AD-A214 759

AIRFIELD PAVEMENT EVALUATION

PISCO AND LA JOYA AIR BASES, PERU

NOVEMBER 1989

AFESC

AIR FORCE ENGINEERING and SERVICES CENTER
TYNDALL AIR FORCE BASE,
FLORIDA 32403-6001

AIRFIELD PAVEMENT EVALUATION

OF

PERUVIAN AIR BASES

PREPARED FOR

TACTICAL AIR COMMAND (TAC)

BY

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EXECUTIVE SUMMARY

1. At the request of Tactical Air Command, a Pavement Evaluation Team from HQ Air Force Engineering and Services Center (AFESC) performed modified destructive airfield pavement evaluations at LaJoya Air Base and Pisco Air Base, Peru during 26 April-10 May 1989. The purposes were to establish physical property data, determine pavement load-carrying capabilities, and identify any existing or potential pavement distresses.

2. LAJOYA AIR BASE

a. The LaJoya airfield consists primarily of 13,154 ft long runway and a parallel taxiway which is also used as a runway. Primary apron features include the East and West Aprons with aircraft shelters dispersed around each. Runway 17/35 and the Parallel Taxiway are essentially 3-layered flexible pavement systems. Tests were conducted every 1000 feet on the taxiway and runway to define the soil strength profiles. Tests were also conducted in random spots throughout the two major parking aprons.

b. Pavement conditions at LaJoya range from FAIR to VERY GOOD condition. The portland cement concrete (PCC) parking aprons are generally FAIR and the asphaltic concrete (AC) runway and taxiway are in GOOD and VERY GOOD condition, respectively. Joint sealant is virtually non-existent throughout all PCC features. This has led to edge spalls that present a FOD hazard. Few distresses exist in the AC pavements. The underlying soils are unusually strong which is key to the overall pavement strength. No significant load limitations exist on this airfield.

3. PISCO AIR BASE

a. The Pisco airfield consists primarily of a 10,000 ft long runway and a parallel taxiway. The parallel taxiway adjoins the runway via 5 ladder taxiways. One other flexible pavement taxiway is adjacent to the PCC parking apron. All flexible pavements are three-layer systems.

b. Pavement conditions at Pisco range from FAILED to EXCELLENT. The PCC parking apron is generally VERY POOR and the AC runway is VERY GOOD to EXCELLENT. The remaining PCC and AC taxiways vary in condition. There are no indications of structural distress on the runway. Joint sealant is virtually non-existent throughout all PCC features. This, too, has led to edge spalls that present a FOD hazard.

c. Shattered slabs, indicative of pavement failure, are common throughout the Parking Apron. Significant load limitations should be imposed on the PCC parking apron. The weakest pavements are sections of the Parallel Taxiway (Feature T04A) and part of the Main Parking Apron (Features A01B and A02B). Catastrophic failure is unlikely, however, the existing slabs are in POOR condition, or worse, on many of the features. Recommend the severely distressed sections be replaced.

SECTION I: INTRODUCTION

A. SCOPE

A Headquarters Air Force Engineering and Services Center (HQ AFESC) Pavement Evaluation Team (PET) performed modified destructive airfield pavement evaluations at LaJoya Air Base and Pisco Air Base, Peru, at the request of Headquarters, Tactical Air Command (TAC). Field testing was accomplished during 26 April-10 May 1989. The purposes of the evaluations were to investigate distress patterns on the airfields, establish physical property data, determine the in situ properties of the pavement structures for calculating allowable gross loads (AGLs), and identify reasons for existing or potential pavement distress.

This report is intended as an aid to individuals, organizations, and agencies. With this in mind, the narrative is brief but is supplemented by many detailed appendices. LaJoya pavement evaluation is reported first in each section, followed by the Pisco evaluation. A list of the included appendices is provided below.

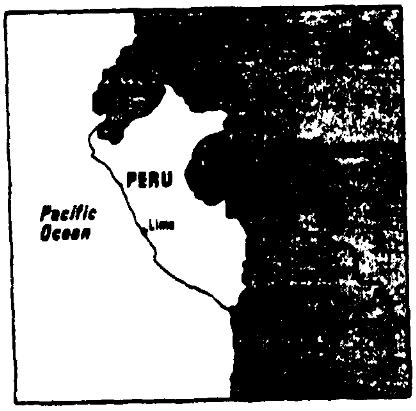
Appendix	Description
A	Airfield Layout Plan: This plan graphically depicts different pavement features of the airfield.
B	This appendix not used.
C	Test Location and Core Location Plans: These plans document the locations where tests were conducted and cores were extracted. Core thicknesses and flexural strengths are also recorded on the core location plan.
D	Condition Survey: This plan shows the operating condition of the airfield pavements. The condition ratings are a qualitative assessment of the pavement surface conditions based upon visual observations and engineering judgment.
E	Summary of Physical Property Data: Physical properties of each pavement feature are tabulated. Included are feature dimensions, material types, thicknesses of layers, and engineering properties.

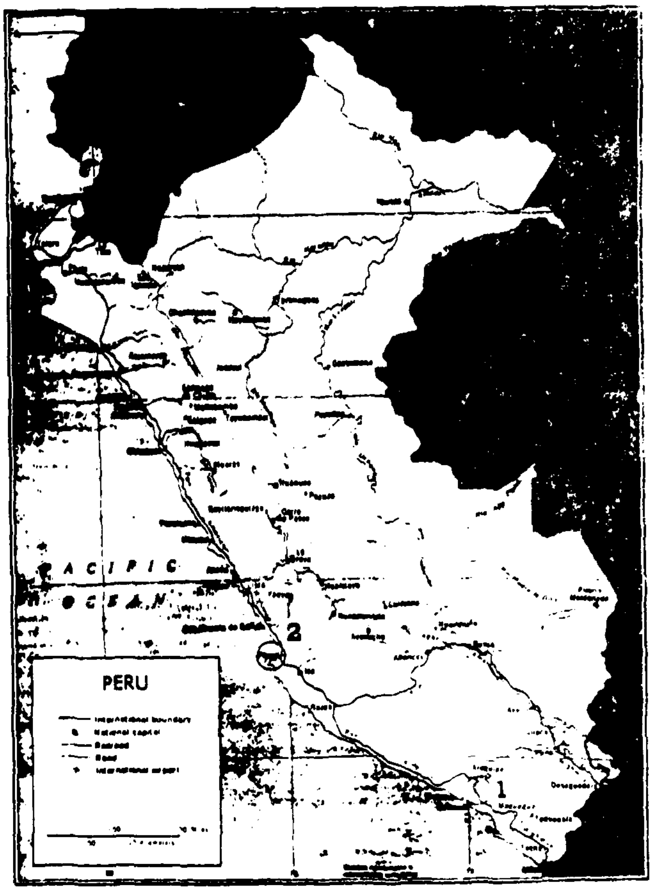
F Allowable Gross Loads (AGLs): A listing of the allowable magnitude of loads at four pass intensity levels for each aircraft group.

G Related Information: Included in this are Aircraft Group Indices, Gross Weight Limits for Aircraft Groups, Pass Intensity Levels, Climatological Chart, and Climatological Narrative.

B. SITE LOCATIONS

LaJoya Air Base is located in southwestern Peru, near the city of Arequipa. It lies in desert terrain, where there is little precipitation. Pisco is located approximately 150 miles south of Lima and located on the Pacific coast. Respective locations are shown on the map below.





1. LaJoya 2. Pisco

SECTION II. EVALUATION PROCEDURES

A. FIELD TESTING

Pavement testing was done by extracting pavement cores and conducting Small Aperture Tests (SAT) and Dynamic Cone Penetrometer (DCP) tests in the pavement core holes. SAT is a modified California Bearing Ratio (CBR) test used to determine the strength of supporting soils. The DCP measures penetration resistance correlated to CBRs for the supporting soils. For evaluation of Portland cement concrete (PCC), corresponding CBRs were correlated to moduli of subgrade reaction (k-values) used in design and evaluation of rigid pavements. Additionally, pavement cores, along with soil samples from both bases, were shipped to Tyndall AFB for material testing.

B. CONDITION RATINGS

Pavement condition definitions range from EXCELLENT (like new) to FAILED (unsafe for aircraft traffic). Condition ratings are a qualitative assessment of the pavement surface and should not be confused with the structural capacity of a pavement. For example, a pavement surface may rate EXCELLENT, but have underlying pavement or soil conditions that could result in pavement failure under the applied load of a given aircraft. On the other hand, a pavement may be structurally sound but the surface condition may be hazardous for aircraft traffic.

C. LABORATORY TESTING

Pavement core samples were returned to Tyndall AFB for laboratory testing. PCC cores were tested for strength by tensile splitting in accordance with ASTM's "Standard Test Methods." The six-inch diameter core tensile splitting strengths were then converted to flexural strengths by using an empirical relationship (Ref 4). Flexural strengths are reported on the "Core Location Plan" (Appendix C) and in Appendix E.

D. MATERIAL PROPERTIES

The load-carrying capacities of the pavements reported herein are based on material properties representative of the in-place conditions at the time this field investigation was conducted. Exact agreement between behavior of the facilities as shown by this evaluation and that which may actually occur under traffic cannot be expected, primarily because of the difficulties of determining the exact traffic that produces the behavior, and also because material properties change due to environmental factors such as precipitation, freeze-thaw cycles, and age. These changes must be considered in future planning, especially where a change in mission will result in an increase in aircraft loads and/or aircraft traffic volume.

E. CLIMATIC DATA

Appendix G provides a summary of climatic data for both airfields.

SECTION III: METHODOLOGY OF ANALYSIS

A. PHYSICAL PROPERTY DATA

The parameters used for this evaluation are summarized in Appendix E. The data presented were selected as the most representative strength values for each feature. Strength of flexible pavements (asphaltic concrete, AC) are based on the the conventional CBR method of design and evaluation. Each unique soil layer was tested to determine the CBR of the layer. CBRs were also measured on the rigid pavement (Portland cement concrete, PCC) supporting soils, and then correlated to moduli of subgrade reaction, or k-value. Rigid pavements were then evaluated based on the Westergaard theory of design and evaluation.

B. DETERMINATION OF ALLOWABLE GROSS LOADS

The AGLs were determined by a computer program based on procedures in AFM 88-24 and AFR 93-5. The AGL for a feature was reduced 25 percent if the condition rating for the feature was POOR or worse. Appendix E outlines the engineering properties used to calculate the AGLs.

Failure criteria used in the allowable load analysis is different for rigid and flexible pavements. Rigid (and composite) pavement failure criteria is partly based on a limiting tensile stress of the concrete. Conversely, compressive subgrade strain is one failure parameter used in the AGL calculation of flexible pavement systems.

C. EXAMPLE PROBLEM

The following example (employing data from this report) illustrates how to use the allowable gross load information.

Problem: The Peruvian Air Force wants to know how many times a 550-kip (1 kip = 1000 pounds) C-5 aircraft can traffic on Feature T01A of the Pisco airfield. How many C-5 passes can be supported before the pavement fails?

Solution: From Appendix F, the Allowable Gross Loads for a C-5 at Pass Intensity Levels I-IV (50,000, 15,000, 3,000, and 500) are 507, 513, 536, and 581 kips, respectively. The weights and passes are plotted on semi-log paper as shown in Figure 1. The completed graph indicates a 550-kip C-5 can make approximately 1,500 passes on Feature T01A before the pavement fails.

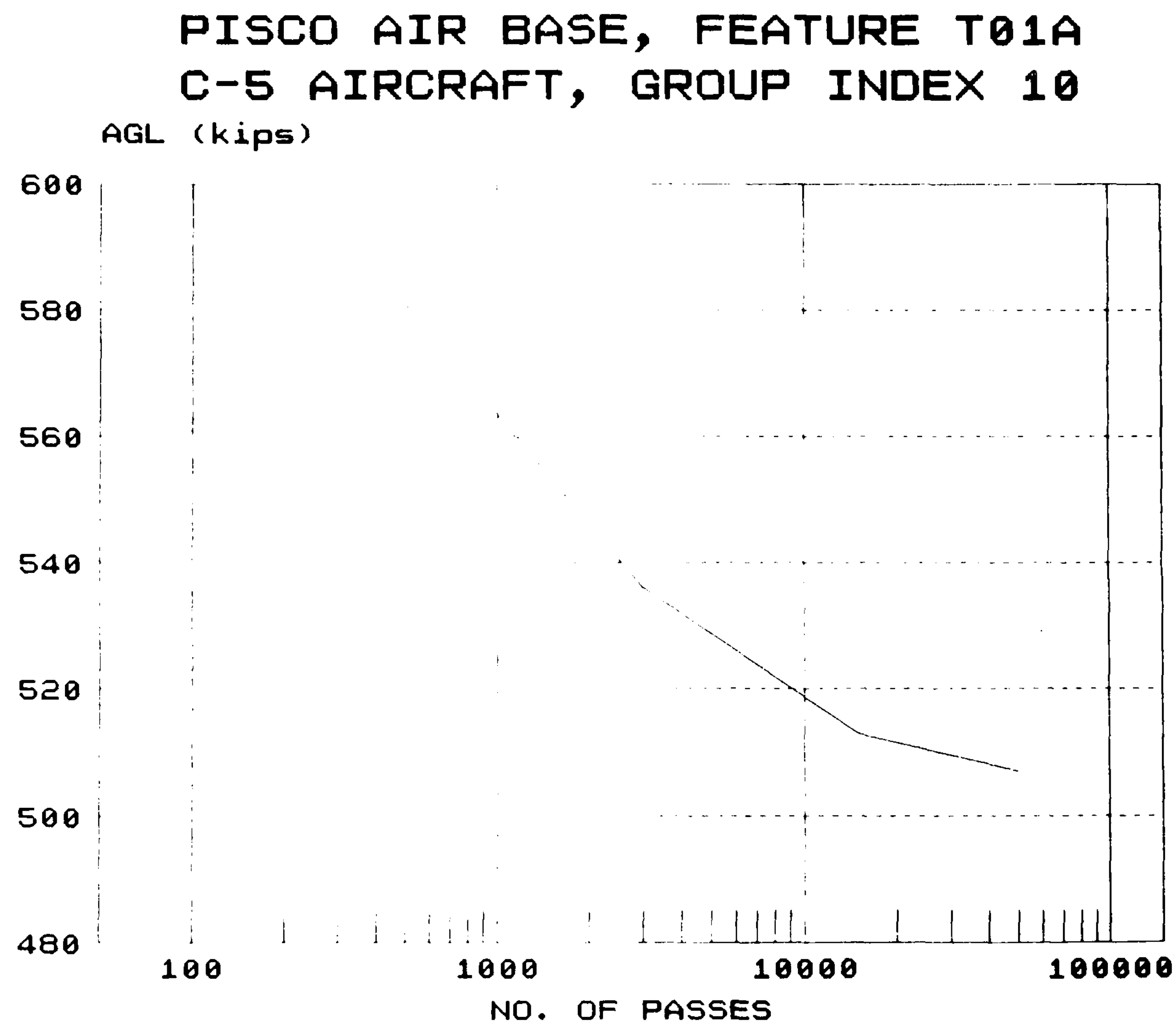

PISCO AIR BASE, FEATURE T01A
C-5 AIRCRAFT, GROUP INDEX 10
AGL (kips)
600
580
560
540
520
500
480
100
1000
10000
100000
NO. OF PASSES

FIGURE 1

D. PAVEMENT CLASSIFICATION NUMBER

The International Civil Aviation Organization (ICAO) has developed and adopted a standardized method of reporting pavement strength. This procedure is known as the Aircraft Classification Number/Pavement Classification Number (ACN/PCN) method (Reference 3). In support of this international system, PCNs are provided for each pavement feature on the different airfields. PCNs were calculated based on Group 9 aircraft at Pass Intensity Level I (50,000 passes). PCNs for respective airfields are listed in Appendix F. A brief explanation on the PCN code is shown below for PCN = 31/R/A/W/T.

PCN FIVE-PART CODE

PCN	Pavement Type	Subgrade Strength	Tire Pressure	Method of PCN Determination
Numeric Value	R - Rigid	A	W	T - Technical Evaluation
		B	X	
= 31	F - Flexible	C	Y	U - Using Aircraft
		D	Z	

EXPLANATION OF TERMS:

Subgrade Strength Codes

Code	Category	Flexible Pavement CBR, %	Rigid Pavement k, pci
A	High	Over 13	Over 400
B	Medium	9 - 13	201-400
C	Low	4 - 8	100-200
D	Ultralow	< 4	< 100

Tire Pressure Codes

Code	Category	Tire Pressure, psi
W	High	No Limit
X	Medium	146 - 217
Y	Low	74 - 145
Z	Ultralow	0 - 73

SECTION IV. PAVEMENT ASSESSMENT

A. LAJOYA AIR BASE

The LaJoya airfield consists primarily of 13,154 ft long runway and a parallel taxiway which is also used as a runway. Primary apron features include the East and West Aprons with aircraft shelters dispersed around each. Runway 17/35 and the Parallel Taxiway are essentially 3-layered flexible pavement systems. SATs were conducted every 1000 feet on the taxiway and runway on both the base course and subgrade, where possible. This was done to define the soil strength profile. SATs were also conducted in random spots throughout the two major parking aprons.

Pavement conditions at LaJoya range from FAIR to VERY GOOD condition. The PCC parking aprons are generally FAIR and the AC runway and taxiway are in GOOD and VERY GOOD condition, respectively. Joint sealant is virtually non-existent throughout all PCC features. This has led to edge spalls that present a FOD hazard. Few distresses exist in the AC pavements. Specific conditions and recommendations are addressed in the following paragraphs.

1. Runway 17/35

Most of Runway 17/35 is a three-layer flexible pavement system consisting of approximately 6 inches of AC on 18 inches of base course covering the subgrade material. Distinction between the two soil layers was difficult at points, but enough tests were conducted to differentiate between the layers. The first 1600 feet of the 17 end is approximately 12 inches of Portland cement concrete (PCC) placed on 12 inches (design thickness) of base over the subgrade material.

The strength of each layer was determined throughout the runway. The base course strengths consistently tested well above 100% CBR. The subgrade strengths also tested considerably high (30%-75%). This can be attributed to the type of soil and arid climate. The soil is a silty sand that is naturally cemented. Runway soil strength indicate the pavements are adequate to maintain current operations, and more. Specific load carrying capabilities are outlined in Allowable Gross Load tables, Appendix F.

Flexible runway pavements are generally in GOOD-to-VERY GOOD condition. Original construction was four inches of AC followed by a 2-inch overlay to smooth the surface. An asphalt seal coat was subsequently applied to the runway. There are no indications of structural distress. However, several patches have been randomly placed throughout.

The patches were constructed and then sealed with a rich asphalt sealant. Because of the rich sealant, surface shear failures are evident from aircraft and vehicular traffic. This can be expected to occur under sharp turning wheels.

Approximately 6000 feet from the 35 end are 1/4"-1/2" cracks running diagonally across the runway. The cracks do not follow a typical "load-related" pattern. The cracks appear to be caused from shifting of subsurface soils. Earth tremors have been known to occur in the area, and testing geological conditions is beyond the scope of this evaluation. Recommend the cracks be sealed and any further deterioration be monitored.

The PCC at the 17 end is in FAIR condition. Typical distresses include longitudinal and transverse cracks that resulted from extreme slab dimensions. Since the cracks first appeared, aircraft traffic has aggravated the condition. Some of the cracks were chipped to a "V-shape" and filled with concrete. The concrete has since broken in many areas and presents a potential for FOD. A suggested method of repair is to sawcut a minimum of three inches deep on each side of the crack, and remove the distressed concrete to sound material. New concrete should then be placed in the prepared area. The cracks will reappear, in time. However, the new material can be sawcut and sealed to "establish" and control the cracking like a joint. Recommend the the new joints be sealed with a flexible, asphalt-based sealant. Recommend the remaining joints and cracks be cleaned and sealed.

2. Taxiways:

There are six AC ladder taxiways that connect the Parallel Taxiway to the runway. Like the runway, the taxiways' soil strength tested very high. The same type of diagonal cracks that appear on the runway also appear on the Parallel Taxiway at the same location. Withstanding these cracks, the parallel taxiway, and the ladder taxiways are generally in GOOD-to-VERY GOOD condition.

The only obvious distresses on the Parallel Taxiway are some environmentally-related block cracks limited to one paving lane between ladder Taxiways 4 and 5. The only other distresses are the same type of diagonal cracks that were present on the runway. These cracks appear to follow the same pattern and continue along the same geological disturbance path. The recommended maintenance for this type of cracking is to seal the cracks and watch for any further deterioration.

3. Aprons:

The primary aprons consist of the East and West parking ramps which are constructed of 11 to 12 inches of PCC. Typical distresses are primarily intersecting slab cracks and joint spalls.

The intersecting cracks are present in a majority of the slabs. The cracks initially appeared because the slab dimensions are too great. Existing slabs are approximately 25 ft x 25 ft, hence many of the slabs have broken into four pieces. The resulting cracks are not sealed and have subsequently spalled. Recommend the cracks be cleaned and sealed to retard any further deterioration.

The second primary problem throughout the aprons is the joint spalling. Joint sealant is virtually non-existent, which has allowed a passageway for incompressibles to enter the pavement joints. These incompressibles restrict movement when concrete expands, thus resulting in spalled edges. Recommend the spalled edges be sawcut a minimum of three inches deep, and the unsound material removed. Upon removal, the joint should be formed and the material replaced with concrete mix.

Joint sealant is missing in most of the PCC features. It is essential to extend the pavement life. Recommend all the joints be cleaned and sealed following the spall repairs.

B. PISCO AIR BASE

The Pisco airfield consists primarily of a 10,000 ft long runway and a parallel taxiway. The parallel taxiway adjoins the runway via 5 ladder taxiways. One other taxiway is adjacent to the PCC parking apron. Runway 03/21 and all the flexible pavements taxiways can be considered three-layer pavement systems. SATs were conducted every 1000 feet on the taxiway, and runway, on both the base course and subgrade, where possible. This was done to define the soil strength profile. Subgrade tests indicated similar materials and strengths throughout the airfield. SATs were also conducted in random spots throughout the main parking apron.

Pavement conditions at Pisco range from FAILED to EXCELLENT condition. The PCC parking apron is generally VERY POOR and the AC runway is VERY GOOD-to-EXCELLENT. The remaining PCC and AC taxiways vary in condition. Joint sealant is virtually non-existent throughout all PCC features. This has led to edge spalls that present a FOD hazard. The joint sealant that does exist is a sand asphalt mixture. This is brittle and popping out in many areas. It also lends itself to incompressibles penetrating the joints.

AGL calculations indicate load limitations should be imposed on some of the Pisco pavements. Although the runway is in VERY GOOD condition, it is because it has not been subjected to frequent large aircraft loadings. Specific load carrying capabilities for each feature are outlined in the AGL tables, Appendix F. Specific conditions and recommendations are addressed in the following paragraphs.

1. Runway 03/21

Original construction of Runway 03/21 was approximately 8000 feet long with a PCC touchdown on the 21 end. The length of the existing runway is nearly 10,000 feet because of a 2000 ft addition on the 21 end. The first 1000 feet of the Runway 21 is 12 inches of PCC, followed by 1000 feet of flexible pavement. The original PCC touchdown has since been overlayed with 4.5 inches of AC. The remaining 7000 feet of runway is a three-layer flexible pavement. The profile, which was investigated and found to be fairly consistent for all flexible pavements, was evaluated as 18 inches of base course covering the subgrade. Surface thicknesses are based on the actual cores extracted throughout the airfield. SATs were conducted at points throughout the airfield and strengths were found to be fairly consistent. For evaluation purposes, subgrade CBRs equal 25%. Base course CBRs are based on SATs conducted in respective pavement features.

The strength of each layer was determined throughout the runway. The base course strengths generally tested between 30% and 50%. "Averages" were then assigned to the different features. Features were distinguished based on surface course thickness, pavement type, traffic area, and subsurface soil strength. The subgrade strengths were consistent at approximately 25%. The base course and subgrade are gravels and sands with large cobbles. Seashells are abundant in each layer.

Flexible runway pavements are generally VERY GOOD to EXCELLENT condition. Original construction was approximately two inches of AC followed by a 2-4 inch overlay to strengthen the surface. There are no indications of structural distress, and only limited environmentally-related distresses. As was mentioned before, the condition can be highly attributed to this area having only light aircraft landings and the low frequency of loads.

The PCC touchdown, located on the first 1000 feet of the 21 end, is in VERY GOOD condition. Only surface map cracks and a few low severity transverse cracks are apparent. However, as in many of the PCC pavements, the joint sealant is a sand asphalt mix. Recommend the joint condition be monitored and the sealant replaced with a hot-poured asphalt sealant.

2. Taxiways:

There are five ladder taxiways that connect the Parallel Taxiway to the runway. Two are PCC and the remaining are flexible pavements. The conditions range from FAIR to EXCELLENT.

The PCC taxiway sections are generally in GOOD condition with the exception of two, which are in VERY POOR and FAILED condition. One is a small section of PCC near the intersection of Taxiway 2 and the Parallel Taxiway (Feature T10A). In this section, nearly all the PCC slabs have shattered due to overloading the pavement. The PCC thickness is between seven and eight inches and supporting soils are relatively weak. Recommend this area be replaced. The second area is the PCC (part of Feature A03B) connecting the main apron to the adjacent AC taxiway. It is in VERY POOR condition. Again, shattered slabs, spalled joints, and intersecting cracks are typical throughout. Recommend this area be replaced.

The other significant taxiway distresses are limited to the AC at the intersection of the Parallel Taxiway and the main parking apron (the south end of Feature T04A). Only 2 inches of AC protects the base course in this area. Isolated depressions and alligator cracking are evidence of pavement failure. Recommend the general area (approximately 800 square feet) be structurally repaired by enhancing the supporting soils and replacing the AC surface course.

3. Aprons:

The primary apron is located on the West side of the parallel taxiway and is constructed of PCC. Different thicknesses indicate different pavement features. Common to all features is the lack of joint sealant. Recommend all joints be cleaned and sealed with a hot-poured liquid asphalt.

The North half of the apron is in FAIR condition with most distresses being low severity intersecting cracks, lack of joint sealant, and edge spalls. The south half of the apron is in POOR, or worse condition. The slab thicknesses in this section range from five to eight inches. The five-inch pavement has failed. The rest of this area is in POOR condition. Shattered slabs, edge spalls, and surface scaling are common throughout. The entire section of apron will eventually require replacement. The most severe areas are where the aircraft travel to and from the parking spots. Shattered slabs are common. If it cannot be done under one contract, recommend the inbound and outbound traffic lanes be replaced first, followed by the remainder of the apron. Recommend the AGL tables be consulted prior to using the apron.

SECTION V: CONCLUSIONS/RECOMMENDATIONS

1. LAJOYA AIR BASE

a. Joint sealant, where evident, is not properly functioning on virtually all PCC features. Recommend a major joint sealant replacement project be implemented.

b. Spalled joints are quite common. Recommend the severely spalled areas be repaired.

c. Diagonal cracks appear in the same general station on both the runway and Parallel Taxiway. Recommend the cracks be sealed.

d. The PCC cracks on the 17 end of the runway were repaired with rigid material after the concrete was chipped to sound material, resulting in a groove. Recommend these cracks be sawcut to establish a clean, vertical edge, and replaced with rigid material.

e. AGLs indicate no significant load restrictions on the tested pavements at LaJoya Air Base.

2. PISCO AIR BASE

a. Many PCC apron features are in POOR, or worse, condition. These pavements should be replaced.

b. Joint sealant is also in poor condition in many PCC pavements. Recommend a major joint sealant replacement project be implemented. Recommend the sealant be a hot-pour asphalt sealant.

c. Most PCC slabs on Feature T10A are shattered. Recommend this feature be replaced.

d. The south area of Feature T4A is structurally distressed. Recommend this area, approximately 800 square feet, be rebuilt.

e. Significant load restrictions should be placed on many of the pavement features at Pisco Air Base. Based on the AGL calculations, the weakest pavements includa Features T04A, A01B, and A02B. Recommend these pavements be structurally enhanced, and/or replaced, and the AGL tables consulted prior to loading these pavements.

SECTION VI: GLOSSARY

Allowable Gross Load (AGL) - The maximum aircraft load that can be supported by a pavement feature for a particular number of passes.

Base or Subbase Courses - Natural or processed materials placed on the subgrade beneath the pavement.

Compacted Subgrade - The upper part of the subgrade, which is compacted to a density greater than the portion of the subgrade below.

Feature - A unique portion of the airfield pavement distinguished by traffic area, pavement type, pavement surface thickness and strength, soil layer thicknesses and strengths, construction period, and surface condition.

Frost Evaluation - Pavement evaluation during the frost-melting period, when the pavement load-carrying capacity will be reduced unless protection has been provided against detrimental frost action in underlying soils.

Pass - On a runway, the movement of an aircraft over an imaginary line 500 feet down from the approach end. On a taxiway, the movement of an aircraft over an imaginary line connecting an apron with the runway. AFR 93-5, Chapter 2.

Pass Intensity Levels (PIL) - Specific repetitions of aircraft over a pavement feature, regardless of time, that are dependent on aircraft design category. AFR 93-5, Chapter 2.

Pavement Condition Index (PCI) - A numerical indicator between 0 and 100 that reflects the structural integrity and surface operational condition of the pavement. AFR 93-5, Chapter 3.

Primary Pavements - Those features that are absolutely necessary for mission aircraft operations. AFR 93-5, Chapter 4.

Subgrade - The natural soil in-place, or fill material, upon which a pavement, base, or subbase course is constructed.

Type A Traffic Areas - Type A Traffic Areas are those pavement facilities that receive the channelized traffic and full design weight of the aircraft. AFM 88-6, Chapter 1.

Type B Traffic Areas - Type B Traffic Areas are considered to be those areas where traffic is more nearly uniform over the full width of the pavement facility, but which receive the full design weight of the aircraft. AFM 88-6, Chapter 1.

Type C Traffic Areas - Type C Traffic Areas are considered to be those on which the volume of traffic is low or the applied weight of the operating aircraft is less than the design weight. AFM 88-6, Chapter 1.

PAVEMENT CONDITION EVALUATION TERMINOLOGY

CONDITION RATING	DEFINITION
EXCELLENT	PAVEMENT HAS MINOR OR NO DISTRESS AND WILL REQUIRE ONLY ROUTINE MAINTENANCE.
VERY GOOD	PAVEMENT HAS SCATTERED LOW SEVERITY DISTRESSES WHICH SHOULD NEED ONLY ROUTINE MAINTENANCE.
GOOD	PAVEMENT HAS A COMBINATION OF GENERALLY LOW AND MEDIUM SEVERITY DISTRESSES. MAINTENANCE AND REPAIR NEEDS SHOULD BE ROUTINE TO MAJOR IN THE NEAR-TERM.
FAIR	PAVEMENT HAS LOW, MEDIUM, AND HIGH SEVERITY DISTRESSES WHICH PROBABLY CAUSE SOME OPERATIONAL PROBLEMS. MAINTENANCE AND REPAIR NEEDS SHOULD RANGE FROM ROUTINE TO RECONSTRUCTION IN THE NEAR-TERM.
POOR	PAVEMENT HAS PREDOMINANTLY MEDIUM AND HIGH SEVERITY DISTRESSES CAUSING CONSIDERABLE MAINTENANCE AND OPERATIONAL PROBLEMS. NEAR-TERM MAINTENANCE AND REPAIR NEEDS WILL BE INTENSIVE.
VERY POOR	PAVEMENT HAS MAINLY HIGH SEVERITY DISTRESSES WHICH CAUSE OPERATIONAL RESTRICTIONS. REPAIR NEEDS ARE IMMEDIATE.
FAILED	PAVEMENT DETERIORATION HAS PROGRESSED TO THE POINT THAT SAFE AIRCRAFT OPERATIONS ARE NO LONGER POSSIBLE. COMPLETE RECONSTRUCTION IS REQUIRED.

SECTION VII: CONVERSION FACTORS

BRITISH TO INTERNATIONAL SYSTEMS (SI) OF UNITS

British units of measurements are used in this report and can be converted to SI (Metric) units as follows:

TO CONVERT	TO	MULTIPLY BY
LENGTH		
inch (in)	millimetre (mm)	25.400
inch (in)	metre (m)	0.0254
foot (ft)	metre (m)	0.305
yard (yd)	metre (m)	0.915
mile (mi)	kilometre (km)	1.609
AREA		
square inch (in^2)	square millimetre (mm^2)	645.2
square inch (in^2)	square metre (m^2)	0.0006452
square foot (ft^2)	square metre (m^2)	0.093
square yard (yd^2)	square metre (m^2)	0.8361
square mile (mi^2)	square kilometres (km^2)	2.59
acres	square kilometres (km^2)	0.004046
VOLUME		
cubic inch (in^3)	cubic millimetre (mm^3)	16487.0
cubic foot (ft^3)	cubic metre (m^3)	0.028
cubic yard (yd^3)	cubic metre (m^3)	0.7646
MASS		
pound (lb)	kilogram (kg)	0.454
FORCE		
pound (lb f)	newton (n)	4.448
kip (1000 lb f)	kilogram (kg)	453.6
STRESS		
pound per square inch (psi)	kilo Pascals (kPa)	6.895
MODULUS OF SUBGRADE REACTION (K-VALUE)		
pounds per square inch per inch (psi/in)	kilo Pascals per millimetre (kPa/mm)	0.2715
DEGREES		
degrees Fahrenheit(^oF) (F^o-32)	degrees Celsius (^oC)	5/9
DENSITY		
pounds per cubic foot (pounds mass)	kilogram per cubic meter (kg/m^3)	16.052

REFERENCES

1. AFM 89-3, Materials Testing, February 1971.

2. AFR 93-5, Airfield Pavement Evaluation Program, 18 May 1981.

3. FAA Advisory Circular 150/5335-5, Standardized Method of Reporting Airport Pavement Strength - PCN, 15 June 1983.

4. Hammitt, G. M. III, Concrete Strength Relationships, Research Paper, Texas A&M University, College Station, Texas, December 1971.

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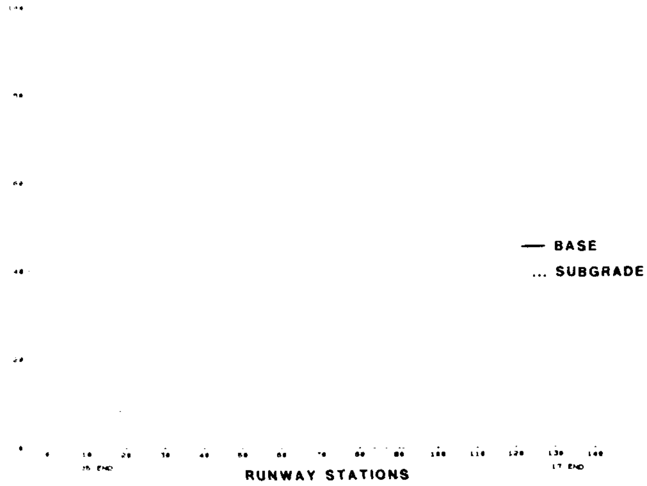
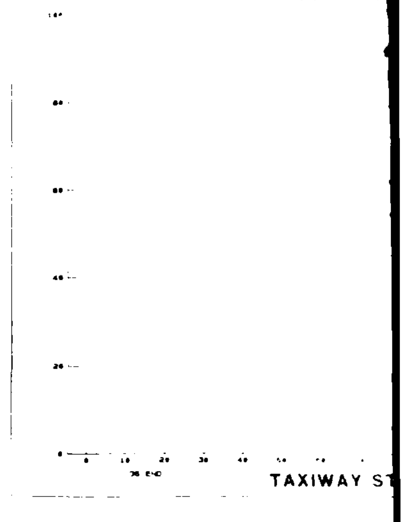
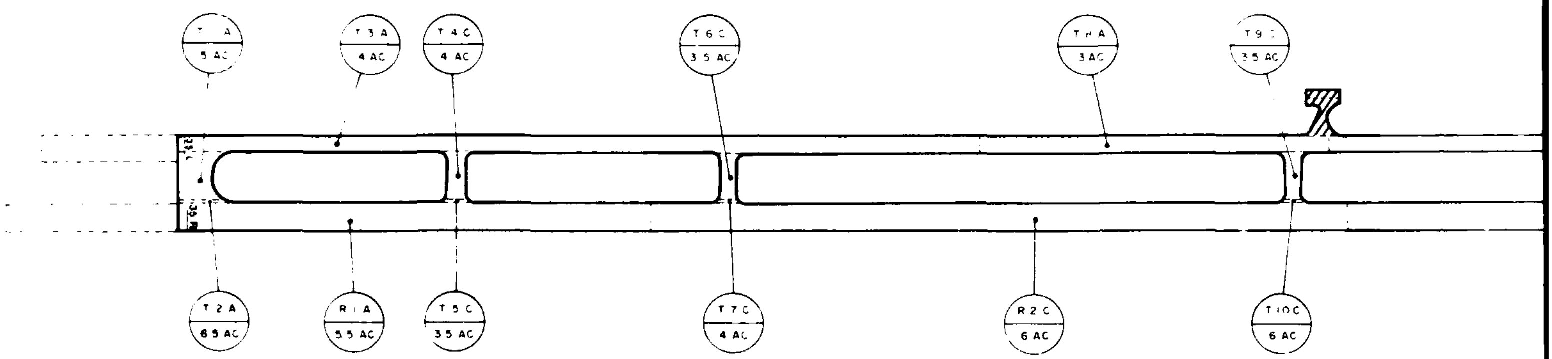
HQ USAF/LEEDM Washington DC 20330	2
HQ TAC/DE Langley AFB VA 23665-5000	4
HQ MAC/DE Scott AFB IL 62225-5001	2
HQ AFLC/DE Wright-Patterson AFB OH 45433-5000	2
HQ AFSPACECOM/DE Peterson AFB CO 80914-5000	1
AFIT/DEE Wright-Patterson AFB OH 45433-5000	1
DMA Aerospace Center Attn: DMAAC/ADP 3200 South Second Street St Louis AFS MO 63118	1
AUL Maxwell AFB AL 36112-5000	1
NAVFAC Division Attn: 04B1 200 Stovall Street Alexandria VA 22332	1
HQ DA (CEEC-EG) Pulaski Building 20 Massachusetts Ave., NW Washington DC 20314-1000	4
WESGP 3909 Halls Ferry Road Vicksburg MS 39180-6199	2

HQ USSOUTHCOM/SCEN APO Miami 34003-0015	10
HQ 12 AF/DE Bergstrom AFB, TX 78743-5002	4
CRREL-EG 72 Lyme Road Hanover NH 03755-1290	2
CERL-FOM P.O. Box 4005 Champaign IL 61820-1305	2
HQ AFESC/TIC Tyndall AFB, FL 32403-6001	1
HQ USAF/LEEI Washington DC 20330-5130	1
HQ USAF/LEEP Washington, D.C. 20330	1
HQ AFESC/DEMP Tyndall AFB FL 32403-6001	15

LAJOYA







LEGEND

R 2 A / 13 PCC — FEATURE DESIGNATION (SEE NOTE 1) / PAVEMENT THICKNESS IN INCHES & TYPE

TYPE OF FEATURE

- R — RUNWAY
- T — TAXIWAY
- A — APRON

TYPE TRAFFIC AREA (SEE NOTE 2)

- A — A TYPE TRAFFIC
- B — B TYPE TRAFFIC
- C — C TYPE TRAFFIC

...... CHANGE IN FEATURE DESIGNATION

PCC PORTLAND CEMENT CONCRETE

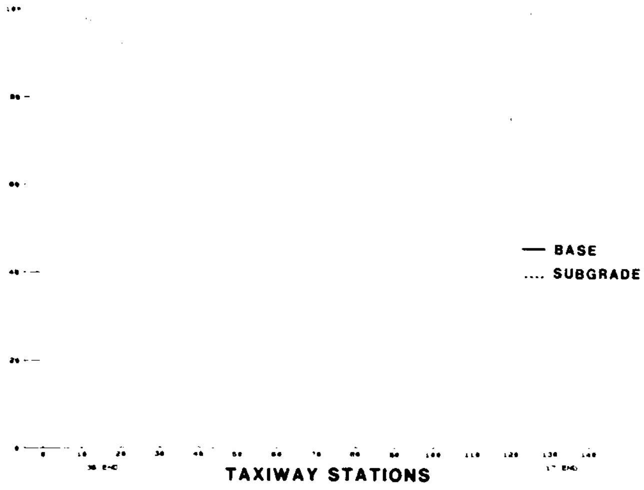
AC ASPHALTIC CONCRETE

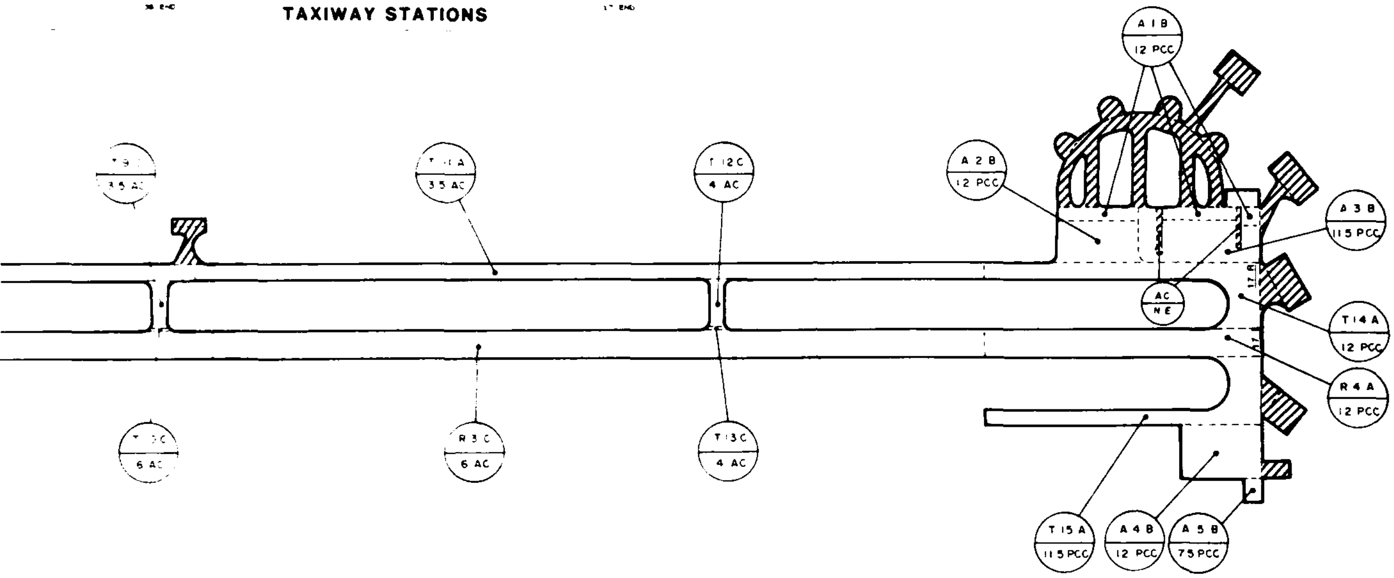
NOT EVALUATED (N.E)

NOTES

1. FEATURE DESIGNATION DENOTES … FEATURE FOR GIVEN FEATURE T…
2. TRAFFIC AREA DESIGNATION A…
3. FEATURE DESIGNATIONS DO NO… FROM PREVIOUS REPORTS AND …

CBR SOIL STRENGTH PROFILE, PARALLEL TAXIWAY
LAJOYA AB, PERU

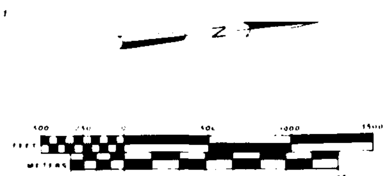




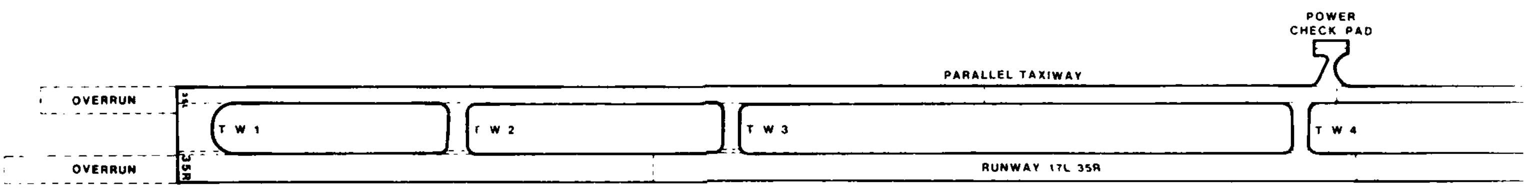
...SEE NOTE 1
...NESS IN INCHES & TYPE

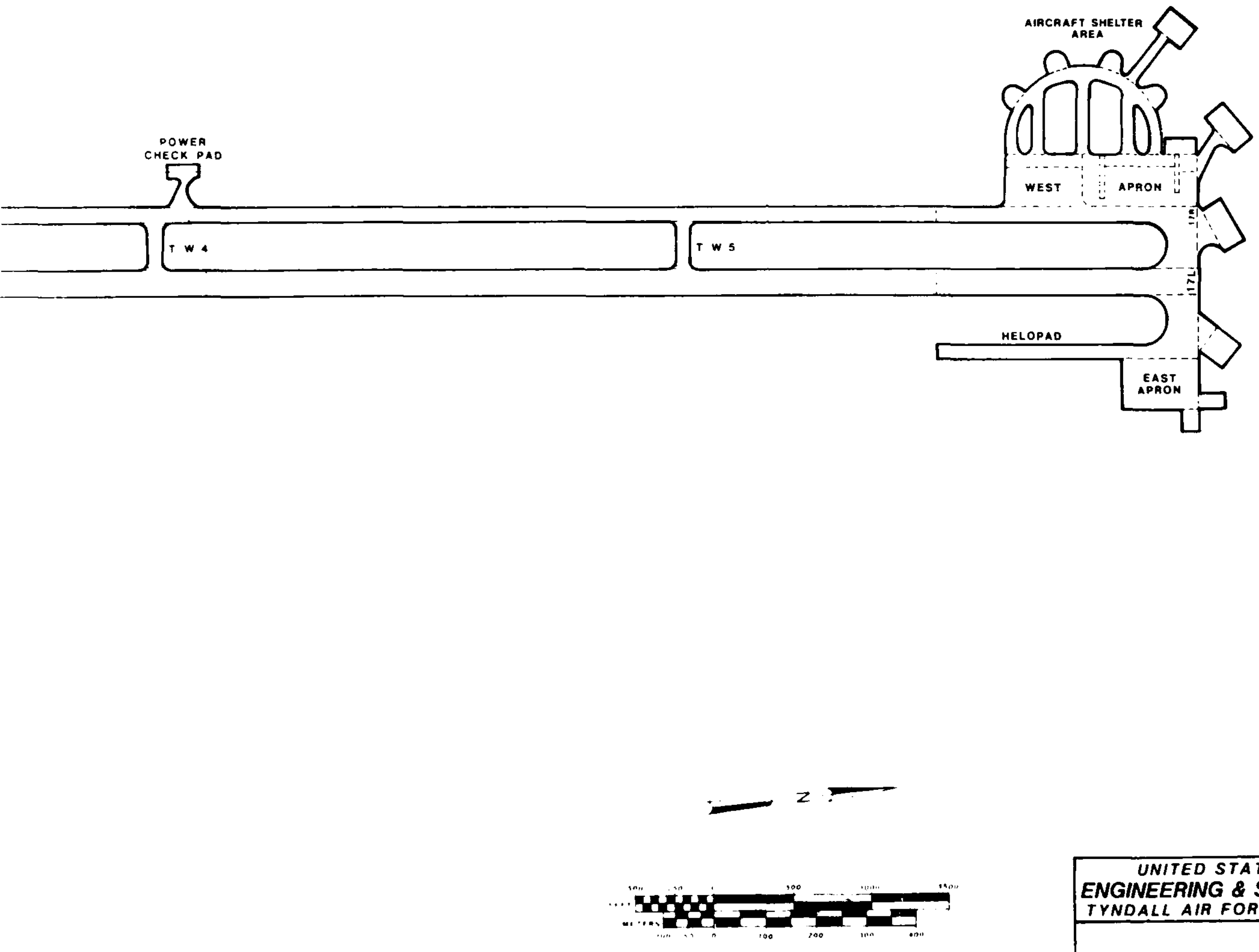
NOTES

1. FEATURE DESIGNATION DENOTES TYPE OF FEATURE, NUMBER OF FEATURE FOR GIVEN FEATURE TYPE AND TYPE TRAFFIC AREA
2. TRAFFIC AREA DESIGNATIONS ARE BASED ON AFM 88 - 6, CHAPTER 1
3. FEATURE DESIGNATIONS DO NOT CORRESPOND WITH THOSE FROM PREVIOUS REPORTS AND DRAWINGS

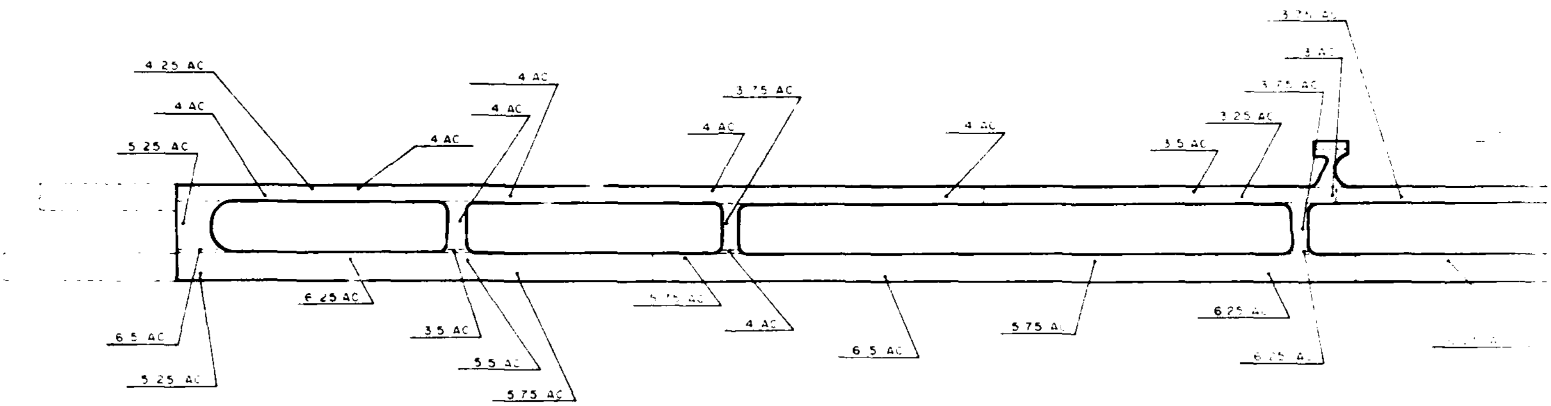


UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
AIRFIELD LAYOUT PLAN MARIANO MELGAR AIR BASE, LA JOYA PERU		
ENGINEER: GABRIELSON	DATE: NOV 89	DRAWING NUMBER: APPENDIX A
DRAWN: SANTIAGO	SCALE: GRAPHIC	SHEET 1 OF 2


POWER
CHECK PAD
PARALLEL TAXIWAY
OVERRUN
OVERRUN
T W 1
T W 2
T W 3
T W 4
35R
RUNWAY 17L 35R

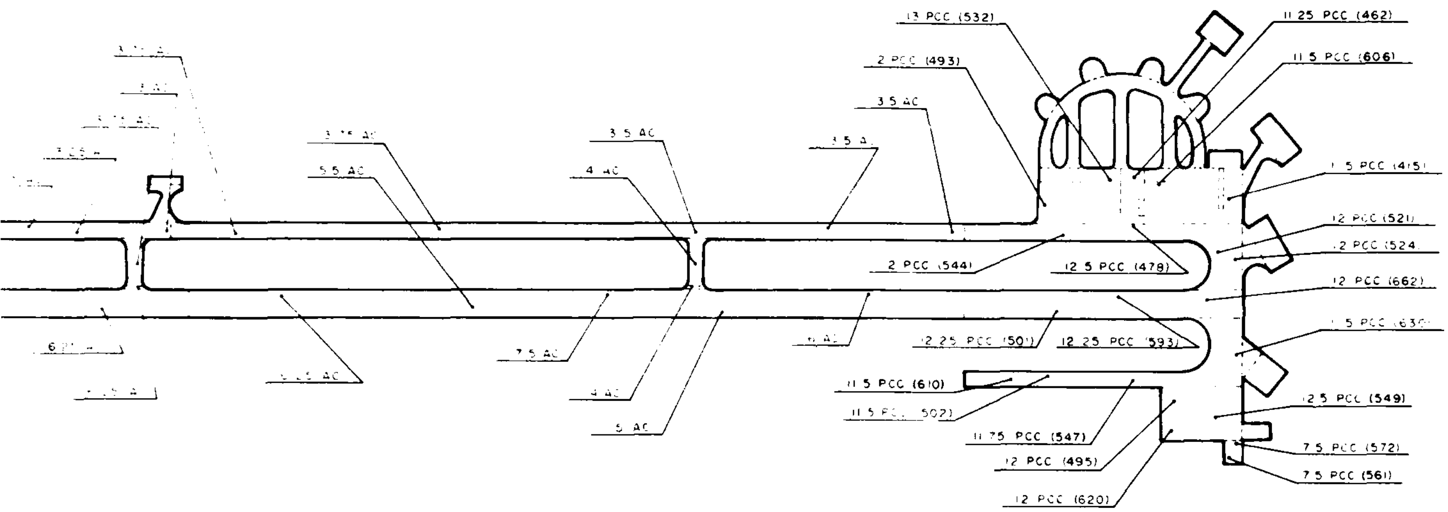


UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
AIRFIELD DESIGNATIONS MARIANO MELGAR AIR BASE, LA JOYA PERU		
ENGINEER GABRIELSON	DATE NOV 89	DRAWING NUMBER APPENDIX A
DRAWN LaHUE	SCALE GRAPHIC	SHEET 2 OF 2



LEGEND

7.5 AC 8.5 PC
CORE LOCATION, PA
TYPE PAVEMENT AN
CONCRETE FOR PC

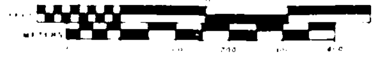


LEGEND

7.5 AC / 8.5 PCC (576)

CORE LOCATION, PAVEMENT THICKNESS IN INCHES, TYPE PAVEMENT, AND FLEXURAL STRENGTH OF CONCRETE FOR PCC CORES.

N

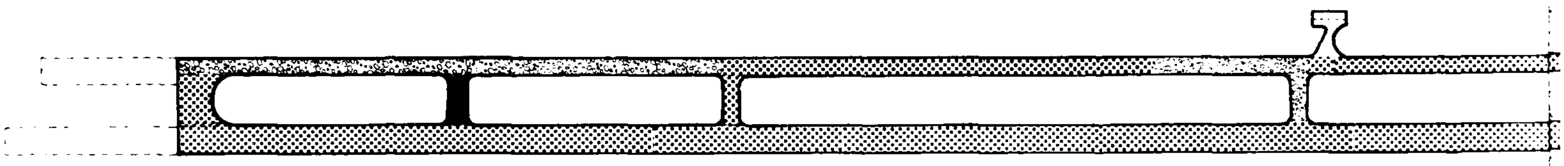


UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDALL AIR FORCE BASE, FLORIDA

CORE LOCATIONS

MARIANO MELGAR AIR BASE, LA JOYA PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX C
DRAWN: LaHUE	SCALE: GRAPHIC	SHEET 1 OF 1

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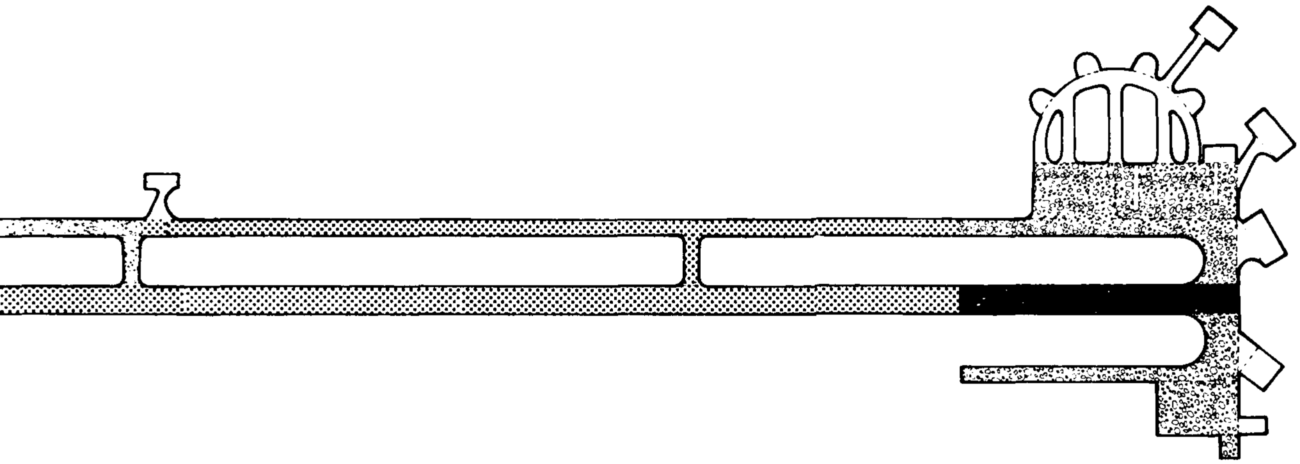
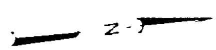
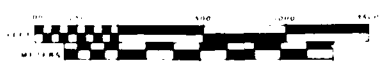


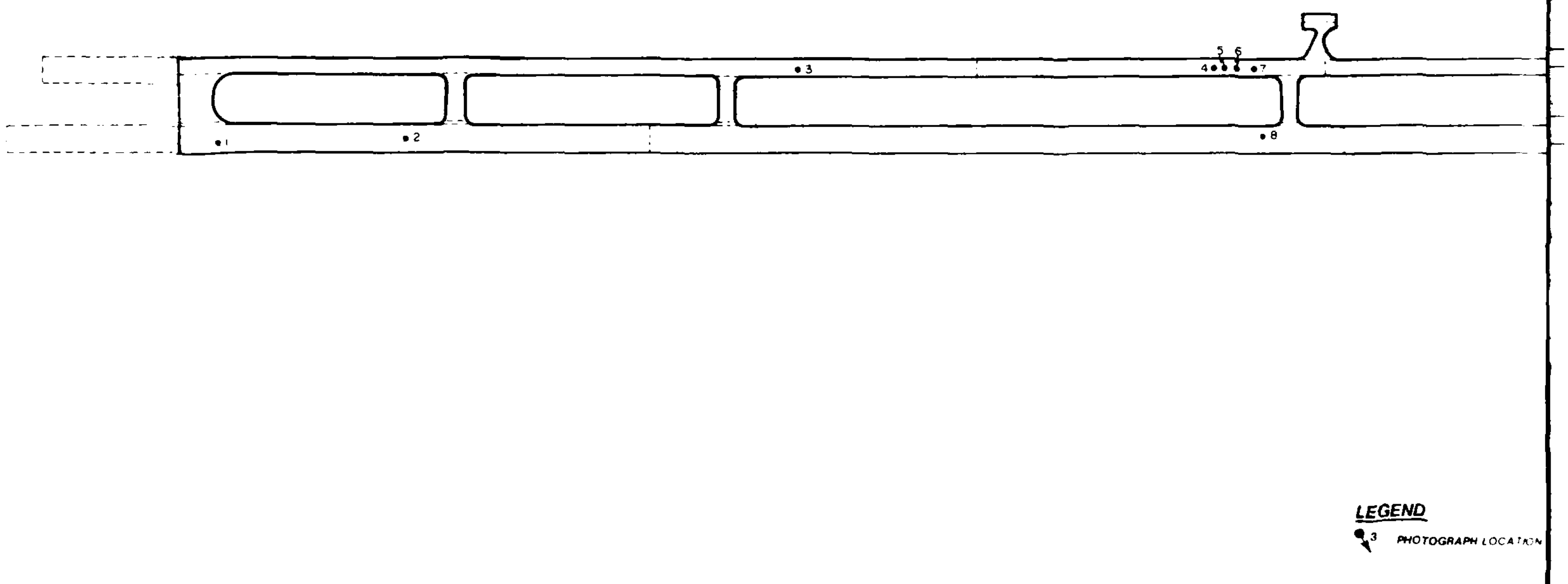
LEGEND

- EXCELLENT
- VERY GOOD
- GOOD
- FAIR
- NOT EVALUATED





UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
CONDITION SURVEY MARIANO MELGAR AIR BASE, LA JOYA PERU		
ENGINEER GABRIELSON	DATE NOV 89	DRAWING NUMBER APPENDIX D
DRAWN LaHUE	SCALE GRAPHIC	SHEET 1 OF 4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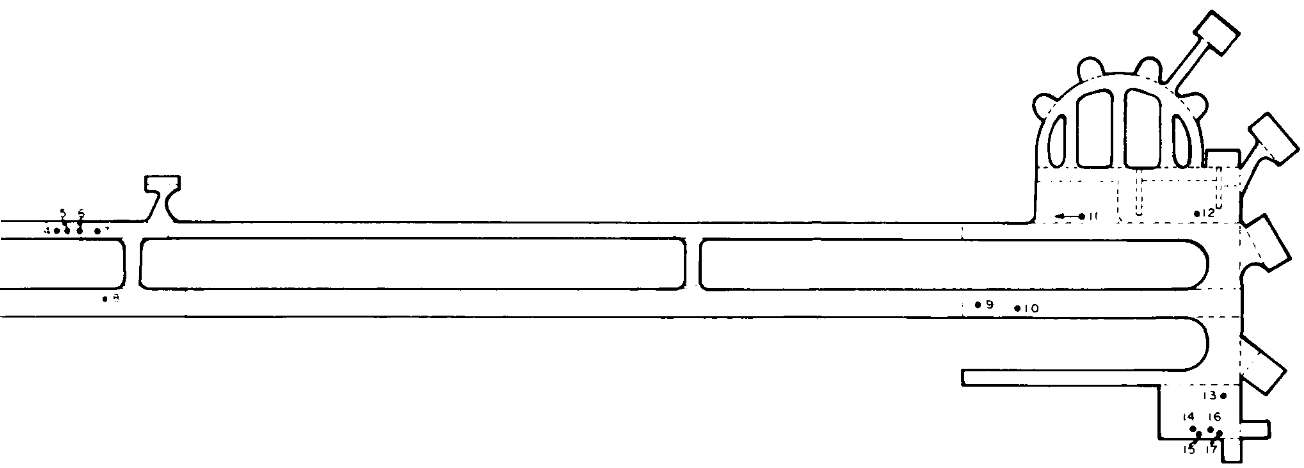
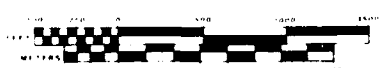
LEGEND
3 PHOTOGRAPH LOCATION



LEGEND

PHOTOGRAPH LOCATION, DIRECTION, AND NUMBER



UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDALL AIR FORCE BASE, FLORIDA

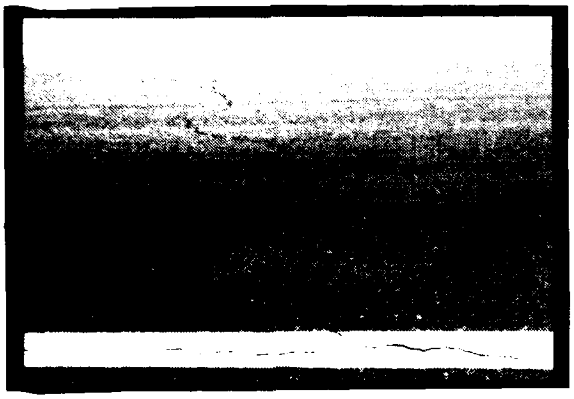
PHOTOGRAPH LOCATIONS

MARIANO MELGAR AIR BASE, LA JOYA PERU

ENGINEER GABRIELSON	DATE NOV 89	DRAWING NUMBER APPENDIX D
DRAWN LaHUE	SCALE GRAPHIC	SHEET 2 OF 4

PHOTO 1: Typical patchwork on runway showing excessive asphalt in seal coat and ungulating AC surface.

PHOTO 2: Tire mark in AC patch where asphalt sealant was placed. Excessive asphalt sealant typical in isolated spots on the runway.



PHOTOS 4-7: Diagonal cracks extending across the entire taxiway. Cracks are most likely a result of earth movement and not aircraft loadings. Recommend the cracks be sealed.

PHOTO 5

PHOTO 7

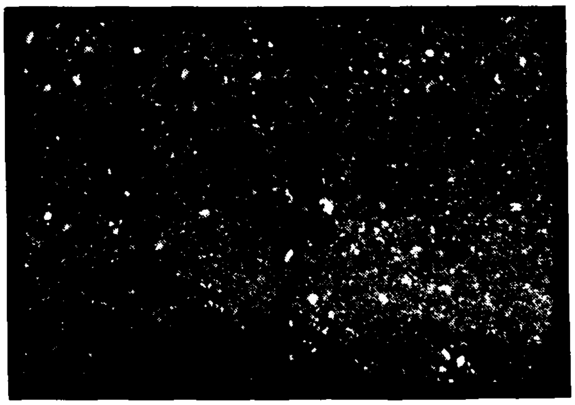


PHOTO 8: Close-up of diagonal runway crack similar to those located on the Parallel Taxiway. Cracks on the runway and taxiway are located in line, indicating subsurface movement.

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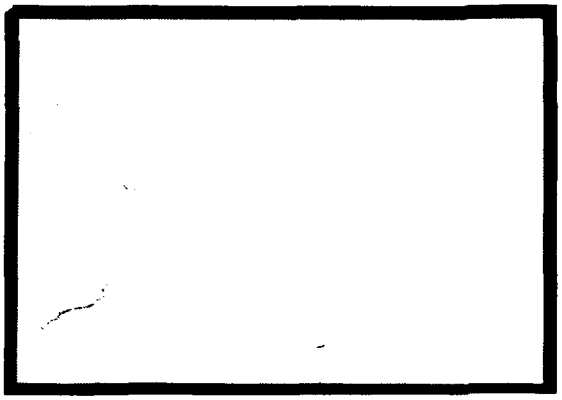


PHOTO 3: Longitudinal, environmental, and load-related cracks limited to the outer 3 paving lanes of the Parallel Taxiway. This is common to both sides, but isolated to the Parallel between Taxiways 4 and 5.

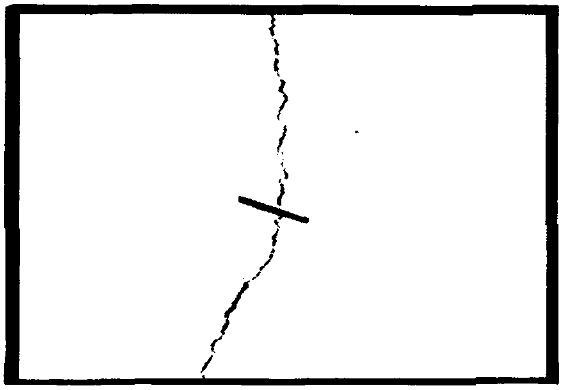


PHOTO 6

runway crack
parallel
and taxiway
subsurface

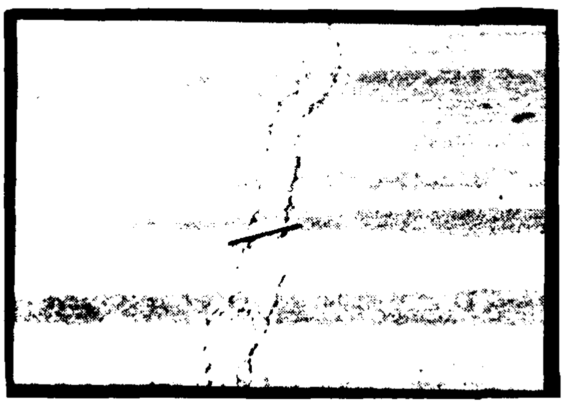


PHOTO 9: "Repaired" transverse cracks that were chipped to sound material and filled with PCC. Pavement is spalled around the rigid material.

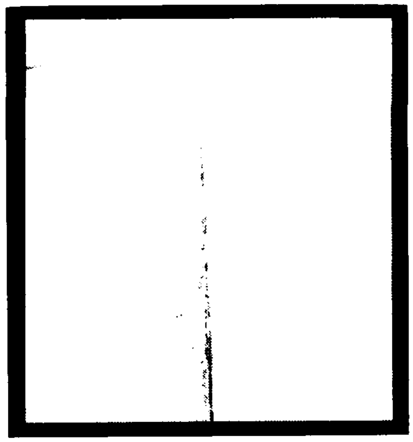
UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDALL AIR FORCE BASE, FLORIDA

PHOTOGRAPHS

MARIANO MELGAR AIR BASE, LA JOYA PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX D
DRAWN: LeHUE	SCALE: N/A	SHEET 3 OF 4

PHOTOS 10 & 11: Spalled joints on PCC apron. Joint sealant missiong in most of the PCC. Recommend the distresses be sawcut, material removed, and replaced with new PCC.



PHOTOS 11

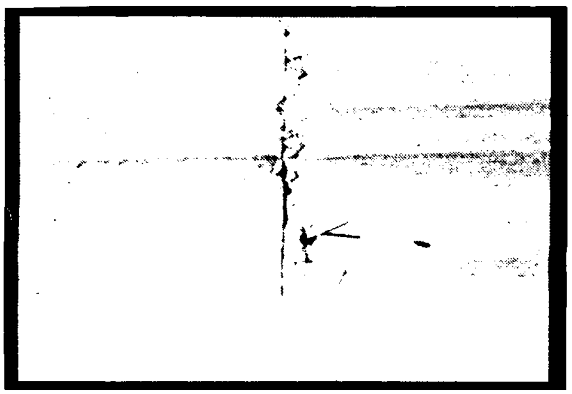


PHOTO 13: High severity joint spall. Joint should be repaired like that recommended in Photos 10 and 11.

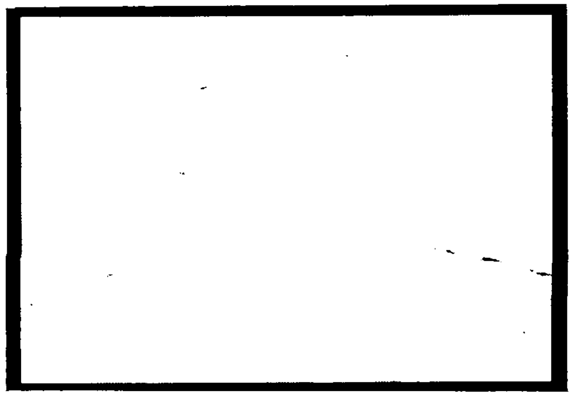


PHOTO 14: Intersecting PCC slab cracks caused from excessive slab dimensions. Recommend the cracks be sealed to minimize moisture and debris infiltrating the pavement.

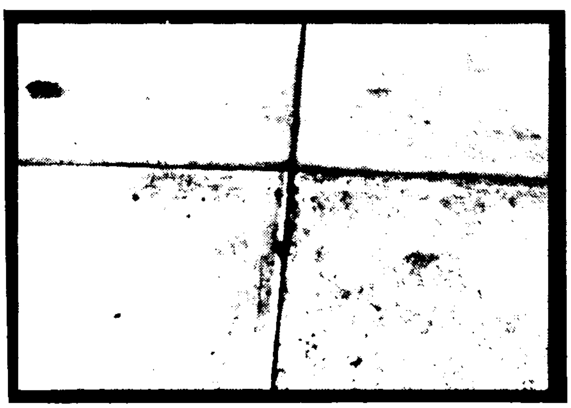


PHOTO 16: Nonexistent joint sealant typical of many PCC pavements.

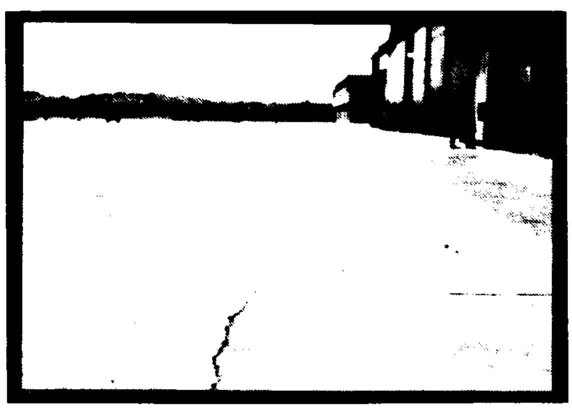


PHOTO 17: Evenly spaced cracks extending the length of the apron and isolated to a row of slabs. This type of distress is associated with the vibration and consolidation during construction. Recommend the cracks be cleaned and sealed.

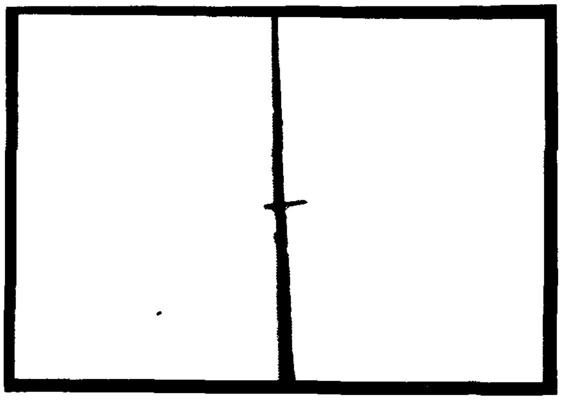


PHOTO 12: Excessively wide joint with no joint sealant.

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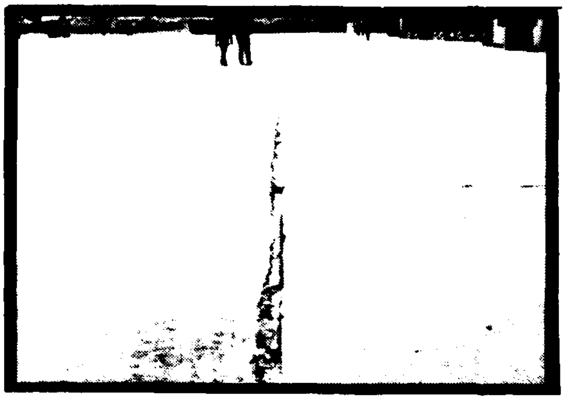
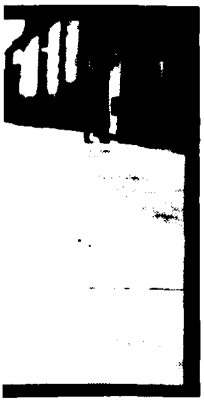


PHOTO 15: Spalled transverse joints which may be a caused from incompressibles prohibiting slab movement resulting in joint spalls.



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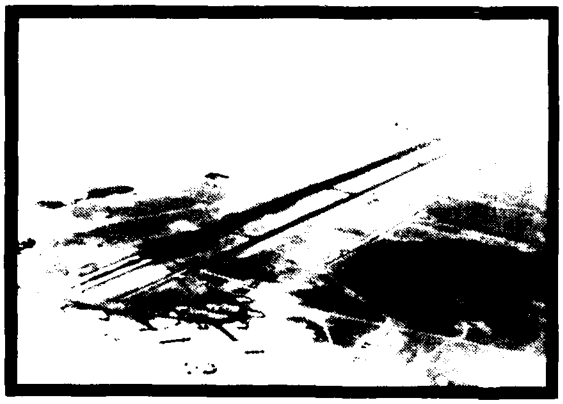


PHOTO 18: LaJoya Air Base pavements.

UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
PHOTOGRAPHS MARIANO MELGAR AIR BASE, LA JOYA PERU		
ENGINEER: GABRIELSON	DATE: NOV 89	DRAWING NUMBER: APPENDIX D
DRAWN: LaHUE	SCALE: N/A	SHEET 4 OF 4

SUMMARY OF PHYSICAL PROPERTY DATA

FACILITY					OVERLAY PAVEMENT			PAVEMENT			BASE			SUBBASE			SUBGRADE	
FEAT	IDENT	LGTH (ft)	WDTH (ft)	GEN COND	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E K/CBR	THICK (in)	DESCRP	1000E CBR	DESCRP	1000E K/CBR
R01A	RUNWAY 17L/35R 35 END	2825	175	VERY GOOD			—	5.5	AC	—	18.0	SM	—/100			—	SM	—/50
R02C	RUNWAY 17L/35R	4100	175	VERY GOOD			—	6.0	AC	—	18.0	SM	—/100			—	SM	—/35
R03C	RUNWAY 17L/35R	4575	175	VERY GOOD			—	6.0	AC	—	18.0	SM	—/100			—	SM	—/75
R04A	RUNWAY 17L/35R 17 END	1650	175	FAIR			—	12.0	PCC	—/600	12.0	SM	—/500			—	SM	—
T01A	T/W 1	275	200	VERY GOOD			—	5.0	AC	—	18.0	SM	—/95			—	SM	—/45
T02A	R/W 35 TRANS. TO T/W 1	200	25	GOOD			—	6.5	AC	—	18.0	SM	—/95			—	SM	—/45
T03A	PARALLEL TAXIWAY	4750	100	GOOD			—	4.0	AC	—	18.0	SM	—/95			—	SM	—/45
T04C	T/W 2	275	100	EXC.			—	4.0	AC	—	18.0	SM	—/95			—	SM	—/45
T05C	TRANS FROM R/W TO T/W 2	100	25	EXC.			—	3.5	AC	—	18.0	SM	—/95			—	SM	—/45
T06C	T/W 3	275	100	VERY GOOD			—	3.5	AC	—	18.0	SM	—/95			—	SM	—/45
T07C	TRANS. FROM R/W TO T/W 3	100	25	VERY GOOD			—	4.0	AC	—	18.0	SM	—/95			—	SM	—/45
T08A	PARALLEL TAXIWAY	2100	100	GOOD			—	3.0	AC	—	18.0	SM	—/100			—	SM	—/25
T09C	T/W 4	275	100	GOOD			—	3.5	AC	—	18.0	SM	—/100			—	SM	—/25

LAJOYA

FACILITY					OVERLAY PAVEMENT			PAVEMENT			BASE			SUBBASE			SUBGRADE	
FEAT	IDENT	LGTH (ft)	WDTH (ft)	GEN COND	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E K/CBR	THICK (in)	DESCRP	1000E CBR	DESCRP	1000E K/CBR
T10C	TRANS. FROM R/W TO T/W 4	100	25	GOOD			—	6.0	AC	—	18.0	SM	100			—	SM	35
T11A	PARALLEL TAXIWAY	4700	100	VERY GOOD			—	3.5	AC	—	18.0	SM	100			—	SM	25
T12C	T/W 5	275	100	VERY GOOD			—	4.0	AC	—	18.0	SM	100			—	SM	25
T13C	TRANS. FROM R/W TO T/W 5	100	35	VERY GOOD			—	4.0	AC	—	18.0	SM	100			—	SM	25
T14A	PARALLEL TAXIWAY 17 END	2000	100	GOOD			—	12.0	PCC	520	18.0	SM	450			—	SM	—
T15A	HELOPAD	2000	100	GOOD			—	11.5	PCC	550	12.0	SM	450			—	SM	—
A01B	WEST APRON	1050	100	GOOD			—	12.0	PCC	530	12.0	SM	350			—	SM	—
A02B	WEST APRON	475	300	GOOD			—	12.0	PCC	500	12.0	SM	375			—	SM	—
A03B	WEST APRON	750	300	GOOD			—	11.5	PCC	450	12.0	SM	400			—	SM	—
A04B	EAST APRON	500	350	GOOD			—	12.0	PCC	550	12.0	SM	450			—	SM	—
A05B	HANGAR ACCESS APRON	150	100	GOOD			—	7.5	PCC	560	12.0	SM	450			—	SM	—

SUMMARY OF ALLOWABLE GROSS LOADS IN BRITISH UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KIPS FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
R01A	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
P02C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
R03C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
R04A	I	+	+	107	+	+	+	+	+	440	+	+	+	369
	II	+	+	+	+	+	+	+	+	+	+	+	+	480
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T01A	I	+	+	+	+	+	+	+	+	431	+	+	+	431
	II	+	+	+	+	+	+	+	+	458	+	+	+	476
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T02A	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T03A	I	+	+	102	+	+	+	+	+	351	+	+	+	349
	II	+	+	113	+	+	+	+	+	370	+	+	+	391
	III	+	+	+	+	+	+	+	+	407	+	+	+	435
	IV	+	+	+	+	+	+	+	+	470	+	+	+	+
T04C	I	+	+	+	+	+	+	+	+	479	+	+	+	469
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T05C	I	+	+	+	+	+	+	+	+	427	+	+	+	418
	II	+	+	+	+	+	+	+	+	454	+	+	+	454
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T06C	I	+	+	+	+	+	+	+	+	427	+	+	+	418
	II	+	+	+	+	+	+	+	+	454	+	+	+	454
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T07C	I	+	+	+	+	+	+	+	+	479	+	+	+	469
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T08A	I	+	56	88	+	+	248	+	313	293	+	500	632	290
	II	+	63	95	+	+	+	+	+	306	+	537	671	312
	III	+	+	102	+	+	+	+	+	332	+	+	736	349
	IV	+	+	115	+	+	+	+	+	376	+	+	+	411

LAJOYA

SUMMARY OF ALLOWABLE GROSS LOADS IN BRITISH UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KIPS FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
T09C	I	+	+	+	+	+	+	+	+	450	+	+	+	440
	II	+	+	+	+	+	+	+	+	478	+	+	+	478
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T10C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T11A	I	+	+	107	+	+	+	+	+	369	+	+	+	367
	II	+	+	119	+	+	+	+	+	390	+	+	+	401
	III	+	+	+	+	+	+	+	+	429	+	+	+	458
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T12C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T13C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T14A	I	+	+	96	+	+	+	164	+	350	+	+	+	292
	II	+	+	112	+	+	+	+	+	404	+	+	+	371
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T15A	I	+	+	85	+	+	+	163	+	352	+	+	+	292
	II	+	+	111	+	+	+	+	+	408	+	+	+	370
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A01B	I	+	+	82	+	+	145	153	+	321	+	+	+	256
	II	+	+	106	+	+	+	+	+	365	+	+	+	316
	III	+	+	+	+	+	+	+	+	447	+	+	+	413
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A02B	I	+	+	80	+	+	143	151	+	316	+	+	+	252
	II	+	+	105	+	+	+	+	+	361	+	+	+	313
	III	+	+	+	+	+	+	+	+	445	+	+	+	414
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A03B	I	+	64	70	+	+	126	133	318	283	+	581	778	224
	II	+	+	92	+	+	+	159	+	325	+	+	+	279
	III	+	+	112	+	+	+	+	+	403	+	+	+	374
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A04B	I	+	+	100	+	+	+	+	+	398	+	+	+	318
	II	+	+	+	+	+	+	+	+	461	+	+	+	406
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A05B	I	56	44	50	+	88	94	100	266	240	605	486	653	[illegible]
	II	+	59	66	+	106	113	120	310	276	711	+	+	220
	III	+	+	80	+	+	+	159	+	345	+	+	+	302
	IV	+	+	112	+	+	+	+	+	470	+	+	+	441

LAJOYA

SUMMARY OF ALLOWABLE GROSS LOADS IN METRIC UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KILOGRAMS x 1000 FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
R01A	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
P02C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
R03C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
R04A	I	+	+	48	+	+	+	+	+	199	+	+	+	167
	II	+	+	+	+	+	+	+	+	+	+	+	+	217
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T01A	I	+	+	+	+	+	+	+	+	195	+	+	+	195
	II	+	+	+	+	+	+	+	+	207	+	+	+	216
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T02A	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T03A	I	+	+	46	+	+	+	+	+	159	+	+	+	158
	II	+	+	51	+	+	+	+	+	167	+	+	+	172
	III	+	+	+	+	+	+	+	+	184	+	+	+	197
	IV	+	+	+	+	+	+	+	+	213	+	+	+	+
T04C	I	+	+	+	+	+	+	+	+	217	+	+	+	212
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T05C	I	+	+	+	+	+	+	+	+	193	+	+	+	189
	II	+	+	+	+	+	+	+	+	206	+	+	+	206
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T06C	I	+	+	+	+	+	+	+	+	193	+	+	+	189
	II	+	+	+	+	+	+	+	+	206	+	+	+	206
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T07C	I	+	+	+	+	+	+	+	+	217	+	+	+	212
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T08A	I	+	25	39	+	+	67	+	142	133	+	227	286	131
	II	+	28	43	+	+	+	+	+	138	+	243	304	141
	III	+	+	46	+	+	+	+	+	150	+	+	334	159
	IV	+	+	52	+	+	+	+	+	170	+	+	+	186

LAJOYA

SUMMARY OF ALLOWABLE GROSS LOADS IN METRIC UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KILOGRAMS x 1000 FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
T09C	I	+	+	+	+	+	+	+	+	204	+	+	+	199
	II	+	+	+	+	+	+	+	+	217	+	+	+	217
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T10C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T11A	I	+	+	48	+	+	+	+	+	167	+	+	+	166
	II	+	+	54	+	+	+	+	+	177	+	+	+	182
	III	+	+	+	+	+	+	+	+	194	+	+	+	207
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T12C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T13C	I	+	+	+	+	+	+	+	+	+	+	+	+	+
	II	+	+	+	+	+	+	+	+	+	+	+	+	+
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T14A	I	+	+	39	+	+	+	74	+	158	+	+	+	132
	II	+	+	50	+	+	+	+	+	183	+	+	+	168
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
T15A	I	+	+	38	+	+	+	74	+	159	+	+	+	132
	II	+	+	50	+	+	+	+	+	185	+	+	+	167
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A01B	I	+	+	37	+	+	65	69	+	148	+	+	+	116
	II	+	+	48	+	+	+	+	+	165	+	+	+	143
	III	+	+	+	+	+	+	+	+	202	+	+	+	187
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A02B	I	+	+	36	+	+	64	68	+	143	+	+	+	114
	II	+	+	47	+	+	+	+	+	163	+	+	+	142
	III	+	+	+	+	+	+	+	+	202	+	+	+	187
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A03B	I	+	29	31	+	+	57	60	144	128	+	263	353	101
	II	+	+	41	+	+	+	72	+	147	+	+	+	126
	III	+	+	50	+	+	+	+	+	182	+	+	+	169
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A04B	I	+	+	45	+	+	+	+	+	180	+	+	+	144
	II	+	+	+	+	+	+	+	+	209	+	+	+	184
	III	+	+	+	+	+	+	+	+	+	+	+	+	+
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A05B	I	25	19	22	+	39	42	45	170	108	274	220	296	[illegible]
	II	+	26	29	+	48	51	54	140	125	322	+	+	99
	III	+	+	36	+	+	+	72	+	156	+	+	+	137
	IV	+	+	50	+	+	+	+	+	217	+	+	+	209

LAJOYA

PAVEMENT CLASSIFICATION NUMBERS (PCN)

BASED ON 50,000 PASSES OF GROUP INDEX 9 AIRCRAFT

LAJOYA AIR BASE PERU

FEATURE	PCN
R01A	104/F/A/X/T
R02C	162/F/A/X/T
R03C	162/F/A/X/T
R04A	100/R/A/X/T
T01A	88/F/A/X/T
T02A	119/F/A/X/T
T03A	70/F/A/X/T
T04C	99/F/A/X/T
T05C	87/F/A/X/T
T06C	87/F/A/X/T
T07C	99/F/A/X/T
T08A	56/F/A/X/T
T09C	92/F/A/X/T
T10C	162/F/A/X/T
T11A	74/F/A/X/T
T12C	105/F/A/X/T
T13C	105/F/A/X/T
T14A	77/R/A/X/T
T15A	79/R/A/X/T
A01B	76/R/B/X/T
A02B	75/R/B/X/T
A03B	60/R/A/X/T
A04B	89/R/A/X/T
A05B	50/R/A/X/T

AIRCRAFT GROUP INDEX

LIGHT LOAD			MEDIUM LOAD							HEAVY LOAD		
1	2	3	4	5	6	7	8	9	10	11	12	13
A-37 C-12 C-21 *C-23 T-37	A-7 A-10 F-4 F-5 *F-15 F-16 F-10X T-33 T-38 T-39 OV-10 C-20	*F-111 FB-111	C-130	C-7 *C-9 DC9. C-140	737 *T-43	*727 C-22	707 *E-3 C-135 *KC-135 VC-137 DC-8 EC-18 A-300 B-767	C-141 *B-1 B-757	C-5	*KC-10 DC10 L1011 C-17	747 *E-4 VC-25	B-52

* CONTROLLING AIRCRAFT

GROSS WEIGHT LIMITS FOR AIRCRAFT GROUPS

	1	2	3	4	5	6	7	8	9	10	11	12	13
	PAVEMENT CAPACITY IN KIPS												
LOWEST POSSIBLE GROSS WEIGHT	5	7	49	69	22	61	92	60	150	325	240	334	180
HIGHEST POSSIBLE GROSS WEIGHT	25	81	114	175	121	125	210	400	477	840	590	850	488
	PAVEMENT CAPACITY IN KILOGRAMS x 1000												
LOWEST POSSIBLE GROSS WEIGHT	2	3	22	31	10	28	42	27	68	147	109	151	82
HIGHEST POSSIBLE GROSS WEIGHT	11	37	52	79	55	57	95	181	216	381	267	385	221

PASS INTENSITY LEVEL

LEVEL	Groups 1–3	Groups 4–10	Groups 11–13
I	300,000 PASSES	50,000 PASSES	15,000 PASSES
II	50,000 PASSES	15,000 PASSES	3,000 PASSES
III	15,000 PASSES	3,000 PASSES	500 PASSES
IV	3,000 PASSES	500 PASSES	100 PASSES

NOTES

IN REFERENCE TO THE ALLOWABLE GROSS LOAD (AGL) TABLE:

- ***A*** *Denotes lowest possible empty gross weight of any aircraft within the group exceeds the AGL of the pavement. Pavement cannot support aircraft for respective pass intensity level.*
- ***◆*** *Denotes no weight restrictions. AGL of the pavement exceeds the greatest possible gross weight of any aircraft in the group.*

Pass intensity levels I and II are used with reduced subgrade strengths to determine the maximum allowable loads during the frost-melt period.

UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDLL AIR FORCE BASE, FLORIDA

RELATED DATA

ENGINEER	DATE	DRAWING NUMBER
N/A	NOV 88	APPENDIX G
DRAWN: L. BASTIAN	SCALE: N/A	SHEET 1 OF __

LA JOYA, PERU

TOPOGRAPHY

La Joya is located 24 miles inland from the South Pacific Ocean in a desert environment. Mountains lie 20 miles to the north through south southeast. The elevations range from 12,000 feet in the north to 5,000 feet in the southeast.

VISIBILITY

There are no significant restrictions to visibility.

SEVERE WEATHER

As La Joya is located in southern Peru there is no significant weather. La Joya has a mean annual precipitation rate of less than 10 inches.

CLIMATOLOGICAL DATA

	J	F	M	A	M	J	J	A	S	O	N	D	ANN	YRS REC
TEMPERATURE (°F)														
HIGHEST	88	88	93	87	80	84	81	84	86	82	82	93	93	14
MEAN DAILY MAX	80	80	79	75	71	67	65	66	68	71	74	77	73	14
MEAN DAILY MIN	65	66	64	60	57	54	52	53	54	56	59	62	59	14
LOWEST	57	57	53	40	40	35	42	33	41	39	39	41	33	14
MEAN NO. OF DAYS														
MAX TEMP ≥ 90 °F	0	0	*	0	0	0	0	0	0	0	0	0	*	14
MIN TEMP ≤ 32 °F	0	0	0	0	0	0	0	0	0	0	0	0	0	14
PRECIPITATION														
MEAN (INCHES)	.2	.1	T	0	0	0	0	0	0	0	0	0	.3	9
MEAN NO OF DAYS ≥ 0.5 IN	1	*	*	0	0	0	0	0	0	0	0	0	1	9
SNOWFALL														
MEAN (INCHES)	0	0	0	0	0	0	0	0	0	0	0	0	0	9
MEAN NO OF DAYS ≥ 6 IN	0	0	0	0	0	0	0	0	0	0	0	0	0	9
RELATIVE HUMIDITY (%)														
MEAN	69	68	69	73	77	80	81	80	79	75	72	70	74	14

MAXIMUM 24 HOUR PRECIPITATION

0.70 INCHES 9 YEARS OF RECORD

MAXIMUM 24 HOUR SNOWFALL

0 INCHES 9 YEARS OF RECORD

FLYING WEATHER ANNUAL PERCENTAGES FOR VARIOUS CATEGORIES

A. CEILING ≥ 1000 FEET AND VISIBILITY ≥ 3 MILES 96.3 %

B. CEILING 500-900 FEET AND VISIBILITY ≥ 1 MILE OR VISIBILITY ≥ 1 MILE BUT < 3 MILES AND CEILING ≥ 1000' 2.7 %

C. CEILING < 500 FEET AND OR VISIBILITY < 1 MILE 1.0 %

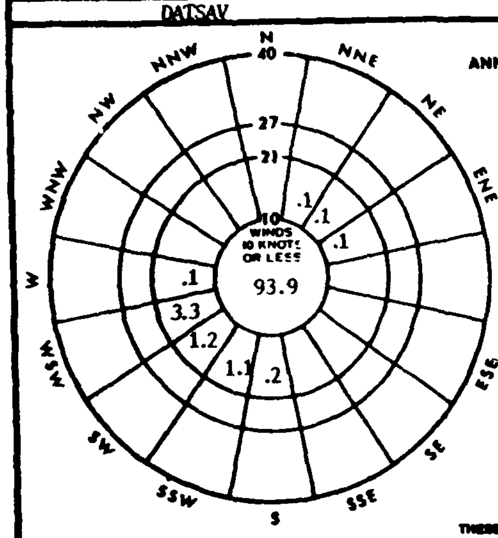
D. INSTRUMENT. CEILING ≥ 200 FEET AND VISIBILITY ≥ 1/2 MILE. AND EITHER CEILING < 1500 FEET OR VISIBILITY < 3 MILES 7.3 %

SOURCE OF DATA NATIONAL INTELLIGENCE SURVEY DATSAV

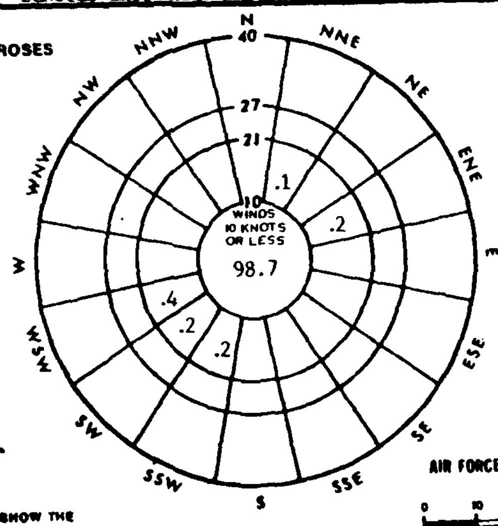
☆ DENOTES LESS THAN 0.5 DAY

T DENOTES LESS THAN 0.05 INCH

ANNUAL WIND ROSES



ALL WEATHER



INSTRUMENT

NOTE: THESE WIND ROSES SHOW THE TOTAL % OF WINDS BY SPEED GROUP AND DIRECTION BASED ON TRUE BEARING.

ANNUAL WIND COVERAGE TABULATION

RUNWAYS OR COMBINATIONS FOR CROSSWIND COMPONENT 10 KNOTS OR LESS

RUNWAY DIAGRAM	MAGNETIC MARK	TRUE BEARING	LENGTH IN FEET	(1)	(2)
RUNWAY DATA NOT AVAILABLE					

INSTRUMENT RUNWAY

(1) WIND COVERAGE (%) ALL WEATHER

(2) WIND COVERAGE (%) INSTRUMENT

ADDITIONAL DATA

FIELD ELEVATION 4100 FEET MSL

MAGNETIC VARIATION

SOURCE

YEAR

ENGINEERING WEATHER DATA

AIR CONDITIONING DESIGN AND CRITERIA DATA (SEE AFM 88-8, CHAP 6)

WINTER HEATING DESIGN TEMPERATURE (SEE AFM 88-8, CHAP 6)

MEAN WINTER WIND SPEED 2.6 KNOTS

MEAN ANNUAL NUMBER OF HEATING DEGREE DAYS 659 (SEE AFR 91-?)

PRESSURE ALTITUDE AND TEMPERATURE DATA FOR DETERMINING REQUIRED RUNWAY LENGTHS (SEE AFM 86-2)

EXTREME WIND DATA FOR CONSTRUCTION DESIGN (SEE AFM 88-3, CHAP 1)

SNOW LOAD DATA FOR ROOF CONSTRUCTION (SEE AFM 88-3, CHAP 1)

MAXIMUM FROST PENETRATION (SEE AFM 88-3, CHAP 1)

MEAN ANNUAL COOLING DEGREE DAYS 1026

NOTICE WHEN NECESSARY, INTERPRETATIONS OF THESE DATA SHOULD BE SECURED THROUGH THE LOCAL STAFF WEATHER OFFICER

AIR FORCE RUNWAY WIND COMPUTER (SEE AFM 86-6)

0 10 21 27 40 KNOTS

12 24 31 46 MPH

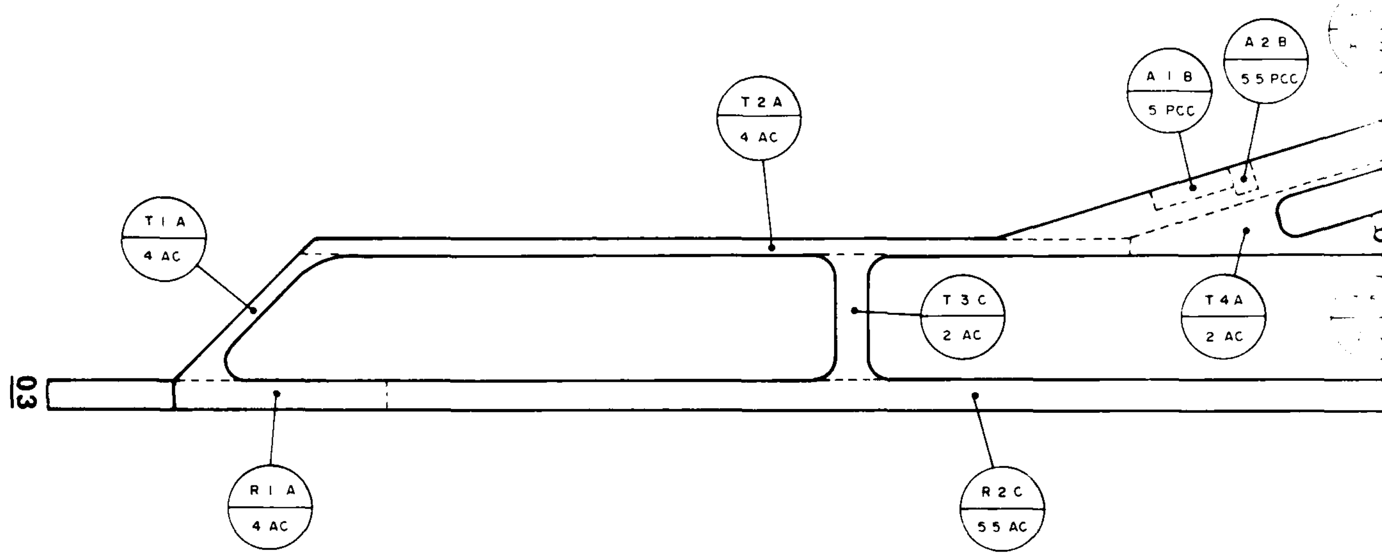
LA JOYA PERU
16° 43' S 071° 5?' W
ELEVATION 4100 ft
PREPARED BY USAFETAC
MAR 1989

TAB I

FORM REVISED 1 DEC

USAFETAC Form 49 MAY 86

PISCO



LEGEND

R2A / 13 PCC — FEATURE DESIGNATION (SEE NOTE 1) / PAVEMENT THICKNESS IN INCHES & TYPE

TYPE OF FEATURE

- R — RUNWAY
- T — TAXIWAY
- A — APRON

TYPE TRAFFIC AREA (SEE NOTE 2)

- A — A TYPE TRAFFIC
- B — B TYPE TRAFFIC
- C — C TYPE TRAFFIC

······ CHANGE IN FEATURE DESIGNATION

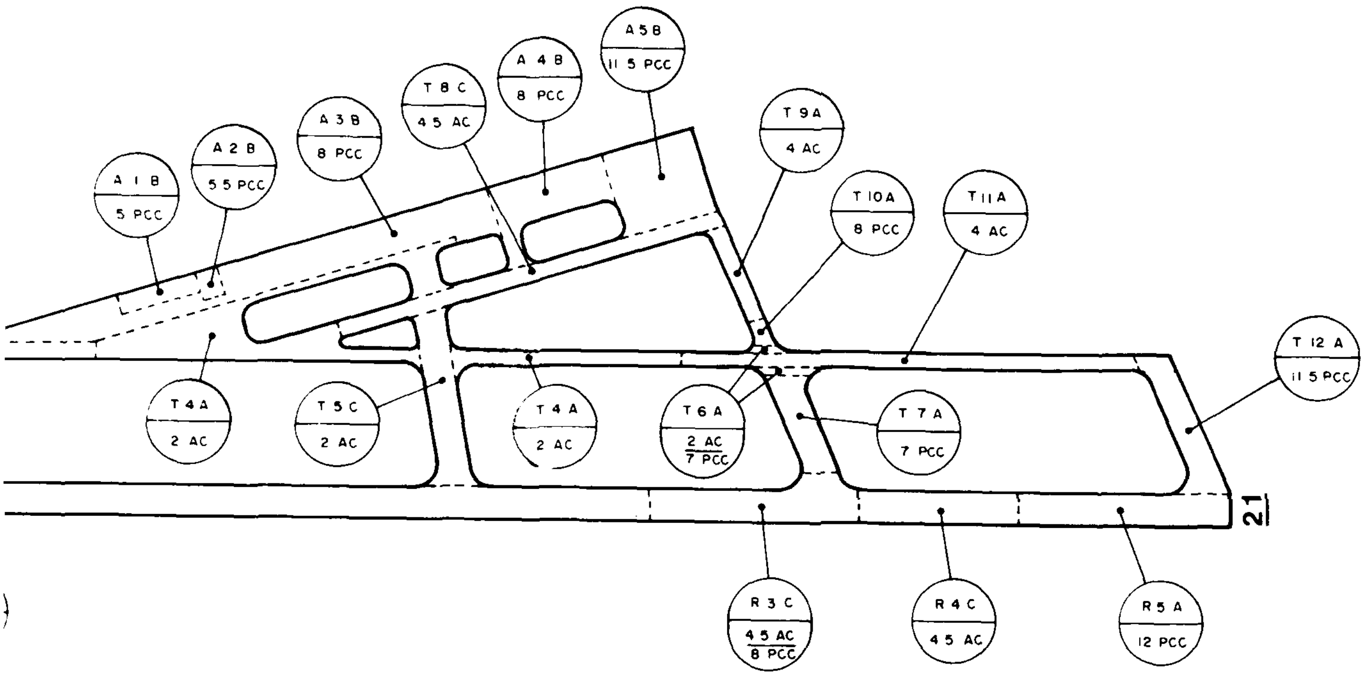
PCC PORTLAND CEMENT CONCRETE

AC ASPHALTIC CONCRETE

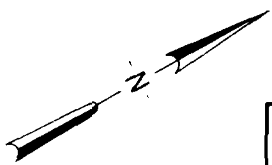
NOTES

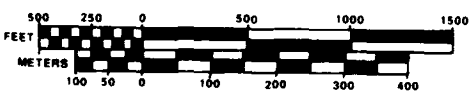
1. FEATURE DESIGNATION DENOTES TYPE OF FEATURE, NUMBER OF FEATURE FOR GIVEN FEATURE TYPE AND TYPE TRAFFIC AREA.
2. TRAFFIC AREA DESIGNATIONS ARE BASED ON AFM 88 – 6, CHAPTER
3. FEATURE DESIGNATIONS DO NOT CORRESPOND WITH THOSE FROM PREVIOUS REPORTS AND DRAWINGS.

500
FEET
METERS
10



DENOTES TYPE OF FEATURE, NUMBER OF
TURE TYPE AND TYPE TRAFFIC AREA.
IONS ARE BASED ON AFM 88 – 6, CHAPTER 1.
DO NOT CORRESPOND WITH THOSE
S AND DRAWINGS.



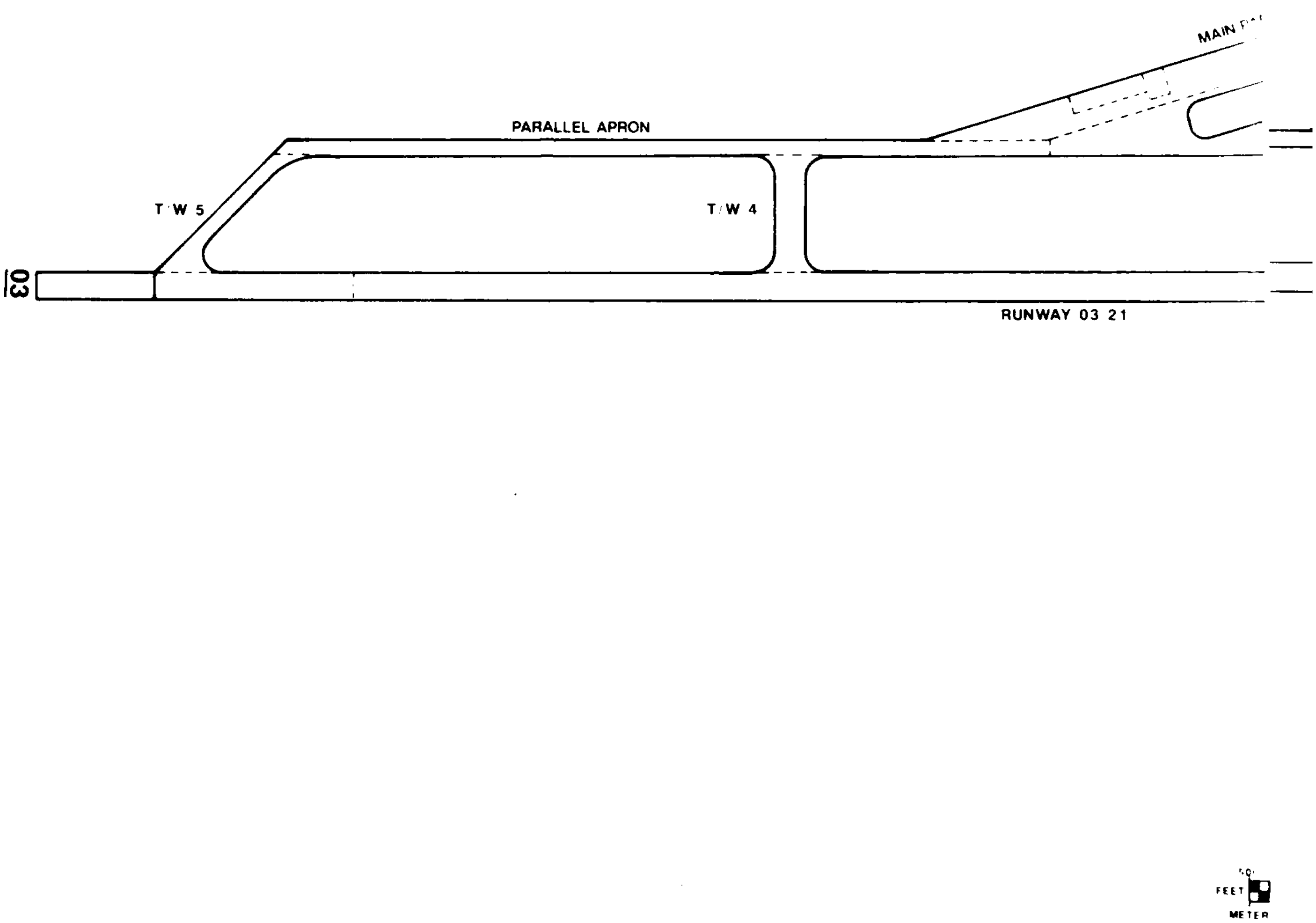


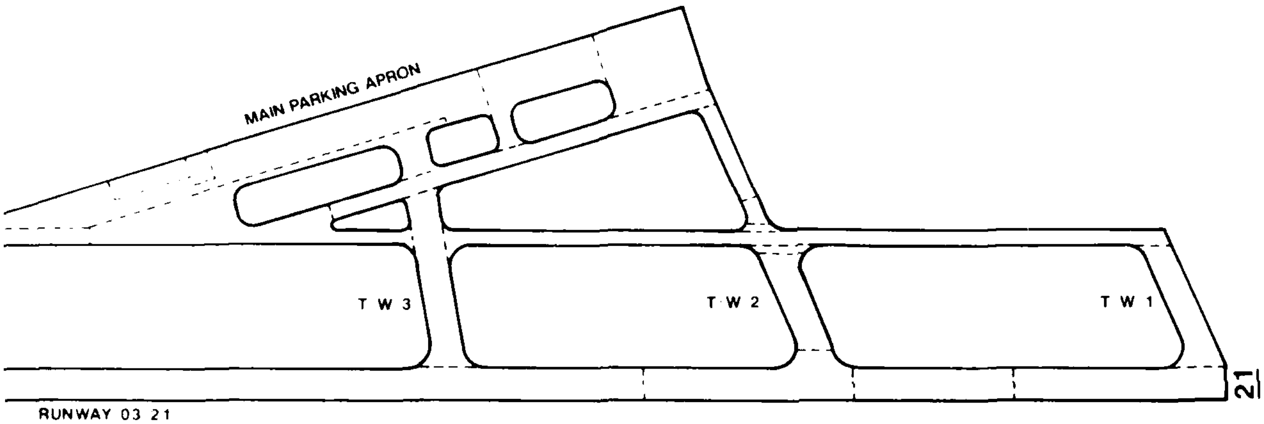
UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDALL AIR FORCE BASE, FLORIDA

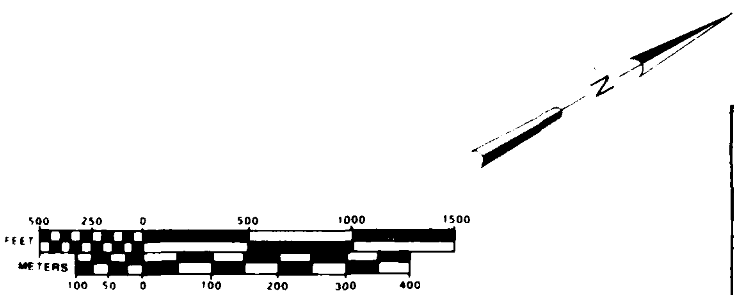
AIRFIELD LAYOUT PLAN

PISCO AIR BASE, PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX A
DRAWN SANTIAGO	SCALE GRAPHIC	SHEET 1 OF 2


MAIN
PARALLEL APRON
T/W 5
T/W 4
03
RUNWAY 03 21
FEET
METER





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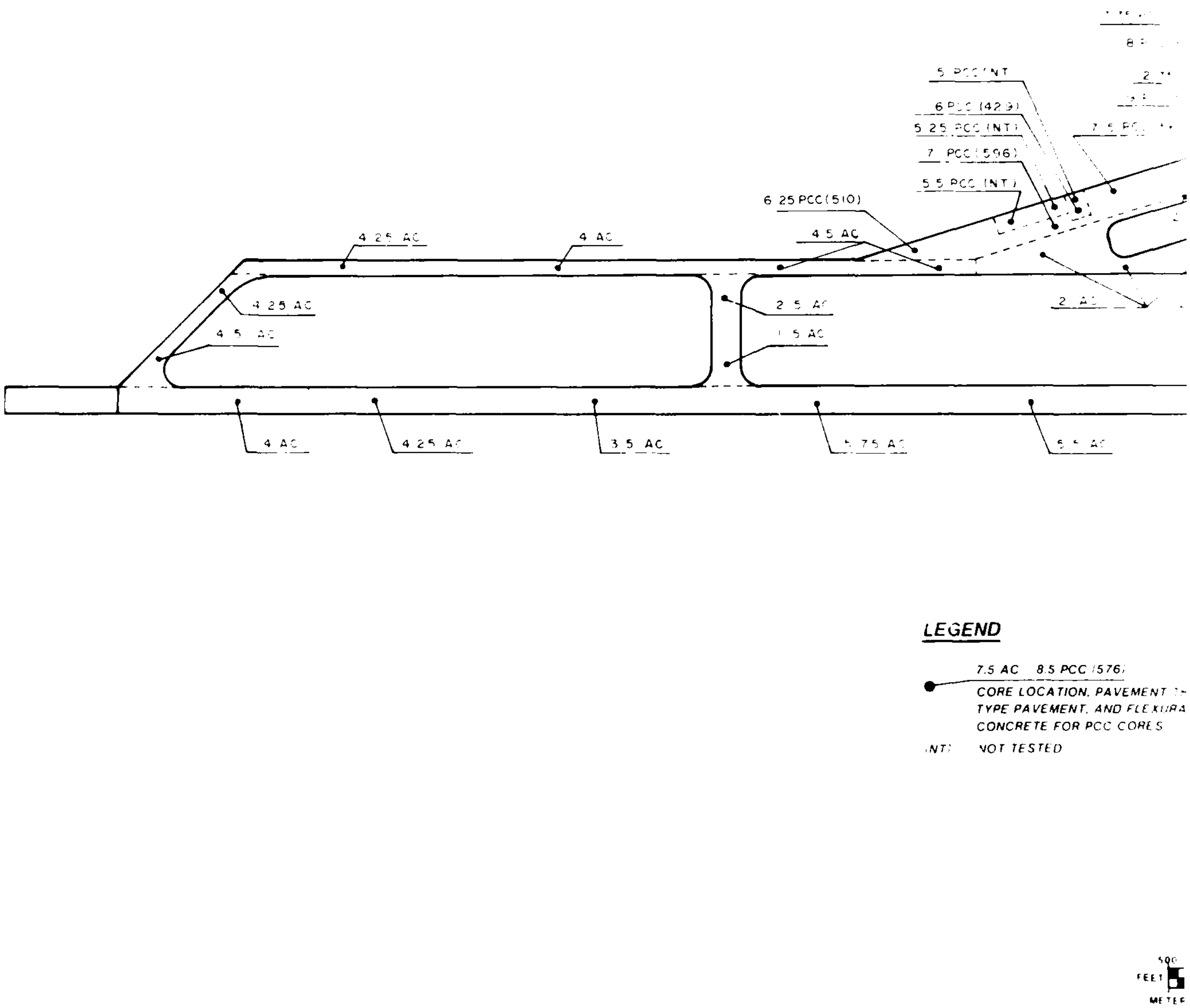
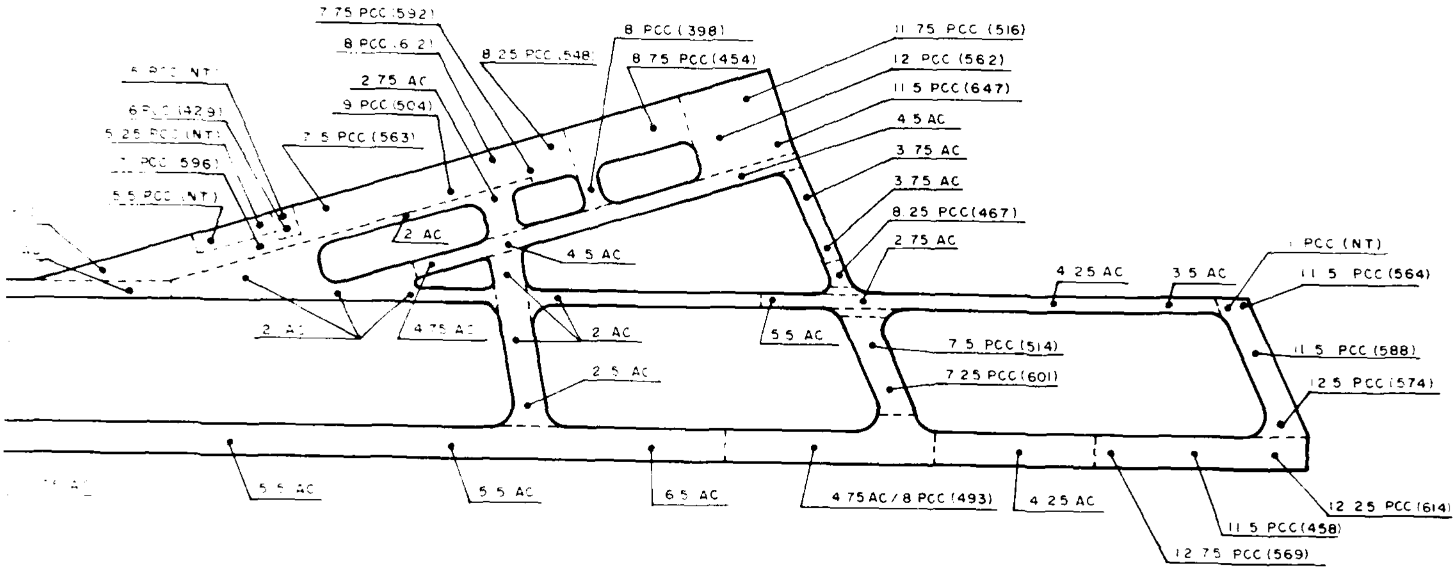
AIRFIELD DESIGNATIONS

PISCO AIR BASE, PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX A
DRAWN SANTIAGO	SCALE GRAPHIC	SHEET 2 OF 2



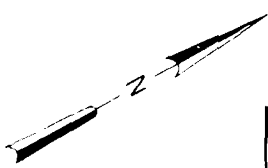
7 PCC (596)
5.5 PCC (NT)
6.25 PCC (510)
4.5 AC
4.25 AC
4 AC
4.25 AC
4.5 AC
2.5 AC
4 AC
4.25 AC
3.5 AC
LEGEND
7.5 AC 8.5 PCC (576)
CORE LOCATION, PAVEMENT
TYPE PAVEMENT, AND FLEXURA
CONCRETE FOR PCC CORES
(NT) NOT TESTED
FEET

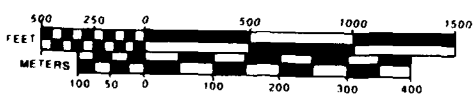


LEGEND

7.5 AC 8.5 PCC (576)
CORE LOCATION, PAVEMENT THICKNESS IN INCHES, TYPE PAVEMENT, AND FLEXURAL STRENGTH OF CONCRETE FOR PCC CORES

NT NOT TESTED





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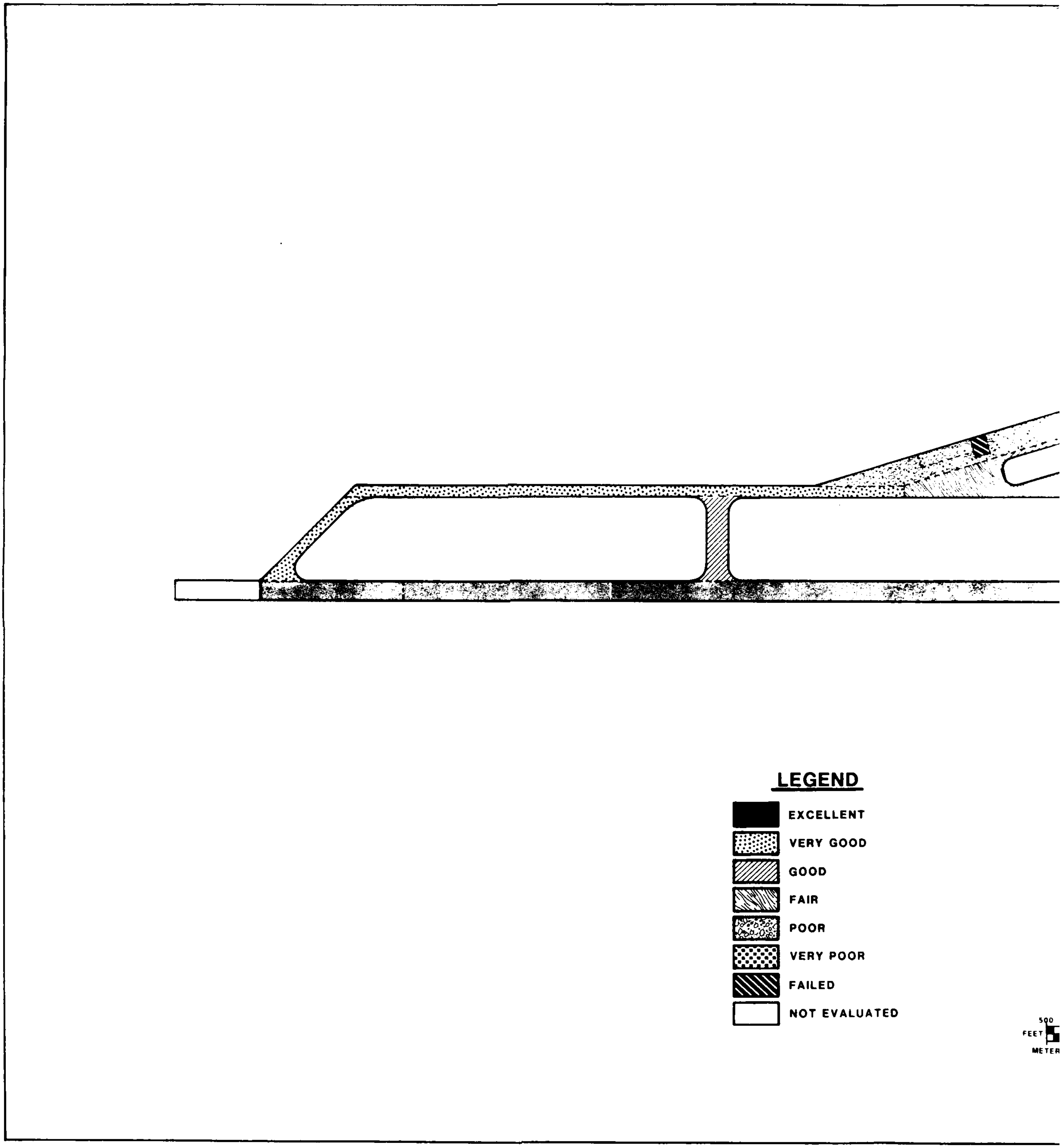
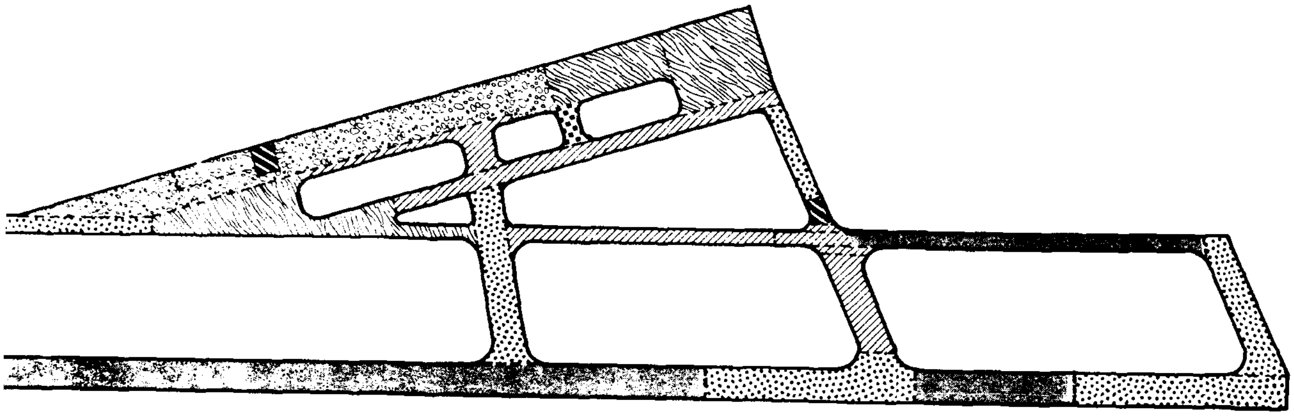
CORE LOCATIONS

PISCO AIR BASE, PERU

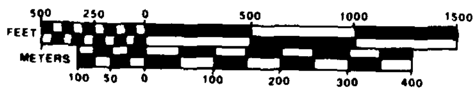
ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX C
DRAWN	SCALE	
SANTIAGO	GRAPHIC	SHEET 1 OF 1


LEGEND
EXCELLENT
VERY GOOD
GOOD
FAIR
POOR
VERY POOR
FAILED
NOT EVALUATED
500
FEET
METER



GEND

CELLENT
RY GOOD
OD
IR
OR
RY POOR
ILED
T EVALUATED



UNITED STATES AIR FORCE
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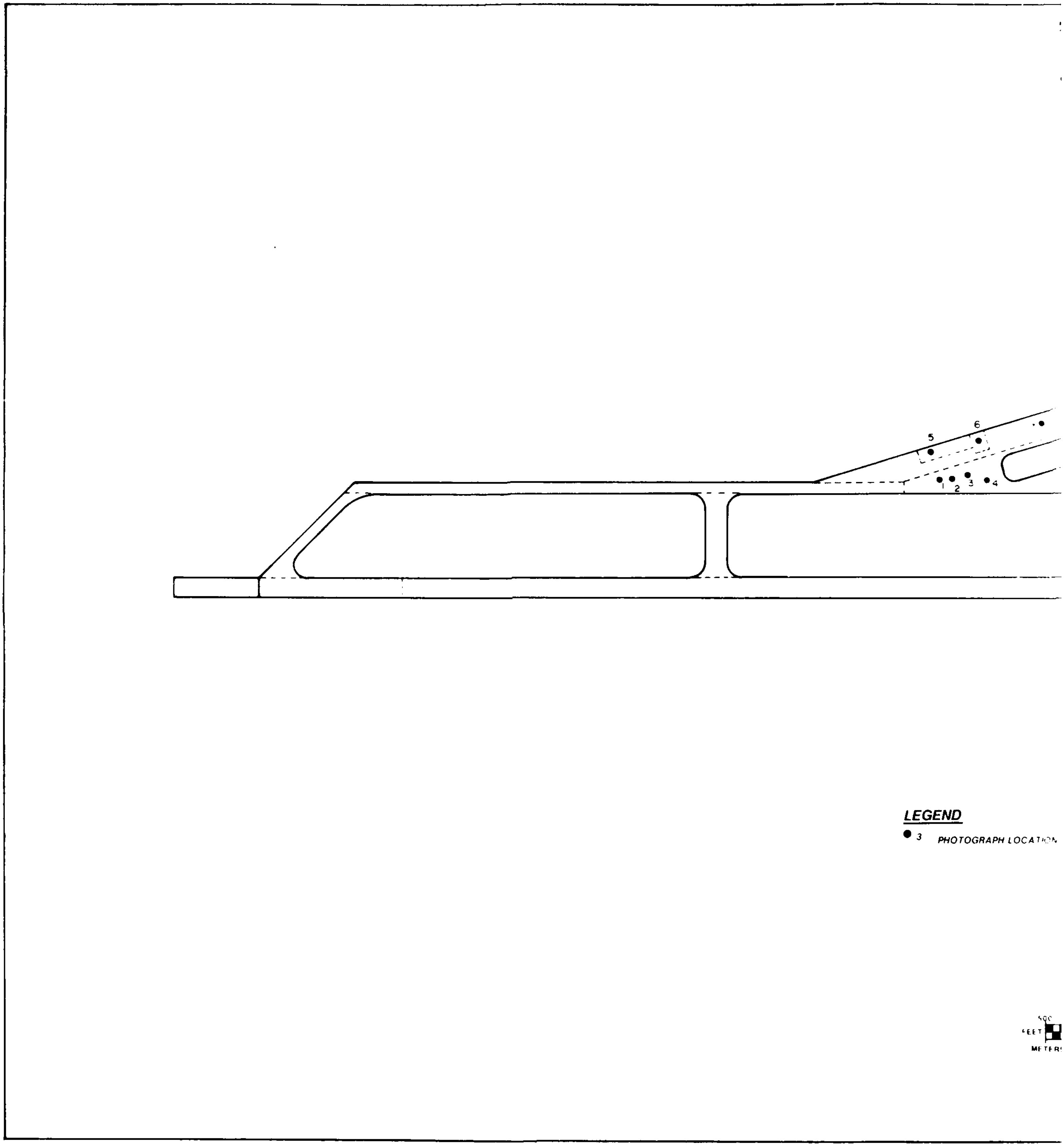
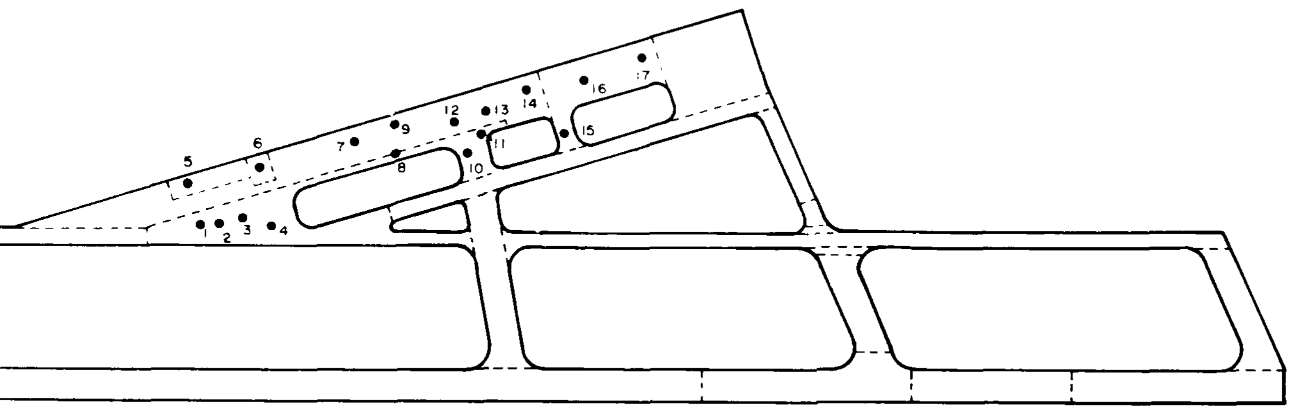
CONDITION SURVEY

PISCO AIR BASE, PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX D
DRAWN SANTIAGO	SCALE GRAPHIC	SHEET 1 OF 4

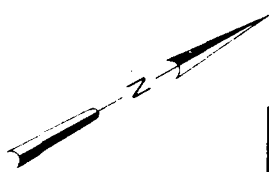


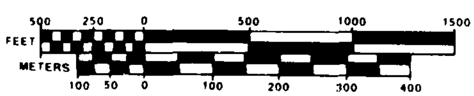
5
6
1
2
3
4
LEGEND
3



LEGEND

● 3 *PHOTOGRAPH LOCATION, DIRECTION, AND NUMBER*





UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
PHOTOGRAPH LOCATIONS PISCO AIR BASE, PERU		
ENGINEER GABRIELSON	DATE NOV 89	DRAWING NUMBER APPENDIX D
DRAWN SANTIAGO	SCALE GRAPHIC	SHEET 2 OF 4

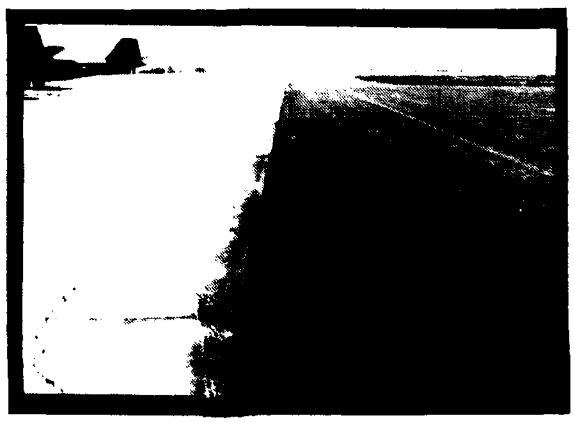
PHOTOS 1-4: Pavement overloading is indicated by alligator cracks, block cracks, and depressions. These are common at the intersection of the Parallel Taxiway and the apron. Recommend this area be replaced.

PHOTO 2

PHOTO 4

PHOTO 5: Severely spalled joint that was patched with AC. The joint should be sawcut and repaired with rigid material.

PHOTO 7: Typical shattered slabs concentrated on the apron taxi route. These slabs should be replaced.



PHOTOS 8: Early signs of pavement failure shown at the intersection of the PCC apron and AC taxiway.

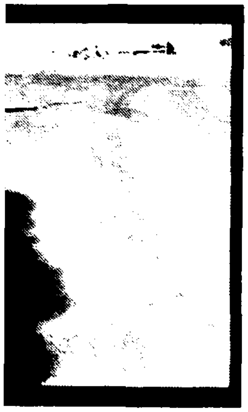


PHOTO 3

... that was ...

PHOTO 6: Failed PCC feature as indicated by extensive shattered slabs. Recommend the area be replaced.

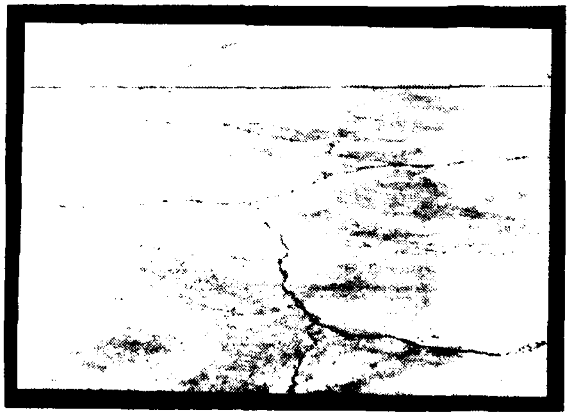


PHOTO 9: Typical shattered PCC s[illegible] apron.

UNITED STATES AIR FORCE ENGINEERING & SERVICES CENTER TYNDALL AIR FORCE BASE, FLORIDA		
PHOTOGRAPHS PISCO AIR BASE, PERU		
ENGINEER GABRIELSON	DATE NOV 89	DRAWING NUMBER APPENDIX D
DRAWN SANTIAGO	SCALE N A	SHEET 3 OF 4

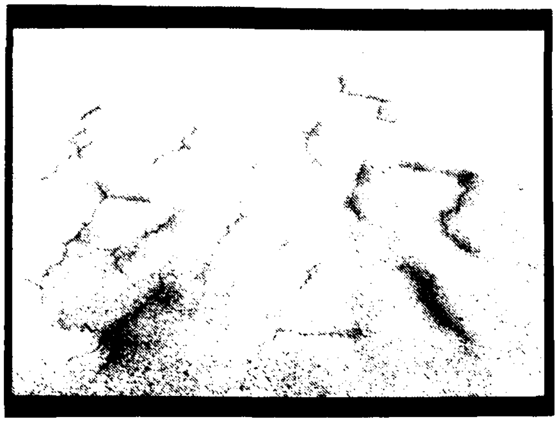


PHOTO 10: AC depression which will eventually progress to alligator cracking and pavement failure under aircraft loads.

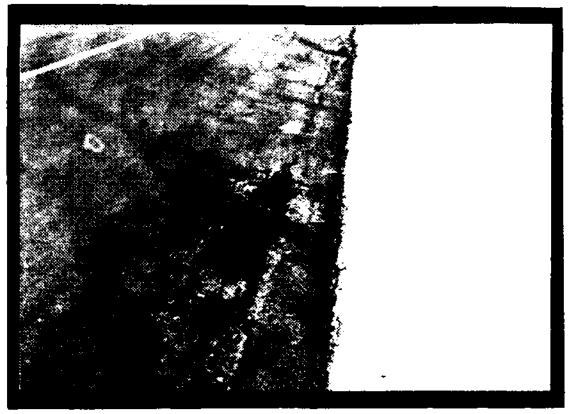


PHOTO 11: Pothole shown at the intersection of the AC taxiway and the PCC apron.

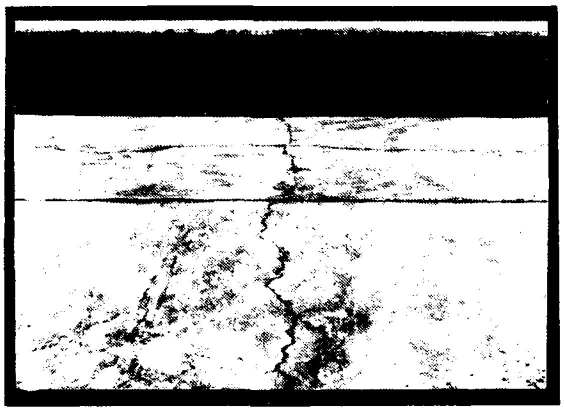
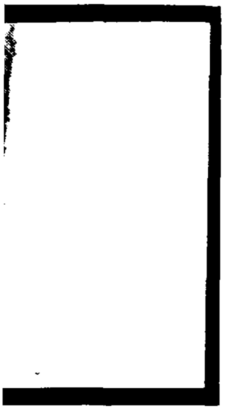


PHOTO 13: Cracks formed where joints should have been cut to control the cracking. Recommend the cracks be cleaned and sealed.

PHOTO 14: Extremely "tight" transverse joint typical on the apron.

PHOTO 16: Extensive map cracking caused from over-finishing and possible, uncontrolled curing.

PHOTO 17: Nonexistent joint sealant typical throughout the PCC features.



e intersection
apron.

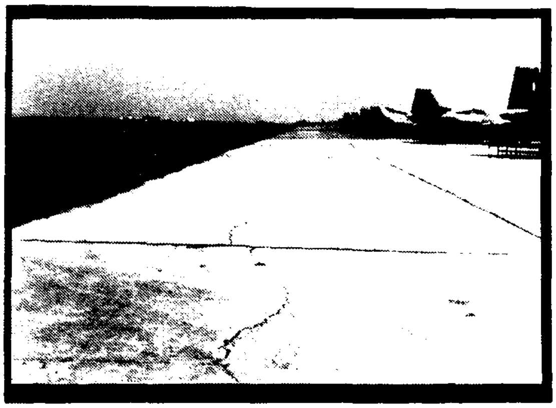
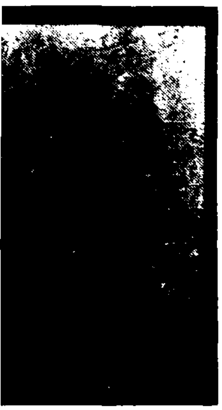


PHOTO 12: Typical longitudinal cracks extending the entire length of the apron. Recommend the cracks be cleaned and sealed.



verse

PHOTOS 15: Shattered slabs typical accross entire taxiway.

typical

PHOTO 18: Pavement Evaluation Team consisting of (left to right) Capt Jay Gabrielson, Team Chief, SSgt Steve Hudson, Coring Expert, SMSgt Doug Thompson, Consultant, TSgt Ralph Crompton, Team Superintendent, and SSgt Todd Bauder, Soils Expert.

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PHOTOGRAPHS

PISCO AIR BASE, PERU

ENGINEER	DATE	DRAWING NUMBER
GABRIELSON	NOV 89	APPENDIX D
DRAWN	SCALE	
SANTIAGO	N A	SHEET 4 OF 4

SUMMARY OF PHYSICAL PROPERTY DATA

FACILITY					OVERLAY PAVEMENT			PAVEMENT			BASE			SUBBASE			SUBGRADE	
FEAT	IDENT	LGTH (ft)	WDTH (ft)	GEN COND	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E K/CBR	THICK (in)	DESCRP	1000E CBR	DESCRP	1000E K/CBR
R01A	RUNWAY 03/21 03 END	1000	150	EXC			—	4.0	AC	—	18.0	GP	46			—	GP	25
R02C	RUNWAY 03/21	6170	150	EXC			—	5.5	AC	—	18	GP	46			—	GP	25
R03C	RUNWAY 03/21	1000	150	VERY GOOD	4.5	AC	—	8.0	PCC	500	18.0	SP	250			—	GP	—
R04C	RUNWAY 03/21	770	150	EXC			—	4.5	AC	—	18.0	GW	36			—	GP	25
R05A	RUNWAY 03/21	1000	150	VERY GOOD			—	12.0	PCC	540	18.0	GW	250			—	GP	—
T01A	TAXIWAY 5	850	75	VERY GOOD			—	4.0	AC	—	18.0	GP	40			—	GP	25
T02A	PARALLEL TAXIWAY	3900	75	VERY GOOD			—	4.0	AC	—	18.0	GP	60			—	GP	25
T03C	TAXIWAY 4	600	150	GOOD			—	2.0	AC	—	18.0	GP	40			—	GP	25
T04A	PARALLEL TAXIWAY	2600	VARIES	FAIR			—	2.0	AC	—	18.0	GP	40			—	GP	25
T05C	TAXIWAY 3	850	150	VERY GOOD			—	2.0	AC	—	18.0	GP	40			—	GP	25
T06A	TW 2 / PARALLEL TAXIWAY TRANS.	100	50	GOOD	2.0	AC	—	7.0	PCC	550	18.0	SP	350			—	GP	—
T07A	TAXIWAY 2	500	150	GOOD			—	7.0	PCC	550	18.0	SP	350			—	GP	—
T08C	APRON TAXIWAY	1900	75	GOOD			—	4.5	AC	—	18.0	GP	36			—	GP	25

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FACILITY					OVERLAY PAVEMENT			PAVEMENT			BASE			SUBBASE			SUBGRADE	
FEAT	IDENT	LGTH (ft)	WDTH (ft)	GEN COND	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E FLEX	THICK (in)	DESCRP	1000E K/CBR	THICK (in)	DESCRP	1000E CBR	DESCRP	1000E K/CBR
T09A	TAXIWAY 2	450	75	VERY GOOD			—	4.0	AC	—	18.0	GP	34			—	GP	25
T10A	TAXIWAY 2	100	75	FAIL			—	8.0	PCC	460	18.0	SP	300			—	GP	—
T11A	PARALLEL TAXIWAY	2150	75	EXC			—	4.0	AC	EXC	18.0	GW	90			—	GP	25
T12A	TAXIWAY 1	750	150	VERY GOOD			—	11.5	PCC	570	18.0	GW	350			—	GP	—
A01B	PARKING APRON	400	100	POOR			—	5.0	PCC	550	18.0	SP	210			—	GP	—
A02B	PARKING APRON	150	100	FAIL			—	5.5	PCC	450	18.0	SP	210			—	GP	—
A03B	PARKING APRON	2300	175	POOR			—	8.0	PCC	550	18.0	SP	230			—	GP	—
A04B	PARKING APRON	550	200	FAIR			—	8.0	PCC	425	18.0	SP	250			—	GP	—
A05B	PARKING APRON	450	400	FAIR			—	11.5	PCC	560	18.0	SP	SP			—	GP	—

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SUMMARY OF ALLOWABLE GROSS LOADS IN BRITISH UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KIPS FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
P01A	I	60	34	A	139	86	87	103	181	170	593	289	379	A
	II	+	39	55	148	93	96	112	190	179	590	316	406	184
	III	+	43	59	163	103	109	126	209	197	617	360	452	211
	IV	+	52	68	+	+	134	152	241	220	658	434	547	254
P02C	I	+	67	89	+	+	+	+	+	315	+	536	713	309
	II	+	+	102	+	+	+	+	+	340	+	+	778	343
	III	+	+	114	+	+	+	+	+	382	+	+	+	403
	IV	+	+	+	+	+	+	+	+	460	+	+	+	+
R03C	I	59	47	54	+	90	96	101	260	232	620	465	620	A
	II	+	60	67	+	104	110	118	292	259	707	549	734	208
	III	+	+	79	+	+	137	144	+	306	+	+	+	262
	IV	+	+	100	+	+	+	+	+	381	+	+	+	336
R04C	I	+	42	58	163	105	107	124	215	202	684	344	451	198
	II	+	49	66	+	+	118	136	230	217	697	379	489	218
	III	+	56	72	+	+	137	155	255	241	733	443	556	253
	IV	+	+	86	+	+	+	+	302	287	+	557	705	312
R05A	I	+	62	67	+	109	116	123	290	259	742	528	713	215
	II	+	+	84	+	+	135	144	+	290	+	+	+	259
	III	+	+	98	+	+	+	175	+	342	+	+	+	324
	IV	+	+	+	+	+	+	+	+	426	+	+	+	415
T01A	I	52	29	A	121	75	70	90	157	149	507	252	370	A
	II	57	34	A	123	80	83	97	166	156	513	274	353	A
	III	+	38	51	142	90	95	110	182	171	536	313	393	193
	IV	+	46	59	164	108	116	132	207	198	531	377	475	221
T02A	I	+	44	64	+	+	114	135	235	222	750	377	494	220
	II	+	50	71	+	+	125	146	249	234	759	412	530	241
	III	+	56	77	+	+	142	164	273	257	+	470	590	275
	IV	+	69	89	+	+	+	+	314	297	+	566	713	332
T03C	I	47	23	A	111	58	61	A	130	A	323	A	A	A
	II	50	25	A	116	61	65	A	135	A	328	A	A	A
	III	53	27	A	123	67	71	87	144	135	410	249	307	A
	IV	59	32	A	137	78	84	100	161	151	433	288	360	A
T04A	I	35	16	A	82	43	45	A	A	A	A	A	A	A
	II	37	18	A	85	45	47	A	A	A	A	A	A	A
	III	39	19	A	90	48	52	A	106	A	A	A	A	A
	IV	42	22	A	98	55	59	A	116	A	A	A	A	A
T05C	I	47	23	A	112	58	61	A	130	A	323	A	A	A
	II	50	25	A	116	61	65	A	135	A	328	A	A	A
	III	53	27	A	123	67	71	87	144	135	410	249	307	A
	IV	59	32	A	137	78	84	100	161	151	433	288	360	A
T06A	I	43	34	A	146	67	71	A	204	195	489	372	504	A
	II	54	44	A	170	79	83	89	234	219	551	451	609	A
	III	+	53	57	+	98	104	110	280	250	682	576	780	21[illegible]
	IV	+	+	74	+	+	142	149	+	317	+	+	+	[illegible]
T07A	I	39	31	A	134	61	65	A	158	171	446	341	463	A
	II	49	40	A	155	71	75	A	215	195	513	414	562	A
	III	57	48	52	+	88	94	100	252	231	625	533	720	[illegible]
	IV	+	63	66	+	+	120	135	+	277	+	+	+	[illegible]

PISCO

SUMMARY OF ALLOWABLE GROSS LOADS IN BRITISH UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KIPS FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
T08C	I	+	42	58	163	105	107	124	215	292	634	344	451	198
	II	+	49	66	+	+	218	136	230	217	677	379	489	218
	III	+	56	72	+	+	137	[illegible]	255	241	733	443	556	253
	IV	+	+	86	+	+	+	+	302	297	+	557	705	312
T09A	I	44	25	A	103	64	65	A	133	A	431	A	A	A
	II	49	29	A	109	68	72	A	141	A	436	233	300	A
	III	53	32	A	120	76	80	93	154	146	456	266	334	A
	IV	+	39	50	139	91	99	112	178	163	474	321	404	188
T10A	I	A	22	A	91	42	45	A	127	A	A	230	311	A
	II	A	28	A	105	49	52	A	144	A	350	275	369	A
	III	40	33	A	127	60	64	A	170	151	421	343	464	A
	IV	50	44	A	164	90	95	90	212	183	525	437	596	A
T11A	I	+	56	96	+	+	+	+	+	332	+	566	741	330
	II	+	+	107	+	+	+	+	+	351	+	+	+	361
	III	+	+	116	+	+	+	+	+	396	+	+	+	413
	IV	+	+	+	+	+	+	+	+	446	+	+	+	+
T12A	I	+	+	76	+	+	235	142	+	302	+	+	+	254
	II	+	+	96	+	+	+	168	+	351	+	+	+	311
	III	+	+	115	+	+	+	+	+	420	+	+	+	405
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A01B	I	A	12	A	A	25	A	A	A	A	A	A	A	A
	II	A	15	A	A	29	A	A	A	A	A	A	A	A
	III	A	17	A	75	34	A	A	A	A	A	A	A	A
	IV	A	22	A	95	44	46	A	122	A	A	255	340	A
A02B	I	A	11	A	A	23	A	A	A	A	A	A	A	A
	II	A	14	A	A	26	A	A	A	A	A	A	A	A
	III	A	16	A	A	32	A	A	A	A	A	A	A	A
	IV	A	21	A	88	41	43	A	113	A	A	233	312	A
A03B	I	A	25	A	105	49	52	A	143	A	340	255	341	A
	II	40	32	A	119	56	60	A	160	143	335	300	401	A
	III	46	39	A	144	69	72	A	180	167	457	360	405	A
	IV	58	49	53	+	[illegible]	96	[illegible]	233	[illegible]	560	463	624	172
A04B	I	A	27	A	112	52	55	A	153	137	362	272	361	A
	II	43	34	A	120	60	66	A	172	[illegible]	411	323	431	A
	III	50	41	A	155	74	79	A	203	[illegible]	420	[illegible]	536	A
	IV	+	53	57	+	99	104	110	253	224	[illegible]	[illegible]	[illegible]	195
A05B	I	+	64	70	+	+	123	129	305	271	757	545	731	216
	II	+	+	89	+	+	142	151	+	304	+	+	+	260
	III	+	+	105	+	+	+	+	+	361	+	+	+	327
	IV	+	+	+	+	+	+	+	+	[illegible]	+	+	+	420

NOTES

IN REFERENCE TO THE ALLOWABLE GROSS LOAD (AGL) TABLE:

- ***A*** *Denotes lowest possible empty gross weight of any aircraft within the group exceeds the AGL of the pavement. Pavement cannot support aircraft for respective pass intensity level.*
- ***+*** *Denotes no weight restrictions. AGL of the pavement exceeds the greatest possible gross weight of any aircraft in the group.*

The load carrying capacities of the pavements reported herein are based on material properties representative of the in-place conditions at the time this field investigation was conducted.

PISCO

SUMMARY OF ALLOWABLE GROSS LOADS IN METRIC UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KILOGRAMS x 1000 FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
R01A	I	27	15	A	63	39	39	46	82	77	254	131	172	A
	II	+	17	24	67	42	43	50	96	91	267	143	184	83
	III	+	19	26	74	46	49	57	94	99	290	163	205	95
	IV	+	23	30	+	+	60	69	109	103	303	197	249	115
R02C	I	+	30	40	+	+	+	+	+	143	+	243	323	140
	II	+	+	46	+	+	+	+	+	154	+	+	353	155
	III	+	+	51	+	+	+	+	+	173	+	+	+	182
	IV	+	+	+	+	+	+	+	+	209	+	+	+	+
R03C	I	26	21	24	+	40	43	45	119	105	231	211	281	A
	II	+	27	30	+	47	49	53	132	117	320	249	333	94
	III	+	+	35	+	+	62	65	+	139	+	+	+	118
	IV	+	+	45	+	+	+	+	+	172	+	+	+	152
R04C	I	+	19	26	74	47	48	56	97	91	310	156	204	89
	II	+	22	29	+	+	53	61	104	98	316	172	272	98
	III	+	25	32	+	+	62	70	115	109	332	201	252	114
	IV	+	+	39	+	+	+	+	137	130	+	252	320	141
R05A	I	+	28	30	+	49	52	55	131	117	336	239	323	97
	II	+	+	38	+	+	61	65	+	131	+	+	+	117
	III	+	+	44	+	+	+	79	+	155	+	+	+	147
	IV	+	+	+	+	+	+	+	+	193	+	+	+	198
T01A	I	23	13	A	54	34	34	40	71	67	230	114	149	A
	II	25	15	A	59	36	37	44	75	70	232	124	160	A
	III	+	17	23	64	40	43	49	82	77	243	142	178	83
	IV	+	20	26	74	49	52	59	94	89	253	171	215	109
T02A	I	+	19	29	+	+	51	61	106	100	345	171	224	99
	II	+	22	32	+	+	56	66	112	106	349	187	240	109
	III	+	25	34	+	+	64	74	123	116	+	213	267	124
	IV	+	30	40	+	+	+	+	142	134	+	256	323	150
T03C	I	21	10	A	50	26	27	A	59	A	179	A	A	A
	II	22	11	A	52	27	29	A	61	A	190	A	A	A
	III	24	12	A	55	30	32	39	65	61	136	113	139	A
	IV	26	14	A	62	35	38	45	73	63	176	130	163	A
T04A	I	15	7	A	37	19	20	A	A	A	A	A	A	A
	II	16	8	A	38	20	22	A	A	A	A	A	A	A
	III	17	8	A	40	21	23	A	49	A	A	A	A	A
	IV	19	9	A	44	24	26	A	52	A	A	A	A	A
T05C	I	21	10	A	50	26	27	A	59	A	179	A	A	A
	II	22	11	A	52	27	29	A	61	A	190	A	A	A
	III	24	12	A	55	30	32	39	65	61	136	113	139	A
	IV	26	14	A	62	35	38	45	73	63	176	130	163	A
T06A	I	19	15	A	66	30	32	A	92	93	222	168	228	A
	II	24	19	A	77	35	37	40	105	95	254	204	276	A
	III	+	24	25	+	44	47	49	127	113	309	261	354	[illegible]
	IV	+	+	33	+	+	64	67	+	143	+	+	+	137
T07A	I	17	14	A	60	27	29	A	85	77	202	154	210	A
	II	22	18	A	70	32	34	A	97	89	232	187	255	A
	III	25	21	23	+	39	42	45	117	104	223	241	326	[illegible]
	IV	+	23	29	+	+	58	61	+	132	+	+	+	[illegible]

PISCO

SUMMARY OF ALLOWABLE GROSS LOADS IN METRIC UNITS

FEAT.	PASS INTENSITY LEVEL	PAVEMENT CAPACITY IN KILOGRAMS x 1000 FOR AIRCRAFT GROUP INDEX NUMBERS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
T08C	I	+	19	26	74	47	48	56	97	91	310	156	204	89
	II	+	22	29	+	+	53	61	104	94	316	172	222	98
	III	+	25	32	+	+	62	70	115	109	332	201	252	114
	IV	+	+	39	+	+	+	+	137	131	+	[illegible]	320	141
T09A	I	19	11	A	46	29	29	A	60	A	175	A	A	A
	II	22	13	A	49	30	32	A	64	A	177	105	136	A
	III	24	14	A	54	34	36	42	69	66	207	120	151	A
	IV	+	17	22	63	41	44	50	80	76	224	145	193	95
T10A	I	A	9	A	41	19	20	A	57	A	A	104	141	A
	II	A	12	A	47	22	23	A	65	A	158	124	167	A
	III	18	14	[illegible]	57	27	29	A	77	63	171	155	210	A
	IV	22	19	A	74	36	30	40	96	95	239	198	270	A
T11A	I	+	29	43	+	+	+	+	+	150	+	256	336	142
	II	+	+	48	+	+	+	+	+	159	+	+	+	163
	III	+	+	52	+	+	+	+	+	175	+	+	+	187
	IV	+	+	+	+	+	+	+	+	202	+	+	+	+
T12A	I	+	+	34	+	+	61	64	+	132	+	+	+	115
	II	+	+	43	+	+	+	76	+	157	+	+	+	141
	III	+	+	52	+	+	+	+	+	190	+	+	+	183
	IV	+	+	+	+	+	+	+	+	+	+	+	+	+
A01B	I	A	5	A	A	11	A	A	A	A	A	A	A	A
	II	A	6	A	A	12	A	A	A	A	A	A	A	A
	III	A	7	A	34	15	A	A	A	A	A	A	A	A
	IV	A	9	A	43	19	20	A	[illegible]	A	A	115	154	A
A02B	I	A	4	A	A	10	A	A	A	A	A	A	A	A
	II	A	6	A	A	11	A	A	A	A	A	A	A	A
	III	A	7	A	A	14	A	A	A	A	A	A	A	A
	IV	A	9	A	39	18	19	A	53	A	A	105	141	A
A03B	I	A	11	A	47	22	23	A	64	A	154	115	154	A
	II	18	14	A	54	25	27	A	72	64	174	136	192	A
	III	20	17	A	65	31	33	A	95	75	207	167	224	A
	IV	26	22	24	+	41	43	46	105	93	254	210	283	91
A04B	I	A	12	A	50	23	24	A	63	62	154	133	165	A
	II	19	15	A	58	27	29	A	78	[illegible]	186	146	195	A
	III	22	18	A	70	33	35	A	92	[illegible]	[illegible]	181	243	A
	IV	+	24	25	+	44	47	49	114	121	274	220	269	99
A05B	I	+	29	31	+	+	55	58	139	123	341	247	331	99
	II	+	+	40	+	+	64	68	+	130	+	+	+	119
	III	+	+	47	+	+	+	+	+	163	+	+	+	149
	IV	+	+	+	+	+	+	+	+	[illegible]	+	+	+	190

NOTES

IN REFERENCE TO THE ALLOWABLE GROSS LOAD (AGL) TABLE:

A — *Denotes lowest possible empty gross weight of any aircraft within the group exceeds the AGL of the pavement. Pavement cannot support aircraft for respective pass intensity level.*

+ — *Denotes no weight restrictions. AGL of the pavement exceeds the greatest possible gross weight of any aircraft in the group.*

The load carrying capacities of the pavements reported herein are based on material properties representative of the in-place conditions at the time this field investigation was conducted.

PISCO

PAVEMENT CLASSIFICATION NUMBERS (PCN)

BASED ON 50,000 PASSES OF GROUP INDEX 9 AIRCRAFT

PISCO AIR BASE PERU

FEATURE	PCN
R01A	28/F/A/X/T
R02C	62/F/A/X/T
R03C	52/R/B/X/T
R04C	35/F/A/X/T
R05A	59/R/B/X/T
T01A	23/F/A/X/T
T02A	40/F/A/X/T
T03C	17/F/A/X/T
T04A	10/F/A/X/T
T05C	17/F/A/X/T
T06A	39/R/B/X/T
T07A	35/R/B/X/T
T08C	35/F/A/X/T
T09A	18/F/A/X/T
T10A	20/R/B/X/T
T11A	65/F/A/X/T
T12A	72/R/B/X/T
A01B	9/R/B/X/T
A02B	7/R/B/X/T
A03B	24/ [illegible]/B/X/T
A04B	26/R/B/X/T
A05B	62/R/B/X/T

AIRCRAFT GROUP INDEX

LIGHT LOAD			MEDIUM LOAD							HEAVY LOAD		
1	2	3	4	5	6	7	8	9	10	11	12	13
A-37	A-7	*F-111	C-130	C-7	737	*727	707	C-141	C-5	*KC-10	747	B-52
C-12	A-10	FB-111		*C-9	*T-43	C-22	*E-3	*B-1		DC10	*E-4	
C-21	F-4			DC9			C-135	B-757		L1011	VC-25	
*C-23	F-5			C-140			*KC-135			C-17		
T-37	*F-15						VC-137					
	F-16						DC-8					
	F-10X						EC-18					
	T-33						A-300					
	T-38						B-767					
	T-39											
	OV-10											
	C-20											

* CONTROLLING AIRCRAFT

GROSS WEIGHT LIMITS FOR AIRCRAFT GROUPS

	1	2	3	4	5	6	7	8	9	10	11	12	13
PAVEMENT CAPACITY IN KIPS													
LOWEST POSSIBLE GROSS WEIGHT	5	7	49	69	22	61	92	60	150	325	240	334	180
HIGHEST POSSIBLE GROSS WEIGHT	25	81	114	175	121	125	210	400	477	840	590	850	488
PAVEMENT CAPACITY IN KILOGRAMS x 1000													
LOWEST POSSIBLE GROSS WEIGHT	2	3	22	31	10	28	42	27	68	147	109	151	82
HIGHEST POSSIBLE GROSS WEIGHT	11	37	52	79	55	57	95	181	216	381	267	385	221

PASS INTENSITY LEVEL

LEVEL	1 – 3	4 – 10	11 – 13
I	300,000 PASSES	50,000 PASSES	15,000 PASSES
II	50,000 PASSES	15,000 PASSES	3,000 PASSES
III	15,000 PASSES	3,000 PASSES	500 PASSES
IV	3,000 PASSES	500 PASSES	100 PASSES

NOTES

IN REFERENCE TO THE ALLOWABLE GROSS LOAD (AGL) TABLE:

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- *✦ Denotes no weight restrictions. AGL of the pavement exceeds the greatest possible gross weight of any aircraft in the group.*

Pass intensity levels V and VI are used with reduced subgrade strengths to determine the maximum allowable loads during the frost-melt period.

UNITED STATES AIR FORCE
ENGINEERING & SERVICES CENTER
TYNDLL AIR FORCE E, FLORIDA

RELATED DATA

ENGINEER	DATE	DRAWING NUMBER
N/A	NOV 88	APPENDIX G
DRAWN: L. BASTIAN	SCALE: N/A	SHEET 1 OF ___

PISCO, PERU

TOPOGRAPHY

Pisco airport is located on the South Pacific coastline just four miles south of the town of Pisco and is at sealevel. The Bay of Paracas is 3 miles south of the airport. A desert plateau lies five miles to the east through southeast. The town of Lima is 130 miles to the north.

VISIBILITY

Visibility can be expected to be reduced below three miles due to fog on at least 12 days a year with May and June having the most days of three and two respectively. Only three days a year will see visibilities reduced below one mile.

SEVERE WEATHER

With Pisco being located on the eastern Peruvian coast there is no significant weather. The mean annual precipitation rate for Pisco is less than 10 inches.

CLIMATOLOGICAL DATA

	J	F	M	A	M	J	J	A	S	O	N	D	ANN	YRS REC
TEMPERATURE (°F)														
HIGHEST	99	102	97	88	88	90	82	84	82	90	91	90	102	14
MEAN DAILY MAX	80	81	80	78	73	70	68	68	69	71	74	77	74	14
MEAN DAILY MIN	68	69	68	65	61	59	57	57	57	59	61	65	62	14
LOWEST	50	48		59	46	50	46	49	43	50	44	57	33	14
MEAN NO. OF DAYS														
MAX TEMP ≥ 90 °F	*	*	*	0	0	0	0	0	0	0	*	0	1	14
MIN TEMP ≤ 32 °F	0	0	0	0	0	0	0	0	0	0	0	0	0	14
PRECIPITATION														
MEAN (INCHES)	T	T	T	T	T	0.2	0.1	T	T	T	T	T	0.5	10
MEAN NO OF DAYS > 0.5 IN.	0	0	0	0	0	0	0	0	0	0	0	0	0	10
SNOWFALL														
MEAN (INCHES)	0	0	0	0	0	0	0	0	0	0	0	0	0	10
MEAN NO OF DAYS > 6 IN	0	0	0	0	0	0	0	0	0	0	0	0	0	10
RELATIVE HUMIDITY (%)														
MEAN	78	78	78	80	82	83	83	82	82	81	80	78	80	14

MAXIMUM 24 HOUR PRECIPITATION

1.1 INCHES 10 YEARS OF RECORD

MAXIMUM 24 HOUR SNOWFALL

0.0 INCHES 10 YEARS OF RECORD

FLYING WEATHER: ANNUAL PERCENTAGES FOR VARIOUS CATEGORIES

A CEILING ≥ 1000 FEET AND VISIBILITY ≥ 3 MILES 96.3 %

B CEILING 500-900 FEET AND VISIBILITY ≥ 1 MILE OR VISIBILITY ≥ 1 MILE BUT < 3 MILES AND CEILING ≥ 1000' 2.7 %

C CEILING < 500 FEET AND/OR VISIBILITY < 1 MILE 1.0 %

D INSTRUMENT: CEILING ≥ 200 FEET AND VISIBILITY ≥ 1/2 MILE, AND EITHER CEILING < 1500 FEET OR VISIBILITY < 3 MILES 7.3 %

SOURCE OF DATA: NATIONAL INTELLIGENCE SURVEY; DATSAV

* DENOTES LESS THAN 0.5 DAY

T DENOTES LESS THAN ~~0.5~~ .05 INCH

ANNUAL WIND COVERAGE TABULATION

RUNWAYS OR COMBINATIONS FOR CROSSWIND COMPONENT 10 KNOTS OR LESS

RUNWAY DIAGRAM	MAGNETIC MARK	TRUE BEARING	LENGTH IN FEET	(1)	(2)
	03-21	2° 30' E	9908	0.6	0.1

INSTRUMENT RUNWAY

(1) WIND COVERAGE (%) ALL WEATHER

(2) WIND COVERAGE (%) INSTRUMENT

ADDITIONAL DATA

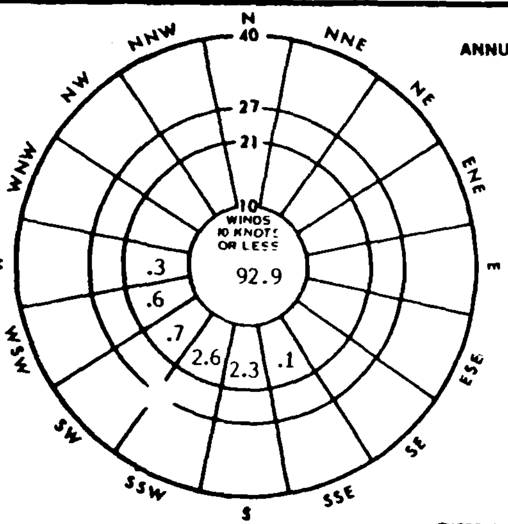
FIELD ELEVATION 39 FEET MSL

MAGNETIC VARIATION

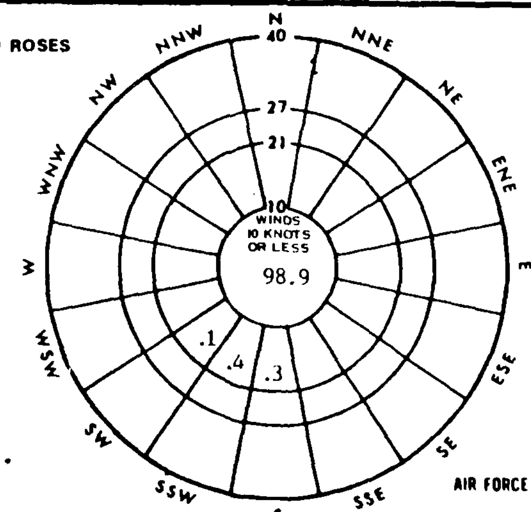
SOURCE

YEAR

ANNUAL WIND ROSES



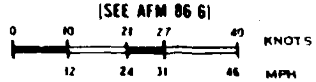
ALL WEATHER



INSTRUMENT

NOTE: THESE WIND ROSES SHOW THE TOTAL % OF WINDS BY SPEED GROUP AND DIRECTION BASED ON TRUE BEARING.

AIR FORCE RUNWAY WIND COMPUTER (SEE AFM 86-6)



ENGINEERING WEATHER DATA

AIR CONDITIONING DESIGN AND CRITERIA DATA (SEE AFM 88-8, CHAP 6)

WINTER HEATING DESIGN TEMPERATURE (SEE AFM 88-8, CHAP 6)

MEAN WINTER WIND SPEED 4.0 KNOTS

MEAN ANNUAL NUMBER OF HEATING DEGREE DAYS 297 (SEE AFR 91-7,

PRESSURE ALTITUDE AND TEMPERATURE DATA FOR DETERMINING REQUIRED RUNWAY LENGTHS (SEE AFM 86-2)

EXTREME WIND DATA FOR CONSTRUCTION DESIGN (SEE AFM 88-3, CHAP 1)

SNOW LOAD DATA FOR ROOF CONSTRUCTION (SEE AFM 88-3, CHAP 1)

MAXIMUM FROST PENETRATION (SEE AFM 88-3, CHAP 1)

MEAN ANNUAL COOLING DEGREE DAYS 1509

NOTICE: WHEN NECESSARY, INTERPRETATIONS OF THESE *DATA SHOULD BE SECURED THROUGH THE LOCAL* STAFF WEATHER OFFICER

PISCO, PERU
13° 45' S 076° 13' W
ELEVATION 39 ft
PREPARED BY USAFETAC
MAR 1989

TAB D

USAFETAC Form 49 MAY 86

FORM REVISED 1 DEC 7