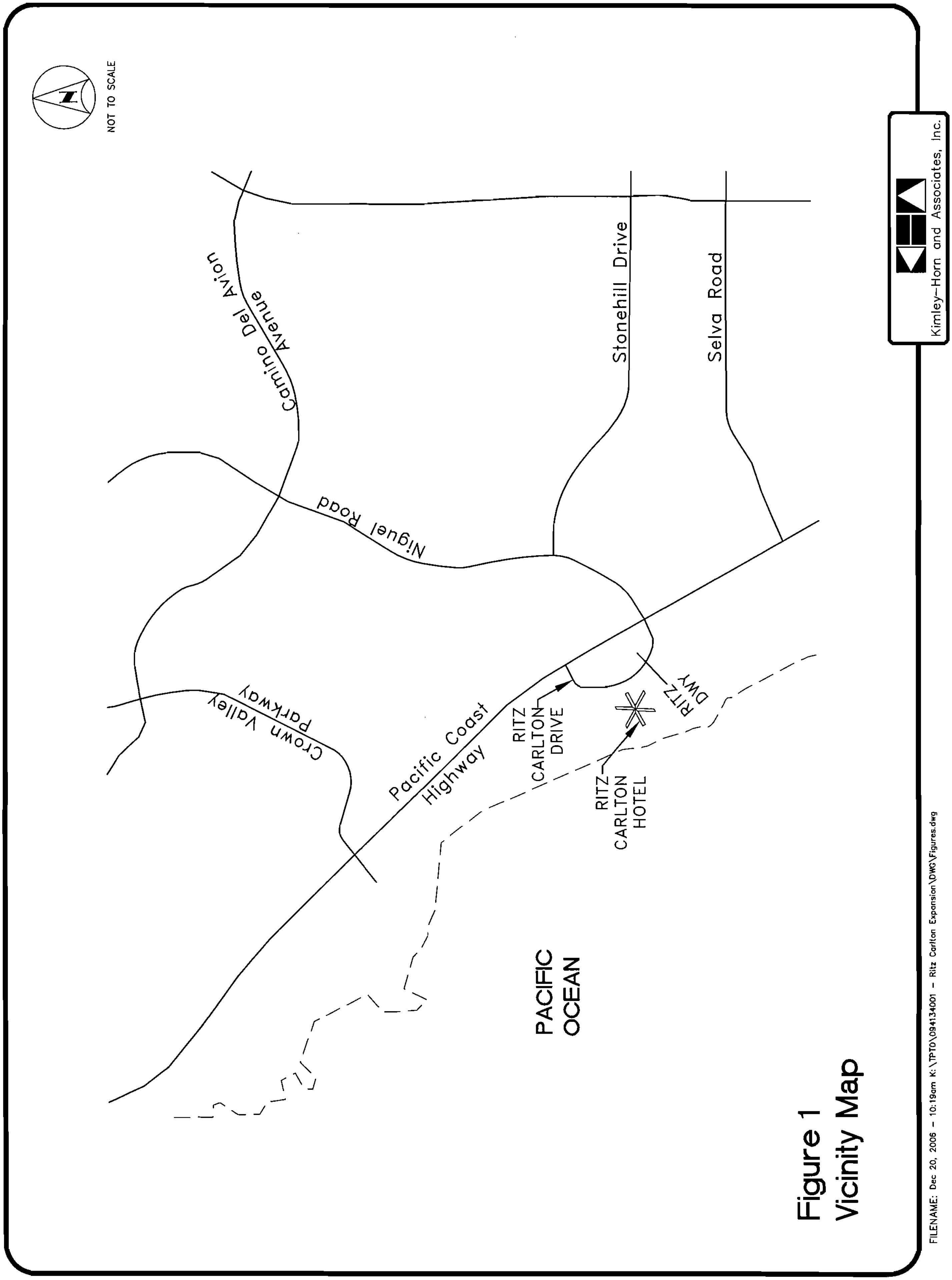
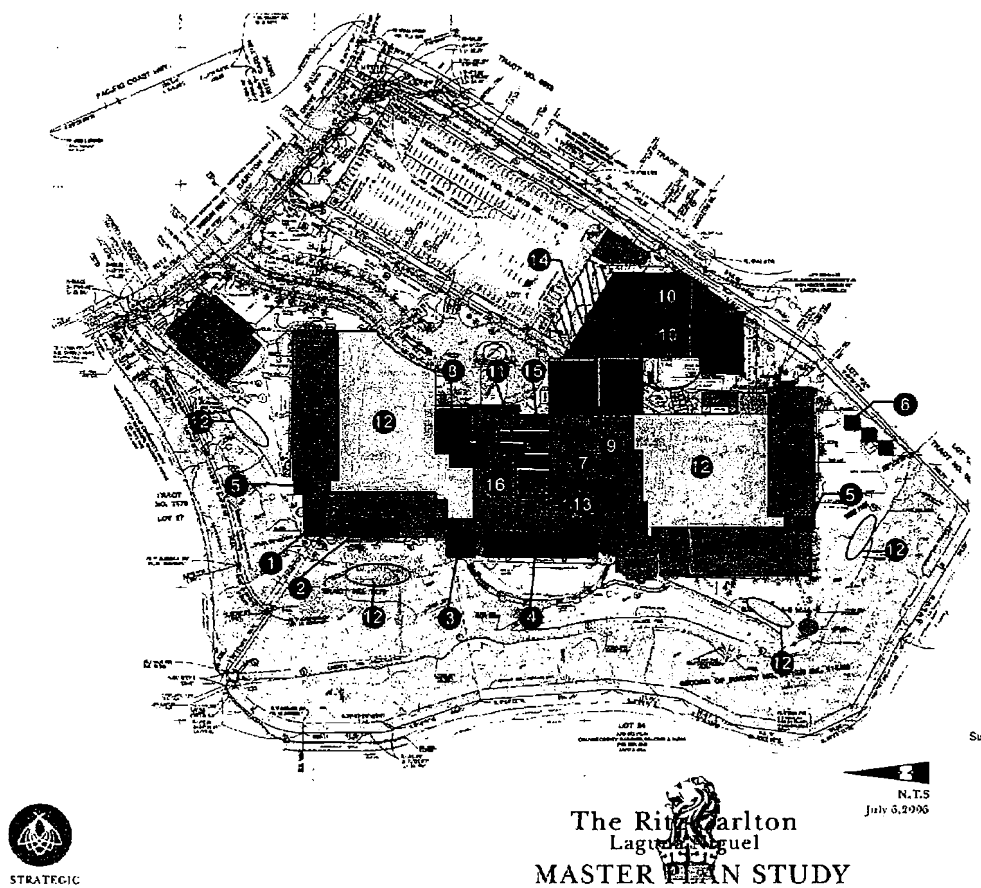


Figure 1
Vicinity Map

FILENAME: Dec 20, 2006 - 10:19am K:\TPTO\094134001 - Ritz Carlton Expansion\DWG\Figures.dwg



Master Plan Study – Key Notes

1. Renovate corner Crown Suites #3022 & #4022 into 2 upgraced Presidential Suites. No additional area added, just a renovation.

2. Convert the existing Presidential Suite into 4 Ocean Front Club Level rooms. Total of 3 New Ocean Front Keys. No additional area added, just a renovation.

3. Infill area between Central Core Building & Monarch Wing to Ocean Side of breezeway. Add a 2-story guest room building with 3 guest rooms per floor. Ground Level opens for access. Total of 6 New Ocean Front Keys. Approximate area is 1,520 SF per floor, totaling 3,040 SF of new floor area.

4. a) Convert Ground Level Plaza & Pavilion Meeting Rooms (6,200SF +/-) into 8 Ocean Front rooms.
4. b) Convert 2nd Story currently used as service corridor/utility space & ceiling space for pavilion meeting rooms into 6 Ocean Front rooms.

   Total of 14 New Ocean Front Keys. Ground level is just a renovation while the 2nd story adds +/- 6,276SF of new floor area.

5. Infill between connection of Dana Wing A&B & Monarch Wing A&B at Ocean Side of breezeway. Add a 3-story guest room building with 1 suite per floor. Ground Level opens for access. Total of 6 New Ocean Front Keys. Approximate area is 580SF per floor, totaling 3,480SF of new floor area.

6. At Dana Lawn, add 3 New Private Casitas, Ocean Front rooms. Total of 3 New Ocean Front Keys. Approximate area is 800SF per Casitas, totaling 1,600SF of new floor area.

7. Existing Executive Offices.

8. Convert existing Administrative Offices (+/- 2,500SF) into new retail. Renovation only, no new area added.

9. A new 11,460 S.F. Building over loading dock.

   - 4,500 S.F. Retail
   - 2,000 S.F. Breezeway
   - 4,990 S.F. Hospitality Suites

10. New 1 Story 29,550 SF Building over existing tennis courts.
    - 9,900 Ballroom
    - 2,750 Prefunction
    - 4,200 Kitchen
    - 1,600 Service Corridor
    - 3,000 Circulation
    - 2,400 Hospitality Suites
    - 5,700 Storage

11. Convert Existing 1535 S.F Logo Shop into Coffee shop. (Renovation Only)

12. Resort enhancement & upgrade of all hardscape, landscape, pool & amenities at Monarch pool area, Dana pool area, & Sunset Terraces.

13. Grand salon conversion to the new wine tasting room. (Renovation Only)

14. Potential extension of lower level Parking Garage

15. Convert Jewelry Shop into Sundry Shop.

16. Convert both Colonnade meeting rooms into break-out space for pool functions

Summary

A. Potential to add 32 Ocean Front Keys.
B. Proposed new floor area of +/- 55,606 SF

kollin | altomare | architects
5826 E Naples Plaza Long Beach, CA 90803
phone 562.856.1256 fax 562.856.1295

Figure 2
Project Site Plan

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Kimley-Horn and Associates, Inc.

ANALYSIS METHODOLOGY

For each of the study roadway segments and intersections, three analysis scenarios will be analyzed:

- Existing Traffic Conditions (Year 2006)
- Cumulative Traffic Conditions without Project (Year 2009)
- Cumulative Traffic Conditions with Project (Year 2009)

The daily roadway analysis has been performed following guidelines for volume-to-capacity calculations as published in the City of Dana Point Circulation Element. The city's Level of Service (LOS) values for various street classifications for LOS C and D are presented on Table 1. The LOS values are consistent with the County of Orange LOS values, which are presented on Table 2 for LOS A to E.

Intersection operation has been evaluated using the methodology used by the jurisdiction responsible for the operation of the signal, in the case of signalized intersections. Thus, intersection operation at the two signalized study area intersections has been evaluated using the Intersection Capacity Utilization (ICU) methodology for signalized intersections, as these intersections are controlled by the City of Dana Point. Intersection operation at the unsignalized study intersection has also been evaluated using the Highway Capacity Manual (HCM) methodology. Brief descriptions of the ICU and HCM methodologies are provided below.

Intersection Capacity Utilization (ICU) Methodology

In accordance with the City of Dana Point Circulation Element requirements, peak hour operating conditions at any city-controlled signalized intersection will be evaluated using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology provides a comparison of the number of vehicles actually passing through that intersection during a given hour to the theoretical hourly vehicular capacity of an intersection.

The ICU calculation assumes a per-lane capacity of 1,700 vehicles per hour (vph) for each travel lane (through or turning lane) through the intersection. A clearance factor of 0.05 (5%) of the total intersection capacity is included in the ICU calculation.

The ICU calculation returns a volume-to-capacity (V/C) ratio that translates into a corresponding Level of Service (LOS) measure, ranging from LOS "A", representing uncongested, free-flowing conditions, to LOS "F", representing congested, over-capacity conditions. A summary description of each Level of Service and the corresponding V/C ratio is provided in Table 3.

Table 1
City of Dana Point
ADT Level of Service Volumes by Facility Types

Facility Type	Maximum Volume	
	LOS C	LOS D
Major (6 Lanes Divided)	45,000	50,600
Primary (4 Lanes Divided)	30,000	33,800
Secondary (4 Lanes Undivided)	20,000	22,500
Collector (2 Lanes)	10,000	11,000

Source: City of Dana Point Circulation Element, June 1995

Table 2
County of Orange
Roadway Design Standards (Road Capacity Values)

Facility Type	Level of Service				
	A	B	C	D	E
Major (6 Lanes Divided)	33,900	39,400	45,000	50,600	56,300
Primary (4 Lanes Divided)	22,500	26,300	30,000	33,800	37,500
Secondary (4 Lanes Undivided)	15,000	17,500	20,000	22,500	25,000
Collector (2 Lanes)	7,500	8,800	10,000	11,000	12,500

Source: County of Orange Roadway Design Standards (Road Capacity Values)

Table 3 ICU Level of Service Descriptions		
Level of Service	ICU Value	Description
A	0.00 - 0.60	EXCELLENT – No vehicle waits longer than one red light and no approach phase is fully used.
B	0.61 - 0.70	VERY GOOD – An occasional approach phase is fully utilized; drivers begin to feel somewhat restricted within groups of vehicles.
C	0.71 - 0.80	GOOD – Occasionally drivers may have to wait through more than one red light; back-ups may develop behind turning vehicles
D	0.81 - 0.90	FAIR – Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive back-ups.
E	0.91 - 1.00	POOR – Represents the most vehicles that the intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.00	FAILURE – Back-ups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Highway Capacity Manual (HCM) Delay Methodology

Any intersection identified as a Caltrans intersection will be evaluated using the Highway Capacity Manual (HCM) methodology as required by the Caltrans Guide for the Preparation of Traffic Impact Studies (June 2001).

For signalized intersections, the HCM methodology estimates the average delay (in average seconds per vehicle) for each of the movements through the intersection, depending on a number of factors, including number of lanes, volume of traffic, and signal timing and phasing.

Unsignalized intersections, including city-controlled intersections, will also be analyzed using the HCM methodology for unsignalized intersections. For unsignalized intersections, The HCM methodology analysis determines the average total delay for each vehicle making any movement from the stop-controlled minor street, as well as left turns from the major street. Delay values are calculated based on the relationship between traffic on the major street and the availability of acceptable "gaps" in the traffic stream through which conflicting traffic movements can be made.

The HCM delay values translate to a Level of Service (LOS) designation, ranging from LOS "A" to LOS "F" using the delay ranges shown on **Table 4**.

LEVEL OF SERVICE STANDARDS

Per the City of Dana Point Circulation Element, the target LOS standard for intersection operation during the morning and evening peak hours on Primary Arterials, Secondary Arterials, and Local Streets is LOS C. The target LOS during the peak hours on Major Arterials and State Highways is LOS D. A copy of the Circulation System Performance Criteria of the City of Dana Point General Plan is included in **Appendix A** of this report for reference.

The intersection of Pacific Coast Highway and Crown Valley Parkway is also a County of Orange Congestion Management Program (CMP) intersection. The CMP target LOS for intersections on the CMP system is LOS E.

SIGNIFICANT TRAFFIC IMPACT CRITERIA

The significant traffic impact criteria used by the City of Dana point is as follows:

- If a project causes a change in LOS from acceptable to unacceptable
- If a project causes an increase in V/C or ICU of 0.010 or more, causing or worsening an unacceptable LOS

If a proposed project's traffic causes the conditions above, then the impacts are deemed significant and the project shall identify feasible mitigations to bring the facility back to the level previously held by the facility prior to the project's significant impacts.

Table 4

HCM-Based Level of Service and Delay Ranges
for Unsignalized Intersections

Average Delay (seconds / vehicle)	LOS
< 10.0	A
> 10.0 to < 15.0	B
> 15.0 to < 25.0	C
> 25.0 to < 35.0	D
> 55.0 to < 80.0	E
> 80.0	F

EXISTING TRAFFIC CONDITIONS

Roadway Characteristics

The proposed project is located on the west side of Pacific Coast Highway between Ritz Carlton Drives North and South. The following provides a brief description of the roadways directly serving the project site.

Pacific Coast Highway (PCH) is a four-lane Primary Arterial in the vicinity of the project with a posted speed limit of 50 miles per hour (mph) in the vicinity of the project. PCH currently carries approximately 25,000 to 43,000 average daily trips (ADT) in the vicinity of the project site at LOS B and F. PCH provides direct access to Ritz Carlton Drive north and the south of the project. Pacific Coast Highway is designated on the City's Master Plan Circulation System Map as a six-lane Major Arterial.

Niguel Road is a four-lane Primary Arterial with a posted speed limit of 40 mph east of PCH. Niguel Road currently carries approximately 18,000 ADT at LOS A west of Pacific Coast Highway. Niguel Road aligns with Ritz Carlton Drive South. Niguel Road is designated on the City's Master Plan Circulation System Map as a six-lane Major Arterial.

Ritz Carlton Drive is a two-lane divided local roadway that provides access to the Ritz Carlton Hotel site. There is no posted speed limit on Ritz Carlton Drive. Ritz Carlton Drive is not designated on the City's Master Plan Circulation System Map.

Existing Daily and Peak Hour Traffic Volumes

Existing daily traffic volumes were obtained from the City of Dana Point traffic count program, provided by City staff. Existing peak hour traffic counts were conducted at the study intersections in November and December 2006. Peak hour traffic count worksheets are provided in **Appendix** B of this report.

Study facilities are shown on **Figure** 3. Existing lane configurations at the study intersections are shown on **Figure 4**, and existing daily and peak hour traffic volumes are shown on **Figure 5.**

Roadway Operation

The study area roadway segments were evaluated based on daily traffic volumes compared to LOS E values in Table 2. To determine LOS designations, the capacity of the roadway for its existing configuration is used. The results of the roadway analysis are summarized in Table 5. The study area roadway segments are currently operating at LOS B or better on a 24-hour basis with the following exception:

- Pacific Coast Highway south of Niguel Road - LOS F

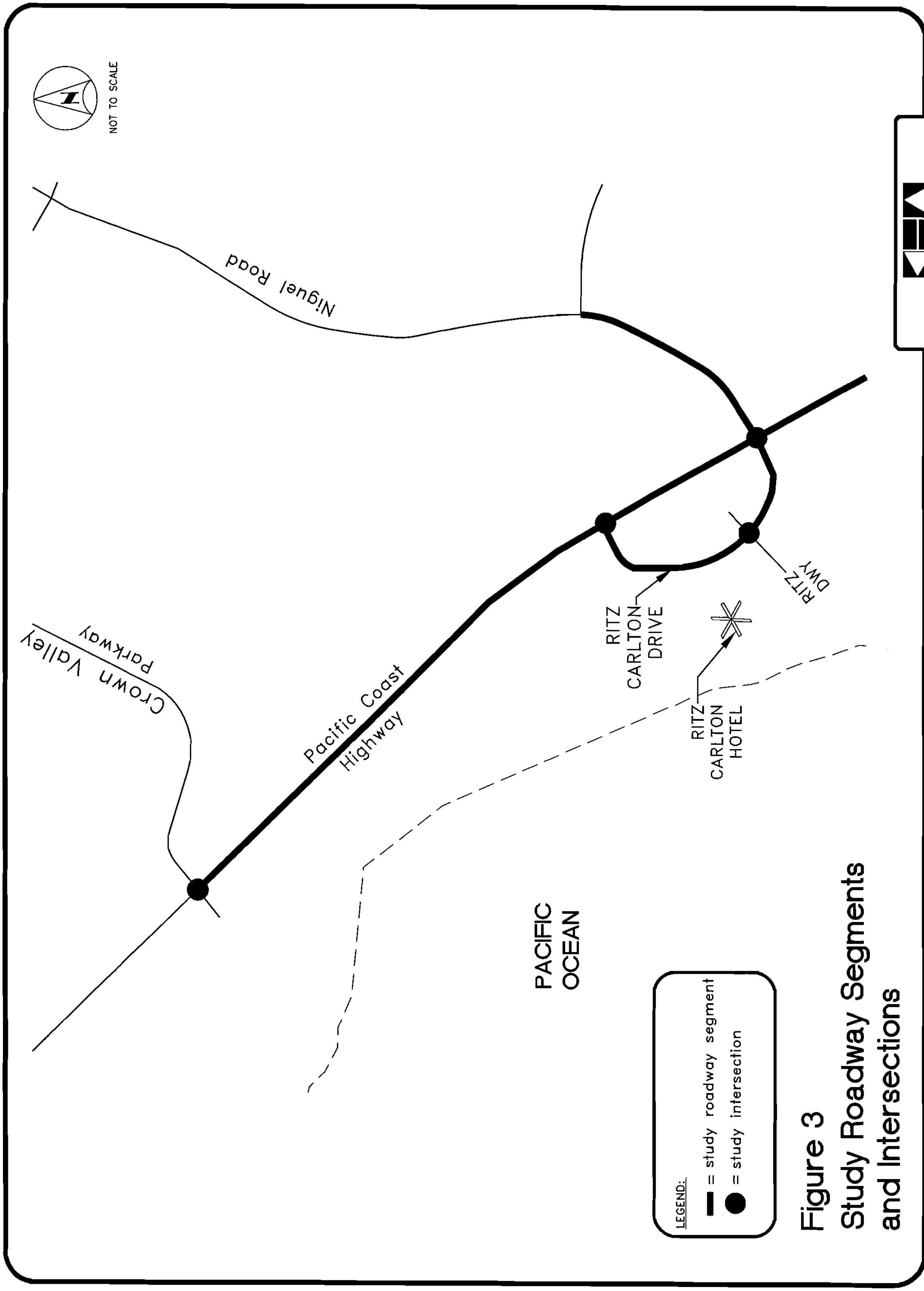

Figure 3
Study Roadway Segments and Intersections

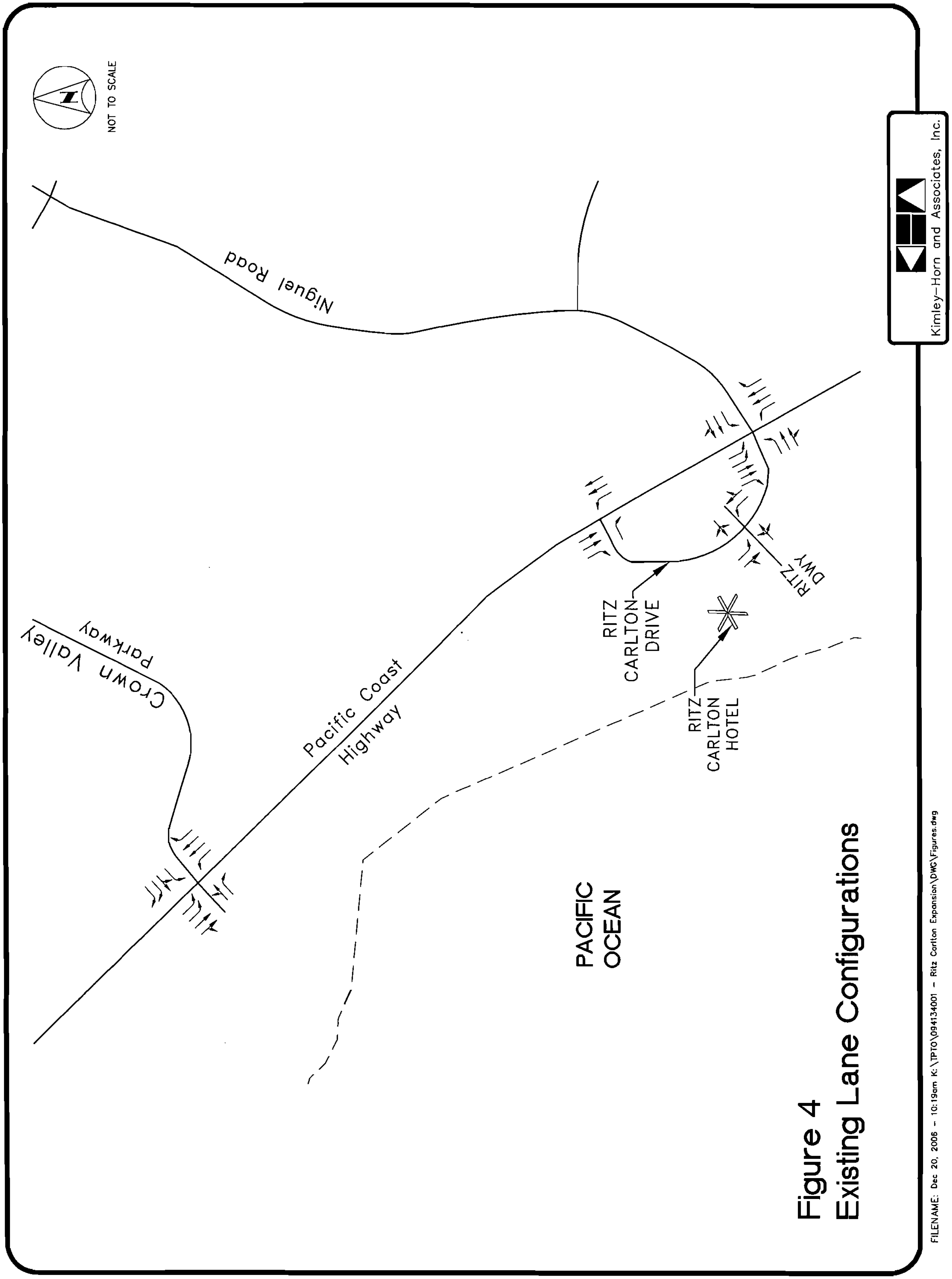

Figure 4
Existing Lane Configurations

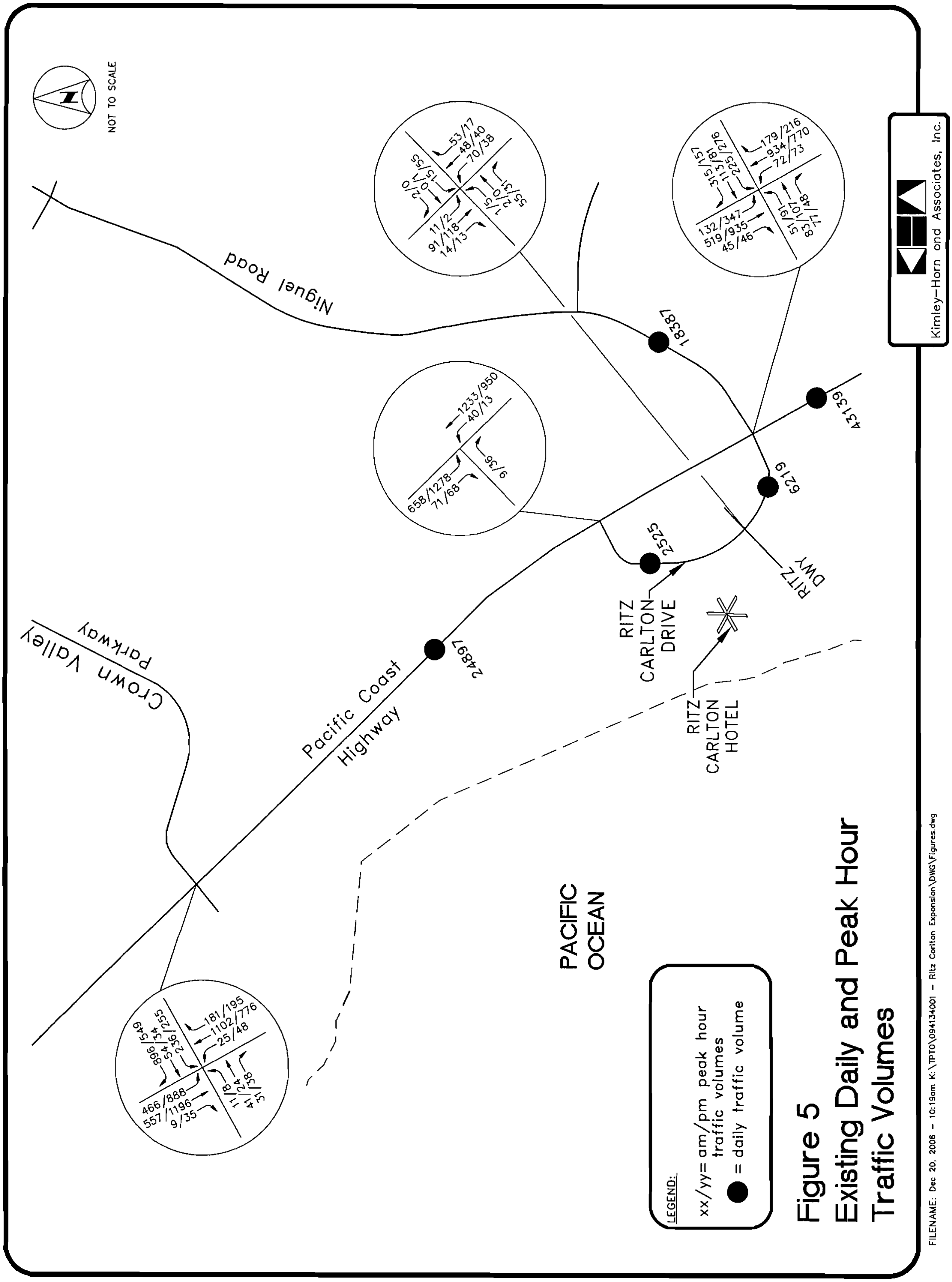

Figure 5
Existing Daily and Peak Hour Traffic Volumes

Table 5
Summary of Roadway Operations
Existing Traffic Conditions

Roadway	Segment	Lanes/Classification	LOS D Maximum Volume	Existing Volume	V/C[1]	LOS
Pacific Coast Hwy	Crown Valley Parkway to Niguel Road	4 Lane Primary	33,800	24,897	0.664	B
	South of Niguel Road	4 Lane Primary	33,800	43,139	1.150	F
Niguel Road	East of Pacific Coast Highway	4 Lane Primary	33,800	18,387	0.490	A
Ritz Carlton Drive N	West of Pacific Coast Highway	2 Lane Collector	11,000	2,525	0.202	A
Ritz Carlton Drive S	West of Pacific Coast Highway	2 Lane Collector	11,000	6,219	0.498	A

[1]V/C is calculated using the LOS E capacity based on County of Orange standards, which are consistent with City of Dana Point standards.

Intersection Operation

Existing peak hour intersection operations were evaluated using the methodologies described above, and the results are summarized on Table 6. The study intersections are currently operating at LOS C or better during both peak hours. Copies of the intersection analysis worksheets are provided in **Appendix** C of this report.

CUMULATIVE TRAFFIC CONDITIONS

Cumulative traffic conditions represent existing traffic conditions with 1% per year ambient growth and traffic associated with related projects in the vicinity of the proposed project site. One cumulative analysis year will be evaluated for project impacts of the Ritz Carlton expansion. The Ritz Carlton expansion is expected to be completed in about 3 years. The following section describes the methodology used to develop cumulative traffic projections, and to evaluate cumulative daily and peak hour conditions in the vicinity of the proposed development.

Cumulative Traffic Forecasting Methodology

Ambient Traffic Growth

An ambient traffic growth rate of 1% per year was applied to the existing traffic volumes on each of the study roadway segments and at each of the study intersections. The growth rate was developed in conjunction with preparation of the traffic impact analysis for the Orange County South Court Facility (Kimley-Horn and Associates, Inc, June 2006). The growth rate was determined by comparing historical and existing peak hour counts and General Plan build-out volume forecasts, and calculating ambient and projected traffic growth throughout the surrounding area. Based on these calculations, it was determined that an average yearly growth rate of 1% per year would be appropriate for the short-term future analysis. City staff concurred with utilization of the 1% per year growth rate.

Related Projects

In addition to the ambient growth rate, anticipated traffic from Related Projects in the vicinity of the project was added to existing traffic volumes. Related Projects include any project that has already been approved but is not yet constructed, or any project that is in the application process, and is a reasonably foreseeable development. Information regarding Related Projects in the vicinity of the proposed development was requested from the City of Dana Point for the Ritz Carlton project and from the following additional cities as part of the preparation of the traffic impact analysis for the Orange County South Court Facility:

• City of Aliso Viejo	• City of Laguna Niguel
• City of Laguna Beach	• City of Mission Viejo
• City of Laguna Hills	• City of San Juan Capistrano

Table 6
Summary of Intersection Operation
Existing Traffic Conditions

No.	Signalized Intersection			AM Peak Hour		PM Peak Hour	
				ICU	LOS	ICU	LOS
1	Pacific Coast Hwy	@	Crown Valley Pkwy	0.709	C	0.676	B
3	Pacific Coast Hwy	@	Ritz Carlton South/Niguel R	0.543	A	0.586	A
No.	Unsignalized Intersections			AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
2	Pacific Coast Hwy	@	Ritz Carlton Dr North				
			Eastbound Approach	10.6	B	15.0	B
4	Ritz Carlton Dwy	@	Ritz Carlton Drive				
			Eastbound Approach	9.4	A	9.3	A
			Westbound Approach	13.2	B	11.6	B

Based on the information received from the local cities, the research indicated that there are nine known Related Projects in the vicinity. A summary of the Related Projects is provided in Table 7. The locations of each of these projects are shown on **Figure** 6.

Traffic studies for each of the related projects were obtained. Based on these traffic studies, the resulting trips that would be generated by each related project are also summarized on Table 7. Table 7 indicates that the related projects would generate about 56,858 trips on a daily basis, with 4,524 trips during the morning peak hour and 5,609 trips during the evening peak hour. Although some of these projects may not be completed by the cumulative analysis year (2009), for a conservative approach, all Related Projects traffic was assumed in the analysis. The total combined traffic generated by all the Related Projects through the study intersections is shown on **Figure** 7.

Cumulative Traffic Conditions Daily and Peak Hour Traffic Volumes

The 1% ambient annual growth and the traffic to be generated by the Related Projects was allocated to the study area intersections and then added to the Existing traffic volumes to represent Cumulative Traffic Conditions. The resulting Cumulative traffic volumes (without the proposed project) are illustrated on **Figure** 8.

Roadway Operation

The study roadway segments were re-analyzed and the results are summarized in Table 8. The analysis indicates that the study roadway segments would operate at LOS C or better on a 24-hour basis under Cumulative Traffic Conditions with the following exception:

- Pacific Coast Highway south of Niguel Road - LOS F

Intersection Operation

The study intersections were re-analyzed and the results are summarized on Table 9. Intersection analysis worksheets are provided in Appendix C. The analysis indicates that the study intersections would continue to operate at LOS C or better under Cumulative Traffic Conditions.

Table 7
Summary of Related Projects Trip Generation

No.	Project	ADT	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
City of Dana Point								
1	Dana Point Headlands (Mixed-Use)	4,599	100	114	214	219	178	397
2	Dana Point Town Center	11,748	306	180	486	374	498	872
City of Dana Point Projects Trip Generation Potential		*16,347*	*406*	*294*	*700*	*593*	*676*	*1,269*
City of Aliso Viejo								
3	Summit Phases 5, 6, & 7 (Mixed-Use)	12,195	1,055	221	1,276	414	1,077	1,491
4	Glenwood (Residential & Recreational Commercial)	6,166	149	303	452	340	242	582
5	The Commons (Mixed-Use)	6,227	81	106	187	320	263	583
6	Vantis (Mixed-Use)	10,110	797	297	1,094	350	834	1,184
City of Aliso Viejo Projects Trip Generation Potential		*34,698*	*2,082*	*927*	*3,009*	*1,424*	*2,416*	*3,840*
City of Laguna Niguel								
7	Bastani Medical Office	867	47	12	59	24	64	88
8	Walgreens Drive-Through Pharmacy [1]	1,156	20	15	35	55	58	113
9	Orange County South Court Facility	3,790	597	124	721	114	185	299
City of Laguna Niguel Projects Trip Generation Potential		*5,813*	*664*	*151*	*815*	*193*	*307*	*500*
Total All Cumulative Projects Trip Generation Potential		56,858	3,152	1,372	4,524	2,210	3,399	5,609

[1] The proposed Walgreens Pharmacy would replace existing commercial uses.

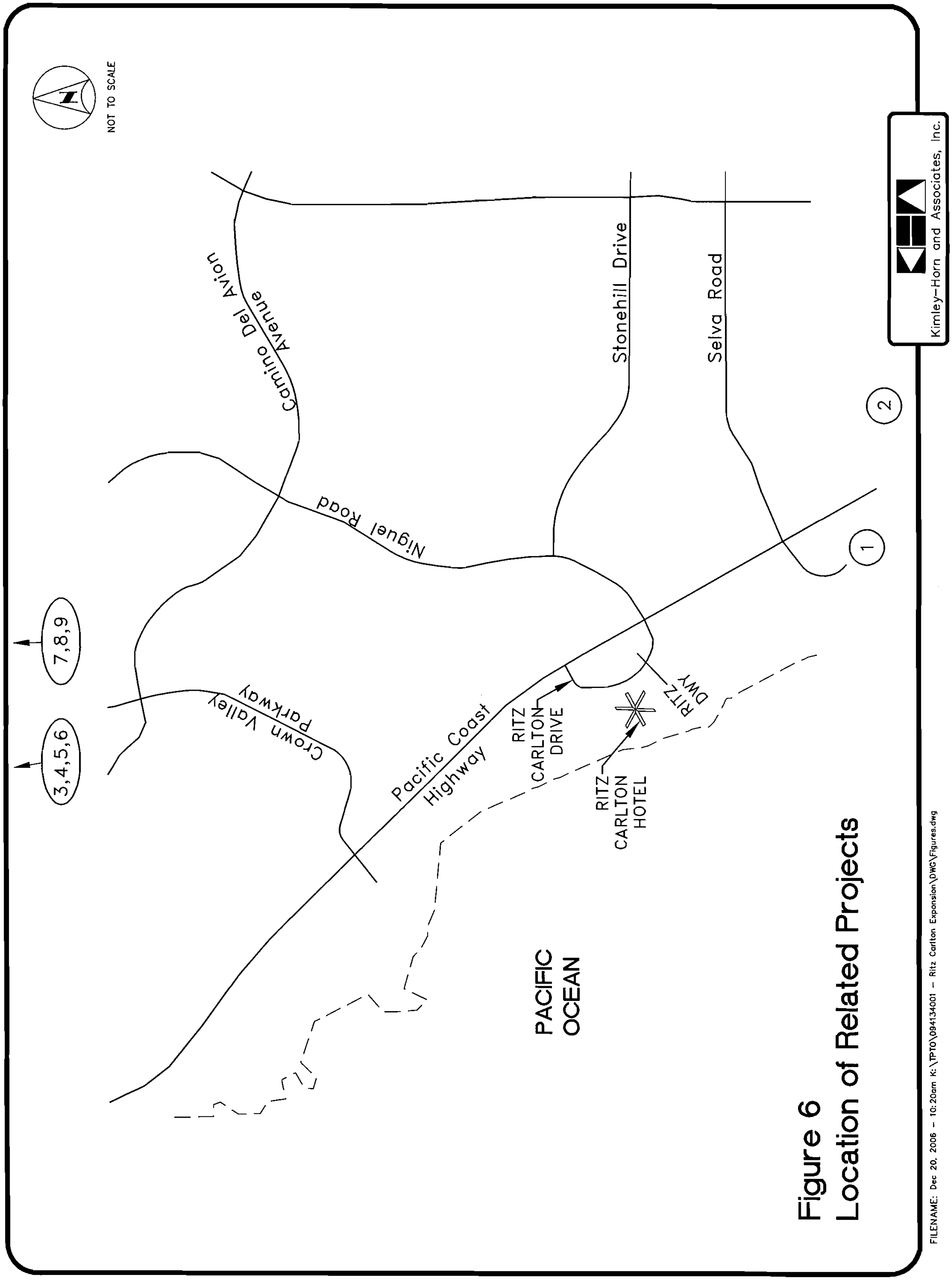

Figure 6
Location of Related Projects

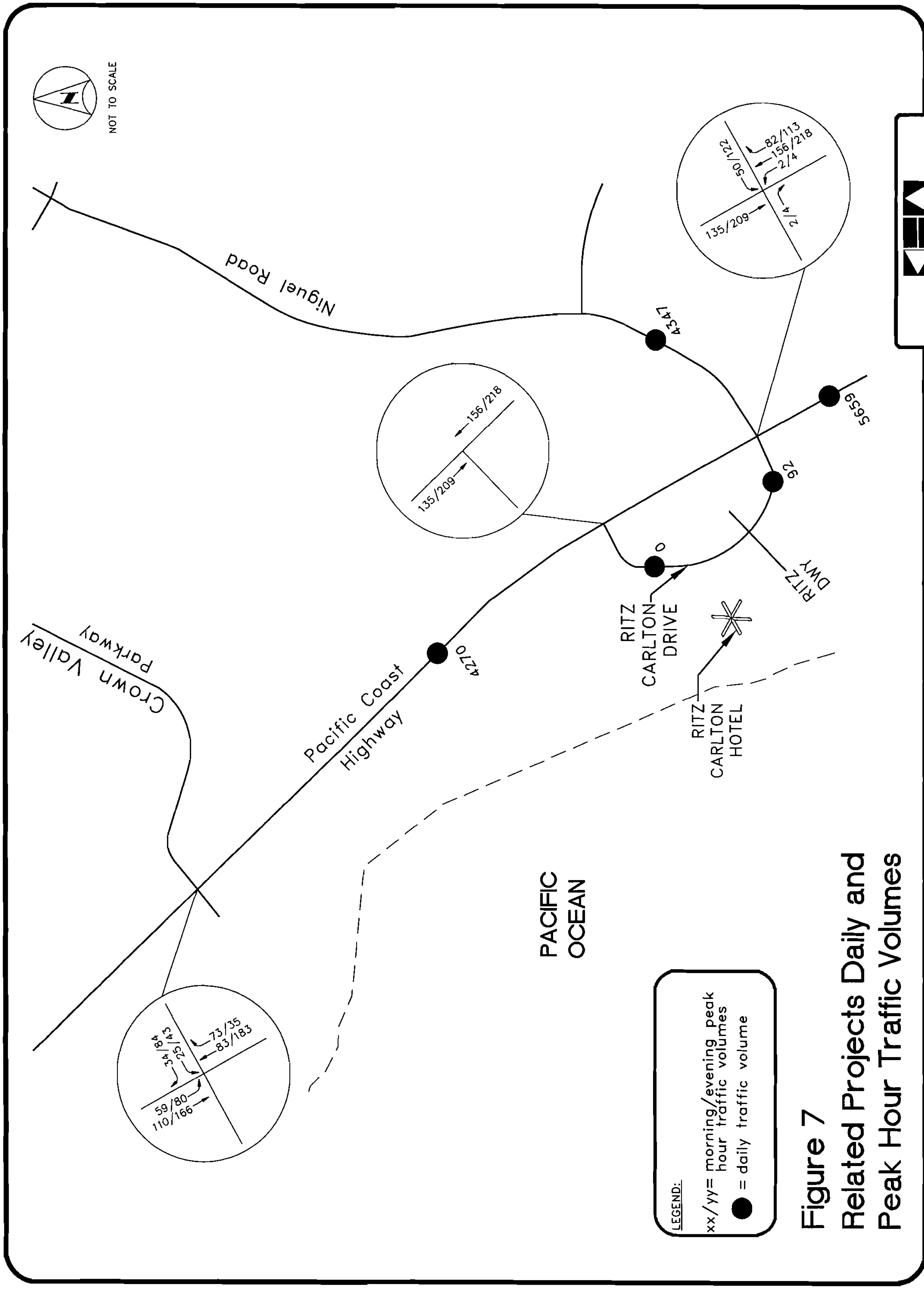

Figure 7
Related Projects Daily and Peak Hour Traffic Volumes

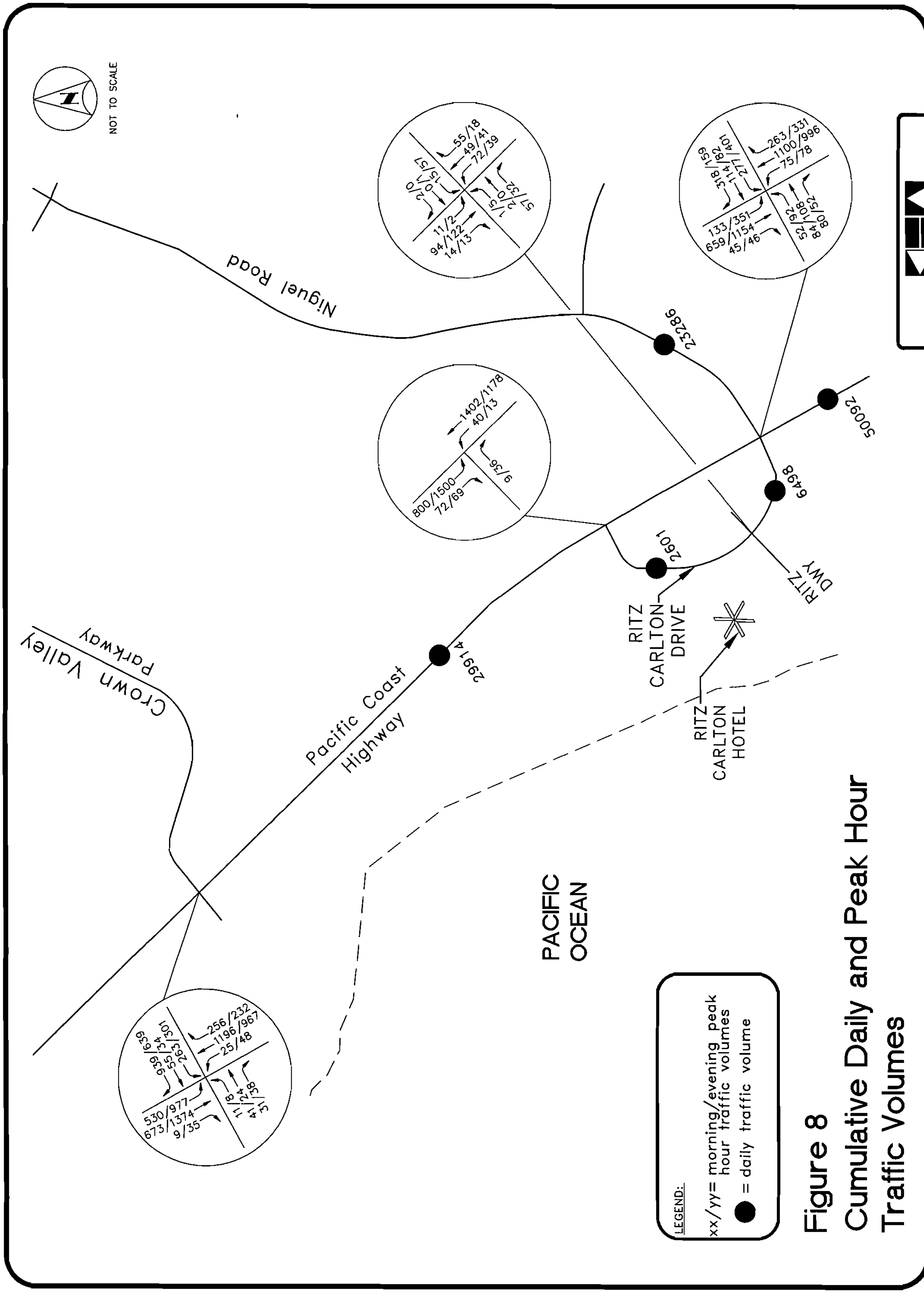

Figure 8
Cumulative Daily and Peak Hour Traffic Volumes

Table 8
Summary of Roadway Operations
Cumulative Traffic Conditions

Roadway	Segment	Lanes/Classification	LOS D Maximum Volume	Cumulative Volume	V/C	LOS
Pacific Coast Hwy	Crown Valley Parkway to Niguel Road	4 Lane Primary	33,800	29,914	0.798	C
	South of Niguel Road	4 Lane Primary	33,800	50,092	1.336	F
Niguel Road	East of Pacific Coast Highway	4 Lane Primary	33,800	23,286	0.621	B
Ritz Carlton Drive N	West of Pacific Coast Highway	2 Lane Collector	11,000	2,601	0.236	A
Ritz Carlton Drive S	West of Pacific Coast Highway	2 Lane Collector	11,000	6,498	0.520	A

Table 9
Summary of Intersection Operation
Cumulative Traffic Conditions

No.	Signalized Intersection			AM Peak Hour		PM Peak Hour	
				ICU	LOS	ICU	LOS
1	Pacific Coast Hwy	@	Crown Valley Pkwy	0.759	C	0.776	C
3	Pacific Coast Hwy	@	Ritz Carlton South/Niguel Rd	0.624	B	0.729	C
No.	Unsignalized Intersections			AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
2	Pacific Coast Hwy	@	Ritz Carlton Dr North				
			Eastbound Approach	11.3	B	17.2	C
4	Ritz Carlton Dwy	@	Ritz Carlton Drive				
			Eastbound Approach	9.4	A	13.4	B
			Westbound Approach	9.4	A	11.7	B

PROJECT TRAFFIC

Trip Generation Estimates

The estimates of the amount of traffic to be generated by the expansion of the Ritz Carlton Hotel have been developed using the Institute of Transportation Engineers (ITE) Trip Generation (7th Edition) publication, which contains trip generation rates for hundreds of land use categories, based on traffic measurements of existing developments. A discussion of the trip generation estimates for the proposed project is provided in the paragraphs below.

Trip Generation

Trip generation rates and resulting trips for the proposed project are summarized on **Table 10.** Table 10 indicates that the proposed addition of 32 rooms to the existing hotel is estimated to generate 261 trips on a daily basis, with 18 trips during the morning peak hour (11 inbound trips and 7 outbound trips) and 19 trips during the evening peak hour (10 inbound trips and 9 outbound trips).

Trip Distribution and Assignment

Distribution of project traffic to the surrounding street system is based on the existing distribution of existing Ritz Carlton trips. **Figure 9** illustrates the project trip distribution assumptions for the proposed project.

The trip distribution assumptions shown on Figure 9 were applied to the trip generation estimates shown on Table 10. The resulting peak hour project traffic volumes for the proposed project are shown on **Figure10.**

PROJECT TRAFFIC IMPACT

Project traffic was added to Cumulative daily and peak hour traffic volumes, and the study roadway segment and intersections were re-analyzed. Cumulative plus Project daily and morning and evening peak hour turning movement volumes are shown on **Figure 11.**

Roadway Operation

The study roadway segments were re-analyzed and the results are summarized in **Table 11.** The analysis indicates that the study roadway segments would operate at LOS C or better on a 24-hour basis under Cumulative plus Project Traffic Conditions with the following exception:

- Pacific Coast Highway south of Niguel Road - LOS F

Comparing the results to the Cumulative Traffic Conditions (without Project), the addition of project traffic would contribute to an already-deficient condition. The project would not cause a change in LOS from acceptable to unacceptable nor would the project cause an increase in V/C of 0.01 or more, causing or worsening unacceptable LOS conditions. Project traffic will not result in a significant impact on daily roadway operation on the study roadway segments.

Table 10
Summary of Trip Generation
Ritz Carlton Laguna Niguel Expansion

ITE Code	LAND USE	Trips Per:	Trip Generation Rates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
310	Hotel	Room	8.17	0.34	0.22	0.56	0.31	0.28	0.59

ITE Code	LAND USE	Rooms	Project Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
310	Hotel	32	261	11	7	18	10	9	19

Trip generation rates are from the Trip Generation (7th Edition) publication of the Institute of Transportation Engineers (ITE).

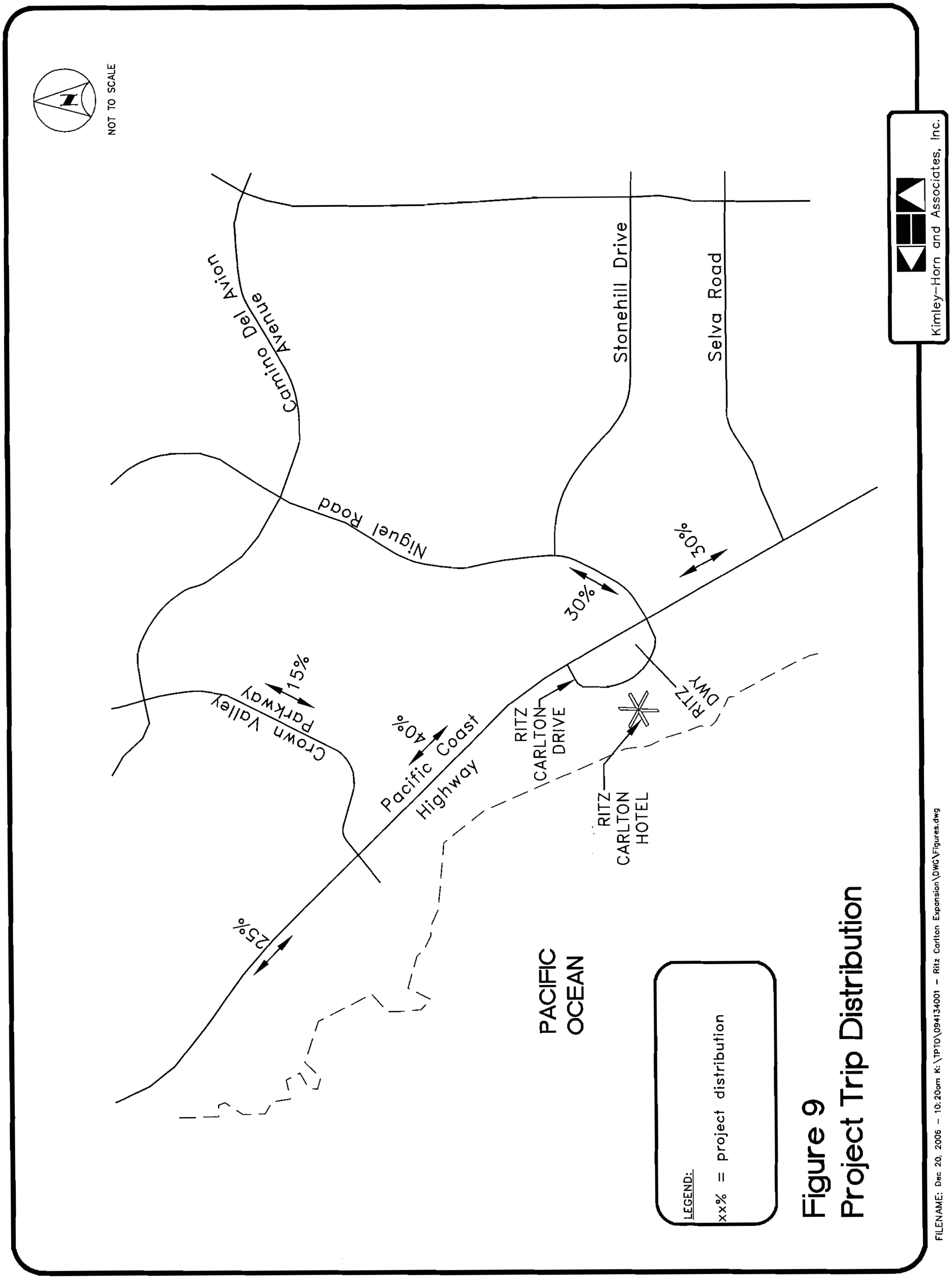

Figure 9
Project Trip Distribution

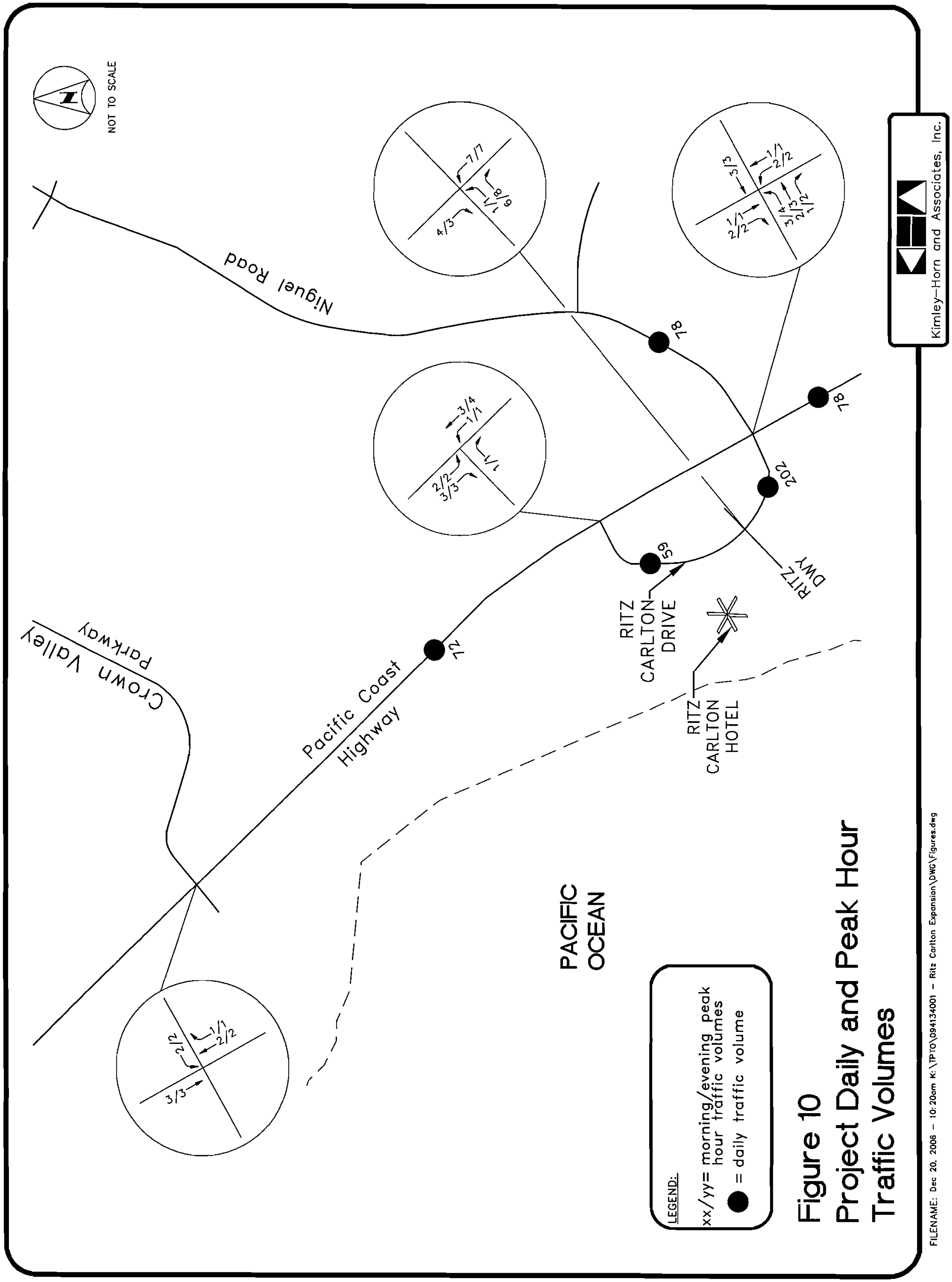

Figure 10
Project Daily and Peak Hour Traffic Volumes

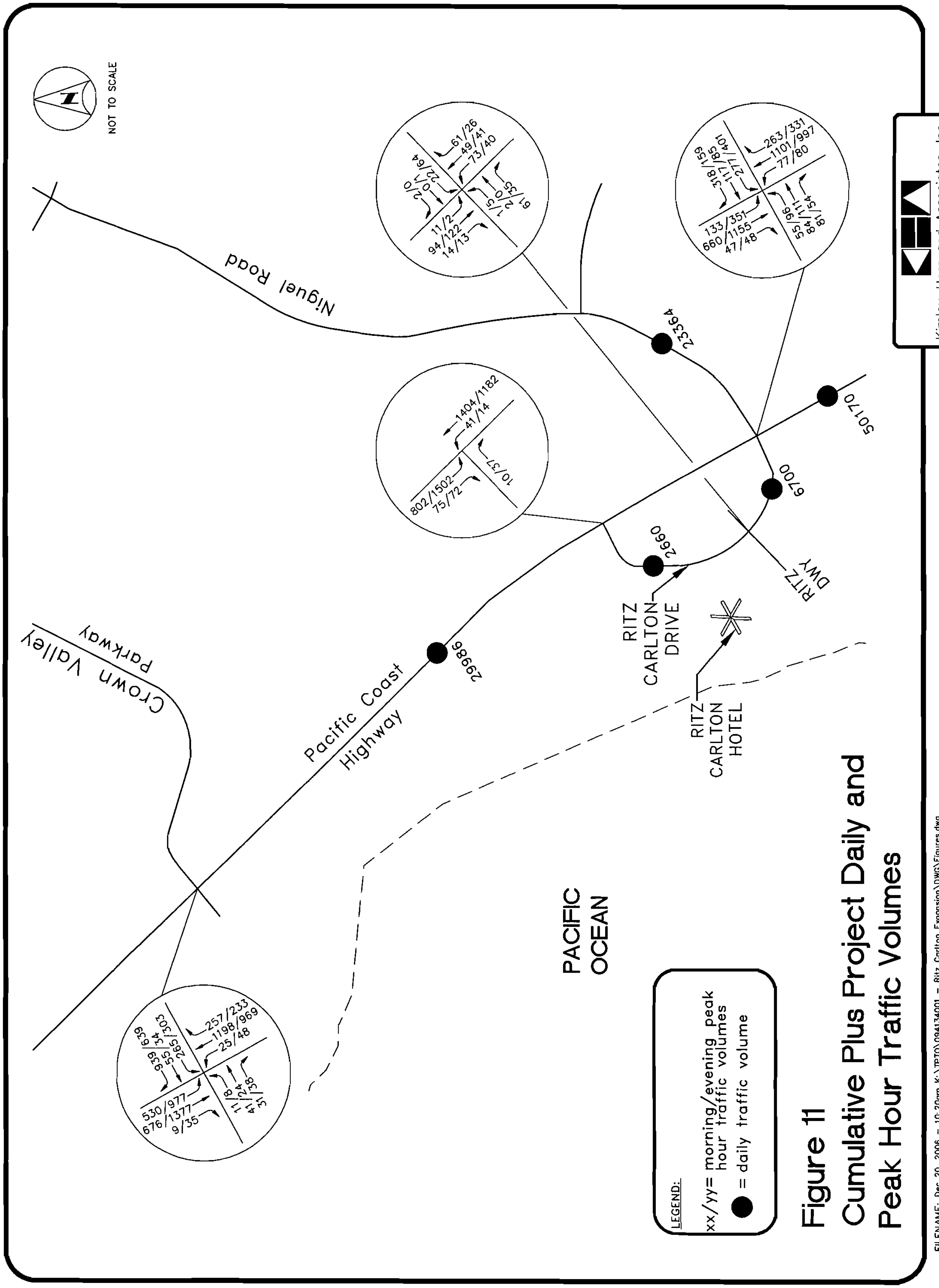
NOT TO SCALE
Niguel Road
Crown Valley Parkway
Pacific Coast Highway
PACIFIC OCEAN
RITZ CARLTON DRIVE
RITZ CARLTON HOTEL
RITZ DWY
23364
50170
6700
2660
29986
802/1502
75/72
1404/1182
41/14
10/37
2/0
0/22
22/64
11/2
94/122
14/13
61/26
49/41
73/40
1/5
0/2
35/61
318/159
117/85
277/401
263/331
1101/997
77/80
133/351
660/1155
47/48
55/96
84/111
81/54
939/639
55/34
265/303
257/233
1198/969
25/48
530/977
676/1377
9/35
11/8
41/24
31/38
LEGEND:
xx/yy= morning/evening peak hour traffic volumes
= daily traffic volume
Figure 11
Cumulative Plus Project Daily and Peak Hour Traffic Volumes
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Table 11
Summary of Roadway Operations
Cumulative Traffic Conditions plus Project

Roadway	Segment	Lanes/Classification	LOS D Maximum Volume	Cumulative Volume	V/C	LOS	Project Volume	Cumulative plus Project Volume	V/C	LOS	Increase in V/C	Significant?
Pacific Coast Hwy	Crown Valley Parkway to Niguel Road	4 Lane Primary	33,800	29,914	0.798	C	72	29,986	0.800	C	0.002	NO
	South of Niguel Road	4 Lane Primary	33,800	50,092	1.336	F	78	50,170	1.338	F	0.002	NO
Niguel Road	East of Pacific Coast Highway	4 Lane Primary	33,800	23,286	0.621	B	78	23,364	0.623	B	0.002	NO
Ritz Carlton Drive N	West of Pacific Coast Highway	2 Lane Collector	11,000	2,601	0.208	A	59	2,660	0.213	A	0.005	NO
Ritz Carlton Drive S	West of Pacific Coast Highway	2 Lane Collector	11,000	6,498	0.520	A	202	6,700	0.536	A	0.016	NO

Intersection Operation

The study intersections were re-analyzed and the results are summarized on **Table 12**. The magnitude of the project impact is also shown on Table 12. Intersection analysis worksheets are provided in Appendix C. The analysis indicates that the study intersections would continue to operate at LOS C or better under Cumulative plus Project Traffic Conditions. The proposed project would not have a significant traffic impact on any of the study roadway segments based on the City's significant impact criteria.

Comparing the results to the Cumulative Traffic Conditions (without Project), the addition of project traffic would would not cause a change in LOS from acceptable to unacceptable nor would the project cause an increase in ICU of 0.01 or more, causing or worsening unacceptable LOS conditions. Project traffic will not result in a significant impact on peak hour intersection operation at the study intersections.

CONGESTION MANAGEMENT PROGRAM COMPLIANCE

The Orange County Congestion Management Program (CMP) was established in 1991, to reduce traffic congestion and to provide a mechanism for coordinating land use and development decisions. Compliance with the CMP requirements ensures a city's eligibility to compete for State gas tax funds for local transportation projects.

Within the study area, the CMP Highway System includes two arterials: Pacific Coast Highway and Crown Valley Parkway, and one intersection: Crown Valley Parkway at Pacific Coast Highway

The Orange County CMP states that "a TIA will be required for CMP purposes for all proposed developments generating 2,400 or more daily trips," and that "for developments which will directly access a CMP Highway System link, the threshold for requiring a TIA should be reduced to 1,600 or more trips per day.

The Ritz Carlton Expansion project is estimated to generate 261 daily trips. Thus, the project is not required to comply with the CMP Traffic Impact Analysis guidelines.

Table 12
Summary of Intersection Operation
Cumulative Traffic Conditions plus Project

No.	Signalized Intersection	Future Conditons				Future + Project Conditions				Project Impact		Significant?
		AM Peak		PM Peak		AM Peak		PM Peak				
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM	PM	
1	Pacific Coast Hwy @ Crown Valley Pkwy	0.759	C	0.776	C	0.760	C	0.778	C	0.001	0.002	NO
3	Pacific Coast Hwy @ Ritz Carlton South/Niguel Rd	0.624	B	0.729	C	0.625	B	0.731	C	0.001	0.002	NO
No.	Unsignalized Intersections	Future Conditons				Future + Project Conditions				Project Impact		Significant?
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	
2	Pacific Coast Hwy @ Ritz Carlton Dr North											
	Eastbound Approach	11.3	B	17.2	C	11.3	B	17.2	C	0.0	0.0	NO
4	Ritz Carlton Dwy @ Ritz Carlton Drive											
	Eastbound Approach	9.4	A	13.4	B	9.5	A	13.9	B	0.1	0.5	NO
	Westbound Approach	9.4	A	11.7	B	9.4	A	12.0	B	0.0	0.3	NO

Appendix A

- City of Dana Point Circulation System Performance Criteria

TABLE C-3
CITY OF DANA POINT
CIRCULATION SYSTEM PERFORMANCE CRITERIA

The following are the performance criteria used for comparing volumes and capacities on the City street and highway system:

I. AVERAGE DAILY TRAFFIC (ADT) LINK VOLUMES

Level of Service C - Primary arterials, secondary arterials and local streets.
Level of Service D - Major arterials and State highways.

Table A below shows ADT volumes corresponding to these levels of service.

II. PEAK HOUR INTERSECTION VOLUMES

Level of Service C - Primary arterials, secondary arterials and local streets.
Level of Service D - Major arterials and State highways.
Level of Service E - Congestion Management Plan (CMP) evaluations (CMP designated roadways only).

Table B below shows how these levels of service are specified.

TABLE A
ADT LEVEL OF SERVICE VOLUMES BY FACILITY TYPES

	MAXIMUM VOLUME	
FACILITY TYPE	LOS C	LOS D
Freeway (per lane)	16,500	18,500
Major (6 lanes divided)	45,000	50,600
Primary (4 lanes divided)	30,000	33,800
Secondary (4 lanes undivided)	20,000	22,500
Collector (2 lanes)	10,000	11,000

TABLE B
PEAK HOUR LEVEL OF SERVICE

Peak hour intersection Level of Service (LOS) to be based on Intersection Capacity Utilization (ICU) values calculated as follows:

Saturation flow rate	1700 Vehicles Per Hour (VPH)
Clearance interval	.05 ICU

Levels of Service are as follows:

LEVEL OF SERVICE	MAXIMUM ICU VALUE
LOS A	.60
LOS B	.70
LOS C	.80
LOS D	.90
LOS E	1.00

Appendix B

- Traffic Counts

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway DATE: 11/9/2006 LOCATION: City of Dana Point

E-W STREET: Crown Valley Parkway DAY: THURSDAY PROJECT# 06-1335-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1 ~~2~~	2	1	2	2	0	0	1	~~0~~ 1	1.5	X.5	~~1.5~~ 2	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2	197	32	52	60	1	1	5	2	41	7	167	567
7:15 AM	5	231	41	85	91	3	2	6	4	38	9	182	697
7:30 AM	8	252	48	97	121	1	1	9	7	49	4	189	786
7:45 AM	7	284	42	119	130	2	3	11	9	55	11	232	905
8:00 AM	7	302	50	107	142	4	5	8	8	62	15	215	925
8:15 AM	5	275	48	125	147	2	2	10	8	60	16	231	929
8:30 AM	6	241	41	115	138	1	1	12	6	59	12	218	850
8:45 AM	8	236	26	117	158	3	4	7	4	57	10	192	822
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	48	2018	328	817	987	17	19	68	48	421	84	1626	6481

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	25	1102	181	466	557	9	11	41	31	236	54	896	3609
PEAK HR. FACTOR:		0.911			0.942			0.902			0.966		0.971

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway DATE: 11/9/2006 LOCATION: City of Dana Point

E-W STREET: Crown Valley Parkway DAY: THURSDAY PROJECT# 06-1335-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1 ~~2~~	2	1	2	2	0	0	1	~~0~~ 1	1.5	~~1~~.5	~~1.5~~ 2	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	8	187	52	160	238	5	7	8	11	44	7	151	878
4:15 PM	9	197	57	181	274	7	4	5	12	52	10	163	971
4:30 PM	11	204	44	204	291	9	2	7	19	63	9	149	1012
4:45 PM	7	201	50	229	306	11	1	4	8	69	8	137	1031
5:00 PM	14	192	42	236	297	8	3	6	7	71	11	123	1010
5:15 PM	16	179	59	219	302	7	2	7	4	52	6	140	993
5:30 PM	9	161	51	202	287	4	4	8	6	43	7	131	913
5:45 PM	7	144	47	181	242	6	3	5	5	47	5	127	819
6:00 PM	4	137	44	169	189	8	5	4	7	39	8	114	728
6:15 PM	3	126	39	148	171	5	6	7	4	41	7	97	654
6:30 PM	1	131	37	120	150	4	4	3	2	32	6	101	591
6:45 PM	2	118	28	117	122	2	2	4	3	28	6	89	521

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	91	1977	550	2166	2869	76	43	68	88	581	90	1522	10121

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	48	776	195	888	1196	35	8	24	38	255	34	549	4046
PEAK HR. FACTOR:		0.984			0.970			0.625			0.948		0.981

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway   DATE: 11/9/2006   LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Drive/Niguel Road   DAY: THURSDAY   PROJECT# 06-1335-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	~~1~~ 2	2	1	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	29	193	35	19	83	5	18	15	14	29	26	50	516
7:15 AM	21	182	31	21	89	8	12	17	15	35	17	61	509
7:30 AM	18	190	44	29	101	10	7	21	17	51	27	80	595
7:45 AM	17	234	52	38	129	11	12	24	13	60	30	90	710
8:00 AM	19	241	46	30	122	15	14	18	19	49	31	77	681
8:15 AM	19	252	38	36	130	9	13	24	21	56	24	81	703
8:30 AM	17	207	43	28	138	10	12	17	24	60	28	67	651
8:45 AM	18	208	42	21	130	12	15	19	31	56	28	60	640
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	158	1707	331	222	922	80	103	155	154	396	211	566	5005

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	72	934	179	132	519	45	51	83	77	225	113	315	2745
PEAK HR. FACTOR:		0.959			0.978			0.909			0.907		0.967

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway DATE: 11/9/2006 LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Drive /Niguel Rd DAY: THURSDAY PROJECT# 06-1335-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	12	2	1	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	12	141	46	81	220	12	20	20	9	70	18	42	691
4:15 PM	19	172	51	94	229	14	25	29	14	71	19	44	781
4:30 PM	22	206	57	89	241	9	27	31	13	68	21	36	820
4:45 PM	17	200	60	86	238	13	20	22	14	75	24	39	808
5:00 PM	15	192	48	78	227	10	19	25	7	62	17	38	738
5:15 PM	11	175	38	83	204	9	15	20	10	54	13	42	674
5:30 PM	9	156	49	87	194	7	14	26	9	71	10	37	669
5:45 PM	7	144	41	75	181	8	10	19	14	80	14	35	628
6:00 PM	8	127	50	68	197	6	12	18	9	69	11	39	614
6:15 PM	6	124	46	57	182	8	13	17	10	54	9	31	557
6:30 PM	9	116	42	38	170	7	12	19	8	60	12	29	522
6:45 PM	7	109	44	30	154	6	8	14	6	52	8	36	474

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	142	1862	572	866	2437	109	195	260	123	786	176	448	7976

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	73	770	216	347	935	46	91	107	48	276	81	157	3147
PEAK HR. FACTOR:		0.929			0.979			0.866			0.931		0.959

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway DATE: 11/9/2006 LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Drive North DAY: THURSDAY PROJECT# 06-1335-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	0	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	255			108	19			1				386
7:15 AM	2	314			112	23			0				451
7:30 AM	9	305			163	18			2				497
7:45 AM	10	317			146	22			1				496
8:00 AM	11	330			181	13			1				536
8:15 AM	10	281			168	18			5				482
8:30 AM	13	259			167	21			4				464
8:45 AM	10	252			160	24			3				449
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	68	2313	0	0	1205	158	0	0	17	0	0	0	3761

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	40	1233	0	0	658	71	0	0	9	0	0	0	2011
PEAK HR. FACTOR:		0.933			0.939			0.450			0.000		0.938

CONTROL: 1-Way Stop E

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pacific Coast Highway   DATE: 11/9/2006   LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Drive North   DAY: THURSDAY   PROJECT# 06-1335-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	0	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	7	220			300	11			9				547
4:15 PM	5	230			292	14			11				552
4:30 PM	6	247			284	19			12				568
4:45 PM	2	236			312	21			9				580
5:00 PM	3	243			348	18			10				622
5:15 PM	2	224			334	10			5				575
5:30 PM	2	205			291	8			3				509
5:45 PM	3	175			284	9			3				474
6:00 PM	2	190			268	6			2				468
6:15 PM	3	172			239	7			5				426
6:30 PM	4	161			205	5			6				381
6:45 PM	5	158			172	6			4				345

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	44	2461	0	0	3329	134	0	0	79	0	0	0	6047

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	13	950	0	0	1278	68	0	0	36	0	0	0	2345
PEAK HR. FACTOR:		0.952			0.919			0.750			0.000		0.943

CONTROL: 1-Way Stop E

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Ritz Carlton Drive　　DATE: 12/5/2006　　LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Main Entrance　　DAY: TUESDAY　　PROJECT# 06-1365-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	6	8	6	1	15	1	0	0	3	2		0	42
7:15 AM	13	10	3	2	15	0	3	0	7	4		0	57
7:30 AM	18	12	4	2	19	1	0	2	10	2		1	71
7:45 AM	16	9	10	3	31	5	0	0	18	5		1	98
8:00 AM	24	15	24	3	28	5	0	0	14	6		0	119
8:15 AM	12	12	15	3	13	3	1	0	13	2		0	74
8:30 AM	8	9	11	5	24	2	0	0	6	0		0	65
8:45 AM	6	11	17	2	28	0	0	0	9	4		0	77
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	103	86	90	21	173	17	4	2	80	25	0	2	603

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	70	48	53	11	91	14	1	2	55	15	0	2	362
PEAK HR. FACTOR:		0.679			0.744			0.806			0.708		0.761

CONTROL: 1 Way NB and SB

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Ritz Carlton Drive DATE: 12/5/2006 LOCATION: City of Dana Point

E-W STREET: Ritz Carlton Main Entrance DAY: TUESDAY PROJECT# 06-1365-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	4	7	7	0	13	0	1	0	8	5	0		45
4:15 PM	4	18	7	0	45	3	0	0	6	8	1		92
4:30 PM	10	8	5	2	25	3	1	0	3	15	0		72
4:45 PM	15	7	4	0	28	1	2	0	6	15	0		78
5:00 PM	9	7	1	0	20	6	2	0	16	17	0		78
5:15 PM	11	3	9	1	13	4	1	0	12	19	0		73
5:30 PM	11	7	0	0	13	2	0	1	14	20	1		69
5:45 PM	8	6	2	0	21	5	0	1	12	14	0		69
6:00 PM	11	3	2	1	8	2	0	1	13	7	1		49
6:15 PM	8	1	0	0	8	4	0	0	13	6	0		40
6:30 PM	12	6	0	0	7	6	1	0	14	4	0		50
6:45 PM	8	5	1	0	6	4	0	0	12	3	0		39

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	111	78	38	4	207	40	8	3	129	133	3	0	754

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	38	40	17	2	118	13	5	0	31	55	1	0	320
PEAK HR. FACTOR:		0.819			0.693			0.500			0.824		0.870

CONTROL: 1 Way NB and SB

Appendix C

- Intersection Analysis Worksheets

INTERSECTION CAPACITY UTILIZATION WORKSHEET

INTERSECTIOI 1 N/S: Pacific Coast Hwy E/W: Crown Valley Pkwy No Split Phasing

AM PEAK HOUR

		Existing Conditions				Future Year							Future Year + Project				Future Year + Project w/Mitigation				
Move-ment	No. Lanes	Cap.	Vol.	AM V/C	Crit. Mvmt.	Future Lanes	Cap	Growth 1.03%	Cum proj Volume	Fut Volume	AM V/C	Crit. Mvmt.	Proj. Vol.	Vol.	AM V/C	Crit. Mvmt.	Mit Lanes	Cap.	Vol.	AM V/C	Crit. Mvmt.
NL	1.0	1700	25	0.015	0	1	1700	0	0	25	0.015	0	0	25	0.015	0	1	1700	25	0.015	0
NR	1.0	1700	181	0.106	0	1	1700	2	73	256	0.151	0	1	257	0.151	0	1	1700	257	0.151	0
NT	2.0	3400	1102	0.324	1	2	3400	11	83	1196	0.352	1	2	1198	0.352	1	2	3400	1198	0.352	1
SL	2.0	3400	466	0.137	1	2	3400	5	59	530	0.156	1	0	530	0.156	1	2	3400	530	0.156	1
SR	0.0	0	9	0.000	0	0	0	0	0	9	0.000	0	0	9	0.000	0	0	0	9	0.000	0
ST	2.0	3400	557	0.166	0	2	3400	6	110	673	0.201	0	3	676	0.201	0	2	3400	676	0.201	0
EL	1.0	1700	11	0.006	0	1	1700	0	0	11	0.006	0	0	11	0.006	0	1	1700	11	0.006	0
ER	0.0	0	31	0.000	0	0	0	0	0	31	0.000	0	0	31	0.000	0	0	0	31	0.000	0
ET	1.0	1700	41	0.042	1	1	1700	0	0	41	0.042	1	0	41	0.042	1	1	1700	41	0.042	1
WL	1.5	2550	236	0.093	1	2	2550	2	25	263	0.103	1	2	265	0.104	1	2	2550	265	0.104	1
WR	2.0	3400	896	0.264	1	2	3400	9	34	939	0.276	1	0	939	0.276	1	2	3400	939	0.276	1
WT	0.5	850	54	0.064	0	1	850	1	0	55	0.065	0	0	55	0.065	0	1	850	55	0.065	0
				N/S component	0.461						N/S component	0.508		N/S component		0.508				N/S component	0.508
				E/W component	0.135						E/W component	0.145		E/W component		0.146				E/W component	0.146
				Right-turn component	0.063						Right-turn component	0.056		ght-turn component		0.056				Right-turn component	0.056
				Clearance	0.050						Clearance	0.050		Clearance		0.050				Clearance	0.050
				ICU	0.709						ICU	0.759		ICU		0.760				ICU	0.760
				LOS	C						LOS	C		LOS		C				LOS	C
														Project Impact		0.001				Mitigation Benefi	NA

Critical movement identified by a 1.

Ten lanes for a right turn indicates free movement.

PM PEAK HOUR

		Existing Conditions				Future Year							Future Year + Project				Future Year + Project w/Mitigation				
Move-ment	No. Lanes	Cap.	Vol.	PM V/C	Crit. Mvmt.	Future Lanes	Cap	Growth 1.03%	Cum proj Volume	Fut Volume	PM V/C	Crit. Mvmt.	Proj. Vol.	Volum	PM V/C	Crit. Mvmt.	Mit Lanes	Cap.	Volume	PM V/C	Crit. Mvmt.
NL	1.0	1700	48	0.028	0	1	1700	0	0	48	0.028	0	0	48	0.028	0	1	1700	48	0.028	0
NR	1.0	1700	195	0.115	0	1	1700	2	35	232	0.136	0	1	233	0.137	0	1	1700	233	0.137	0
NT	2.0	3400	776	0.228	1	2	3400	8	183	967	0.284	1	2	969	0.285	1	2	3400	969	0.285	1
SL	2.0	3400	888	0.261	1	2	3400	9	80	977	0.287	1	0	977	0.287	1	2	3400	977	0.287	1
SR	0.0	0	35	0.000	0	0	0	0	0	35	0.000	0	0	35	0.000	0	0	0	35	0.000	0
ST	2.0	3400	1196	0.362	0	2	3400	12	166	1374	0.414	0	3	1377	0.415	0	2	3400	1377	0.415	0
EL	1.0	1700	8	0.005	0	1	1700	0	0	8	0.005	0	0	8	0.005	0	1	1700	8	0.005	0
ER	0.0	0	38	0.000	0	0	0	0	0	38	0.000	0	0	38	0.000	0	0	0	38	0.000	0
ET	1.0	1700	24	0.036	1	1	1700	0	0	24	0.036	1	0	24	0.036	1	1	1700	24	0.036	1
WL	1.5	2550	255	0.100	1	2	2550	3	43	301	0.118	1	2	303	0.119	1	2	2550	303	0.119	1
WR	2.0	3400	549	0.161	0	2	3400	6	84	639	0.188	0	0	639	0.188	0	2	3400	639	0.188	0
WT	0.5	850	34	0.040	0	1	850	0	0	34	0.040	0	0	34	0.040	0	1	850	34	0.040	0
				N/S component	0.489						N/S component	0.572		N/S component		0.572				N/S component	0.572
				E/W component	0.136						E/W component	0.155		E/W component		0.155				E/W component	0.155
				Right-turn component	0.000						Right-turn component	0.000		ght-turn component		0.000				Right-turn component	0.000
				Clearance	0.050						Clearance	0.050		Clearance		0.050				Clearance	0.050
				ICU	0.676						ICU	0.776		ICU		0.778				ICU	0.778
				LOS	B						LOS	C		LOS		C				LOS	C
														Project Impact		0.002				Mitigation Benefi	NA

Critical movement identified by a 1.

Ten lanes for a right turn indicates free movement.

INTERSECTION CAPACITY UTILIZATION WORKSHEET

INTERSECTIOI 3 N/S: Pacific Coast Hwy E/W: Ritz Carlton South/Niguel Rd No Split Phasing

AM PEAK HOUR

	Existing Conditions					Future Year							Future Year + Project				Future Year + Project w/Mitigation				
Move-ment	No. Lanes	Cap.	Vol.	AM V/C	Crit. Mvmt.	Future Lanes	Cap	Growth 1.03%	Cum proj Volume	Fut Volume	AM V/C	Crit. Mvmt.	Proj. Vol.	Vol.	AM V/C	Crit. Mvmt.	Mit Lanes	Cap.	Vol.	AM V/C	Crit. Mvmt.
NL	1.0	1700	72	0.042	0	1	1700	1	2	75	0.044	0	2	77	0.045	0	1	1700	77	0.045	0
NR	1.0	1700	179	0.105	0	1	1700	2	82	263	0.155	0	0	263	0.155	0	1	1700	263	0.155	0
NT	2.0	3400	934	0.275	1	2	3400	10	156	1100	0.324	1	1	1101	0.324	1	2	3400	1101	0.324	1
SL	2.0	3400	132	0.039	1	2	3400	1	0	133	0.039	1	0	133	0.039	1	2	3400	133	0.039	1
SR	1.0	1700	45	0.026	0	1	1700	0	0	45	0.026	0	2	47	0.027	0	1	1700	47	0.027	0
ST	2.0	3400	519	0.153	0	2	3400	5	135	659	0.194	0	1	660	0.194	0	2	3400	660	0.194	0
EL	1.0	1700	51	0.030	0	1	1700	1	0	52	0.031	0	3	55	0.032	0	1	1700	55	0.032	0
ER	0.0	0	77	0.000	0	0	0	1	2	80	0.000	0	1	81	0.000	0	0	0	81	0.000	0
ET	2.0	3400	83	0.047	1	2	3400	1	0	84	0.048	1	2	86	0.049	1	2	3400	86	0.049	1
WL	1.0	1700	225	0.132	1	1	1700	2	50	277	0.163	1	0	277	0.163	1	1	1700	277	0.163	1
WR	0.0	0	315	0.000	0	0	0	3	0	318	0.000	0	0	318	0.000	0	0	0	318	0.000	0
WT	2.0	3400	113	0.126	0	2	3400	1	0	114	0.127	0	3	117	0.128	0	2	3400	117	0.128	0

	Existing Conditions	Future Year	Future Year + Project	Future Year + Project w/Mitigation
N/S component	0.314	0.363	0.363	0.363
E/W component	0.179	0.211	0.212	0.212
Right-turn component	0.000	0.000	0.000	0.000
Clearance	0.050	0.050	0.050	0.050
ICU	0.543	0.624	0.625	0.625
LOS	A	B	B	B
			Project Impact 0.001	Mitigation Benefi NA

Critical movement identified by a 1.
Ten lanes for a right turn indicates free movement.

PM PEAK HOUR

	Existing Conditions					Future Year							Future Year + Project				Future Year + Project w/Mitigation				
Move-ment	No. Lanes	Cap.	Vol.	PM V/C	Crit. Mvmt.	Future Lanes	Cap	Growth 1.03%	Cum proj Volume	Fut Volume	PM V/C	Crit. Mvmt.	Proj. Vol.	Volume	PM V/C	Crit. Mvmt.	Mit Lanes	Cap.	Volume	PM V/C	Crit. Mvmt.
NL	1.0	1700	73	0.043	0	1	1700	1	4	78	0.046	0	2	80	0.047	0	1	1700	80	0.047	0
NR	1.0	1700	216	0.127	0	1	1700	2	113	331	0.195	0	0	331	0.195	0	1	1700	331	0.195	0
NT	2.0	3400	770	0.226	1	2	3400	8	218	996	0.293	1	1	997	0.293	1	2	3400	997	0.293	1
SL	2.0	3400	347	0.102	1	2	3400	4	0	351	0.103	1	0	351	0.103	1	2	3400	351	0.103	1
SR	1.0	1700	46	0.027	0	1	1700	0	0	46	0.027	0	2	48	0.028	0	1	1700	48	0.028	0
ST	2.0	3400	935	0.275	0	2	3400	10	209	1154	0.339	0	1	1155	0.340	0	2	3400	1155	0.340	0
EL	1.0	1700	91	0.054	0	1	1700	1	0	92	0.054	0	4	96	0.056	0	1	1700	96	0.056	0
ER	0.0	0	48	0.000	0	0	0	0	4	52	0.000	0	2	54	0.000	0	0	0	54	0.000	0
ET	2.0	3400	107	0.046	1	2	3400	1	0	108	0.047	1	3	111	0.048	1	2	3400	111	0.048	1
WL	1.0	1700	276	0.162	1	1	1700	3	122	401	0.236	1	0	401	0.236	1	1	1700	401	0.236	1
WR	0.0	0	157	0.000	0	0	0	2	0	159	0.000	0	0	159	0.000	0	0	0	159	0.000	0
WT	2.0	3400	81	0.070	0	2	3400	1	0	82	0.071	0	3	85	0.072	0	2	3400	85	0.072	0

	Existing Conditions	Future Year	Future Year + Project	Future Year + Project w/Mitigation
N/S component	0.329	0.396	0.396	0.396
E/W component	0.208	0.283	0.284	0.284
Right-turn component	0.000	0.000	0.000	0.000
Clearance	0.050	0.050	0.050	0.050
ICU	0.586	0.729	0.731	0.731
LOS	A	C	C	C
			Project Impact 0.002	Mitigation Benefi NA

Critical movement identified by a 1.
Ten lanes for a right turn indicates free movement.

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*PCH at Ritz Carlton Dr N*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*11/27/2006*	Analysis Year	*2006 (Existing)*
Analysis Time Period	*AM Peak Hour*		

Project Description	*PCH Ritz N am ex.xhu*		
East/West Street:	*Ritz Carlton Drive North*	North/South Street:	*PCH*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*40*	*1233*			*658*	*71*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*42*	*1311*	*0*	*0*	*700*	*75*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			*9*			
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*0*	*9*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*0*
Configuration			*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (vph)	*42*							*9*
C (m) (vph)	*850*							*652*
v/c	*0.05*							*0.01*
95% queue length	*0.16*							*0.04*
Control Delay	*9.5*							*10.6*
LOS	*A*							*B*
Approach Delay	--	--				*10.6*		
Approach LOS	--	--				*B*		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*PCH at Ritz Carlton Dr N*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*11/27/2006*	Analysis Year	*2006 (Existing)*
Analysis Time Period	*PM Peak Hour*		
Project Description	*PCH Ritz N pm ex.xhu*		
East/West Street:	*Ritz Carlton Drive North*	North/South Street:	*PCH*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	13	950			1278	68
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	13	1010	0	0	1359	72
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	0	2	1
Configuration	L	T			T	R
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			36			
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	0	38	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			R			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							R
v (vph)	13							38
C (m) (vph)	481							398
v/c	0.03							0.10
95% queue length	0.08							0.31
Control Delay	12.7							15.0
LOS	B							B
Approach Delay	--	--				15.0		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*ser*
Agency/Co.	*kha*
Date Performed	*12/18/2006*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*PCH at Ritz Carlton Dr N*
Jurisdiction	*City of Dana Point*
Analysis Year	*Cumulative*

Project Description *PCH Ritz N am ex cm.xhu*

East/West Street: *Ritz Carlton Drive North* | North/South Street: *PCH*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	40	1402			800	72
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	42	1491	0	0	851	76
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	0	2	1
Configuration	L	T			T	R
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			9			
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	0	9	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			R			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							R
v (vph)	42							9
C (m) (vph)	746							582
v/c	0.06							0.02
95% queue length	0.18							0.05
Control Delay	10.1							11.3
LOS	B							B
Approach Delay	--	--				11.3		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*PCH at Ritz Carlton Dr N*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/18/2006*	Analysis Year	*Cumulative*
Analysis Time Period	*PM Peak Hour*		
Project Description	*PCH Ritz N pm ex cm.xhu*		
East/West Street:	*Ritz Carlton Drive North*	North/South Street:	*PCH*
Intersection Orientation:	*North-South*	Study Period (hrs):	*0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*13*	*1178*			*1500*	*69*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*13*	*1253*	*0*	*0*	*1595*	*73*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			*36*			
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*0*	*38*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*0*
Configuration			*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (vph)	*13*							*38*
C (m) (vph)	*390*							*333*
v/c	*0.03*							*0.11*
95% queue length	*0.10*							*0.38*
Control Delay	*14.5*							*17.2*
LOS	*B*							*C*
Approach Delay	--	--				*17.2*		
Approach LOS	--	--				*C*		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*PCH at Ritz Carlton Dr N*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/18/2006*	Analysis Year	*Cumulative plus Project*
Analysis Time Period	*AM Peak Hour*		

Project Description *PCH Ritz N am ex cm pj.xhu*

East/West Street: *Ritz Carlton Drive North*	North/South Street: *PCH*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	41	1405			802	75
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	43	1494	0	0	853	79
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	0	2	1
Configuration	L	T			T	R
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			10			
Peak-Hour Factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Hourly Flow Rate, HFR	0	0	10	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			R			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L							R
v (vph)	43							10
C (m) (vph)	743							582
v/c	0.06							0.02
95% queue length	0.18							0.05
Control Delay	10.1							11.3
LOS	B							B
Approach Delay	--	--				11.3		
Approach LOS	--	--				B		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*PCH at Ritz Carlton Dr N*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/18/2006*	Analysis Year	*Cumulative plus Project*
Analysis Time Period	*PM Peak Hour*		

Project Description *PCH Ritz N pm ex cm pj.xhu*	
East/West Street: *Ritz Carlton Drive North*	North/South Street: *PCH*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*14*	*1182*			*1502*	*72*
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*14*	*1257*	*0*	*0*	*1597*	*76*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*1*
Configuration	*L*	*T*			*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume			*37*			
Peak-Hour Factor, PHF	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*	*0.94*
Hourly Flow Rate, HFR	*0*	*0*	*39*	*0*	*0*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*1*	*0*	*0*	*0*
Configuration			*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (vph)	*14*							*39*
C (m) (vph)	*389*							*333*
v/c	*0.04*							*0.12*
95% queue length	*0.11*							*0.39*
Control Delay	*14.6*							*17.2*
LOS	*B*							*C*
Approach Delay	--	--				*17.2*		
Approach LOS	--	--				*C*		

 Generated: 12/18/2006 3:41 PM

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*Ritz Carlton Dr at Ritz Dwy*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/12/2006*	Analysis Year	*2006 (Existing)*
Analysis Time Period	*AM Peak Hour*		

Project Description *RC Ritz Dwy am ex.xhu*

East/West Street: *Ritz Carlton Drive*	North/South Street: *Ritz Driveway*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*70*	*48*	*53*	*11*	*91*	*14*
Peak-Hour Factor, PHF	*0.76*	*0.76*	*0.76*	*0.76*	*0.76*	*0.76*
Hourly Flow Rate, HFR	*92*	*63*	*69*	*14*	*119*	*18*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*1*	*2*	*55*	*15*	*0*	*2*
Peak-Hour Factor, PHF	*0.76*	*0.76*	*0.76*	*0.76*	*0.76*	*0.76*
Hourly Flow Rate, HFR	*1*	*2*	*72*	*19*	*0*	*2*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*92*	*14*		*21*			*75*	
C (m) (vph)	*1459*	*1466*		*461*			*893*	
v/c	*0.06*	*0.01*		*0.05*			*0.08*	
95% queue length	*0.20*	*0.03*		*0.14*			*0.27*	
Control Delay	*7.6*	*7.5*		*13.2*			*9.4*	
LOS	*A*	*A*		*B*			*A*	
Approach Delay	--	--	*13.2*			*9.4*		
Approach LOS	--	--	*B*			*A*		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*ser*
Agency/Co.	*kha*
Date Performed	*12/12/2006*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Ritz Carlton Dr at Ritz Dwy*
Jurisdiction	*City of Dana Point*
Analysis Year	*2006 (Existing)*

Project Description *RC Ritz Dwy pm ex.xhu*

East/West Street: *Ritz Carlton Drive* | North/South Street: *Ritz Driveway*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	38	40	17	2	118	13
Peak-Hour Factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Hourly Flow Rate, HFR	43	45	19	2	135	14
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	0	31	55	1	0
Peak-Hour Factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87
Hourly Flow Rate, HFR	5	0	35	63	1	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	43	2		64			40	
C (m) (vph)	1445	1551		612			868	
v/c	0.03	0.00		0.10			0.05	
95% queue length	0.09	0.00		0.35			0.14	
Control Delay	7.6	7.3		11.6			9.3	
LOS	A	A		B			A	
Approach Delay	--	--	11.6			9.3		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*ser*
Agency/Co.	*kha*
Date Performed	*12/13/2006*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Ritz Carlton Dr at Ritz Dwy*
Jurisdiction	*City of Dana Point*
Analysis Year	*Cumulative*

Project Description *RC Ritz Dwy am ex cm.xhu*

East/West Street: *Ritz Carlton Drive* | North/South Street: *Ritz Driveway*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	72	49	55	11	94	14
Peak-Hour Factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76
Hourly Flow Rate, HFR	94	64	72	14	123	18
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	1	2	57	15	0	2
Peak-Hour Factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76
Hourly Flow Rate, HFR	1	2	75	19	0	2
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	94	14		21			78	
C (m) (vph)	1455	1461		452			889	
v/c	0.06	0.01		0.05			0.09	
95% queue length	0.21	0.03		0.15			0.29	
Control Delay	7.6	7.5		13.4			9.4	
LOS	A	A		B			A	
Approach Delay	--	--	13.4			9.4		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*Ritz Carlton Dr at Ritz Dwy*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/12/2006*	Analysis Year	*cumulative*
Analysis Time Period	*PM Peak Hour*		

Project Description *RC Ritz Dwy pm ex cm.xhu*

East/West Street: *Ritz Carlton Drive*	North/South Street: *Ritz Driveway*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*39*	*41*	*18*	*2*	*122*	*13*
Peak-Hour Factor, PHF	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*
Hourly Flow Rate, HFR	*44*	*47*	*20*	*2*	*140*	*14*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*0*	*32*	*57*	*1*	*0*
Peak-Hour Factor, PHF	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*
Hourly Flow Rate, HFR	*5*	*0*	*36*	*65*	*1*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*44*	*2*		*66*			*41*	
C (m) (vph)	*1439*	*1547*		*602*			*862*	
v/c	*0.03*	*0.00*		*0.11*			*0.05*	
95% queue length	*0.09*	*0.00*		*0.37*			*0.15*	
Control Delay	*7.6*	*7.3*		*11.7*			*9.4*	
LOS	*A*	*A*		*B*			*A*	
Approach Delay	--	--		*11.7*			*9.4*	
Approach LOS	--	--		*B*			*A*	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	ser	Intersection	Ritz Carlton Dr at Ritz Dwy
Agency/Co.	kha	Jurisdiction	City of Dana Point
Date Performed	12/13/2006	Analysis Year	Cumulative plus Project
Analysis Time Period	AM Peak Hour		

Project Description	RC Ritz Dwy am ex cm pj.xhu		
East/West Street:	Ritz Carlton Drive	North/South Street:	Ritz Driveway
Intersection Orientation:	North-South	Study Period (hrs):	0.25

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	73	49	61	11	94	14
Peak-Hour Factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76
Hourly Flow Rate, HFR	96	64	80	14	123	18
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal		0			0	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	1	2	61	22	0	2
Peak-Hour Factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76
Hourly Flow Rate, HFR	1	2	80	28	0	2
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR			LTR	
v (vph)	96	14		30			83	
C (m) (vph)	1455	1451		434			890	
v/c	0.07	0.01		0.07			0.09	
95% queue length	0.21	0.03		0.22			0.31	
Control Delay	7.6	7.5		13.9			9.5	
LOS	A	A		B			A	
Approach Delay	--	--	13.9			9.5		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*ser*	Intersection	*Ritz Carlton Dr at Ritz Dwy*
Agency/Co.	*kha*	Jurisdiction	*City of Dana Point*
Date Performed	*12/12/2006*	Analysis Year	*cumulative plus Project*
Analysis Time Period	*PM Peak Hour*		

Project Description *RC Ritz Dwy pm ex cm pj.xhu*	
East/West Street: *Ritz Carlton Drive*	North/South Street: *Ritz Driveway*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	*40*	*41*	*26*	*2*	*122*	*13*
Peak-Hour Factor, PHF	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*
Hourly Flow Rate, HFR	*45*	*47*	*29*	*2*	*140*	*14*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*1*	*0*	*1*	*1*	*0*
Configuration	*L*		*TR*	*L*		*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	*5*	*0*	*35*	*64*	*1*	*0*
Peak-Hour Factor, PHF	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*	*0.87*
Hourly Flow Rate, HFR	*5*	*0*	*40*	*73*	*1*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)	*0*			*0*		
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (vph)	*45*	*2*		*74*			*45*	
C (m) (vph)	*1439*	*1536*		*591*			*864*	
v/c	*0.03*	*0.00*		*0.13*			*0.05*	
95% queue length	*0.10*	*0.00*		*0.43*			*0.16*	
Control Delay	*7.6*	*7.3*		*12.0*			*9.4*	
LOS	*A*	*A*		*B*			*A*	
Approach Delay	--	--	*12.0*			*9.4*		
Approach LOS	--	--	*B*			*A*		

Kimley-Horn
and Associates, Inc.

February 9, 2009

Suite 400
765 The City Drive
Orange, California
92868

Ms. Donna Jones
Sheppard Mullin
501 West Broadway, 19th Floor
San Diego, CA 92101

Re: Ritz Carlton Hotel Expansion Traffic Impact Analysis – Revised Project Addendum Letter

Dear Ms. Jones:

Kimley-Horn and Associates, Inc. (KHA) prepared the Traffic Impact Analysis (dated February, 2007) for the Ritz Carlton Hotel Expansion project in the City of Dana Point.

The traffic analysis addressed the traffic-related impacts associated with the proposed project, which consisted of the addition of 32 hotel rooms, and 41,000 square feet of hotel amenities. The traffic study indicated that the proposed project would generate 261 daily trips, with 18 trips in the morning peak hour, and 19 trips in the evening peak hour.

The traffic study analyzed the project's traffic-related impacts at four study intersections and on four study roadway segments. The results of the analysis indicated that the project would not result in a significant impact at any of the study locations.

The Ritz Carlton Hotel Expansion project proposal has changed. The applicant now proposes to add 27 hotel rooms, and 30,396 square feet of hotel amenities. The project trip generation will be reduced to 221 daily trips, with 15 trips in the morning peak hour and 16 trips in the evening peak hour. This is a reduction of 40 daily trips, and 3 peak hour trips in both the morning and the evening peak hours.

Since the prior project did not result in any significant traffic impacts, and since the revised project will generate less traffic, the prior findings that the project will not result in a significant impact on any study roadway segment or any study intersection are still valid. Additional traffic impact analysis for the project will not be required.

TEL 714 939 1030
FAX 714 938 9488

Please contact me if you have any questions, or if you need additional information.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Serine Ciandella

Serine Ciandella, AICP
Vice President

Kimley-Horn
and Associates, Inc.

Suite 400
765 The City Drive
Orange, California
92868

November 5, 2008

Mr. Cory Warning
Sr. Director Acquisitions & Development
Strategic Hotels & Resorts
200 W. Madison Street, Suite 1700
Chicago, IL 60606

Subject: Revised Parking Analysis for Ritz Carlton Laguna Niguel Hotel with Expansion

Dear Mr. Warning:

The following letter report summarizes the revised parking analysis prepared by Kimley-Horn and Associates, Inc. (KHA) for the Ritz Carlton Laguna Niguel expansion project. The parking analysis has been revised based on comments from the City of Dana Point, including the need to modify existing parking to meet handicap parking requirements.[1] The findings of the parking analysis are based on the methodologies used in the approved parking study for the existing hotel uses prepared by Linscott Law and Greenspan Engineers (Addendum to the Parking Demand Study for the Ritz Carlton – Laguna Niguel, January 11, 2007). This letter report summarizes our analysis, findings, and conclusions.

Project Understanding

The Ritz Carlton Hotel contemplates expanding several areas on the existing hotel site at Pacific Coast Highway and Ritz Carlton Drive, in Dana Point, California. The proposed project will consist of the addition of 27 Ocean Front Keys (rooms), 8 of which will replace 6,300 square feet of meeting room space; the addition of 14,080 square feet of meeting room space above the loading dock; and the conversion of 2,980 square feet of the Club Grille Restaurant into functional areas (to support the meeting room space).

This parking analysis was based on the parking needs for the entire development at the Ritz Carlton including the expansion project. The detailed expansion project summary prepared by Kollin Altomare Architects, Inc. dated June 11, 2007 is provided in **Appendix A** for reference. **Table 1** summarizes the uses at the Ritz Carlton including the proposed expansion project.

[1] The existing parking supply will be modified to provide a total of 17 handicap parking spaces.

TEL 714 939 1030
FAX 714 938 9488

PARKING REQUIRED PER CITY CODE

The parking requirements for the Ritz Carlton Hotel, including the proposed expansion, per the City of Dana Point Municipal Code are presented on **Table 2**. The Municipal Code sets forth the off-street parking space requirements for developments in the City.

The City's Zoning Code requires 1 parking space for each hotel room plus additional parking as required for accessory uses, as follows:

- Restaurant: 1 parking space for each 100 square feet (SF) of Gross Floor Area (GFA) for the first 4,000 SF, plus 1 space for each 50 SF of GFA above 4,000 SF.
- Banquet rooms and conference facilities: 1 parking space for each 25 SF of GFA or 1 space for 3 fixed seats. Because the seating arrangements are flexible, the 1 space/25 SF was used.
- Outdoor function areas: 1 parking space for each 150 SF of outdoor area was used.
- Spa facilities: 3 parking spaces for each treatment room.

Per Section 9.35.080(b) of the Zoning Code, where parking calculations are based on GFA, the GFA shall be calculated by measuring to the exterior of the building walls. The following areas shall be included in the calculation:

- Restrooms, closets and storage or mechanical rooms;
- Exterior patios intended to be occupied;
- Elevator shafts and stairwells

Per the Zoning Code, the following areas may be excluded from the calculation:

- Interior building floor space which is devoted to parking, circulation, access driveways to subgrade parking or landscaping;
- Exterior breezeways, hallways, and balconies.

As part of the expansion, 6,300 square feet of existing meeting room space would be replaced by 8 new hotel rooms and 2,980 square feet of the Club Grille Restaurant would be replaced by 2,980 square feet of functional area to support the meeting room space. Thus, the parking that would have been required for the replaced meeting rooms and restaurant space has been backed out of the analysis.

As shown on Table 2, by strict application of the City's code, the Ritz Carlton Hotel, with the proposed expansion, would be required to have a total parking supply of 2,229 parking spaces.

Kimley-Horn
and Associates, Inc.

RITZ CARLTON EXISTING PARKING SUPPLY

Based on a field survey made by Kollin Altomare Architects, Inc. in May 2008, the Ritz Carlton currently has a parking supply of 853 spaces, including 54 spaces that have typically been used for hotel storage. Based on the information above, the existing parking supply at the Ritz Carlton is summarized on **Table 3A**.

All hotel guest/visitor parking is provided by valet parking 100% of the time. The Kollin Altomare survey noted that of the 853 parking spaces, 185 parking spaces are considered "additional valet" parking spaces. These spaces represent vehicles that are parallel-parked along one side of each of the drive aisles, behind vehicles parked in the marked parking spaces, and vehicles parked in other valet-only parking areas.

Per the requirements of the 2007 California Building Code, Chapter 11, the parking supply will be modified to meet handicap parking requirements. A total of 17 handicap spaces will be provided. These 17 handicap spaces will reduce the parking supply to 847 parking spaces. The future parking supply is summarized on **Table 3B.** Copies of the architect's parking plans for each level are provided in ***Appendix A***.

By strict application of the City's code, the Ritz Carlton Hotel, with the proposed expansion, would be required to have a total parking supply of 2,229 parking spaces. The hotel has limitations on its ability to provide additional parking of the magnitude that would be required by city code requirements. Thus, two considerations are discussed in the following paragraphs. First, the dynamics of how each accessory hotel use operates in terms of parking is discussed. Second, a shared parking evaluation, based on the Urban Land Institute (ULI) shared parking model, was conducted to assess the parking spaces that would actually be needed to serve the expanded Ritz Carlton Hotel.

RITZ CARLTON ACCESSORY USES DYNAMICS

As summarized in Table 1, in addition to hotel rooms, the Ritz Carlton Hotel has a number of accessory uses, including restaurants/ lounges/ bars, banquet rooms, conference facilities, outdoor function areas, and spa facilities. In the hotel setting, each of these uses would not operate independently, but as a function of hotel guests versus non-hotel guests. The methodologies for determining the needed parking spaces for each use are based on the approved parking study for the existing hotel uses (LLG Engineers, January 11, 2007). A summary of the methodology and assumptions presented in the 2007 parking study is provided below.

Kimley-Horn
and Associates, Inc.

Restaurants/Lounges/Bars

As indicated in Table 2, the restaurants/lounges/bars at the Ritz Carlton would have a city code parking requirement of 112 spaces. Of the 112 parking spaces required by city code, 30% of the spaces (34) are assumed to be non-guest parking spaces. The remaining 78 spaces would be used by hotel guests and are already accounted for in the hotel room parking rate.

Spa

As indicated in Table 2, the spa facilities at the Ritz Carlton would have a city code parking requirement of 33 spaces. Of the 33 parking spaces required by city code, 25% of the spaces (8) are assumed to be non-guest parking spaces. The remaining 25 spaces would be used by hotel guests and are already accounted for in the hotel room parking rate.

Banquet, Conference and Outdoor Function Areas

With the expanded Ritz Carlton, the banquet facilities will total 17,909 SF (same as existing - consisting of the Main Ballroom – 9,207 square feet; the Pavilion Ballroom – 3,900 SF, and the Promenade Ballroom – 4,802 square feet) and the outdoor function area would total 27,807 SF (same as existing SF). The conference facilities will be increased to 19,075 SF.

A common practice at the Ritz Carlton is to plan banquets and conferences whose attendees stay at the hotel. As such, the parking requirements for the banquet/conference/outdoor function areas are mostly accounted for with the hotel room parking requirements. As noted in the approved parking study, the outdoor function areas are not booked for separate events in addition to the banquet/conference facilities. Conversely, if an outdoor function area is booked for a non-guest event, one of the ballrooms is reserved as a contingency.

The weekday (Monday through Thursday) analysis assumes the following:

- Banquet space: the two smaller ballrooms (8,702 SF) will be used as banquet facilities. The parking requirement for banquet spaces is based on 15 SF per person, average vehicle occupancy of 2.5 persons per vehicle, and that 85% of the spaces are assumed to be non-guest parking spaces, resulting in a parking requirement of 197 spaces for banquets.

- Conference facilities: The Main Ballroom (9,207 SF) and the remainder of the conference space (19,075 SF) will be used. The parking requirement is based on 30 SF per person, average vehicle occupancy of 2.0 persons per vehicle, and that

15% of the spaces are assumed to be non-guest parking spaces, resulting in a parking requirement of 71 spaces.

- Outdoor functional area: 6,112 SF will be used. The parking requirement is based on 15 SF per person, average vehicle occupancy of 2.5 persons per vehicle, and that 85% of the spaces are assumed to be non-guest parking spaces, resulting in a parking requirement of 139 spaces for outdoor functions.

The conservative Friday analysis assumes the following:

- Banquet space: the Main Ballroom and the Promenade Ballroom (14,009 SF) will be used as banquet facilities. Using the parking requirement assumptions stated above for banquet space, this would result in a parking requirement of 318 spaces for banquets.

- Conference facilities: The Pavilion Ballroom (3,900 SF) and the remainder of the conference space (19,075 SF) will be used. Using the parking requirements assumptions stated above for conference rooms, this would result in a parking requirement of 57 spaces.

- Outdoor functional area: 10,962 SF of the outdoor area will be used. Using the parking requirement assumptions stated above for outdoor functions, this would result in a parking requirement of 248 spaces.

The weekend (Saturday and Sunday) analysis assumes the following:

- Banquet space: All of the banquet space (17,909 SF) will be used as banquet facilities. Using the parking requirement assumptions stated above for banquet space, this would result in a parking requirement of 406 spaces for banquets.

- Conference facilities: All of the conference space (19,075 SF) will be used. Using the parking requirement assumptions stated above for conference rooms, this would result in a parking requirement of 48 spaces.

- Outdoor functional area: 6,112 SF of the outdoor area will be used. Using the parking requirement assumptions stated above for outdoor functions, this would result in a parking requirement of 139 spaces.

ULI SHARED PARKING ANALYSIS

The ULI Shared Parking methodology is a multi-step process that first establishes the stand-alone peak parking requirements for retail, office, theater, restaurant, hotel, and residential uses. The methodology then applies a percentage to the peak requirement for each use, for each hour of the day between the hours of 6:00 AM and midnight, reflecting the fact that the parking demand for each use varies throughout the course of the day.

Shared parking synergies exist between different uses whose peak operating times are at different times of the day. The most dramatic example of complementary uses for shared parking purposes are office and theater uses in the same development. When the office parking demand is at 100% (at 10:00 and 11:00 in the morning on a weekday), the theater parking demand is at 0%, according to the ULI document. Conversely, when the theater parking demand is at 100% (from 8:00 to 10:00 on a weekend night), the office has virtually no parking demand. These two uses, then, can share all or a portion of the same parking supply without detriment to the other, rather than each providing their own distinct and complete parking supply. In theory, the total parking demand for that mix of uses will not exceed that projected peak, due to the interrelationships and benefits of shared parking synergies.

In the case of the Ritz Carlton Hotel expansion, the hotel room parking demand has peaks during the early morning and late evening hours on weekday and weekends while the restaurants, spa, conference and outdoor function area parking demand peaks are at 100% collectively between 9:00 AM and 5:00 PM on weekdays and weekends. Peak parking demand for the banquet facilities are in the evening hours. Shared parking percentages and needed parking spaces are shown in **Appendix B**.

The shared parking analysis takes into consideration the parking that would be needed for the existing Ritz Carlton uses along with the proposed expansion considering the accessory use dynamics discussed above.

The shared parking analyses are summarized on **Tables 4**, **5**, and **6** for weekdays, Fridays, and weekends, respectively. The results indicate:

- The peak parking demand on a typical weekday for the Ritz Carlton with expansion would be 663 parking spaces between 12:00 and 2:00 PM. Considering the future parking supply of 847, there would be a weekday surplus of no less than 184 parking spaces.

- On a conservative Friday, the peak parking demand for the Ritz Carlton with expansion would be 837 parking spaces at between 12:00 and 2:00 PM. Considering the future parking supply of 847, there would be a Friday surplus of no less than 10 parking spaces.

- On a typical weekend day, the peak parking demand for the Ritz Carlton with expansion would be 831 parking spaces at 6:00 PM. Considering the future parking supply of 847, there would be a surplus on a weekend day of no less than 16 parking spaces.

CONCLUSIONS

The Ritz Carlton Hotel currently has a parking supply of 853 spaces for its existing uses, assuming that the 54 parking spaces currently used for storage are made available for hotel parking demands. The parking supply includes 185 additional valet parking spaces. In order to provide the required handicap parking, the future parking supply at the Ritz Carlton will be reduced to 847 spaces, of which 17 will be handicap spaces, and 187 will be additional valet spaces. Based on the analysis presented above, the Ritz Carlton with the proposed expansion would have a maximum parking demand of 837 parking spaces. Compared to the future parking supply, there would be a surplus of no less than 10 parking spaces.

Please feel free to call if you have any questions regarding this analysis.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Serine Ciandella

Serine Ciandella, AICP
Vice President

Attachments

K:\ORA_TPTO\Ritz Carlton Parking\Parking Study November 2008\11-2008 Rev Parking analysis.doc

Table 1
Summary of Land Uses
for the Existing Ritz Carlton Laguna Niguel and
Ritz Carlton Laguna Niguel with Expansion

Land Uses	Units	
EXISTING RITZ CARLTON		
Hotel Rooms	393	rooms
Restaurant/Lounge/Bar		
- The Club Grille and Bar	4,700	sf
- Restaurant 162	4,850	sf
- Restaurant 162 Wine Room	425	sf
- Library Lounge and Bar	3,360	sf
Banquet Rooms	17,909	sf
Conference Facilities	8,315	sf
Outdoor Function Areas	27,807	sf
Spa Facilities	11	rooms
CHANGES TO EXISTING USES		
Removing Meeting Space	-6,300	ksf
Adding Hotel Rooms	27	rooms
Adding Meeting Space over Loading Dock	14,080	ksf
Removing Club Grille Restaurant	-2,980	ksf
Adding Meeting Room Functional Areas	2,980	ksf
EXPANDED RITZ CARLTON		
Hotel Rooms	420	rooms
Restaurant/Lounge/Bar		
- The Club Grille and Bar	1,720	sf
- Restaurant 162	4,850	sf
- Restaurant 162 Wine Room	425	sf
- Library Lounge and Bar	3,360	sf
Banquet Rooms	17,909	sf
Conference Facilities	19,075	sf
Outdoor Function Areas	27,807	sf
Spa Facilities	11	rooms

Table 2
Summary of Land Use and Parking Provisions
Ritz Carlton Laguna Niguel with Expansion
Based on City Code Requirements

Land Uses	Units		City of Dana Point Parking Code		Parking Required per City Code
Hotel Rooms	420	rooms	1	space/guest room plus additional parking as required for accessory use	420
Restaurant/Lounge/Bars					
- The Club Grille and Bar	1,720	sf			17
- Restaurant 162	4,850	sf	1	space/100 sf-gfa for 1st 4,000 sf plus	57
- Restaurant 162 Wine Room	425	sf	1	space/50 sf above 4,000 sf	4
- Library Lounge and Bar	3,360	sf			34
Banquet Rooms	17,909	sf	1	space/3 fixed seats or 1 space/25 sf-gfa	716
Conference Facilities	19,075	sf	1	space/3 fixed seats or 1 space/25 sf-gfa	763
Outdoor Function Areas	27,807	sf	1	space/150 sf of outdoor area	185
Spa Facilities	11	rooms	3	spaces/treatment room	33
				Total Parking Required per City Code	**2,229**

sf = square feet
gfa - gross floor area

Table 3A
Summary of Existing Parking Supply
Ritz Carlton Laguna Niguel

Type of Spaces	Parking Levels: Ground	Parking Levels: 2	Parking Levels: Roof	Drop-off Loop	Total
General	86	127	122	0	335
Compact	50	94	93	0	237
Taxi	0	0	4	0	4
Limo	0	0	12	0	12
Unmarked	8	1	4	0	13
Handicap	0	1	0	0	1
Rental Car	0	5	0	0	5
Permanent Storage	49	5	0	0	54
Additional Valet	50	62	57	16	185
VIP	0	7	0	0	7
Total Supply	243	302	292	16	853

Table 3B
Summary of Future Parking Supply
Ritz Carlton Laguna Niguel with Expansion

Type of Spaces	Parking Levels			Drop-off	Total
	Ground	2	Roof	Loop	
General	86	128	104	0	318
Compact	50	94	88	0	232
Taxi	0	0	4	0	4
Limo	0	0	12	0	12
Unmarked	8	1	2	0	11
Handicap	0	0	17	0	17
Rental Car	0	5	0	0	5
Permanent Storage	49	5	0	0	54
Additional Valet	50	63	58	16	187
VIP	0	7	0	0	7
Total Supply	243	303	285	16	847

Table 4
Summary of Hourly Parking Demand for Ritz Carlton Hotel with Expansion
For Weekdays (Monday through Thursday)

Time of Day	Rooms	Restaurant	Spa	Conference Rooms	Outdoor Function Areas	Banquet Rooms	Hotel Parking Demand with Expansion	Future Parking Supply (a)	Surplus/ Deficit
6:00 AM	293	0	0	0	0	0	293	847	554
7:00 AM	314	3	1	0	0	0	318	847	529
8:00 AM	348	10	3	36	0	59	456	847	391
9:00 AM	318	3	4	71	7	118	522	847	325
10:00 AM	296	3	6	71	14	118	509	847	338
11:00 AM	296	2	7	71	70	118	564	847	283
12:00 PM	283	34	8	71	139	128	**663**	847	**184**
1:00 PM	283	34	8	71	139	128	**663**	847	**184**
2:00 PM	296	11	8	71	139	128	653	847	194
3:00 PM	296	3	8	71	70	128	576	847	271
4:00 PM	305	3	7	71	35	128	548	847	299
5:00 PM	301	10	5	71	14	197	599	847	248
6:00 PM	292	19	3	36	70	197	616	847	231
7:00 PM	275	20	1	21	70	197	584	847	263
8:00 PM	288	24	1	21	35	197	566	847	281
9:00 PM	305	23	0	21	0	197	547	847	300
10:00 PM	305	20	0	7	0	99	431	847	416
11:00 PM	311	14	0	0	0	99	423	847	424
12:00 AM	306	10	0	0	0	0	316	847	531

This summary is based on the ULI Shared Parking analyses provided in Appendix B of this report.
(a) Supply assumes the use of 54 parking spaces currently used for storage
Bold indicates weekday peak parking demand for the hotel with expansion

Table 5
Summary of Hourly Parking Demand for Ritz Carlton Hotel with Expansion
For a Conservative Friday

Time of Day	Rooms	Restaurant	Spa	Conference Rooms	Outdoor Function Areas	Banquet Rooms	Hotel Parking Demand with Expansion	Future Parking Supply (a)	Surplus/ Deficit
6:00 AM	293	0	0	0	0	0	293	847	554
7:00 AM	314	3	1	0	0	0	318	847	529
8:00 AM	348	10	3	29	0	95	485	847	362
9:00 AM	318	3	4	57	12	191	586	847	261
10:00 AM	296	3	6	57	25	191	578	847	269
11:00 AM	296	2	7	57	124	191	677	847	170
12:00 PM	283	34	8	57	248	207	**837**	847	**10**
1:00 PM	283	34	8	57	248	207	**837**	847	**10**
2:00 PM	296	11	8	57	248	207	827	847	20
3:00 PM	296	3	8	57	124	207	695	847	152
4:00 PM	305	3	7	57	62	207	640	847	207
5:00 PM	301	10	5	57	25	318	716	847	131
6:00 PM	292	19	3	29	124	318	784	847	63
7:00 PM	275	20	1	17	124	318	756	847	91
8:00 PM	288	24	1	17	62	318	710	847	137
9:00 PM	305	23	0	17	0	318	663	847	184
10:00 PM	305	20	0	6	0	159	490	847	357
11:00 PM	311	14	0	0	0	159	483	847	364
12:00 AM	306	10	0	0	0	0	316	847	531

This summary is based on the ULI Shared Parking analyses provided in Appendix B of this report.
(a) Supply assumes the use of 54 parking spaces currently used for storage
Bold indicates Friday peak parking demand for the hotel with expansion

Table 6
Summary of Hourly Parking Demand for Ritz Carlton Hotel with Expansion
For Weekends (Saturday and Sunday)

Time of Day	Rooms	Restaurant	Spa	Conference Rooms	Outdoor Function Areas	Banquet Rooms	Hotel Parking Demand with Expansion	Future Parking Supply (a)	Surplus/ Deficit
6:00 AM	321	0	1	0	0	0	322	847	525
7:00 AM	337	3	2	0	0	0	342	847	505
8:00 AM	357	10	7	24	0	122	519	847	328
9:00 AM	323	3	6	48	7	244	631	847	216
10:00 AM	296	3	4	48	14	244	609	847	238
11:00 AM	296	2	6	48	70	244	665	847	182
12:00 PM	279	34	4	48	139	264	768	847	79
1:00 PM	279	34	4	48	139	264	768	847	79
2:00 PM	296	11	2	48	139	264	761	847	86
3:00 PM	296	3	4	48	70	264	685	847	162
4:00 PM	306	3	5	48	14	264	640	847	207
5:00 PM	311	10	4	48	35	406	814	847	33
6:00 PM	310	19	2	24	70	406	**831**	847	**16**
7:00 PM	297	20	1	14	70	406	808	847	39
8:00 PM	314	24	0	14	35	406	793	847	54
9:00 PM	330	23	0	14	0	406	773	847	74
10:00 PM	330	20	0	5	0	203	558	847	289
11:00 PM	341	14	0	0	0	203	558	847	289
12:00 AM	338	10	0	0	0	0	348	847	499

This summary is based on the ULI Shared Parking analyses provided in Appendix B of this report.
(a) Supply assumes the use of 54 parking spaces currently used for storage
Bold indicates weekend peak parking demand for the hotel with expansion

Appendix A
Kollin Altomare Parking Plans and Project Data Sheet

PROJECT DATA:

Project Data
The Ritz Carlton Laguna Niguel 6/11/07
Dana Point, California

Lot Size: .... 766,063 SF (17.59 acres)
Current Building Area: .... 380,369 SF
Current FAR: .... .49

Current Building Footprint: .... 204,003 SF
Current Lot Coverage: 26.0%

Proposed Additions: .... 30,396 SF
Existing Building Area: .... 380,369 SF
Total Proposed Building Area: .... 410,765 SF
Proposed FAR: .... .530

Proposed Footprint added: ....19,680 SF
(15,200 loading dock building; 1800 SF casitas; 1520 SF Central core infill; 580 SF Monarch Infill;
580 SF Dana Infill)
Current Footprint: .... 204,003 SF
Total Proposed Footprint Area: ... 223,683 SF
Proposed Lot Coverage: 29%

Existing Keys: .... 393 Rooms
New Keys Added: .... 27 Rooms
Total Keys: .... 420 Rooms

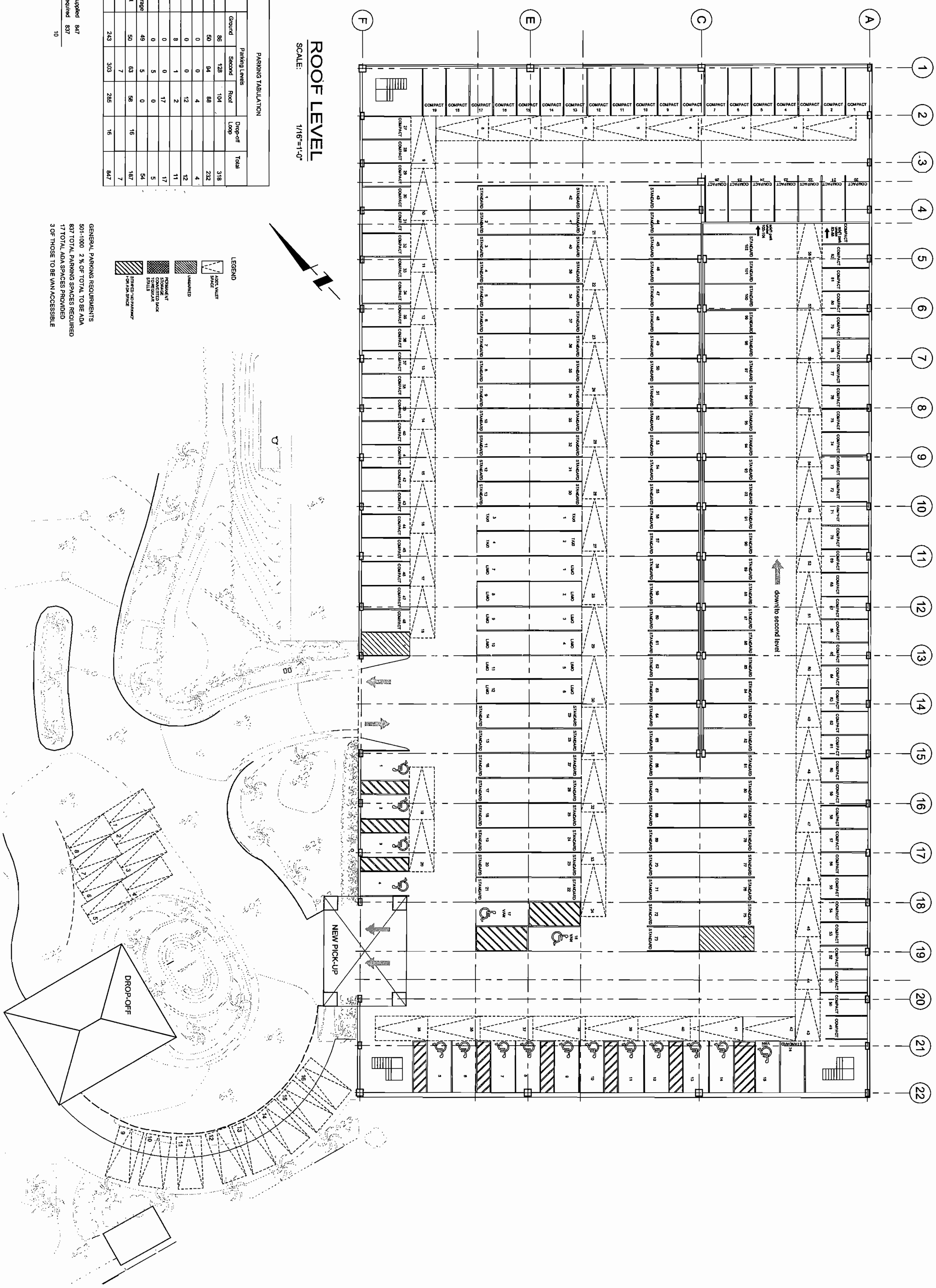
Parking
Current Parking Analysis: ....10 Surplus Spaces
(See Parking Study prepared by Kimely-Horn)

Landscape Coverage
Required: 20% ....153,213 SF
Existing: 48% ....366,316 SF(8.41 acres)
Proposed: 46% ....355,016 SF(8.15 acres)

Zoning: Visitor/ Recreation ....V/RC
APN: 672-171-03

ROOF LEVEL

SCALE: 1/16"=1'-0"



LEGEND

- ADD'L VALET SPACE
- UNMARKED
- PERMANENT STORAGE CONVERTED BACK TO REGULAR STALLS
- STRIPED "NO PARKING" FOR ADA SPACE

GENERAL PARKING REQUIRMENTS
501-1000 2 % OF TOTAL TO BE ADA
837 TOTAL PARKING SPACES REQUIRED
17 TOTAL ADA SPACES PROVIDED
3 OF THOSE TO BE VAN ACCESSIBLE

PARKING TABULATION

Type of Space	Parking Levels: Ground	Second	Roof	Drop-off Loop	Total
Standard	86	128	104		318
Compact	50	94	88		232
Taxi	0	0	4		4
Limo	0	0	12		12
Unmarked	8	1	2		11
Handicap	0	0	17		17
Rental Car	0	5	0		5
Permanent Storage	49	5	0		54
Additional Valet	50	63	58	16	187
VIP		7			7
Total Supply	243	303	285	16	847

Total parking supplied 847
Total parking required 837
Surplus 10

THE RITZ-CARLTON

LAGUNA NIGUEL DESIGN CONCEPTS

kollin altomare architects

P1

THE RITZ-CARLTON

LAGUNA NIGUEL DESIGN CONCEPTS

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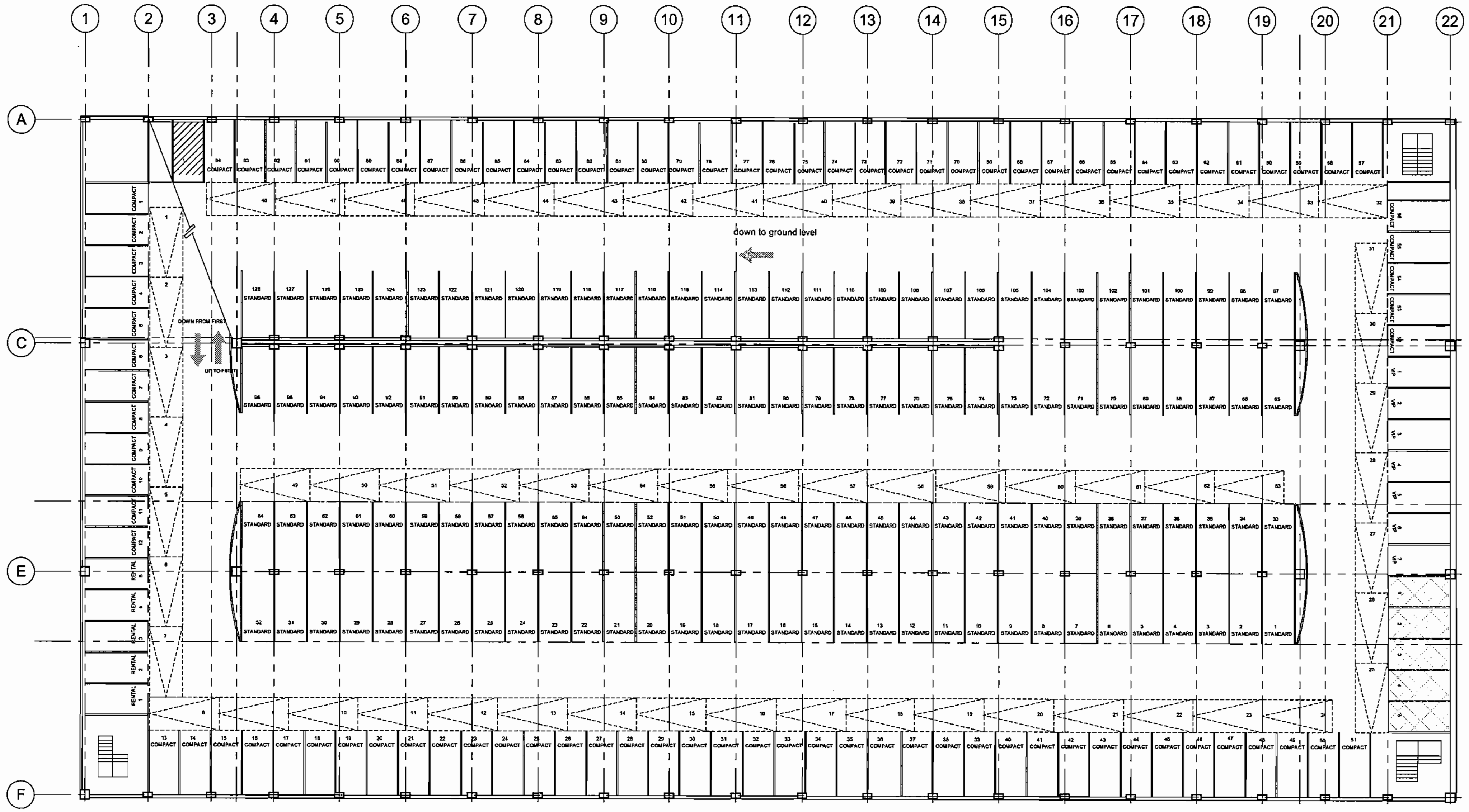


PARKING TABULATION					
Type of Space	Parking Levels			Drop-off Loop	Total
	Ground	Second	Roof		
Standard	86	128	104		318
Compact	50	94	88		232
Taxi	0	0	4		4
Limo	0	0	12		12
Unmarked	8	1	2		11
Handicap	0	0	17		17
Rental Car	0	5	0		5
Permanent Storage	49	5	0		54
Additional Valet	50	63	58	16	187
VIP		7			7
Total Supply	243	303	285	16	847

Total parking supplied 847
Total parking required 837
Surplus 10

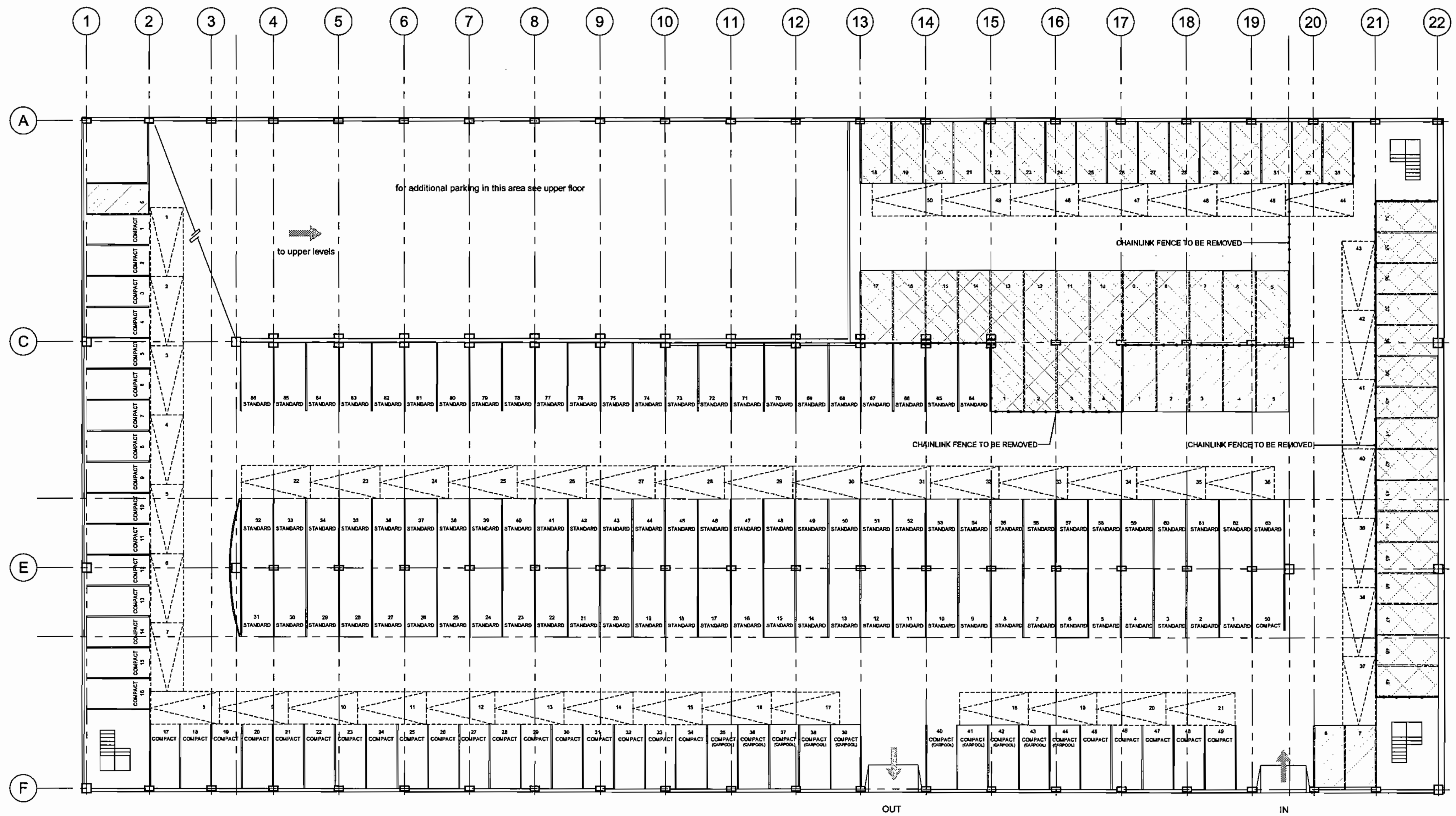
LEGEND

- ADD'L VALET SPACE
- UNMARKED
- PERMANENT STORAGE CONVERTED BACK TO REGULAR STALLS
- STRIPED "NO PARKING" FOR ADA SPACE

GENERAL PARKING REQUIRMENTS
501-1000 2 % OF TOTAL TO BE ADA
837 TOTAL PARKING SPACES REQUIRED
17 TOTAL ADA SPACES PROVIDED
3 OF THOSE TO BE VAN ACCESSIBLE

SECOND LEVEL
SCALE: 1/16"=1'-0"

P2
SHEET



PARKING TABULATION					
Type of Space	Parking Levels			Drop-off Loop	Total
	Ground	Second	Roof		
Standard	86	128	104		318
Compact	50	94	88		232
Taxi	0	0	4		4
Limo	0	0	12		12
Unmarked	8	1	2		11
Handicap	0	0	17		17
Rental Car	0	5	0		5
Permanent Storage	49	5	0		54
Additional Valet	60	63	58	16	167
VIP		7			7
Total Supply	243	303	285	16	847

Total parking supplied 847
Total parking required 837
Surplus 10

LEGEND

- ADD'L VALET SPACE
- UNMARKED
- PERMANENT STORAGE CONVERTED BACK TO REGULAR STALLS
- STRIPED "NO PARKING" FOR ADA SPACE

GENERAL PARKING REQUIRMENTS
501-1000 2 % OF TOTAL TO BE ADA
837 TOTAL PARKING SPACES REQUIRED
17 TOTAL ADA SPACES PROVIDED
3 OF THOSE TO BE VAN ACCESSIBLE

GROUND LEVEL

SCALE: 1/16"=1'-0"

THE RITZ-CARLTON

LAGUNA NIGUEL DESIGN CONCEPTS

kollin altomare architects

P3
SHEET

Appendix B
Shared Parking Calculations

SHARED PARKING ANALYSIS

PER THE ULI SHARED PARKING MANUAL (Second Edition - 2005)
FOR TYPICAL WEEKDAY PARKING DEMAND

	HOTEL						
PROJECT:	**Ritz Carlton Laguna Niguel with Expansion**						
LAND USE:	ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ
UNIT:	ROOM	EMP	KSF	ROOM	KSF	KSF	KSF
QUANTITY:	335	85	10.355	11	28.282	6.112	8.702
RATE:	1	1	(a)	(a)	(a)	(a)	(a)
REQ'D PRKG	335	85	34	8	71	139	197
Transit Center Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
W-day/W-end Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seasonal Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

TIME OF DAY	HOTEL ROOM	HOTEL EMP	HOTEL REST.	HOTEL SPA	HOTEL CONF.	HOTEL OFA	HOTEL BANQ	HOTEL ROOM	HOTEL EMP	HOTEL REST.	HOTEL SPA	HOTEL CONF.	HOTEL OFA	HOTEL BANQ	**TOTAL**
6:00 AM	86%	5%	0%	5%	0%	0%	0%	288	4	0	0	0	0	0	293
7:00 AM	86%	30%	10%	10%	0%	0%	0%	288	26	3	1	0	0	0	318
8:00 AM	81%	90%	30%	40%	50%	0%	30%	271	77	10	3	36	0	59	456
9:00 AM	72%	90%	10%	55%	100%	5%	60%	241	77	3	4	71	7	118	522
10:00 AM	63%	100%	10%	75%	100%	10%	60%	211	85	3	6	71	14	118	509
11:00 AM	63%	100%	5%	90%	100%	50%	60%	211	85	2	7	71	70	118	564
12:00 PM	59%	100%	100%	100%	100%	100%	65%	198	85	34	8	71	139	128	**663**
1:00 PM	59%	100%	100%	100%	100%	100%	65%	198	85	34	8	71	139	128	**663**
2:00 PM	63%	100%	33%	100%	100%	100%	65%	211	85	11	8	71	139	128	653
3:00 PM	63%	100%	10%	100%	100%	50%	65%	211	85	3	8	71	70	128	576
4:00 PM	68%	90%	10%	85%	100%	25%	65%	228	77	3	7	71	35	128	548
5:00 PM	72%	70%	30%	65%	100%	10%	100%	241	60	10	5	71	14	197	599
6:00 PM	77%	40%	55%	35%	50%	50%	100%	258	34	19	3	36	70	197	616
7:00 PM	77%	20%	60%	15%	30%	50%	100%	258	17	20	1	21	70	197	584
8:00 PM	81%	20%	70%	10%	30%	25%	100%	271	17	24	1	21	35	197	566
9:00 PM	86%	20%	67%	5%	30%	0%	100%	288	17	23	0	21	0	197	547
10:00 PM	86%	20%	60%	0%	10%	0%	50%	288	17	20	0	7	0	99	431
11:00 PM	90%	10%	40%	0%	0%	0%	50%	302	9	14	0	0	0	99	423
12:00 AM	90%	5%	30%	0%	0%	0%	0%	302	4	10	0	0	0	0	316

(a) as described in the parking analysis text

SHARED PARKING ANALYSIS

PER THE ULI SHARED PARKING MANUAL (Second Edition - 2005)
FOR CONSERVATIVE FRIDAY PARKING DEMAND

PROJECT: **Ritz Carlton Laguna Niguel with Expansion**

	HOTEL						
LAND USE:	ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ
UNIT:	ROOM	EMP	KSF	ROOM	KSF	KSF	KSF
QUANTITY:	335	85	10.355	11	22.975	10.962	14.009
RATE:	1	1	(a)	(a)	(a)	(a)	(a)
REQ'D PRKG	335	85	34	8	57	248	318
Transit Center Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
W-day/W-end Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seasonal Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

TIME OF	HOTEL							HOTEL							
DAY	ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ	ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ	**TOTAL**
6:00 AM	86%	5%	0%	5%	0%	0%	0%	288	4	0	0	0	0	0	293
7:00 AM	86%	30%	10%	10%	0%	0%	0%	288	26	3	1	0	0	0	318
8:00 AM	81%	90%	30%	40%	50%	0%	30%	271	77	10	3	29	0	95	485
9:00 AM	72%	90%	10%	55%	100%	5%	60%	241	77	3	4	57	12	191	586
10:00 AM	63%	100%	10%	75%	100%	10%	60%	211	85	3	6	57	25	191	578
11:00 AM	63%	100%	5%	90%	100%	50%	60%	211	85	2	7	57	124	191	677
12:00 PM	59%	100%	100%	100%	100%	100%	65%	198	85	34	8	57	248	207	**837**
1:00 PM	59%	100%	100%	100%	100%	100%	65%	198	85	34	8	57	248	207	**837**
2:00 PM	63%	100%	33%	100%	100%	100%	65%	211	85	11	8	57	248	207	827
3:00 PM	63%	100%	10%	100%	100%	50%	65%	211	85	3	8	57	124	207	695
4:00 PM	68%	90%	10%	85%	100%	25%	65%	228	77	3	7	57	62	207	640
5:00 PM	72%	70%	30%	65%	100%	10%	100%	241	60	10	5	57	25	318	716
6:00 PM	77%	40%	55%	35%	50%	50%	100%	258	34	19	3	29	124	318	784
7:00 PM	77%	20%	60%	15%	30%	50%	100%	258	17	20	1	17	124	318	756
8:00 PM	81%	20%	70%	10%	30%	25%	100%	271	17	24	1	17	62	318	710
9:00 PM	86%	20%	67%	5%	30%	0%	100%	288	17	23	0	17	0	318	663
10:00 PM	86%	20%	60%	0%	10%	0%	50%	288	17	20	0	6	0	159	490
11:00 PM	90%	10%	40%	0%	0%	0%	50%	302	9	14	0	0	0	159	483
12:00 AM	90%	5%	30%	0%	0%	0%	0%	302	4	10	0	0	0	0	316

(a) as described in the parking analysis text

SHARED PARKING ANALYSIS

PER THE ULI SHARED PARKING MANUAL (Second Edition - 2005)
FOR WEEKEND PARKING DEMAND

PROJECT:	**Ritz Carlton Laguna Niguel with Expansion**						
	HOTEL						
LAND USE:	ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ
UNIT:	ROOM	EMP	KSF	ROOM	KSF	KSF	KSF
QUANTITY:	335	85	10.355	11	19.075	6.112	17.909
RATE:	1	1	(a)	(a)	(a)	(a)	(a)
REQ'D PRKG	335	85	34	8	48	139	406
Transit Center Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
W-day/W-end Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seasonal Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

TIME OF DAY	HOTEL ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ	HOTEL ROOM	EMP	REST.	SPA	CONF.	OFA	BANQ	**TOTAL**
6:00 AM	95%	4%	0%	10%	0%	0%	0%	318	3	0	1	0	0	0	322
7:00 AM	95%	22%	10%	30%	0%	0%	0%	318	19	3	2	0	0	0	342
8:00 AM	90%	65%	30%	84%	50%	0%	30%	302	55	10	7	24	0	122	519
9:00 AM	80%	65%	10%	72%	100%	5%	60%	268	55	3	6	48	7	244	631
10:00 AM	70%	72%	10%	51%	100%	10%	60%	235	61	3	4	48	14	244	609
11:00 AM	70%	72%	5%	78%	100%	50%	60%	235	61	2	6	48	70	244	665
12:00 PM	65%	72%	100%	46%	100%	100%	65%	218	61	34	4	48	139	264	768
1:00 PM	65%	72%	100%	50%	100%	100%	65%	218	61	34	4	48	139	264	768
2:00 PM	70%	72%	33%	29%	100%	100%	65%	235	61	11	2	48	139	264	761
3:00 PM	70%	72%	10%	50%	100%	50%	65%	235	61	3	4	48	70	264	685
4:00 PM	75%	65%	10%	62%	100%	10%	65%	251	55	3	5	48	14	264	640
5:00 PM	80%	50%	30%	48%	100%	25%	100%	268	43	10	4	48	35	406	814
6:00 PM	85%	29%	55%	25%	50%	50%	100%	285	25	19	2	24	70	406	**831**
7:00 PM	85%	14%	60%	10%	30%	50%	100%	285	12	20	1	14	70	406	808
8:00 PM	90%	14%	70%	5%	30%	25%	100%	302	12	24	0	14	35	406	793
9:00 PM	95%	14%	67%	0%	30%	0%	100%	318	12	23	0	14	0	406	773
10:00 PM	95%	14%	60%	0%	10%	0%	50%	318	12	20	0	5	0	203	558
11:00 PM	100%	7%	40%	0%	0%	0%	50%	335	6	14	0	0	0	203	558
12:00 AM	100%	4%	30%	0%	0%	0%	0%	335	3	10	0	0	0	0	348

(a) as described in the parking analysis text