DCN 577

Western Pennsylvania Coalition for the Defense of Pittsburgh IAP ARS and the 911th Airlift Wing

Executive Summary

Overview of the Defense

The Western Pennsylvania Coalition categorically challenges the component processes and refutes the results that placed Pittsburgh IAP ARS on the Secretary of the Air Force 1995 Base Closure List. The Coalition will show that the Air Force not only deviated substantially from the criteria, but failed to apply standards of fairness and consistency in the decision-making process.

The Air Force failed to apply correct and consistent financial data to determine operating costs. A confusing and contradictory number of total and supporting figures were discovered in the BCEG minutes, the AFRES/XPXP data to the AFRES BRAC 95 Action Officer, the Department of the Air Force Analyses and Recommendations report and subsequent responses to Congressional Inquires. *(RE: Exhibit A.)*

The Coalition has uncovered serious errors in COBRA assumptions and subsequent analysis, including a gross misrepresentation of MILCON.

The Coalition will prove Pittsburgh IAP ARS to be the most cost effective Air Reserve Installation and the 911th Airlift Wing to be the C-130 AFRES unit with the greatest military value. Pittsburgh IAP ARS and the 911th Airlift Wing demonstrates the greatest capacity for cost effective expansion and the capability to react to future force structure plans.

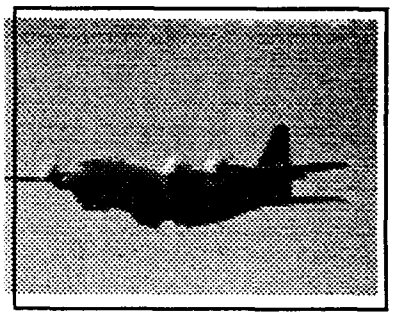
Furthermore, the Coalition will show Pittsburgh IAP ARS to possess ready excess capacity at no cost to the government. Pittsburgh will be shown to be the installation where consolidation and expansion should occur, and that a total closure would cost money, not save taxpayer dollars.

Finally, the Coalition will present a number of base closure options that will save a significantly greater amount of money whether based on one time closing costs, Return on Investment (ROI), Military Construction (MILCON) avoidance or Net Present Value (NPV).

NOTE: The reference documentation to this executive summary are contained in two volumes. The volumes were presented to Mr. Richard A. DiCamillo, Air Force Team Analyst, Defense Base Closure and Realignment Commission.

No Cost Excess Capacity at Pittsburgh ARS

Ramp Capacity is the Result of Long Range Planning



INSTALLATION CAPACITY: Currently the Installation operates efficiently on 115 acres of land primarily leased from Allegheny County for one dollar per year. The Installation has a compact and efficient infrastructure, with all facilities and buildings well maintained. In February 1994, the 911th Airlift Wing signed a Memorandum of Agreement with Allegheny County to utilize an additional 21.7 acres of adjacent ramp space for surge capacity, at no cost to the government. *(RE: DAF Major Command Capacity Analysis, February 1995 and Exhibit B.)*

The County additionally offered 30 acres of prime, ready ramp space to the Air Force in 1994. Recently, the Commissioners of Allegheny County have offered an additional 47 acres of concrete ramp space, adjacent to the existing ramp, at no cost to the Air Force. The Air Force is not required to possess nor maintain this valuable acreage. It is held in 'escrow' for future Air Force utilization, again, at no cost. This unique arrangement should not be overlooked by the Commission when evaluating the capability of installations to absorb future force structure plans. *(RE: Exhibit B.3.)*

The development of this offer ***was not*** a reaction to BRAC 95. The offer is the outcome of a $500,000 study begun in 1983 and presented in 1988 as the 911th Airlift Wing Base Comprehensive Plan. The recent completion of the billion dollar Pittsburgh Mid-field Terminal complex released this acreage for the 911th when the old terminal and ramp space was abandoned. *(RE: Exhibit C., 911th Airlift Wing Base Comprehensive Plan)*

ASSOCIATED AIRSPACE: Although competitively ranked for airspace issues, the location of Pittsburgh International Airport within a metropolitan area is misleading. The airfield is remotely located southwest of Pittsburgh, enabling aircrews to enter their tactical low level environment immediately after departure. The availability of two drop zones within 25 nautical miles of the airport, facilitates exceptionally cost effective aircrew training. The ability of crews to train in designated mountainous terrain or over challenging non-descript country-side is an intangible, yet valuable, benefit associated with Pittsburgh ARS adjoining airspace. The HQ AFRES/CEV/DOTSA *Preliminary Airspace Environmental Analysis Report for the 911th Airlift Wing, 30 September 1994* was not part of the Base Questionnaire data call, but contributes important information regarding Pittsburgh's airspace. *(RE: Exhibit D., Operations and Exhibit E., Preliminary Airspace Environmental Analysis Report))*

Deviations from and Corrections to the Criteria

Military Value

CRITERIA ONE: The Base Closure Executive Group ranked Pittsburgh IAP ARS as one of the top two installations in Criteria One. *(RE: Exhibit F., AF/BCEG Minutes)*

CRITERIA TWO: Pittsburgh ARS was initially ranked low due to Criteria 4.C. Future Growth (Air Quality) limitations. Data from the Allegheny County Health Department, Bureau of Air Pollution Control, shows the AQCA has been in attainment for ozone and CO since 1990 and the Pennsylvania Department of Environmental Resources, in November 1993, proposed reclassification as an attainment area, giving Pittsburgh ARS *green* in this subcategory, thereby ranking Pittsburgh ARS at the top of Criteria II. *(RE: Exhibit G., Air Quality Certification)*

CRITERIA THREE: The exceptional capacity and capability of Pittsburgh IAP ARS to accommodate contingency, mobilization and future total force requirements are demonstrated in the Comprehensive Summary submitted to the Commission. The 77 acres of ramp space held for Air Force use in addition to the additional fueling capability of the airfield, clearly positions Pittsburgh ARS at the top of criteria three. *(RE: Exhibit H.2.)*

In several unit-initiated exercises, Patriot Steel 94-01 and Patriot Pitt, clearly demonstrated the capacity of this installation, during actual operation. *(RE: Exhibit D., Operations)*

Return on Investment

CRITERIA FOUR: The Department of the Air Force Analyses and Recommendations to the Commission state: "Its [Pittsburgh IAP ARS] operating costs were the greatest among Air Force Reserve C-130 operations at civilian airfields". Through Congressional Inquiry, the Coalition requested substantiation of that assertion. *(RE: Exhibit A.3.)* The following is the answer to the Inquiry:

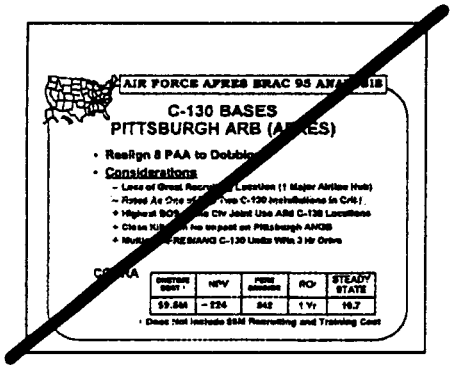
"Pittsburgh ARS FY 94 O&M was $22.83M (sixth highest of units on civilian airfields). FY 94 RPA was $8.67M (highest of all). Projected MILCON, a cost avoidance if Pittsburgh is closed, is $33.58M (highest by $20M of any unit). Totaling the three areas, Pittsburgh is $65.08M. Gen Mitchell at Milwaukee is $30.62M, Minn-St Paul is $35.98M, Chicago O'Hare (host to ANG unit) is $39.51M, Niagara (host to ANG unit) is $45.94, and Youngstown is $31.23M." *(RE: Exhibit A.4.)*

WESTERN PENNSYLVANIA COALITION

FY 94 OBLIGATIONS
COMPARISONS OF C-130 AFRES UNITS
AT CIVILIAN AIRPORTS
O&M RANKING*

NO. 1	O'HARE	$27.347M
NO. 2	NIAGARA FALLS	$26.473M
NO. 3	YOUNGSTOWN	$24.161M
NO. 4	MINN-ST. PAUL	$23.556M
NO. 5	B. MITCHELL	$23.486M
NO. 6	PITTSBURGH ARS	$22.829M

*From April 7, 1995 Congressional Inquiry Response



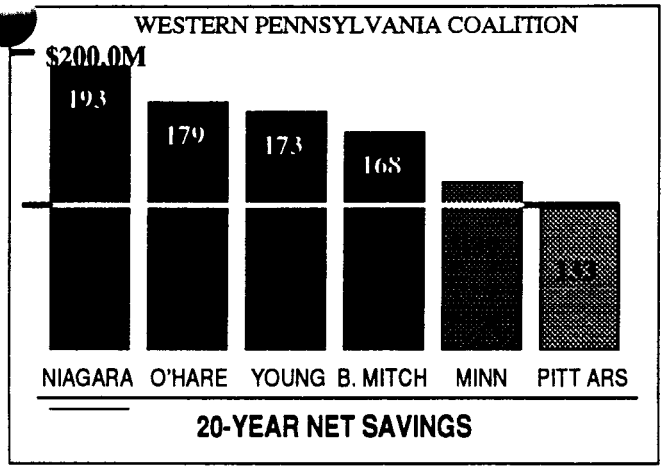
Coalition counter-argument:

- Pittsburgh IAP ARS FY O&M obligations for FY 94 were the **lowest** of the six installations. "(Sixth highest ...)", is actually the **lowest of all.** *(RE: Appendix A.4., Congressional Inquiry Response)*

- The highest RPA is true. This is a figure that represents a high level of military activity, reflecting the high level of volunteerism requested by AFRES. This figure directly correlates to the Pittsburgh IAP ARS highest ranking in Criteria One. This figure should not be included in the determination of operating cost for the closure deliberations. A high RPA is directly related to military value and a unit's contribution to *Total Force. (RE: Exhibit A.4., Congressional Inquiry Response)*

Pittsburgh IAP ARS projected MCP/P341 construction (MILCON) is actually $4.414M for FY 95 through FY 01, according to analysis by 911th Base Civil Engineering using AFRES January 1995 figures. *(RE: Exhibit I.1, Civil Engineering Data)*

In summary, comparing the actual figures (provided by AFRES) for all AFRES C-130 installations at civilian airfields, Pittsburgh IAP ARS incurs the **least** cost for operations. *(RE: Exhibit J., Operating Cost Summary)*

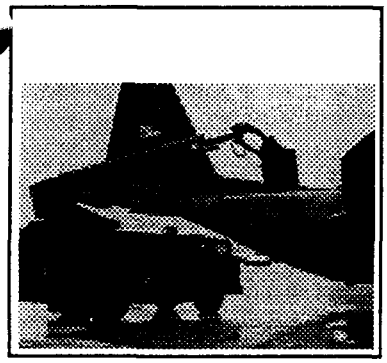


CRITERIA FIVE: The COBRA analysis was clearly flawed. When COBRA is run with corrected data and proper assumptions, Pittsburgh IAP ARS is actually the poorest candidate for closure among all AFRES C-130 installations at civilian airfields. The Coalition COBRA data is certified by Dr. Patrick J. Litzinger, Professor of Economics at Robert Morris College and Mr. Joseph F. Knapik, Fellow Engineer, Westinghouse Electric Corporation. COBRA analysis is summarized in graphic form as follows: *(RE: Exhibit K., COBRA Data)*

CRITERIA SIX: The economic implication of closure of Pittsburgh IAP ARS was not considered significant relative to other installations within large Statistical Metropolitan Areas (SMA). Nevertheless, the impact to smaller communities near the base was not considered by the Air Force. *(RE: Exhibit L., Carnegie-Mellon University Economic Impact Summary)*

Impacts

CRITERIA SEVEN: The ability of the Pittsburgh area communities to support forces, mission and personnel were clearly recognized by the BCEG. Pittsburgh was described as a "great recruiting area". Total manning figures for the 911th Airlift Wing consistently exceed 100%. *(RE: Exhibit F., AF/BCEG Minutes, 19 December 1994 and Exhibit M., 911 AW Manning Summary)*



CRITERIA EIGHT: Environmental Impact issues were not considered by the Coalition. However, it is of interest to briefly note the recently completed de-icing facility (the only operational de-icing facility among AFRES installations) that recycles aircraft de-icing contaminates to protect the environment. This is a cost that must be incurred by another installation not presently on the base closure list. *(RE: Exhibit I.6., De-icing Pad)*

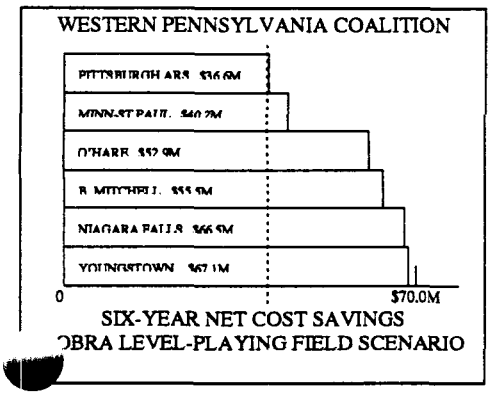
Incorrect BOS and Associated Manpower Figures

The Base Operating Support (BOS) costs were stated as $22.23M in the BCEG minutes and on the *AFRES BRAC 95 Action Officer facsimile (3 Mar 95)* summarizing AFRES/XPXP data released following the DOD Base Closure announcement. BOS, as defined by AFR 700-20, Air Force Corporate Dictionary, 20 March 1995 would indicate true BOS costs of $10.2M. Under any definition of BOS, the figures used by the BCEG for their deliberations indicate gross inconsistencies in the presentation of data. The Coalition position has already been addressed in the CRITERIA FIVE discussion. *(RE: Exhibit N., AFR 700-20 Extract and Exhibit J., Operating Cost Summary)*

The same failure to apply accurate and consistent standards and data are also evident in the manpower figures associated with BOS. Pittsburgh IAP ARS was asserted to have 243 personnel assigned to BOS, in the same AFRES BRAC Action Officer data release. The actual figure for FY 93 is estimated to be 121. *(RE: Exhibit N., AFR 700-20 Extract)*

COBRA

Level-Playing Field Errors



When the Air Force performed the COBRA "Level-Playing Field" analysis in November 1994, it made a serious error by applying critical cost figures from Minneapolis-St. Paul ARS to three other bases, including Pittsburgh ARS. For Pittsburgh, this overstated the communications cost element by 170 percent and the Base Operating Support cost element by 118 percent. *(RE: Exhibit K., COBRA Data)*

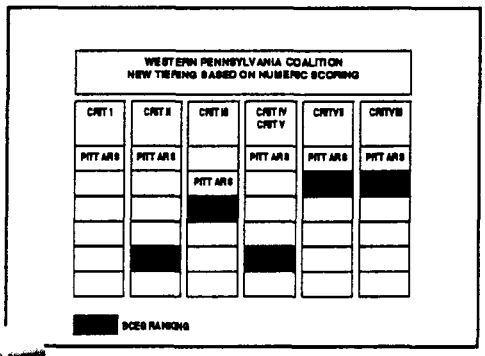
When the Level Playing Field Scenarios are re-run with corrected input data (extracted from the Air Force MICRO-BASS Financial Database), the relative standing of the AFRES C-130 installations' changes dramatically. Pittsburgh ARS moves from **second best** closure candidate to the **sixth best** closure candidate. *(RE: Exhibit K., COBRA Data))*

Ignored MILCON Avoidance Cost Savings

The analysis also failed to accurately consider savings benefits from MILCON avoidance. Of the 6 installations at civilian airfields, Pittsburgh IAP ARS has the lowest projected MILCON. By contrast, the most expensive base has projected MILCON (six year COBRA Analysis period) **775 percent** greater than Pittsburgh ARS. *(RE: Exhibit K. and Exhibit I.1.)*

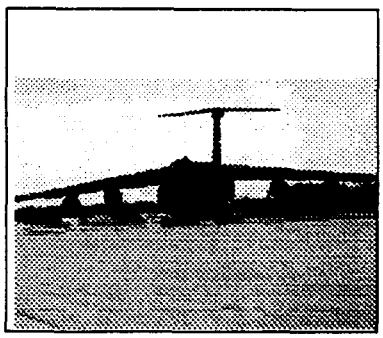
The same relative standings and similar relationships are seen when the so-called FOCUSED COBRA scenario is executed using actual cost data and MILCON cost avoidance figures. *(RE: Exhibit K., COBRA Data)*

Ranking of AFRES C-130 Installations at Civilian Airfields Using Corrected Data



The adjacent chart graphically depicts Pittsburgh IAP ARS new ranking when corrected data is considered. The corrected roll-up is based on numerical rank order. The inference is clear--**Pittsburgh ARS should be retained** as the primary installation for force structure consolidation and future force structure plans.

Retention of Pittsburgh IAP ARS is the Clear Choice



Pittsburgh ARS possesses the critical elements required for force structure consolidation, mission change or expansion. The centerpiece of this argument is the already discussed availability of "no-cost excess capacity". As DOD attempts to eliminate costly infrastructure, the retention of Pittsburgh IAP ARS gives the Air Force the unique luxury of maintaining an efficient 115 acre installation, with the option of 77 acres of ready ramp space, capable of absorbing any likely mission.

Furthermore, the capability of Pittsburgh ARS in coordination with civilian support agencies and contractors at Pittsburgh International Airport, enable the Air Force to accommodate exceptional contingency/mobilization surge operations. This capability is an elevation of the excess capacity argument; wherein, DOD is able to retain wartime capacity, at no cost, using the combined resources of Pittsburgh ARS and the civilian aviation community.

A review of the additional elements favoring the retention of Pittsburgh IAP ARS:

- Tremendous recruiting area *(RE: Exhibit F.)*
- The largest airfield in the Northeast and Mid-Atlantic, capable of handling any aircraft without disruption of commercial traffic during contingency or wartime mobilization *(RE: Exhibit O.)*
- Permissive local flying area *(RE: Exhibit D.)*
- Cost effective lease that leverages all airfield and air traffic services for only one dollar per year *(RE: Exhibit P., Lease Agreement)*
- Additionally, a lease agreement that purchases for the Air Force, complete crash, fire and rescue services, paramedic ambulance service and structural fire protection for only $20,000 per year--an estimated $2.5 to $3.0M annual savings *(RE: Exhibit P., Lease Agreement)*
- An existing ramp capable of supporting any aircraft in the Air Force inventory *(RE: Exhibit Q., Airfield Pavement Evaluation)*
- State of the art communications system servicing over 50 Federal and community agencies, including the Pennsylvania Air National Guard *(RE: Exhibit R., Communications Summary)*
- An installation with no significant projected MILCON required to maintain its capacity or capability *(RE: Exhibit I.)*
- An installation with robust capability *(RE: Exhibit S.)*
- A base with **proven military value**

lternative Base Closure Options

It is the opinion of the Coalition that the cost effectiveness of Air Reserve Components located at civilian airfields (ANG and AFRES) indicates no operational installation should be closed. The cost benefit of ARC installations compared to the cost of maintaining equivalent Active Duty functions is clear. In the domain of tactical and strategic airlift, the military value of ARC forces has been confirmed, from Operation Desert Storm to Operations Provide Comfort and Uphold Democracy.

Western Pennsylvania Coalition

COALITION NUMERIC RANKING OF AFRES C-130 INSTALLATIONS AT CIVILIAN AIRFIELDS

CRIT 1	CRIT II	CRIT III	CRIT IV CRIT V	CRITVII	CRITVIII
PITT ARS	PITT ARS	NIAGARA	PITT ARS	PITT ARS	PITT ARS
O'HARE	MINN-ST	PITT ARS	MINN-ST	O'HARE	YOUNG
MINN-ST	NIAGARA	B. MITCH	B. MITCH	B. MITCH	O'HARE
B. MITCH	O'HARE	O'HARE	YOUNG	MINN-ST	B. MITCH
NIAGARA	YOUNG	MINN-ST	O'HARE	NIAGARA	MINN-ST
YOUNG	B. MITCH	YOUNG	NIAGARA	YOUNG	NIAGARA

Nevertheless, if compelled to eliminate ARC infrastructure, the Commission must base their deliberations on correct data and accurate assumptions. The inference from the following comparisons of AFRES C-130 installations at civilian airfields is unambiguous--that Pittsburgh IAP ARS and the 911th Airlift Wing must be retained.

Pittsburgh IAP Complex

911TH AIRLIFT WING

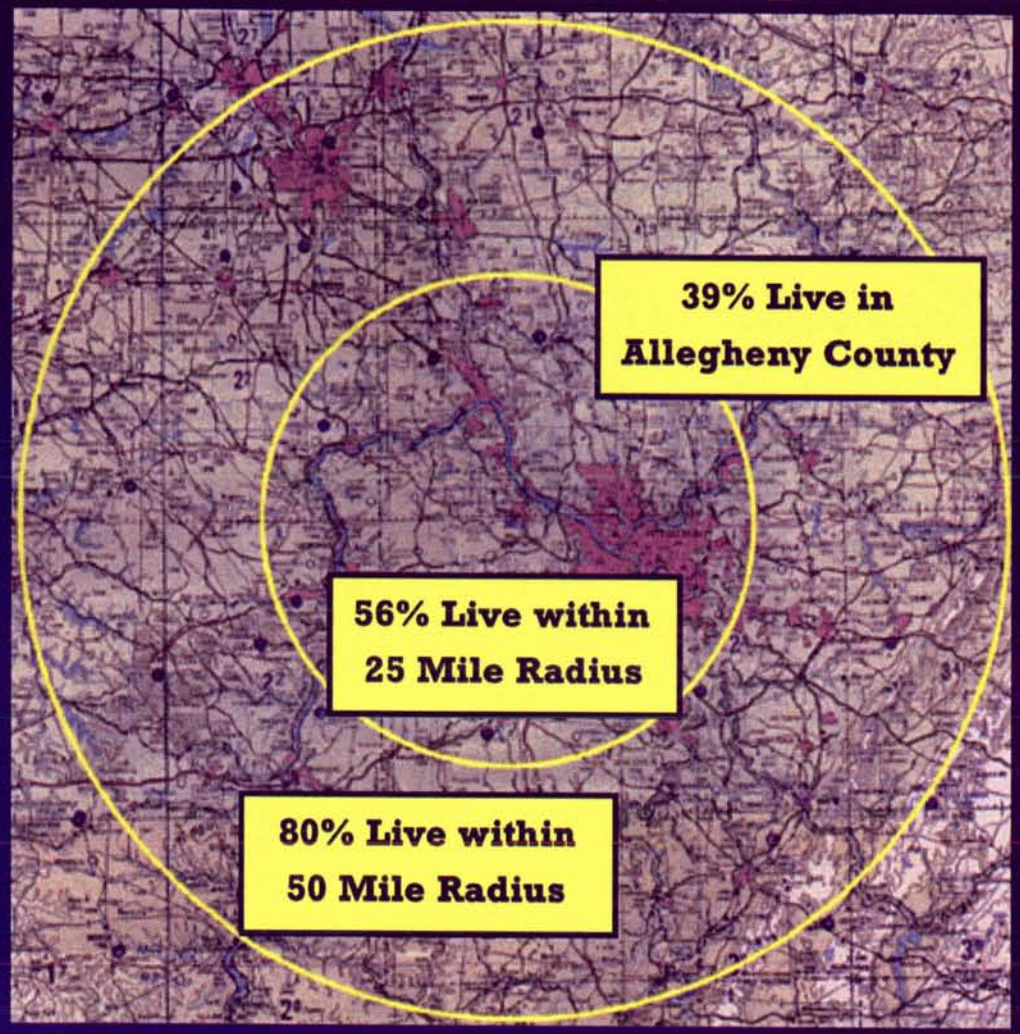
Mission of the 911th Airlift Wing

- To Train Reservists
- Provide Airlift for Airborne Forces, Their Equipment and Supplies
- Provide Inter-theater Aeromedical Evacuation
- Provide Support for Active Duty Forces

Personnel

- 1300 Reservists and 357 Full-time Employees
- Pittsburgh International Airport
  - Provides a Significant Pool of Experienced Personnel
  - Hub of a Major U.S. Airline Makes Pittsburgh a Valuable Resource for Aircrew Recruiting

911th Airlift Wing Demographics



Current Base Loading

- 8 C-130 Hercules Aircraft
- 2 Youngstown + 1 Lockheed Aircraft
- Total Capacity = 13 C-130's

Two Environmentally Approved Drop Zones

- Located within 25 miles of Base
- No Cost To Taxpayer

Advanced Consolidated Communications System

- The Only Operational Fiber-optic Network in the Air Force Reserve
- 21st Century, State-of-the-Art Local Area Network
- Serving More than 50 Federal and Community Facilities Including the Pennsylvania Air National Guard

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
PITTSBURGH ARB (AFRES)

- **Realign 8 PAA to Dobbins**
- **Considerations**
  - Loss of Great Recruiting Location (1 Major Airline Hub)
  - Rated As One of Top Two C-130 Installations in Crit I
  + Highest BOS of the Civ Joint Use Afld C-130 Locations
  + Clean Kill With No Impact on Pittsburgh ANGB
  + Multiple AFRES/ANG C-130 Units W/in 3 Hr Drive

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$9.5M	-224	242	1 Yr	16.7

[1] Does Not Include $9M Recruiting and Training Cost

911TH AIRLIFT WING

De-Icing Pad

Only one in AFRES

911TH AIRLIFT WING

National Disaster Medical System

911TH AIRLIFT WING

911th Airlift Wing Deployments

Bosnia Air Drop

Desert Storm

Hurricane Andrew

Number One in Criteria One

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
PITTSBURGH ARB (AFRES)

- Realign 8 PAA to Dobbins
- Considerations
  - Loss of Great Recruiting Location (1 Major Airline Hub)
  - Rated As One of Top Two C-130 Installations in Crit I
  - \+ Highest BOS of the Civ Joint Use Afld C-130 Locations
  - \+ Clean Kill With No Impact on Pittsburgh ANGB
  - \+ Multiple AFRES/ANG C-130 Units W/in 3 Hr Drive

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$9.5M	– 224	242	1 Yr	16.7

[1] Does Not Include $9M Recruiting and Training Cost

Maj Richardson, AF/RTR, BARC130.PPT4, 12/23/94, 10:10 AM

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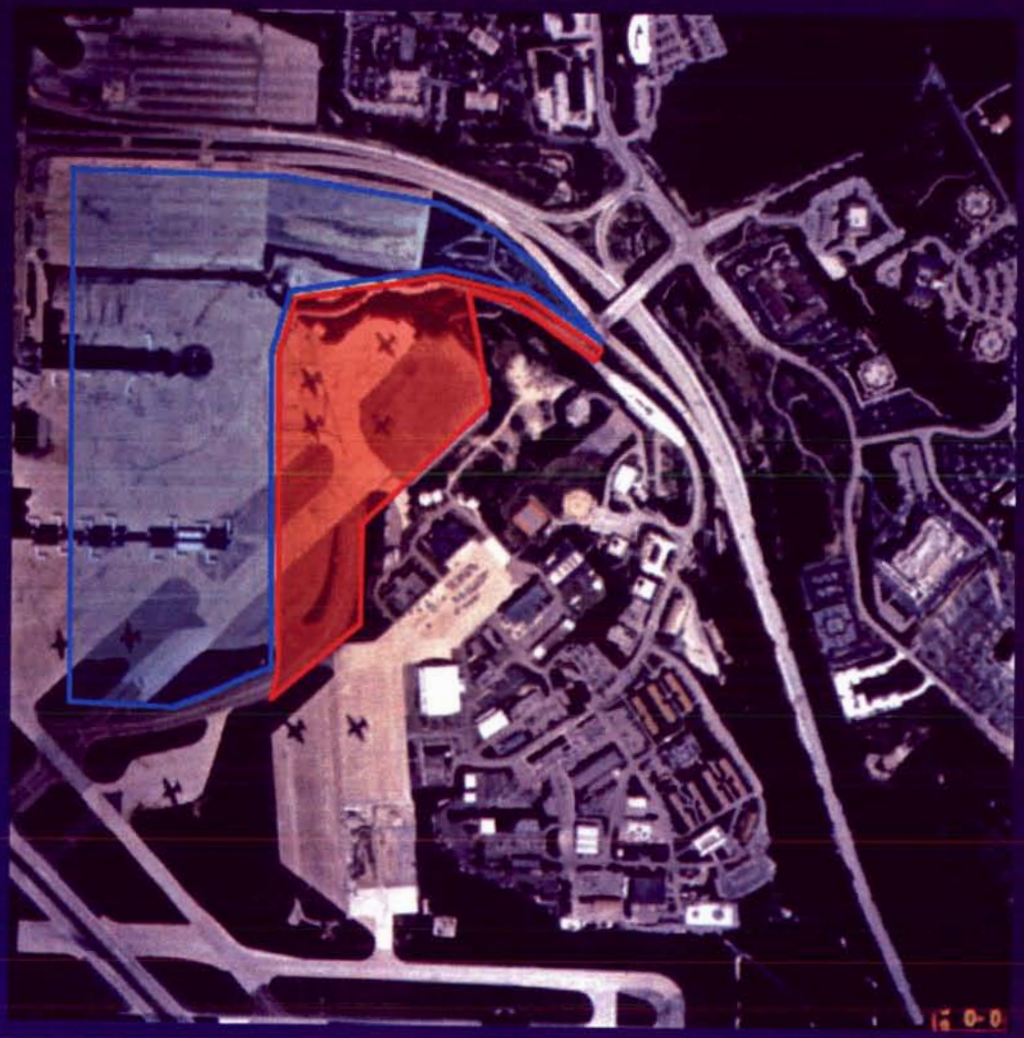
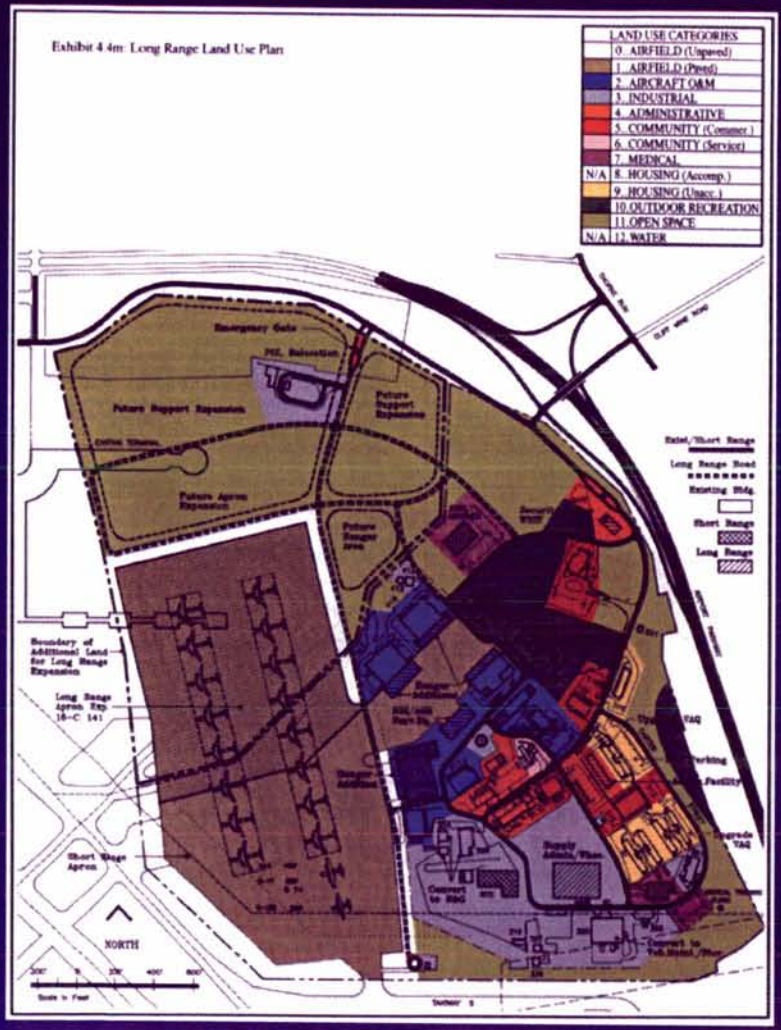
Expansion Capability



Pittsburgh IAP Complex

Proposed 911 Long Range Land Use Plan



BOS Cost Comparison

AIR FORCE AFRES BRAC 95 ANALYSIS

AFRES BOS COST COMPARISON

LOCATION	AIRFIELD OPERATOR	COLLOCATED UNITS	BOS	COST
BERGSTROM	AFR	CIV (?)	286	$20.89M
CARSWELL	NAVY	AFR / ANG	260	17.1
DOBBINS	AFR	ANG / AD / NAVY	363	24.73
GEN MITCHELL	CIV	AFR / ANG / AR	278	18.32
GRISSOM	AFR	AFR	383	20.27
HOMESTEAD	AFR	CIV (?)	334	26.57
MARCH	AFR	ANG / AFR	383	30.1
MINN-ST PAUL	CIV	NAVY / ANG / AFR	216	13.96
NIAGARA	CIV	AFR / ANG / NG	256	20.04
O'HARE	CIV	AFR / ANG	259	16.52
PITTSBURGH	CIV	AFR	243	22.23
WESTOVER	AFR	NG	397	36.1
WILLOW GROVE	NAVY	AFR / ANG / AR	144	9.41
YOUNGSTOWN	CIV	AFR	175	10.43

911th AIRLIFT WING

Flawed Cost Analysis

- Incorrect O&M Used
- High RPA Used as a Negative True Indication of Military Value
- Incorrect MILCON Used
- Incorrect COBRA Inputs Used

Congressional Inquiry – April 7, 1995

- "Pittsburgh ARS FY 94 O&M was $22.83M (sixth highest of units on civilian airfields)."
- **"FY 94 RPA was $8.67M (highest of all)."**
- "Projected MILCON, a cost avoidance if Pittsburgh is closed, is $33.58M (highest by $20M of any unit)."

Congressional Inquiry – April 26, 1995

"It appears that some data from Minn-St. Paul was transferred to Pittsburgh, Niagara, and O'Hare for some COBRA scenarios.

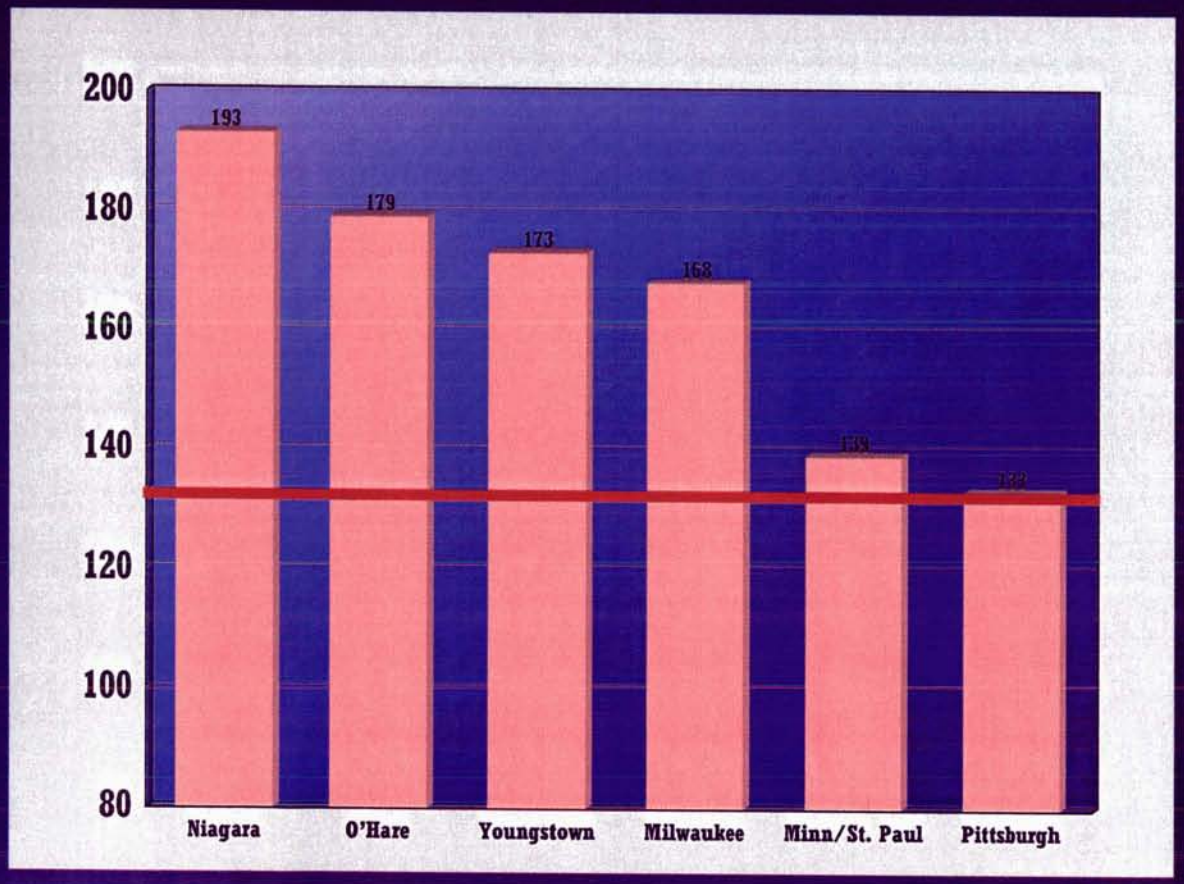
The COBRA input data is being reviewed. Updated COBRA runs will be accomplished for each base and forwarded when complete."

COBRA "Level Playing Field" Scenario

- Basis for Category IV/V Ranking
- Serious Deficiencies and Errors in Input Cost Data

Corrected COBRA

Taxpayers Save $6M to $60M if Base other than Pittsburgh is Closed



Pittsburgh IAP Complex

Incorrect Analysis

- Decision Making Data Incorrect
- Expansion Facilities No-Cost to U.S.
- Duplication Cost Not Considered During Air Force Analysis

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the Regional Presentation

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EXHIBIT	DESCRIPTION
VOLUME I	
A.	**Air Force Operating Cost Assertions and Congressional Inquiry Responses**
A.1	19 December 1994 AF/BCEG Minutes, Extracted Slides
A.2	AFRES BRAC 95 Action Officer Facsimile to AFRES/XPXP
A.3	DAF Analyses and Recommendations (Pittsburgh ARS Extract)
A.3.b.	Gen MacIntosh's BRAC 95 Message
A.4	Responses to Congressional Inquiries
B	**Land Offers and Agreements**
B.1	Memorandum of Agreement for 21.7 Acres of Ramp Space
B.2	31 Acre Offer
B.3	77 Acre Offer
C.	**1988 911th Airlift Wing Base Comprehensive Plan**
C.2	Base Comprehensive Plan
C.3	Executive Summary of the Plan
D.	**The 911th Airlift Wing: Organization and Operations**
E.	**Preliminary Airspace Environmental Analysis Report: 911th AW**
F.	**Selected AF/BCEG Minutes (Pittsburgh ARS Issues Highlighted)**
G.	**Air Quality Certification**
H.	**Contingency/Mobilization Issues**
H.1	Contingency Hot Cargo Pad
H.2	Contingency Hydrant Fueling Option

EXHIBIT	DESCRIPTION
VOLUME II	
I.	**Civil Engineering Data**
I.1.	FY 98 MILCON Program
I.2.	Substantiation of the April 10th MILCON Assertions
I.3.	MILCON Data
I.3.a.	MILCON and P-341 Review and Call Letter
I.4.	MILCON and P-341 Lists
I.5.	MILCON: FY 90 to FY 01
I.6.	De-icing Systems within the Air Force
J.	**Base Operating Support (BOS) Cost Certification**
K.	**Coalition COBRA Data Analysis**
L.	**Greater Pittsburgh Economic Value Assessment**
M.	**911th Airlift Wing Manning Summary**
N.	**AFR 700-20 Extract**
O.	**Presentation of Mr. Steve George, ex-Director of Aviation for Allegheny County to Commissioner Cornella on April 10, 1995**
P.	**Lease Agreement between Allegheny County and the United States**
Q.	**Airfield Pavement Evaluation**
R.	**911th Airlift Wing Communications Summary**
S.	**911th Airlift Wing Robust Capability and Installation Capacity**

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

VOLUME I

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

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Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

A

EXHIBIT A.

AIR FORCE OPERATING COST ASSERTIONS
AND
CONGRESSIONAL INQUIRY RESPONSES

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT A.1

19 DECEMBER 1994 AF/BCEG MINUTES, EXTRACTED SLIDES

AIR FORCE AFRES BRAC 95 ANALYSIS

AFRES BOS COST COMPARISON

LOCATION	AIRFIELD OPERATOR	COLLOCATED UNITS	BOS	COST
BERGSTROM	AFR	CIV (?)	288	$20.89M
CARSWELL	NAVY	AFR / ANG	260	17.1
DOBBINS	AFR	ANG / AD / NAVY	363	24.73
GEN MITCHELL	CIV	AFR / ANG / AR	278	18.32
GRISSOM	AFR	AFR	383	20.27
HOMESTEAD	AFR	CIV (?)	334	26.57
MARCH	AFR	ANG / AFR	383	30.1
MINN-ST PAUL	CIV	NAVY / ANG / AFR	216	13.96
NIAGARA	CIV	AFR / ANG / NG	256	20.04
O'HARE	CIV	AFR / ANG	259	16.52
PITTSBURGH	CIV	AFR	243	22.23
WESTOVER	AFR	NG	397	36.1
WILLOW GROVE	NAVY	AFR / ANG / AR	144	9.41
YOUNGSTOWN	CIV	AFR	175	10.43

AIR FORCE AFRES BRAC 95 ANALYSIS

CONSIDERATIONS FOR AFRES RECOMMENDATION

- Pros
  - Cost And Manpower Savings
  - Reduces AFRES BOS Cost
- Cons
  - Small Financial Pay Back for Non-Financial Impact
  - Lowers AFRES Presence in Civilian Community
    - Reduces Recruiting & Volunteer Pool
  - All Bases Are In Good Recruiting and Training Locations
    - Impact On Joint Training With Regional Guard and DOD Res Units
- Key Factors
  - Force Structure Addressed Programatically
  - Greatest Savings for Least Amount of Pain
  - Reassignment of Displaced Reservists

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

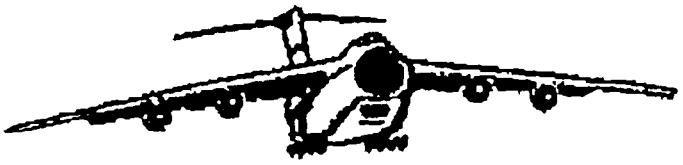
References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT A.2

AFRES BRAC ACTION OFFICER FACSIMILE TO AFRES/XPXP

XPXP Lunch Bun

FAX COVER SHEET



HQ USAF/RTR
1480 AIR FORCE PENTAGON
WASHINGTON DC 20330-1480
DSN 225-6766/6766 or Comm (703) 695-XXXX
FAX DSN 223-9707 or Comm (703) 693-9707

March 3, 1995, 07:29 AM
FROM: Major Robert C. Richardson USAFR
AFRES BRAC 95 Action Officer
# of Pages (including this cover): Five (5)

TO: HQ AFRES/XPXP
ATTN: Maj Orr

REMARKS

RE: Greater Pittsburgh Information For HQ AFRES/PA. Capt Treat

*

1. Below is a comparison of the base operating support (BOS) cost and manpower at the AFRES C-130 locations on civilian airfields. HQ AFRES/XPXP provided these figures during the Air Force deliberations.

INSTALLATION	MANPOWER POSITIONS	FY 93 AFRES BOS COST	REMARKS
Gen Mitchell ARS	278	$18.32M	ANG & AFRES have separate facilities
Minneapolis-St Paul ARS	216	$13.96M	AFRES run the POL facilities for AFRES & ANG
Niagara ARS	256	$20.04M	AFRES run the POL facilities for AFRES & ANG
O'Hare ARS	259	$16.52M	AFRES and ANG share some of the BOS functions
Greater Pittsburgh ARS	243	$22.23M	AFRES & ANG maintain separate operations
Willow Grove ARS	144	$9.41M	AFRES & ANG are tenants to the Navy Res
Youngstown ARS	175	$10.43M	AFRES is the only military unit

2. To help deal with other questions I included the BRAC 95 AF Detailed Analyses one pager, a point paper on the AFRES personnel relocation assistance, a map of ANG/AFRES units near Greater Pittsburgh ARS, and a some information on Cost of Base Realignment & Realignment Action (COBRA) model used in determining the return on investment from this recommendation. I coordinated release with SAF/PA.

MAJOR ROB RICHARDSON, USAFR,
HQ USAF/RTR AFRES BRAC 95 Action Officer

4. ATCH
1. Greater Pittsburgh one pager from the Air Force recommendation
2. Point paper and diagram on COBRA model
3. Point paper on AFRES personnel relocation assistance
4. A map of AFRES/ANG unit near Greater Pittsburgh ARS

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT A.3

DAF ANALYSES AND RECOMMENDATIONS
(PITTSBURGH ARS EXTRACT)

GREATER PITTSBURGH IAP AIR RESERVE STATION, PENNSYLVANIA

Recommendation: Close Greater Pittsburgh IAP Air Reserve Station (ARS). The 911th Airlift Wing will inactivate and its C-130 aircraft will be distributed to Air Force Reserve C-130 units at Dobbins ARB, Georgia, and Peterson AFB, Colorado.

Justification: The Air Force Reserve has more C-130 operating locations than necessary to effectively support the Reserve C-130 aircraft in the Department of Defense (DoD) Force Structure Plan. Although Greater Pittsburgh ARS is effective at supporting its mission, its evaluation overall under the eight criteria supports its closure. Its operating costs are the greatest among Air Force Reserve C-130 operations at civilian airfields. In addition, its location near a number of AFRES and Air National Guard units provides opportunities for its personnel to transfer and continue their service without extended travel.

Return On Investment: The total estimated one-time cost to implement this recommendation is $22.3 million. The net of all costs and savings during the implementation period is a savings of $36.3 million. Annual recurring savings after implementation are $13.1 million with a return on investment expected in two years. The net present value of the costs and savings over 20 years is a savings of $161.1 million.

Impact: Assuming no economic recovery, this recommendation could result in a maximum potential reduction of 631 jobs (387 direct jobs and 244 indirect jobs) over the 1996-to-2001 period in the Allegheny, Fayette, Washington, and Westmoreland, Pennsylvania, counties economic area, which is 0.1 percent of economic area employment. Review of demographic data projects no negative impact on recruiting. The cumulative economic impact of all BRAC 95 recommendations, including the relocation of some Air Force activities into the Allegheny, Fayette, Washington, and Westmoreland area, and all prior-round BRAC actions in the economic area over the 1994-to-2001 period could result in a maximum potential decrease equal to 0.1 percent of employment in the economic area. Environmental impact from this action is minimal, and restoration of the Greater Pittsburgh IAP ARS will continue.

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT A.3.a.

Gen MacIntosh's BRAC 95 Message

Subject: GEN McIntosh's BRAC 95 Message

GEN McINTOSH BRAC 95 MESSAGE:

Secretary of Defense Perry has made his decision of which bases to recommend to the BRAC commission for closure. Although the Reserve has bases and units announced, it's important to remember that some very important steps remain The BRAC commission can change the list by adding or deleting bases before it forwards it to the President by July 1st. The President can then approve or reject the list. If he rejects it, the commission has 30 days to submit a revised list, if the President rejects the second list, no closure or realignment can take place. If he approves the commission's list, he must submit the entire list to Congress. If Congress does not disapprove the list on an all or nothing basis, it has the force of law. Since BRAC 91, the commission has changed the Secretary of Defense's list, but the President or Congress has never rejected a BRAC list.

The following actions affect Air Force Reserve units. Details and a timetable to implement these actions are pending

The Secretary of Defense has submitted the following actions to the BRAC commission:

1. Bergstrom Air Reserve Base, Texas: Close Bergstrom ARB. The 924th Fighter Wing will inactivate. The wing's F-16 aircraft will be redirected or retired. Headquarters 10th Air Force will relocate to Naval Air Station Fort Worth, Joint Reserve Base, Texas. Justification: Due to Air Force Reserve fighter force drawdown, the Air Force Reserve has an excess of F-16 fighter locations. The closure of Bergstrom ARB is the most cost effective option for the Air Force Reserve. The relocation of 10th Air Force headquarters to NAS Fort Worth will also collocate the unit with one of its major subordinate units.

What unit?

2. Greater Pittsburgh IAP Air Reserve Station, Pennsylvania: Close Greater Pittsburgh IAP Air Reserve Station (ARS). The 911th Airlift Wing will inactivate and its C-130 aircraft will be distributed to Air Force Reserve C-130 units at Dobbins ARB, Georgia and Peterson AFB, Colorado. Justification: The Reserve has more C-130 operating locations than necessary to effectively support the Reserve C-130 aircraft in DoD's Force Structure Plan. Although Greater Pittsburgh ARS is effective at supporting its mission, its evaluation overall under the eight criteria supports it closure. Its operating costs are the greatest among the Air Force Reserve C-130 operations at civilian airfields. In addition, it's location to other AFRES and ANG units provides opportunities for its personnel to transfer and continue their service without extended travel.

* may in fact be the lowest

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT A.4

RESPONSES TO CONGRESSIONAL INQUIRIES

SUBJECT: Congressional Inquiry APR 07 1995

QUESTION: All construction programs for FY 92, FY 93, and FY 94. Include MCP, P341 and O&M (521/522/529)

ANSWER: The Pittsburgh IAP construction program includes:

P341
FY92 - $0
FY93 $296,562 (aircraft de-icing)
FY94 - $300,000 (water storage tank)

O&M
FY92 $1,027,097
FY93 - $1,953,134
FY94 - $1,090,902

MCP
FY92 - $0
FY93 - $0
FY94 - $8.7M (off-base firing range, jet fuel storage, base CE complex)

QUESTION: List of *all* AFRES installations with a de-icing pad with a contaminate recovery system

ANSWER: Pittsburgh ARS, PA has the only operational system.

QUESTION: AFRES or AF plan to relocate 911 AW Communications Center upon total closure of Pittsburgh ARS

ANSWER: At present, the Pittsburgh Air National Guard, 171 ARW, is planning to assume operation of the Communications Center and telephone switch. The ANGRC estimates $985K to assume communications support. This includes $360K for facility construction/alter. There is no requirement for a switch of that capacity to be located at any reserve installation. The Air National Guard Readiness Center and 171 ARW will have to determine if the same level of support is to be maintained.

a. What was the cost to the Government to install the Communications System and its associated infrastructure (including C2IPS) at Pittsburgh ARS.

SWITCH	$2.659M (AF FUNDED)
CABLE	$1.352M (AFRES FUNDED)
C2IPS	$0.100M
LAN/MAN	$0.748M

TOTAL $4.859M

b. What is the estimated or forecast cost to the government to bring each AFRES installation to Pittsburgh ARS standard relative to its Communications System and associated infrastructure.

There are different requirements at each installation.

SWITCH (MAJCOM BLUEPRINT THROUGH 1998)

BERGSTROM ARS	$1.0M (BRAC)
O'HARE ARS	$0.2M
DOBBINS	0
CARSWELL	0
MITCHELL	$0.2M
GRISSOM	$0.1M
HOMESTEAD	$2.9M
MARCH	$1.5M
MINN-ST PAUL	$1.5M
NEW ORLEANS	0
NIAGARA	0
WESTOVER	0
WILLOW GROVE	0
YOUNGSTOWN	$1.2M
TOTAL	$8.6M

CABLE

BERGSTROM ARS	$0.3M
O'HARE	$0.1M
DOBBINS	0
CARSWELL	$0.8M
MITCHELL	$0.1M
GRISSOM	$0.7M
HOMESTEAD	$0.9M
MARCH	$1.1M
MINN-ST PAUL	$0.2M
NEW ORLEANS	$2.0M
NIAGARA	0
WESTOVER	$1.8M
WILLOW GROVE	$1.0M
YOUNGSTOWN	$0.4M
TOTAL	$9.4M

QUESTION: What EEIC were considered as AFRES determined comparative BOS cost for each installation. What is BOS as defined by AFRES for BCEG deliberations.

ANSWER: AFRES did not determine the comparative BOS costs. AFRES did not define BOS for the BCEG deliberations. AFRES validated the unit supplied information. All Elements of Expense Investment Codes (EEIC) in the following program elements were included:

55356 Environmental Compliance (other than DERA)
55376 Minor Construction (FY93 and outyears)
55378 Real Property Maintenance and Repair (FY93 and outyears)
55394 Real Property Maintenance (FY92 and prior)
55395 Base Communications
55396 Base Operating Support -

BOS components:

Function Code:	Function/Title
1040	Public Affairs
1062	Ground Safety
1100	Administration
1250	Contracting
1500	Comptroller/Budget
1600	Consolidated Personnel Office
1680	Civilian Personnel
4100	Supply/Fuels
4200	Transportation
4300	Security/Law Enforcement
4400	Civil Engineering
4420	Fire Protection
4500	MWR
4600	Services/Billeting
4700	Base Operations
3102	Aircrew Life Support
4751	Disaster Preparedness

QUESTION: Total budget printout for each installation considered for FY 93 and FY 94

ANSWER:

FY94 OBLIGATIONS
COMPARISON OF C-130 AFRES UNITS
AT CIVILIAN AIRPORTS

	GTR PITT	GEN MITCHELL	MINN-ST PAUL	OHARE	NIAGARA FALLS	YOUNGSTOWN
O&M	22,829	23,486	23,556	27,347	26,473	24,181
RANKING	6	5	4	1	2	3
RPA	8,673	7,134	7,423	8,658	7,368	7,086
RANKING	1	5	3	2	4	6
TOTAL	31,502	30,620	30,979	36,005	33,841	31,226
RANKING	3	6	5	1	2	4

FY93 OBLIGATIONS

O&M	21656	22215	23232	27953	22207	23184
RANKING	6	4	2	1	6	3
RPA	7669	6427	6303	7490	6287	5744
RANKING	1	3	4	2	5	6
TOTAL	29325	28642	29535	35443	28494	28928
RANKING	3	5	2	1	6	4

QUESTION: What constituted manpower was associated with BOS costs as determined by AFRES

ANSWER: AFRES defined BOS components:

Function Code:	Function/Title
1010	Public Affairs
1062	Ground Safety
1100	Administration
1250	Contracting
1500	Comptroller/Budget
1600	Consolidated Personnel Office
1680	Civilian Personnel
4100	Supply/Fuels
4200	Transportation
4300	Security/Law Enforcement
4400	Civil Engineering
4420	Fire Protection
4500	MWR
4600	Services/Billeting
4700	Base Operations
3102	Aircrew Life Support
4751	Disaster Preparedness

27 216
197

QUESTION: Was Fire Protection and Crash Rescue costs considered by AFRES when arriving at a figure for operating costs.

ANSWER: HQ AFRES was not responsible for arriving at a figure for operating cost. All cost factors were derived from the Base Closure Questionnaire, supplied by the 911 AW. The headquarters was responsible for certifying data supplied by the units. The 911 AW uses fire and rescue that is provided by Allegheny County.

QUESTION: What were AFRES unfunded obligations for FY 93 and FY 94 for each installation.

ANSWER:

FY	ST	Location	Project	Approp	Est Awd
93	MI	Selfridge (ANG)	ADAL Facilities for Conversion	1,650	Aug-95
93	WI	Gen Mitchell ARS	Composite Ops and Maint	2,500	May-95
			FY 93 TOTAL MILCON	4,150	
94	FL	Homestead ARB	Medical Training Facility	2,750	Apr-95
94	PA	Greater Pittsburgh ARS	Off Base Firing Range	1,300	Jun-95
94	PA	Greater Pittsburgh ARS	Jet Fuel Storage Complex	4,300	Mar-95
94	PA	Greater Pittsburgh ARS	Base Civil Eng Complex	3,100	Mar-95
94	WI	General Mitchell ARS	Add Fire Prot to Aircraft Hangar	1,500	Jun-95
			FY 94 TOTAL MILCON	12,950	

QUESTION: List congressional add-ons for each installation.

ANSWER: FY 94 MILCON Add-ons

Location	Project	HASC	SASC	Auth Conf	HAC	SAC	Approp Conf

Homestead ARB	Medical Training Facility	0	0	0	0	0	2,750
Dobbins ARB	Firing Range	1,900	0	1,900	1,900	0	1,900
Dobbins ARB	Flight Simulator	6,000	0	6,000	6,000	0	6,000
Niagara ARB	Corrosion Control Facility	800	0	800	0	0	800
Youngstown ARS	Shortfield Landing Zone	6,400	6,400	6,400	6,400	6,400	6,400
Youngstown ARS	Squadron Ops Facility	3,200	3,200	0	0	0	0
Youngstown ARS	Munitions Maint Complex	0	0	0	0	3,200	0
Youngstown ARS	C130 Maint Hangar	4,600	0	0	0	0	0
Greater Pittsburgh ARS	Base Civil Eng Complex	3,600	3,100	3,100	3,100	3,100	3,100
	TOTAL MILCON	26,400	12,700	18,200	17,400	12,700	20,950
	General Reductions				-7,580	0	-2,780
Arch & Eng Svs & Construction Design		0	0	0	589	0	589
Youngstown Planning & Design		1,877	0	0	0	0	0
PL 103-211 General Recision		0	0	0	0	0	-1,862
Unspecified Minor Construction		0	0	0	0	0	0
	Grand TOTAL	28,277	12,700	36,400	10,409	12,700	18,759

QUESTION: What objective criteria were set by AFRES for units to determine category IX.9 Recruiting Area.

ANSWER: AFRES did not set the criteria. Air Force Base Closure Working Group members identified specific areas that were then approved by the Air Force Base Closure Executive Group. The criteria that was utilized for the 1993 BRAC process was also used for the 1995 BRAC process. Green = 200K and greater; Yellow = 75K to 199,999; Red = Less than 75,000K.

QUESTION: What objective parameters were set by AFRES to determine categories II.3.A.3 Low Level Routes; II.3.B.3 Low Level Routes; II.3.C Existing Local Flying Area; II.3.D Future Local Flying Area

ANSWER: AFRES did not set the criteria. Air Force Base Closure working Group members identified specific areas that were then approved by the Air Force Base Closure Executive Group. In coordination with AF/XOFM and AF/XOFC, the same process and parameters that were used for the active duty large and small sub-categories were utilized for the AFRES analysis. The installation Evaluation Criteria is detailed in Appendix 1, Department of the Air Force Analyses and Recommendations (Volume V) February 1995.

QUESTION: What is the source and what are the components of the "Manpower Positions" and "FY 93 AFRES BOS Cost" figures documented in the facsimile message date March 3, 1995, 07:29 AM from Major Robert C. Richardson, AFRES BRAC Action Officer to HQ AFRES/XPXP.

ANSWER: Figures were taken from a Civilian Manpower Cut Exercise spreadsheet developed at HQ AFRES. These numbers were not used for the COBRA computations. The BCEG used only certified data provided by the unit through the Base Closure Questionnaire, and HQ USAF/RT. These numbers were not the basis for any of the eight criteria used by the BCEG in making their recommendations.

QUESTION: Substantiate the SECAF assertion: "Its [Pittsburgh ARS] operating costs are the greatest among Air Force Reserve C-130 operations at civilian airfields."

ANSWER: Pittsburgh ARS FY94 O&M was $22.83M (sixth highest of units on civilian airfields). FY94 RPA was $8.67M (highest of all). Projected MILCON, a cost avoidance if Pittsburgh is closed, is $33.58M (highest by $20M of any unit). Totaling the three areas, Pittsburgh is $65.08M. Gen Mitchell at Milwaukee is $30.62M, Minn-St Paul is $35.98M, Chicago O'Hare (host to ANG unit) is $39.51M, Niagara (host to ANG unit) is $45.94M, and Youngstown is $31.23M.

Assistant Secretary of the Air Force
Financial Management

GARRY G. SAUNER
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DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE SECRETARY

April 26, 1995

SAF/LLP
1160 Air Force Pentagon
Washington, DC 20330-1160

The Honorable Rick Santorum
United States Senate
Washington, DC 20510

Dear Senator Santorum

This is in response to your April 18, 1995, request for additional information concerning Greater Pittsburgh International Airport, Pennsylvania. The data is provided per your request.

A similar letter is being provided to Mr. Mascara.

Sincerely

STEPHEN D. BULL, III
Colonel, USAF
Chief, Programs and Legislation Division
Office of Legislative Liaison

Attachments

THE DEFENSE BASE CLOSURE AND REALIGNMENT COMMISSION
1700 NORTH MOORE STREET SUITE 1425
ARLINGTON, VA 22209
703-696-0504

ALAN J. DIXON, CHAIRMAN

COMMISSIONERS:
AL CORNELLA
REBECCA COX
GEN J. B. DAVIS, USAF (RET)
S. LEE KLING
RADM BENJAMIN F. MONTOYA, USN (RET)
MG JOSUE ROBLES, JR., USA (RET)
WENDI LOUISE STEELE

March 30, 1995

Please refer to this number when responding: 950329-4R1

The Honorable Rick Santorum
United States Senate
Washington, D.C. 20510

Dear Senator Santorum:

Attached are responses to questions submitted on your behalf by the Defense Base Closure and Realignment Commission at an investigative hearing on March 6, 1995. I trust that this information is helpful and responds to your concerns.

Again, thank you for your interest in the base closure and realignment process. Please do not hesitate to contact me if I may be of further assistance as we go through this difficult and challenging process.

Sincerely,

Alan J. Dixon
Chairman

AJD:cw
Enclosures

Sen Santorum (PA)

Page 19, Question 1: The DoD justification for closure of the Pittsburgh IAP Air Reserve Station was that, "although Greater Pittsburgh ARS is effective in supporting its mission, its evaluation overall under the eight criteria supports its closure. Its operating costs are the greatest among Air Force Reserve C-130 operations at civilian airfields." Can you tell me what exactly are the components of "operating costs?"

Answer: The following are components of Base Operating Support: Public Affairs; Ground Safety; Administration; Contracting; Comptroller/Budget; CBPO; Civilian Personnel; Supply/Fuels; Transportation; Security/Law Enforcement; Civil Engineering; Fire Protection; MWR; Services/Billeting; Base Operations; Aircrew Life Support; Disaster Preparedness.

Page 19, Question 2: Are the costs associated with successfully manning at 110% considered relative to other bases which are below 100% total manning?

Answer: The costs were compiled for requirements, not assigned personnel. This ensures that all organizations are equally evaluated using the same criteria.

Page 19, Question 3: Are the costs incurred in maintaining a higher state of readiness (exercise, contingency, and humanitarian deployments, etc.) held against the unit in computing "operating costs?"

Answer: No. The operating costs that are considered are fixed irrespective of operations of the unit. The costs are related to the unit's facilities and operating location arrangements.

Questions directed to AF response to Congressional Inquiry dated 17 Apr 1995

QUESTION: Comparative BOS cost data, provided shows Youngstown data to be $10.43M, Minneapolis St. Paul's to be $13.96M and Pittsburgh's to be $22.23M. Please provide an item by item comparison for each base by PEC code and BOS component used to provide this data.

ANSWER: The cost figures in exhibit 1 were taken from a Civilian Manpower Cut Exercise spreadsheet developed for HQ AFRES/XPXP. The spreadsheet only showed total BOS cost data and did not itemize by either PEC code or BOS component. Additionally, the cost figures from the spreadsheet were not used in either the "Level Playing Field" or "Focused" COBRA computations.

QUESTION: Please provide by function codes for all BOS components, the manpower figures for all bases considered.

FUNDED CIVILIANS ALL PECS

UNIT		PITTSBURGH	GEN MITCHELL	MINN-ST. PAUL	O'HARE	NIAGARA	YOUNGSTOWN
FAC	TITLE						
104A	Public Affairs	2	2	2	3	3	2
106A	Grd Safety	1	0	0	1	1	1
16G1	Info Mgmt	6	5	6	5	(4)2	6
12A0	Contracting	9	10	11	11	17	10
15XX	Compt/Budget	15	15	15	15	15	12
16B1	CBPO	19	16	18	20	16	16
16C1	Civ Personnel	4	(3)37	4	4	4	4
41XX	Supply	37	44	36	41	(4)3	36
42XX	Transportation	11	11	16	11	(4)1	13
43XX	Security/Law	35	35	35	36	35	35
44XX(1)	Civil Eng	46	34	47	52	(4)19	44
44EF	Fire Protection	(6)1	30	(6)1	37	50	32
45--	MWR	12	4	11	6	17	7
46--	Services	0	0	0	0	0	0
13E1	Base Operations	1	2	2	2	2	2
31C1(2)	Life Support	4	4	4	4	4	5
44EB	Disaster Prep	3	2	2	3	2	2
		206	251	210	251	191	227

(1) 44XX Excluding Fire Protection and Disaster Prep (included on other lines)
(2) Part of Aviation Flyaway Package
(3) Regional Civilian Personnel Support
(4) Under OMB A-76 Circular Contract
(5) 12 PAA Unit
(6) Contracted Fire Protection

QUESTION: Were costs for Pittsburgh's 3 MCP unfunded projects in FY94 (POL, Firing Range and BCE complex) considered? If so, what figures were used? Were similar costs considered at other bases?

ANSWER: No. MCP projects, for COBRA computations, were only considered for FY96 through FY01.

QUESTION: Are Congressional add-on projects considered as unfunded when considering MCP?

ANSWER: It depends on the MCP project and the language that added the project. Normally, Congressional add-ons are considered funded. Please provide a specific project or more details.

QUESTION: Ref. Previous question, "Total budget printout for each installation considered for FY93 and FY94." The answer given is in chart form titled "FY94 Obligations, Comparison of C-130 AFRES Units at Civilian Airfields." (Exhibit 2)

Please define the components included in the figures for "RPA".

ANSWER: The following project codes were used in the RPA portion of the base cost sheet:

721	Training-Unit program Pay Group A
722	Training-IMA Program Pay Groups A,B&D
725	Training-Non-Prior Service Pay Group F
726	School Training
727	Special Tours
734	Disability, Hospitalization & Death Gratuity
735	Individual Ready Reserve Training & Screening
739	Bonus Incentives, Including Montgomery GI Bill

QUESTION: Provide a copy of the Civilian Manpower Cut Exercise spreadsheet developed at HQ AFRES and referred to in the response.

ANSWER: The referenced Civilian Manpower Cut Exercise was an informal, speculative document developed to measure the relative impact of various force structure options. Unfortunately, it has been perceived as a critical element of the realignment and closure process and therefore continues to generate considerable interest. As a hypothetical exercise, its only goal was to provide a rough order of magnitude comparison between several internal proposals. It only considered generalized parameters and was created solely for HQ AFRES/XPXP use.

As a working paper, there is no documentation to either confirm or deny the validity of any of the information it contains. Also, any effort to critique the accuracy of its information will be superfluous because it was not submitted to the Base Closure Executive Group (BCEG) as certified or validated data. All information supplied by HQ AFRES personnel to the BCEG strictly adhered to the rigorous scrutiny and validation procedures outlined in the BRAC Questionnaire internal control plan.

QUESTION: Provide certified data used by BCEG which was provided by HQ USAF/RT as referenced in the response. (Exhibit 3)

ANSWER: Please see Attachment 1.

QUESTION: SECDEF briefing to BRAC Commission on March 1, 1995: Reference, Page 9 - Explain why O'Hare cost information was omitted, particularly since O'Hare could yield the greatest cost savings. (Exhibit 4)

ANSWER: The slide at Exhibit 4 did not come from a SECDEF briefing. A COBRA excursion (for O'Hare) was not included for consideration because the cost is zero. In accordance with a previous (BRAC 93) decision, if O'Hare ARS is to be closed and the units moved, it must be done without any cost whatsoever to the federal government. Note: the City of Chicago has until July 1995 to begin the closure/realignment.

QUESTION: AFRES BRAC 95 Options Briefing by BGen Bradley dated 12-20-94 Page 5 - provide the COBRA Analysis and Scenario Files for the COBRA results shown on these slides. They differ significantly from the presently available "Level Play" and "Focused" Scenarios. (Exhibit 5)

ANSWER: Please see Attachment 2. The attached COBRA is a notional COBRA run. The COBRA run supporting exhibit 5 numbers has previously been provided.

QUESTION: BCEG Minutes, dated 2 January 1995 - Attachment 1 - Explain why Fire Protection and Airfield Maintenance were not included in the ARC criteria. If they are considered elsewhere, provide complete itemization of those costs for all bases considered.

ANSWER: Please provide a copy of the BCEG minutes referred to in the question as there was no 2 January BCEG meeting. Fire Protection and Airfield Maintenance are part of the BOS. Complete budget printouts have already been forwarded in response to a previous Congressional inquiry.

QUESTION: BCEG Minutes dated 9 January 1995 - Bottom of first page - Justify why closure decisions should not be based on "ARC presence" in the state rather than AFRES presence, particularly if large cost savings would result. (Exhibit 6)

ANSWER: There is no 9 January 1995, BCEG meeting. AFRES and ANG are separate subcategories in the BRAC process. This has been the case during the three previous BRAC rounds. Therefore, ANG locations, AFRES locations, and active duty locations were all considered separately.

FOLLOW UP QUESTION A: Youngstown - Page IV.28, Item IV, 1B - - The FY94 RPMA Cost is missing. Provide this number and identify whether it was included in all COBRA summaries.

ANSWER: Complete budget printouts have already been forwarded in response to a previous Congressional inquiry.

FOLLOW UP QUESTION B: Youngstown IV, 28, Item IV, 1C - - What are the FY91 and FY 92 RPM-S Costs?

ANSWER: HQ AFRES is reviewing the data from FY91 and FY92. The breakout for RPM-S costs will be forwarded as soon as they are available.

FOLLOW UP QUESTION C: Air Force Analysis and Recommendations, Volume V, dated February 95.

ANSWER: Volume V is the Air Force analyses and recommendations to the DoD Base Closure and Realignment Report to the Commission.

QUESTION: Explain why the BCEG did not consider ARC C-130 Bases (AFRES and ANG), instead of only AFRES C-130 Bases? If they were considered, explain how data on each was compared and provide the data (Exhibit 7)

ANSWER: Although AFRES and ANG were shown in the ARC category in the Air Force BRAC questionnaire, in fact, they were considered as separate subcategories in the recommendation process. Therefore, the ANG was not compared with AFRES units in the recommendation process. This is the same process that was used in the three previous base closure rounds. Since ANG units fall under the Governor and Adjutant General of each state, they can only be moved within state boundaries. The BCEG, however, looked at each state to find opportunities for relocating ANG units to active Air Force bases that met the DoD selection criteria and were cost effective. They found only one opportunity to move an ANG C-130 unit and recommended the 129th Rescue Group, Moffett Federal Airfield, CA move to McClellan AFB, CA.

QUESTION: Provide a detailed breakdown of the one-time shutdown costs associated with all aspects of the closure of the 911th Airlift Wing, including man-hours and materials.

ANSWER: Air Force Base Closure Agency estimates were used for estimating closure costs in the COBRA computations. There is no further breakdown of the costs. The site survey and revised COBRA results will be forwarded when they are complete.

QUESTION: Were any costs associated with supporting the Pennsylvania Air National Guard, such as communication facilities, billeting, BX, gym or credit union considered?

ANSWER: The questionnaire sent to each base attempted to consider or capture the services that were interconnected. Pittsburgh's response to question II.5.A was "There are no unique (one-of-a-kind) Air Force Facilities which must be replaced if the base is closed." Unfortunately, by not fully answering the question, the interrelated nature of the communications facility (between the AFR and the ANG) was not identified. The ANG does not consider billeting, the BX, the gym, or the credit union to be an issue.

QUESTION: COBRA - - We were previously provided the following floppy disk COBRA scenario files (*.CBR) and standard factor files (*SFF) for the bases listed.

-- LEVEL - PLAY Scenarios dated 11/17/94 for Pittsburgh, Niagara, Milwaukee, Minn - St. Paul, Willow Grove, Youngstown and O'Hare.

-- FOCUSED Scenario dated 2/20/95 for Pittsburgh only.

a. Did the Air Force develop or use any other COBRA scenarios for the above installations or for any ANG C-130 installations that were considered in the DoD's selection process?

ANSWER: No.

FOLLOW UP QUESTION B: Provide these COBRA reports, *.CBR files and associated *.SFF files along with a full description of how, why and for what purpose the scenario generated was used.

ANSWER: Not Applicable.

FOLLOW UP QUESTION C: Provide COBRA scenarios used when reviewing ANG C-130 bases. If none were used, explain how equitable comparison of Closure costs and savings were established, and how the ANG C-130 units were compared against the AFRES C-130 units.

ANSWER: Only one COBRA run for ANG C-130 units was run for use in the Air Force selection process. That recommendation COBRA was for the 129th Rescue Group, Moffett Federal Airfield, CA moving to McClellan AFB, CA. ANG C-130 units were not compared against AFRES C-130 units. Although AFRES and the ANG were listed in the ARC category in the Air Force BRAC questionnaire, in fact, they were considered as separate subcategories in the recommendation process. Therefore, the ANG was not compared with AFRES units in the process, consistent with previous base closure rounds. Since ANG units fall under the Governor and Adjutant General of each state, they can only be moved within state boundaries, The BCEG, however, looked at each state to find opportunities for closure of ANG installations that met the DoD selection criteria and were cost effective. They found only one opportunity to move and ANG C-130 unit and the Secretary of the Air Force recommended the 129th Rescue Group, Moffett Federal Airfield, CA move to McClellan AFB, CA.

QUESTION: Provide a detailed breakdown of the $15 million in one-time closure costs at Pittsburgh used in the PITTSBURGH FOCUSED Scenario of 2/20/95.

ANSWER: The $15 million in one-time closure costs represents the estimated Air Force Base Conversion Agency (AFBCA) costs. Revised COBRA results will be forwarded when they are complete.

QUESTION: For the PITTSBURGH FOCUSED Scenario of 2/20/95, provide a detailed breakdown of the $17.2 MILLION in MILCON costs at Dobbins, and explain why this figure is modified to only $1 million in the COBRA input data.

ANSWER: The $17.2 million in question does not represent dollars but 17,200 square feet of new construction. This 17,200 square feet of construction costs $1 million.

QUESTION: Provide copies of the Host-Tenant Support Agreement, or any similar agreement, between the AFRES and ANG units at the following bases: Milwaukee, Niagara, Minn - St. Paul, O'Hare, and Youngstown.

ANSWER: Please see Attachment 3.

QUESTION: Were costs of Fire Protection included in COBRA cost figures for any installation considered? If so, please provide the data used? If not, explain why it is considered a cost to compare.

ANSWER: Yes. Complete budget printouts have already been forwarded in response to a previous Congressional inquiry.

QUESTION: From the SECDEF Briefing to BRAC Commission on March 1, 1995 -- We note that Wisconsin has not lost any civilian positions and only six military positions for all BRAC actions from 1989 through 1995. New York's cumulative losses are about one third of Pennsylvania's. Were these lopsided ratios considered when the DoD chose Pittsburgh over Milwaukee or Niagara?

ANSWER: Each base was examined on an individual basis utilizing the eight selection criteria. The economic impact for BRAC 95 was based on the proposed recommendations and the effects of the previous three rounds of BRAC. The economic impact from the Pittsburgh action (631 jobs) was estimated at 0.1 percent of the economic area employment.

QUESTION: Page 8 of SECDEF Briefing to BRAC Commission of March 1, 1995 -- Provide complete details, including all figures and their basis, for any "Transferred BOS Costs" considered, included, or deleted in the COBRA or any other cost analyses.

ANSWER: We cannot track the page number provided. Please provide a request relative to a specific COBRA.

QUESTION: Confirm that the LEVEL PLAYING FIELD Scenarios of 11/17/94 , were erroneously based on cost data from Minn - St. Paul being used for Pittsburgh, Niagara, and O'Hare. Provide the reason for using this data or plans for using other corrected data.

ANSWER: It appears that some data from Minn - St. Paul was transferred to Pittsburgh, Niagara, and O'Hare for some COBRA scenarios. The COBRA input data is being reviewed. Updated COBRA runs will be accomplished for each base and forwarded when complete.

QUESTION: Confirm that the actual 1994 Non-Payroll Overhead Costs for Youngstown are approximately 140 -150 percent greater than the figures used in the November 1994 COBRA Level Play scenario.

ANSWER: HQ AFRES is reviewing the FY94 cost data. Data will be provided when the review is complete. Complete budget printouts have already been forwarded in response to a previous Congressional inquiry.

QUESTION: Describe the process by which AFRES and Air Force "certified" the questionnaire cost data submitted by each base. Provide a copy of the certification and any back-up materials for above AFRES C-130 bases.

ANSWER: The cost data was supplied by each individual base as requested by the 1995 Air Force Base Questionnaire. The data was then validated by AFRES Headquarters personnel. The questionnaire was then sent to the Headquarters USAF Realignment and Transition Office where it was converted into the same format used for all Air Force bases. This data was then utilized in the COBRA computations. Please see Attachment 1.

QUESTION: Explain why it is not considered sufficient to have an ARC presence in a state, i.e., why is it also necessary to have an "AFRES" presence?

ANSWER: AFRES and the ANG have a distinct and separate role in the DoD.

QUESTION: Identify all pre-FY95 MILCON funds that have been authorized but not yet placed as firm contracts. In your response, ensure that A&E work is distinguished from actual construction work. Provide information for all C-130 bases considered.

ANSWER:

FY	Location	Project	PA ($M)	A&E	Total
93	Gen Mitchell	Composite Ops & Mx Facility	1.65	0.149	1.799
94	Greater Pitt	Firing Range	1.3	0.117	1.417
94	Greater Pitt	Jet Fuel Storage Complex	4.3	0.387	4.687
94	Greater Pitt	Base CE Complex	3.1	0.279	3.379
94	Gen Mitchell	Add Fire Protection to Hangar	1.5	0.135	1.635

QUESTION: Air Force Analysis and Recommendations, Volume V dated February 1995 - Page 29 -- Why did the BCEG not also consider "above threshold" ANG C-130 bases instead of just AFRES C130 bases when comparing costs?

ANSWER: There are no ANG C-130 bases that are above the 300 DoD direct hire civilian threshold.

QUESTION: AFRES BRAC 95 options briefing by BGen Bradley dated 12/20/94 -- Page 5 -- Provide the COBRA results shown on these slides. They differ considerably from the presently available "Level Play" and "Focused" Scenario results. Also explain how they results were factored into the base selection decision.

ANSWER: This question is a duplicate. Please see Attachment 2.

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

B

EXHIBIT B.

LAND OFFERS
AND
AGREEMENTS

Western Pennsylvania Coalition for the 911th

Questionnaire Worksheet

SUBJECT: 10 April 1995 BRAC Briefing Commissioner A. Cornella CRITERIA(S): _____

QUESTIONNAIRE REFERENCE(S): _____ GRADE: _____

CONFLICTS NOTED: YES (explain) ☐ NO ☐

CORRECT ANSWER:

REFERENCES: In reference to the subject briefing, the attached information is presented in support of the statements made by Mr. Charles Holsworth on Page 7 of his presentation to Commissioner Cornella regarding additional acreage.

In May, 1988, a BaseComprehensive Plan was prepared by GRW Engineers, Inc. from Lexington, Kentucky for HQ AFRES and the 911th TAG at a cost of $267,601. The long range AFRES plan, as stated on page 1-3 of the plan, was to acquire an additional 77 acres of property from Allegheny County when the terminal activities were moved to the new Midfield Terminal.

On 3 February 1994, the use of 21.7 acres of the original 77 acre proposal, concrete parking apron, was executed with Allegheny County through a Memorandum of Agreement (MOA). On 14 November 1994, the Director of Aviation for Allegheny County, extended a written offer of approximately 30 acres of ramp area to the Wing Commander. This offer was immediately forwarded to HQ AFRES for review and approval. Letters from Congressmen Santorum and Klink, dated 12 December 1994 and 10 January 1995 respectively, to Mr. James F. Boatwright, Deputy Secretary for Installations and BCEG Committee member, concerning this property, were never answered to our knowledge. The 30 acre offer included the 21.7 acres currently being utilized by the 911 AW under terms of the aforementioned Memorandum of Agreement. The offer of these 30 acres by the Director of Aviation was subsequently approved by the Allegheny County Board of Commissioners on 2 February 1995.

Just recently, on 7 April 1995, the Director of Aviation for Allegheny County, extended another offer of approximately 77 acres, in accordance with the AFRES approved 1988 Base Comprehensive Plan. Approval of this action by the Allegheny County Board of Commissioners is expected before May, 1995.

ADDITIONAL FACTS IN SUPPORT OF ANSWER:

I certify that the above information is accurate and complete to the best of my knowledge and belief.

Preparer: Robert F. Moeslein Date: 14 April 1995

ROBERT F. MOESLEIN
911 AW/CE
(412) 474-8571

CONTINUE ITEMS ON BACK ☐

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT B.1

MEMORANDUM OF AGREEMENT FOR 21.7 ACRES OF RAMP SPACE

ALLEGHENY COUNTY
ALLEGHENY COUNTY INSTITUTION DISTRICT
CONTRACT LOG
CONTACT PERSON: CELESTE MCGRAW
412 355-4750

AGENDA #: 156-94-B

Date Authorized: 2/03/94

Moved: DUNN Second: FLAHERTY Vote: U

Date received from Law Department: 2/03/94
Date received by Commissioners: 2/03/93
Date forwarded to Controller: 3/29/94
Date received from Controller:
Date returned to Department: APR 7 1994

TO: Director
Department: AVIATION

When Billing please refer:

From: Guy A. Tumolo
Director of Administration/
Chief Clerk

Agreement #: 0 32070

Contract #: 0

Vendor Name: U.S. AIR FORCE

Description:

U.S. AIR FORCE, MEMORANDUM OF AGREEMENT, FOR TEMPORARY USE OF THE OLD COMMUTER APRON FOR THE PURPOSE OF PARKING MILITARY AIRCRAFT DURING APRON REPAIRS AND CONSTRUCTION OF A DEICING PAD, FOR THE PERIOD OF ONE YEAR FROM DATE OF EXECUTION AND RENEWABLE FOR AN ADDITIONAL YEAR, NOT TO EXTEND BEYOND DECEMBER 31, 1995, AND FURTHER GRANT AUTHORIZATION FOR THE DIRECTOR OF AVIATION TO EXECUTE MEMORANDUM OF AGREEMENT.

****

Properly executed copies of the above-referenced agreement are returned herewith. You are requested to distribute those returned you.

GAT/cam

cc: Controller
Law Department
Vendor: U.S. AIR FORCE

MEMORANDUM OF AGREEMENT BETWEEN
ALLEGHENY COUNTY AND THE UNITED STATES AIR FORCE RESERVE

PURPOSE: The purpose of this agreement is to specify terms for the Air Force Reserve (AFRES) to use a portion (21.7 acres more or less) of the old commuter parking apron east of the recently installed security fence around the former terminal building at Pittsburgh International Airport (IAP). Allegheny County owns the property located north and east of taxiway "O". (See exhibit A attached). The apron will be used for parking five or more C-130 aircraft temporarily during three phases of ramp repairs, and the construction of a deicing pad on the Pittsburgh IAP Air Reserve Station (ARS).

Agreement:

1. Allegheny County Shall:

a. Allow AFRES, its officers, agents and employees use of the apron (County property) at no cost for the limited purpose of parking Military aircraft.

b. Not be responsible for damages to property or injuries to persons which may arise from, or be incident to, the use and occupation of the apron premises or arising out of activities of AFRES, its officers, agents, employees, representatives or contractors; or for any contamination caused by AFRES; or for damages to the property or injuries to the person of the Counties officers, agents, servants or employees or others who may be on the used premises at their invitation or the invitation of any one of them, except for claims arising out of the negligence or willful misconduct of the County, its officers, agents, employees, or invitees.

2. Air Force Reserve Shall:

a. Prepare an Environmentel Assessment, and Environmental Base Line Survey prior to the use of the property, to show what significant impact, if any, use of the land will have on the property, surrounding area and/or environment at large.

b. Comply with all applicable Pittsburgh IAP regulations,etc. while using County property.

c. Be responsible for sweeping and removing all snow while using County property.

d. Be responsible for security of used County property thru daily inspections by AFRES security police.

e. Maintain and implement a spill response plan that would include provisions for containing and cleaning up a spill. Supply and maintain adequate spill protection kits on site and assume total managerial and financial responsibilty for the organization, cleanup and disposal of spilled fuel and/or contaminated material in case of an accidental spill or emergency on County property.

f. Conduct a joint condition survey of the proposed use County property with representatives of the County prior to implementation of this Agreement. All damage caused by AFRES during the term of this Agreement will be repaired and/or replaced by AFRES at no cost to the County.

g. Restore the property to the same condition as that existing at the time of entering upon the same under this Agreement, or leave any improvements made to the County at no cost.

3. Limitations: The County will allow utility connections and useage to AFRES, however, no other services will be provided.

4. Term: This Agreement shall be in effect for one year, renewable for an additional year, and shall in no event extend beyond 31 Dec 95, or upon completion of ramp repairs and construction of the deicing pad on the Air Station. The Agreement may only be modified by mutual agreement of both parties in writing and signed by each of the parties hereto. This Agreement may be cancelled by either party upon 90 days written notification, and is effective upon signing of both parties.

This Agreement made and entered into this 3rd day of February, 1993.

COUNTY OF ALLEGHENY

HERBERT HIGGENBOTHAM, III
DIRECTOR

HEADQUARTERS UNITED STATES
AIR FORCE RESERVE

BOBBY G. CLARY
Asst Director/Civil Engineering

APPROVED AS TO FORM:

SOLICITOR

ASSISTANT COUNTY SOLICITOR

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT B.2

COUNTY OF ALLEGHENY 30 ACRE OFFER

PETE FLAHERTY
COMMISSIONER

TOM FOERSTER
CHAIRMAN

LARRY DUNN
COMMISSIONER

DEPARTMENT OF AVIATION

PITTSBURGH INTERNATIONAL AIRPORT • ALLEGHENY COUNTY AIRPORT

County of Allegheny

PITTSBURGH INTERNATIONAL AIRPORT

LANDSIDE TERMINAL, SUITE 4000
P.O. BOX 12370
PITTSBURGH, PA 15231-0370
(412) 472-3500 • FAX (412) 472-3636

HERBERT C. HIGGINBOTHAM, II, P.E.
DIRECTOR

November 14, 1994

Colonel T. Spencer, USAF Reserve
911th Air Wing
Greater Pittsburgh International Airport
316 Defense Avenue, Suite 101
Coraopolis, PA 15108-4403

SUBJECT: REUSE OF OLD TERMINAL
GREATER PITTSBURGH INTERNATIONAL AIRPORT

Dear Colonel Spencer:

The County of Allegheny, Department of Aviation has recently been reviewing the old terminal for the Greater Pittsburgh International Airport and the associated ramp area. In reviewing this, it appears that the eastern portion of this ramp area which comprises approximately thirty (30) acres, may be suitable for use by the Air Force Reserve. If this is of interest to you, we would submit a request to the Board of Commissioners of Allegheny County to amend your lease to include this with the other land you are currently occupying. In previous discussions with the Commissioners, I am sure they will be receptive to this idea because of the value and the benefit of the 911th to this community. Based on these conversations with the Commissioners, specifically concerning the County's reuse of this area, I know that they would receive this request favorably.

Please indicate your thoughts concerning this to me so that if this is your desire, we can initiate the necessary paper work. I have been told that you have been an excellent neighbor over the years and that the Allegheny County Department of Aviation and the 911th have worked together very well. This was very evident to me in the aftermath of the tragedy of the crash of USAir Flight 427.

If there is a need for us to discuss this matter, please do not hesitate to call me at 472-3510.

Very truly yours,

Herbert C. Higginbotham

Herbert C. Higginbotham, II, P.E.
Director

HCH/rd

cc Commissioner Tom Foerster, Chairman
Commissioner Pete Flaherty
Commissioner Larry Dunn
Tom Jargiello, ACDA
Peter Florian, ACDA
Kevin Conroy, ACDA
Richard Belotti, ACDA

OFFICIAL REQUEST FOR BOARD ACTION

A. 148-A-95

Allegheny County ☒ Institution District ☐

AGENCY: Department of Aviation

ADDRESS: Pittsburgh International Airport

CONTACT: Thomas R. Jarrizzo EXT. 472-3512

SIGNATURE: Hubert C. Higginbotham (Director) 1/17/95

DATE SUBMITTED BY AGENCY:

ADMINISTRATION:

EST. COST:

EST. REVENUE:

FUTURE IMPACT:

CHECK APPROPRIATE BOX:

Grant ☐ Capital ☐ Operating ☐

INDEX CODE: N/A

PROJECT NO: N/A

EXP. SUB OBJ. CODE: N/A

INCLUDED IN BUDGET: YES ☐ NO ☐

SUMMARY:

Board Authority is requested to offer to lease approximately thirty (30) acres of property at Pittsburgh International Airport to the 911th Air Wing of the United States Airforce (USAF) Reserve for ramp usage.

EXPLANATION:

Board authority is requested to offer a lease to the USAF Reserve for use of approximately 30 acres of ramp space at Pittsburgh International Airport.

The 911th Air Wing has documented involvement in most major US military and relief operations. The 911th has provided humanitarian and military airlifts for Allegheny County businesses and organizations. The 911th provides support for Presidential and other VIP visits and has been a key player in disaster operations like the USAir crash. The 911th provides substantial economic impact to the Allegheny County Community.

The 911th Air Wing's space capacity at Pittsburgh International Airport is currently at its maximum. We believe that this additional space will enable the 911th to increase operations and enhance the 911th's chances for expanded missions, facilities, larger aircraft and make it a more attractive base to possibly avoid any reserve base closings that may be considered in the future. This should help prevent any future loss of the base which this County cannot afford.

Upon Board approval and USAF Reserve acceptance, Agreement NO. 25603 with the USAF Reserve and the County will be amended to include the approximately 30 acres mentioned.

(Continued on Reverse)

REPORT OF BOARD ACTION AT MEETING OF: FEB 02 1995

Date Received by Chief Clerk

COMMENT:

VOTE: "U"

cc: Controller
Law Department
Budget & Finance

FILE: AGENCY
FILE:

☒ Approved as Submitted
☐ Approved Conditionally
☐ Denied
☐ Withdrawn/Heldover

Certified: Guy A. Tumolo
Chief Clerk

SUBCOMMITTEE ON EDUCATION, YOUTH, JOBS AND CREATIVE EDUCATION

EDUCATION AND LABOR
SUBCOMMITTEE ON LABOR MANAGEMENT RELATIONS
SUBCOMMITTEE ON POST-SECONDARY EDUCATION AND TRAINING
SMALL BUSINESS
SBA LEGISLATION AND THE GENERAL ECONOMY
PROCUREMENT, TAXATION AND TOURISM
DEMOCRATIC STEERING AND POLICY COMMITTEE

Ron Klink
Congress of the United States
House of Representatives
4th District, Pennsylvania

WASHINGTON, D.C.
(202) 225-2565

DISTRICT OFFICES
NORTH HUNTINGDON TOWNSHIP
(412) 864-8681
(800) 453-5078

BEAVER COUNTY
(412) 728-3005

CRANBERRY TOWNSHIP
(412) 772-6080

NEW CASTLE
(412) 654-9036

LOWER BURRELL
(412) 335-4518

January 10, 1995

The Honorable James F. Boatwright
Deputy Assistant Secretary for Installations
U.S. Air Force
The Pentagon, Room 4D927
Washington, DC 20330-1000

Dear Mr. Boatwright:

The purpose of this letter is to request your support for a land transfer on a 30-acre parcel at the Pittsburgh International Airport.

Currently this parcel is owned by Allegheny County, whose governing body (the Allegheny County Commission) has expressed a willingness to release the parcel for use by the 911th Tactical Airlift Wing. I support this no-cost transfer from the commission to the U.S. Air Force.

As the region's Air Force Reserve unit, the 911th Tactical Airlift Wing has contributed greatly to this nation's state of readiness and its relief operations. The unit has supported Operation Desert Shield and Desert Storm, the invasion of Panama and the occupation of Haiti. It has completed relief missions in connection with Hurricanes Hugo and Andrew, the Bosnia Airlift, and relief for the Kurds.

The 911th Airlift Wing, in my view, has a vital mission to our nation's defense. The acquisition of this new parcel will enhance the wing's mission as well as promote defense readiness. Thank you for your attention to my request.

Sincerely,

Ron Klink

RON KLINK
Member of Congress

RK:jg

RICK SANTORUM
18TH DISTRICT, PENNSYLVANIA

COMMITTEE ON
WAYS AND MEANS
RANKING MEMBER, SUBCOMMITTEE
ON HUMAN RESOURCES
MEMBER, SUBCOMMITTEE ON
OVERSIGHT

WASHINGTON OFFICE:
1222 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-3818
(202) 225-3135

Congress of the United States
House of Representatives
Washington, DC 20515-3818

DISTRICT OFFICES:
906 Wyllian Road
PITTSBURGH, PA 15236
(412) 882-3206

641 Penn Avenue
McKEESPORT, PA 15132
(412) 664-4049

640 Rose Road
PITTSBURGH, PA 15235
(412) 882-3206

December 12, 1994

Secretary James F. Boatright
Deputy Assistant Secretary
Of Air Force (Installations)
SAS-MII
1660 Air Force Pentagon
Washington, D.C. 20330-1660

Dear Secretary Boatright:

I am writing to urge your consideration of a proposal regarding the 911th Airlift Wing in Pittsburgh, Pennsylvania.

Through my numerous visits to the 911th as a U.S. Congressman, I became aware of the opportunity to acquire additional aircraft parking ramp space. As you may know, the old Greater Pittsburgh Airport is currently vacant and stands adjacent to the 911th. An offer has been made by the county to add to the current lease some 30 acres of land from the old airport terminal area. This land would be a valuable and extremely useful asset to the Reserve Base at no additional cost to the Reserves.

It is my understanding that approval of this action is currently pending in your office. The 911th has played an integral part in serving the Pittsburgh and international community through its humanitarian and military airlift missions. Acceptance of this proposal would enable the 911th to expand and take on additional responsibility.

Thank you for your consideration of this matter. I look forward to your reply.

Sincerely,

Rick Santorum

Rick Santorum
Member of Congress

RS:ps

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT B.3

COUNTY OF ALLEGHENY 77 ACRE OFFER

PETE FLAHERTY
COMMISSIONER

TOM FOERSTER
CHAIRMAN

LARRY DUNN
COMMISSIONER

DEPARTMENT OF AVIATION

PITTSBURGH INTERNATIONAL AIRPORT • ALLEGHENY COUNTY AIRPORT

County of Allegheny

PITTSBURGH INTERNATIONAL AIRPORT
LANDSIDE TERMINAL, SUITE 4000
P.O. BOX 12370
PITTSBURGH, PA 15231-0370
(412) 472-3500 • FAX (412) 472-3636

HERBERT C. HIGGINBOTHAM, II, P.E.
DIRECTOR

April 7, 1995

Colonel T. Spencer, USAF Reserve
911th Air Wing
Greater Pittsburgh International Airport
316 Defense Avenue, Suite 101
Coraopolis, PA 15108-4403

SUBJECT: REUSE OF OLD TERMINAL
GREATER PITTSBURGH INTERNATIONAL AIRPORT

Dear Colonel Spencer:

The County of Allegheny, Department of Aviation has recently been reviewing the old terminal and the associated ramp area at the old Greater Pittsburgh International Airport. In reviewing this, it appears that the eastern portion of this ramp area and terminal which comprises approximately seventy-seven (77) acres, may be suitable for use by the Air Force Reserve. If this is of interest to you, we would submit a request to the Board of Commissioners of Allegheny County to amend your lease to include this with the other land you currently occupy. Based on previous discussions with the Commissioners, I am sure they will be receptive to this idea because of the value and the benefit of the 911th to this community.

Please indicate your thoughts concerning this matter to me. Meanwhile, we will initiate the necessary paperwork and anticipate that the Board of County Commissioners will approve this action by the end of this month. I have been told that you have been an excellent neighbor over the years and that the Allegheny County Department of Aviation and the 911th have worked together very well. This was very evident to me in the aftermath of the tragedy of the crash of USAir Flight 427.

If there is a need for us to discuss this matter, please do not hesitate to call me at 472-3510.

Very truly yours,

Herbert C. Higginbotham

Herbert C. Higginbotham, II, P.E.
Director

HCH/rd

cc Commissioner Tom Foerster, Chairman
Commissioner Pete Flaherty
Commissioner Larry Dunn
Judge Brosky
Tom Jargiello, ACDA
Peter Florian, ACDA
Kevin Conroy, ACDA
Richard Belotti, ACDA

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

C

EXHIBIT C.

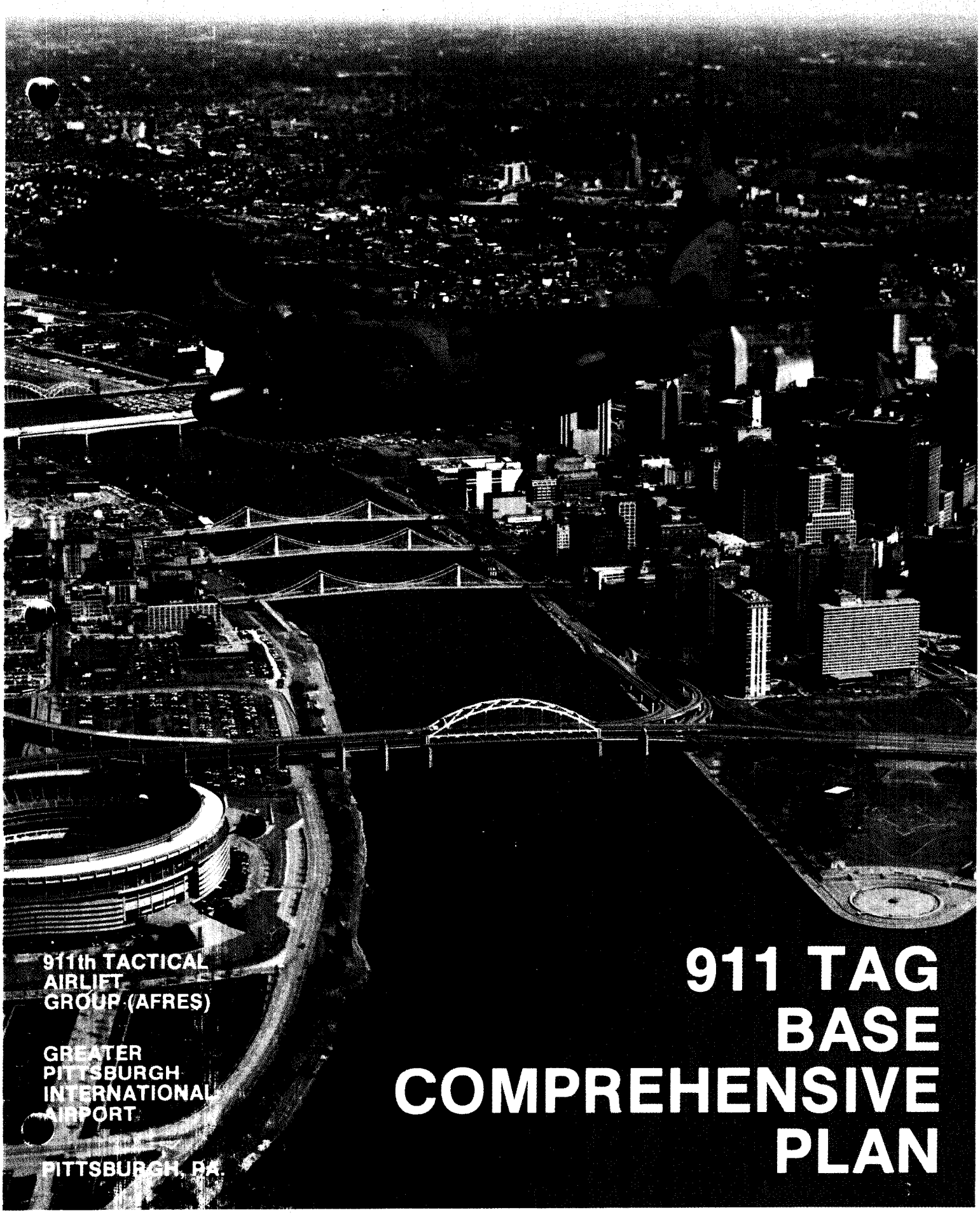
911TH AIRLIFT WING 1988 BASE COMPREHENSIVE PLAN

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT C.1

911TH AIRLIFT WING BASE COMPREHENSIVE PLAN



911th TACTICAL
AIRLIFT
GROUP (AFRES)

GREATER
PITTSBURGH
INTERNATIONAL
AIRPORT

PITTSBURGH, PA.

911 TAG BASE COMPREHENSIVE PLAN

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 911TH TACTICAL AIRLIFT GROUP (AFRES)
GREATER PITTSBURGH INTL AIRPORT, PITTSBURGH, PA 15231

It is my pleasure to present the Base Comprehensive Plan document to the 911th Tactical Airlift Group, Headquarters AFRES and Air Force Headquarters. The plan provides an organized and comprehensive approach to future base planning. It will eliminate inefficient land use and reduce future siting conflicts and unnecessary project expenditures.

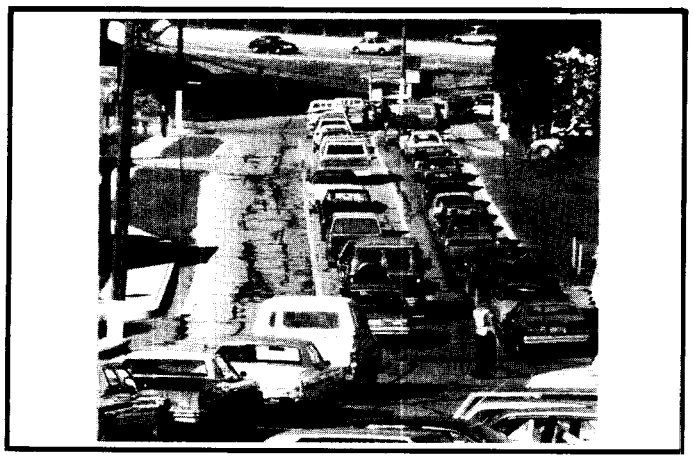
The plan provides for the future siting of all known or anticipated military construction projects and provides the background information essential for knowledgeable land use decisions and facility sitings not specifically identified in the plan.

The Base Comprehensive Plan is intended to be the primary planning tool of the base to be used in all future land use actions and facility sitings. It is to be followed as much as possible, yet it is not an inflexible document. It can be modified when fully justified and in the best interest of the Air Force.

The need to use our land wisely, the current environmental constraints, and the probability of reduced government spending make it essential that we avoid incompatible future development and that we plan intelligently for our role in the future mission of national defense.

I endorse this Base Comprehensive Plan and trust that future planning and programming actions by base and headquarters personnel will be accomplished with primary emphasis on the long range plan.

SAMUEL C. WOODROW, Colonel, USAFR
Commander



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(Cover photo courtesy of Lockheed-Georgia Company)

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Chapter I

COMMANDER'S SUMMARY

Exhibit 1.1t: List Of Short Range New Facility Proposals

NUM	AFC	FACILITY	AREA	OTHER	YC
	1	PARKING APRON EXPAN	40,100 SY		XX
00130	2	A/PORT TNG FAC ADDN	4,600 SF		87
00405	2	COMM FCLTY W/ADDN	1,692 SF		90
	2	HANGAR/SHOPS/DCM*	49,000 SF		XX
	7	33RD AEROMED EVAC SQ	15,000 SF		XX
00342	3	BE STORAGE ADDN	1,200 SF		88
	3	MASK CONFIDENCE BLDG	600 SF		89
	3	ATV STORAGE/WSSF	462 SF		89
	3	IMPR BASE ACCESS			89
	3	WATER STORAGE TANK		300 MG	89
	3	BCE COMPLEX	27,600 SF		92
	3	FIRING RANGE: OFFBASE		21 FP	91
	4	TRAFFIC CHK HSE	144 SF		89
00221	4	CONVERT: SM ARMS/WSSF	6,173 SF	6173	92
00120	5	GYMNASIUM ADDITION	2,500 SF		87
	7	MED TRAINING CLINIC	11,250 SF		91
00219	9	CONVERT TO VOQ	12,967 SF	56 PN	XX
00218	9	CONVERT TO VOQ	12,967 SF	56 PN	XX
00217	9	UPGRADE VAQ	12,967 SF	56 PN	XX

*New 53,000 SF hangar includes:
...25,000 SF hangar area @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF admin. @ 50' x 160' on 2nd floor
... 4,000 SF mobility storage

INTRODUCTION

The 911 TAG (AFRES) is *located* on the east side of the Greater Pittsburgh International Airport (GPIA). The 911th occupies *106 acres*, has a UTA weekend population of *1,372 persons*, and *eight C-130 aircraft* for use in its airlift mission.

The *purpose* of this plan is to inventory and analyze existing facilities, establish future needs, and prepare plans for the orderly and comprehensive future development of the base. The *plan preparation* and review process included the 911th staff, HQ/AFRES, and the consultant over a 20-month period.

SELECTED SHORT RANGE PLAN/CIP

The short range plan or CIP proposals include:
...*Demolition* of existing buildings, as shown below, is proposed primarily in the BCE area and the General Purpose Shops (Building 418)* area in order to provide space for new buildings.

...*Two additional land areas*, with a total of ± 17 acres, would be requested for leasing from the GPIA, as shown by the map on the next page.

...*Apron expansion* would occur on the added parcel to the west, permitting the 911 TAG to expand from the present *eight* C-130's to 16 C-130's, with four hangar positions (including a new hangar) and at least 12 apron positions. If the

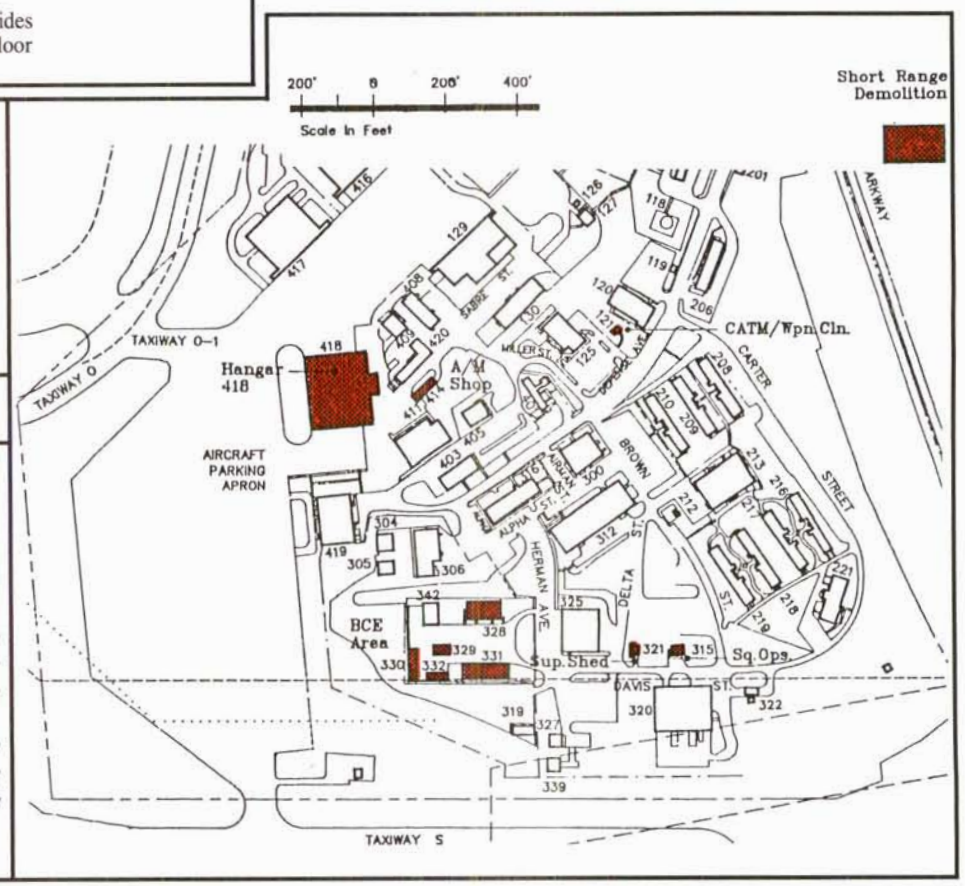
*Present occupants of 418 will be temporarily housed as follows while awaiting completion of new hangar: Shops and mobility storage to 129; administrative to trailers or temporary structures near hangars 129 or 417.

...Location of proposals

Exhibit 1.2m: Short Range Demolition Proposals

...List of Demolitions

NUM	AFC	FACILITY	AREA
00100	4	TRAFFIC CHK HSE	144 SF
00121	3	CATM/WPN CLN	218 SF
00315	2	SQ OPS	1,000 SF
00321	3	SHED SUP & EQUIP BSE	462 SF
00328	3	BE ADMIN	4,800 SF
00329	3	BE MAINT SHP	1,221 SF
00330	3	BE STOR SHED	1,822 SF
00331	3	BE MAINT SHP	5,166 SF
00332	3	BE STOR CV FCLTY	1,200 SF
00414	2	SHP A/M ORGL	1,637 SF
00418	2	ACFT MAINT SHP	48,793 SF



new C-130's were assigned in units of four, less expansion area would be required initially from the GPIA.

...*A new Entry Area* would be built on the second added tract, with access coming from the new Airport Parkway interchange at Thorn Run Road. The new Entry Road would connect with Defense Avenue near the POL. The existing entrance would then be closed since its land area would be required for one of the new interchange ramps.

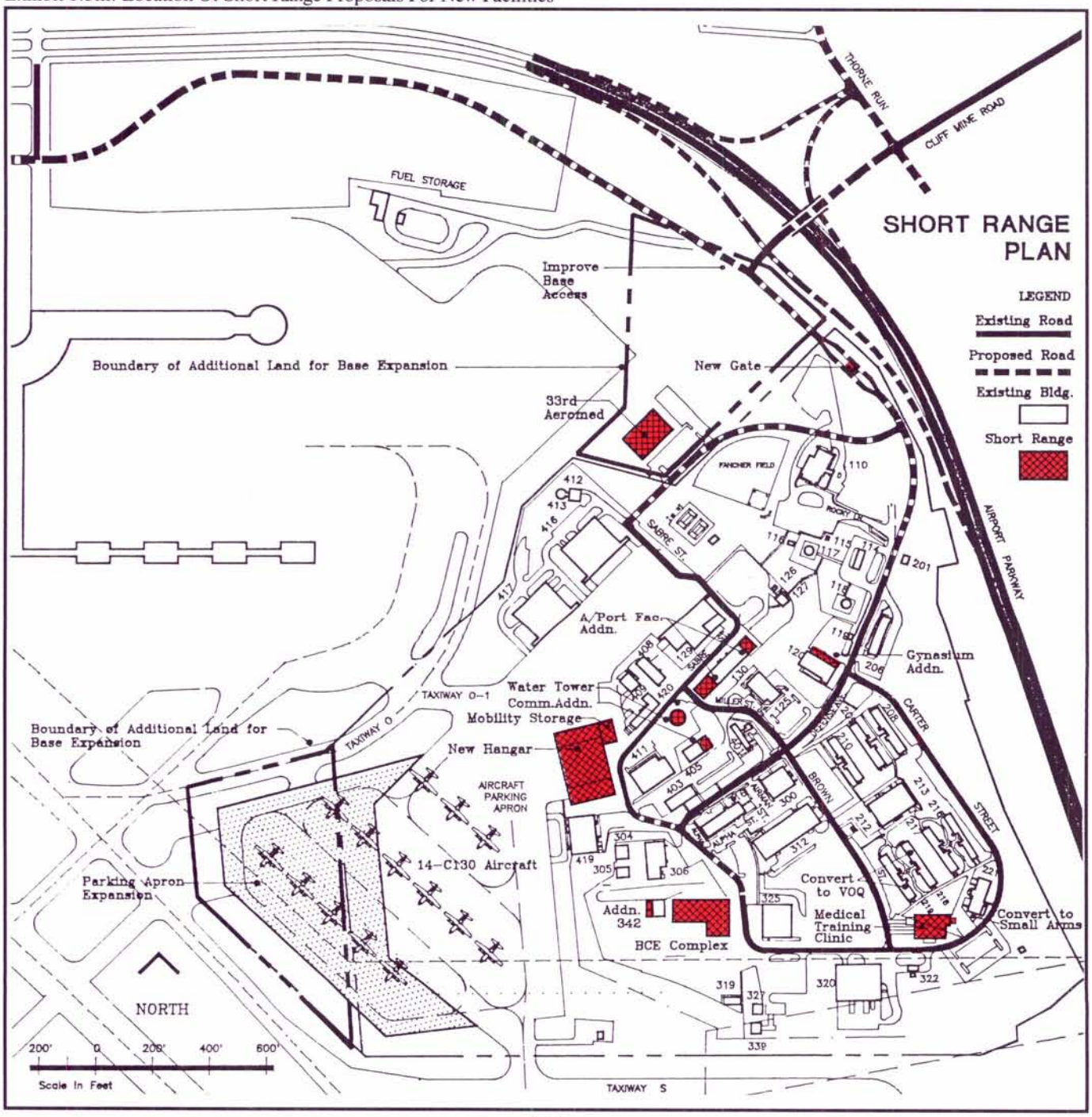
...*A new clinic would be built adjacent to the existing clinic, and a 33rd AES facility* would be built on the second tract, with access coming from a new road connecting the Entry Area with Sabre Street.

...*A new BCE facility*, with two stories, would be constructed in the existing BCE area. Only open storage for the BCE facility would be permitted south of the RW building restriction line.

...*A new Hangar* with shops, DCM and mobility storage would be built on the site of demolished building 418. The new hangar would be required to service the C-130 expansion to 16 aircraft.

...*Other proposals* include altering buildings 218 and 219 for VOQ use, and upgrading 217 as a VAQ facility. Building 221 will be converted for Small Arms use.

Exhibit 1.3m: Location Of Short Range Proposals For New Facilities



SELECTED LONG RANGE PLAN

The long range plan proposals for the Pittsburgh AFRES base are described by the text, tables, and maps on these facing pages.

...GPIA New Terminal - The major changes proposed for the AFRES base are dependent upon the GPIA construction of its new passenger terminal on airport land to the west....,thereby leaving its existing terminal and apron available for another use.

...An Additional Land Lease of ± 77 acres would be requested from the GPIA officials after their terminal activities are moved. Added to the previous ± 17 acres requested for short range needs, the total added lease area would be ± 94 acres....only slightly less than the existing AFRES area of 105.7 acres.

If less than the ± 77 acres were to be available, a second option, using only ± 50 additional acres, would exclude the land north of the AFRES future apron and north of fuel storage area (see Exhibit 1.5m).

...New Aircraft - The major purpose for leasing more land from the GPIA would be to permit the 911 TAG to accommodate new and larger aircraft, such as 16 C-141's or 12 C-17's.

...Apron Expansion, as shown by the map to the right, to accommodate 16 C-141's would require a 991' x 1,910' area (or 43.5 acres) plus space for two transient aircraft. An apron for 12 C-17's would require a 1,005' x 1,540' area (or 36 acres) plus space for two transient aircraft. The apron area could be reduced to the extent that hangar space is used for aircraft parking.

...Maintenance Hangar Expansion - To accommodate the larger aircraft, existing hangars (129, 416, 417, and the new hangar built as part of the short range plan) would have to be expanded and/or new hangars constructed. The required hangars would provide for scheduled maintenance, unscheduled maintenance, and a fuel cell dock. The hangars could fully enclose the aircraft or act as nose docks with the aircraft tail sticking out. The 16 C-141's would require four hangars, while the 12 C-17's would require only three.

...New AGE, etc. - To replace the demolished buildings 408, 409, and 420, a new facility would be built to house AGE, NDI, and the survival equipment shop for a total of approximately 12,000 square feet. As another alternative, existing hangar 129 might be used for these three functions if it's not required for continued use as a hangar.

...POL - The new POL would make use of the existing GPIA facility to the north, and permit demolition of the present POL and converting its area to landscaping and recreation. If the GPIA facility were not used for any reason, the existing POL would have to be expanded and upgraded as a second choice.

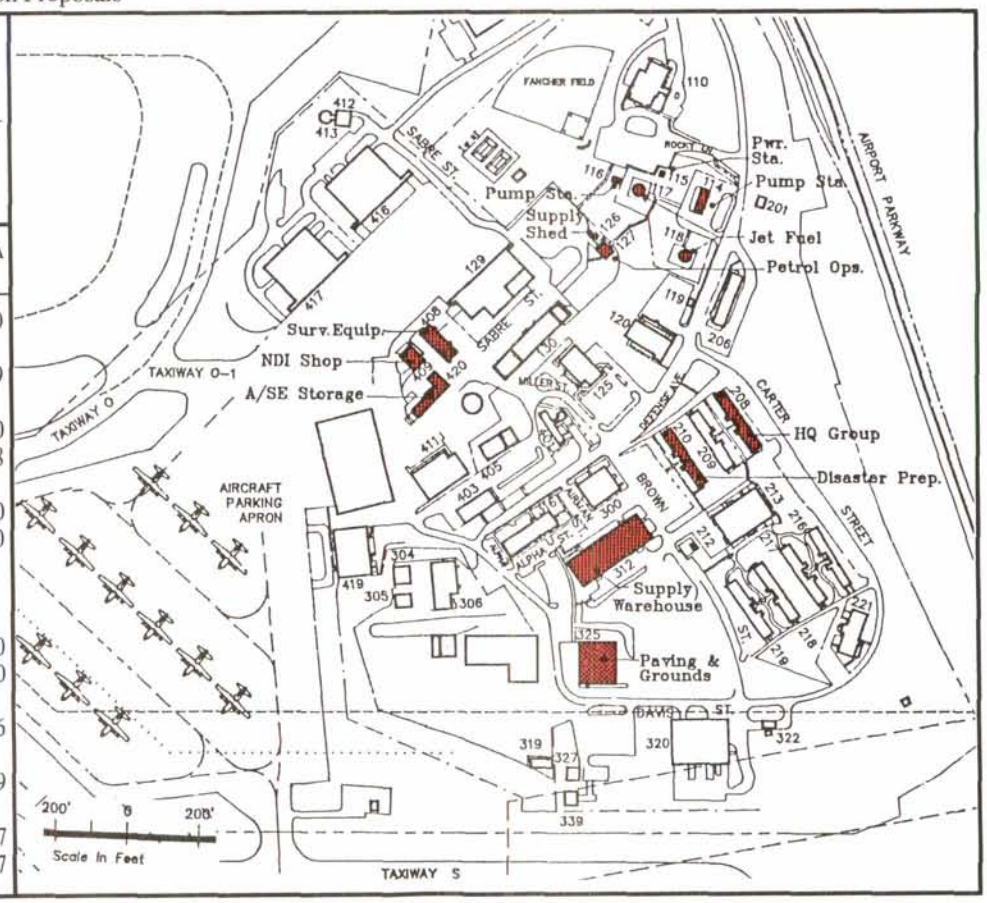
...Supply, BCE, etc. - In the southern part of the base, three activities would be allocated larger and more efficient work areas: (1) the existing Supply Building (320) would be converted to vehicle maintenance and vehicle covered storage with open storage yards adjacent; (2) the existing vehicle maintenance buildings (304, 305, 308) would be converted to use by BCE Roads and Grounds, adjacent to the other BCE facilities; and (3) a new Supply facility would be built opposite building 320, and

Exhibit 1.4m: Long Range Demolition Proposals

...Location of demolition proposals →

...Listing of demolition proposals

NUM	AFC	FACILITY	AREA SF
408	2	SHP SURV EQUIP	4,400
409	2	SHP NON-DESTR INSP	2,699
420	2	SHP A/SE STOR FCLT	4,500
114	3	PMP STN, LF	1,538
115	3	ELEC PWR STN BLDG	240
116	3	PMP STN, LF	280
117	3	STOR, JET FL	
118	3	STOR, JET FL	
126	3	SHED SUP & EQUIP BSE	240
127	3	PETROL OPS BLDG	1,200
312	3	WHSE SUP & EQUIP BSE	19,656
325	3	BE PAV GRND FCLTY	12,269
208	4	HQ GROUP (RECRUIT)	12,967
210	4	CONTRACT & DP	12,967



the area to the west and north (where buildings 312 and 325 have been demolished) will be used for open storage.

...Upgrade 208, 209, 210 area by (1) demolishing building 208 and developing a POV parking lot; (2) upgrading building 209, VAQ; and (3) demolish 210, and replace it on site with a new administration building.

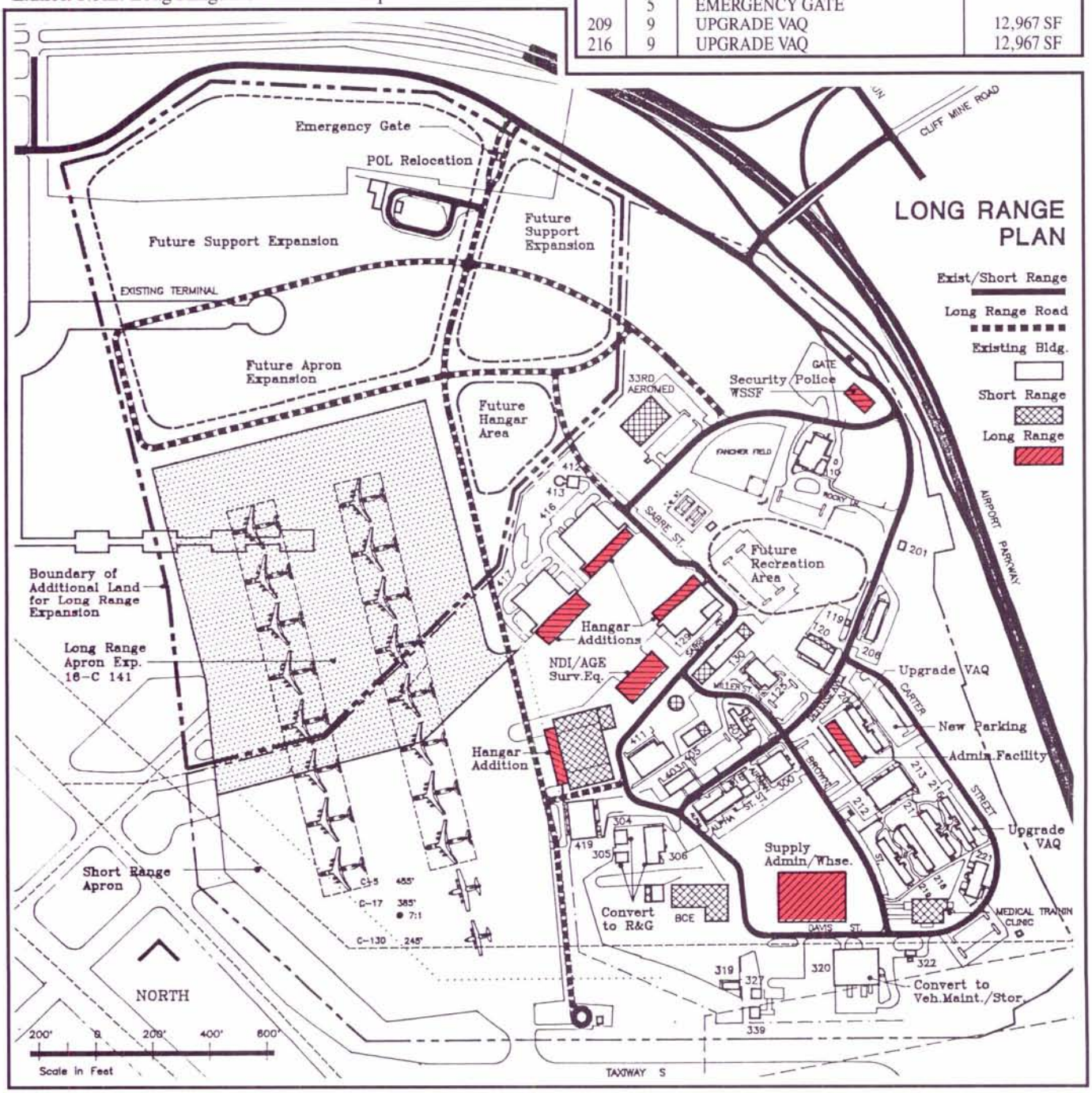
...*Access & Street improvements* would include a second gate, for emergency use, north of the new POL; new government vehicle only roads along the expanded apron, and new POV roads in the expansion area.

...*Demolitions* are listed and located to the left.
...*Future expansion* areas exist to the north.

Exhibit 1.6t: List Of Long Range Proposals

NUM	AFC	FACILITY	AREA
	1	PARKING APRON EXPAN	115,700 SY
129	2	HANGAR ADDITION	8,200 SF
416	2	HANGAR ADDITION	8,200 SF
417	2	HANGAR ADDITION	14,350 SF
	2	SR HANGAR ADDITION	8,200 SF
	2	NDI/AGE/SURV EQUIP	12,000 SF
304	3	CONVERT TO BE PAV/GR	2,000 SF
305	3	CONVERT TO BE PAV/GR	1,767 SF
306	3	CONVERT TO BE PAV/GR	8,440 SF
320	3	CONV VEH MAINT/STOR	18,544 SF
	3	SUPPLY ADM/WHSE	38,635 SF
	3	REPLACE POL	
	4	SECURITY POLICE/WSSF	5,000 SF
	4	ADMIN FACIL	13,000 SF
	5	EMERGENCY GATE	
209	9	UPGRADE VAQ	12,967 SF
216	9	UPGRADE VAQ	12,967 SF

Exhibit 1.5m: Long Range New Facilities Proposals



Chapter II

BASE AND COMMUNITY BACKGROUND

INTRODUCTION

The purpose of this chapter is to provide the reader with background information on Pittsburgh and the AFRES base.

GREATER PITTSBURGH AREA

The Greater Pittsburgh area, as shown below, includes five counties with a population of about 2.4 million people. The Greater Pittsburgh International Airport (GPIA) is located in the western part of Allegheny County, about 15 miles from Downtown Pittsburgh. Other area features include:

...*Allegheny County* contains 130 municipalities (townships, boroughs, and cities), of which Pittsburgh is the largest with eight percent of its land area (55.5 out of 730 square miles) and 28 percent of its population.

...*A population decrease* is estimated for Pittsburgh and Allegheny County between 1980 and 1990.

...*The GPIA* is located within Findlay and Moon Townships, with the Air Force Reserve Base situated entirely within Moon Township.

...*The GPIA region* is one of the *most rapidly expanding* areas in southwest Pennsylvania in terms of business, residential, and light industrial growth... and the generation of community-wide income. The GPIA is considered to be the major reason for this growth, as well as a major employer with over 10,000 jobs.

Exhibit 2.2t: Population Figures

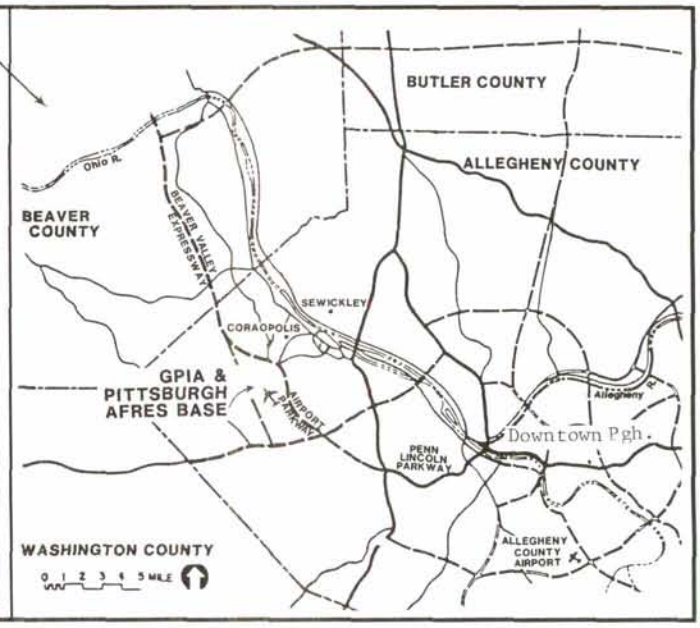
Place	1980 Pop.	1985 Est.	80-90 Change
..Pennsylvania	11,864,720	11,900,222	
..Pittsburgh CMSA*	2,263,894	2,390,100	
..Allegheny County	1,450,195	1,430,375	-4%
..Pittsburgh	423,960	396,625	-14%
..Moon Township	20,935	23,205	+19%
..Findlay Township	4,573	4,669	+2%

*CMSA-consolidated metro area; includes Allegheny, Beaver, Fayette, Washington, Westmoreland counties.

Exhibit 2.1p:

Airport Location Within Greater Pittsburgh Area

Downtown Pittsburgh View From Mt. Washington



911 TAG PROFILE

Some of the major physical features of the 911 TAG area include:

...105.7 acres of land area
...1,372 persons on base during a Unit Training Assembly (UTA) weekend
...1,000 ± POV vehicles on base during a UTA weekend
...60 ± buildings
...Eight C-130 (H Model) aircraft
...A few linear miles of streets and overhead and underground utilities

On a UTA weekend, the base activity equals that of a small city with its own police and traffic control, industries, restaurants, sports center, chapel, clinic and dormitories.

MISSION

The mission of the 911 TAG (AFRES) is to organize, recruit, and train Air Force Reservists to provide airlift of airborne forces, their equipment and supplies, and delivery of these forces and material by airdrop, airland, or cargo extraction systems.

HISTORY AND POPULATION

Air Force interests at the Greater Pittsburgh International Airport date to 1942 and 1944 when federal funds were approved for construction work, a lease was negotiated with Allegheny County for what is now the Air Force Reserve site, and some temporary WWII type buildings constructed. By 1945, the facility was in use by the Air Transport Command as a refueling stop for ferrying of aircraft.

From 1945 to 1972, the base served several types of aircraft for several different Air Force commands. Since 1972, the host unit has been the 911th TAG, with its gaining command being the Military Airlift Command.

Base population figures by employment category are shown by the table below. The population total represents all base personnel, military and civilian. During a UTA weekend, the maximum population present in an eight hour period is 1,372. The base has bedspace for 330 persons.

Exhibit 2.3t: Population Figures For 911 TAG

Category	UTA Weekend	Normal Weekday
..Non-ART (Air Reserve Technician)	59	233
..ARTs-Officer	13	
-Airmen	125	
..Non Appropriated Fund	31	31
..Tenants-Civilian	14	26
-Military	2	22
-Active Duty	3	3
..Reserves-Officer	187	0
-Airmen	938	0
TOTAL	1,372	453

NEEDS AND OBJECTIVES

Some of the major needs and objectives, developed during the inventory and analysis work, include the following:

...*Exterior Access* is very much in need of improvement since it now consists of only one entry/exit at grade onto the Airport Parkway which is a heavily travelled highway.

...*Flexibility and Expansion* - The tightly packed existing base needs breathing room for flexibility and mission expansion possibilities. Any additional land would have to come from the GPIA.

...*Additional Apron* is needed in order to accommodate an increased aircraft mission. Construction of new facilities generally is dependent upon demolition of existing buildings since there are few development sites remaining that are vacant.

CONSTRAINTS

The combination of steep topography and tight boundaries present formidable obstacles to the future development of the 911 TAG. As shown by the aerial photo below, the adjacent and restrictive boundaries include:

...The Airport Parkway to the east.
...Two GPIA runways to the south and west, along with the building restriction lines 750' from each runway centerline and aircraft parking setbacks at 500'.
...The GPIA terminal area and commercial aircraft parking to the north and northwest.

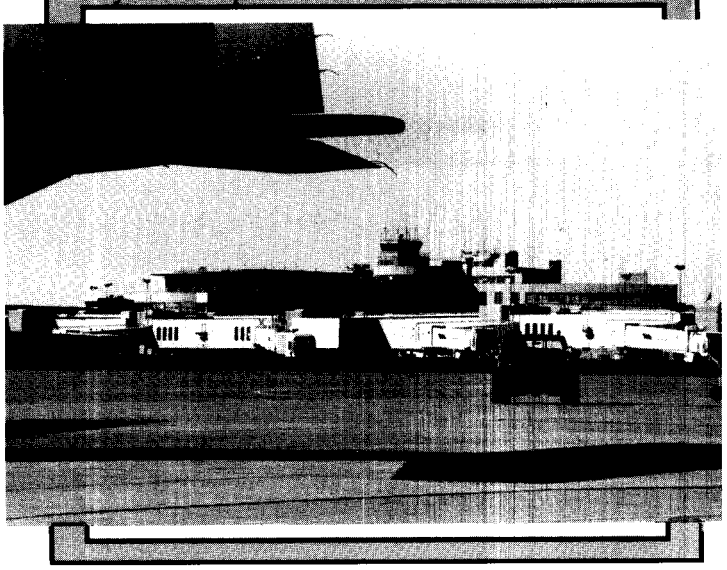
The steep terrain (a 130'decline from the apron to the adjacent creek) not only restricts site development opportunities, but also makes movement of people and vehicles extremely difficult when it rains or snows.

Exhibit 2.4p: 911 TAG Site Constrained From All Sides

Chapter III

FUTURE DEVELOPMENT ALTERNATIVES SUMMARY

Exhibit 3.1p: Construction Of New GPIA Terminal May Create Expansion Possibilities For The 911 TAG



INTRODUCTION

After completing an inventory and needs analysis of the base, the next step was to generate alternative concepts for its future physical development....with special attention to recognizing its optimum development opportunities.

ALTERNATIVE #1: THE EXISTING C.I.P.

The existing capital improvement program summarized the base development proposals at the beginning of the study, as shown by the exhibit below. Major proposals included:

...A new Main Gate and entrance.

...Apron expansion to accommodate 14 C-130's based on acquiring more land from the GPIA.

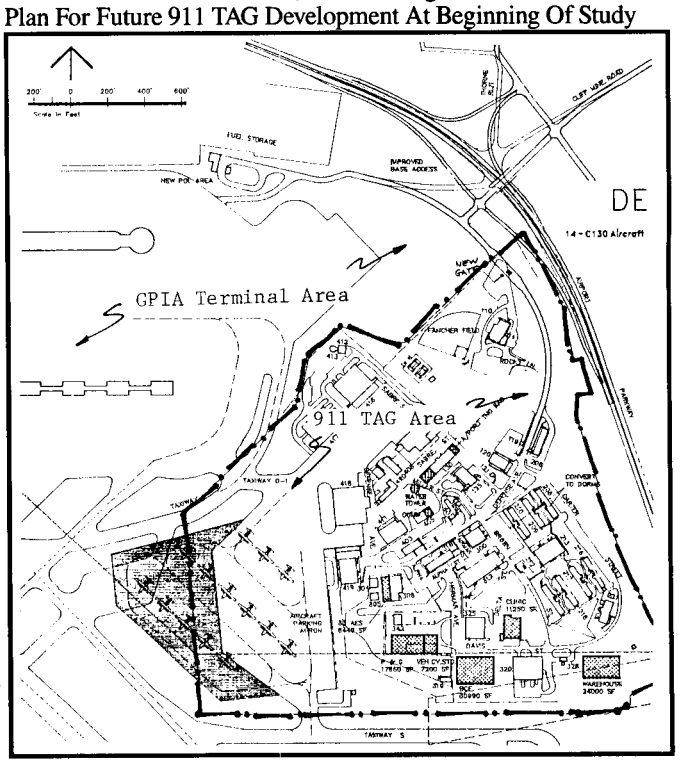
...Four new buildings (BCE, Clinic, Supply, and Veh. Maint.) and several building additions.

OTHER ALTERNATIVES

The four alternatives at right are representative of eleven alternatives (and several parking layouts) that were designed and evaluated before the *final plans were selected* as described in Chapter I.

When the new GPIA terminal facility is completed in the late 1980's, some of the existing terminal apron area may be available for expansion of the 911 TAG area to the north and northwest. This could provide an expanded apron for 12 or more C-17's (as opposed to the existing 8 C-130's, a smaller aircraft) *and* new and better sites for several buildings. Further, it could provide *replacement sites for the new BCE and Supply* buildings that are improperly located, as shown below, *within the runway building restriction line (BRL).*

Exhibit 3.2m: Alternative #1, The Existing Plan For Future 911 TAG Development At Beginning Of Study



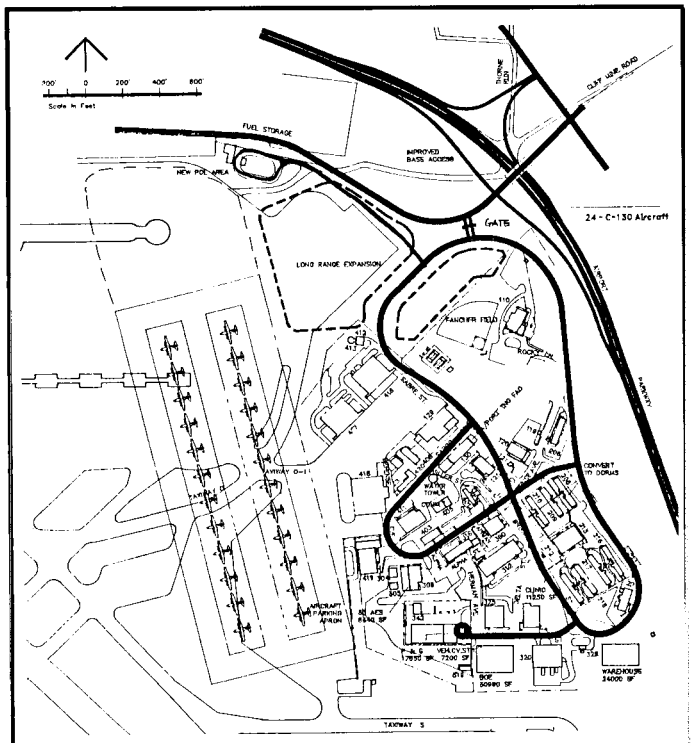


Exhibit 3.3m: Alternative #4 assumes acquisition of additional GPIA land to accommodate up to 24 C-130's. The interchange entry road is smoothed, and a loop road is extended through the base. The new buildings proposed within the BRL would have to be moved.

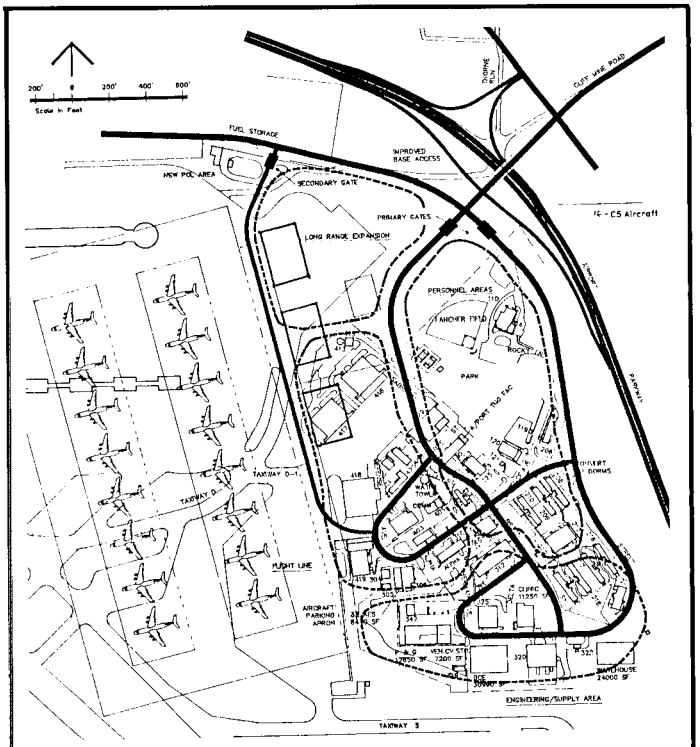


Exhibit 3.4m: Alternative #5 shows an expanded apron to hold 16 C-5's on a 79 acre apron with additional land reserved for new hangars and other facilities. Base entry would come straight off the new Airport Parkway interchange.

Exhibit 3.5m: Alternative #6 is very similar to #5 except that the buildings within the BRL have been moved....and the secondary entry gate has been eliminated.

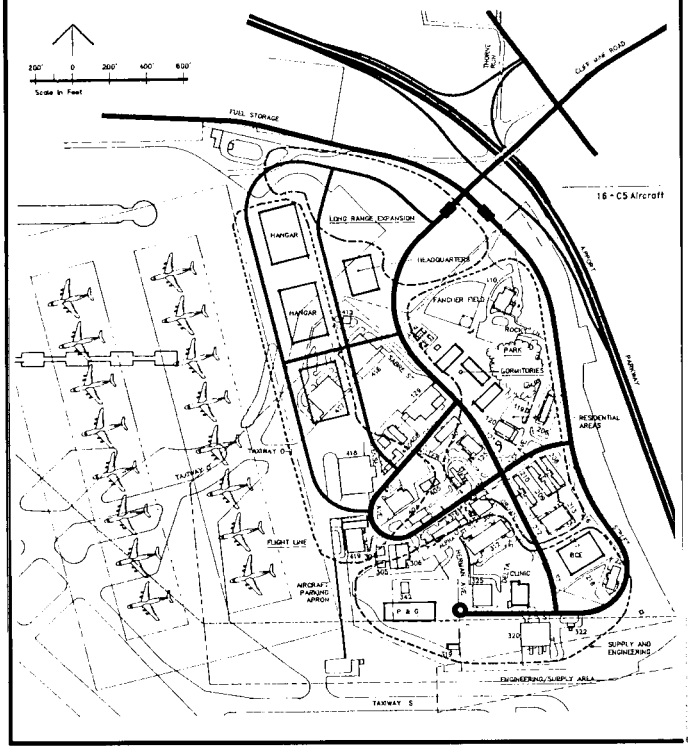
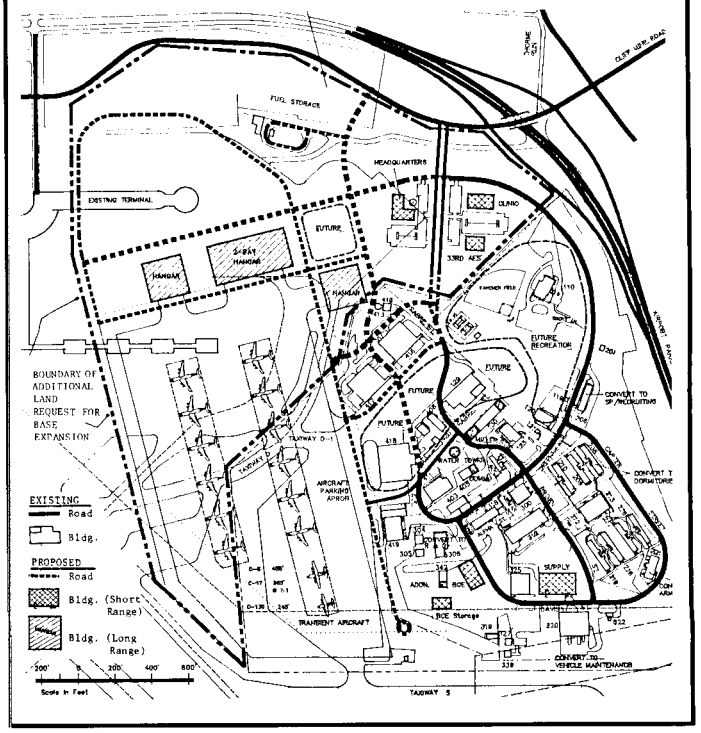


Exhibit 3.6m: Alternative #9 could expand the 911 TAG area of 105.7 acres by an additional 94 acres. Twelve C-17's would occupy the apron and a new entry boulevard would lead past a new HQs building into the center of the base.



Chapter IV

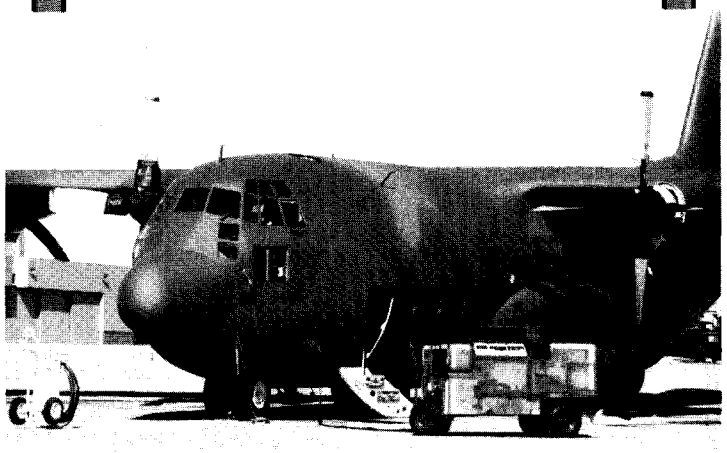
SUMMARY OF COMPONENT PLANS

FOR THE

911 TAG

COMPREHENSIVE PLAN

Exhibit 4.1p: C-130 On Apron



INTRODUCTION

The "component plans" are contained in Chapters 5 through 19, or Part Two, of the 911 TAG Base Comprehensive Plan and are listed below.

The purpose of this chapter is to provide a summary of each of the component plans. The summaries will vary in length from one paragraph to four pages. And, if a plan already has been summarized in one of the three previous chapters, the reader will be referred to that earlier chapter rather than summarizing it again.

Exhibit 4.2t: Location Of Component Plan Summaries

Listing of "Part Two: Component Plans" by Chapter Number & Title	Location of Chapter Summary In "Part One: Plan Overview"
5...Introduction	See Chapter II
6...Future Development Alternative Concepts	See Chapter III
7...Natural Resources Plan	See page 4-2
8...Environmental Quality Protection Plan	See page 4-2
9...Base Layout & Vicinity	See page 4-2
10..Land Use Plan	See page 4-3
11..Airfield & Airfield Operations	See page 4-7
12..Utilities Plan	See page 4-7
13..Communications Plan	See page 4-9
14..Transportation Plan	See page 4-11
15..Architectural Design Guidelines	See page 4-6
16..Exterior Master Paint Plan	See page 4-13
17..Landscape Development Plan	See page 4-13
18..Long Range Facilities Development	See Commander's Summary, Ch. 1
19..Five Year Capital Improvement Program	See Commander's Summary, Ch. I

NATURAL RESOURCES PLAN

The area surrounding the Pittsburgh AFRES contains several items of study with respect to natural resources. Other than the aprons, taxiways, athletic fields and work areas, the general topography of the base is moderately to steeply sloping. As a result of the slopes on the base, surface water drainage is essentially from the northwest to southeast.

WATER

A tributary of McClaren's Run (a small stream) runs parallel to Route 60, and in places, defines the eastern boundary of the base. This tributary receives most of the base storm water runoff and also a significant amount of runoff from the Greater Pittsburgh International Airport. The condition of the tributary appears to be sterile. No evidence of fish, amphibians, or macroinvertebrates were observed, nor were algae or complex aquatic plant life noted. The sterility of this stream is probably linked to the presence of petroleum distillates in the water originating at the Pittsburgh Airport.

LAND

The geology of this region has been extensively investigated mostly due to coal and oil exploration. In general, the area is underlain by horizontal beds of shale, siltstone, sandstone, limestone, and coal. These bedrock layers are essentially sedimentary in geologic origin and are generally slow percolating (with exception of the sandstone). The availability of bedrock water supplies is limited.

A preliminary review of the effects of limited expansion of facilities projects on peak rates of discharge from the base storm water drainage system was conducted. This review indicated that runoff increases from the base, although measurable, will be minimal and will not significantly increase peak rates of discharge to McClaren's Run.

WILDLIFE

Wildlife considerations in the base area are minimal. Small game such as rabbits, skunks, and raccoons have been noted within the base confines. There is an on-going effort to trap and relocate woodchucks which are creating problems. Various species of song birds feed on the good supply of food available in the shrubbery around the base. However, limited types of other birds inhabit the area.

HISTORICAL AND ARCHAEOLOGICAL

There are no limitations to building on the AFRES or on the entire Pittsburgh Airport properties because of historical or archaeological restrictions.

ENVIRONMENTAL QUALITY PLAN

Environmental quality affects all physical and operational aspects of the Pittsburgh AFRES base. The Environmental Quality Protection Plan summarizes those major programs designed to maintain and enhance the environmental quality of the base.

INSTALLATION RESTORATION PROGRAM

The Department of Defense (DOD) has developed a program to identify and evaluate past hazardous material disposal sites on DOD property, to control the migration of hazardous contaminants, and to control hazards to health or welfare that may result from these past disposal operations. This program is called the Installation Restoration program (IRP).

Five sites at the Pennsylvania Air Force Reserve Facility are identified as potentially containing hazardous contaminants resulting from past activities. Four of these sites have been assessed using a Hazard Assessment Rating Methodology (HARM) which takes into account factors such as site characteristics, waste characteristics, potential for contaminant migration, and waste management practices. These facilities are slated for improvements in light of the hazardous ratings assigned to them.

ENVIRONMENTAL COMPLIANCE REVIEW

In November of 1985, HQ AFRES assisted the 911th TAG/DE by conducting an evaluation of existing environmental programs at the installation.

During the Environmental Compliance Review (ECR), the air emission permits and associated files were reviewed and physical inspections were made of paint spray booths, degreasing and paint remover tanks, and fuel storage areas. The results of this review/evaluation included the location of several sources of air emissions including the following: cold tank degreasers, fuel storage tanks, paint spray booths, and paint remover tanks. There are no sources which emit pollutants in quantities greater than 100 tons per year. These problems are scheduled for correction in the near future.

OIL & HAZARDOUS SUBSTANCES CONTINGENCY PLAN

The possibility of accidental spills of oil or other substances into the watershed draining the base must be considered. Depending on the nature of the spill, McClaren's Run, Montour Run and eventually the Ohio River could become contaminated. 911th TAG base will be required to institute clean-up actions for any pollution spills that occur on or by facilities it controls or supervises. The 911th TAG base may be called upon to furnish resources (manpower, equipment, materials) for a coordinated Federal response to non-Air Force caused pollution spills.

BASE LAYOUT AND VICINITY SUMMARY

As part of the comprehensive plan project for the Pittsburgh AFRES Base, several aerial photos and map TABs were produced.

Most of the map TABs are similar to those found in a civilian community's public works and planning departments, primarily to indicate the existing conditions, although a few will describe future needs and proposals.

For the Pittsburgh AFRES, the map TABs included 40 different titles with a total of 61 final map sheets. They comprise almost all areas encompassed by the standard Air Force Statement of Work for Comprehensive plan mapping.

The process of producing the map TABs included aerial photography, field control, photogrammetric compilation, interactive graphic manipulation, and field research and verification.

LONG RANGE LAND USE PLAN

The long range land use change possibilities are tabulated below, located by the map to the right, and further described in the following text.

ACREAGE INCREASE

A potential overall land area increase of ± 94 acres is shown for the long range plan. Most of this increase would be north of the existing base, and would be used for apron expansion, several new facilities (POL, new entry road and 33rd AeroMed) and an open space reserve for future apron, hangar, or support needs. This additional land would have to be leased from the Greater Pittsburgh International Airport (GPIA).

0 and 1...AIRFIELD LAND USE

The *airfield clearance* pertains to the 125' building line setback from the apron. This area increases slightly to accommodate the apron expansion.

The *apron expansion* of ± 35 acres is the largest increase of any of the "active" land use categories. Sixteen C-141 aircraft, as well as two transient aircraft, could be housed on the apron. Reserve land to the north could be used to expand the apron further if more, or larger, aircraft were acquired.

2...AIRCRAFT O&M LAND USE

The small increase in *aircraft O&M* land use occurs with the construction of the hangar additions and new hangar. Reserve land to the north could be used by this activity if additional hangars, or related facilities, were needed. Generally, this activity remains concentrated in its present location.

3...INDUSTRIAL LAND USE

Industrial land use, with a three acre increase, remains primarily in the southwest portion of the base...except for the POL relocation to the north area. Within the southwest area, however, the following major moves are scheduled: *BCE* activities will concentrate around the existing BCE area; *Supply* will be concentrated within the Brown-Davis Streets loop; and *Vehicle Maintenance*/storage will be concentrated south of Davis Street.

4...ADMINISTRATIVE LAND USE

Administrative land use acreage remains the same, but there are two locational shifts: Building 208 is demolished and replaced by dormitory POV parking, and a new Security Police facility is added near the new Main Gate. Overall, however, the administrative land uses would remain concentrated along Defense Avenue in the vicinity of the HQs building.

An emergency/secondary gate also is shown in the new northern area for use during rush hours, UTA weekends, and for special delivery needs.

5 and 6...COMMUNITY LAND USE

The community-commercial and community-service land uses remain unchanged for the future, retaining their present locations and acreage figures. All are well located in relation to the people they serve: the consolidated open mess is near the entry gate, while the other uses (gym, chapel, BX, and dining hall) are in the base central area near dormitories and major work areas.

7...MEDICAL LAND USE

Medical land use increases by three acres when the clinic moves from building #221 to an adjacent new facility with a new parking lot across the street and a new 33rd AeroMed facility is built near the ballfield.

8 and 9...HOUSING LAND USE

The only base housing is the dormitories for unaccompanied personnel. No change is made in the location of these facilities, although an acre of POV parking is added for dormitory #209 when the administrative facility #208 is demolished.

10, 11, & 12...OUTDOOR RECREATION, OPEN SPACE & WATER

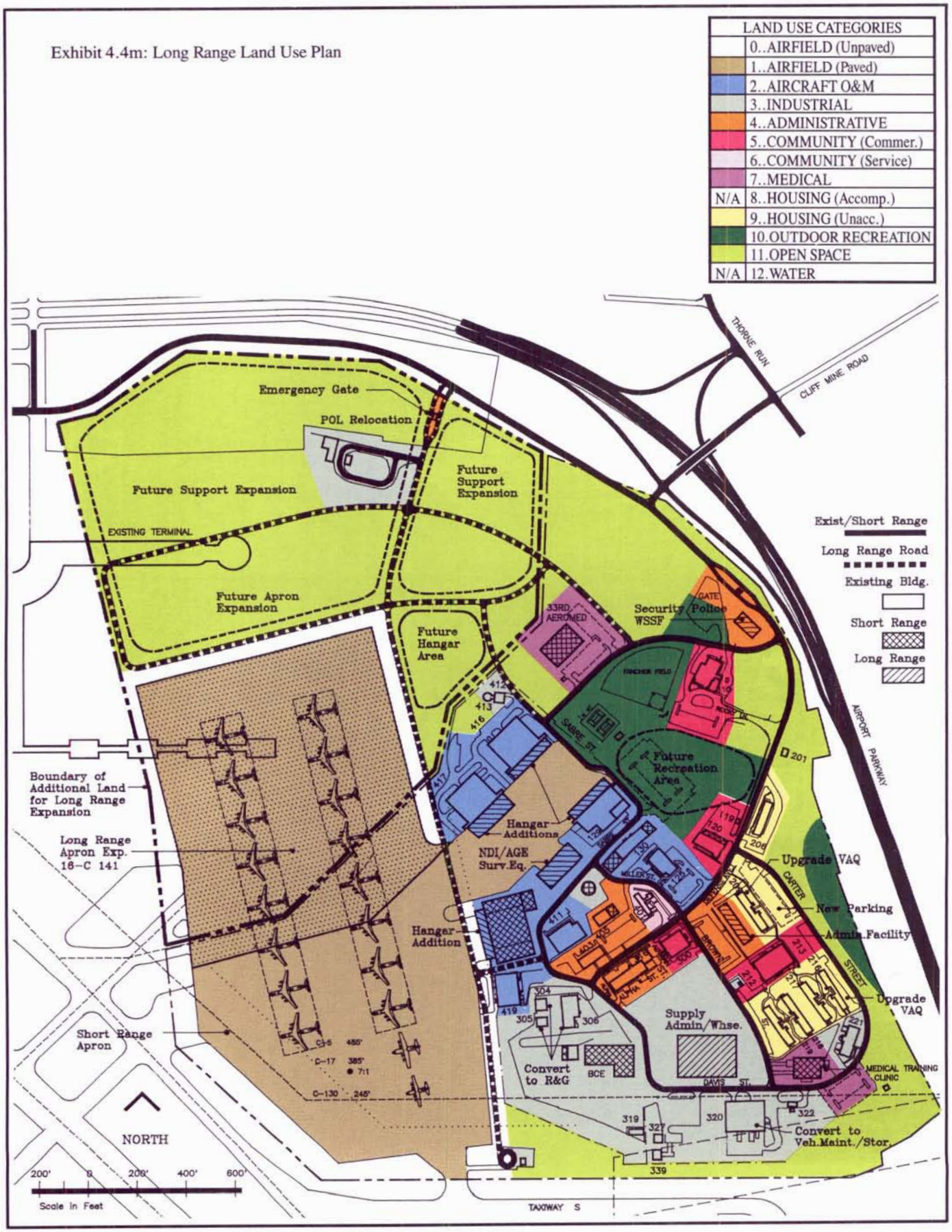
The *outdoor recreation* area is expanded by taking over the existing ± 4 acre POL site when the POL is moved to its new location. This will provide an excellent concentration of facilities (open mess, outdoor recreation, gym) to serve the nearby dorms. *Open space* increases by 46 acres. Most of this is in the area to be acquired from GPIA, and would not be permanent open space, but rather, a reserve for future facility needs. There is no *water* land use.

Exhibit 4.3t: Long Range Land Use Changes*

Air Force Land Use Category	Existing		Long Range		Change	
	Acres	%	Acres	%	Acres	%
0..Airfield, Clearance	11	10%	12	6%	1	9%
1..Airfield, paved	21	20	55	28	34	162
2..Aircraft O&M	11	11	12	6	1	9
3..Industrial	19	18	22	11	3	16
4..Administrative	6	5%	6	3%	0	0
5..Community, Commercial	5	5	5	3%	0	0
6..Community, Service	1	1	1	1	0	0
7..Medical	1	1%	4	2%	3	300%
8..Housing, Accompanied	0	0	0	0	0	0
9..Housing, Unaccompanied	5	5	6	3	1	20
10..Outdoor Recreation	8	8%	12	6%	4	50%
11..Open Space	18	17	64	32	46	256
12..Water	0	0	0	0	0	0
TOTAL	106	100	200	100	94	89%

*All figures rounded to nearest whole number.

Exhibit 4.4m: Long Range Land Use Plan



AIRFIELD & AIR OPERATIONS SUMMARY

The air operations at the 911th TAG focus on the eight H-model C-130's assigned. These aircraft replaced eight A-model C-130's in 1987.

The primary missions governing the 911th TAG operations is to provide command and staff supervision units engaged in providing tactical airlift support for airborne forces, other personnel, equipment, supplies, and aeromedical evacuation of patients within the theatre of operations.

The C-130's accomplish approximately 100 aircraft movements per month. This compares to about 1,200 daily operations for the entire airport.

AIRFIELD FACILITIES

The primary airfield facilities utilized by the 911th TAG and other tenants are the runway and taxiways operated and maintained by the Greater Pittsburgh International Airport. The facilities owned and maintained by the 911th TAG are their aprons and connecting taxiways located at the east end of the airport just northeast of the intersection of runways 14/32 and 10R/28L.

AIRCRAFT PARKING

The present aircraft parking apron at the 911th TAG allows space for seven C-130's. There are also two hangars and one nose-dock which provide cover for three more C-130's during maintenance.

The short range airfield plan anticipates that the existing mission could be expanded by adding up to 16 C-130 aircraft. This would require an additional aircraft parking apron and a new maintenance hangar.

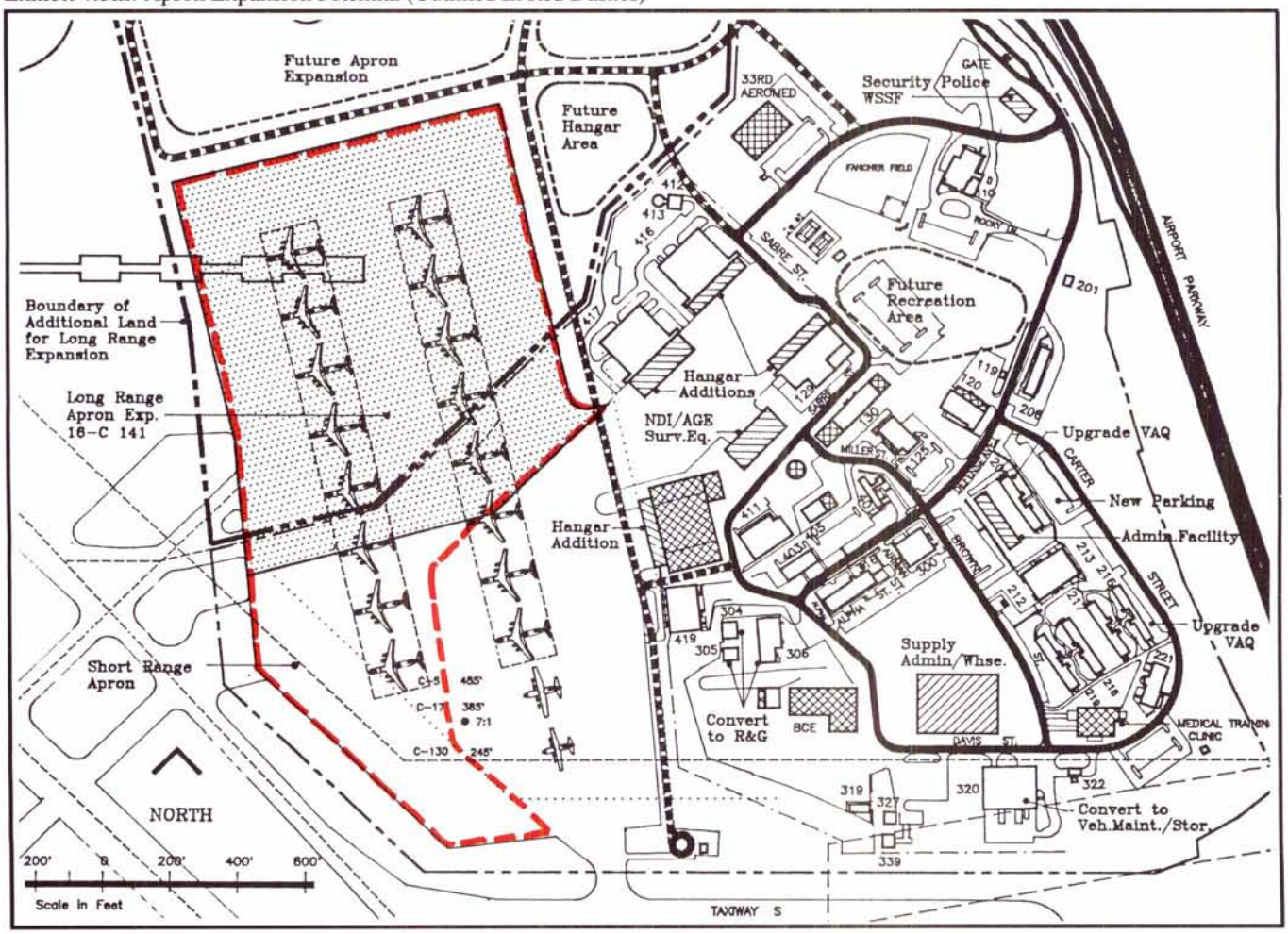
Apron expansion would depend on the acquisition of more land from the Greater Pittsburgh International Airport (GPIA).

The long range airfield plan anticipates that a mission change could assign larger aircraft.

Utilizing C-141 aircraft and assuming that 16 could be assigned, the required airfield facility additions would total those shown by the exhibit below.

Again, apron expansion and additional areas for future hangars or apron, as shown below, would be dependent upon gaining additional land from the GPIA.

Exhibit 4.5m: Apron Expansion Potential (Outlined In Red Dashes)



ARCHITECTURAL DESIGN GUIDELINES

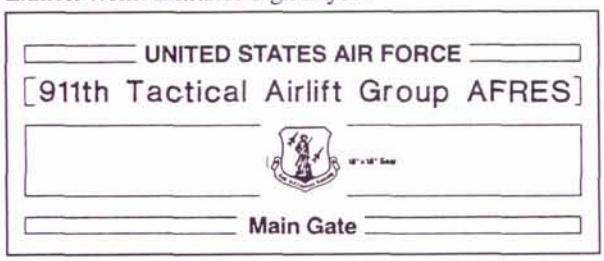
The purpose of the architectural design guidelines is to help create a more visually satisfying and pleasing physical environment, and to help accomplish the following:

...Develop a coherent architectural character that promotes visual attraction by its continuity and consistency.
...Improve the visual organization of the installation, including buildings and the spaces between the buildings.
...Reduce the impact of the base's visual liabilities and unsightly problem areas.
...Help blend the natural environment with the built environment.

The guidelines and recommendations are oriented to four groupings of facilities, as follows:

...*Buildings* - The overall architectural treatment and appearance of buildings. Recommendations cover areas such as design consideration, construction materials, roof style, color, and the use of a Design Review Board.
...*Circulation and Parking* - Needs special design attention to insure proper curb and gutter (or snow removal design), pavement width, signs, lighting, and cross-section as shown below.
...*Street Furniture* - Selection of a coordinated group of accessories, including street lighting, fencing, trash receptacles, and any static aircraft or other displays.
...*Signs* - The selection of an integrated system of identification for buildings and facilities which meets the Air Force standard with recommendations made for location and types of exterior signs for all buildings. A typical entry sign is shown below.

Exhibit 4.6m: Entrance Sign Layout



Exh. 4.8p: Bldg. 221 For Conversion To Small Arms Use

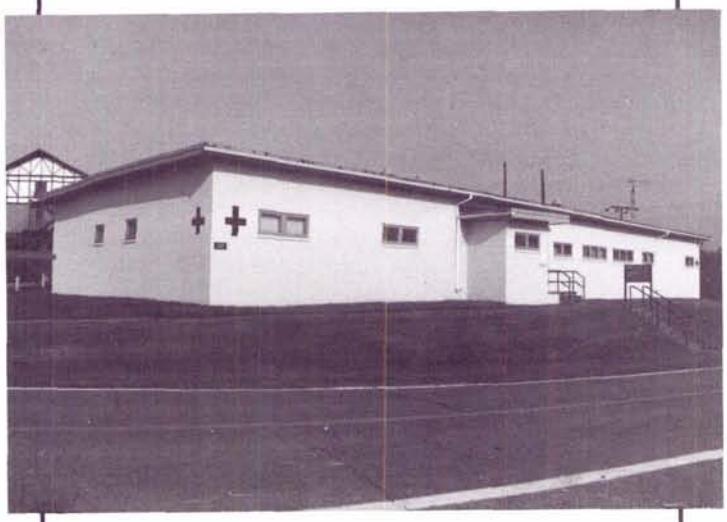


Exhibit 4.9m: Building 221 After Conversion To Small Arms Use

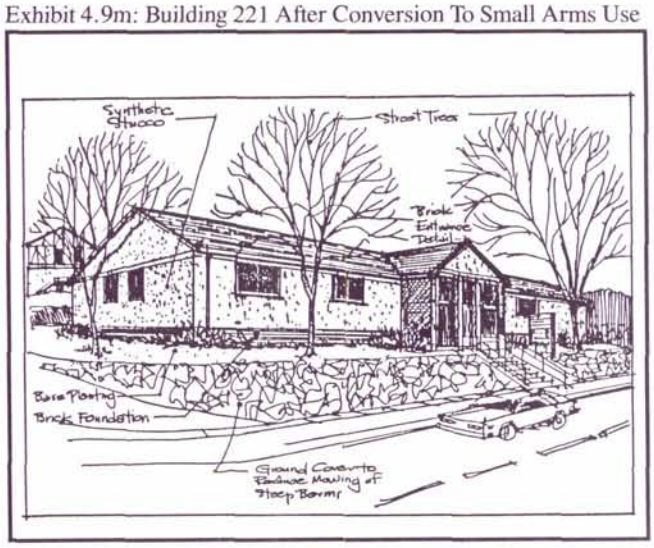
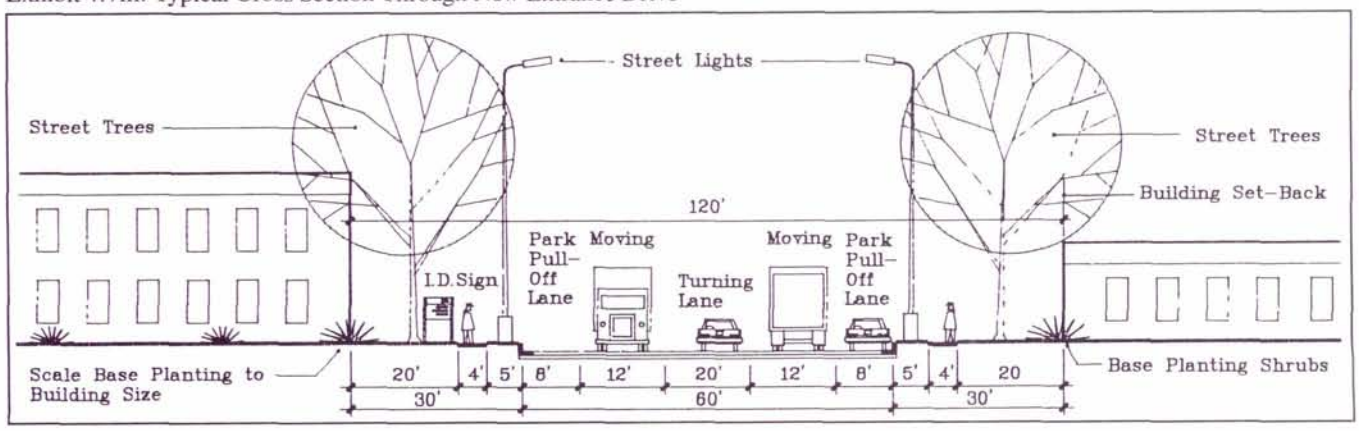


Exhibit 4.7m: Typical Cross Section Through New Entrance Drive



UTILITIES PLAN

In order to function properly, each building at the Pittsburgh AFRES generally must be connected to several utility systems that bring energy or information to them, and carry waste materials away (see the exhibit below). Without these underground pipes or overhead wires, operating in a relatively efficient fashion, few buildings are usable for human activities.

During the Master Plan preparation, each utility was inventoried and analyzed to determine existing needs. After development of the short range and long range building site plans (in Chapter VI), the utilities were studied again to determine what further proposals would be required to serve these new facilities.

...Existing utility improvements needed for present situation, with no regard for any future changes.

...Short range needs will reflect any additional utility improvements necessary to serve the short range development plan described in Chapter VI, page 6-51.

...Long range needs will reflect any additional utility improvements necessary to serve the long range development plan described in Chapter VI, pg. 6-53.

The exhibit to the right lists each utility and the estimated cost for improvements. The totals by time period are:

Existing Needs	$ 851,225
Short Range Needs	$ 767,825
Long Range Needs	$1,226,340
TOTAL	$2,845,390

No cost estimate was made in the Liquid Fuels section for relocating the POL. The Long Range Storm Drainage Plan is shown to the right as an example of one utility plan.

Exhibit 4.10m: Schematic Plan View Of Utilities

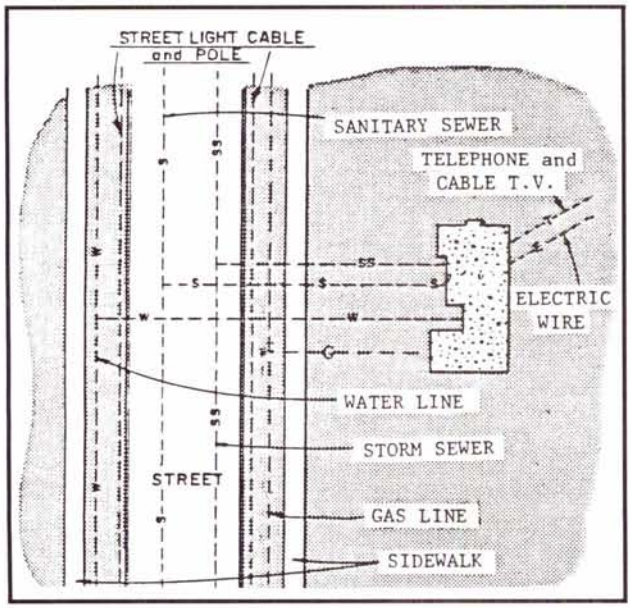
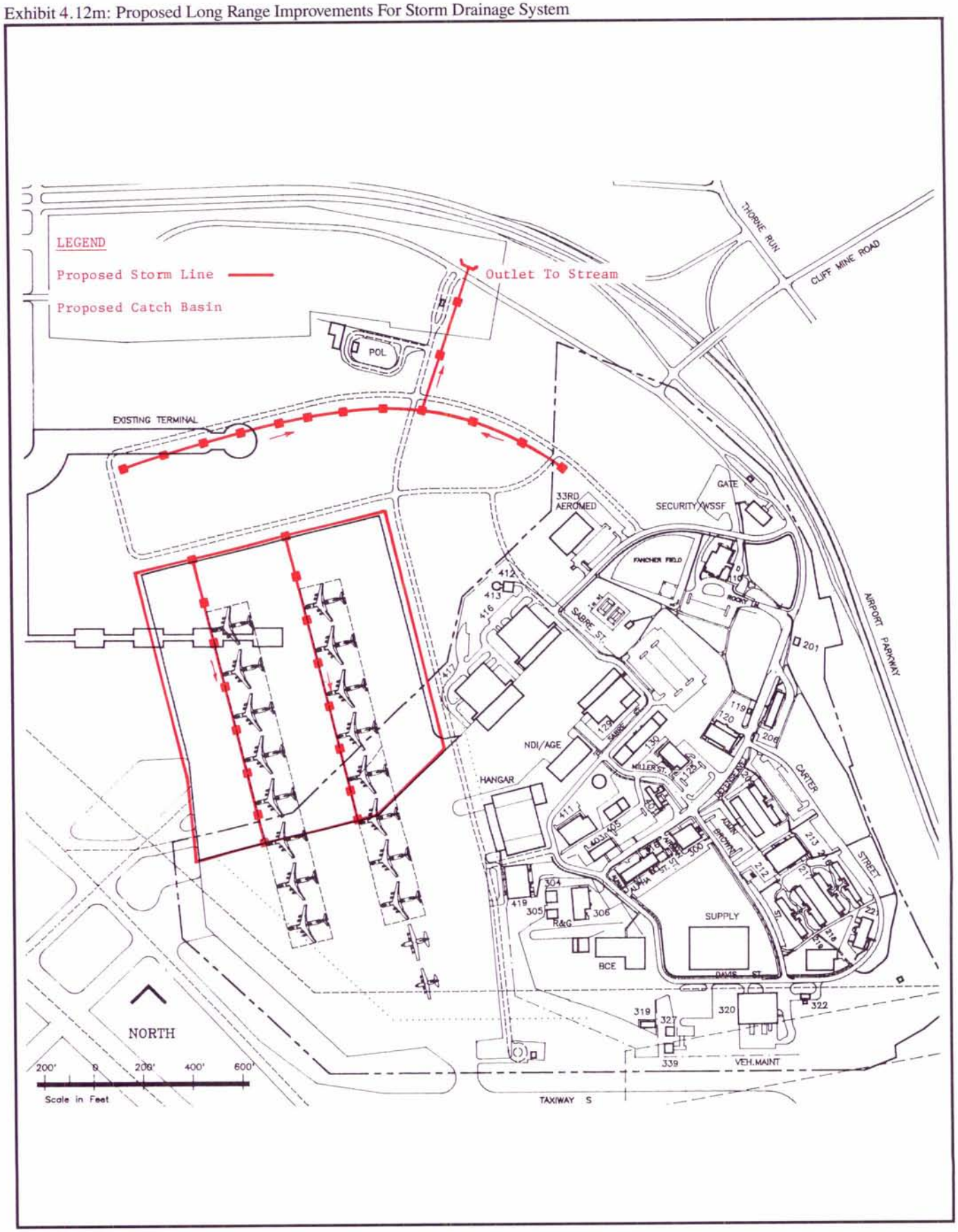


Exhibit 4.11t: Summary Of Utility Proposal Costs

Utility	Estimated Cost $
...*Solid Waste*	
Contract for rental/usage to be negotiated with private companies	N/A
...*Natural Gas*	
..Existing	N/A
..Short Range	161,000
..Long Range	46,500
TOTAL	207,500
...*Storm Drainage*	
..Existing	4,500
..Short Range	365,500
..Long Range	522,500
TOTAL	892,500
...*Sanitary Sewage*	
..Existing	N/A
..Short Range	34,000
..Long Range	117,000
TOTAL	151,000
...*Water Supply*	
..Existing	779,250
..Short Range	115,350
..Long Range	145,350
TOTAL	1,039,950
...*Liquid Fuels*	
Relocation of POL facility	N/A
...*Cathodic Protection*	
None proposed	N/A
...*Electric*	
..Existing	50,150
..Short Range	87,350
..Long Range	379,200
TOTAL	516,700
...*Street and Area Lighting*	
..Existing	17,325
..Short Range	4,625
..Long Range	15,790
TOTAL	37,740
GRAND TOTAL	2,845,390

Exhibit 4.12m: Proposed Long Range Improvements For Storm Drainage System



COMMUNICATIONS PROPOSAL SUMMARY

Existing needs for COMMUNICATIONS, NAVAIDS, METEOROLOGICAL FACILITIES, FIRE ALARMS and SECURITY ALARMS are discussed in the respective report sections. The effects of selected short and long range development proposals upon Pittsburgh AFRES base communications systems primarily involve additions and modifications to the communications cable plant or, Outside Plant (OSP) Cable Distribution System.

Pittsburgh AFRES base's existing communications cable plant is owned and maintained by Bell Telephone of Pennsylvania under contract. Much of Bell's on-base cable plant utilizes aerial cables of considerable age. Moisture-related cable problems are common. Although Bell of PA. provides good service response when problems occur, and their completion of service order related work is timely, the needed major upgrade of on-base cable facilities is unlikely. Despite these shortcomings, charges for the base's use of them continue to increase.

In view of the above considerations, migration to an entirely Government-owned communications cable plant is recommended. In accord with this recommendation, all base cable additions proposed herein are assumed to be Government-owned.

The Communications Proposals presented in this section include communications conduit, cables installed in conduit and direct-buried cables. Where cables are to be installed in conduit the use of expanded insulation, filled construction cables is recommended. All direct-buried cables, however, should utilize solid insulation and filled construction.

Short Range Communications Proposals

Short range base development proposals identify the area north and west of Fancher Field as a location for new and relocated facilities. In addition, modifications to present base traffic patterns are proposed that enhance Defense Avenue's use as the primary entry route to the Headquarters area of the base. To provide communications services to the main base development area, eliminate unsightly aerial telephone plant and minimize future disturbance of Defense Avenue a backbone communications conduit system is proposed (see exhibit, lower right).

The main run of the proposed conduit system will consist of four, four-inch Inner Diameter (4-4"I.D.), concrete-encased polyvinyl chloride (PVC) conduits. The four duct package begins at the Communications Center and extends to a new manhole on the northwest side of Defense Avenue. The four duct package continues along Defense Avenue passing through a second manhole at the intersection with Miller Street and ends in a manhole located between the Gymnasium (Building 120) and Avionics (Building 125).

Two (2) branch conduit runs will extend from the third manhole, both packages being 2-4"I.D. ducts. One conduit run, the main branch, will follow Defense Avenue while the other, the Sabre branch, will route to the northwest and follow along Sabre Avenue toward the new development area.

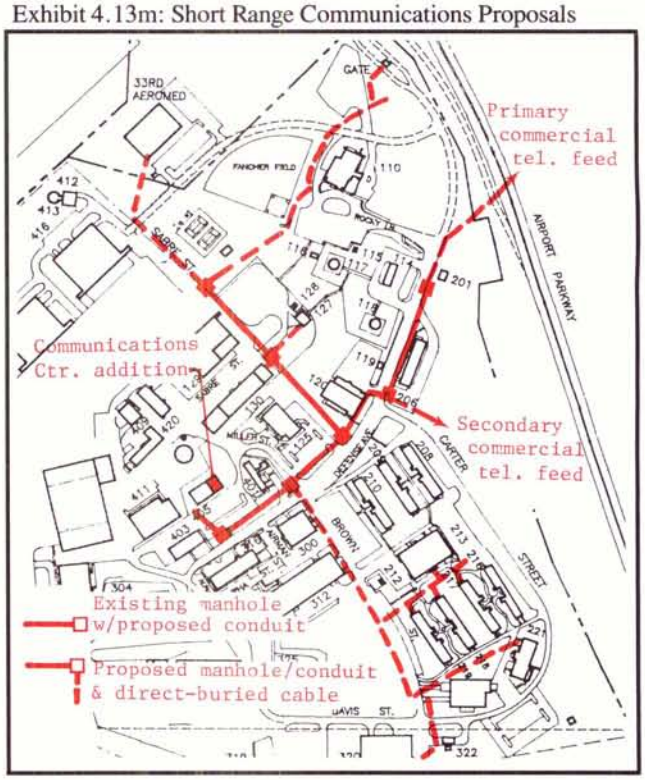
The main conduit branch will extend from the third manhole along Defense Avenue to the Carter Street intersection. The conduit will cross Defense to the north side of Carter where a fourth manhole will be placed. The branch will continue from the fourth manhole along the south and east side of Defense Avenue to a terminal manhole in the vicinity of the existing Main Gate. It is intended this manhole provide the point of interface with the commercial telephone system. The exact location of this manhole should be negotiated with Bell Telephone of Pennsylvania to assure minimum future charges to the Government.

The Sabre branch conduit run will extend from the third manhole towards the northwest passing between Avionics and the Gym and continuing along Sabre Avenue. A manhole will be located beside Sabre Avenue near the Aerial Port Training Facility (Building 130). The branch duct run extends from this manhole to the terminal manhole which will be located across from the Large Aircraft Maintenance Dock (Building 129) and the corner of the ramp.

Between the Communications Center and the first manhole at Defense Avenue, a 2400x24 cable is proposed. From the first manhole to the second manhole an 1800x24 cable is recommended. The 1800-pairs will feed a 1500x24 cable extending to the next manhole and a direct-buried four hundred pair cable proposed to feed along Brown Street.

The Brown Street feeder cable will be placed along the southwest side of Brown Street to just beyond the Dining Hall. From this point a 300x24 cable will be buried across Brown Street and extended between the Dining Hall (Building 213) and the VAQ Dormitories (Buildings 216, 217, 218 and 219). A 50x24 direct-buried cable each will serve Buildings 213, 216, 217, 218 and 219.

Exhibit 4.13m: Short Range Communications Proposals



A 200x24 direct-buried cable will extend along Brown Street from the end of the above 400 pair cable toward Davis Street. Near the Davis Street end of Building 219 the two hundred pair cable will cross Brown Street. Fifty pair direct-buried cables will serve Buildings 221, 320 and the proposed Medical Training Clinic.

A 400x24 cable is proposed between the third and fourth manholes to serve the Primary and Secondary Commercial Telephone Feeds, VOQ (Building 206) and the Infirmary (Building 221). A 300x24 cable is recommended for the last main run conduit section to the terminal manhole near the present Main Gate. Except for the 26-pair feed to Building 221, scheduled for elimination under *Long Range Communications Proposals*, the entire 300 pairs will be reserved for the Primary Commercial Telephone Feed.

A 600x24 is proposed for the beginning of the Sabre branch conduit run. The 600-pair cable is to extend from the manhole at Defense Avenue to the second manhole near Building 129. This cable will provide the pairs to feed Building 110, the new Gate House and the proposed Security Police/WSSF Facility. Buildings 127 and 130 will also feed from this cable with pairs remaining available for possible future service to Building 129.

A 300x24 cable will be direct-buried from this manhole to a location near the Combined Open Mess (Building 110). This cable will feed Building 110 and a 200x24, direct-buried cable extending toward the new Main Gate. A 100x24 cable will be buried to the new gate house with the remaining hundred pair reserved for the proposed Security Police/WSSF facility as shown under *Long Range Communications Proposals*, in this section.

A 50x24, direct-buried cable is recommended to be extended from the Sabre branch terminal manhole along Sabre Avenue to serve the proposed 33rd Aeromed building.

Pairs will remain available at the Sabre branch terminal manhole to serve future growth to the northwest and/or possible future feeds to Buildings 412, 413, 416 and 417.

A 100-pair direct-buried cable from existing Manhole #11 near Squadron Operations (Building 419) will serve the proposed hangar.

Long Range Communications Proposals

Direct-buried cables are proposed to serve the area south and east of Defense Avenue. Beginning at the manhole on the northwest side of Defense Avenue near the Communications Center that has been proposed under *Short Range Communications Proposals*, above, a 600x24 cable will be placed across Defense Avenue.

The 600-pair cable will extend along Defense Avenue toward the southwest to the intersection with Alpha Street near Reserve Forces Operational Training (Building 316). A 400x24 cable will be buried along the northeast side of Alpha Street to serve BCE and proposed Supply Admin/Warehouse. The 200 pairs remaining at the intersection of Defense and Alpha will remain available for extension toward Squadron Operations (Building 419).

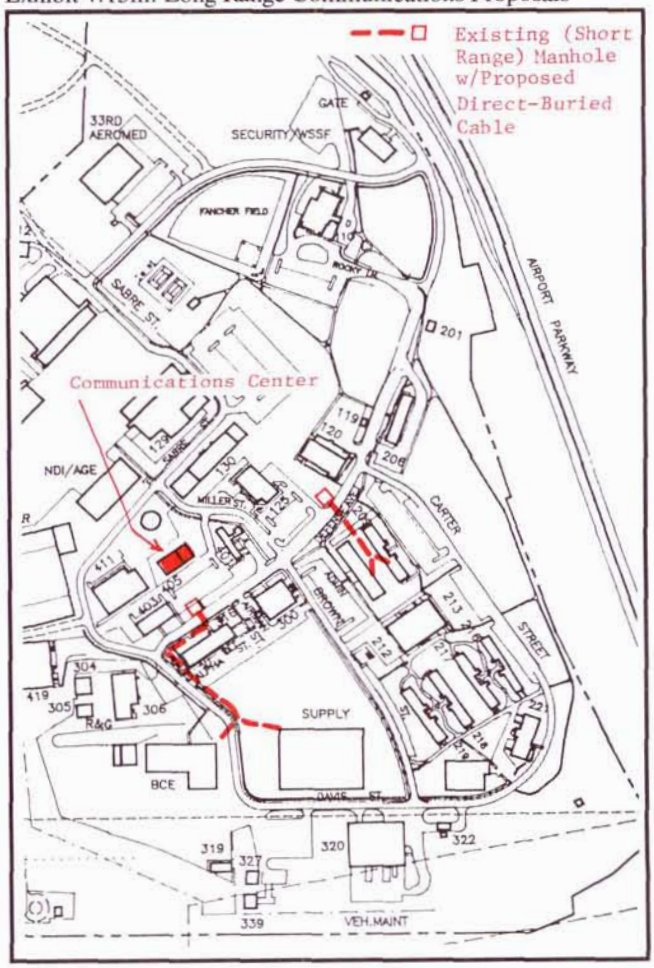
Beginning at the Defense Avenue manhole between Buildings 120 and 125 a 200x24 direct-buried cable will be placed across the street to serve Buildings 209 and 210.

Exhibit 4.14t: Communications Proposal Cost Summary

Proposal	Cost (thousands)
Short-Range Proposals:	
Placement of Communications Conduit & Manholes	81.6
Placement of Communications Cables	61.0
Short-Range Proposals Total:	142.6
Long-Range Proposals:	
Placement of Buried Communications Cables	17.6
Long-Range Proposals Total:	17.6

Branching from the 200x24 cable recommended in *Short Range Communications Proposals* for placement along the proposed new street near the new Main Gate a 100x24 cable will be buried into the new Security Police/WSSF facility.

Exhibit 4.15m: Long Range Communications Proposals



TRANSPORTATION PLAN SUMMARY

The existing roadway system at the Pittsburgh AFRES base, shown in the exhibit below, has several deficiencies that restrict the smooth flow of traffic.

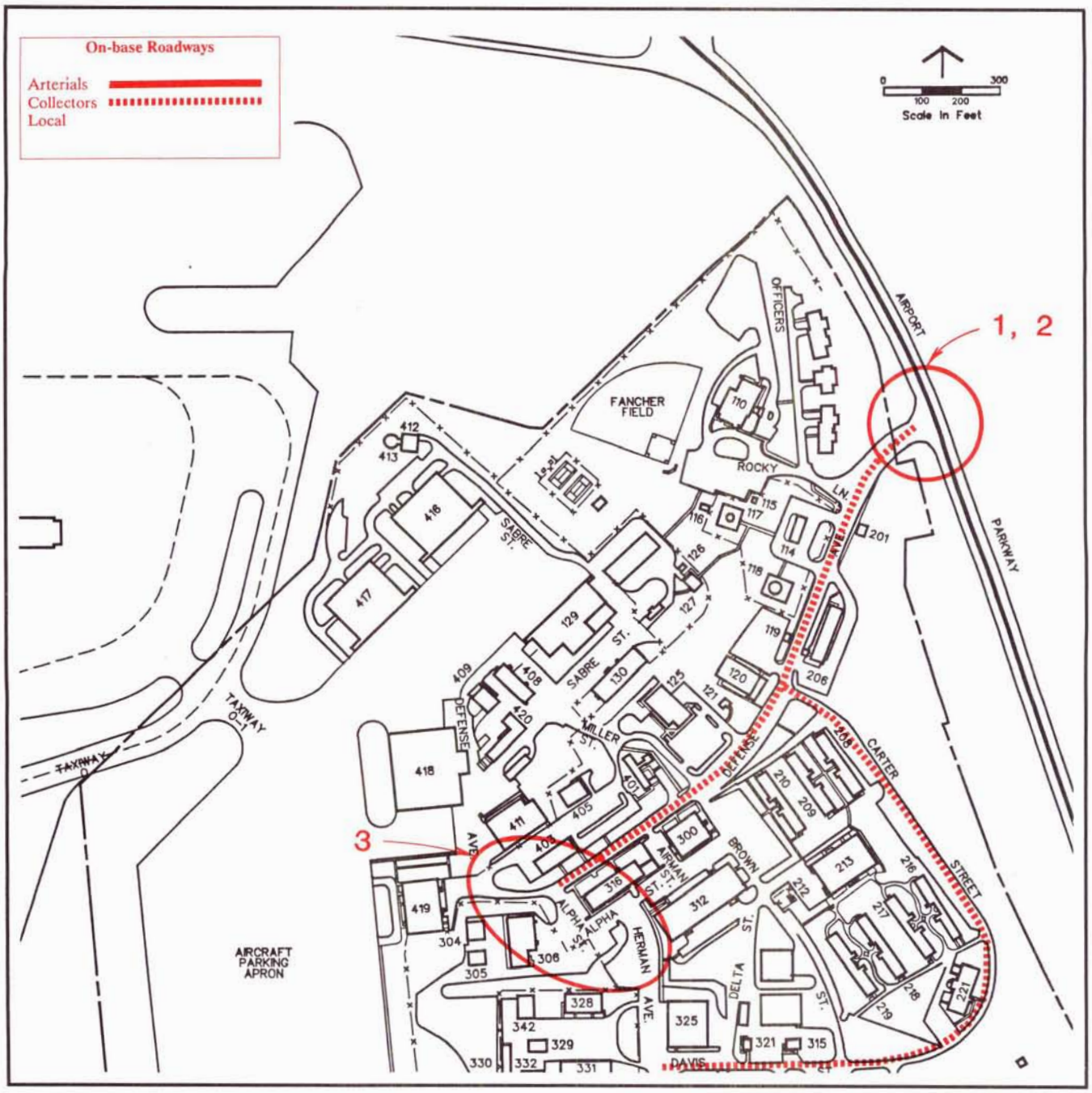
..1) The base's only gate is connected to the eastbound-lane of the Airport Parkway, a four-lane divided highway. Personnel leaving the base are exposed to hazardous conditions while merging with the high-speed traffic on the Parkway.

..2) No westbound access is available from the main gate to the Parkway. Traffic leaving the base for points west must use the Montour interchange, 2.3 miles to the east, to access the Airport Parkway.

..3) The on-base roadway system lacks continuity because of poor intersections, steep grades, and on-street parking.

..4) Additional parking areas are needed to accommodate the large number of vehicles on-base during Unit Training Assemblies (UTA).

Exhibit 4.16m: Existing Roadway System At The Pittsburgh AFRES Installation



Transportation Improvements

The Base Comprehensive Plan (BCP) for the Pittsburgh AFRES installation includes a series of transportation-related improvements, including:

..1) A new base access area and main gate that will be directly connected to the GPIA and the new Thorn Run Road interchange;

..2) A new roadway linking Defense Avenue with the new base access area;

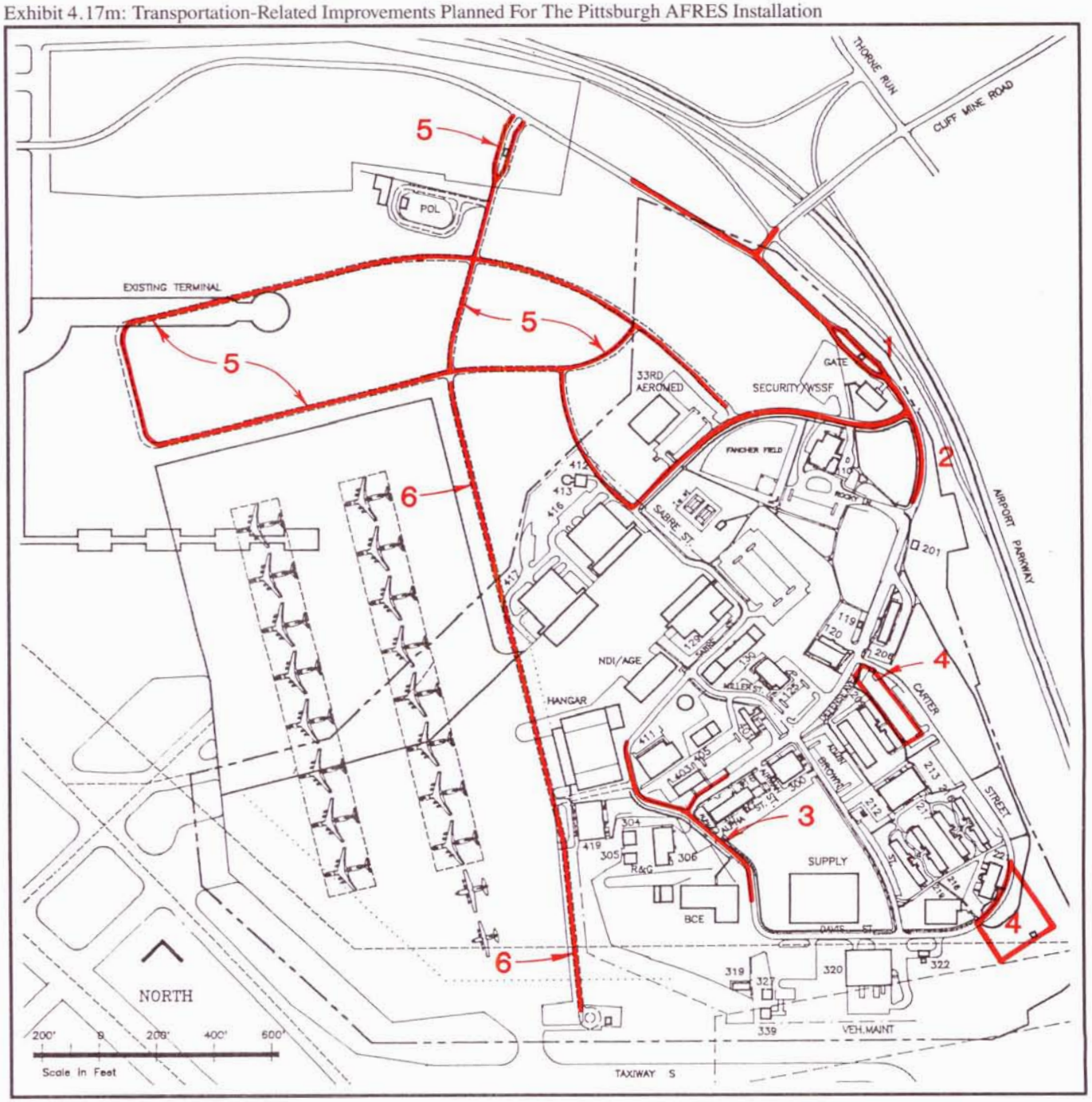
..3) Improvements to the on-base roadway system that will create an organized system of collector and local roadways;

..4) Construction of several new parking areas;

..5) A new POV roadway system and emergency-use only gate on lands leased from the GPIA for base expansion; and,

..6) A government vehicles-only roadway along the perimeter of the flight line.

Exhibit 4.17m: Transportation-Related Improvements Planned For The Pittsburgh AFRES Installation



LANDSCAPE DEVELOPMENT PLAN

The landscape development plan is intended to serve as a guide for the selection and installation of planting materials on base. The visual character of the physical base is coordinated by this landscape plan in concert with the exterior master paint plan and the architectural guidelines.

Although past plantings have followed no master plan, conditions are very good for the installation of a long range planting plan:

...a wide variety of trees and shrubs will grow in the Pittsburgh climate
...rainfall and drainage are adequate for plant material to grow without extensive artificial watering systems
...almost any reasonable landscaping treatment can be supported by the existing climatic and environmental conditions.

The overall general landscaping plan is shown by the map on the next page, while more detailed site plantings are shown by the sketches below.

EXTERIOR MASTER PAINT PLAN

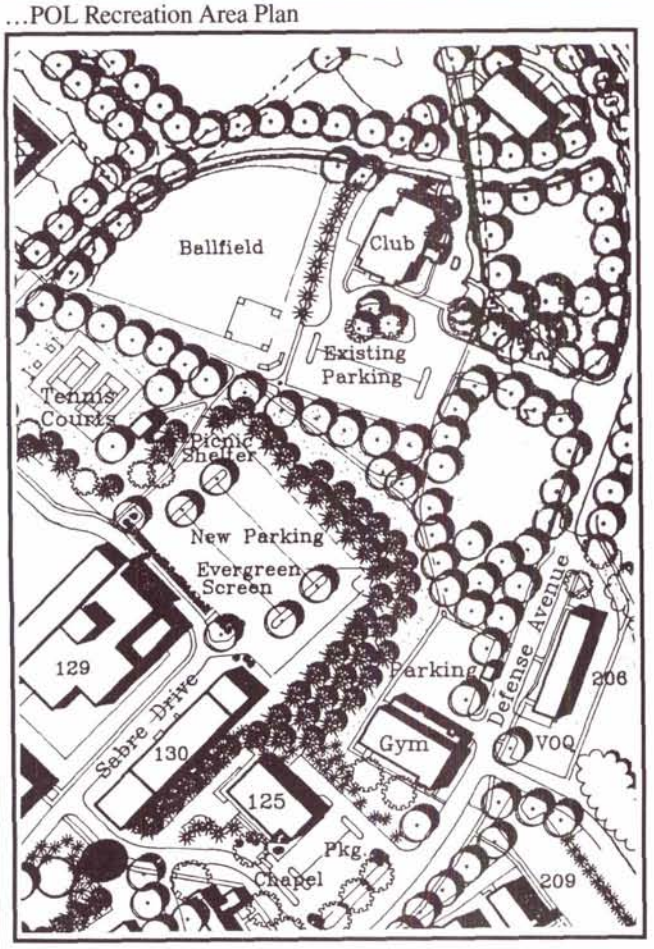
The purpose of the exterior master paint plan is to enhance the appearance of the base physical environment through the use of a harmonious color scheme, and to reduce the impact of visual liabilities and unsightly problem areas through the use of material and paint colors.

The base currently contains over 60 buildings with a wide range of sizes, materials, colors, styles, and functions. When the primary building colors are mapped, it shows that buildings near the airfield generally contain blue color tones while most others on base are earth tones, such as brown, beige, and cream. This color pattern has the potential to become a more formal color theme for the base.

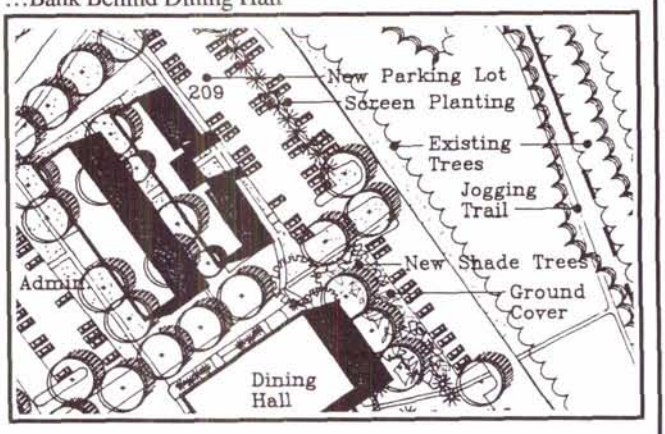
The master paint plan will be formalized in a separate notebook where paint chips will illustrate the proposed color scheme for each building, with color photographs of each building also attached.

Exhibit 4.18m: Landscaping Site Plans For Specific Areas

...POL Recreation Area Plan



...Bank Behind Dining Hall



...Headquarters Landscaping

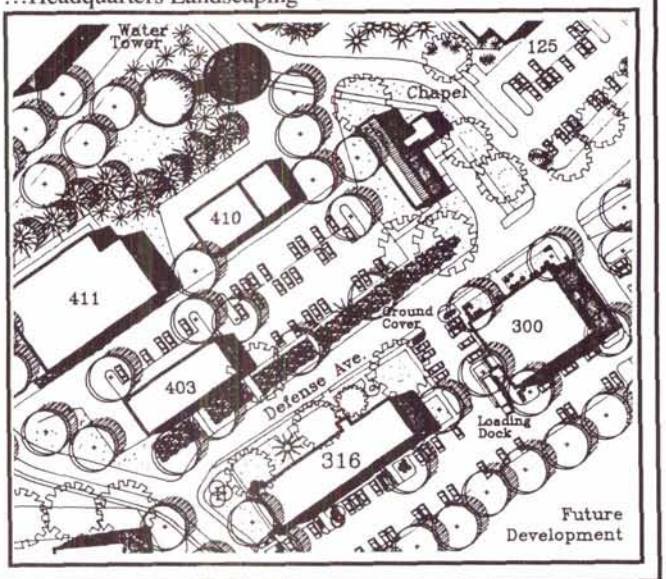
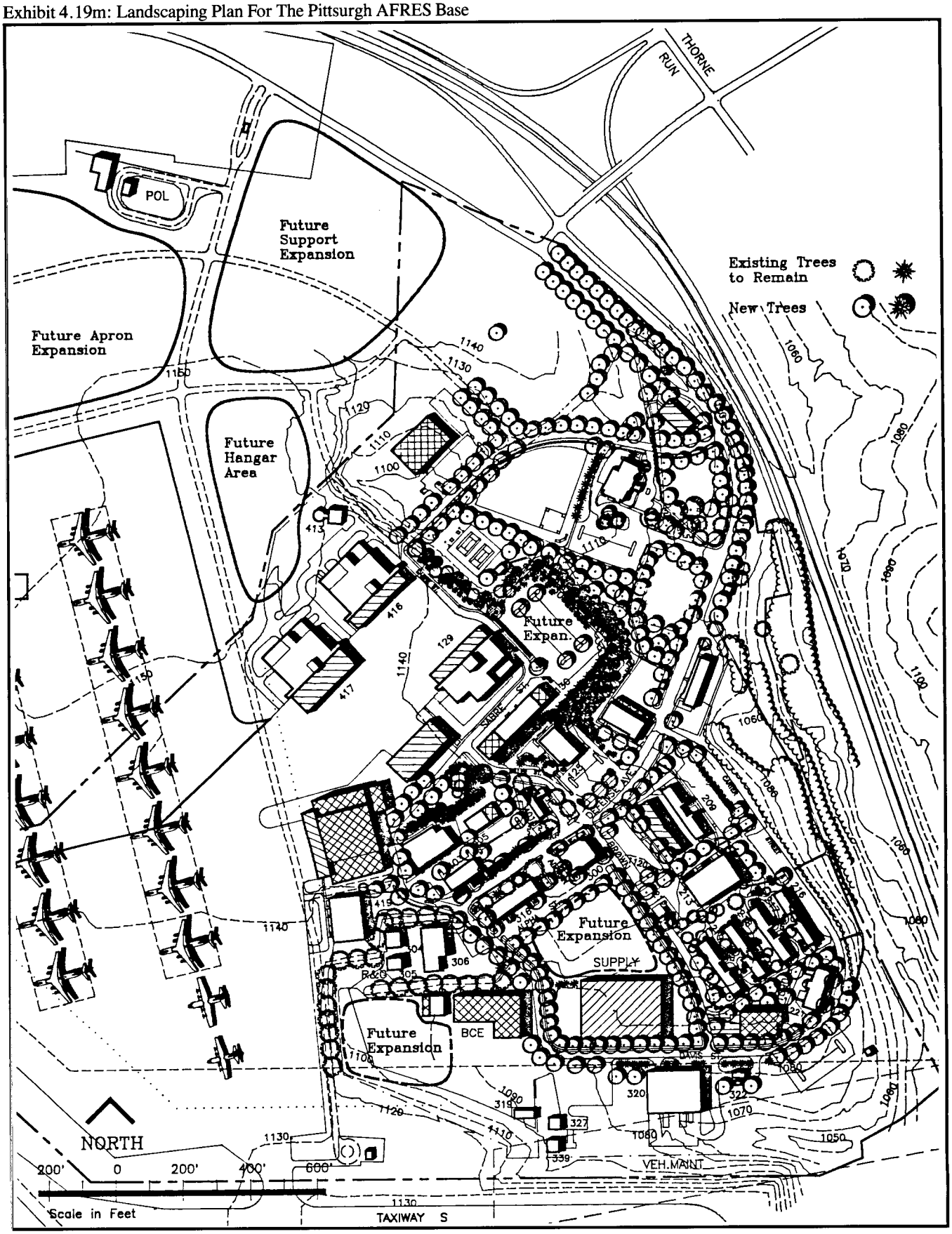


Exhibit 4.19m: Landscaping Plan For The Pittsburgh AFRES Base



Chapter V

INTRODUCTION

TO

THE

PITTSBURGH

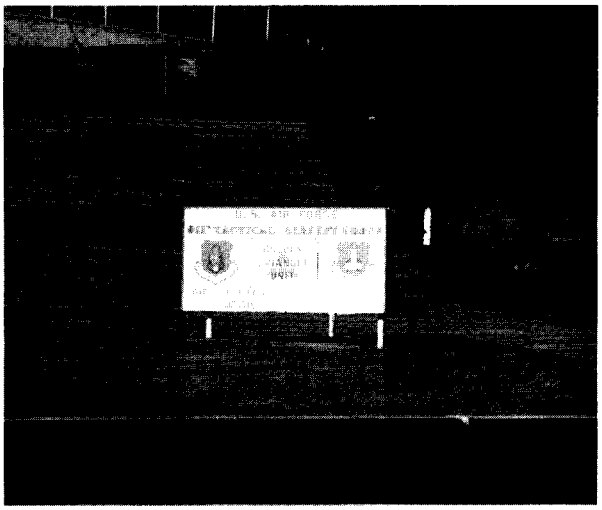
AFRES

BASE

COMPREHENSIVE

PLAN

Exhibit 5.1p: Entrance Sign for The 911 TAG (AFRES)



INTRODUCTION

The following chapters of this report comprise the component plans, and each will be described in these general phases:

...Inventory and Analysis of Existing Conditions;
...Determination of Existing and Future Needs;
...Needs, Objectives and Constraints of Future Development;
...Alternatives for Future Development; and
...Plans for Future Development.

This introductory chapter will provide background information on the 911th Tactical Airlift Group (TAG), and the Pittsburgh area, in the following sections:

...Mission;
...Installation Profile: location, history, base population, housing, goals and objectives;
...Community Profile: location, climate, cities/counties, population, economy, housing, government, transportation, social linkage and community interaction mechanisms, goals, objectives, plans of adjacent communities, and off-base constraints and opportunities.

MISSION*

The mission of the Air Force Reserve Unit is to organize, recruit and train Air Force Reservists to provide airlift of airborne forces, their equipment and supplies and delivery of these forces and material by airdrop, airland, or cargo extraction systems.

911TH TACTICAL AIRLIFT GROUP (AFRES)

The primary mission of the 911th Tactical Airlift Group (AFRES) is to provide command and staff supervision of tactical airlift squadrons and assigned support units engaged in providing tactical airlift support for airborne forces and other personnel, equipment, supplies and aeromedical evacuation of patients within the theater of operations.

The secondary mission assigned to the 911th TAG is to provide for the operation and maintenance of base facilities in support of assigned or attached units.

In addition, the 911th provides: full support of Operating Location E, 1998th Information Systems Group; base recovery capability in the event of unforeseen contingencies or natural disasters; reimbursable utilities to the Pennsylvania Air National Guard at the Greater Pittsburgh International Airport and AF collateral responsibilities rendering aid to civil authorities in similar emergencies.

The 911th TAG has several assigned units and tenants whose mission descriptions follow. The overall organizational structure of the 911th TAG is illustrated by the exhibit at the upper right.

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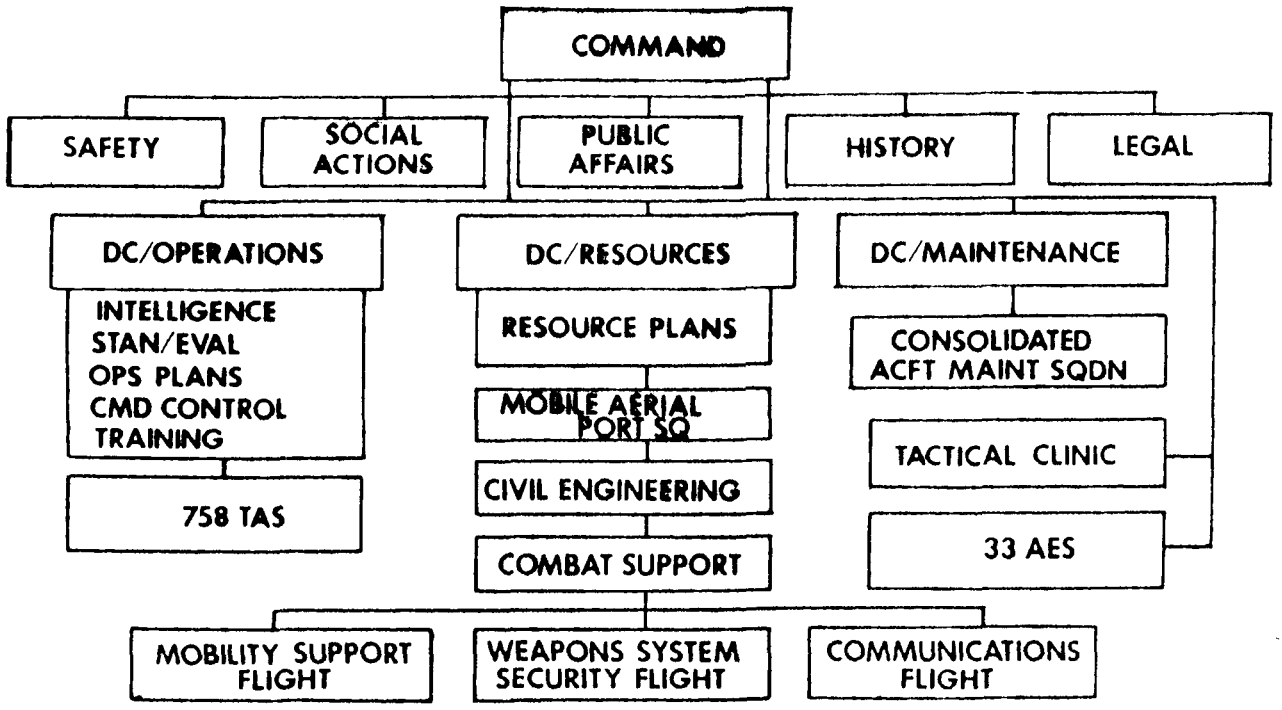
*Annual Review Real Property Study, p. 11,12; 911th TAG, 19 November 1986.

Exhibit 5.2t: Organizational Structure Of The 911th TAG AFRES*



*From the Office of the 911th Base Civil Engineering Office

ASSIGNED UNITS*

The 911th TAG is one of the units assigned to the 439th Tactical Airlift Wing (TAW) located at Westover Air Force Base, Massachusetts; the 439th TAW is subordinate to the 14th Air Force, which reports directly to Headquarters Air Force Reserve*.

The missions of the subordinate units assigned to the 911th TAG are:

...The 758th Tactical Airlift Squadron whose mission is to provide air transportation for airborne forces, their equipment and supplies, by airdrop, airland or extraction; to provide intratheater airlift of personnel, equipment and supplies, including tactical aeromedical evacuation within the theater of operations intertheater airlift as required.

...The 911th Consolidated Aircraft Maintenance Squadron's mission is to provide organizational and intermediate level maintenance on aircraft and engines; to include associated avionics and munitions system and equipment; to provide non-Destructive Inspection and Precision Measurement Equipment Laboratory services under field or combat conditions for tactical units.

...The 911th Combat Support Squadron provides operation and maintenance of an Air Force installation in support of the assigned or attached, dispersed and enroute or alert tactical units.

...The mission of the 911th Weapons System Security Flight is to provide physical security for USAF aircraft.

...The mission of the 911th Mobility Support Flight is to provide necessary base augmentation to bolster existing support organization at a main operating base and to support work routines generated by the augmentation of the tactical squadron and its associated aircraft maintenance units.

...The 33rd Aeromedical Evacuation Squadron provides necessary augmentation for inflight medical care in the form of administrative and operational support that is incidental to the air movement of patients; and to achieve full utilization of military airlift aircraft under various conditions of heightened tension up to and including full mobilization.

...The 911th Tactical Clinic provides limited diagnostic and therapeutic services in general medicine and surgery, flight medicine, military public health, dental and veterinary services under field or combat conditions for tactical units.

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*TAB A-1, Environmental Narrative, March 1978.
**HQ of the 911 TAG AFRES, 8 February 1985

...The mission of the 911th Communications Flight is to provide personnel trained in communications and electronics staff support of flying groups; to operate assigned mobility and support equipment required for communications-electronics training and operational support of the group; to maintain ground communications equipment assigned to the flight as mobility or support equipment.

...The mission of the 32nd Mobile Aerial Port Squadron is to furnish qualified personnel to supervise aircraft loading and unloading at deployment bases; to perform joint inspections of airdrop loads and to assist tactical airlift units in the aerial ejection of supplies, equipment and personnel from cargo aircraft; to furnish combat control teams to locate, identify and mark the airborne assault zones where they will establish and operate ground to air and point to point communications and NAVAIDS as required in support of the tactical airlift mission.

...The 911th Civil Engineering Squadron's mission is to provide a 200-man engineering team, 50 service personnel and equipment capable of deployment to support contingencies, special air warfare operations, disasters and other emergencies for short term duration. The team deploys in advance of other flyaway units in order to establish basic engineer services necessary to activate a bare base.

TENANTS*

The 911th TAG is "landlord" to several tenants at the base. Mission statements of major tenants units are:

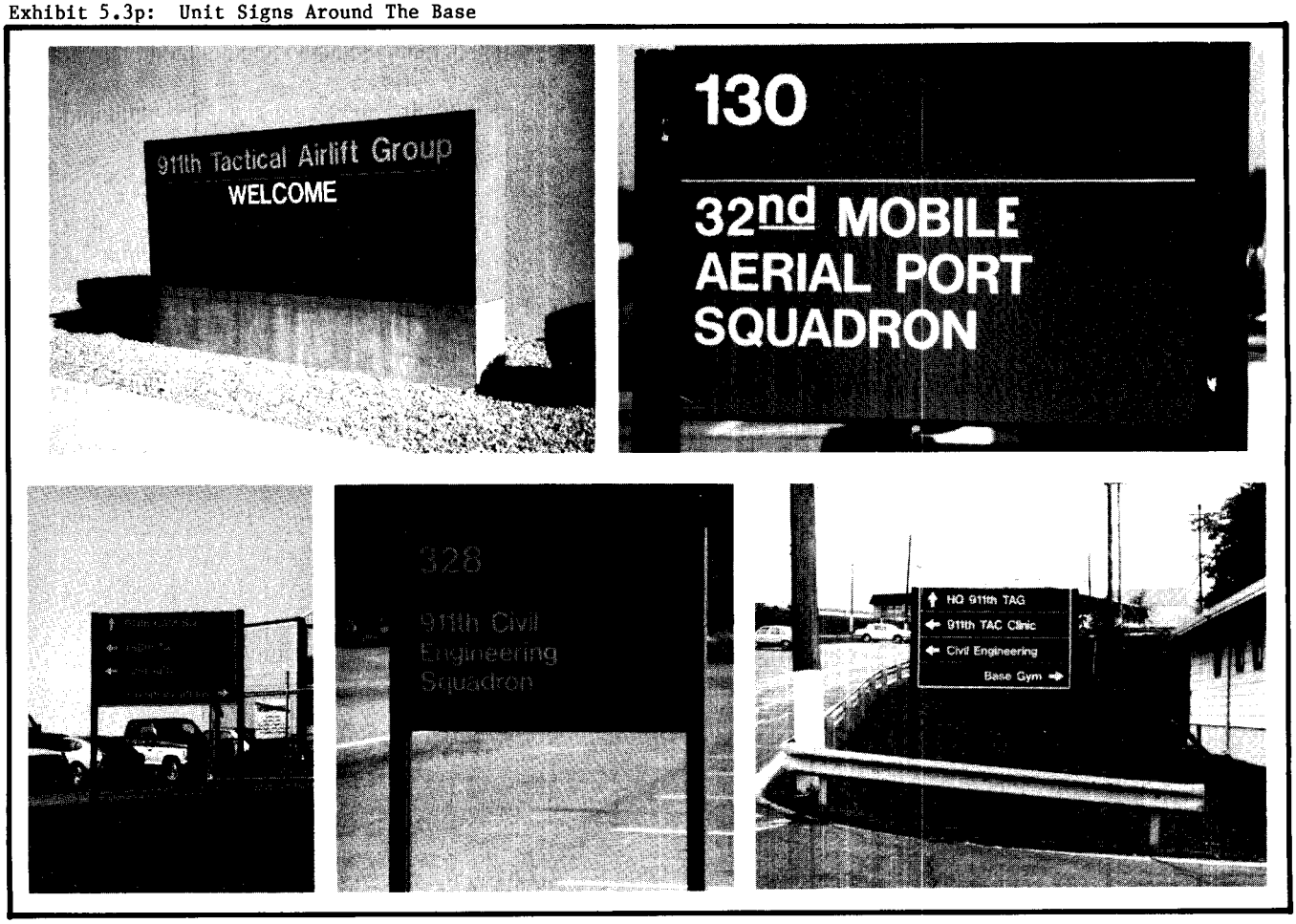
...Operating Location E 1998th Information Systems Group (AFCS) operates and maintains voice and record communication facilities to support the 911th TAG; provides Air Force technical advice to the 911th Comm Flight (ASAFR), 112th and 171st Comm Flights (ANG); provides ComSEC support and record communications for DOD agencies in western Pennsylvania and northern West Virginia; provides record communication support for U.S. agencies as requested, i.e. FBI and Treasury Department; and provides AUTOVON as available to other DOD agencies in the area.

...The 3511th Air Force Recruiting Squadron's mission is to recruit the resources needed by the Air Force without regard to race, color and creed.

...Detachment AHOI/Civil Air Patrol (USAF) as the active duty Air Force Liaison Officer to the Pennsylvania Wing, Civil Air Patrol represents the Commander CAP-USAF. The liaison mission is accomplished by: (1) implementing policies,

*TAB A-1, Environmental Narrative, March 1978.

Exhibit 5.3p: Unit Signs Around The Base



directives, and procedures established by Headquarters CAP-USAF, (2) advising CAP unit commanders on organization, administration, and matters of technical nature, and (3) providing liaison and control between CAP and federal government sources, where facilities, services, equipment or funds are involved.

Other tenants* located at the base, but independent of the AFRES are: the Tri-State Credit Union; Commonwealth of Pennsylvania, Department of Public Welfare, Bureau for Visually Handicapped; Army/Air Force Exchange Service; and Department of the Army Recruiting Command.

*Annual Review Real Property Study, 911th TAG, 19 November 1986.

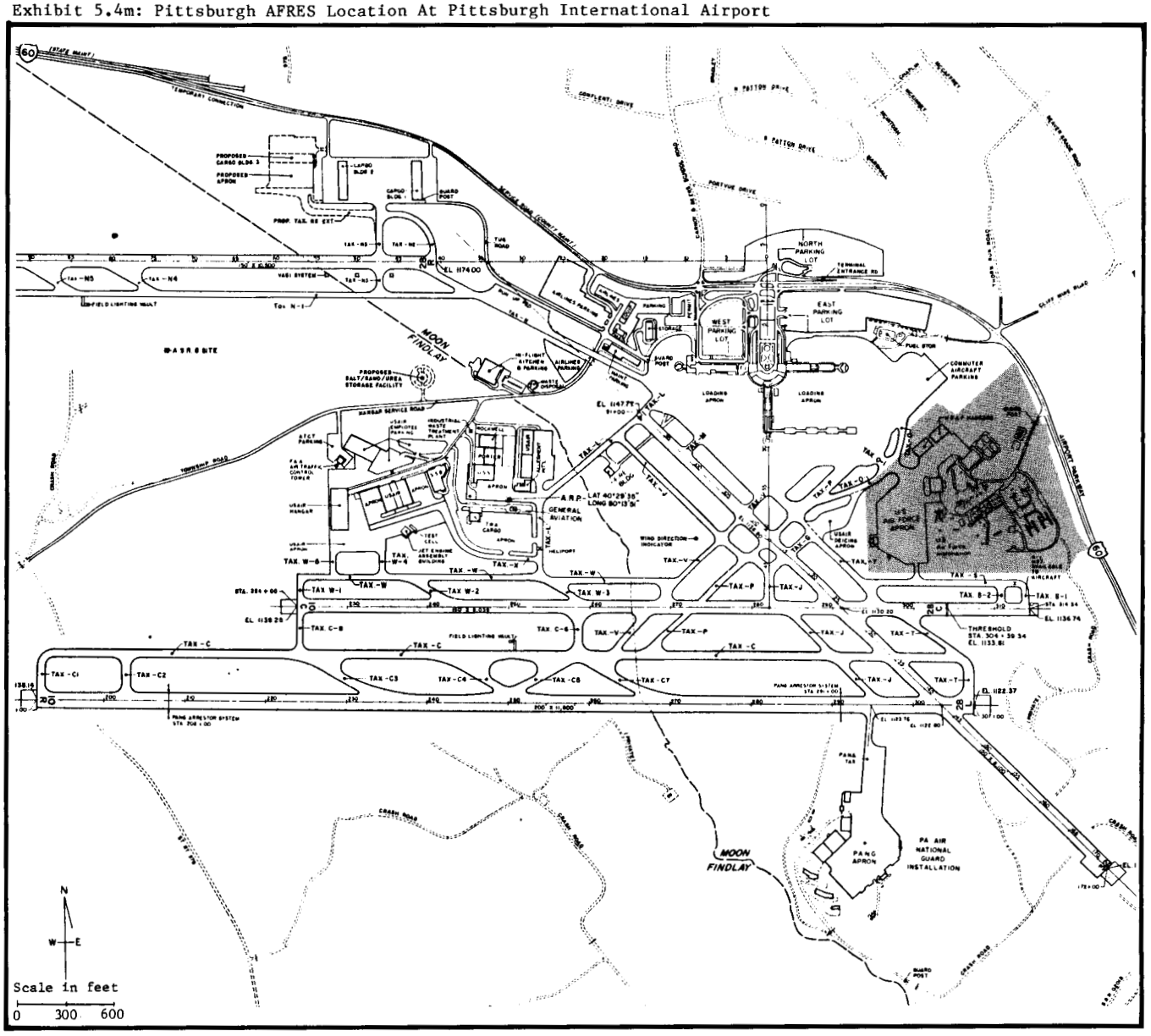
INSTALLATION LOCATION*

The 911th Tactical Airlift Group (AFRES) is located at the Greater Pittsburgh International Airport, 16 miles WNW of Pittsburgh, Pennsylvania, and 4.5 miles SW of the town of Coraopolis, Pennsylvania. The base is located on the east side of the airport in Moon Township. The airport lies at the foothills of the Allegheny Mountains where the open, steeply sloping; hills are interspersed with lightly wooded sections.

The Penn-Lincoln Parkway West/State Highway 60 is adjacent to the airport and provides access to the city of Pittsburgh and points east (see the exhibit below and the map on page 5-90). The base entrance is directly off the western section of the Parkway West. Route 60 connects the Parkway with the Beaver Valley Expressway, north of the airport, which ultimately leads to Ohio.

*Ibid, pg. 1.

Exhibit 5.4m: Pittsburgh AFRES Location At Pittsburgh International Airport



HISTORY*

The Air Force interests at the Greater Pittsburgh International Airport began in 1942 when Congressional appropriation for civil aeronautics, in the amount of $2,600,000 was made for clearing, grading and constructing drainage structures for Civil Aeronautics Administration, National Defense Airport, Allegheny County, Pittsburgh, PA. By 1 October 1942, contract work including paving totaled $4,591,752.

Effective 4 May 1944, a formal lease was negotiated between Allegheny County and the Federal Government. The lease provided for an exclusive use parcel for the Air Transport command facilities site, now the Air Force Reserve site, and the joint use of runways, taxiways, and all other sections of the airport.

Two construction contracts were awarded on 30 June 1944 for the construction on the exclusive use parcel of temporary buildings (World War II type), parking apron, access taxiways and a hangar, together with utilities and appurtenances. By 1945, the facility was in use by Air Transport Command as a refueling stop for ferrying of aircraft.

In 1946, the installation was assigned to the Continental Air Command (CAC). The land and facilities used by CAC were assigned to Aerospace Defense Command (ADC) in 1952. The years under ADC, 1952-1958, began the second major building program of facilities in support of an active fighter interceptor mission.

In 1958, the ADC mission was discontinued and the 758th Troop Carrier Squadron, a reserve flying unit, was activated. This unit was replaced by the activation of the 911th Troop Carrier Group in January 1963. The unit became a Military Airlift Group in January 1967, with the Military Airlift Command (MAC) designated as the active force gaining command upon federalization or special mission tasking. From March 1967 to April 1972, the eight assigned C-124s averaged 5,000 hours per year on worldwide missions in performance of tasks assigned by MAC.

In April 1972, the 911 MAG was redesignated as the 911th Tactical Airlift Group (911 TAG) with assignment to the Tactical Air Command (TAC) as the gaining command. The C-124s were replaced by 16 C-123K aircraft. As of 1 July 1975, the 911 TAG was reassigned to the Military Airlift Command (MAC).

The C-123s were replaced by C-130s in October 1980. The eight assigned C-130s averaged at least 3,400 hours per year on missions in performance of tasks assigned by MAC. In March 1987, the C-130s are scheduled to start being replaced by C-130H models.

The installation has been a stable employer with many civilian employees having a continuous employment record since the 1940's. It has been a source of employment to veterans, minorities, the handicapped and many students under the various Government programs. It is used as the arrival point for the President, Vice President, Cabinet Members, and foreign government leaders coming to the Pittsburgh area on official business.

*Ibid, p. 3,4.

BASE POPULATION*

Base population figures by organization are provided by the table at the right. The population total of 1,372 persons represents all base personnel, military and civilian. During a UTA (Unit Training Assembly) weekend, the maximum population present in an eight-hour period would be 1,372 personnel (see the exhibits at right). The base has bed spaces for 330 personnel; therefore, the maximum population present in a 24-hour period would be 330 persons.

The base population during a regular weekday would be approximately 453 persons: 138 ARTs (Air Reserve Technicians), 233 non-ARTs, 31 NAF (non-appropriated fund) employees, 26 civilian tenants, and 25 military and active duty tenants.

For planning of utilities, in accordance with DOD regulations, capacity figures for each utility are based on the "existing effective population", which is:

...existing maximum dormitory population for 24-hour period on a UTA Weekend..... 330

...plus, one third of existing maximum population for 8-hour period on UTA weekend 1,372 - 330 = 1,042 x 1/3 = ... 347

...equals existing effective population of..... 677

rounded off to..... 680

The rationale applied to the figures above is simply that a full time "resident" is making use of utilities over a 24-hour period, whereas an eight-hour occupant uses only one-third as much. Thus, 1042 persons on an eight-hour basis x one third = 347 persons on a full-time utility usage basis; plus, 330 personnel actually present (during a UTA) on a full-time basis.

The "future effective population", assuming an eight-hour maximum of 2,000 persons and a 24-hour dormitory population the same as at present (330 persons) would be:

...future maximum dormitory population for a 24-hour period..... 330

...plus, one third of future maximum population for 8-hour period 2,000 - 330 = 1,670 x 1/3 = ... 557

...equals future effective population of..... 887

rounded of to..... 890

*Ibid, attachment.

Exh. 5.5t: Pittsburgh AFRES Base Population Figures

Category		UTA Weekend	Normal Weekday
NON-ART (Air Reserve Technician)		59	233
ARTs	OFFICER	13	138
	AIRMEN	125	
NON-APPROPRIATED FUND		31	31
TENANTS	CIVILIAN	14	26
	MILITARY	2	22
	ACTIVE DUTY	3	3
RESERVES	OFFICER	187	0
	AIRMEN	938	
TOTAL		1,372	453

*From BCE Office, 1-15-87.

Exhibit 5.6t: Billeting Occupancy For UTAs, 2/86

	Bed-Spaces	Authorized Bedspaces	Deficit Bedspaces
VIPs/Officers	50	58	8
Male Enlisted	238	350	112
Female Enlisted	42	46	4
TOTAL	330	454	124

BASE HOUSING*

The 911th TAG base has five VAQs (Visiting Airmen Quarters) as shown in the photograph below, left. The VAQs are capable of accommodating 280 airmen. The one VOQ, shown below right, can house 50 officers and includes two rooms designated for VIPs.

Exhibit 5.6t summarizes the number of bedspaces and billeting activity. Some pertinent observations of VAQ usage include:*

...Rooms available: 280 enlisted + 50 officers = 330

...20%, or 56 of the enlisted rooms are used on a daily basis;

...72%, or 36 of the officer rooms are used on a daily basis;

...100%, or 280 of the enlisted rooms are used on UTAs;

...96%, or 48 of the officer rooms are used on UTAs;

...454 enlisted, plus officers, are authorized rooms on UTAs; but

...124 personnel travel home on UTA evenings due to unavailability of rooms on base.

GOALS AND OBJECTIVES

The exhibit on the next two pages describes goals and objectives used for Air force base comprehensive planning. Chapter VI of this report contains additional objectives.

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*Ibid, p. 6.

Exhibit 5.7p: Housing At The Pittsburgh AFRES Base

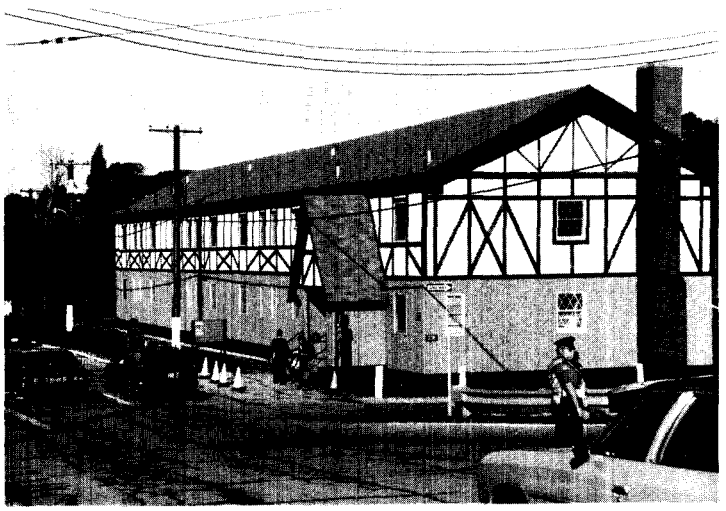


Exhibit 5.8t: Goals & Objectives For The Air Force Base Comprehensive Plan*

Goals	Objectives
..OVERALL GOAL of BCP is to provide a plan that constitutes the framework for programming, design and construction.	...Cooperation - An initial element of this goal is the achievement of a complementary and harmonious relationship between the base and the civilian community through cooperative community planning. ...Integrated - These planning goals must be integrated to establish a comprehensive plan that: ...provides a functional layout ...is energy efficient ...sensitive to the environment ...compatible with community development ...cost effective ...provides setting for a high quality of life
1..MISSION - Provide effective and efficient use of base resources to support the AF mission.	a..Information - Provide information necessary for Commanders to make valid operational and programming decisions. b..Resources - Provide planning for maximum utility, efficiency, and flexibility of base resources.
2..ENERGY - To make optimal use of the latest developments in energy efficient concepts/systems/technologies.	a..Expenditures - Minimize energy expenditures. Determine energy usages before the requirements are built into the comprehensive plan. b..Optimal - Make optimal use of renewable energy resources. c..Flexibility - Plan for future energy flexibility. Flexibility to change fuel types based on future supplies/costs, to use new or improved energy systems as technology progresses, and to efficiently increase/decrease capacity as requirements change. d..Conservation - Evaluate/incorporate conservation systems. Apply centralized energy monitoring/control systems, centralized or decentralized energy generation technologies, and energy efficient transportation modes/system. Emphasize use of the physical environment, seasonal climate, and microclimate (orientation and spacing). e..Construction - Use energy efficient construction concepts/systems/technologies. As a minimum, investigate underground, multilevel, and/or composite or clustered facilities, active/passive solar systems, color surfacing concepts, and insulation systems.
3..ENVIRONMENT - To protect the Natural and Human Environment.	a..Air - Minimize air pollution. Recommend systems/concepts (environmental/emissions control devices, landscaping, etc.) that may be used to reduce air pollution impact. b..Water - Minimize water pollution. Conserve water through efficient equipment and processes such as multiple reuse, recycling, and recharge. Consider the use of innovative/alternative technology in th design and operation of wastewater treatment/management systems. Avoid upsetting the natural water balance. Keep undesirable/unnatural chemicals/elements from entering water courses through run-off or discharge. Retain storm water run-off or water discharges until they can safely/properly enter waterways. c..Waste - Minimize waste generation - maximize recycling. d..Noise - Minimize noise pollution. Consider noise sources from airfield operations and industral areas, and impacts off-base as well as on-base. e..Adverse Impacts - Minimize adverse impacts on the natural environment. ...Demonstrate an understanding of, and plan an appropriate treatment o f austere but sensitive habitats if such is found in and around the base. ...Minimize reliance on the use of toxic substances and materials, such as pesticides and herbicides. ...Use landscape plant materials which are compatible with the fragile natural ecosystem of the area. f..Storage - Properly/efficiently store and dispose of wastes. Include hazardous wastes and solid/liquid wastes which cannot be reasonably recycled.
4..QUALITY OF LIFE - To provide the highest possible quality of life for the Air Force community.	a..Transportation - Plan for convenient, dependable, and comfortable transportation. The transportation system should integrate the base transportation system for people and goods into all modes of the local, regional, and national systems. On-base transit should be based on, and encourage, pedestrian travel, incorporating design elements to increase interest/aesthetics/comfort while diminishing adverse climatic factors. b..Communications - Plan communications linkages with other population centers. Include the potential use implications of cable television, regional radio reception, etc., as means to retain currency in national affairs/trends, to promote education at all levels, and to facilitate the objectives of base and local planning.

*Revised layout by WHQ 11/86 of "Goals & Objectives" in Air Force Standard Statement Of Work. Note that some of the objectives go beyond planning and apply to implementation or preliminary engineering/architecture.

Goals	Objectives
4..QUALITY OF LIFE (cont.)	c..Recreation - Provide for maximum recreation and leisure time opportunities. Plan for a variety of outdoor and indoor, active and passive activities. Minimize adverse impacts of environmental conditions upon the leisure requirements of the base and local community. d..Compatible - Plan facilities that are compatible with the environment. Dominant development trends in the U.S. frequently disregard the contrasting climate and natural beauty of the environment. Sound, environmentally sensitive planning should guide the development of the base. e..Aesthetics - Plan/design an efficient and aesthetically pleasing living and working environment. ...Through the use of sound planning and urban design principles, careful attention will be given to massing and spacial relationships in order to develop an efficient, interesting and aesthetically pleasing overall form for the base. ...Develop a base-wide aesthetic identity which emphasizes Air Force tradition and esprit de corps and is at the same time compatible with the character and culture of the surrounding region. ...Through the use of sensitive design, clearly distinguish the various major functional areas of the base (housing, recreation, operations, etc.) ...Plan a base-wide signage program. ...Working within the overall aesthetic theme, design community details (street furniture, lighting, etc.) which are compatible with large architectural forms. f..Social - Consider the social/psychological needs of base inhabitants. ...Design for people's response to their environment. ...Address the ever-present human need for privacy, security, freedom, variety, order, etc. ...Plan group facilities to create/reinforce a sense of community, belonging, pride, etc.
5..LAND USE - To achieve optimum land use planning.	a..Layout - Establish the most efficient and functional layout. ...Integrate the optimum technologies, historical data, and systems (circulation, landscape, utilities, etc.) into a cohesive and practical comprehensive plan. ...Make optimal use of desirable natural features (terrain, climate, etc.); "design with nature." ...Plan for adaptability in land uses, linkages, and other infrastructures to allow a rapid and economical response to mission or organizational changes. b..Plan for future growth and/or change. ...Provide for future expansion or realignment without adversely affecting functional relationships. ...Plan for adaptability in land uses, linkages, and other infrastructures to allow a rapid and economical response to mission or organizational changes. ...Locate facilities within applicable regulatory safety criteria so that criteria distances can be increased without adversely affecting other facilities. ...Use Air Installation Compatible Use Zone (AICUZ) guidance in base planning and surrounding area recommendations. c..Adjacent - Develop recommendations for land uses in adjacent off-base areas. Recommend compatible and complementary land uses which would preclude often typical, undesirable "strip" development. d..Image - Enhance the base image. Ensure the visual image of the base is compatible with the surrounding environment through such planning considerations as architectural theme and compatible plant and building materials.
6..MAINTENANCE - To plan for maximum maintainability.	a..Low Maintenance Plan - Plan to use low maintenance or maintenance-free architectural design/materials. ...Use materials/finishes which require minimal or no recurring maintenance. ...Plan for adequate space for maintenance materials and equipment as well as access to systems and equipment for easier maintenance. ...Emphasize standardization of parts and modular components. ...Avoid the tendency of each activity or office on base requiring separate structures or equipment. Design to minimize maintenance requirements, such as excessie grass mowing, sign replacement/painting, and manual watering or trimming of landscape plantings. ...Plan for uniform mechanical/electrical utility plants and systems, and develop efficient utility distribution systems, free of duplication or excess capacity beyond that needed for possible expansion. b..Existing Environment - Use the existing environment to minimize maintenance. Use locally available, near maintenance-free material, work with the local climate/environment, and use the natural topography to reduce maintenance requirements.

COMMUNITY PROFILE

Pittsburgh is located in southwestern Pennsylvania (see map inset below) at the point where the Allegheny and Monongahela Rivers merge to form the Ohio River as shown by the exhibit below.

The topography of this region includes numerous small streams; the terrain is interspersed with wooded slopes and rolling and broken hills which keep the suburban communities compact and separated.

Pittsburgh occupies 55.5 of Allegheny County's 730 square mile area, and has an average elevation of 740 feet above sea level. Elevations along the rivers average 702 feet; highest elevation in the county is 1,400 feet.

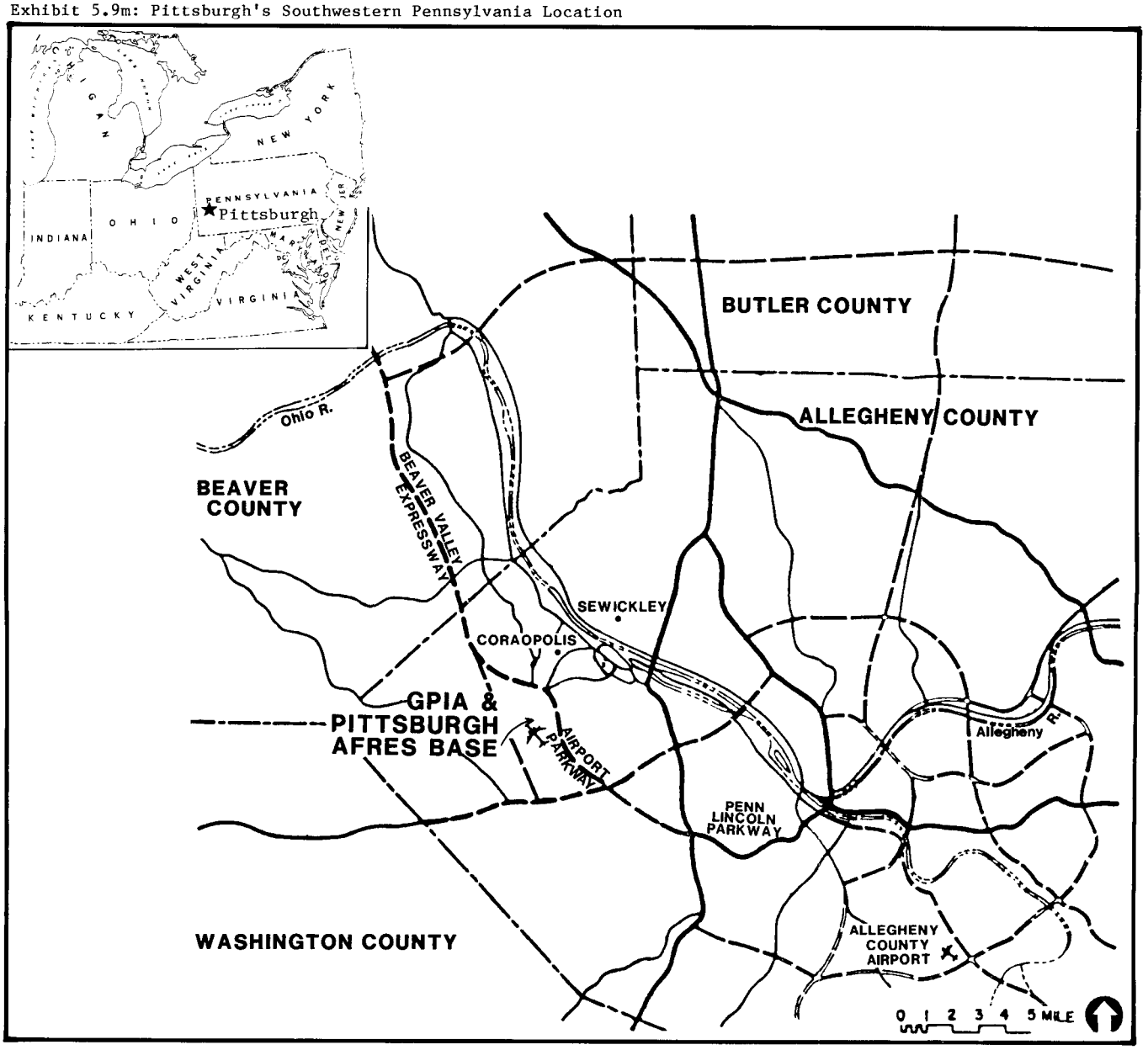
CLIMATE*

Pittsburgh is a little over 100 miles southeast of Lake Erie. It has a humid continental type of climate modified only slightly by its nearness to the Atlantic Seaboard and the Great Lakes.

The predominant winter air masses influencing the climate of Pittsburgh have a polar continental source in Canada and more in from the Hudson Bay region or the Canadian Rockies. During the summer frequent invasions of air from the Gulf of Mexico bring warm humid weather. Occasionally, Gulf air reaches as far north as Pittsburgh during winter and produces intermittent periods of thawing. The last spring temperature of 32 degrees usually occurs in late April and the first in late October. The table on the next page shows weather normals, means and extremes for the Pittsburgh area.

*National Oceanic And Atmospheric Administration, Local Climatological Data, Annual Summary, 1985.

Exhibit 5.9m: Pittsburgh's Southwestern Pennsylvania Location



The average growing season is about 180 days. There is a wide variation in the time of the first and last frosts over a radius of 25 miles from the center of Pittsburgh due to terrain differences.

Precipitation is distributed well throughout the year. During winter months about a fourth of the precipitation occurs as snow and there is about a 50 percent chance of measurable precipitation on any day. Thunderstorms occur normally during all months, except midwinter, and have a maximum frequency in midsummer. The first appreciable snowfall generally occurs in late November and usually the last occurs in April. Snow lies on the ground in the suburbs on an average of about 33 days during the year.

Seven months of the year, April through October, have sunshine more than 50 percent of the possible time. During the remaining five months, cloudiness is heavier because the track of migration storms from west to east is closer to the area and because of the frequent periods of cloudy, showery weather associated with northwest winds from across the Great Lakes. Cold air drainage induced by the many hills leads to the frequent formation of early morning fog which may be quite persistent in the river valleys during the colder months.

Rising of the tributary streams causes occasional flooding at Pittsburgh. Serious inconvenience is occasioned by the Ohio River reaching the flood stage of 25 feet about once each year. Significant flooding, or a 30-foot stage, occurs about once each three years.

Exhibit 5.10t: Climatological Normals, Means, And Extremes For Pittsburgh Vicinity, 1985*

	(a)	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F:														
Normals														
-Daily Maximum		34.1	36.8	47.6	60.7	70.8	79.1	82.7	81.1	74.8	62.9	49.8	38.4	59.9
-Daily Minimum		19.2	20.7	29.4	39.4	48.5	57.1	61.3	60.1	53.3	42.1	33.3	24.3	40.7
-Monthly		26.6	28.8	38.5	50.0	59.7	68.1	72.0	70.6	64.1	52.5	41.5	31.4	50.3
Extremes														
-Record Highest	33	69	69	80	87	91	96	99	97	97	87	82	74	99
-Year		1985	1954	1977	1970	1962	1971	1954	1953	1954	1959	1961	1982	JUL 1954
-Record Lowest	33	-18	-12	-1	14	26	34	42	39	31	16	-1	-12	-18
-Year		1985	1979	1980	1982	1970	1972	1963	1982	1959	1965	1958	1983	JAN 1985
NORMAL DEGREE DAYS:														
Heating (base 65°F)		1187	1014	822	447	201	28	0	13	101	393	702	1042	5950
Cooling (base 65°F)		0	0	0	0	37	121	222	186	74	5	0	0	645
% OF POSSIBLE SUNSHINE	33	33	38	44	48	52	57	59	56	58	52	38	29	47
MEAN SKY COVER (tenths)														
Sunrise - Sunset	33	8.1	7.8	7.6	7.2	6.9	6.4	6.3	6.3	6.1	6.3	7.7	8.2	7.1
MEAN NUMBER OF DAYS:														
Sunrise to Sunset														
-Clear	33	2.9	3.4	4.1	4.5	5.2	5.2	5.3	6.3	7.7	7.9	3.9	2.6	59.0
-Partly Cloudy	33	6.0	5.8	6.8	8.2	9.2	11.6	13.2	11.8	10.3	8.5	6.2	5.8	103.4
-Cloudy	33	22.1	19.0	20.1	17.4	16.6	13.2	12.5	12.9	12.0	14.6	19.9	22.6	202.9
Precipitation .01 inches or more	33	16.5	14.1	16.1	13.5	12.3	11.5	10.8	9.8	9.2	10.6	13.2	16.5	154.1
Snow, Ice pellets 1.0 inches or more	33	3.9	3.0	2.3	0.4	0.1	0.0	0.0	0.0	0.0	0.1	1.1	2.7	13.6
Thunderstorms	33	0.1	0.3	1.8	3.3	5.0	6.7	7.0	5.6	3.1	1.3	0.6	0.3	35.3
Heavy Fog Visibility 1/4 mile or less	33	1.4	1.2	1.0	0.9	1.2	1.1	1.7	2.1	2.4	1.8	1.5	1.7	17.8
Temperature °F														
-Maximum														
90° and above	26	0.0	0.0	0.0	0.0	0.2	1.4	2.5	1.2	0.7	0.0	0.0	0.0	6.1
32° and below	26	15.5	11.1	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	10.4	42.5
-Minimum														
32° and below	26	27.5	24.2	19.8	8.4	1.0	0.0	0.0	0.0	0.0	3.9	14.4	24.7	124.0
0° and below	26	2.8	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.*	0.8	5.4
AVG. STATION PRESS.(mb)	13	973.0	973.4	971.3	971.4	971.1	972.4	973.5	974.8	975.1	975.4	974.2	973.7	973.3
RELATIVE HUMIDITY (%)														
Hour 01	25	72	70	69	66	72	77	80	82	81	76	75	74	75
Hour 07 (Local Time)	25	75	74	74	72	75	78	82	85	85	81	78	76	78
Hour 13	25	65	62	58	50	52	52	53	56	56	54	62	67	57
Hour 19	25	67	63	59	52	54	57	59	63	65	62	68	70	62
PRECIPITATION (inches):														
Water Equivalent														
-Normal		2.86	2.40	3.58	3.28	3.54	3.30	3.83	3.31	2.80	2.49	2.34	2.57	36.30
-Maximum Monthly	33	6.25	5.98	6.10	7.61	6.36	8.20	7.43	7.56	5.42	8.20	11.05	5.24	11.05
-Year		1978	1956	1967	1964	1968	1981	1958	1975	1972	1954	1985	1978	NOV 1985
-Minimum Monthly	33	0.77	0.51	1.14	0.48	1.21	0.90	1.82	0.78	0.28	0.16	0.90	0.40	0.16
-Year		1981	1969	1969	1971	1965	1967	1965	1957	1985	1963	1976	1955	OCT 1963
-Maximum in 24 hrs	33	1.47	2.30	2.00	2.15	2.44	1.93	2.97	3.06	2.25	3.56	1.97	1.76	3.56
-Year		1982	1975	1964	1964	1971	1955	1971	1956	1975	1954	1985	1978	OCT 1954
Snow, Ice pellets														
-Maximum Monthly	33	40.2	24.2	21.3	7.2	3.1					1.8	11.0	21.2	40.2
-Year		1978	1972	1960	1985	1966					1972	1958	1974	JAN 1978
-Maximum in 24 hrs	33	14.0	12.3	14.7	4.8	3.1					1.8	10.5	12.5	14.7
-Year		1966	1960	1962	1985	1966					1972	1958	1974	MAR 1962
WIND:														
Mean Speed (mph)	33	10.7	10.6	10.9	10.5	8.9	8.0	7.3	6.9	7.4	8.4	9.8	10.4	9.1
Prevailing Direction through 1963		WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW
Fastest Obs. 1 Min.														
-Direction (!!!)	33	23	26	25	27	25	27	25	29	02	27	29	25	26
-Speed (MPH)	33	52	58	48	46	42	40	51	46	32	35	45	48	58
-Year		1978	1967	1954	1974	1957	1957	1956	1963	1960	1959	1969	1968	FEB 1967
Peak Gust														
-Direction (!!!)														
-Speed (mph)														
-Date														

*NOAA, Local Climatological Data, Annual Summary, 1985.

Exhibit 5.11t: Populations And Projections

PLACE	1980 CENSUS	1985* ESTIMATED	1990* PROJECTED	CHANGE 1980-90
Pennsylvania**	11,864,720	11,900,222	not available	
Pittsburgh CMSA**	2,263,894	2,390,100		
Allegheny County	1,450,195	1,430,375	1,394,765	- 3.8%
Pittsburgh	423,960	396,625	365,843	-13.7%
Findlay Township	4,573	4,669	4,669	+ 2.1%
Coraopolis	7,308	6,808	6,134	- 16.1%
Moon Twp.	20,935	23,205	24,869	+ 18.8%
Neville Twp.	1,416	1,190	932	- 34.2%
Crescent Twp.	2,862	2,919	2,940	+ 2.7%
Robinson Township	9,416	9,953	10,323	+ 9.6%
North Fayette Twp.	7,351	8,259	9,036	+ 22.9%

*From Allegheny Co. Planning Department.
**From U.S. Bureau of the Census.

CITIES/COUNTIES, POPULATION

Greater Pittsburgh is a five county consolidated metropolitan area (CMSA) consisting of Allegheny, Beaver, Fayette, Washington and Westmoreland counties and has a combined population of 2.4 million people. The map at the right outlines the Pittsburgh CMSA.

The following paragraphs of this section identify the region of influence of the Pittsburgh Air Force Reserve base; then the remaining sections of this chapter further describe the region in terms of economy, housing, government, and transportation. The map of Allegheny County on the facing page, shows community locations.

Allegheny County

Allegheny County contains 130 separate but interdependent municipalities (townships, boroughs and cities). The County's 1985 estimated population was 1.4 million.

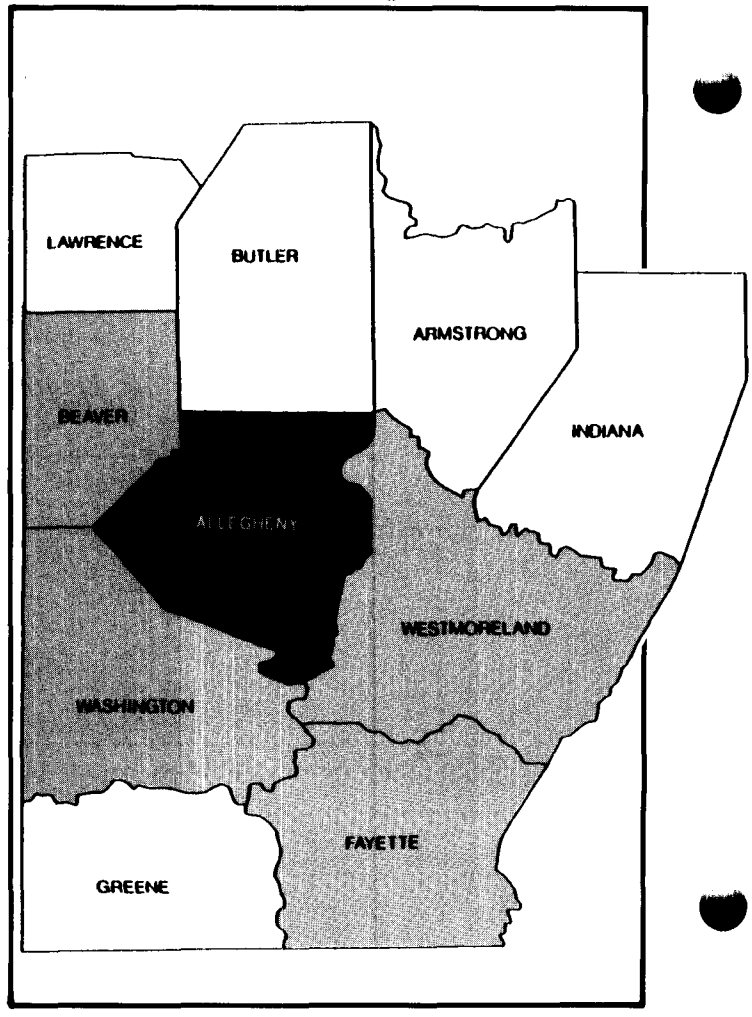
Population projections for the County for the period 1980-1990 show a 3.8 percent decrease.

City Of Pittsburgh

Pittsburgh, with a population of approximately 396,625 (1985) is the largest city near the installation and also the largest city at 55.5 square miles, in Allegheny County (730 square miles).

Population projections for the City of Pittsburgh for the 1980-1990 period estimate a 13.7 percent decrease.

Exhibit 5.12m: Greater Pittsburgh Area



Airport Area Communities

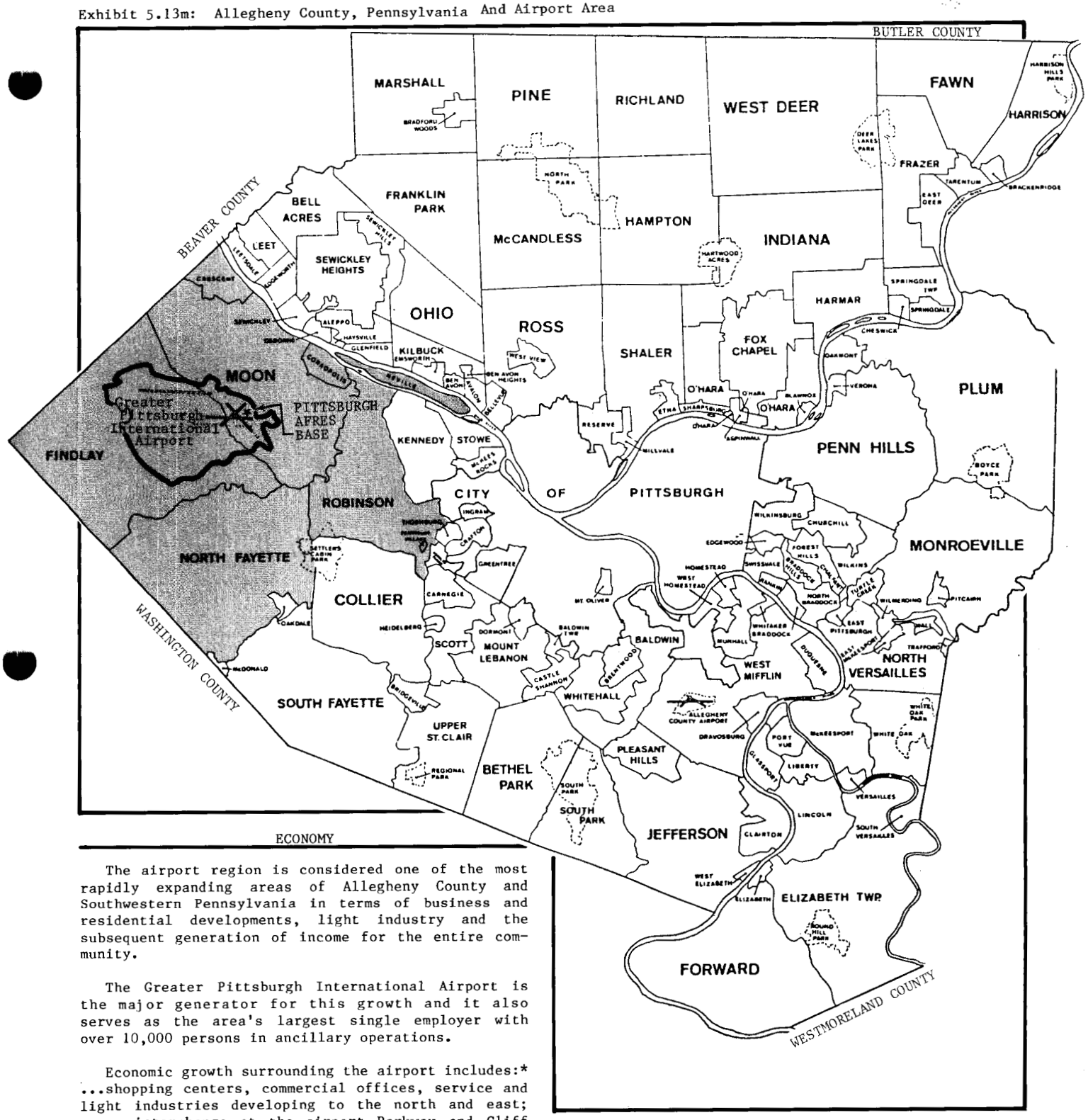
The communities near the airport are located about 15 miles northwest of Pittsburgh and surround the Greater Pittsburgh International Airport, as shown on the map on the next page. The communities include the borough of Coraopolis and the townships of Neville, Findlay, Moon, Crescent, Robinson, and North Fayette. The area covers about 100 square miles of Allegheny County's 730 square miles, and has a combined population in excess of 52,000.

The airport is located within Findlay (population 4,669) and Moon (population 23,205) Townships. The Air Force Reserve Base is situated entirely within Moon Township.

Population changes for the 1980-1990 period project Moon's population to rise 18.79 percent and Findlay's to rise 2.1 percent.

Coraopolis is the nearest town to the airport and the installation. Its population is approximately 6,808 and projections for 1980-1990 estimate a decline of 16 percent.

Exhibit 5.13m: Allegheny County, Pennsylvania And Airport Area



ECONOMY

The airport region is considered one of the most rapidly expanding areas of Allegheny County and Southwestern Pennsylvania in terms of business and residential developments, light industry and the subsequent generation of income for the entire community.

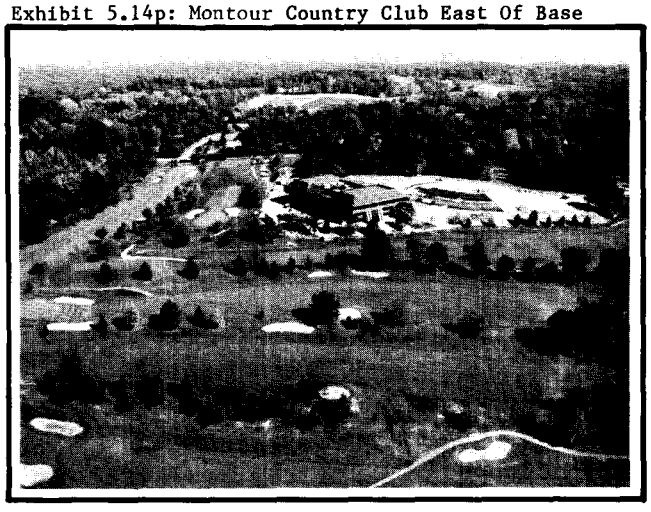
The Greater Pittsburgh International Airport is the major generator for this growth and it also serves as the area's largest single employer with over 10,000 persons in ancillary operations.

Economic growth surrounding the airport includes:*
...shopping centers, commercial offices, service and light industries developing to the north and east;
...an interchange at the airport Parkway and Cliff Mine and Thorn Run Roads has proposed completion by 1989 (Chapter VI of this report describes this proposal in more detail).

...construction of new midfield terminal within the next five years; and
...Montour Country Club east of the installation and pictured on the next page, is the site for a new executive health resort and scheduled for completion by the end of 1988.

*Annual Review Real Property Study, 911th TAG, 19 November 1986.

Exhibit 5.14p: Montour Country Club East Of Base



Pittsburgh is America's third largest corporate city, and is located mid-way between the first, New York, and the second, Chicago. Due to its central location and transportation and distribution facilities, it is one of the most desirable and diversified economic markets in the country. Pittsburgh:

..is located within a 500-mile radius of over half of the U.S. and Canadian populations;
..produces 50 percent of the nation's steel;
..has 55 percent of the nation's personal income;
..has 60 percent of all retail activity in the U.S.;
..has 70 percent of the nation's industrial output; &
..has 12 of the top U.S. metropolitan markets.*

Steel making and fabricating industries were once predominant in the area, but since the economic depression of the 1970's, there has been gradual diversification from steel making to service industries and research.

Pittsburgh is home to 13 four year colleges and universities and 19 two-year institutions, as well as numerous vocational and technical schools. The University of Pittsburgh and Carnegie Mellon University are among the major research institutions in the nation.*

Employment trends and projections for the Pittsburgh metropolitan area for the eighties are shown by the exhibit below. Unemployment rates recorded by the Commonwealth of Pennsylvania, Office of Employment for August 1986 were: U.S. - 6.8%, Pennsylvania - 6.6, Pittsburgh - 8.0%, Allegheny County - 7.2%, Fayette County - 8.9%, Washington County - 7.9%, Westmoreland County - 9.5% and Beaver County 10.3%.

*Pittsburgh's Economic Profile, Gtr. Pgh. COC, 1985.

Exh. 5.15t: Employment Trends And Projections 1980-90

	1980	1982	June 1986	1990	Change 1980-1990
Total Non-AG Jobs	951.0	688.0	871.8	1,025.5	+7.8%
MANUFACTURING	242.3	193.1	133.6	230.8	-4.8%
Durable Goods	198.8	151.8	98.0	185.4	-6.7%
Stone/Glass/Clay	15.8	13.5	10.2	16.3	+2.9%
Primary Metals	90.1	62.8	28.9	73.3	-18.7%
(Basic Steel)	(79.5)	(54.3)	(22.0)	(65.0)	-18.2%
Fabricated Metals	21.0	16.2	11.9	17.5	-16.7%
Nonelect. Machinery	24.4	22.0	16.7	26.0	+6.4%
Electric. Machinery	24.9	18.3	13.6	28.4	+14.0%
Transportation Eq.	13.1	10.0	7.3	13.7	+4.2%
Instruments	6.0	6.2	5.9	6.8	+13.1%
Other Durables	-	2.8	3.5	6.8	-
Nondurable Goods	43.5	41.4	35.6	45.4	+4.2%
Food	10.7	10.1	8.3	9.1	-14.7%
Apparel	2.9	2.3	2.5	2.7	-9.2%
Paper	2.4	2.3	1.9	1.9	-20.3%
Printing	9.2	9.0	8.9	9.7	+5.7%
Chemicals	10.7	10.4	9.2	13.1	+23.3%
Oil & Coal	3.8	3.6	0.7	4.2	+8.1%
Other nondurables	-	3.6	0.2	-	-
NONMANUFACTURING	709.0	692.4	736.4	794.7	+12.1%
Mining	10.2	9.0	7.1	11.3	+11.4%
Construction	46.0	41.3	44.4	58.0	+27.3%
Trans. & Public Ut.	65.8	52.0	44.7	63.6	-3.4%
(Transportation)	(35.0)	(29.1)	(26.5)	(35.1)	-
(Public Utilities)	(22.2)	(22.9)	(18.2)	(20.2)	-
Wholesale Trades	52.6	51.0	53.0	57.0	+8.3%
Retail Trades	158.7	154.5	168.8	179.3	+13.0%
FIRE	46.2	46.8	52.4	52.7	+14.0%
Services	215.4	228.2	256.5	275.7	+28.0%
(Health Services)	(67.3)	(73.7)	(81.4)	(91.0)	+35.2%
Government	122.6	109.7	109.5	109.5	-
(Federal)	(18.3)	(17.4)	(17.7)	(17.7)	-
(State & Local)	(104.3)	(92.4)	(91.8)	(91.8)	-16.1%

Pennsylvania Department of Labor and Industry, September 1986.

Exhibit 5.16t: Home Price Comparison Index, 1985 (National Relocation Service)

The subject property is a 2,000 square foot, 3-bedroom, 2-bath home with a dining area, family room, 2-car garage and basement (if applicable) located in a neighborhood judged to be above average to prime. For example: if you live in the designated property in Chicago and the home is valued at $93,000, a similar home in Washington, D.C. would be $118,000.

City	Cost	City	Cost	City	Cost
Akron, OH	$80,000	Detroit, MI	80,250	New Orleans, LA	88,000
Albequerque, NM	91,500	Fairbanks, AK	159,000	New York, NY (suburb)	217,000
Atlanta, GA	94,000	Honolulu, HI	192,500	Omaha, NE	85,000
Baltimore, MD	97,500	Indianapolis, IN	80,000	Philadelphia, PA	97,000
Boston, MA	159,000	Kansas City, KS and MO	77,500	Phoenix, AZ	96,500
Charlotte, NC	105,000	Las Vegas, NV	93,000	Pittsburgh, PA	89,000
Chicago, IL	93,000	Little Rock, AR	85,000	St. Louis, MO	110,000
Cincinnati, OH	82,500	Long Beach, CA	225,000	Salt Lake City, UT	110,000
Columbia, SC	75,000	Louisville, KY	81,000	San Francisco, CA	325,000
Dallas, TX	135,000	Memphis, TN	94,000	Seattle, WA	115,000
Denver, CO	102,700	Miami, FL	105,000	Stanford, CT	195,000
Des Moines, IA	85,000	Milwaukee, WI	85,000	Tampa, FL	89,000
		Minneapolis, MN	130,000	Washington, DC	118,000

HOUSING

Allegheny County offers virtually any type of housing from owner occupied suburban or rural homes to apartments, townhouses, or duplexes to own or rent. Due to the county's size and the wide variety of age, quality, type and locations of housing, it is difficult to assess rental rates or median sales prices of the housing in the county as a whole.

The exhibit at the top of this page shows how home prices in Pittsburgh compare with prices in other U.S. cities.

Residents of Moon Township include many base employees and Air Force Reserve personnel. Housing development in the township flourished until the problems with the national economy occurred in the 1970's. Single family houses in the western portion of the township and apartments in the central portion were constructed during that accelerated growth period.

Exh. 5.17t: Hsg. Characteristics, Moon Twp., 1960-80

	1960	1970	1980
Total Housing Units	2,962	5,157	7,406
Vacant Housing Units	1712	205	391
Occupied Housing Units	2,790	4,952	7,015
Median Value (dollars)	16,379	22,825	63,700
Occupied Rental Units	668	1,414	2,239
Median Rent/Month	-	146	258
Housing Units with:			
..1 room	22	21	12
..2-3 rooms	176	616	456
..4-5 rooms	1,526	1,669	804
..5+ rooms	1,235	2,158	2,117
% lacking some or all plumbing	2.4%	1.6%	0.4%

*Moon Township Municipal Questionnaire, 1985.

In 1985, the house price range in Moon Township was $55,000 to $125,000 with estimated annual property taxes of 2.1 percent to 2.4 percent of market value.* Other general housing characteristics of Moon Township are outlined in the exhibit below.

GOVERNMENT*

The management of fiscal affairs of the County and all legislative responsibility for county government is that of the Board of County Commissioners. The County Commissioners, as the executive and administrative officers of the Allegheny County, levy and collect taxes for an associated political subdivision. The commission form is the most common form of local government in Pennsylvania.

Elected officials responsible for executing the functions of State Government include: the commissioners, controller, treasurer, District Attorney, Register of Wills, Prothonotary, Clerk of Courts, Recorder of Deeds, Sheriff, Coroner and Commission for the Selection of Jurors.

Within Allegheny County, there are 129 separate units of local government, including the city of Pittsburgh. The various townships, boroughs and cities within Allegheny County are governed by elected officials and are legally independent of each other in governmental operations.

Pittsburgh has a mayor-council form of government. Its mayor is elected for a four-year term and the nine member council is elected at large for overlapping four year terms.

Moon and Findlay Townships have the commission form of government, with a Board of Supervisors, treasurer (tax collector) and auditors.

*Allegheny County Government, Organization, Facilities and Services, League of Women Voters; Allegheny County Council.

TRANSPORTATION

The Greater Pittsburgh Area is served by a wide variety of transportation modes including highway, rail, air and water. The facilities supporting these modes are discussed in the following sections; the maps on the next two pages show locations of transportation systems in the county.

Highway

The area is served by a number of interstate and federal highways.

...Interstate 79 leads to Erie, Pennsylvania to the north and, south toward Charleston, West Virginia;

...Interstate 76/Pennsylvania Turnpike traverses Allegheny County from the east central part to the northwest corner;

...Interstate 70; accessible south of Pittsburgh, runs from Washington, D.C. to Utah;

...U.S. Highway 19/Washington Road approximately parallels I-79 in Pennsylvania (north and south of Pittsburgh);

...U.S. Highway 22/William Penn Highway leads through Steubenville to the west and to Harrisburg to the east;

...U.S. Highway 30/Lincoln Highway heads west toward Chicago, and east to Philadelphia;

...State Highway 28/Allegheny Valley Expressway leads to I-80 at Brookville, north of Pittsburgh;

...State Highway 65/Ohio River Boulevard parallels the Ohio River, northward to Beaver;

...State Highway 51/Saw Mill Run Road also parallels the Ohio River northward to Beaver, and leads south to Uniontown;

...State Highway 60/Airport Parkway connects U.S. 22/30 with Beaver Creek Expressway, west of the Greater Pittsburgh International Airport.

As can be seen by the map on the next page, many of the major roadways go through the downtown area, offering a wide choice of access routes to the central business district.

The grey roads on the map to the right correspond to the "Spider Web" Belt Route Plan which was designed to alleviate traffic congestion from city streets, provide by-passing for out of county traffic and to increase the usage of secondary traffic arteries.

The plan utilizes a group of miscellaneous existing county roads, streets and highways to define a workable highway system.

The routes were chosen so as to connect the two large airports, the North and South County Parks and key industrial sections, and to avoid congested radial routes.

Truck Lines

Motor freight services are provided by more than 75 carriers with hundreds of terminals in the Pittsburgh area.

Taxi Service and Bus Lines

There is no public transportation onto the base except taxis which can be called to come from the Greater Pittsburgh International Airport terminal located a half mile away.

Interstate passenger service by bus is provided by both the Greyhound and Trailways Bus Lines. City bus service, described in the next section, goes to the airport, but does not serve the Air Force Reserve Base.

Public Transit

The PAT System* is a publicly owned mass transit system operated by the Port Authority of Allegheny County serving 735 square miles of Allegheny County and parts of four adjacent counties. The system consists of bus and rail routes: 117 through-bus routes, 48 shuttle-feeder bus routes, 23 miles of Light Rail Transit (LRT) lines including a 1.1 mile downtown subway nearing completion, two exclusive busways totalling 11.1 miles, the Monongahela Inclince operated by a non-profit neighborhood group under a $1-a-year lease from PAT, and 18.2 mile PATrain-Mon Valley Commuter Rail Line operated by the Chessie System.

PAT's fleet includes 992 buses, 53 trolley cars, 10 commuter train coaches and two incline cars transporting some 300,000 riders on a typical weekday. About 60% of workers entering downtown Pittsburgh and half of downtown shoppers use PAT. Nearly half of PAT's operating expenses are covered by rider fares; the remainder by grants from Allegheny County, State and Federal governments.

PAT Services include local bus routes with frequent stops; regular express routes with limited stops, Flyer buses to shorter rush-hour commuter trips; U-bus routings for direct services to universities and colleges and 3,645 all-day free parking spaces located adjacent to many transit routes. Transit stops are identified by blue and white street signs.

Railway

The base is not directly served by any railroad; but Pittsburgh is served by approximately a dozen railroad freight companies and the following major railroads.

...Penn-Central - cargo and AMTRAK passenger service

...Chessie System - cargo and commuter service from the suburbs to Pittsburgh

...Norfolk and Western - cargo service

...Pittsburgh and Lake Erie - cargo

...Bessemer and Lake Erie - cargo

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*PAT System Map, Service Information, Rail and Busway System, 1985.

Exhibit 5.18m: Allegheny County Transportation Systems

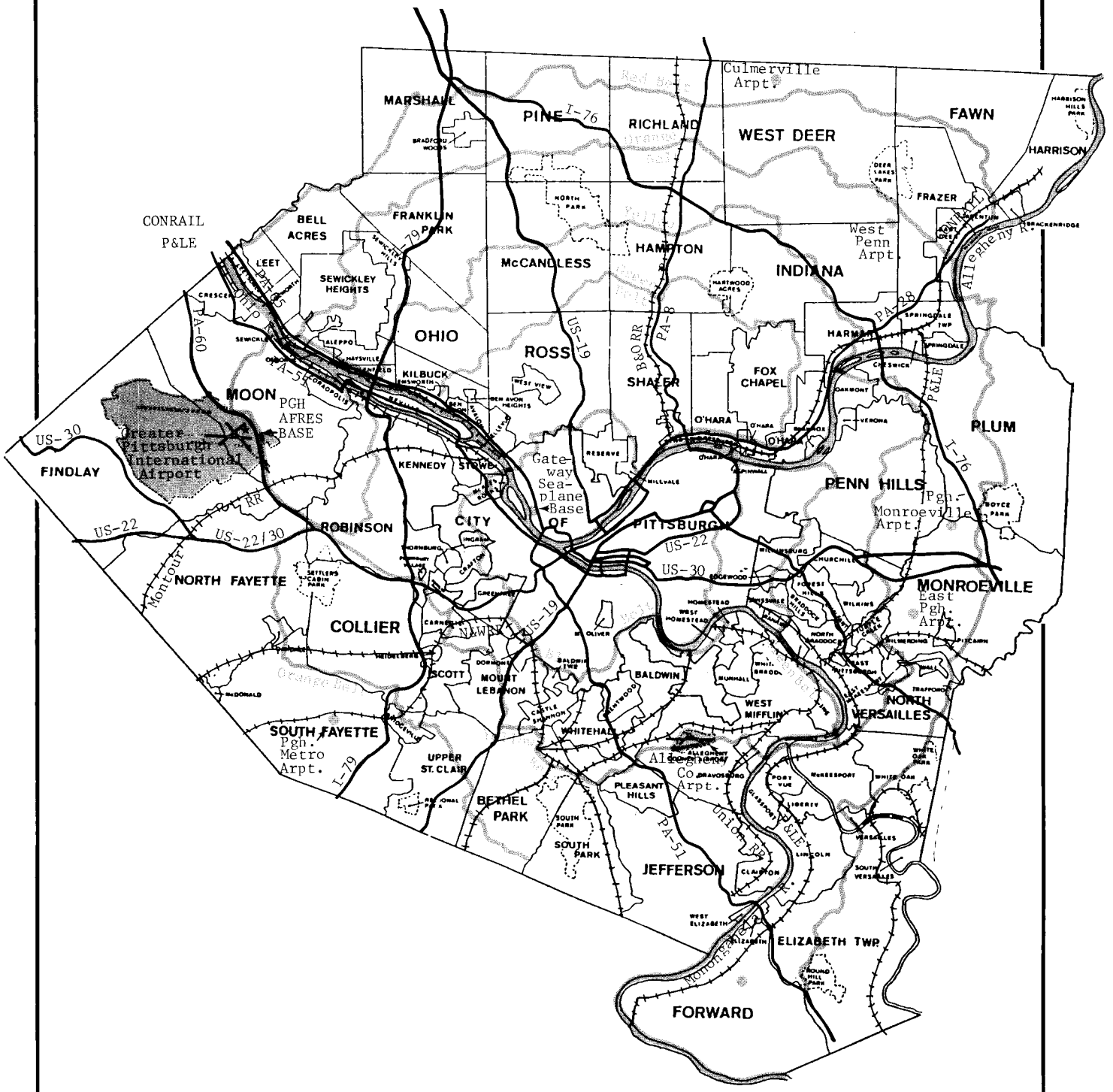
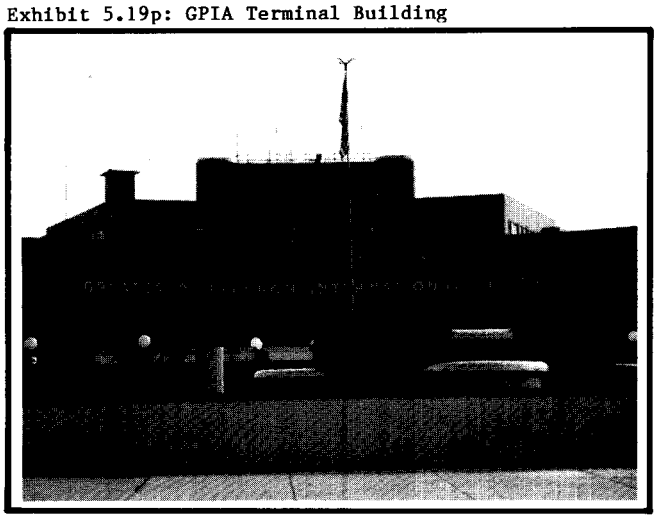
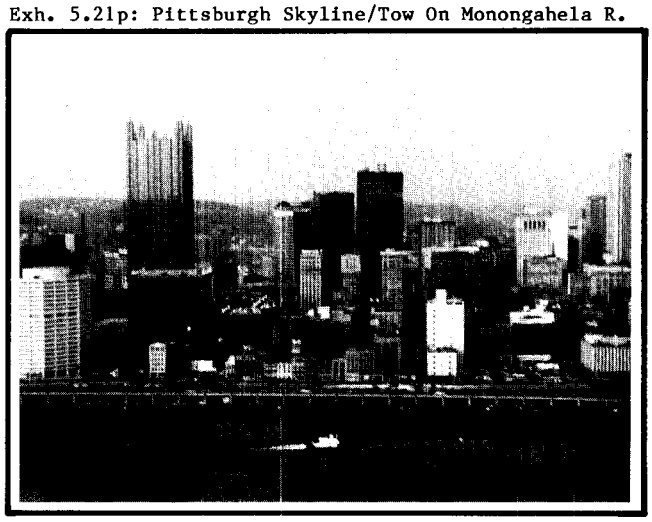


Exhibit 5.19p: GPIA Terminal Building



Exh. 5.21p: Pittsburgh Skyline/Tow On Monongahela R.



Airports

Several airports are located within the region as listed in the exhibit below and located by the map on the preceding page.

The largest airport in the county and the busiest in the state is the Greater Pittsburgh International Airport (GPIA) which, in 1985*: served 15 million passengers; increased daily operations to 465 flights serving 93 cities; and sent Aviation Department gross revenues climbing to $37 million ($2 million higher than 1984).

Other events of 1985 include:
...GPIA became a British gateway with the initiation of British Air's one-stop service to London;

...the FAA staff ocupies the 227-foot-tall control tower overlooking the Midfield site. The tower is the tallest FAA built structure in the U.S.

...Runway 10C/28C, which was rebuilt and extended adding a fourth jet-sized landing strip, was completed;

...and, the County Aviation and Planning Departments began assembling plans for a study of the Midfield Terminal's impact; the environmental assessment of the new terminal was completed.

Commercial airlines serving the GPIA are American, British Airways, Delta, Eastern, Nordair, PanAm, People Express, Piedmont, Republic, Trans World Airlines, United and USAir. Commuter service is provided by Allegheny Commuter, Bradford Air Transport, Christman Air System, Calgan and City Express.

- -
*Allegheny Co. Aviation System, 1985 Annual Rept, p.3

Exhibit 5.20t: Airports Within Pittsburgh Region

GPIA.....	Commercial Airline
Allegheny County Airport....	General Aviation
Pittsburgh Metro Airport....	Private Aviation
Culmerville Airport.....	Private Aviation
East Pittsburgh Airport.....	Private Aviation
Pgh-Monroeville Airport.....	Private Aviation
West Penn Airport.....	Private Aviation
Gateway Seaplane Base.....	Seaplanes

Waterways

Pittsburgh is at the head of the Ohio River, which meets the Mississippi River at Cairo, Illinois, then flows into the Gulf of Mexico at New Orleans. The route is navigable by barge traffic. The Allegheny River flows to Pittsburgh from northern Pennsylvania and is navigable to mile 54 upriver. The Monongahela River flows to Pittsburgh from central West Virginia, and is navigable to approximately mile 100 upriver.

Pittsburgh's rivers contain numerous dams and locks which accommodate the commercial barge traffic as well as the recreational river traffic. Pittsburgh is served by more than 20 barge lines, with over 100 port facilities.

Barges transport products, such as sand, gravel, synthetics, steel, iron, building products, oil, gas, asphalt and coal tar.

SOCIAL LINKAGE AND COMMUNITY INTERACTION MECHANISMS

Morale, Welfare and Recreational facilities are provided on base at the Base Gym which offers basketball, volleyball, exercise equipment, saunas and ceramics classes; outdoor recreation includes softball, tennis, horse show pitching and a picnic pavilion.

A credit union, base exchange, snack bar, dining hall, club/bar, chapel and clinic also provide services on base.

The family housing units on base were removed because no functional requirement existed for the units; and without family housing no potential need exists for school facilities or for busing children to community schools.

The surrounding area provides practically any service imaginable, including: food stores, restaurants, hotels/motels, car rentals, dry cleaning/laundry, kennels, moires, libraries, churches, hospitals, shopping centers, parks, historical sites, museums, galleries; historical, industrial and business tours, and educational institutions.

GOALS, OBJECTIVES & PLANS OF ADJACENT COMMUNITIES

The following documents are relevant to the study and development of the AFRES base:

...Moon Township Comprehensive Plan (1972)
...West Hills and Valleys Regional Plan (1981)
...Airport Zoning Law (July 1981)
...Airport Noise Control and Land Use Compatibility Study (ANCLUC, 1981)
...GPIA Environmental Assessment for New Terminal Development (May 1986), and
...Airport Parkway/Cliff Mine Road Interchange Traffic and Preliminary Engineering Study (1985)

OFF-BASE CONSTRAINTS AND OPPORTUNITIES

Off-base constraints and opportunities are generally related to land use and zoning in the area.

LAND USE*

Major residential areas, industrial facilities, commercial activity and community facilities are all found in the area surrounding the airport, but none of these land uses are particularly significant constraints to the base at present.

The airport and AFRES base are located in an area underlain with coal. Sharp drops in elevation occur over relatively short expanses of land. Much of the land is unsuited to develoment due to either slope constraints, or the composition of the soil and its ability to support development.

The land adjacent to the AFRES base is either airport property to the north, west and south, or conservation/commercial to the east (Montour Country Club) as shown by the photo below.

ZONING

As mentioned earlier in this chapter, while the airport occupies land in both Findlay and Moon townships, the AFRES base is situated entirely in Moon township. The airport itself is zoned partially as a special/conservation (Special S) area and partially for agricultural use. Findlay Township views the airport as a conditonal use; Moon views it as a permitted use under its zoning classification.

The land east of the base is zoned as conservation, and areas beyond, as single and multi-family residential.

The Moon Township Planning Study (1984) developed a minimum development plan for a study area, part of which is east of and adjacent to the AFRES base. Pertinent goals of this plan include:

...develop Cliff Mine Road - Airport Parkway interchange;
...retain/preserve maximum amounts of open space and undeveloped land; and
...rezone Montour Country Club property to permit commercial and industrial development, but no further residential development near east side of airport (Airport Zoning Law (1981) requires municipalities to adopt zoning controls which will make the land uses compatible with the airport).

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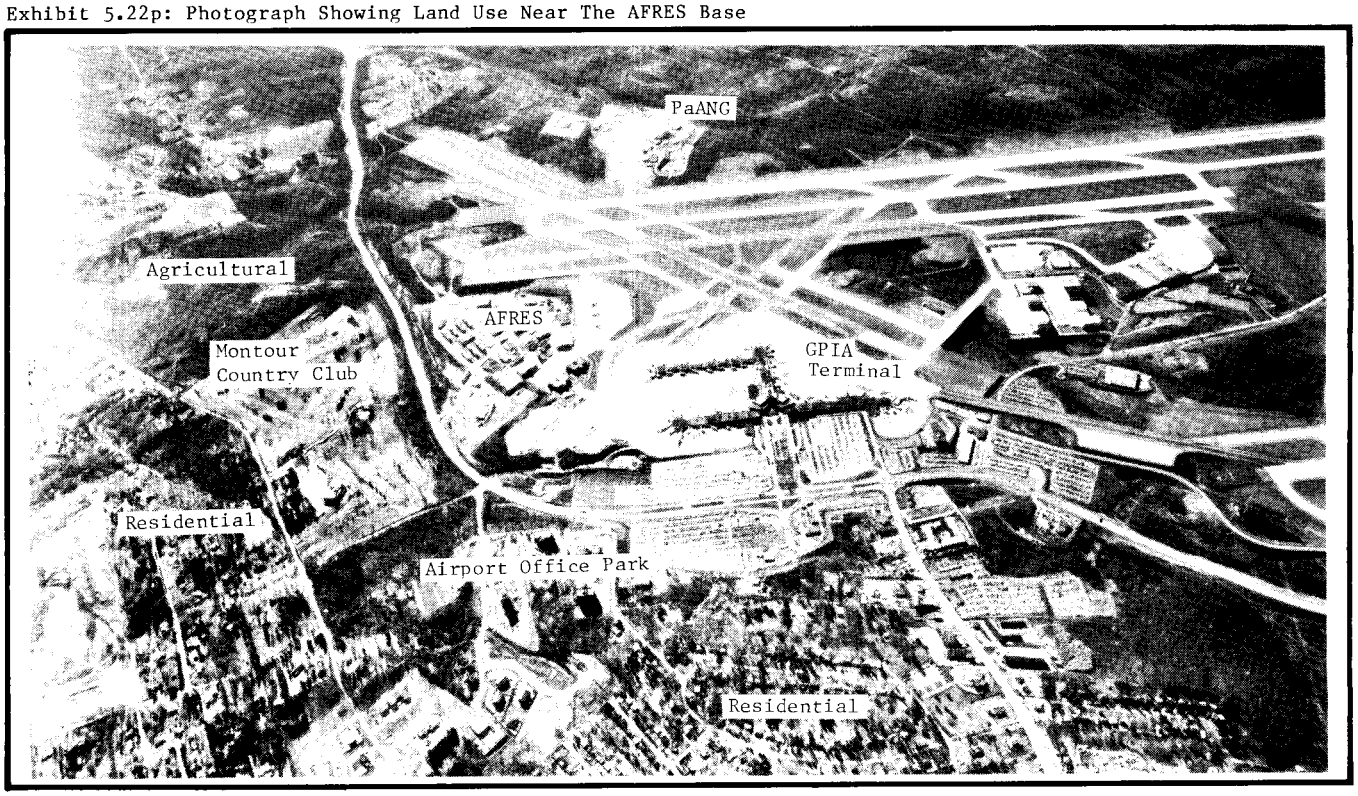
*GPIA Environmental Assessment for New Terminal Development; Aviation Planning Associates; May 1986, p. 29, 30.

Exhibit 5.22p: Photograph Showing Land Use Near The AFRES Base



Chapter VI

FUTURE DEVELOPMENT ALTERNATIVE CONCEPTS*

FOR THE PITTSBURGH AFRES BASE

***This Chapter Will Concentrate On CIRCULATION - LAND USE - BUILDINGS**

Although all physical components of an air base are important to its function and design, there are three of prime importance:

...Circulation denotes the linear ribbons of movement used by people and vehicles.
...Land Use denotes the most efficient grouping of buildings and facilities, in relation to the circulation corridors.
...Building sites denote individual building locations and distribution within each land use grouping.

Once locational patterns are determined for these three elements, the remaining physical features (utilities, signs, landscaping) generally can be located in a service-type relationship.

Exhibit 6.0p: Welcome Sign At Squadron Operations

INTRODUCTION

The existing Pittsburgh AFRES base is shown by the aerial photograph on the next page. In the near future, however, the layout must change as new facilities are added or existing facilities are moved or demolished. The changes will include buildings, streets, utilities and perhaps even the apron and land area.

Unfortunately, there is no one best solution immediately apparent for the form of this future layout. Each of the facility needs or changes can be met generally by more than one location....and as the alternatives multiply to meet each need, the number of potential layout schemes that must be considered also multiply. Choosing between alternatives, and depicting the alternatives in a coherent fashion to enable the viewer to evaluate and quickly comprehend their strong and weak points, is a considerable challenge.

And, the purpose of this chapter is to meet that challenge. It will develop a series of alternative layouts to assist the Pittsburgh AFRES in making decisions for their preferred layout. Their decision then will be implemented in all later chapters as the basis for future land use, major streets, buildings, utilities, and other facilities. The chapter is organized as follows:

...Existing Facilities
...Areal Unit Hierarchy
...Existing Street System
...POV Parking & Proposed Parkway Interchange
...Existing Land Use
...Airfield Restrictions
...Steep Slope Areas
...Objectives & Constraints
...Study Area
...Future Development Alternatives
...Alternatives Evaluation
...Selected Alternative
...Short Range Plan
...Long Range Plan
} ...see page 6-51

EXISTING FACILITIES AT THE PITTSBURGH AFRES BASE

The Pittsburgh AFRES facilities are listed in the exhibit on page 6-3 and located by the map on page 6-4.

All of the Pittsburgh AFRES base facilities are located within its 105.7 acre boundary. A total of 94 acres are leased to the Air Force Reserve by the airport, and the remaining 11.7 acres is owned by the Air Force in fee, with improvements controlled and used by the Air Force Reserve. The facilities map on page 6-4 also shows the base boundary, and delineates the area owned by the Air Force.

Most of the buildings at the base have been built on manufactured concrete pads; some of these pads became visible after the demolition of the family housing units (facilities 101, 102, 103, 104 and 105) on Officer's Row, as shown in the photograph on the next page. Additional recent demolitions, which opened up more space for development, include three buildings in the Davis Street and Brown Street block.

Exhibit 6.1p: Location Of The Pittsburgh AFRES Base At The Greater Pittsburgh International Airport

Exhibit 6.2p: Demolitions At The Pittsburgh AFRES Base Prior To Start Of Comprehensive Plan, December 1986

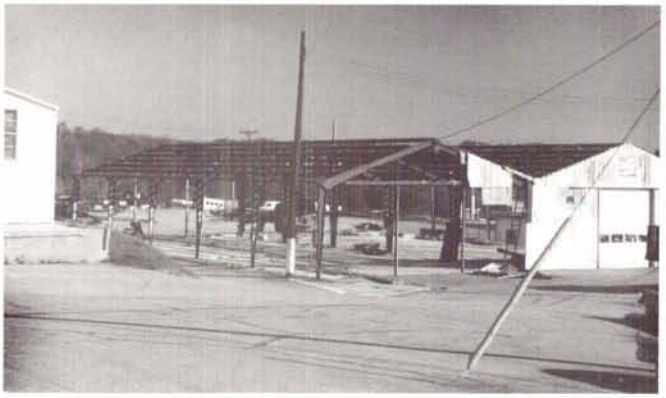
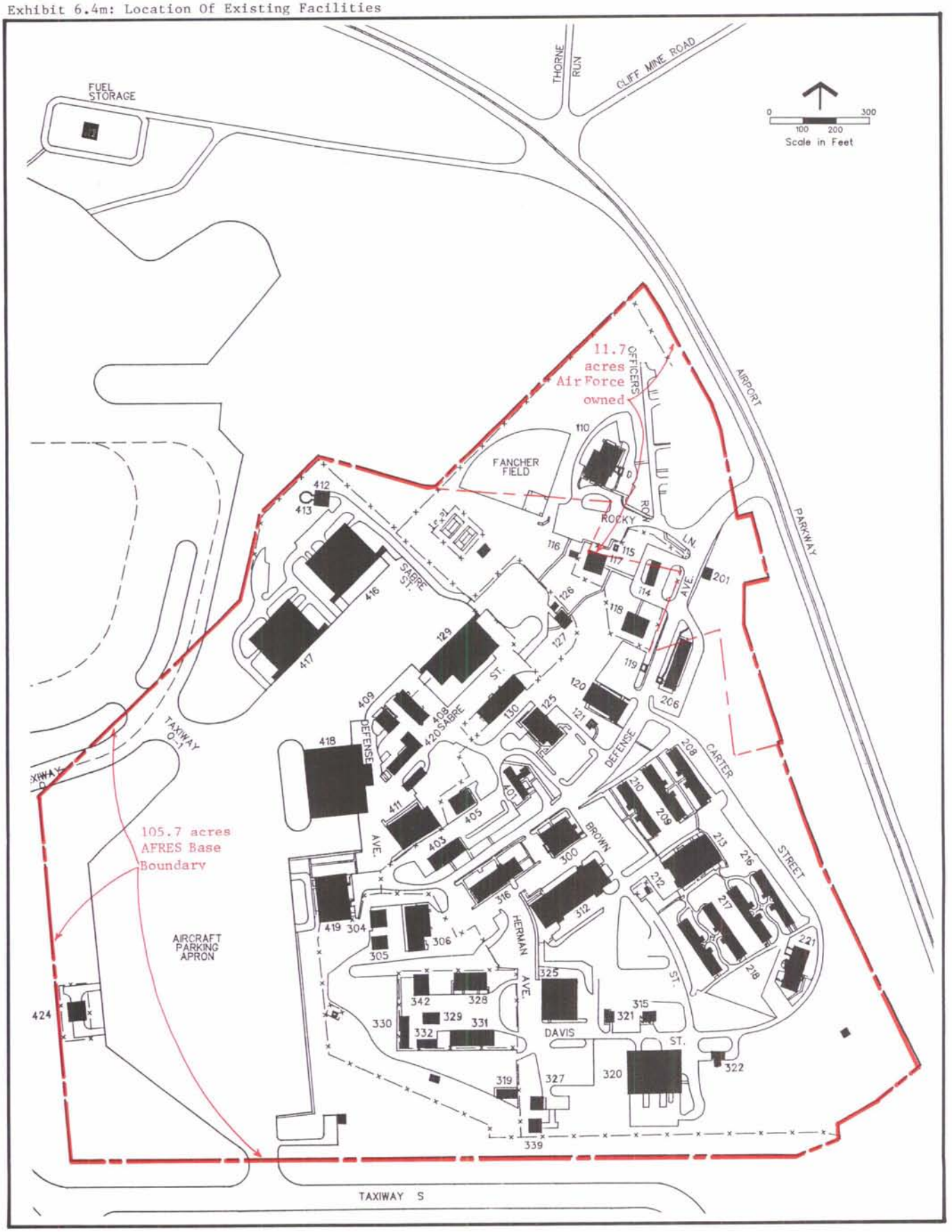


Exhibit 6.3t: Listing Of Existing Facilities At The Pittsburgh AFRES Base

Fac. #	Facility Name	Land Use Code
100	Traffic Check House	4
110	Open Mess	5
114	Liquid Fuel Pump Station	3
115	Electric Power Station Building	3
116	Liquid Fuel Pump Station	3
117	Jet Fuel Storage	3
118	Jet Fuel Storage	3
119	Gas Meter Facility	3
120	Gymnasium	5
121	BE Maintenance Shop	3
125	Avionics Shop	2
	Reserve Forces Comm. & Electr. Trng	(4)
126	Supply & Equipment Shed	3
127	Petroleum Operations Building	3
129	Large Aircraft Maintenance Dock	2
	General Purpose Aircraft Shop	(2)
	Aircraft Maintenance Organizational Shop.	(2)
130	Aerial Port Training Facility	2
201	Security Police Operations	4
206	VOQ Dormitory	9
208	Group Headquarters	4
	Reserve Forces G/Trng S	(4)
	Reserve Forces Operational Training	(2)
	Cat. Maintenance Building	(3)
209	VAQ Dormitory	9
	Group Headquarters	(4)
210	Base Contracting Office	4
	Squadron Operations; Disaster Prep	(2;3)
	Reserve Forces Operational Training	(2)
	Non-Air Force Admin. Office	(4)
	Social Act. Facility	(4)
213	Airmen Dining Hall	5
	Recreation Center	(5)
216	VAQ Dormitory	9
	Air Force Clinic	(7)
217	VAQ Dormitory	9
218	VAQ Dormitory	9
	Group Headquarters	(4)
	Non-Air Force Admin. Office	(4)
219	VAQ Dormitory	9
	Non-Air Force Admin. Office	(4)
221	Air Force Clinic	7
300	Exchange Sales Store	5
	Credit Union	(5)
	Arts & Crafts Center	(5)
	Public Shopping Center	(5)
304	Vehicle Maintenance Shop	3
305	Vehicle Maintenance Shop	3
306	Vehicle Maintenance Shop	3
	Vehicle Refueling Shop	(3)
312	Base Supplies & Equipment Warehouse	3
	Reserve Forces G/Trng S	(4)
315	Squadron Operations	2
316	Reserve Forces Operational Training	2
	Base Photo Lab	(2)
	Reserve Forces G/Trng S	(4)
	Reserve Forces Operational Training	(2)
	Security Police Operations	(4)
319	Base Hazardous Storage	3
320	Base Supply & Equipment Warehouse	3
321	Base Supply & Equipment Shed	3
322	Vehicle Fuel Station	3
325	BE Pavements & Grounds Facility	3
327	CE Open Storage	3
328	BE Administration	3
329	BE Maintenance Shop	3
330	BE Storage Shed	3
331	BE Maintenance Shop	3
332	BE Covered Storage	3
339	Base Hazardous Storage	3
342	BE Covered Storage	3
401	Base Chapel	5
403	Base Personnel Office	4
405	Communications Facility	2
408	Survival Equipment Shop	2
409	Non-Destructive Inspection Shop	2
411	Engine I&R Maintenance Shop	2
412	Foam Equipment Facility	3
413	Fire Deluge Material Storage	3
414	Aircraft Maintenance Organizational Shop.	2
416	Fuel System Maintenance Dock	2
417	Maintenance Hangar	2
418	General Purpose Aircraft Maint. Shop	2
	Reserve Forces G/Trng S	(4)
	Res. Forces Aeromedical Evacuation Trng	(2)
	General Purpose Aircraft Shop	(2)
	Aircraft Maintenance Organizational Shop.	(2)
	Vehicle Operations Heated Parking	(4)
	Base Supplies & Equipment Warehouse	(3)
	Weapon Sys/M Management Facility	(2)
419	Squadron Operations	2
	Res. Forces Aeromedical Evaluation Trng	(2)
420	Aerospace Equipment Storage Facility	(2)
424	Rocket Checkout & Assembly Explosive Stor	2
5482	Recreation Pavillion	10
6497	Recreation Facility	10
6498	Softball Field	10
6499	Tennis Courts	10

Exhibit 6.4m: Location Of Existing Facilities



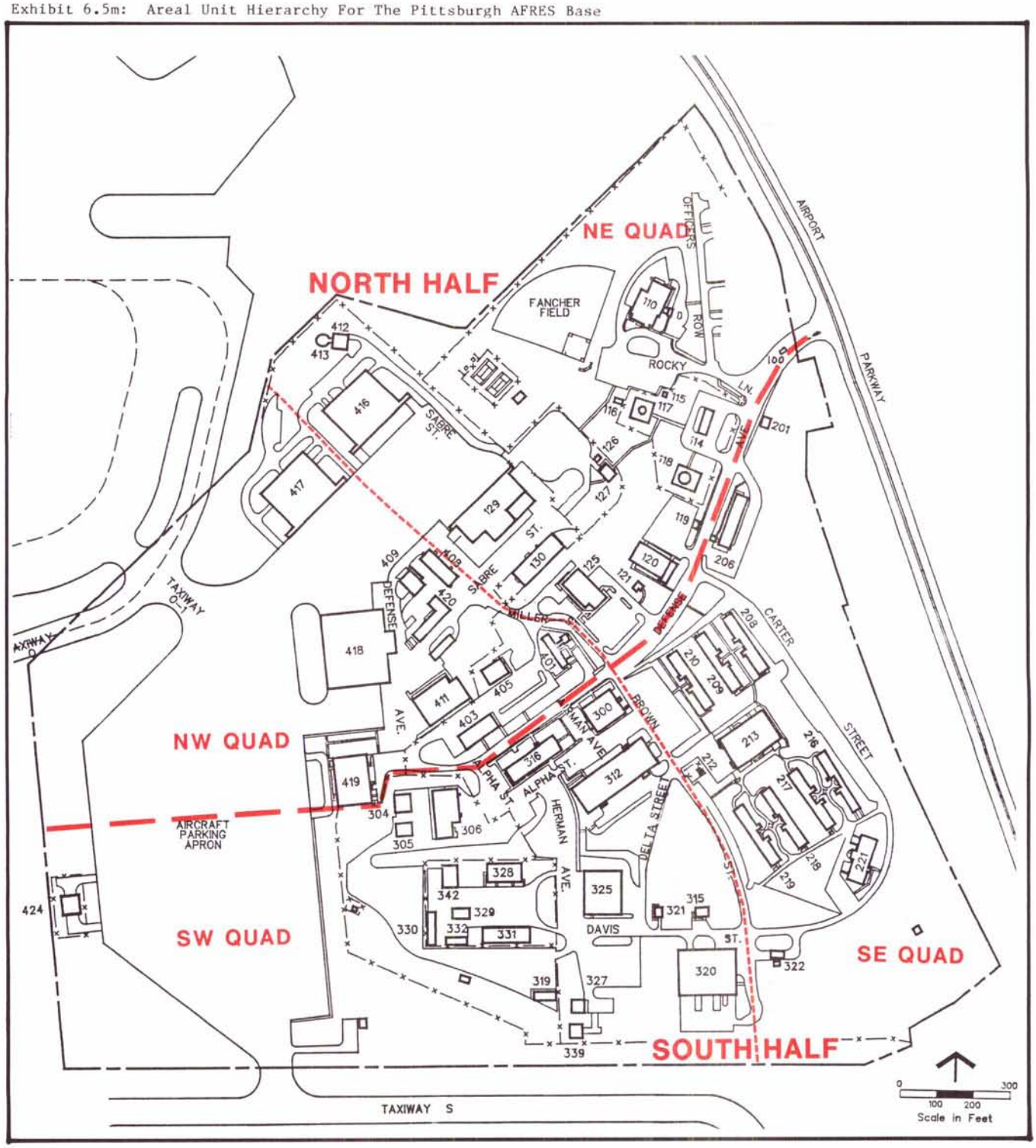
AREAL UNIT HIERARCHY

The base is subdivided into an areal unit hierarchy by the map below. The division permits comparison and analysis of various characteristics (land area, population, etc.) in a most helpful way.

The unit land areas are:

...The base as a whole.....	105.7 acres or	100.0%
...The north half.....	55.4 acres or	52.4%
...The NE quadrant...	26.7 acres or	25.3%
...The NW quadrant...	28.7 acres or	27.1%
...The south half.....	50.3 acres or	47.6%
...The SE quadrant...	21.2 acres or	20.1%
...The SW quadrant...	29.1 acres or	27.5%

Exhibit 6.5m: Areal Unit Hierarchy For The Pittsburgh AFRES Base



EXISTING STREET SYSTEM

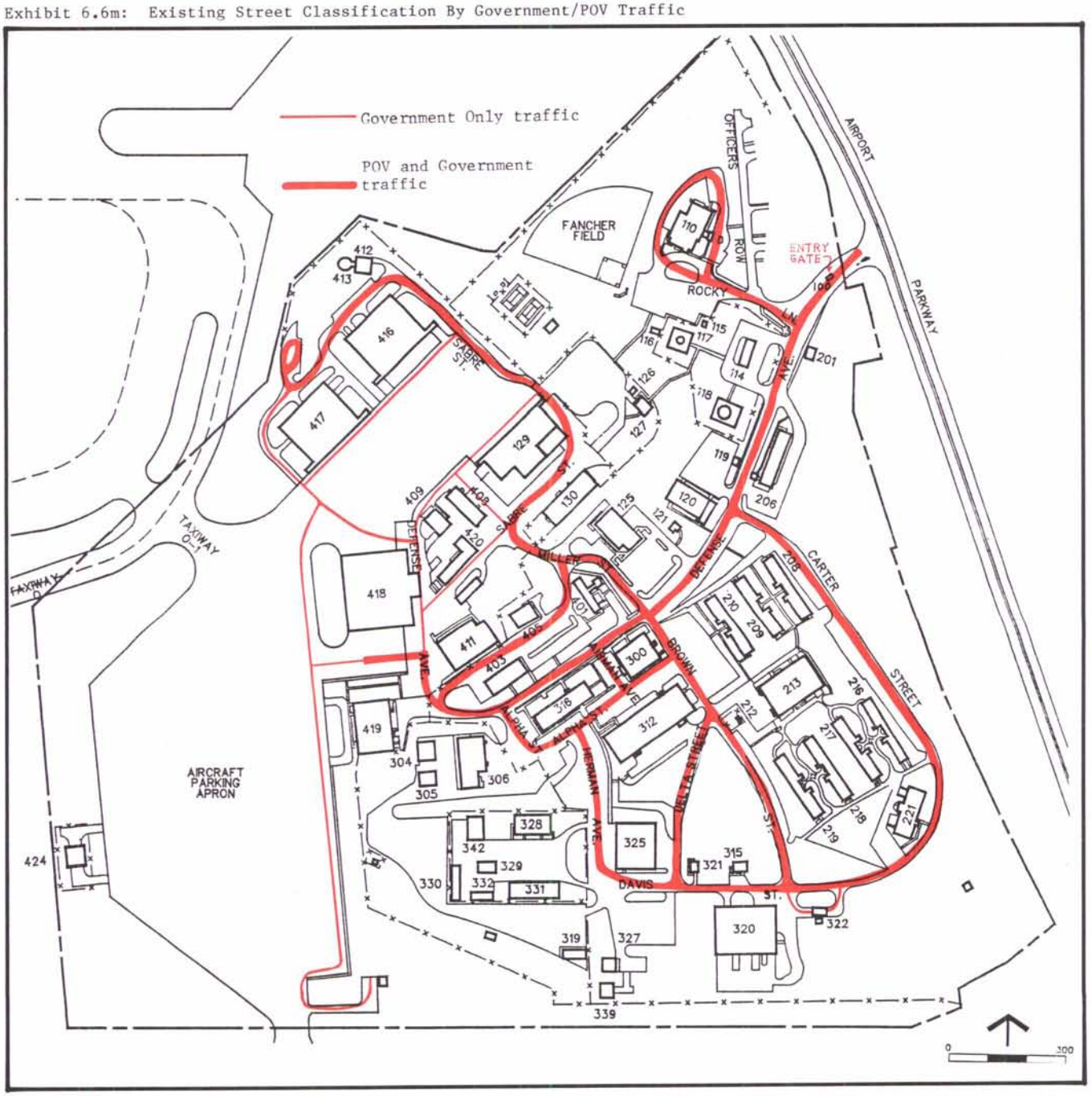
The installation is served by one main gate that is manned on a 24-hour per day basis. The gate is located on Defense Avenue about 100' southwest of Pennsylvania Route 60, known as the Airport Parkway.

The parkway is a heavily-travelled four-lane divided highway, with a raised median that prevents left turns on to the parkway from Defense Avenue. No signal exists at the base exit, and departing traffic must merge with eastbound parkway traffic. At evening rush hour, the State Highway Patrol directs traffic to enable base vehicles to enter the parkway.

The base street system, as shown throughout the comprehensive plan, consists of two collector streets, Defense Avenue and Carter/Davis Streets, that form a discontinuous loop, fed by a network of local streets. As shown on the following page, Davis Street and Defense Avenue are connected by Herman Avenue and Alpha Street. These local streets, however, cannot be classified as collectors because of several short-radius, 90-degree turns, severe grade changes, and extensive on-street perpendicular parking.

The map below classifies the streets in terms of the permitted traffic: either "government vehicles only" or "government and POV vehicles". Only the aircraft apron parking and hangar area are restricted to government vehicles.

Exhibit 6.6m: Existing Street Classification By Government/POV Traffic



PRIVATELY OWNED VEHICLE (POV) PARKING

During a normal UTA weekend, over 1,300 persons can be expected to be on-base. In addition, members of the Pennsylvania Air National Guard utilize on-base facilities, such as the VOQ and open mess. About 2,800 base parking stickers have been issued by the base security police.

There are approximately 1,089 parking spaces on base, as shown by the map below and the table at right. About 865 spaces are paved and marked; roughly a third of these involve perpendicular parking that requires backing out onto a roadway. About 224 additional spaces are available in a gravel lot and could be unusable at times. The gravel lot is not striped, so its capacity is estimated.

Exhibit 6.7m: On Base POV Parking Lots And Number Of Spaces

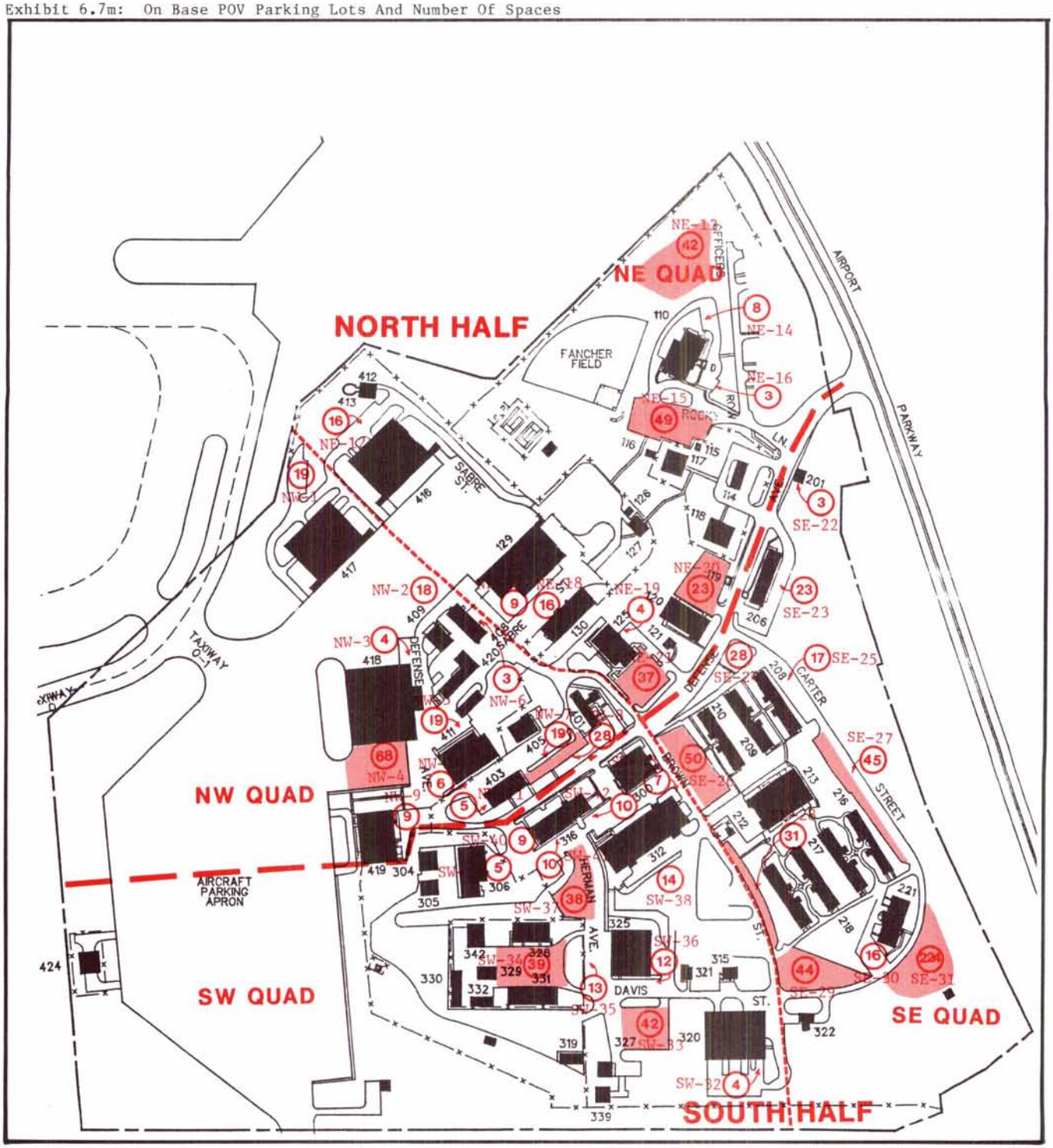


Exhibit 6.8t: Parking Spaces On Base, By Areal Unit

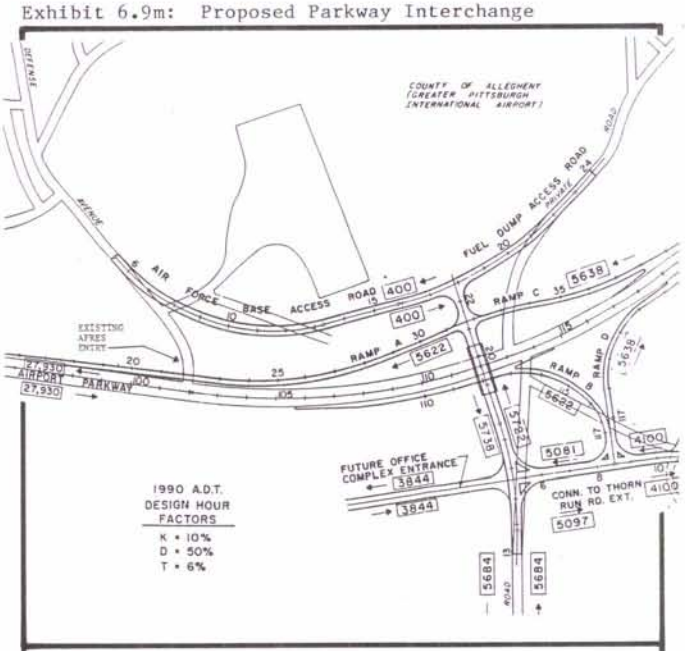
Areal Unit	Parking Lots With 25 Spaces Or More	Other Parking Spaces	Total Parking Spaces
ENTIRE BASE	765	324	1,089-100%
..North Half	224	181	405- 37%
..NW Quad	96	102	198- 18%
..NW-1		19	
..NW-2		18	
..NW-3		4	
..NW-4	68		
..NW-5		19	
..NW-6		3	
..NW-7		19	
..NW-8	28		
..NW-9		9	
..NW-10		6	
..NW-11		5	
..NE Quad	128	79	207- 19%
..NE-12		16	
..NE-13	42		
..NE-14		8	
..NE-15	49		
..NE-16		3	
..NE-17		9	
..NE-18		16	
..NE-19		4	
..NE-20		23	
..NE-21	37		
..South Half	541	143	684- 63%
..SE Quad	422	59	481- 44%
..SE-22		3	
..SE-23		23	
..SE-24	28		
..SE-25		17	
..SE-26	50		
..SE-27	45		
..SE-28	31		
..SE-29	44		
..SE-30		16	
..SE-31	224		
..SW Quad	119	84	203- 19%
..SW-32		4	
..SW-33	42		
..SW-34	39		
..SW-35		13	
..SW-36		12	
..Sw-37	38		
..SW-38		14	
..SW-39		5	
..SW-40		9	
..SW-41		10	
..SW-42		10	
..SW-43		7	

PROPOSED PARKWAY INTERCHANGE

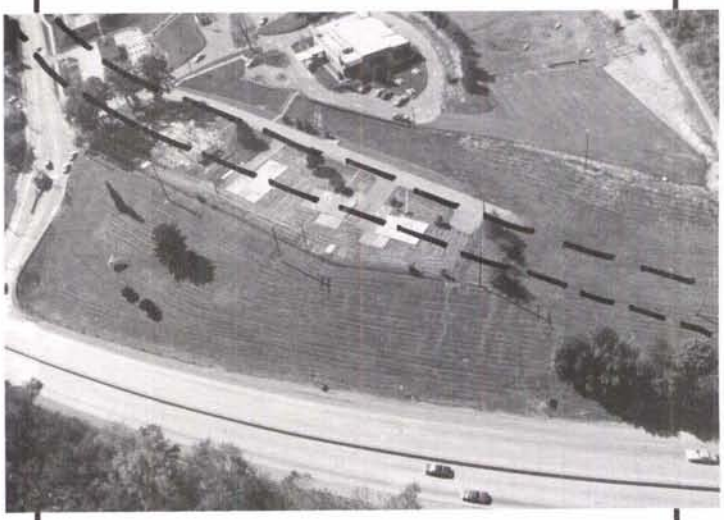
A grade separated interchange is proposed for the Airport Parkway immediately to the north of the AFRES base. As shown by the map below, the interchange will be a "modified diamond", with the two diamond legs on the AFRES side of the road.

Access to the AFRES base would be constructed concentric to the existing parkway alignment, passing through the old single family residence area, and connecting into Defense Avenue above the old gate (see photograph below). The existing access will be closed after the new road is completed since the south entry ramp to the parkway will be routed in the old gate area.

Exhibit 6.9m: Proposed Parkway Interchange



Area Of Proposed New Access



EXISTING LAND USE

The existing land use at the Pittsburgh AFRES Base is described by the text on this page; the exhibit below shows the acreage tabulation of land use by areal unit and Air Force land use code; and the location of facilities by organization and color is provided by the map on the facing page.

Observations on the land use distributions by Air Force code include the following:

...The Airfield Clearance Areas which affect the AFRES base are located on the southern side of the base. The Airfield Restrictions exhibit of page 6-12 shows several building violations of the building restriction line.

...The Airfield Pavement Area is concentrated on the west side.

...The Aircraft O&M activities are concentrated in the northwest quadrant.

...Industrial land use is distributed in the northeast and southwest quadrants, with very small areas in the northwest and southeast quadrants.

...Except for the Entry Gate in the northeast quadrant, the majority of Adminstrative land use is concentrated in the middle of the base; and it is interspersed by Commercial, Service, Unaccompanied Housing, Industrial and Aircraft O&M uses.

...Unaccompanied Housing use is located in the southeast quadrant, as is the Medical land use area.

...Outdoor Recreation land use is located in the northeast quadrant.

...Open Space is located predominately along the eastern border; additional open space areas occur in small amounts mainly on the south side.

...No areas of Water are located on the base; however, a small stream runs parallel to Airport Parkway and, in places, defines the eastern boundary of the base.

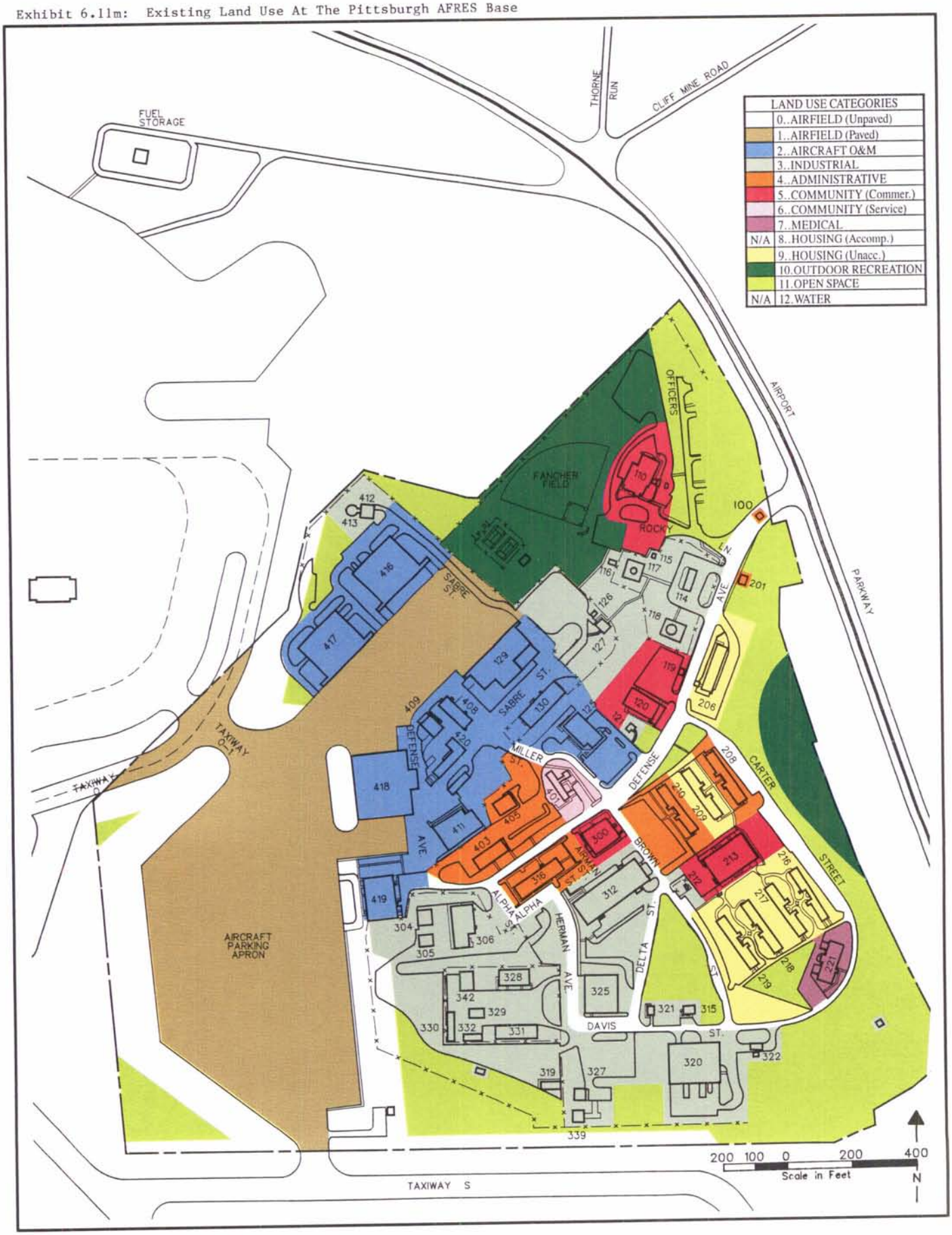
The following listing shows the land uses ranked by acreage, from highest to lowest:

Land Use	Acres or Percent	
...Airfield Pavement	20.6 acres or	19.5%
...Industrial	19.1 acres or	18.1%
...Open Space	18.3 acres or	17.3%
...Aircraft O&M	11.1 acres or	10.5%
...Outdoor Recreation	8.2 acres or	7.8%
...Administrative	5.5 acres or	5.2%
...Unaccompanied Housing	5.2 acres or	4.9%
...Community Commercial	4.9 acres or	4.6%
...Medical	1.0 acres or	0.9%
...Community Service	0.8 acres or	0.8%
...Water	0 acres or	0 %

Exhibit 6.10t: Existing Land Use Acreage, By Areal Unit Hierarchy And Air Force Land Use Cateorgy

Land Use → / Acres / Areal Unit ↓	0 Airfield Clearance	1 Airfield Pavement	2 Aircraft O&M	3 Industrial	4 Administrative	5 Community: Commercial	6 Community: Service	7 Medical	8 Housing: Accompanied	9 Housing: Unaccompanied	10 Outdoor Recreation	11 Open Space	12 Water	Total Acres	Total %
% of Base	10.4%	19.5%	10.5%	18.1%	5.2%	4.6%	0.8%	0.9%	0	4.9%	7.8%	17.3%	0	-	100.0%
Entire Base	11.0	20.6	11.1	19.1	5.5	4.9	0.8	1.0	0	5.2	8.2	18.3	0	105.7	100.0%
North Half	8.0	13.3	11.1	5.0	2.2	3.2	0.8	-	-	-	6.2	5.6	-	55.4	52.4%
NE Quad	-	2.3	5.0	5.0	-	3.2	-	-	-	-	6.2	5.0	-	26.7	25.3%
NW Quad	8.0	11.0	6.1	-	2.2	-	0.8	-	-	-	-	0.6	-	28.7	27.1%
South Half	3.0	7.3	-	14.1	3.3	1.7	-	1.0	-	5.2	2.0	12.7	-	50.3	47.6%
SE Quad	-	-	-	1.1	2.4	1.1	-	1.0	-	5.2	2.0	8.4	-	21.2	20.1%
SW Quad	3.0	7.3	-	13.0	0.9	0.6	-	-	-	-	-	4.3	-	29.1	27.5%

Exhibit 6.11m: Existing Land Use At The Pittsburgh AFRES Base



AIRFIELD RESTRICTIONS

The purpose of this section is to present the airfield restrictions that affect the Pittsburgh Air Force Reserve Base.

RUNWAYS/TAXIWAYS

The Pittsburgh Air Force Reserve, located at the Greater Pittsburgh International Airport (GPIA), is just east of the Air Carrier Terminal. There are four active runways at GPIA. They include:

...Runway 10R/28L is 11,500 feet long and 220 feet wide and is CAT I precision with ILS (instrument landing system).

...Runway 10L/28R is 10,500 feet long and 150 feet wide and is also CAT I, ILS. This runway is parallel to and 4,300 feet northwest of runway 10R/28L.

...Runway 10C/28C is 8,000 feet long and 150 feet wide and is a non-precision instrument runway. It is located parallel to and 1,200 feet northwest of runway 10R/28L.

...Runway 14L/32R is 8,100 feet long and 150 feet wide. Runway 32R is also CAT I, ILS, but the 14L approach is a non-precision instrument runway.

The AFRES aircraft primarily use runway 10C/28C with access via taxiways O, O-1, K, T and S. Taxiway S is parallel to and 300 feet northwest of runway 10C/28L. Only taxiways O-1 and K are within the AFRES lease line. The 911th does not own any runways, but utilizes the Allegheny County owned and maintained GPIA runways.

APRONS

There are two aircraft apron areas which serve AFRES. The north access apron provides access to hangars 416, 417 and 418 and is not used for parking operational aircraft. The main parking apron provides all of the parking area for AFRES and is affected by the clearances described below as shown by the exhibit to the right. This apron accesses GPIA via taxiway O-1 to taxiway O, and via taxiway K to taxiway S.

CLEARANCES

The AFRES is affected by runway clearances on runways 10C/28C and 14L/32R and each of the taxiways listed previously.

Runway 10C/28C has a primary surface (lateral clearance line) located 250 feet either side of the runway centerline, a 500-foot aircraft parking setback line and a 750 foot building restriction line. Runway 14L/32R has a primary surface and aircraft parking setback line 500 feet either side of the runway centerline and a 750 foot building restriction line. Aircraft parking, etc., has further restrictions on height by a 7:1 transitional surface which begins at the edge of the primary surface.

The taxiway clearance line falls within the more restrictive runway clearance lines with the exception of clearance for a moving aircraft on taxiway O. Assuming a C-5 as the most demanding aircraft, the taxiway clearance would be 175 feet from the centerline. The apron setback line is 125 feet from the apron edge. Regulations governing the airfield clearances are the Federal Aviation Regulations (FAR Part 77) and FAA Circulars AC 150/5300-4B and AC 150/5300-12, as well as Air Force Regulation AFR 86-14 (also see p. 11-5).

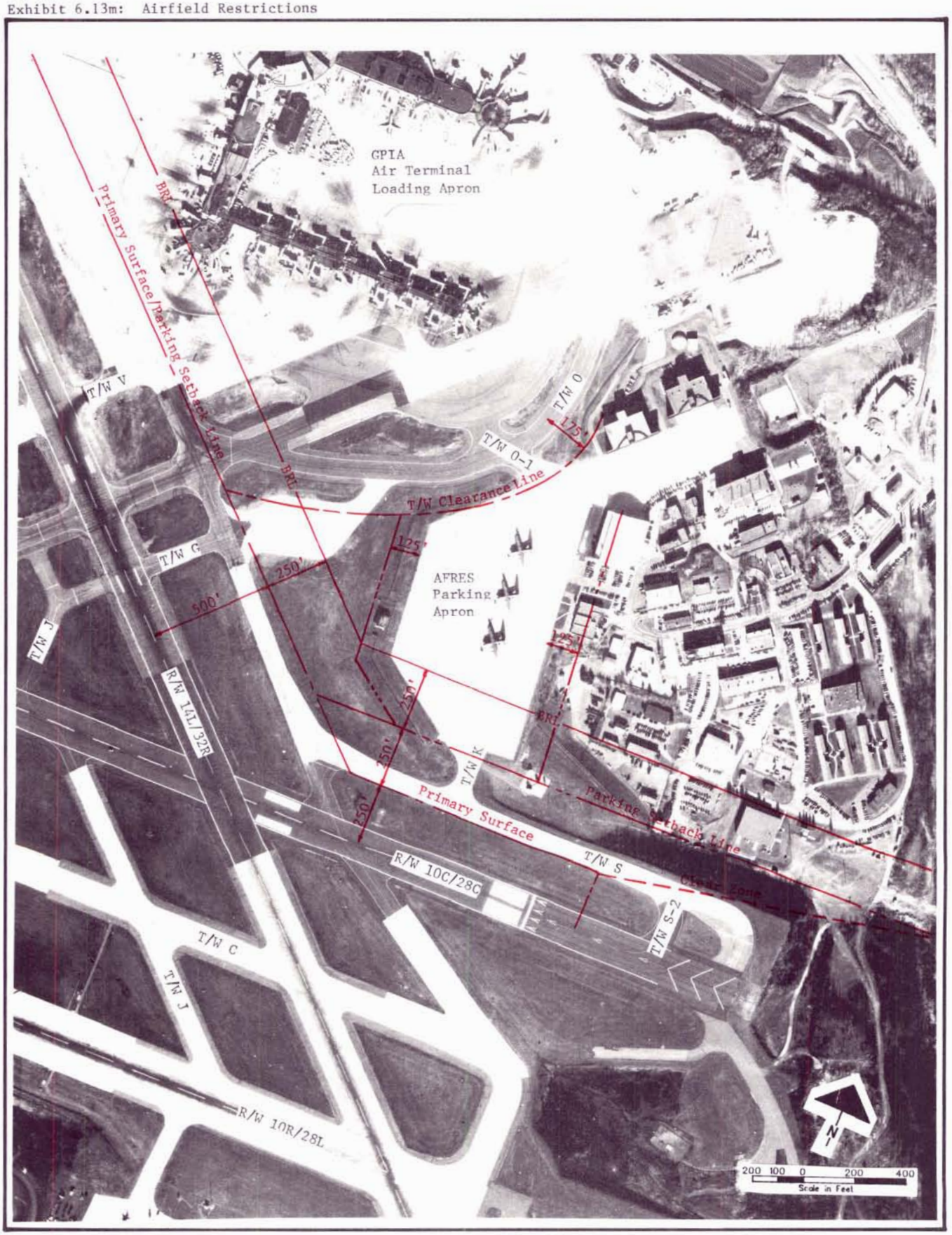
AFRES Clearance Lines From Centerline

R/W	Primary Surf.	Pkg. Setback	BRL	Height
10C/28C	250'	500'	750'	705'*
14L/32R	500'	500'	750'	955'*
T/W O	N/A	175'	N/A	N/A

*Setback depends on height of parked aircraft; restriction shown is for C-5.

Exhibit 6.12p: Aircraft Parking Apron At AFRES

Exhibit 6.13m: Airfield Restrictions



STEEP SLOPE AREAS

Steep slope areas at the Pittsburgh AFRES Base are illustrated by the exhibits on these two facing pages. The elevation difference, from the relatively flat apron/hangar area to the creek next to the parkway, is over 130 feet (1,150' to 1,020').

Building sites generally have been developed by terracing certain areas, which results in about four generalized terrace areas from the creek to the apron.

The steep terrain restricts site development opportunities, and makes movement of people and vehicles extremely difficult in inclement (snow and rain) weather.

Exhibit 6.14m: Topography With Ten Foot Contour Intervals (Solid Lines) And Two Foot (Dashed)

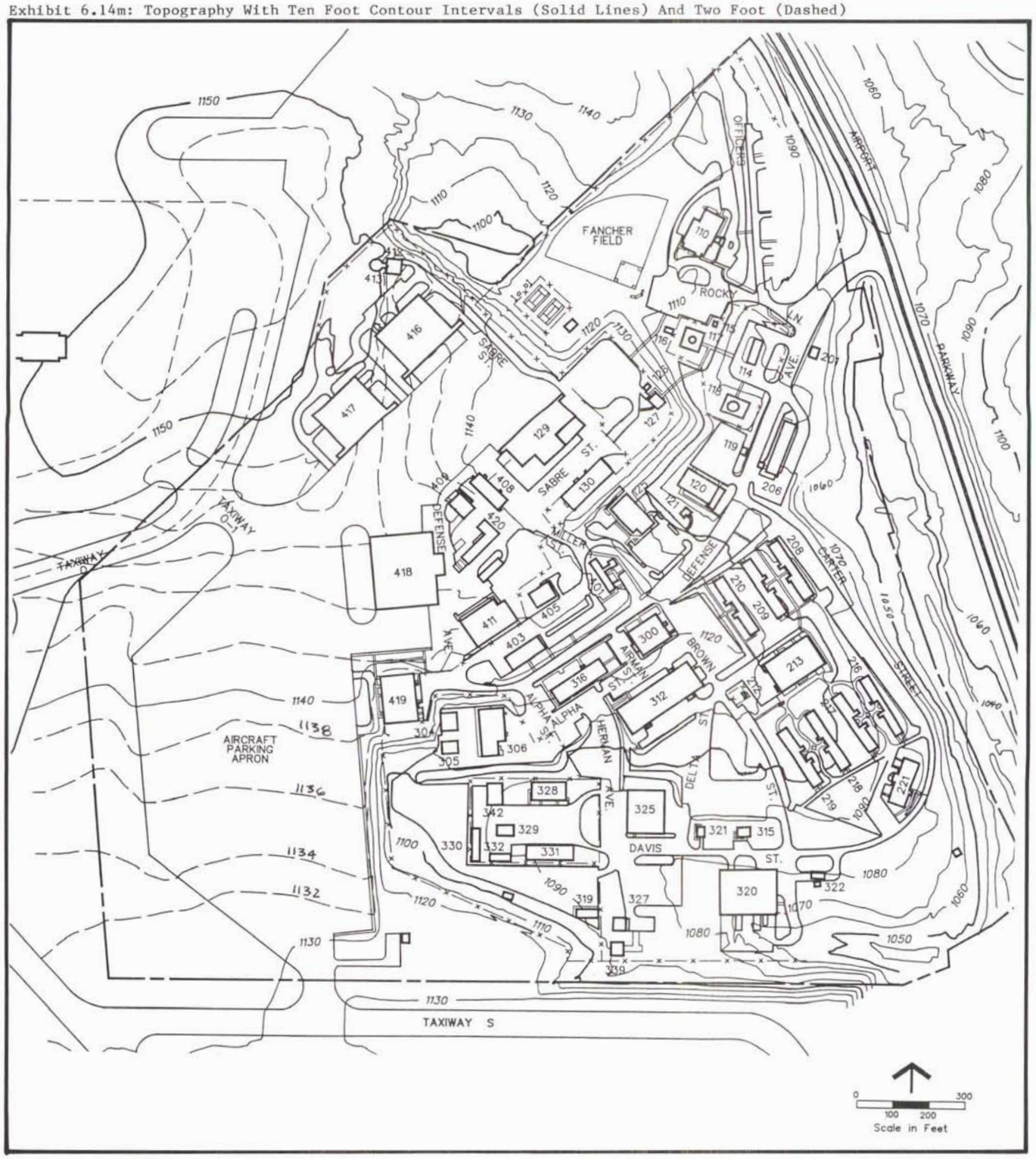
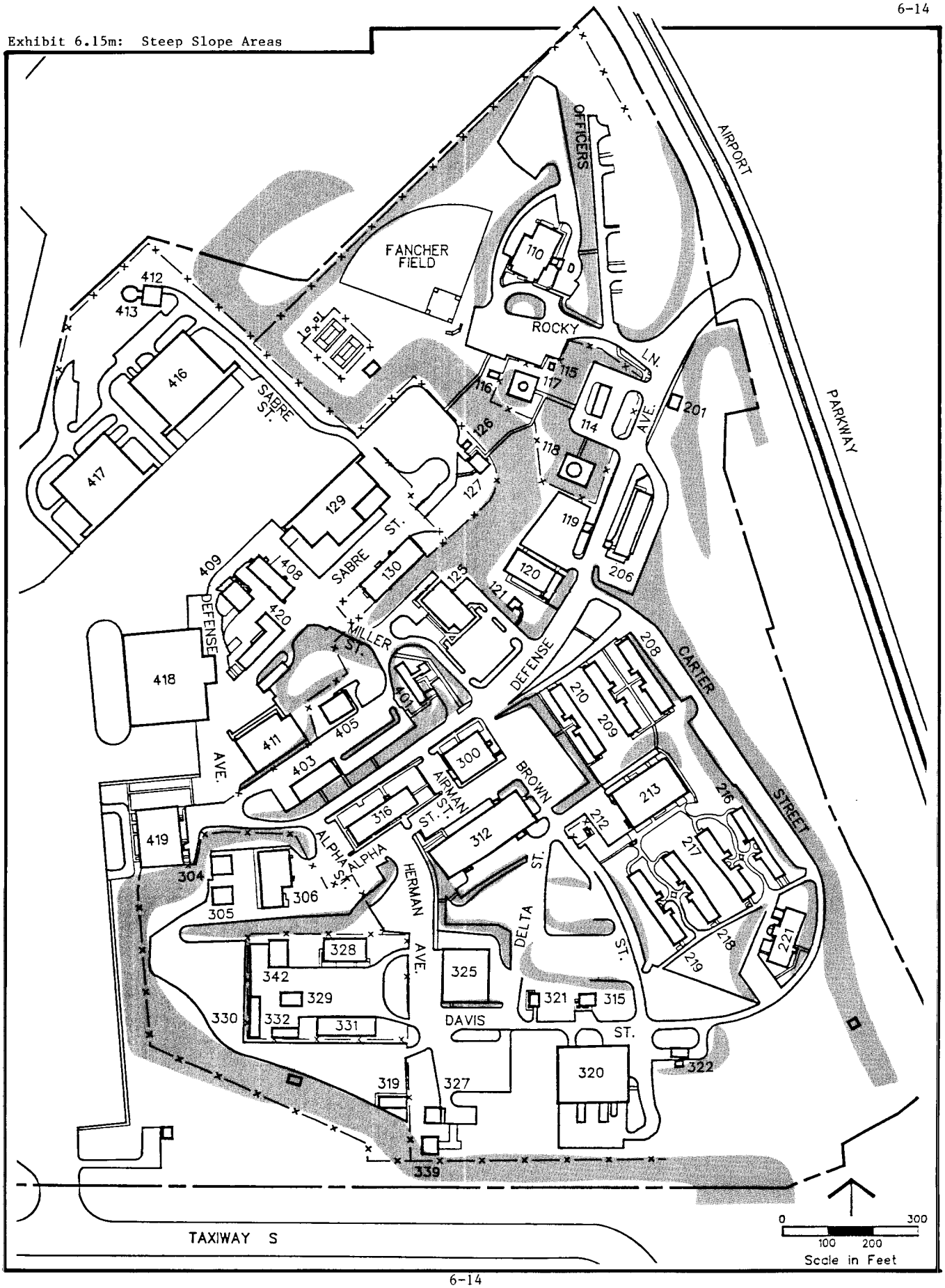


Exhibit 6.15m: Steep Slope Areas



OBJECTIVES

The Armed Forces have established an excellent series of installation design objectives for a broad range of important physical facilities. These will be employed by Pittsburgh AFRES Base, and are summarized on the next page. In addition, the following broad objectives will be important to the base.

...Mission Accomplishment - To continue to uphold the accomplishment of the assigned missions as the foremost objective in planning efforts for the base.

...Good Neighbor - As part of the Pittsburgh metropolitan area, continue working to maintain a good neighbor relationship with the total community.

...Land Use & Buildings - Seek the best locational relationship for the different land use and building needs. This will maximize the efficiency with which daily mission activities are performed by the staff.

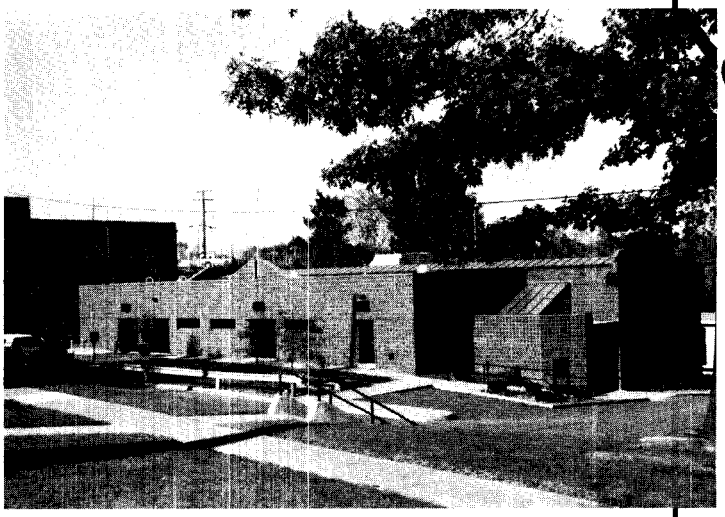
...Streets & Utilities - To provide safe and efficient street and utility systems that properly service all of the base buildings and activity areas.

...Flexibility and Expansion - If the available land permits, attempt to incorporate flexibility that will permit adapting to change, as well as reserve land for unforeseen future expansion needs.

...Aesthetics - Attempt to provide not only an efficient arrangement of buildings and facilities, but also a physical environment that is attractive and pleasing to the staff and visitors.

...Assets - To properly maintain those natural and manmade features and facilities that are existing assets; to replace existing inadequate facilities, and to insure that any new facilities will become assets.

...A Quality Base - To maintain and improve the base reputation as being a quality place to work, live, and contribute to worthwhile accomplishment.



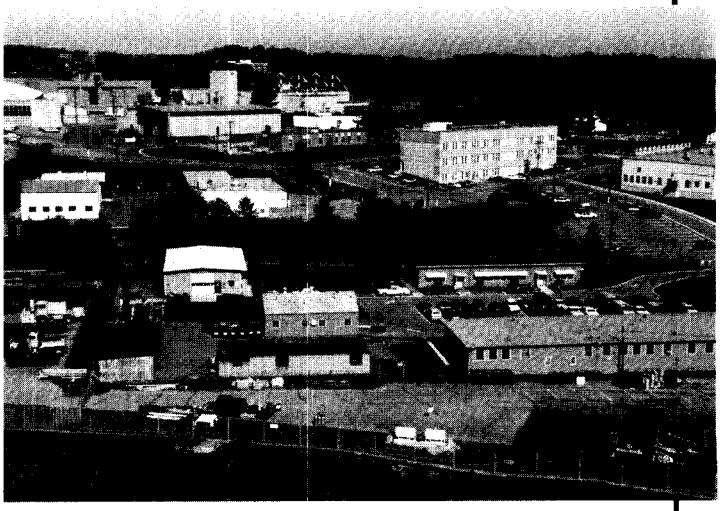
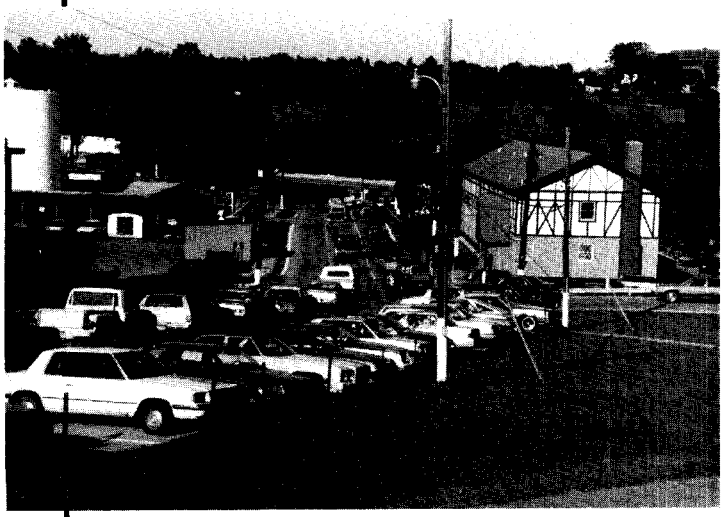


Exhibit 6.16p: Views Of Existing Pittsburgh AFRES Base



...Drainage Structure At Creek Adjacent To Base

Exhibit 6.17t: Installation Design Objectives From AFM 88-43*

Base Physical Feature	Related Objectives	
..BUILDINGS	A..Adapt building design to natural site conditions. B..Relate buildings in groups.	C..Develop a coherent architectural character. D..Preserve historic buildings and areas.
..ROADS	A..Circulation system should define a hierarchy of flow. B..Adapt roads to site conditions.	C..Improve the existing network for growth, safety, and appearance.
..PARKING	A..Reduce the visual impact of parking facilities.	B..Minimize parking requirements and land coverage.
..PLANTING	A..Preserve and enhance existing landscape resources. B..Improve the overall visual quality.	C..Improve the environmental quality of the installation. D..Minimize maintenance requirements.
..PLAZAS AND COURTYARDS	A..Locate plazas in response to user requirements. B..Reduce maintenance.	C..Design plazas appropriate to their setting.
..WALKWAYS	A..Provide safe and secure pedestrian facilities. B..Provide pedestrian facilities in response to potential demand.	C..Create a pleasent pedestrian-scaled environment with elements of visual delight. D..Facilitate movement and access to facilities by the handicapped.
..BIKEWAYS**	A..Develop bicycle facilities as a component of the installations circulation system.	B..Establish a direct, continuous, and safe bikeway network. C..Develop attractive and convenient bicycle parking areas in response to demand.
..SIGNING	A..Communicate necessary information effectively. B..Contribute positively to the overall visual image of a base.	C..Establish an overall signing system that is coordinated, consistent, flexible, and economical.
..LIGHTING	A..Express the appropriate image, character, and scale of an area. B..Convey a sense of the installation organization.	C..Promote safety and security for night-time use of the installation. D..Minimize operational, maintenance, and repair costs.
..SITE FURNISHINGS	A..Provide site furnishings appropriate to their intended function. B..Establish a coordinated system of site furnishings. C..Consolidate and simplify the design of site furnishings.	D..Provide consistency and continuity in the use of site furnishings. E..Incorporate adequate provisions for the handicapped.
..UTILITIES	A..Minimize the visual impact of utilities. B..Minimize the environmental impact of utility systems.	C..Design utility systems for ease of maintenance and repair.

*These objectives were digested from "Installation Design: Improving the Visual Environment," 1 March 1981, Air Force AFM 88-43, Army TM 5-803-5, and Navy NAVFAC P-960.

**Due to steep Pittsburgh terrain, bike usability will be restricted at the 911 TAG. Relatively flat flightline area will offer best possibilities.

STUDY AREA

The approximate AFRES base boundary in relation to the Greater Pittsburgh International Airport (GPIA) terminal area is illustrated on the aerial photo below.

When the new GPIA terminal facility is built to the west, Airport officials have said they will entertain requests from the AFRES base to expand into some of the existing terminal area. With that possibility in mind, the "Study Area" for the 911th TAG (AFRES) base comprehensive plan will include the existing base property plus some of the GPIA area to the north and west.

Exhibit 6.18p: Study Area For BCP

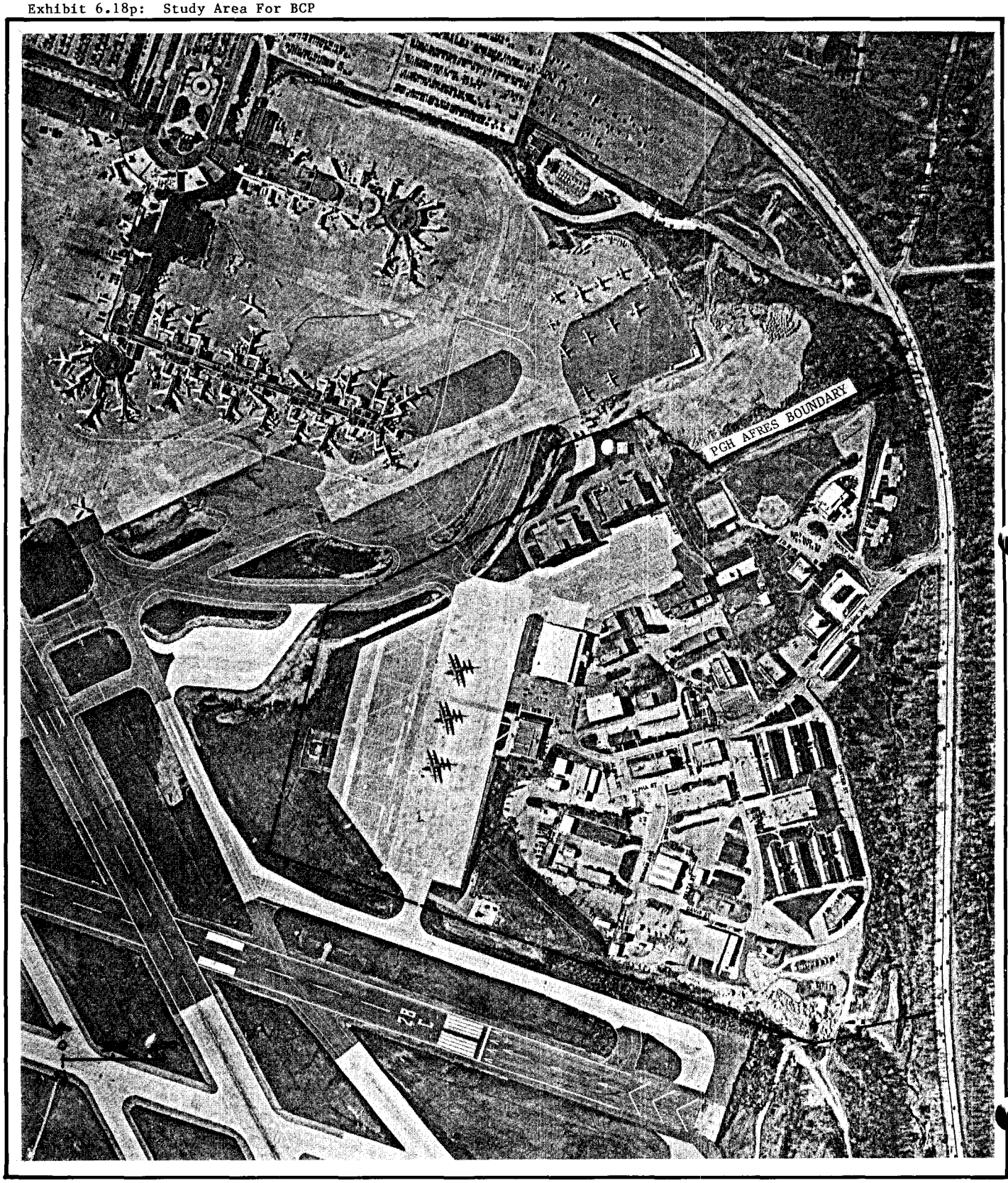
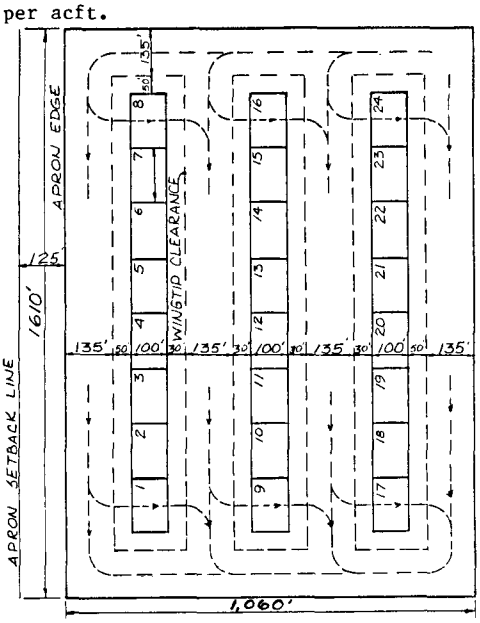


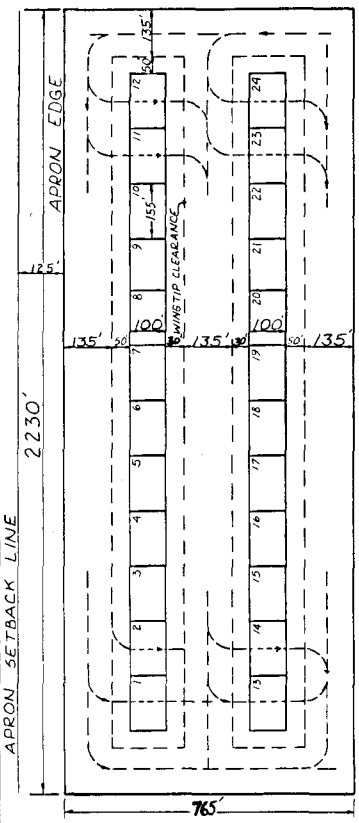
Exhibit 6.19m: C-130 Parking Layout

Layout #1 for C-130's: 1,060' x 1,610 = 39.2 acres for 24 acft., or 1.6 acres per acft.



0 200 400 C-130 dimensions
W=132.6'
L= 97.7'
H= 38.3'

Layout #2: 765' x 2,230' = 39.2 acres, or 1.6 acres/acft.



AIRCRAFT PARKING LAYOUTS FOR FUTURE CONSIDERATION

In looking at potential expansion possibilities for the future, the 911th TAG officials asked the consultant to consider needs for accommodating up to 24 C-130 aircraft or, as another alternative, up to 16 C-5A aircraft. The exhibits of this page illustrate the layout and land acreage needs of these aircraft.

...Layout #1 is for 24 C-130's in three rows, requiring 39 acres.

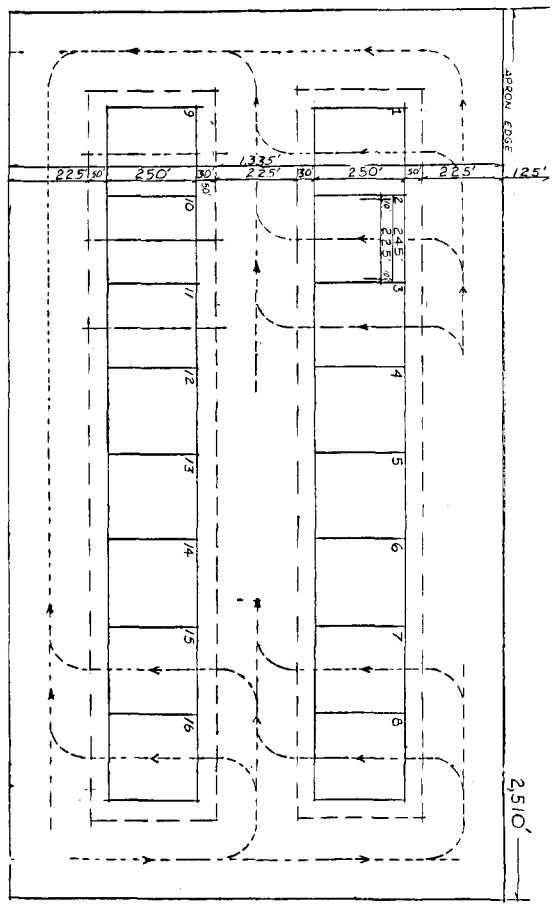
...Layout #2 is for 24 C-130's in two rows, needing 39 acres.

...Layout #3 is for 16 C-5's in two rows, requiring 77 acres.

...Layout #4 is for 16 C-5's in one row, requiring 82 acres.

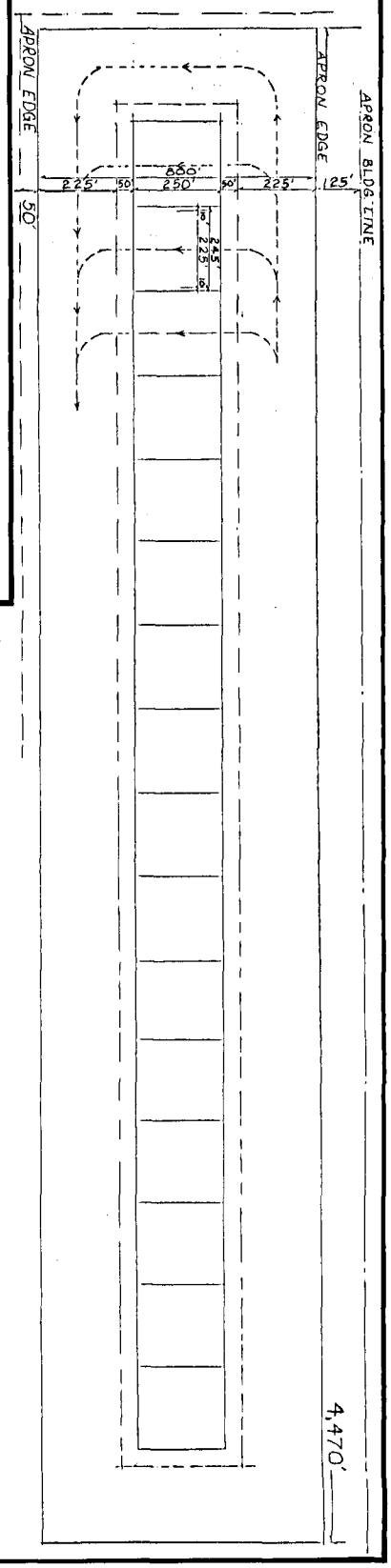
Generally speaking, the C-5 transport aircraft require almost three times as much land area per aircraft as the C-130.

Layout #3 for C-5s: 1,335' x 2,510' = 76.9 acres for 16 aircraft, or 4.8 acres per acft.



Exh. 6.20m: C-5 Parking Layout

#4 for C-5: 800' x 4,470' = 82 acres for 16 acft., or 5.1 acres per acft.



C-141 LAYOUT (ALSO C-17)

In addition to the C-130 and C-5A, the base asked the consultant to consider needs for accommodating up to 24 C-141 aircraft. The exhibit on this page illustrates two layouts and land acreage needs of the C-141, whose dimensions are a width of 160 feet, length of 168 feet and height of 38 feet.

...Layout #5 is for 24 C-141's in three rows, requiring 58.2 acres.

...Layout #6 is for 24 C-141's in two rows, requiring 57.8 acres.

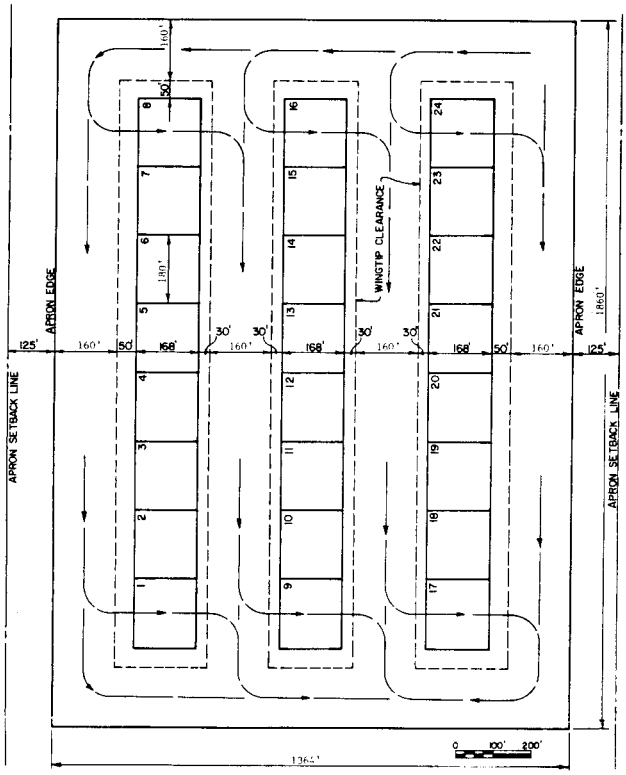
Generally, accommodating 24 C-141 aircraft requires one and a half times as much land area as for the C-130, or half as much land area as for 16 C-5's.

The layout requirements for the C-17 aircraft are similar to those shown for the C-141. The only difference is the C-17's length of 175' as opposed to the 168' length for the C-141.

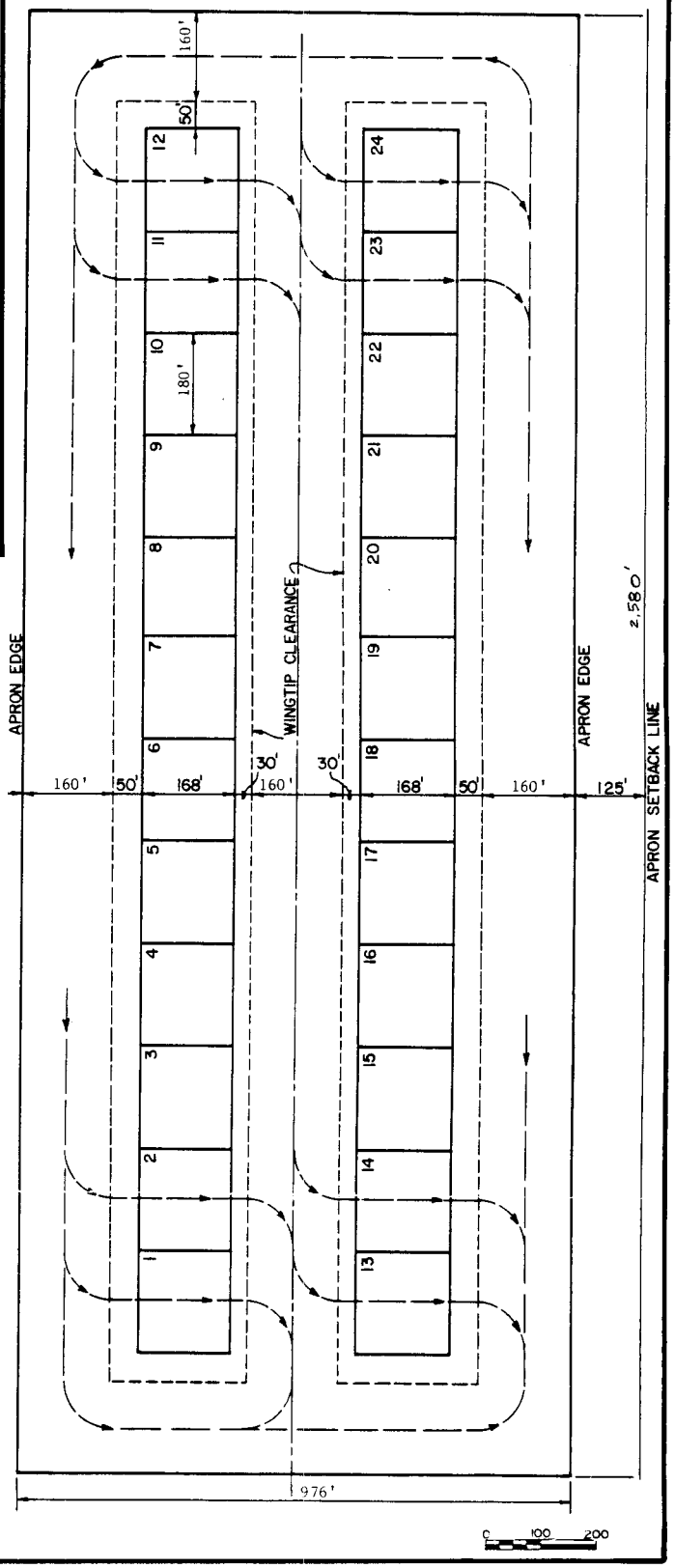
Exhibit 6.21m: C-141 Parking Layout

C-141 dimensions:
W = 160'
L = 168'
H = 38'

Layout #5 for C-141: 1,364' x 1,860' =58.2 acres, or 2.43 acres/aircraft.



Layout #6: 2,580' x 976' = 57.8 acres, or 2.41 acres/aircraft.

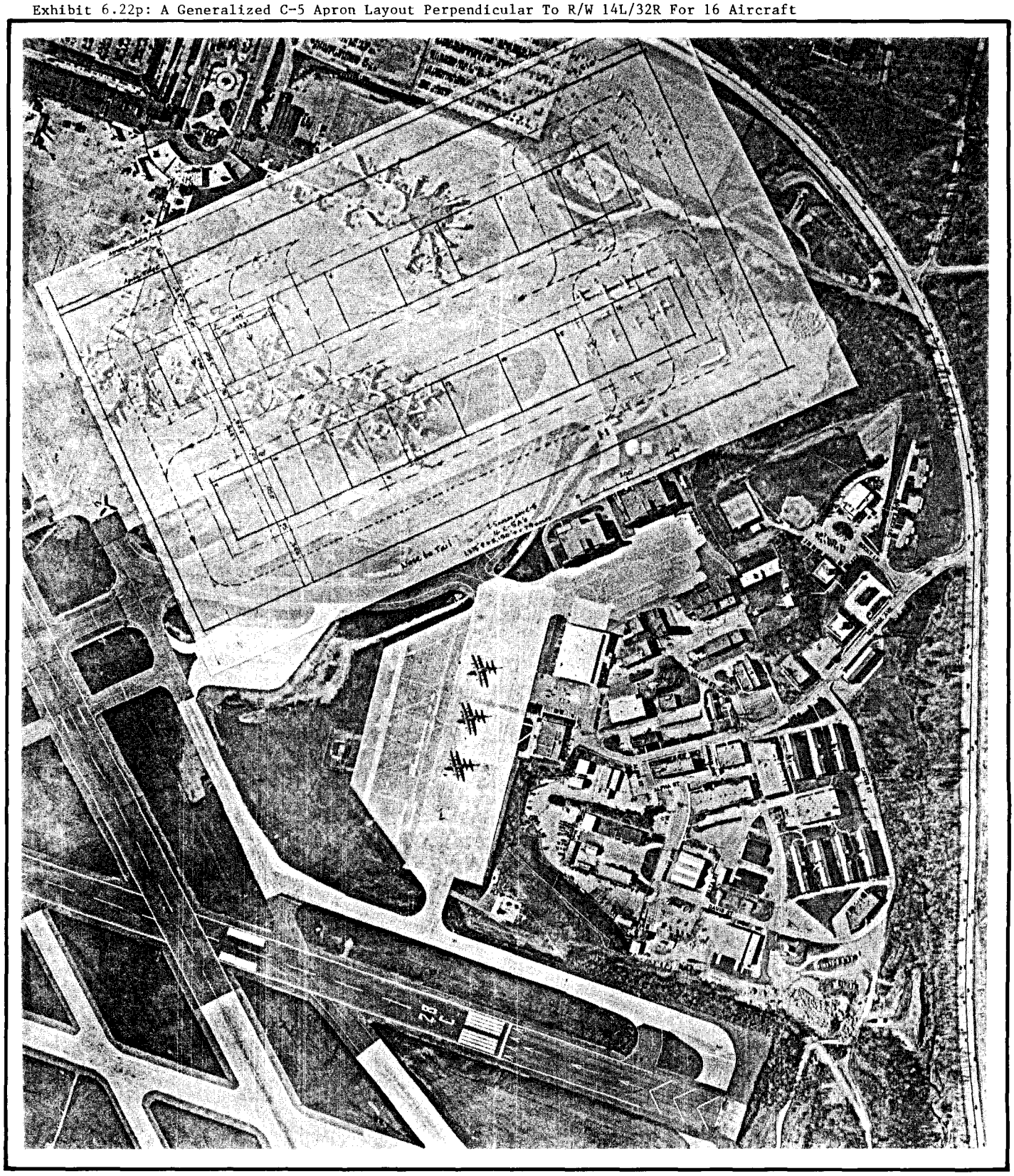


C-5 APRON LAYOUT PERPENDICULAR TO R/W 14L/32R

The C-5 apron layout below shows two rows of aircraft perpendicular to runway 14L/32R.

The 79 acre layout observes a 125' setback from the rear of hangars #416 and #417. To the north, it would extend to the Airport Parkway and to within 150' of the main GPIA terminal building.

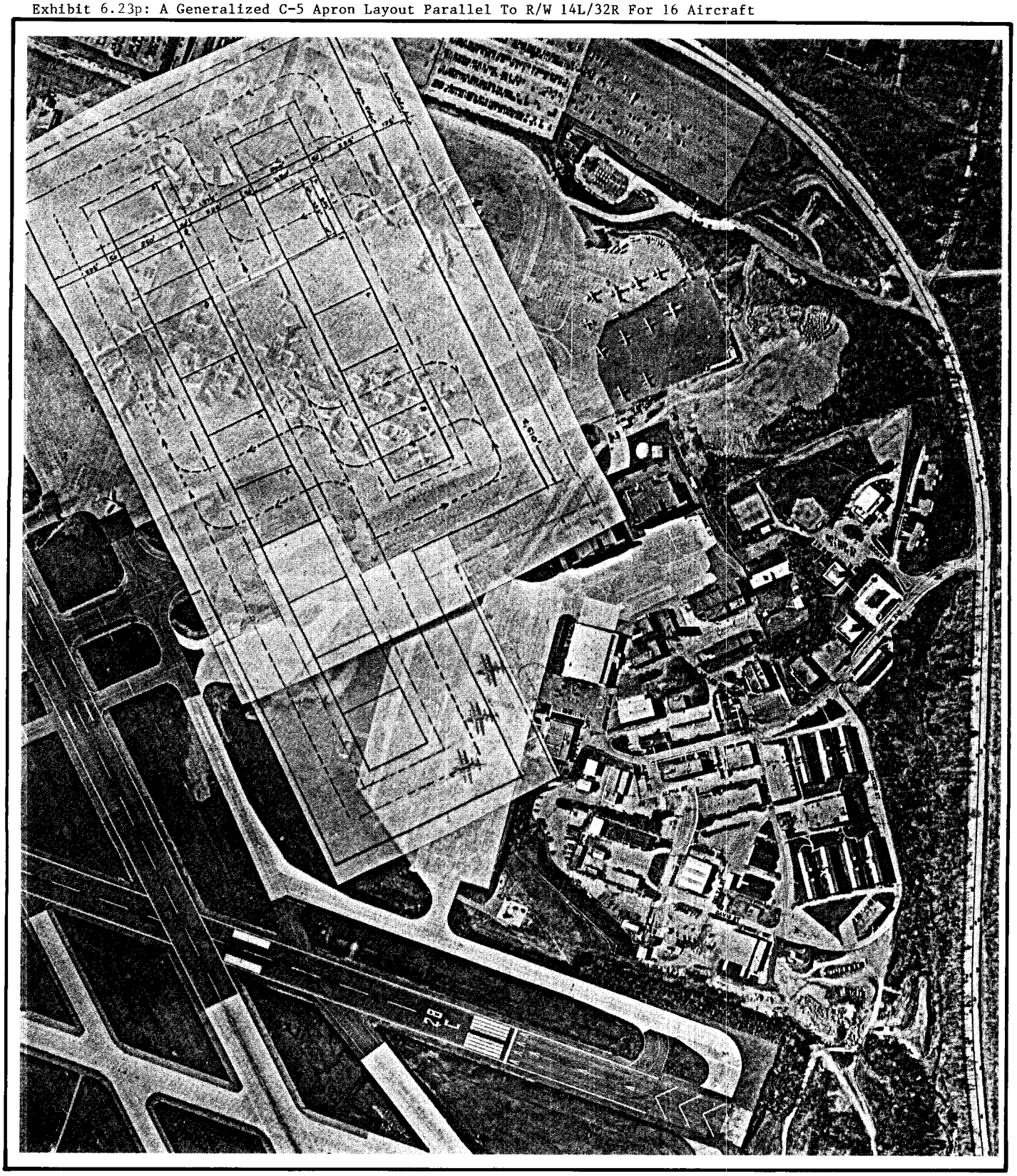
Exhibit 6.22p: A Generalized C-5 Apron Layout Perpendicular To R/W 14L/32R For 16 Aircraft



C-5 APRON LAYOUT PARALLEL TO R/W 14L/32R

The C-5 apron layout shown below proposes two rows of aircraft parking parallel to runway 14L/32R. In a general north-south direction, the apron would extend 3,520' from the front of the GPIA terminal to within 125' of the Flight Operations building and Hangar #417.

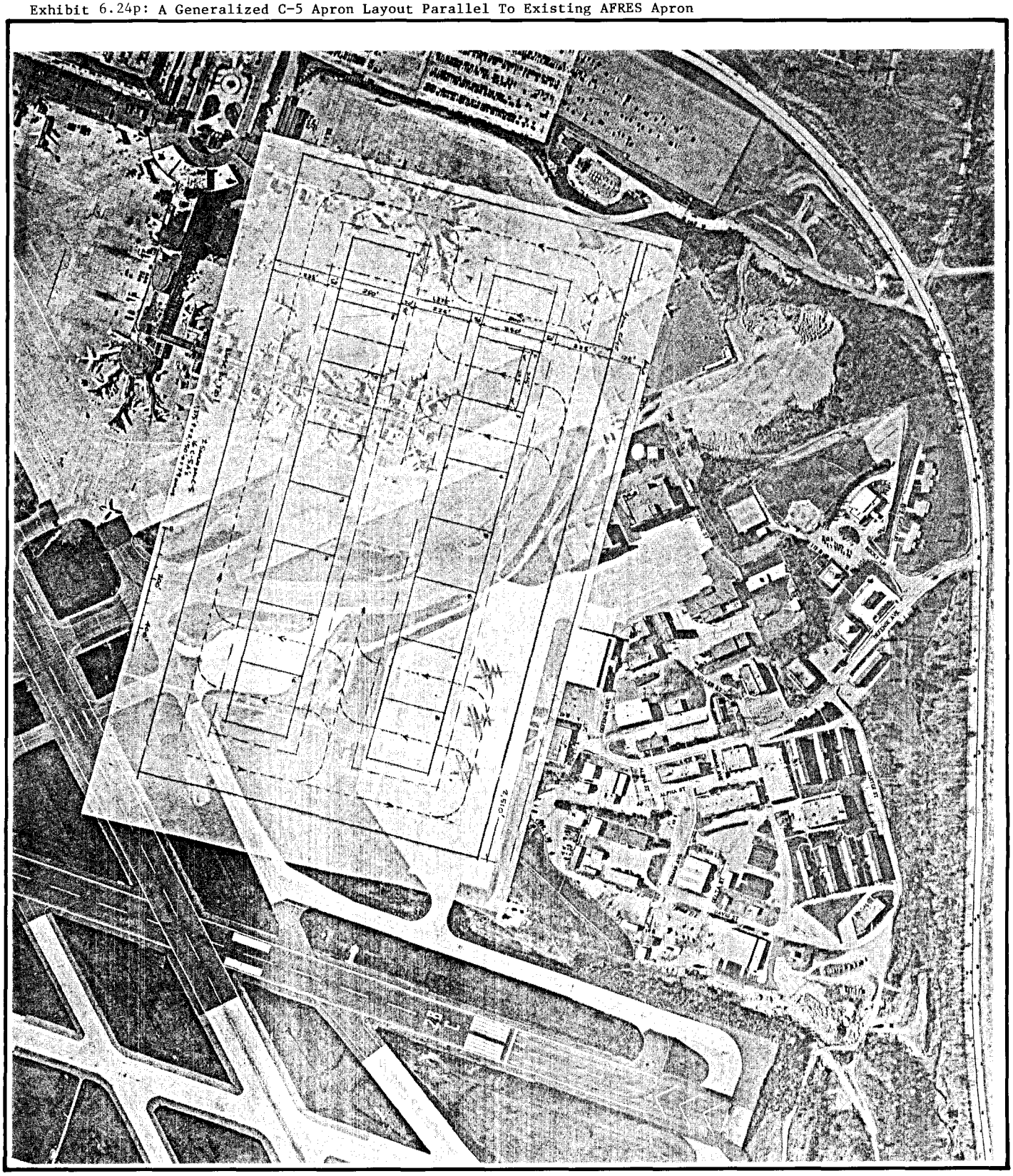
Exhibit 6.23p: A Generalized C-5 Apron Layout Parallel To R/W 14L/32R For 16 Aircraft



C-5 APRON LAYOUT PARALLEL TO EXISTING AFRES APRON

The generalized layout below shows two rows of C-5 aircraft that are parallel to the existing AFRES apron. The apron occupies 79 acres, is 125' from Flight Operations and building 418, extends west to the main GPIA terminal building, and extends north to the existing POL facility.

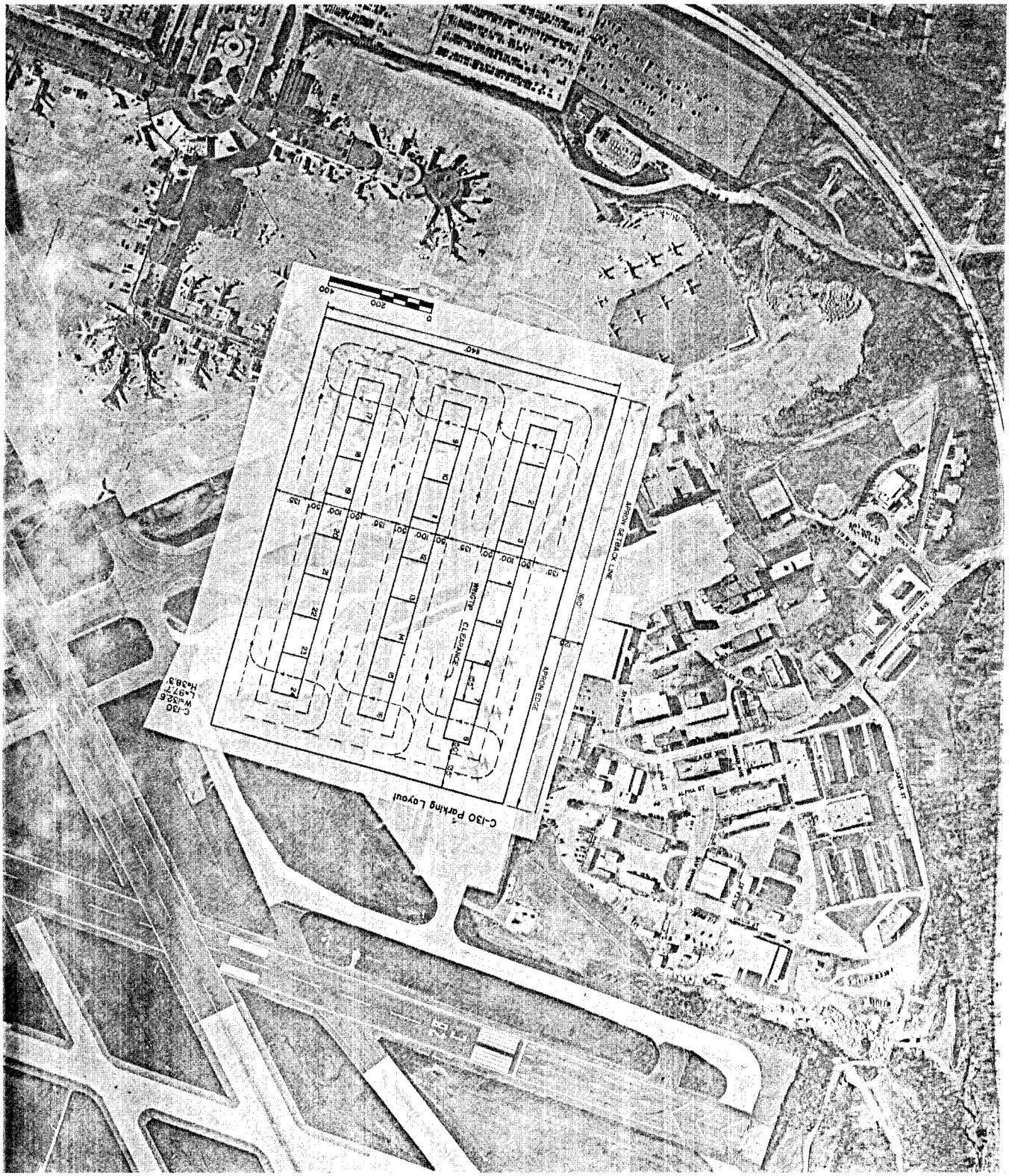
Exhibit 6.24p: A Generalized C-5 Apron Layout Parallel To Existing AFRES Apron



C-130 APRON LAYOUT WITH THREE ROWS OF AIRCRAFT

The generalized layout below for 24 C-130 aircraft covers 42 acres. It is parallel to the existing apron and within 125' of buildings #418 and #419. Any use of this generalized scheme would have to amend it in relation to setback from building #417.

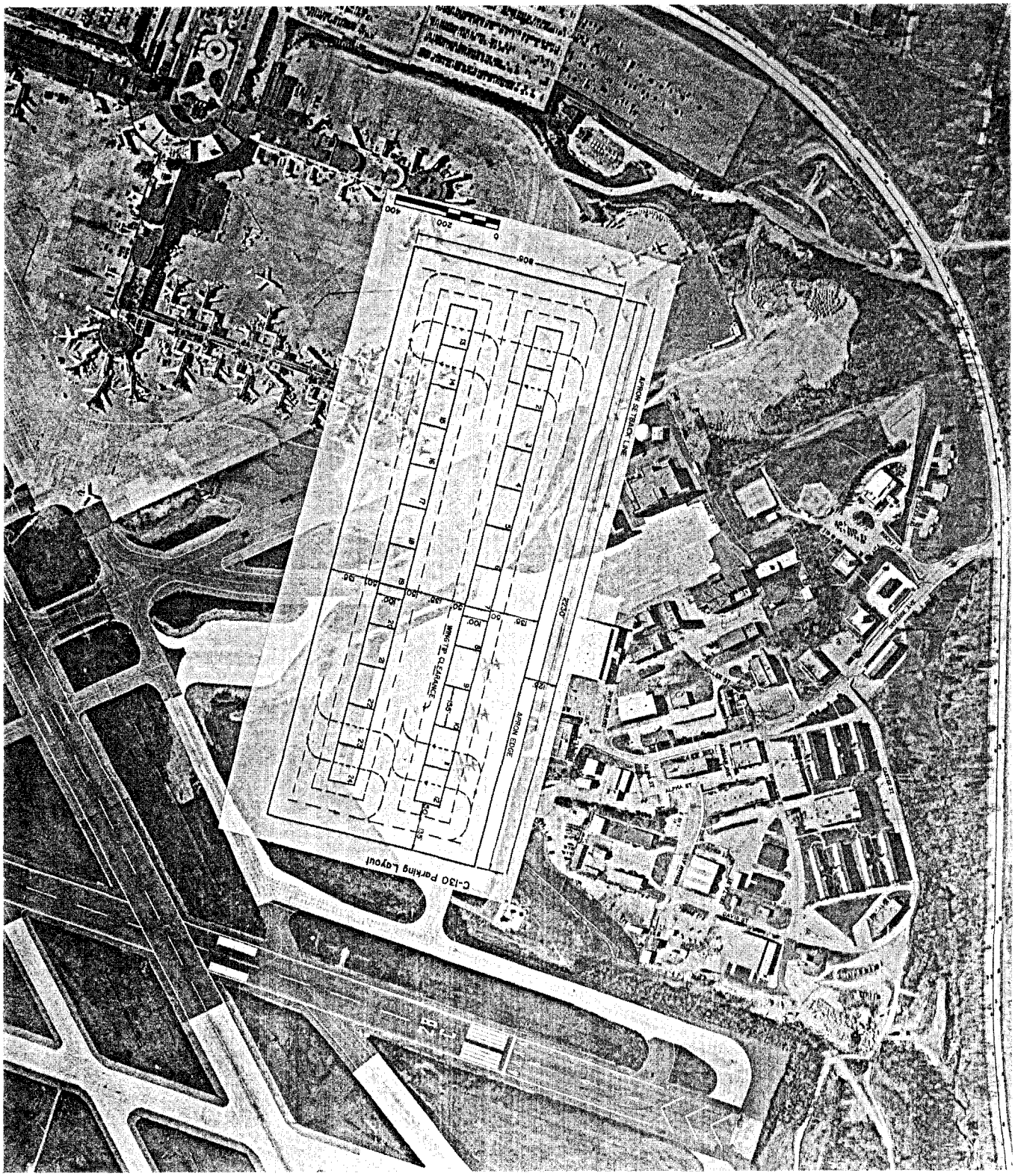
Exhibit 6.25p: A Generalized C-130 Apron Layout With Three Rows Of Aircraft



C-130 APRON LAYOUT WITH TWO ROWS OF AIRCRAFT

A 41 acre layout for a parking apron to hold 24 C-130 aircraft in two rows is shown on the photograph below. The apron is 125' from buildings #418 and #419, but touches building #417. If this layout were used, its relation to building #417 and the taxiways would require changes.

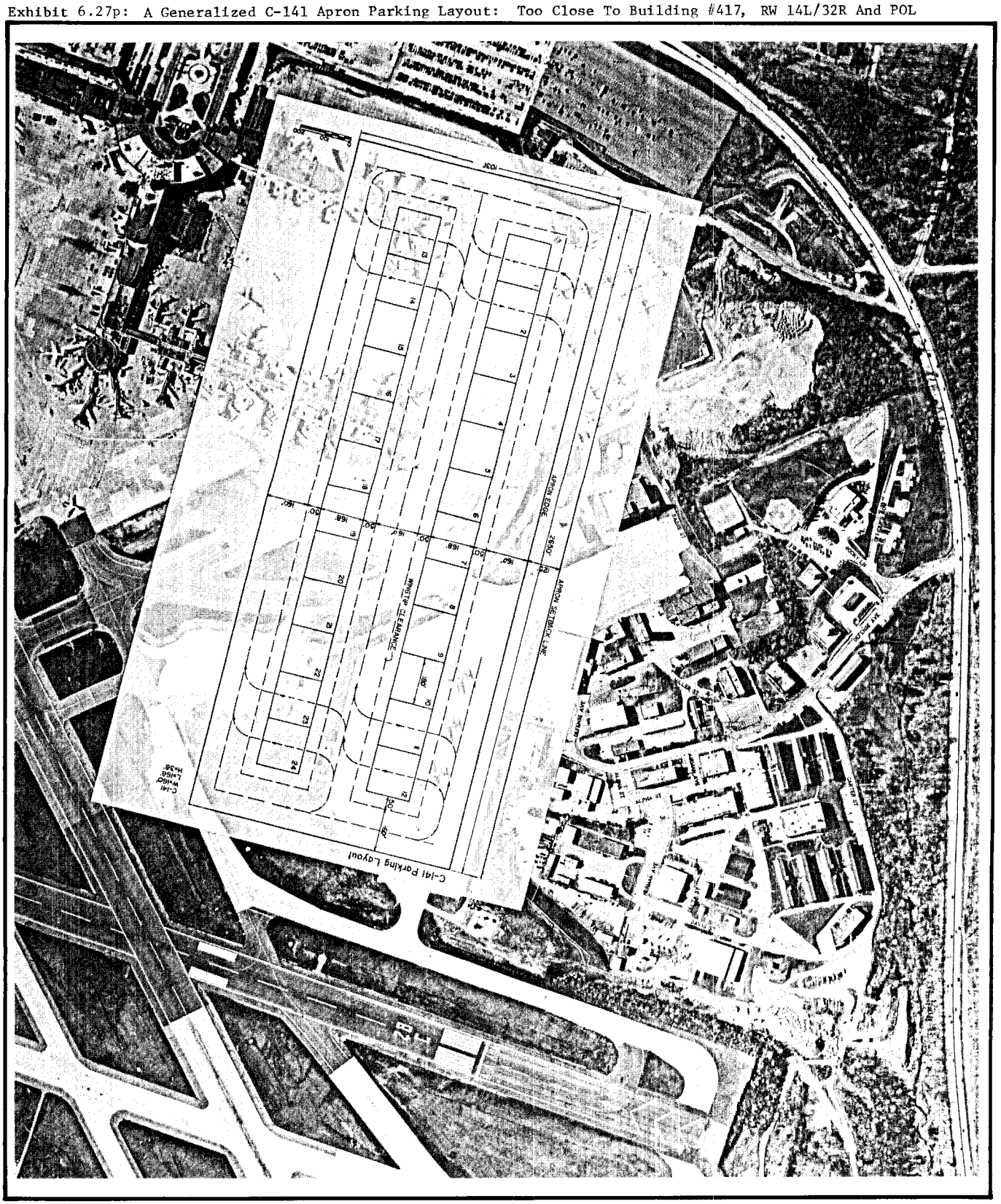
Exhibit 6.26p: A Generalized C-130 Apron Layout With Two Rows Of Aircraft



C-141 APRON LAYOUT WITH TWO ROWS OF PARKING

A 63 acre generalized layout for a parking apron to hold 24 C-141 aircraft in two rows is shown on the photograph below. The apron is the proper distance from all AFRES buildings except for hangar #417. The apron also is too close to RW 14L/32R and the POL.

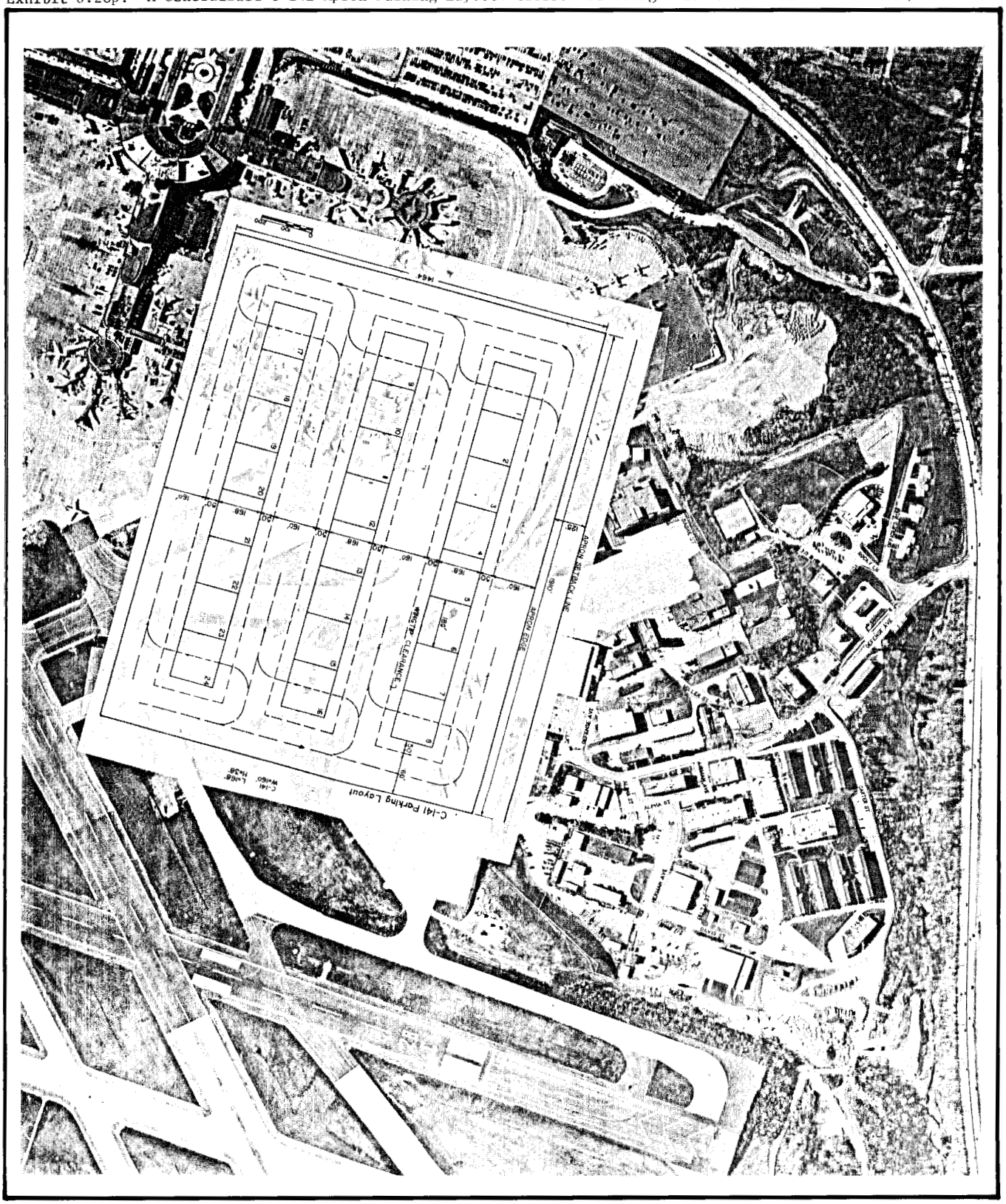
Exhibit 6.27p: A Generalized C-141 Apron Parking Layout: Too Close To Building #417, RW 14L/32R And POL



C-141 APRON LAYOUT WITH THREE ROWS OF PARKING

A 64 acre generalized layout for a parking apron to hold 24 C-141 aircraft in three rows is shown on the photograph below. Like the previous layout, this apron also crosses building #417 and is too close to RW 14L/32R. It does not, however, come too close to the POL.

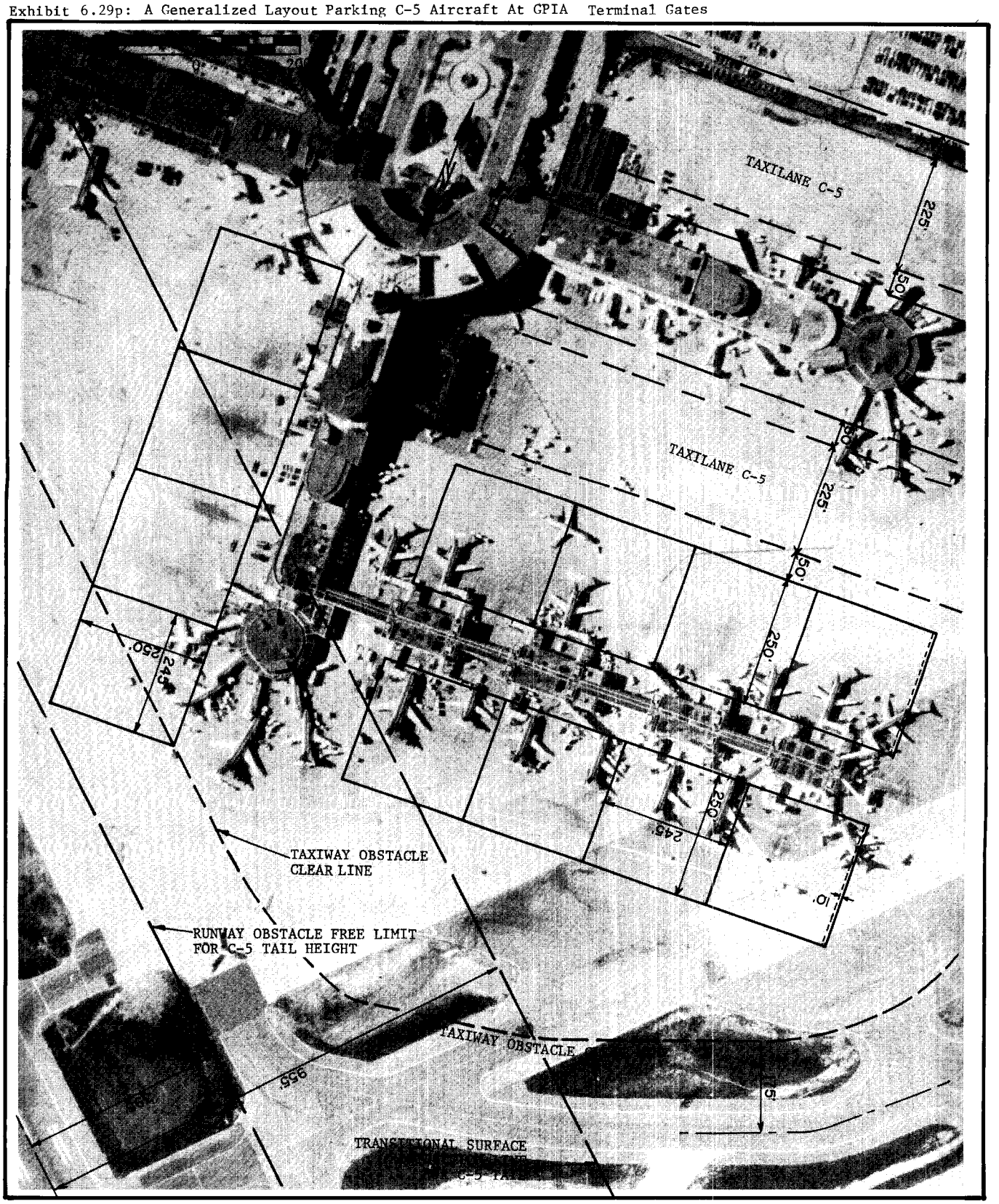
Exhibit 6.28p: A Generalized C-141 Apron Parking Layout: Crosses Building #417 And Too Close To RW 14L/32R



C-5 LAYOUT AT GPIA TERMINAL GATES

The layout below looks at the potential for parking C-5 aircraft at the existing GPIA passenger gates. Several features combine to show such use to be impractical: runway and taxiway clearance lines and inadequate space to provide for taxilane and parking bays.

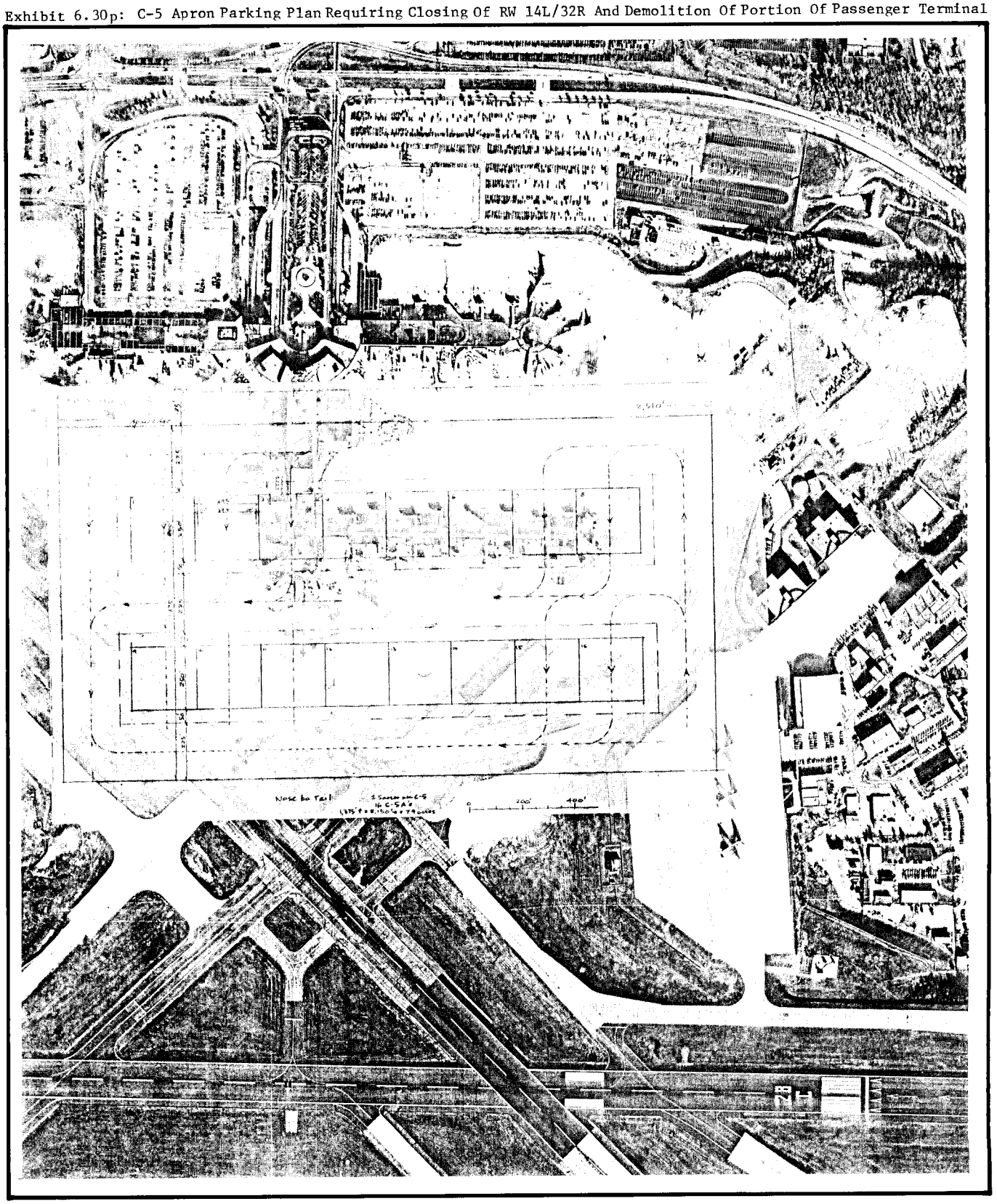
Exhibit 6.29p: A Generalized Layout Parking C-5 Aircraft At GPIA Terminal Gates



C-5 LAYOUT AT GPIA DISREGARDING GATES

The layout below parks 16 C-5 aircraft in two rows in a 79-acre land area. Use of this layout would require closing of RW 14L/32R and demolition of that portion of the passenger terminal extending south beyond the entry area.

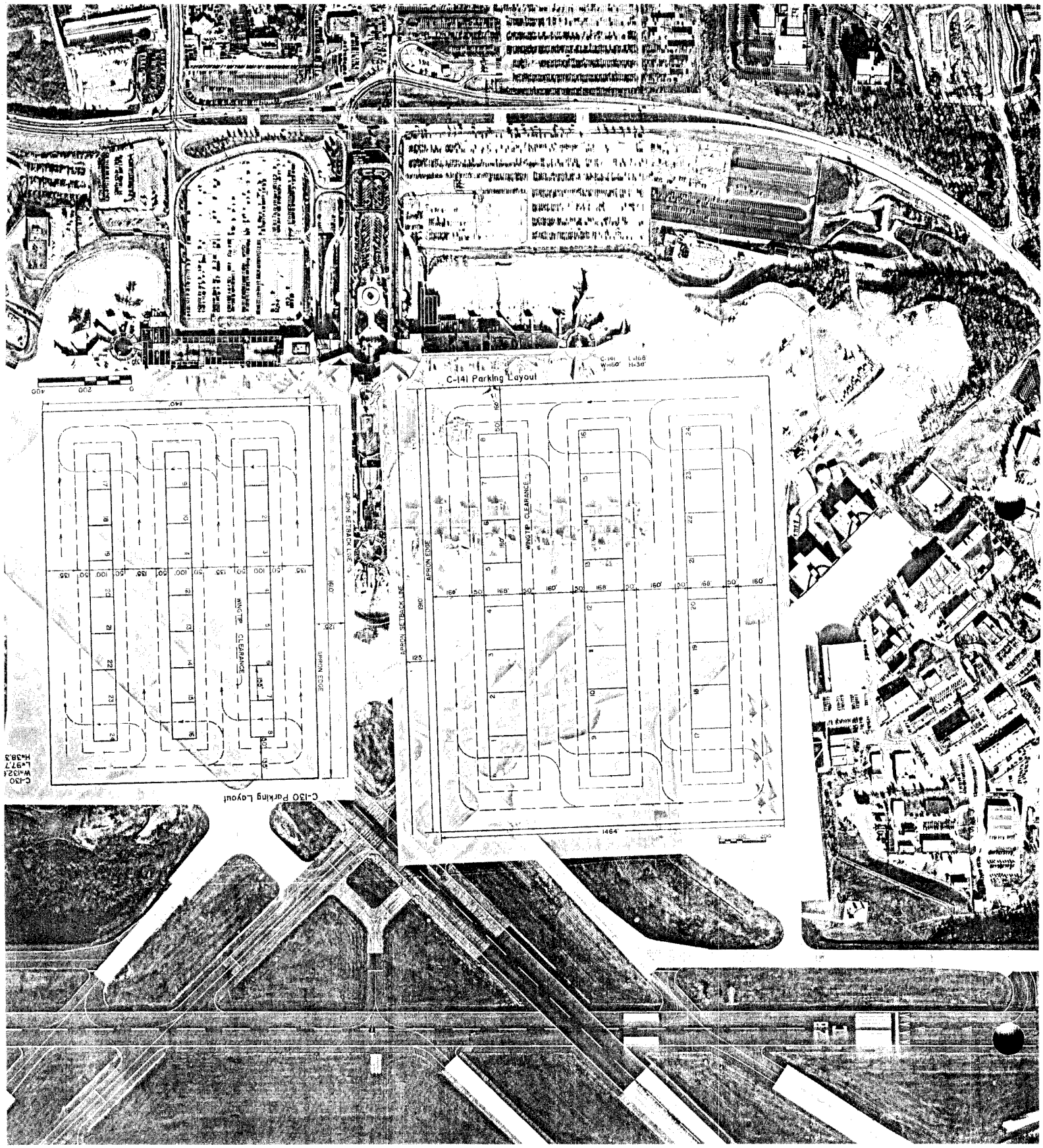
Exhibit 6.30p: C-5 Apron Parking Plan Requiring Closing Of RW 14L/32R And Demolition Of Portion Of Passenger Terminal



C-130/C-141 LAYOUT AT GPIA

This layout shows a generalized apron parking plan, on the left, for 24 C-130s in a 42-acre area, and on the right, for 24 C-141's in a 63-acre area. As the previous scheme, it would require closing of RW 14L/32R and demolition of part of the GPIA terminal.

Exhibit 6.31p: C-130 And C-141 Requiring Closing Of RW 14L/32R And Partial Demolition Of GPIA Terminal



CONSTRAINTS TO FUTURE DEVELOPMENT

Constraints to future development of the AFRES base include the following:

...Steep Slope constraints are described on page 6-13.

...Airfield Restrictions (building restriction line, etc.) are described on page 6-11.

...Existing Building and Streets, the Airport Parkway, and adjacent GPIA facilities must be observed as existing constraints.

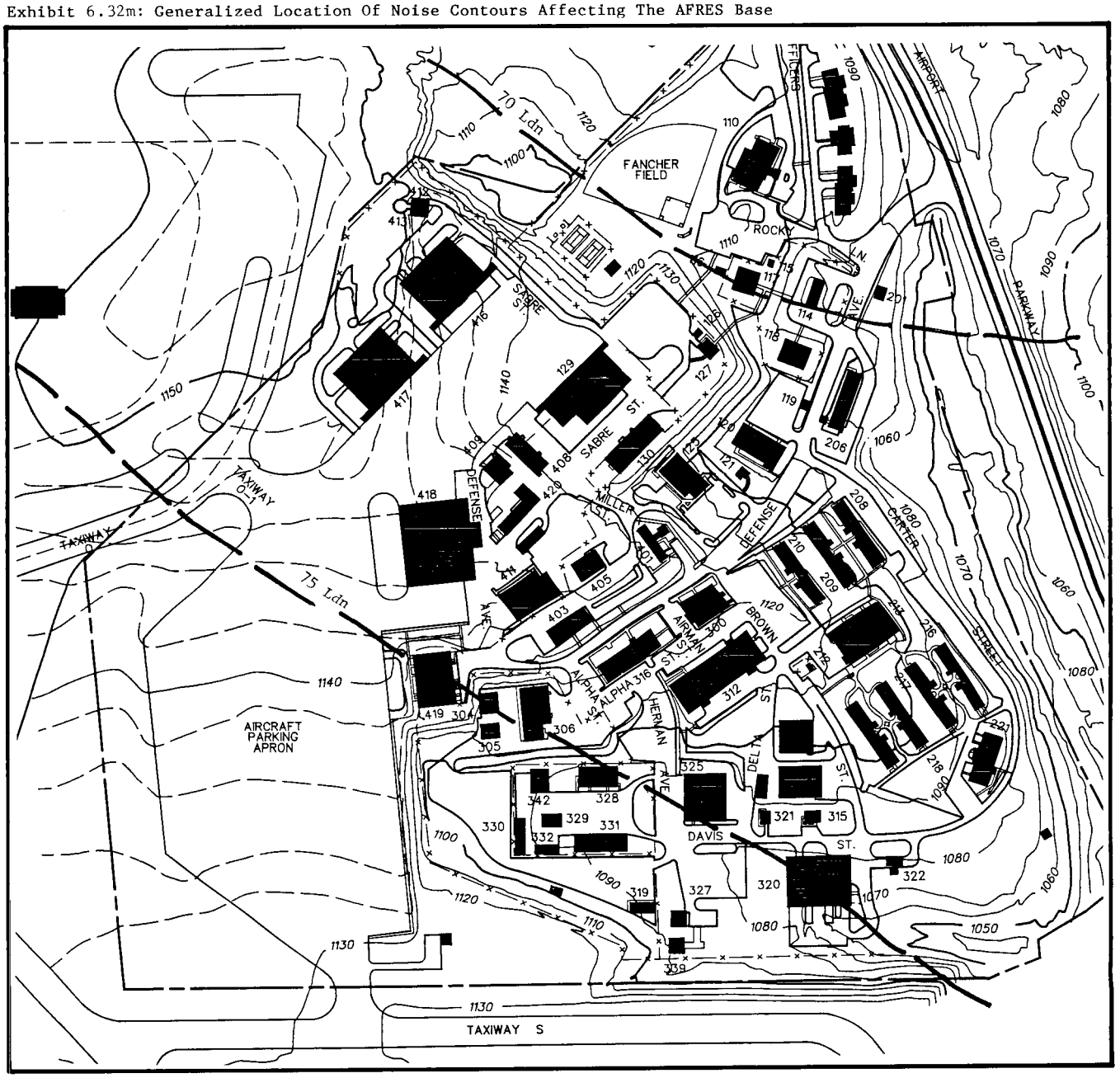
...Noise contours, as shown below, range from 70 to 75 Ldn. Any habitable buildings should incorporate a noise level reduction of 25 to 30.

...Soil Conditions of importance to building activity include a moderate permeability of on-base soils. Seasonal high water table and shallow depth to bedrock are development limitations.

...Other potential constraints which do not presently exist on base include:

- ...Flooding or wetlands. The area drains to the east into McClaren's Run, adjacent to the Airport Parkway.
- ...Woodlands over five acres. The greatest tree growth is along the Airport Parkway and McClaren's run right-of-way.
- ...Historic Structures or sites
- ...Prime Farmland or agricultural leases
- ...Rare or endangered species habitat
- ...Munitions quantity distance (QD) safety radii

Exhibit 6.32m: Generalized Location Of Noise Contours Affecting The AFRES Base



FUTURE DEVELOPMENT ALTERNATIVES

The previous sections of this chapter have concentrated on preparing background information as a foundation on which to develop future alternatives. This section will be organized as follows:

...Overall Future Needs
...Alternative Concepts
...Selected Long Range Plan
...Selected Short Range Plan

OVERALL FUTURE NEEDS

The overall future needs, as initially concerned at the beginning of the study (11/86), are listed by the exhibit to the right. The needs can be organized by the following AF land use categories:

...1-Airfield Pavement - Need to expand aircraft parking apron by 40,100 square yards in order to accommodate more aircraft.

...2-Aircraft Operations & Maintenance - Need additions to three buildings: Aerial Port Training Facility, 33rd AES, and Communications Facility.

...3-Industrial - Industrial needs include:
...relocation of POL
...construction of firing range (off-base)
...vehicle maintenance facility
...warehouse
...BCE complex
...water storage tank
...improve base access
...convert clinic to small arms training

...4-Administrative needs include finding replacement office space for the activities moved out of buildings 208 and 210.

...7-Medical needs include location for a new 11,250 SF facility.

...9-Housing, Unaccompanied - Need is to return two buildings (208 and 210) to their original dormitory use.

...11-Open Space - Need to convert old POL area to park after POL is moved.

USE OF ADJACENT GPIA LAND

In addition to the above needs, the opportunity needs to be explored for using some of the adjacent GPIA land after the new terminal is constructed to the west.

The aircraft parking layout, shown on the previous pages, illustrate several possibilities for use of the adjacent land for accommodating more and larger aircraft. Equally important is to explore the possibility of GPIA land for hangar and other building facility needs.

Exhibit 6.33p: Expansion Of Aircraft Apron Needed

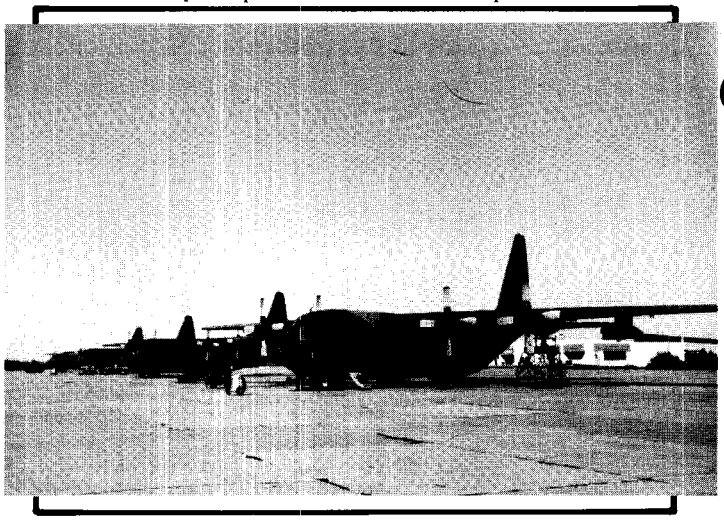


Exhibit 6.34t: Initial Listing Of Needs For New Facilities, Expanded Facilities, Or Conversions to New Land Use (11/86)

NUM	CTL	CAT CODE	AFC	FACILITY	SF	OTHER	YC	ORG-ABBR
-	F	113321	1	PKG APRON ADDN	40,100	XX		MA
00130	F	171873	2	A/PORT TNG FAC ADDN	4,600		86	MAPF
00306	R	218712	7	CONVERT TO 33 AES	8,440		SR	SGN
00405	F	131111	2	COMM FCLTY ADDN	1,692		SR	SI
00221	R	171476	3	CONVERT CLINIC TO ARMS TRNG	6,173	6,173	91	CATM/WS
-	F	123335	3	RELOCATE POL			91	LGSF
-	F	179475	3	FIRING RANGE (OFF-BASE)		21 FP	91	CATM
-	F	214425	3	VEH MAINT FACIL	12,900		XX	LGT
-	F	442758	3	WAREHOUSE	24,000		XX	LGS
-	F	610127	3	BCE COMPLEX	30,990		91	DE
-	F	841427	3	WATER STORAGE TK		300MG	89	DE
-	F	851142	3	IMPR BASE ACCESS			88	DE
-	F	610127	4	OFFICES FOR 208/210	25,934		XX	DE
-	F	730839	4	TRAFFIC CHK HSE	144 SF		88	SP
-	F	510411	7	MED TRAINING FAC	11,250		90	SGA
00208	R	721315	9	CONVERT OFFICES TO DORMS	12,967	56 PN	52	SVH
00210	R	721315	9	CONVERT OFFICES TO DORMS	12,967	56 PN	SR	SVH
-			11	CONVERT OLD POL TO PARK				

CTL CODES:

A - Single Use Building
B - Multi-Use Building
D - Space: Multi Use Bldg.
E - Non-Building Use
X - Utilities (Bldg.)
F - Funded Project
V - Visable Non-Building Use
R - Remodeling

AFC CODES:

1 - Airfield Use
2 - Acft. Ops/Maint.
3 - Industrial
4 - Administrative
5 - Community Commercial
6 - Community Service
7 - Medical
8 - Housing: Accompanied
9 - Housing: Unaccompanied
10 - Outdoor Recreation
11 - Open Space/Land
12 - Water

EXISTING ALTERNATIVE #1

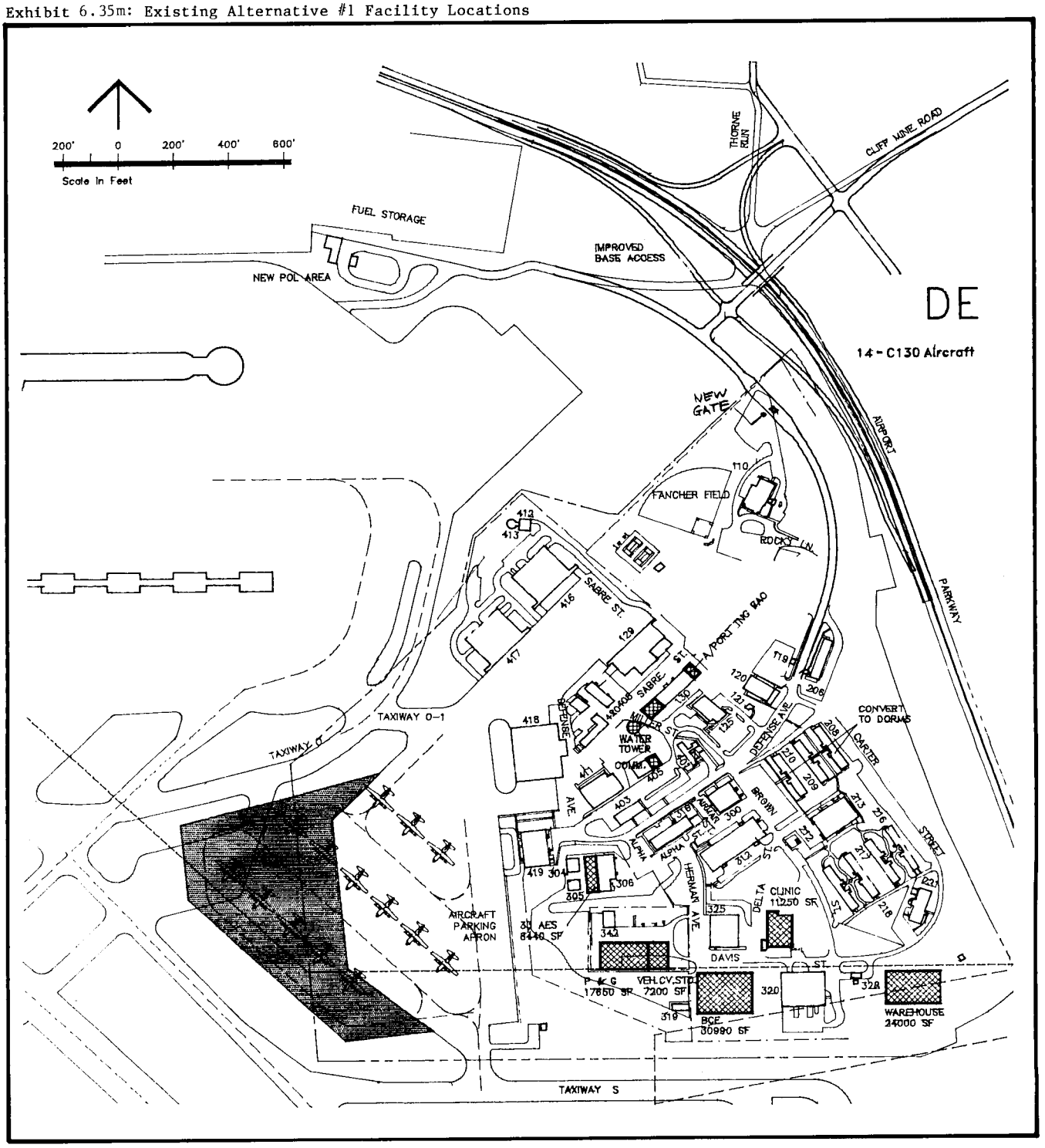
The existing alternative development plan, as shown below, summarizes some of the proposals already made by the BCE. They incorporate the following:

...Interchange Access via the new Airport Parkway with a new gate.

...Expanded Aircraft Parking Apron that accommodates 14 C-130 aircraft.

...Aerial Port addition (Bldg. 130)
...New Water Tower
...Communications addition (Bldg. 405)
...Addition to Bldg. 306 and conversion for use by 33 AES
...Conversion of 208 and 210 to dorms
...New Medical Clinic of 11,250 SF, freeing the old clinic for Arms Training Use
...New BCE facility
...New Vehicle Ops heated parking and BCE grounds facility

Exhibit 6.35m: Existing Alternative #1 Facility Locations



ALTERNATIVE PLAN #2

Alternative #2 retains most of the facility location proposals from the previous alternative. The major differences are:

...Aircraft Parking Apron expansion for 16 C-5s would use all of the existing apron plus adjacent GPIA land.

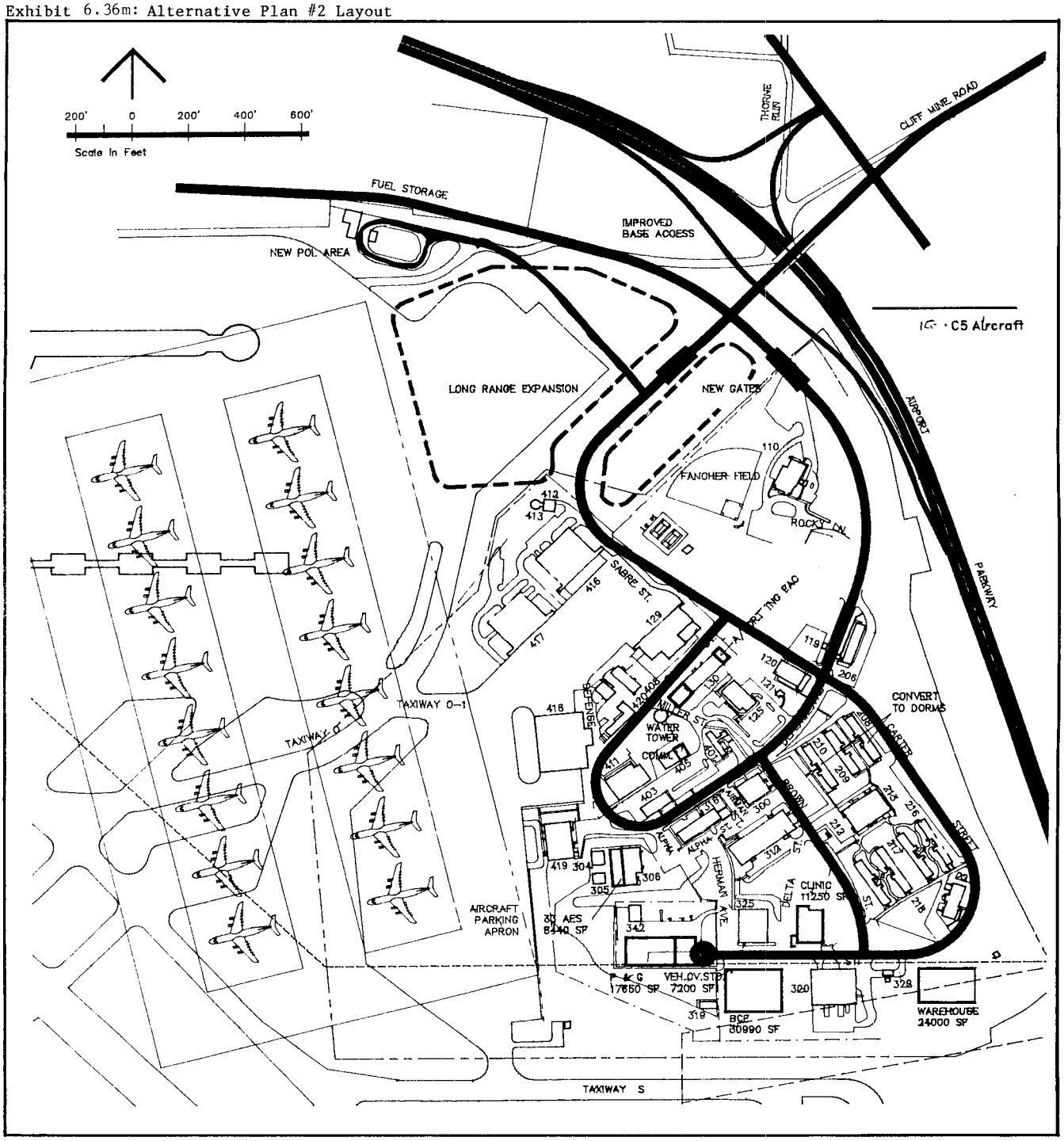
...New POL Area would use a GPIA facility.

...An Additional Gate/Entry Road are proposed.

...The Interior Circulation System is revised to provide greater continuity, lesser grades, and improved safety.

...Facility Expansion Areas are established on each site of the new entry road, and on GPIA land. The area to the north of the new road would adjoin the POL area and be excellent for other Industrial or O&M use. The area to the south overlooks the ball-field, tennis courts, and Open Mess....and would make a good location for Administration or dormitory use.

Exhibit 6.36m: Alternative Plan #2 Layout



ALTERNATIVE PLAN #3

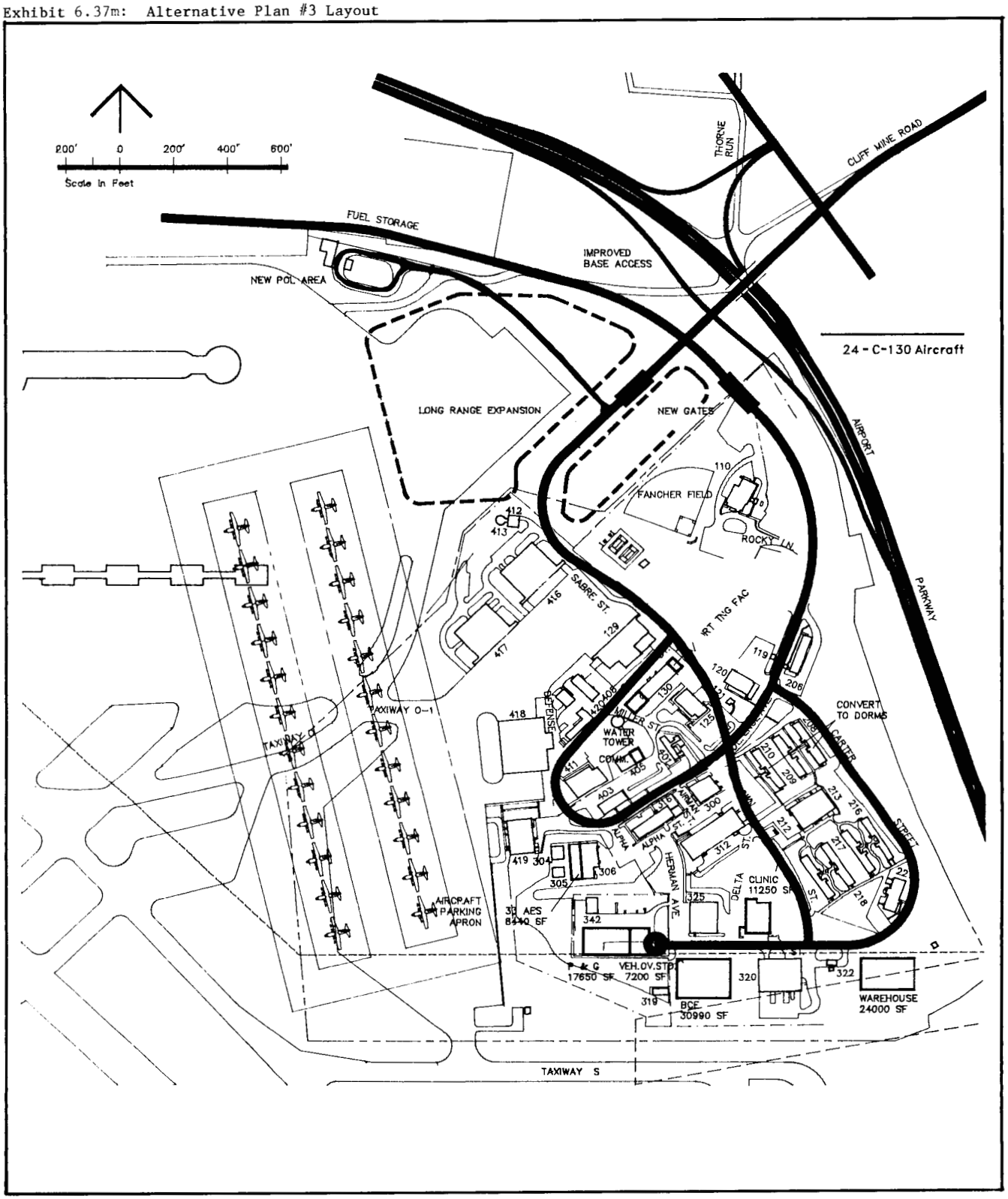
Alternative #3 is exactly like the previous plan except that the parking apron layout is for C-130s rather than C-5 aircraft....and a Brown Street/Sabre Street connection is made.

The basic differences between the aprons for the two aircraft types are:

...The 24 spaces for the C-130 aircraft require approximately 42 acres; while

...The 16 spaces for the C-5A require 79 acres.... almost twice as much as for the C-130s.

Exhibit 6.37m: Alternative Plan #3 Layout



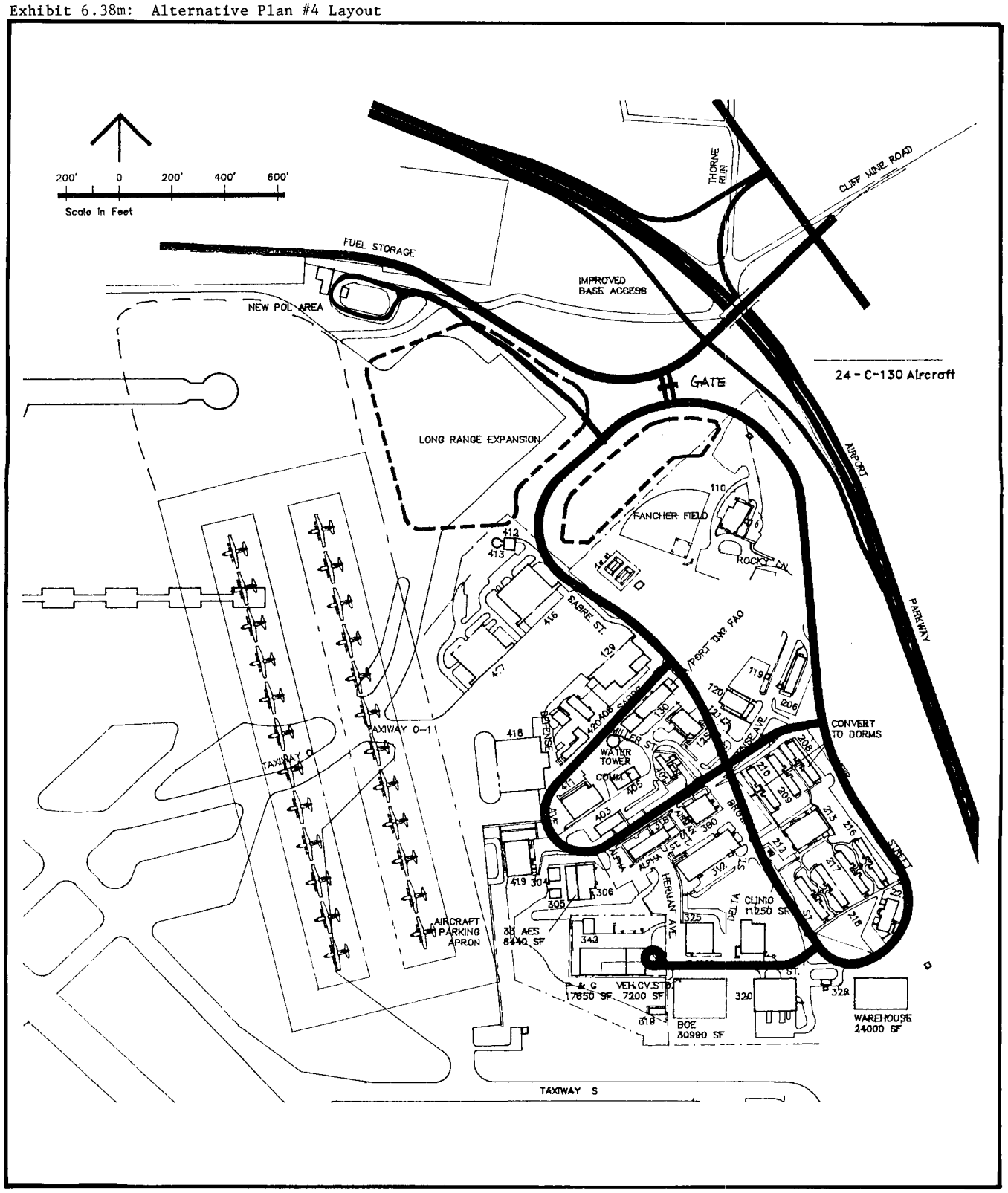
ALTERNATIVE PLAN #4

Alternative #4 is the same as #3 except for two major differences in the street circulation system.

...One New Entry Gate (rather than two) results from this new design.

...A Base Loop Road replaces the previous design by swinging behind building 206 into Carter Street, then connecting Brown to Sabre and back to the new Entry Gates.

Exhibit 6.38m: Alternative Plan #4 Layout



ALTERNATIVE PLAN #5

Alternative #5 has three major differences from the previous alternatives.

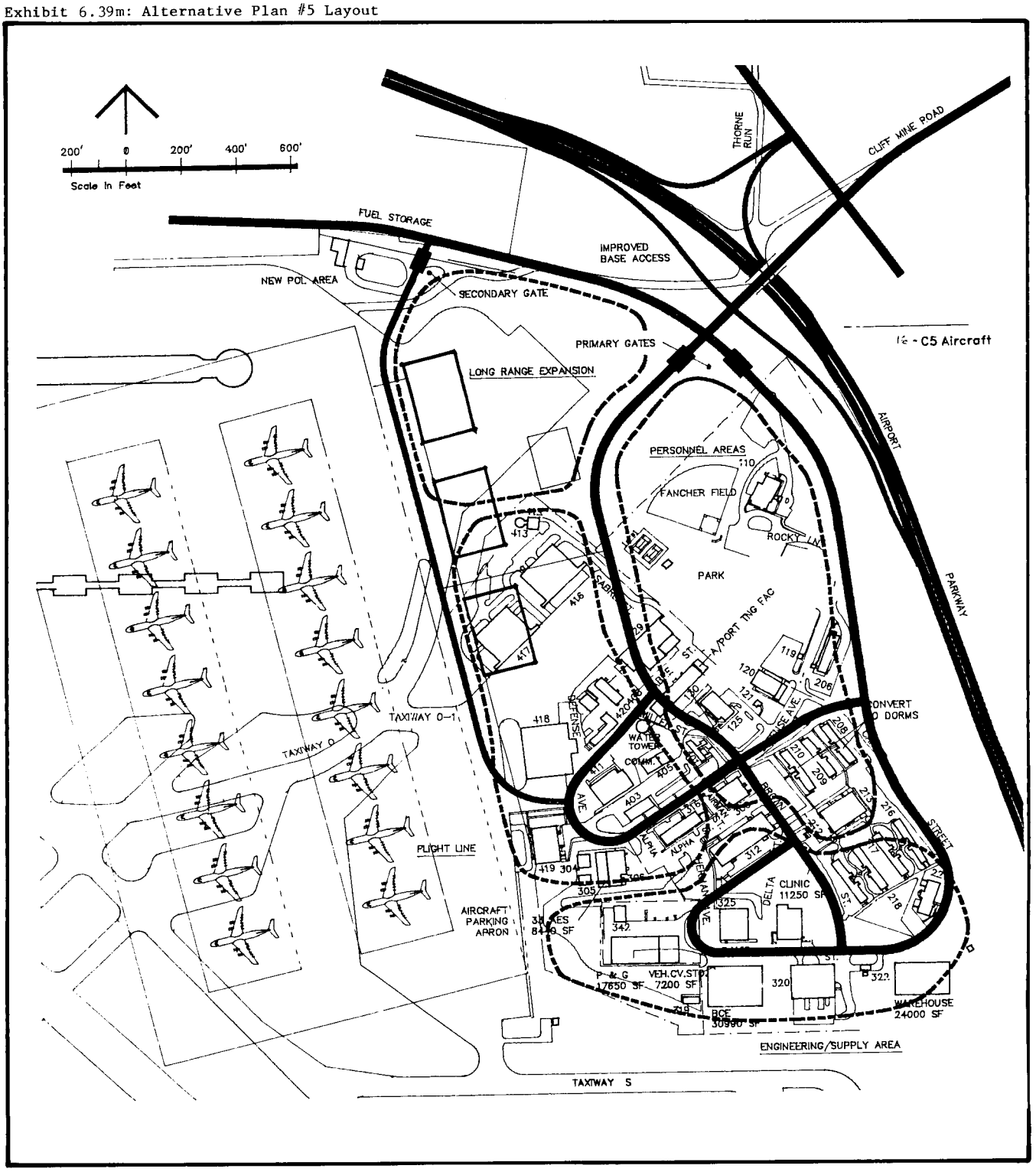
...New Hangars are laid out parallel to the new 79 acre apron for C-5s, with a service road in front. This would provide a much more efficient layout than the present hangar/apron relationship.

...Existing Hangars would be converted to other uses (supply, warehouse, O&M, etc.)

...Davis Street would be looped back to Brown, rather than made a cul-de-sac.

...Brown/Sabre Connection would cut across existing Hangar apron.

Exhibit 6.39m: Alternative Plan #5 Layout



ALTERNATIVE PLAN #6

The major differences in Alternative #6 include:

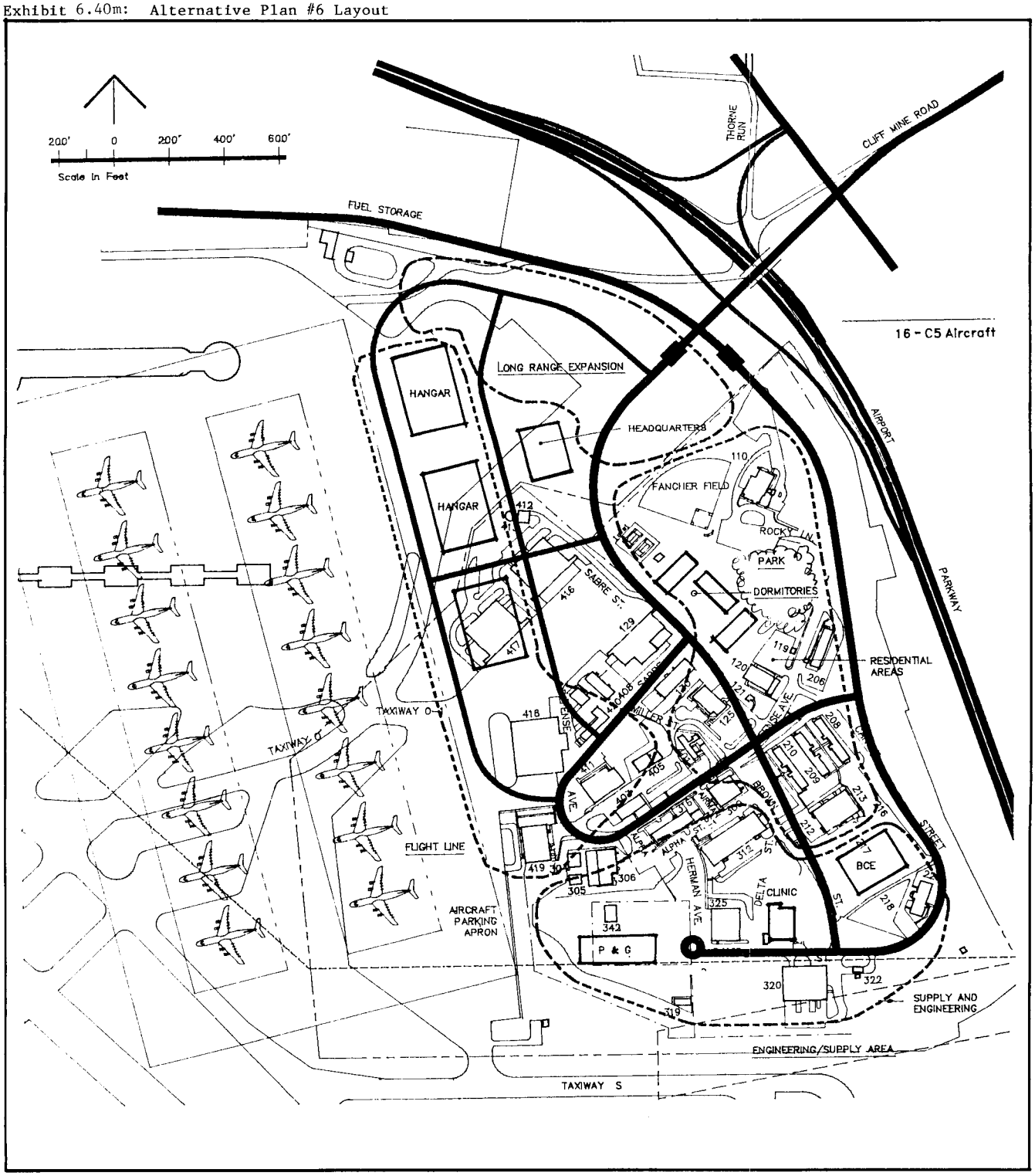
...Observe BRL - Observing the runway building restriction line along Davis Street eliminates the possibility of locating the new Warehouse, BCE, and other facilities south of Davis Street as previously shown.

...Supply/BCE area could be concentrated in far south of base, by displacing existing dorms closest to the runway with new BCE facility.

...New Dorms at old Fuel Truck site would overlook new Park on old POL site, bringing all of the housing/community facility areas in a closer relationship.

...New Headquarters/Future Expansion area in north portion of expanded base.

Exhibit 6.40m: Alternative Plan #6 Layout

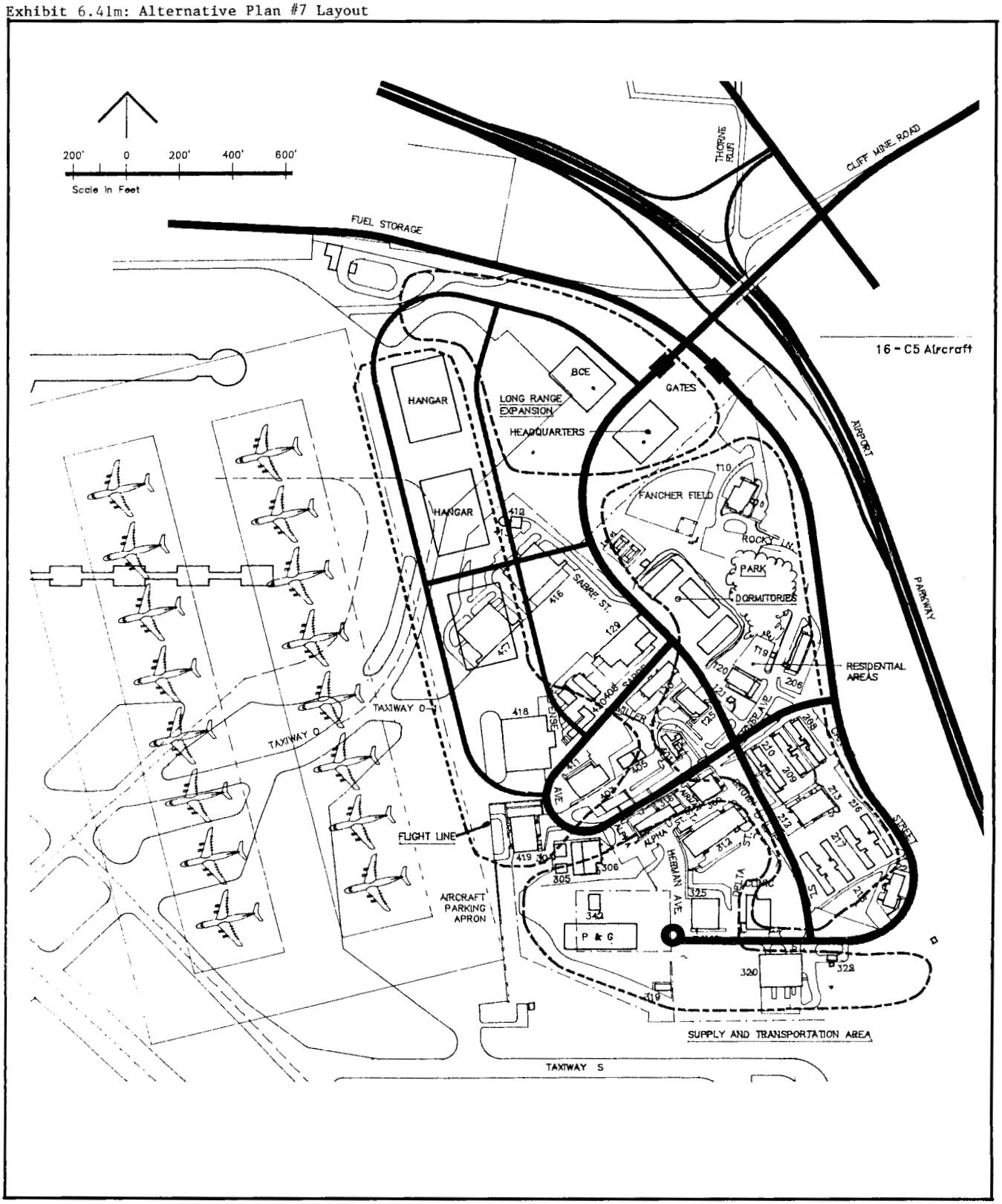


ALTERNATIVE PLAN #7

The seventh alternative is the same as #6 except for locations for the new BCE facility and a potential new Headquarters.

Both facilities take advantage of the new area north of the base if it could be acquired from the GPIA. Other potential uses in this area might be oriented to those needing a location as far as possible from the runway noise.

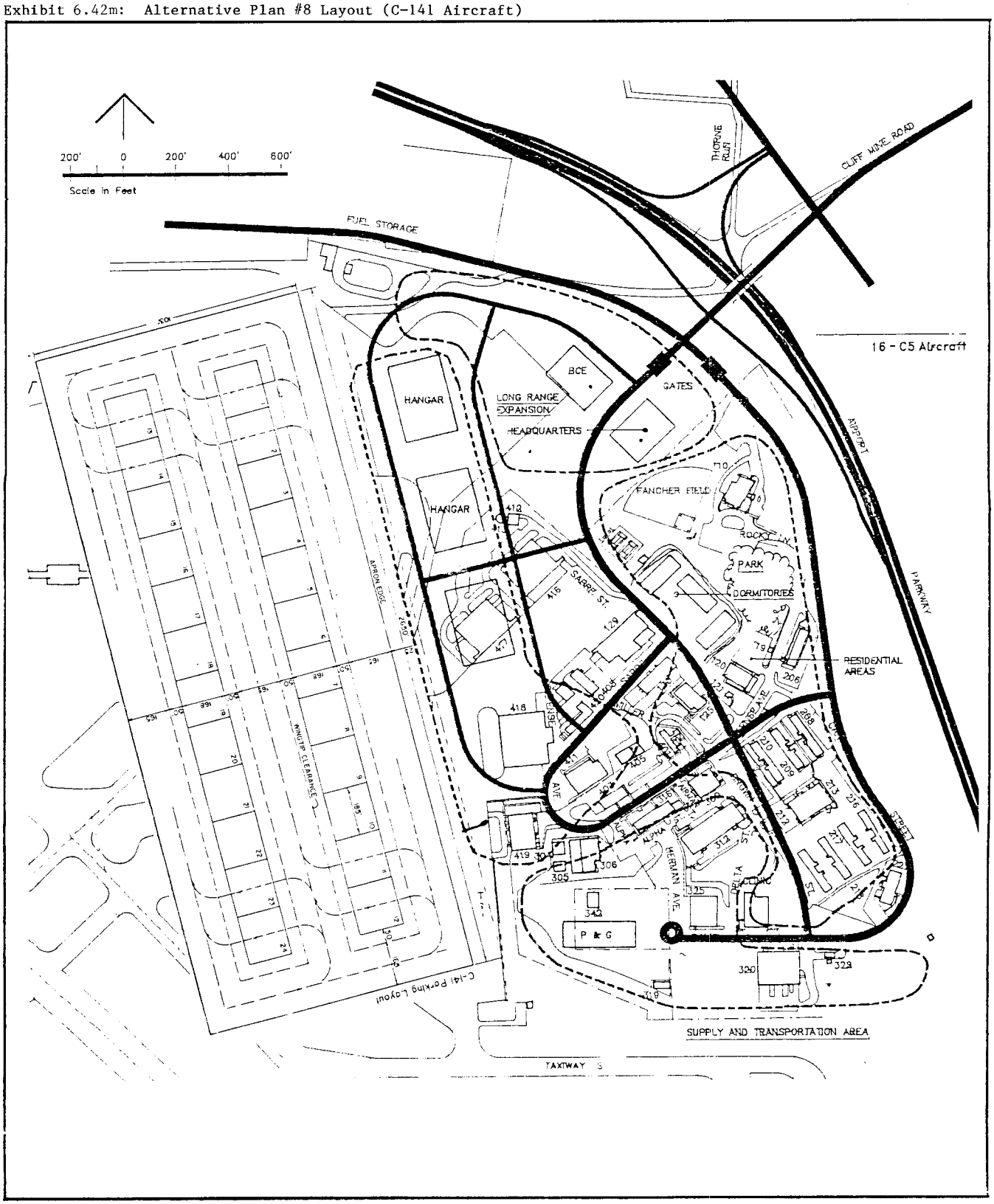
Exhibit 6.41m: Alternative Plan #7 Layout



ALTERNATIVE PLAN #8

This alternative is the same as the previous one, except that the parking apron generally is laid out to accommodate 24 C-141 aircraft. If this layout were to be further considered, the apron dimensions near the POL (to the north) and the taxiways to the south would require change.

Exhibit 6.42m: Alternative Plan #8 Layout (C-141 Aircraft)



EVALUATION OF ALTERNATIVES

The alternatives developed thus far require the making of several decisions. These decisions can then be used as a basis for developing one or more further refined alternatives....a process that can be repeated until the desired plan is achieved. Decisions needed on the present alternatives are outlined below.

Exhibit 6.43t: Framework For Decisions On Alternatives

APRON LAYOUT	1..What apron layout is preferred?	..Layouts shown on pp 6-18 through 6-29 for C-5, C-130, C-141: a...Rows perpendicular to RW 14L/32R b...Rows perpendicular to RW 10R/28L c...Rows parallel to RW 14L/32R d...Use of Existing GPIA Terminal
		..Preferred is "b", where rows are perpendicular to RW 10R/28L, ..Apron aircraft parking is close to RW ..Opens new land for buildings near new interchange, far from runway noise.
	2..GPIA Terminal Building use?	..Evaluation of this possibility would require considerably more study time, especially from an architectural standpoint.
	3..Aircraft Type?	..Preferred would be to reserve for C-5, as largest aircraft.
EXTERIOR ACCESS	4..What exterior access/gate preference?	a..One gate and entry (#1) b..Two gates on loop road (#2, etc.) c..One gate on loop road (#4) d..Two gates on two roads (not shown)
INTERIOR CIRCULATION	5..Street location @ Building 206?	a..In front of 206 (#1,2,3) b..Behind 206 (#4,5,6,7,8)
	6..Street design at Davis-Herman?	a..Stay as is (#1) b..Cul-de-sac (2,3,4,6,7,8) c..Loop (#5)
	7..Street design at Davis-Brown??	a..Stay as is (all, except #4) b..Loop (#4)
	8..Street design in existing hangar area?	a..Front of gym (2). No, too steep. b..East of Avionics (3,4,6,7,8). Steep, but?? c..Through hangar (5)
	9..Street design in new hangar area?	a..No change (1,2,3,4) b..New government roads only (5,6,7,8)
BUILDING AND FACILITY SITES	10..Runway Lateral Clearance Line Observance?	a..No buildings south of Davis Street RLCL (6,7,8) b..No buildings, but try to use for open storage, POV parking, etc. c..Try to continue using (1,2,3,4,5)
	11..Use of existing dormitories?	a..Leave as is. b..Leave as is, except convert 208, 210 to dorms. c..Close 4 dorms nearest RW and use area for other purposes. d..Add new dorms where fuel trucks now park, or in area.
	12..Hangar facilities	a..Leave hangar situation as is (1,2,3,4) b..Plan for new hangars (5,6,7,8) c..If "b", what do with existing hangars
	13..What is priority for new land near interchange?	a..New HQs (7) b..New BCE/POL (7) c..New Dorms
	14..Preferred clinic location?	a..Leave at presently proposed site (1-8) b..Other site
	15..Water tank location?	a..Where presently proposed (1,2, etc.) b..Other site
	16..POL location?	a..Move to GPIA old POL (1-8) b..Other Site
	17..Park area?	a..Convert existing POL to park
	18..Veh. Maint. Fac.	a..Areas along Davis Street...or other?
	19..Warehousing	a..Areas along Davis Street...or other?
HQ AFRES guidance is required in regard to above alternatives.		
GPIA guidance also is required in regard to alternatives dependent upon use or acquisition of GPIA land.		

ALTERNATIVE #9

During the first half of March 1987, meetings were held at the base to review the alternatives previously described in this chapter. Attendance at the review sessions included representatives from the 911 TAG, HQ/AFRES, GPIA, County of Allegheny, and the consultant. From these sessions, a short range and a long range plan were selected, as described on the following pages.

SHORT RANGE PLAN

Proposals made for the short range plan are listed and located on these facing pages. They include:

...Demolition of existing buildings as shown below, is proposed primarily in the BCE and in order to make room for new BCE facilities.

...Additional land lease of ±14 acres would be requested from the GPIA officials for two purposes:

...Apron Expansion, as shown by the map on the next page, would permit the base to accommodate 14 C-130's on the aircraft parking apron.

Exh. 6.45t: List Of Short Range Facility Proposals

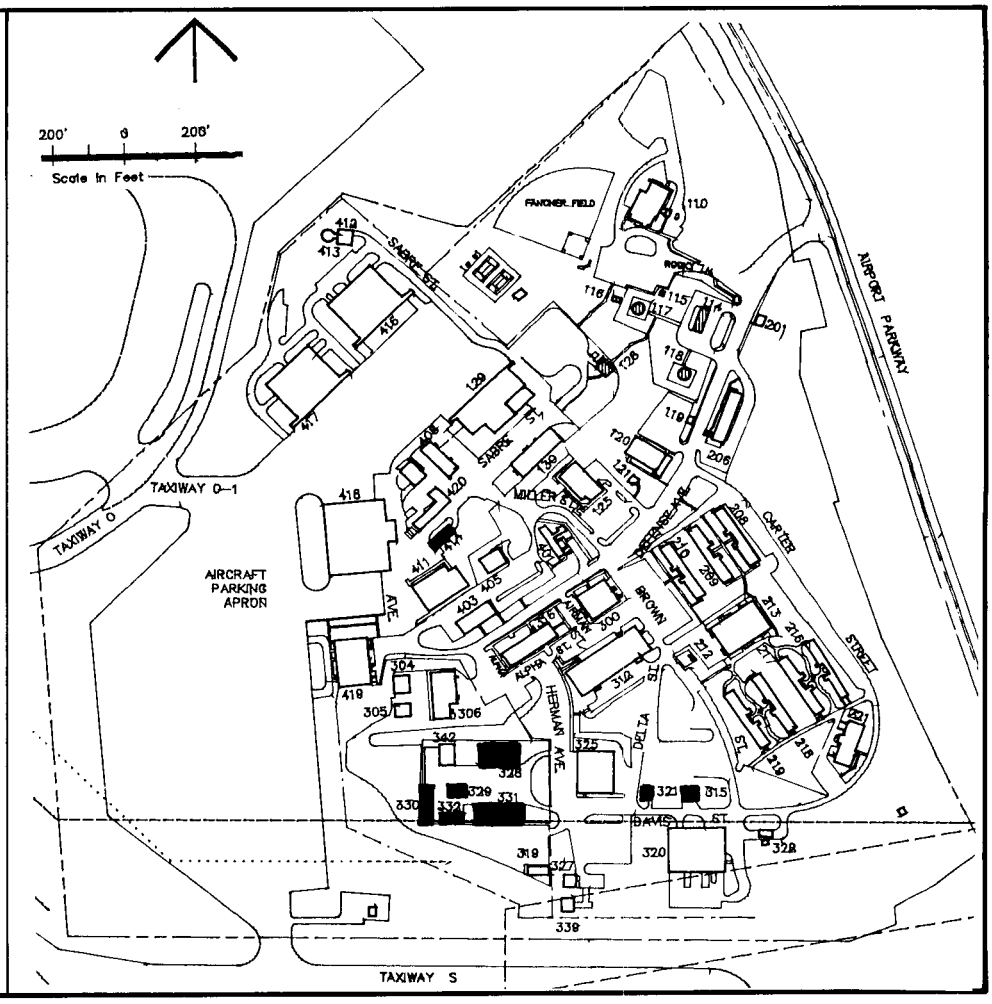
NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00130	F	171873	2	A/PORT TNG FAC ADDN	4600 SF		87
00405	F	131111	2	COMM FCLTY W/ADDN	1692 SF		88
00342	F	219946	3	BE STORAGE ADDN	1200 SF		88
____	F	730839	4	TRAFFIC CHK HSE	144 SF		88
____	F	841427	3	WATER STORAGE TANK		300 MG	89
____	F	851142	3	IMPR BASE ACCESS			89
____	F	510411	7	MED TRAINING CLINIC	11250 SF		90
____	F	171449	7	33RD AEROMED EVAC SQ	15000 SF		91
00221	R	171476	4	CONVERT:SM ARMS/WSSF	6173 SF	6173	91
____	F	179475	3	FIRING RANGE:OFFBASE		21 FP	91
____	J	219947	3	BCE STORAGE SHED	5840 SF		91
____	H	610127	3	BCE COMPLEX	30990 SF		91
____	J	610127	3	BCE OFFICES/SHOPS	25150 SF		91
____	F	113321	1	PARKING APRON EXPAN	40100 SY		92
____	F	442758	3	WAREHOUSE	24000 SF		92
____	F	171445	4	HEADQUARTERS BLDG	12000 SF		93
00320	R	214425	3	CONVERT TO VEH MAINT	18544 SF		93
00218	R	721315	9	VAQ - ALTER DORMS	12967 SF	56 PN	SR
00208	R	721315	9	CONVERT TO DORMS	12967 SF	56 PN	SR
00209	R	721315	9	VAQ - ALTER DORMS	12967 SF	56 PN	SR
00210	R	721315	9	CONV: VOQ/BILLETING	12967 SF	56 PN	SR
00216	R	721315	9	VAQ - ALTER DORMS	12967 SF	56 PN	SR
00217	R	721315	9	VAQ - ALTER DORMS	12967 SF	56 PN	SR
00219	R	721315	9	VAQ - ALTER DORMS	12967 SF	56 PN	SR
00206	R	_____	4	CONV: SP/RECRUITING	12095 SF		SR

Exhibit 6.44m: Short Range Demolition Proposals

...Location of proposed demolitions..... (shown in red)

...List of Demolitions

NUM	AFC	FACILITY	AREA
00315	2	SQ OPS	1000 SF
00321	3	SHED SUP&EQUIP BSE	462 SF
00328	3	BSE ENGR ADMIN	4800 SF
00329	3	BE MAINT SHP	1221 SF
00330	3	BE STOR SHED	1822 SF
00331	3	BE MAINT SHP	5166 SF
00332	3	BE STOR CV FCLTY	1200 SF
00414	2	SHP A/M ORGL	1637 SF



...Entry Area Expansion would occur near the proposed interchange at the Airport Parkway. It would permit a new Entry Gate and base access, and new facilities for the 911th TAG headquarters, clinic, and the Aeromedical Evacuation Squadron.

...Base Civil Engineer facilities would be constructed in the existing BCE area, with only open storage permitted south of the RW building restriction line.

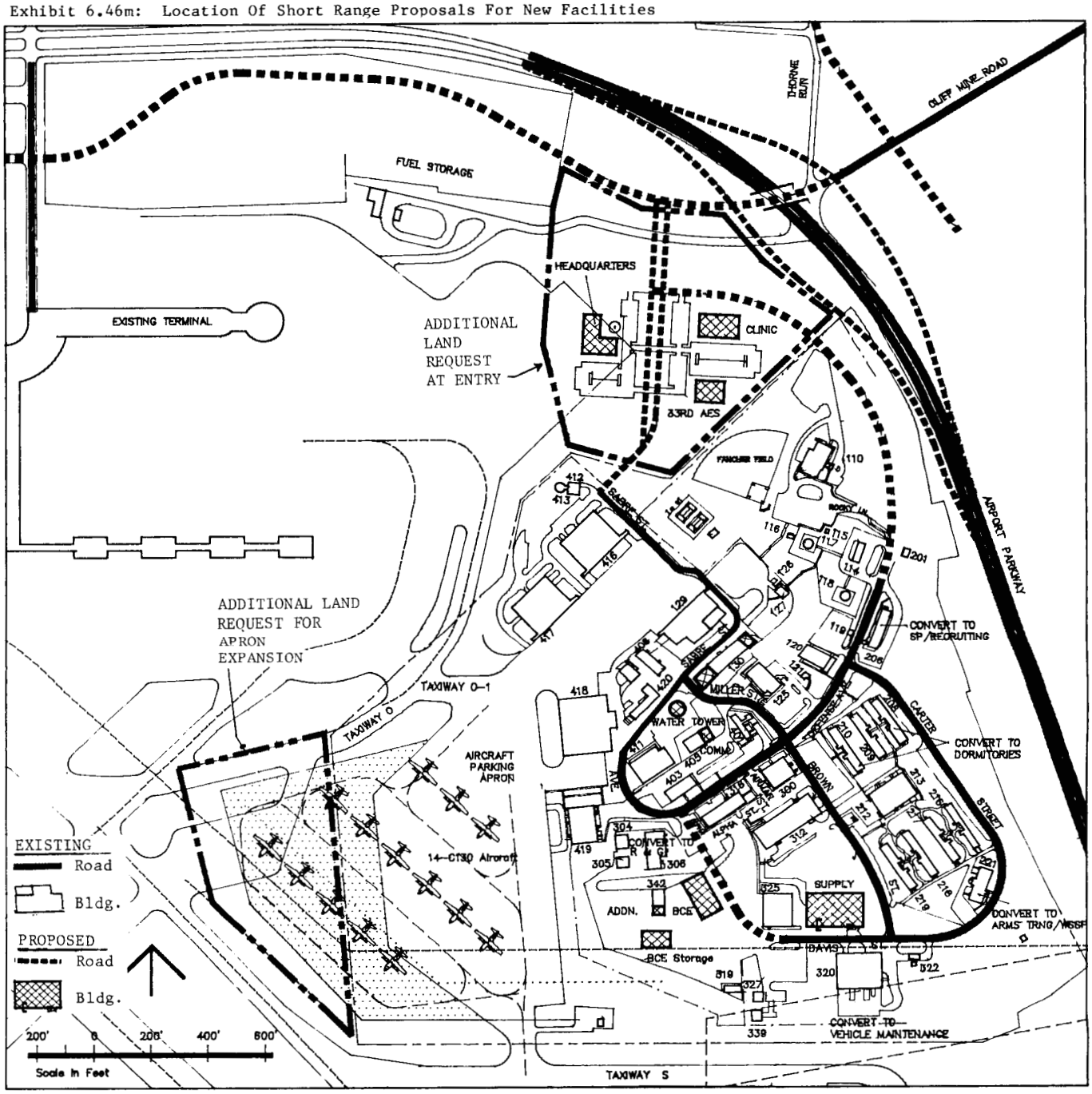
...A new Supply facility would be built on the north side of Davis Street. This would permit a concentration of Supply activities in the area, with building 312 and adjacent open space.

...Vehicle Maintenance would take over the previous Supply facility on the south side of Davis Street. Adjacent open area, within the runway building restriction line, would be used only for open storage.

...Dormitories would be affected by three changes:

...Dorm #206 would be converted for use by Security Police and Recruiting activities.
...Buildings #208 and 210 would be converted from administrative to dormitory use.
...Five other dorms would receive alterations to improve their usability.

Exhibit 6.46m: Location Of Short Range Proposals For New Facilities



LONG RANGE PLAN

The long range plan proposals for the Pittsburgh AFRES base are described by the tables and maps on these facing pages, and the following text.

...GPIA New Terminal - The major changes proposed for the AFRES base are dependent upon the GPIA construction of its new passenger terminal...thereby leaving its existing facility and apron available for another use.

...Additional Land Lease of ±53 acres would be requested from the GPIA officials after their terminal activities are moved. Added to the previous 14 acre short range request, the total added lease would be 67 acres.

Exhibit 6.47t: List Of Proposed Demolitions

NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00114	A	125977	3	PMP STN, LF	1538 SF		53
00115	A	811149	3	ELEC PWR STN BLDG	240 SF		71
00116	A	125977	3	PMP STN, LF	280 SF		58
00117	V	411135	3	STOR, JET FL		2914 BL	55
00118	V	411135	3	STOR, JET FL		4381 BL	54
00126	A	442628	3	SHED SUP&EQUIP BSE	240 SF		85
00127	A	121111	3	PETROL OPS BLDG	1200 SF		79

...Demolition of existing buildings, as shown below, would pertain to the existing POL facilities after their replacement by the new facility.

...Apron Expansion, as shown by the map to the right, would permit the base to accommodate 14 C-17's on its aircraft parking apron, as well as some transient aircraft.

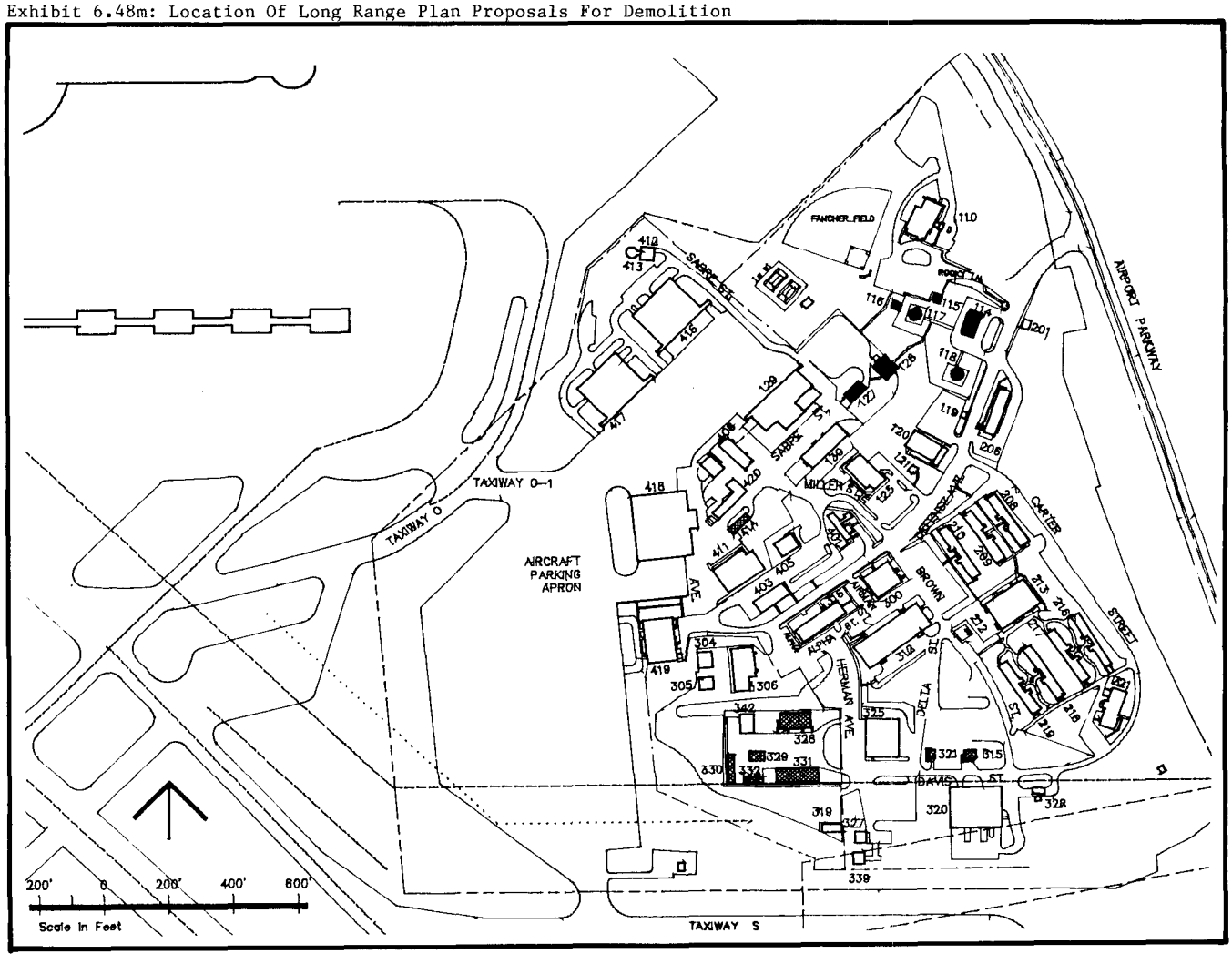
...New Maintenance Hangars - To accommodate the C-17 aircraft, larger hangars would be required. The plan to the right would provide three such facilities adjacent to the new apron.

...A two bay hangar,
...A single bay hangar, and
...A fuel system maintenance dock.

...POL - The new POL would make use of an existing GPIA facility that they would not require in the future. This would permit demolition of the existing base POL, and conversion of that area to a park and recreation use.

...Recreation - With conversion of the POL to a park use, a concentration of recreation/park space would occupy the area from Fancher Field and tennis courts around to the gymnasium on Defense Avenue....and adjacent to the dormitories.

Exhibit 6.48m: Location Of Long Range Plan Proposals For Demolition



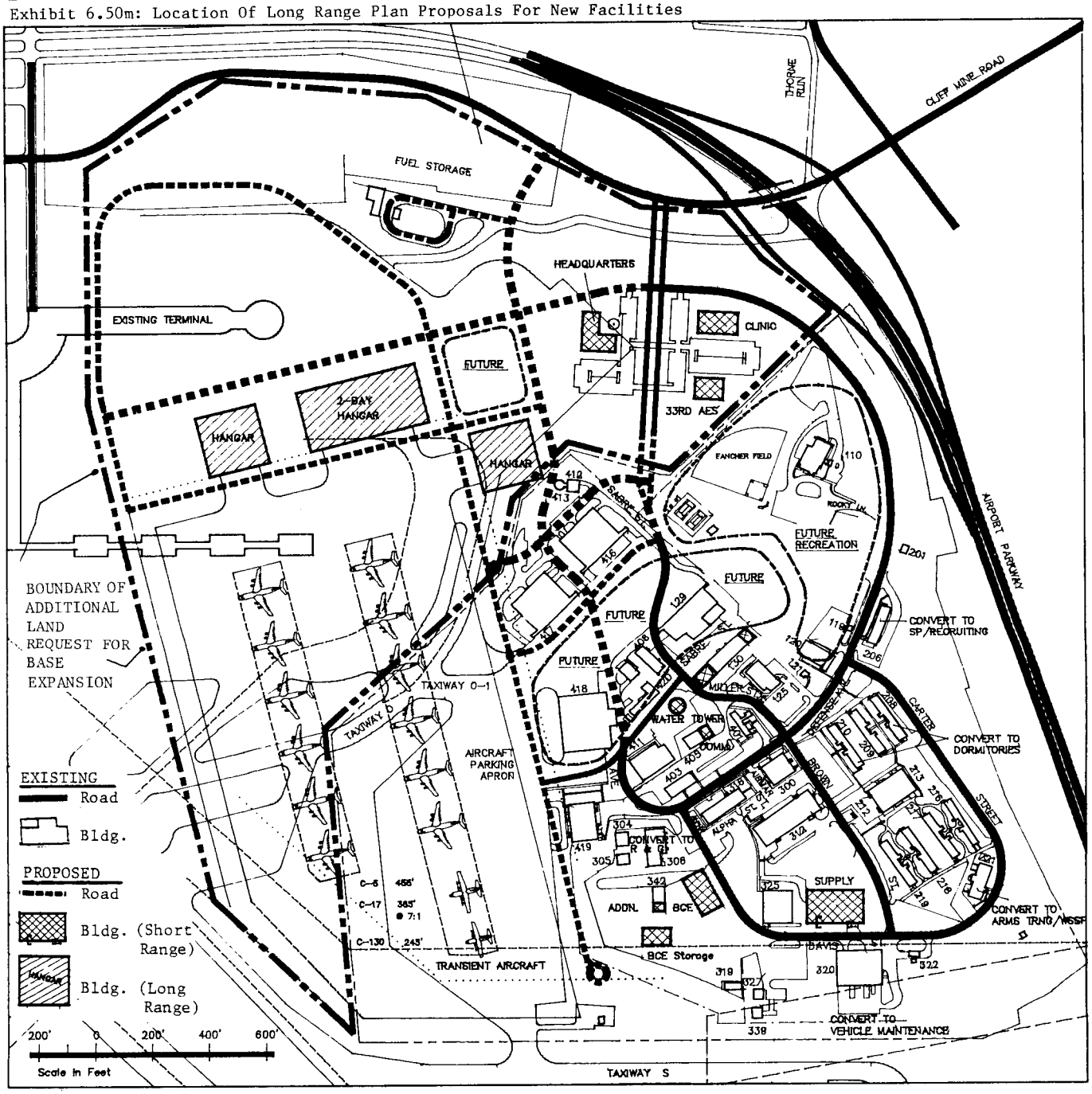
...Sites for additional future expansion also would be available in several locations.

Exhibit 6.49t: Listing Of Proposed New Facilities

NUM	CTL	CATCODE	AFC	FACILITY	AREA
____	G	113321	1	PARKING APRON EXPAN	115700 SY
____	F	123335	3	RELOCATE POL	
____	F	179511	3	FIRE TRNG FAC	SF
____	F	211111	2	HG MAINT-2 BAY	80000 SF
____	F	211111	2	HG MAINT	40000 SF
____	F	211179	2	MAINT DOCK, FL SYS	40000 SF
____	F	214426	3	VEH OPS HEATED PKG	7200 SF
____	F	730142	3	FIRE STATION	5850 SF

Exhibit 6.51p: Expansion Into GPIA Terminal Area

Exhibit 6.50m: Location Of Long Range Plan Proposals For New Facilities



ALTERNATIVE #10

From March to September of 1987, additional review was given to the alternatives by the 911 TAG, HQ/AFRES, GPIA, County of Allegheny, and the consultant. As a result, revised short and long range plans were selected, as described on the following pages.

SHORT RANGE PLAN

Proposals made for the short range plan are listed and located on these facing pages. They include:

...Demolition of existing buildings, as shown below, is proposed primarily in the BCE area and the General Purpose Shops (Building 418) area in order to provide space for new buildings.

...Two additional land areas, with a total of +9 acres, would be requested for leasing from the GPIA, as shown by the map on the next page.

...Apron expansion would occur on the added parcel to the west, permitting the 911 TAG to expand from the present eight C-130's to 16 C-130's, with four hangar positions (including a new hangar) and at least 12 apron positions. If the

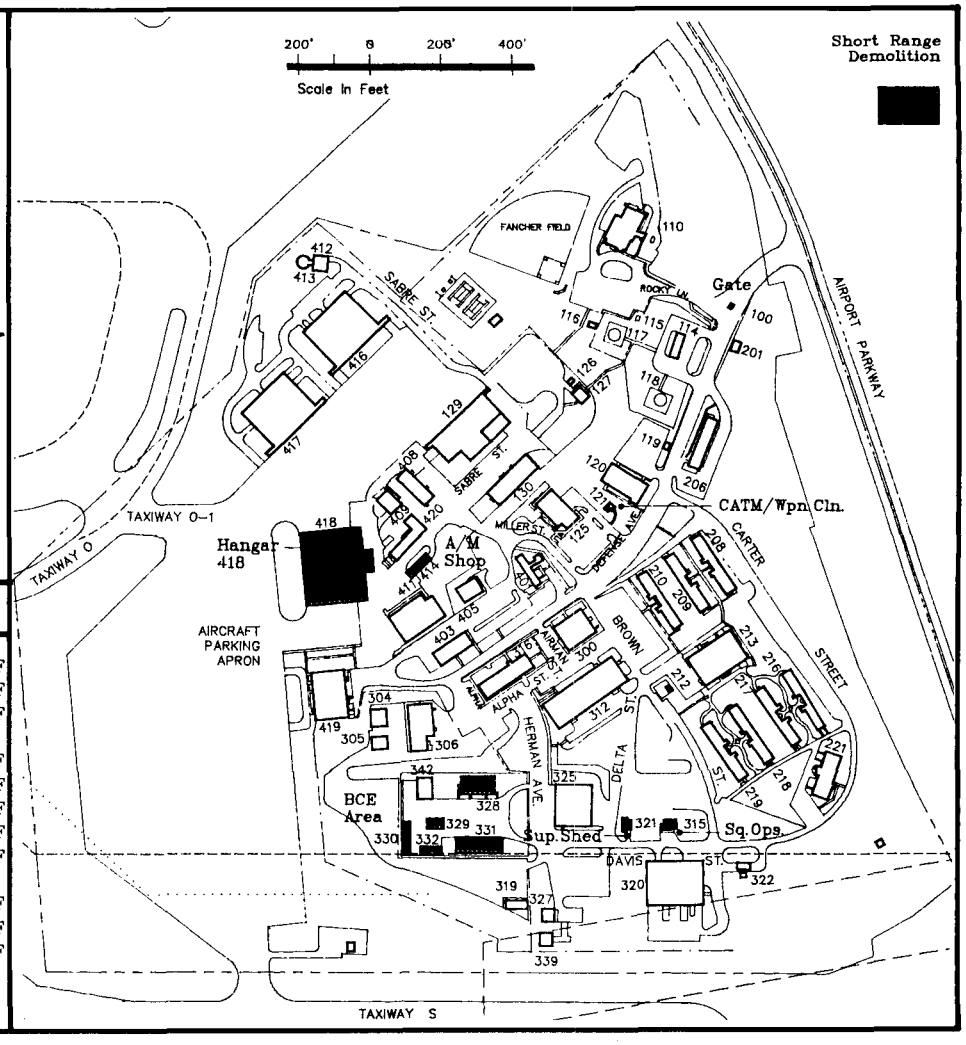
Exh. 6.53t:List Of Short Range New Facility Proposals

NUM	AFC	FACILITY	AREA	OTHER	YC
	1	PARKING APRON EXPAN	40100 SY		92
00130	2	A/PORT TNG FAC ADDN	4600 SF		87
00405	2	COMM FCLTY W/ADDN	1692 SF		90
	2	HANGAR/SHOPS/DCM*	49000 SF		92
	7	33RD AEROMED EVAC SQ	15000 SF		92
00342	3	BE STORAGE ADDN	1200 SF		88
	3	MASK CONFIDENCE BLDG	600 SF		89
	3	ATV STORAGE/WSSF	462 SF		89
	3	IMPR BASE ACCESS			89
	3	WATER STORAGE TANK		300 MG	89
	3	BCE COMPLEX	27600 SF		91
	3	FIRING RANGE:OFFBASE		21 FP	91
	4	TRAFFIC CHK HSE	144 SF		89
00221	4	CONVERT:SM ARMS/WSSF	6173 SF	6173	92
00120	5	GYMNASIUM ADDITION	2500 SF		87
	7	MED TRAINING CLINIC	11250 SF		90
00219	9	CONVERT TO VOQ	12967 SF	56 PN	90
00218	9	CONVERT TO VOQ	12967 SF	56 PN	91
00217	9	UPGRADE VAQ	12967 SF	56 PN	92

*New 49,000 SF hangar includes:
...25,000 SF hangar area @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF admin. @ 50' x 160' on 2nd floor

Exhibit 6.52m: Short Range Demolition Proposals

...Location of proposals →



...List of Demolitions

NUM	AFC	FACILITY	AREA
00100	4	TRAFFIC CHK HSE	144 SF
00121	3	CATM/WPN CLN	218 SF
00315	2	SQ OPS	1000 SF
00321	3	SHED SUP&EQUIP BSE	462 SF
00328	3	BE ADMIN	4800 SF
00329	3	BE MAINT SHP	1221 SF
00330	3	BE STOR SHED	1822 SF
00331	3	BE MAINT SHP	5166 SF
00332	3	BE STOR CV FCLTY	1200 SF
00414	2	SHP A/M ORGL	1637 SF
00418	2	ACFT MAINT SHP	48793 SF

new C-130's were assigned in units of four, less expansion area would be required initially from the GPIA.

...A new Entry Area would be built on the second added tract, with access coming from the new Airport Parkway interchange at Thorn Run Road. The new Entry Road would connect with Defense Avenue near the POL. The existing entrance would then be closed since its land area would be required for one of the new interchange ramps.

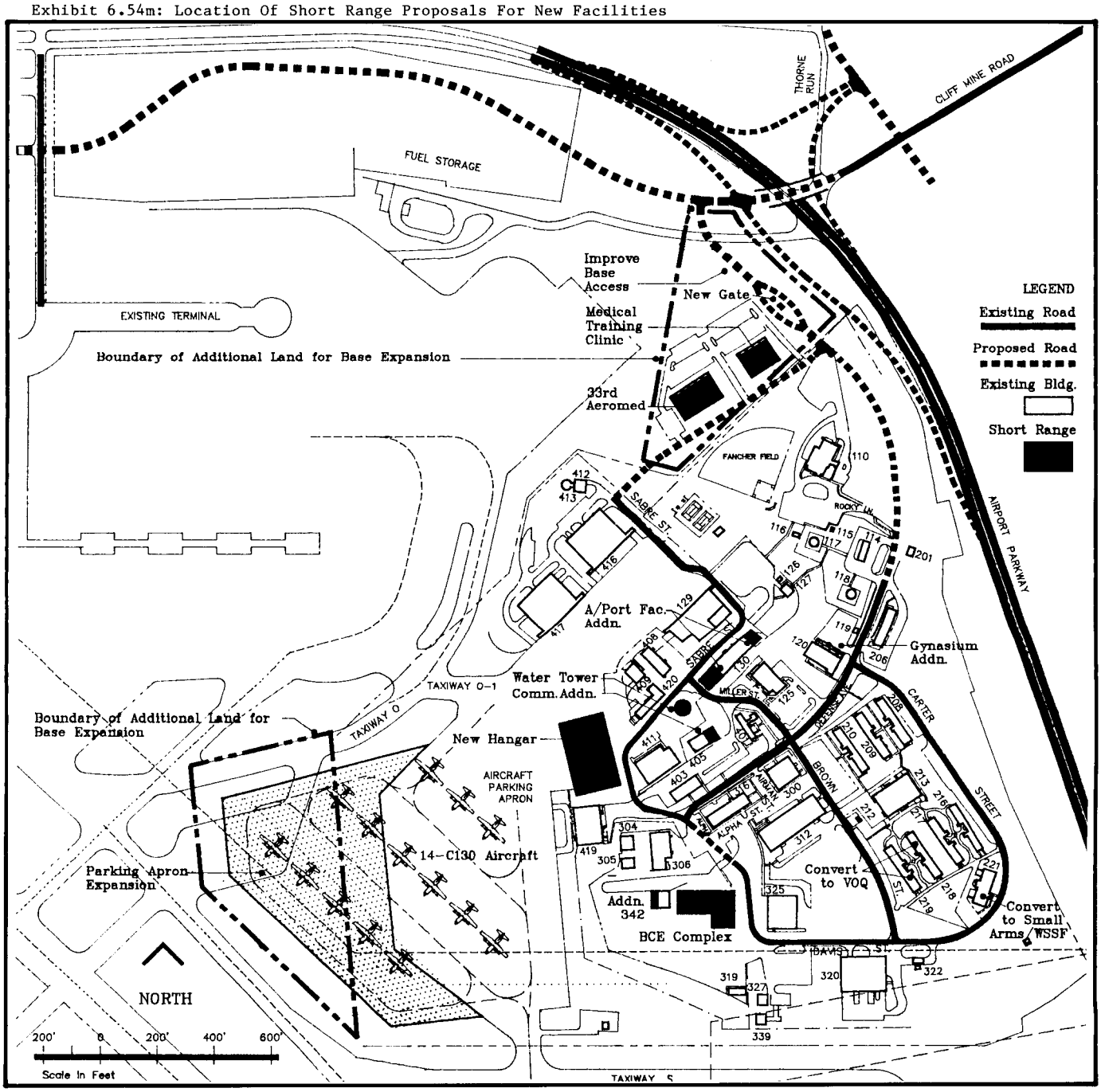
...A new Clinic and 33rd AES facility also would be built on the second tract, with access coming from a new road connecting the Entry Area with Sabre Street.

...A new BCE facility, with two stories, would be constructed in the existing BCE area. Only open storage for the BCE facility would be permitted south of the RW building restriction line.

...A new Hangar with shops and DCM space would be built on the site of demolished building 418. The new hangar would be required to service the C-130 expansion to 16 aircraft.

...Other proposals include altering buildings 218 and 219 for VOQ use, and upgrading 217 as a VAQ facility. Building 221 will be converted for Small Arms/WSSF use.

Exhibit 6.54m: Location Of Short Range Proposals For New Facilities



LONG RANGE PLAN

The long range plan proposals for the Pittsburgh AFRES base are described by the text, tables, and maps on these facing pages.

...GPIA New Terminal - The major changes proposed for the AFRES base are dependent upon the GPIA construction of its new passenger terminal on airport land to the west....,thereby leaving its existing terminal and apron available for another use.

...An Additional Land Lease of ±85 acres would be requested from the GPIA officials after their terminal activities are moved. Added to the previous ±9 acres requested for short range needs, the total added lease area would be ±94 acres....only slightly less than the existing AFRES area of 105.7 acres.

If less than the ±85 acres were to be available, a second option, using only ±58 additional acres, would exclude the land north of the AFRES future apron and fuel storage area (see Exh. 6.58m and 6.59m).

...New Aircraft - The major purpose for leasing more land from the GPIA would be to permit the 911 TAG to accommodate a new and larger aircraft, such as 16 C-141's or 12 C-17's.

...Apron Expansion, as shown by the map to the right, to accommodate 16 C-141's would require a 991' x 1,910' area (or 43.5 acres) plus space for two transient aircraft. An apron for 12 C-17's would require a 1,005' x 1,540 area (or 36 acres) plus space for two transient aircraft. The apron area could be reduced to the extent that hangar space is used for aircraft parking.

...Maintenance Hangar Expansion - To accommodate the larger aircraft, existing hangars (129, 416, 417, and the new hangar built as part of the short range plan) would have to be expanded and/or new hangars constructed. The required hangars would provide for scheduled maintenance, unscheduled maintenance, and a fuel cell dock. The hangars could fully enclose the aircraft or act as nose docks with the aircraft tail sticking out. The 16 C-141's would require four hangars, while the 12 C-17's would require only three.

...New AGE, etc. - To replace the demolished buildings 408, 409, and 420, a new facility would be built to house AGE, NDI, and the survival equipment shop for a total of approximately 12,000 square feet. As another alternative, existing hangar 129 might be used for these three functions if it's not required for continued use as a hangar.

...POL - The new POL would make use of the existing GPIA facility to the north, and permit demolition of the present POL and converting its area to landscaping and recreation. If the GPIA facility were not used for any reason, the existing POL would have to be expanded and upgraded as a second choice.

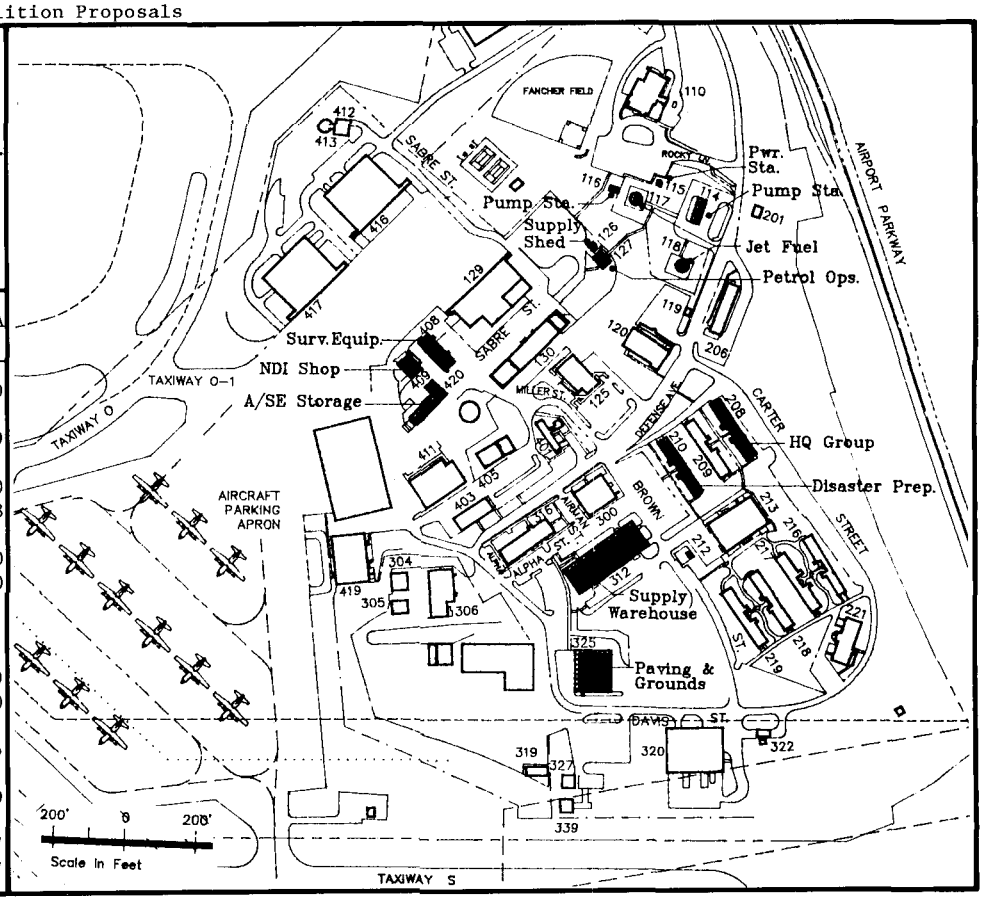
...Supply, BCE, etc. - In the southern part of the base, three activities would be allocated larger and more efficient work areas: (1) the existing Supply Building (320) would be converted to vehicle maintenance and vehicle covered storage with open storage yards adjacent; (2) the existing vehicle maintenance buildings (304,305,308) would be converted to use by BCE Roads and Grounds, adjacent to the other BCE facilities; and (3) a new Supply facility would be built opposite building 320, and the area to the west

Exhibit 6.55m: Long Range Demolition Proposals

...Location of demolition proposals →

...Listing of demolition proposals

NUM	AFC	FACILITY	AREA SF
408	2	SHP SURV EQUIP	4400
409	2	SHP NON-DESTR INSP	2699
420	2	SHP A/SE STOR FCLT	4500
114	3	PMP STN, LF	1538
115	3	ELEC PWR STN BLDG	240
116	3	PMP STN, LF	280
117	3	STOR, JET FL	
118	3	STOR, JET FL	
126	3	SHED SUP&EQUIP BSE	240
127	3	PETROL OPS BLDG	1200
312	3	WHSE SUP&EQUIP BSE	19656
325	3	BE PAV GRND FCLTY	12269
208	4	HQ GROUP (RECRUIT)	12967
210	4	CONTRACT & DP	12967



and north (where buildings 312 and 325 have been demolished) will be used for open storage.

...Upgrade 208, 209, 210 area by (1) demolishing building 208 and developing a POV parking lot; (2) upgrading building 209, VAQ; and (3) demolish 210, and replace it on site with a new administration building.

...Access & Street improvements would include a second gate, for emergency use, north of the new POL; new government vehicle only roads along the expanded apron, and new POV roads in the expansion area.

...Demolitions are listed and located to the left.
...Future expansion areas exist to the north.

Exhibit 6.57t: List Of Long Range Proposals

NUM	AFC	FACILITY	AREA
	1	PARKING APRON EXPAN	115700 SY
129	2	HANGAR ADDITION	8200 SF
416	2	HANGAR ADDITION	8200 SF
417	2	HANGAR ADDITION	14350 SF
	2	SR HANGAR ADDITION	8200 SF
	2	NDI/AGE/SURV EQUIP	12000 SF
304	3	CONVERT TO BE PAV/GR	2000 SF
305	3	CONVERT TO BE PAV/GR	1767 SF
306	3	CONVERT TO BE PAV/GR	8440 SF
320	3	CONV VEH MAINT/STOR	18544 SF
	3	SUPPLY ADM/WHSE	42000 SF
	3	REPLACE POL	
206	4	CONV: SP/RECRUITING	12095 SF
	4	ADMIN FACIL	13000 SF
	5	EMERGENCY GATE	
209	9	UPGRADE VAQ	12967 SF
216	9	UPGRADE VAQ	12967 SF

Exhibit 6.56m: Long Range New Facilities Proposals

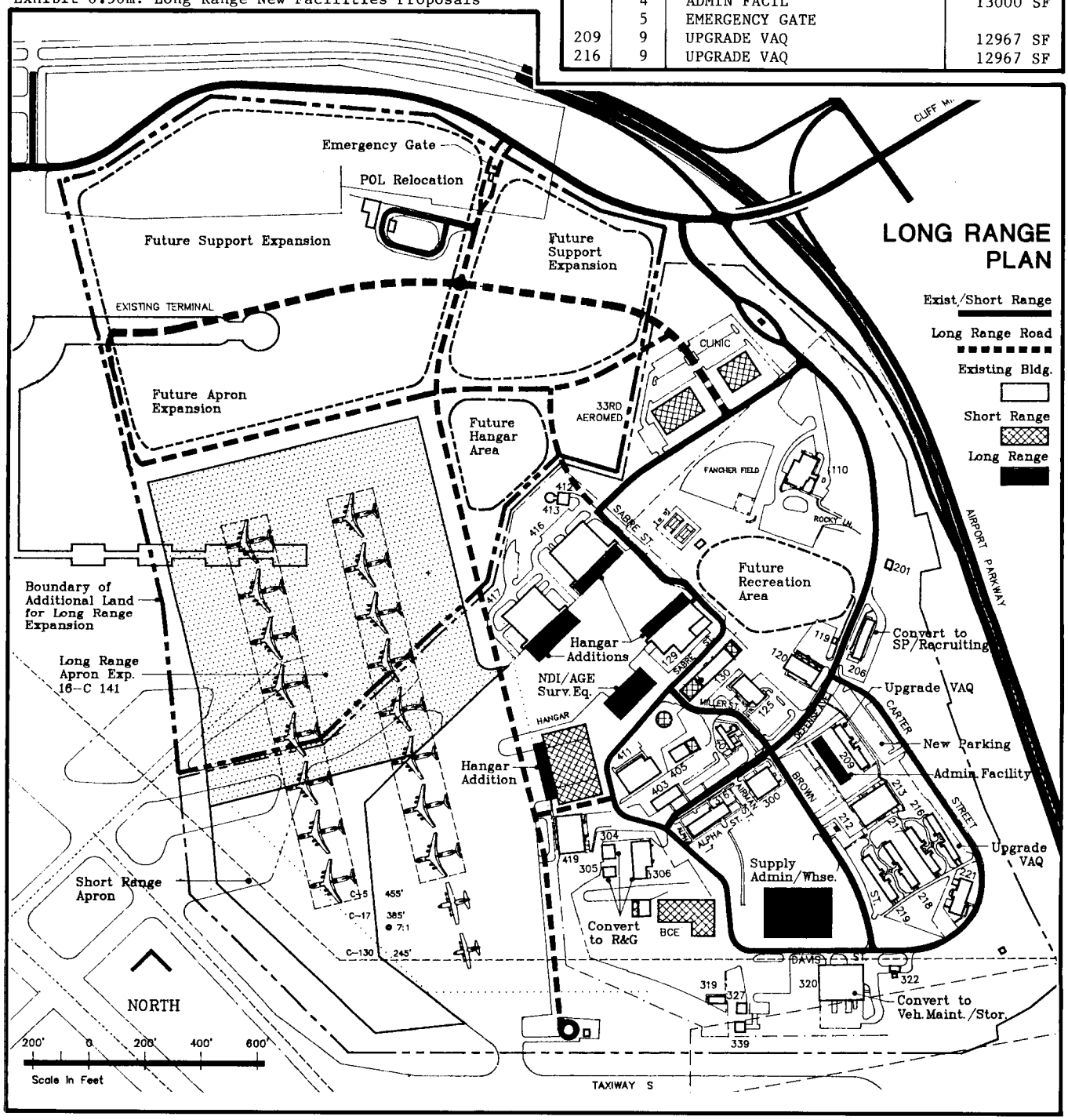


Exhibit 6.58m: Option #1: Boundary For Long Range Plan

...In Long Range Plan Option #1, it is assumed that the AFRES expansion could extend northward almost to the Airport Parkway

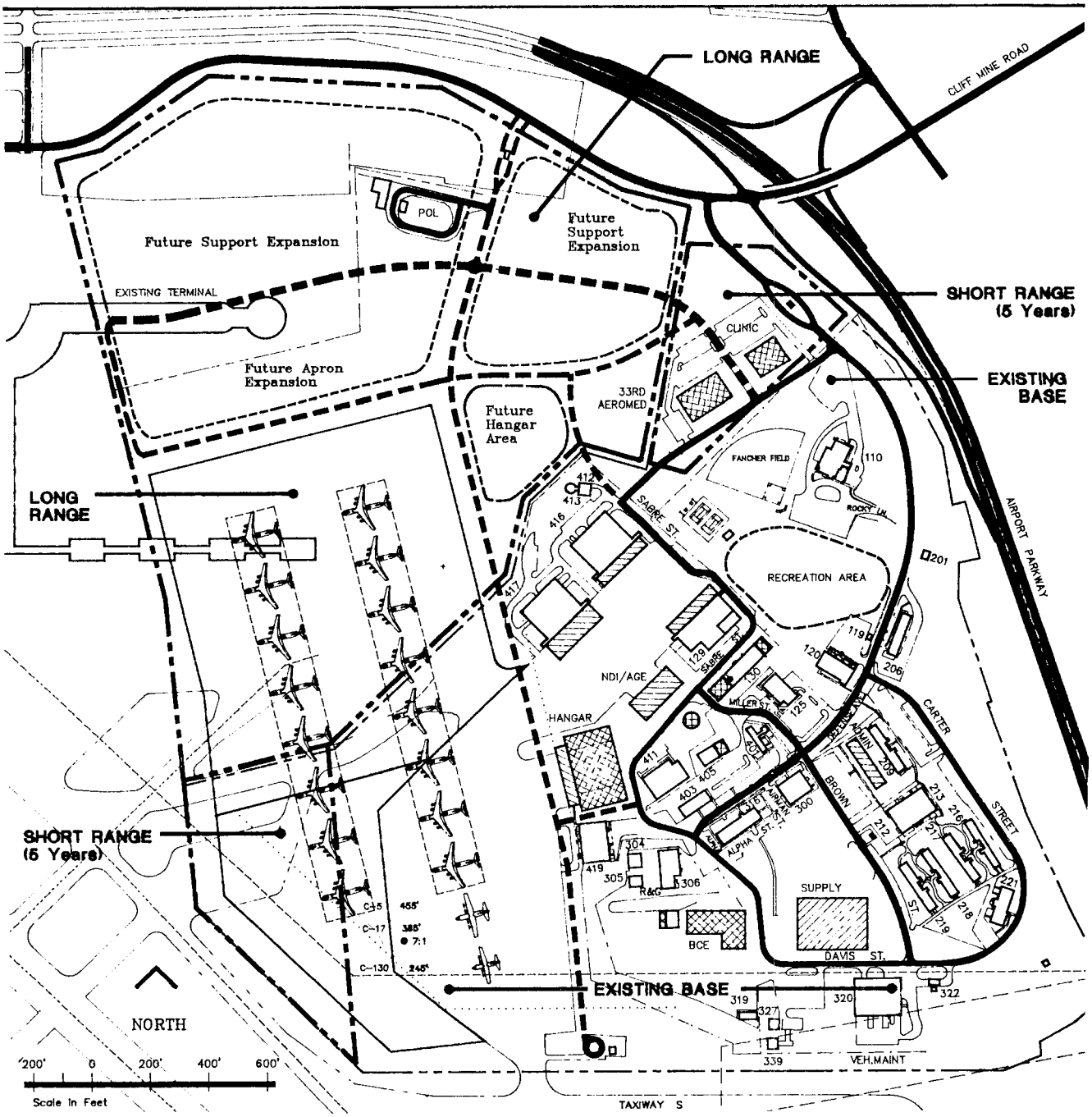
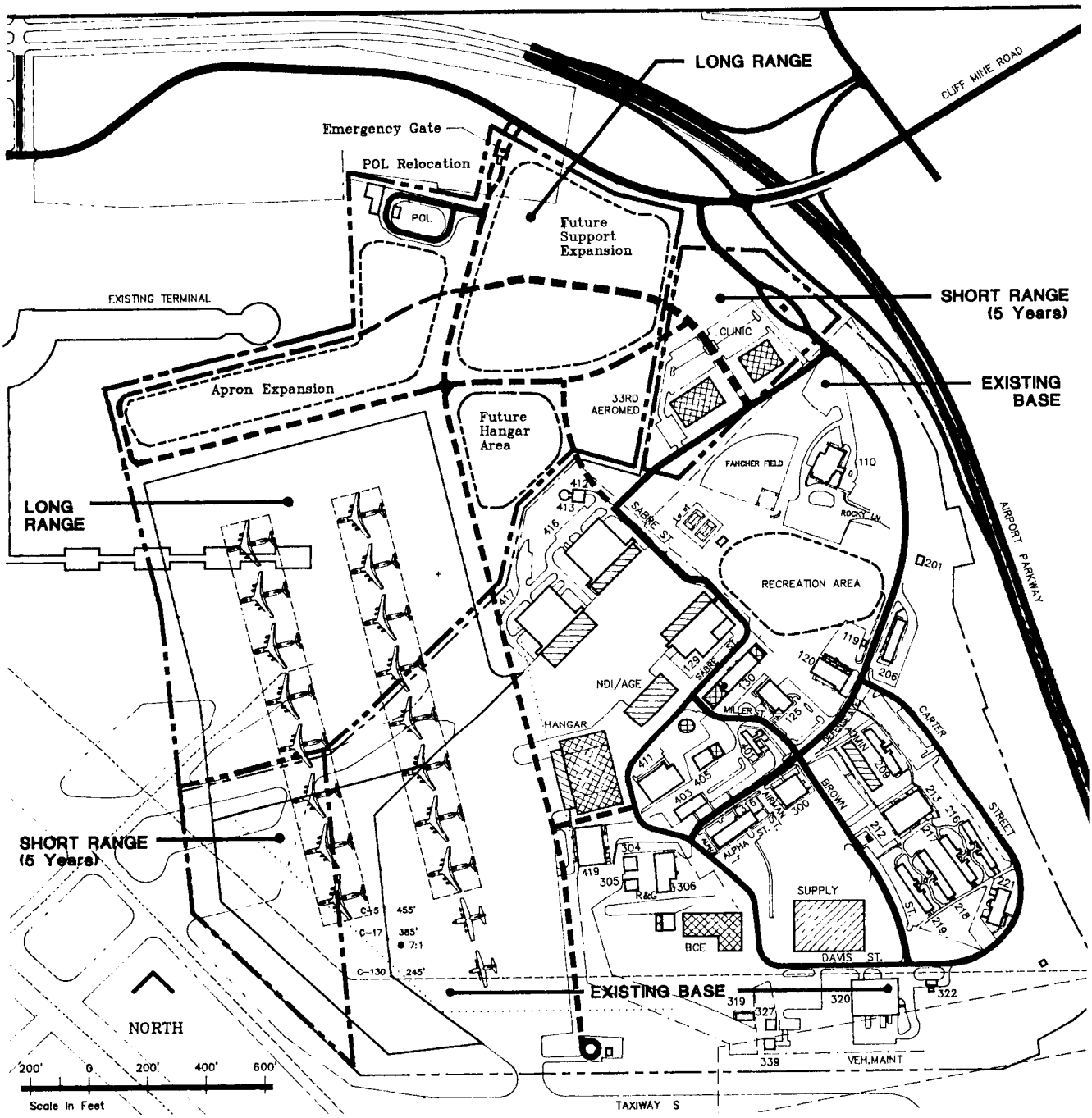


Exhibit 6.59m: Option #2: Boundary For Long Range Plan

...In Option #2 for the Long Range Plan boundary, it is assumed that the AFRES expansion would not extend as far north as the first option.



THE SELECTED ALTERNATIVE : #11

During October of 1987 and May of 1988, further revisions were made which resulted in the selected short and long range plans described on the following pages.

SELECTED SHORT RANGE PLAN

The short range plan proposals include:

...Demolition of existing buildings, as shown below, is proposed primarily in the BCE area and the General Purpose Shops (Building 418)* area in order to provide space for new buildings.

...Two additional land areas, with a total of +17 acres, would be requested for leasing from the GPIA, as shown by the map on the next page.

...Apron expansion would occur on the added parcel to the west, permitting the 911 TAG to expand from the present eight C-130's to 16 C-130's, with four hangar positions (including a new hangar) and at least 12 apron positions. If the

*Present occupants of 418 will be temporarily housed as follows while awaiting completion of new hangar:
..Shops and mobility storage to 129; admin. to trailers or temporary structures near hangars 129 or 417.

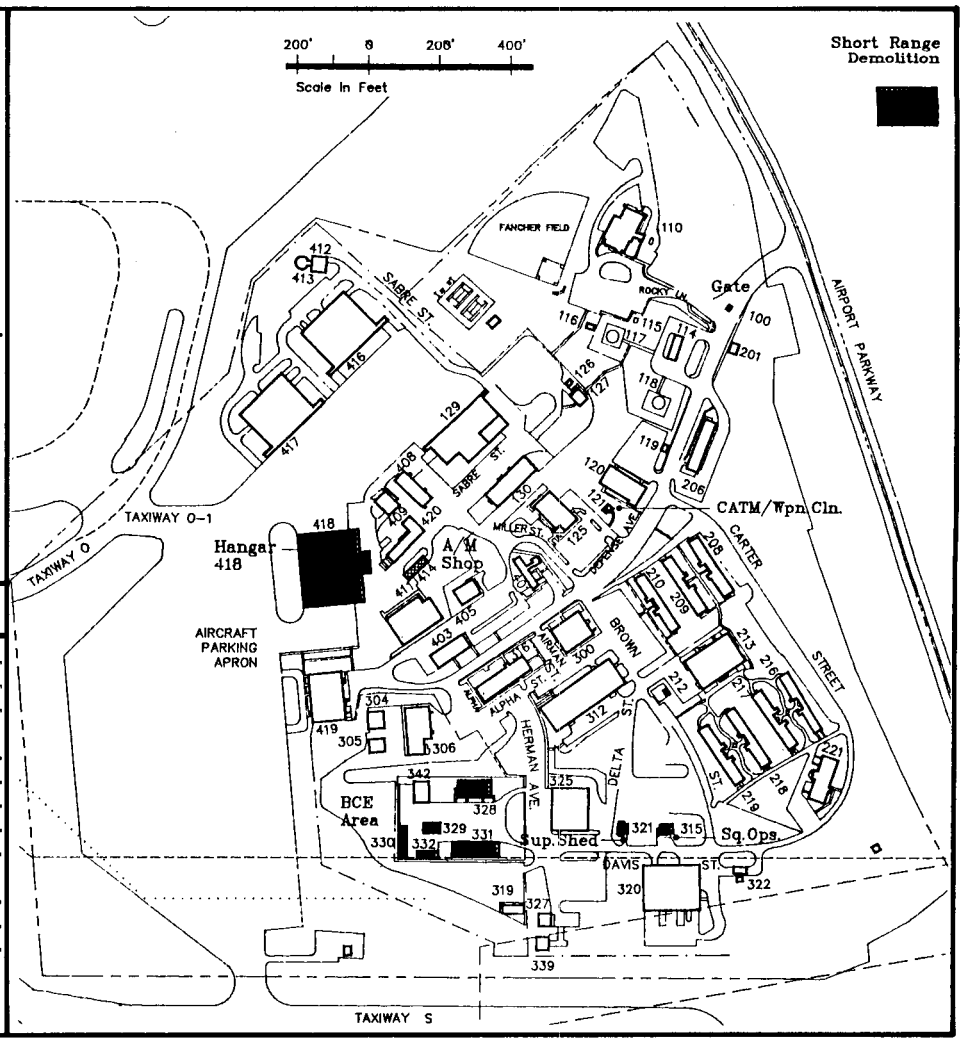
Exh. 6.61t: List Of Short Range New Facility Proposals

NUM	AFC	FACILITY	AREA	OTHER	YC
	1	PARKING APRON EXPAN	40100 SY		XX
00130	2	A/PORT TNG FAC ADDN	4600 SF		87
00405	2	COMM FCLTY W/ADDN	1692 SF		90
	2	HANGAR/SHOPS/DCM*	53000 SF		XX
	7	33RD AEROMED EVAC SQ	15000 SF		XX
00342	3	BE STORAGE ADDN	1200 SF		88
	3	MASK CONFIDENCE BLDG	600 SF		89
	3	ATV STORAGE/WSSF	462 SF		89
	3	IMPR BASE ACCESS			89
	3	WATER STORAGE TANK		300 MG	89
	3	BCE COMPLEX	27600 SF		92
	3	FIRING RANGE:OFFBASE		21 FP	91
	4	TRAFFIC CHK HSE	144 SF		89
00221	4	CONVERT:SM ARMS	6173 SF	6173	92
00120	5	GYMNASIUM ADDITION	2500 SF		87
	7	MED TRAINING CLINIC	11250 SF		91
00219	9	CONVERT TO VOQ	12967 SF	56 PN	XX
00218	9	CONVERT TO VOQ	12967 SF	56 PN	XX
00217	9	UPGRADE VAQ	12967 SF	56 PN	XX

*New 53,000 SF hangar includes:
...25,000 SF hangar area @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF admin. @ 50' x 160' on 2nd floor
... 4,000 SF mobility storage

Exhibit 6.60m: Short Range Demolition Proposals

...Location of proposals →



...List of Demolitions

NUM	AFC	FACILITY	AREA
00100	4	TRAFFIC CHK HSE	144 SF
00121	3	CATM/WPN CLN	218 SF
00315	2	SQ OPS	1000 SF
00321	3	SHED SUP&EQUIP BSE	462 SF
00328	3	BE ADMIN	4800 SF
00329	3	BE MAINT SHP	1221 SF
00330	3	BE STOR SHED	1822 SF
00331	3	BE MAINT SHP	5166 SF
00332	3	BE STOR CV FCLTY	1200 SF
00414	2	SHP A/M ORGL	1637 SF
00418	2	ACFT MAINT SHP	48793 SF

new C-130's were assigned in units of four, less expansion area would be required initially from the GPIA.

...A new Entry Area would be built on the second added tract, with access coming from the new Airport Parkway interchange at Thorn Run Road. The new Entry Road would connect with Defense Avenue near the POL. The existing entrance would then be closed since its land area would be required for one of the new interchange ramps.

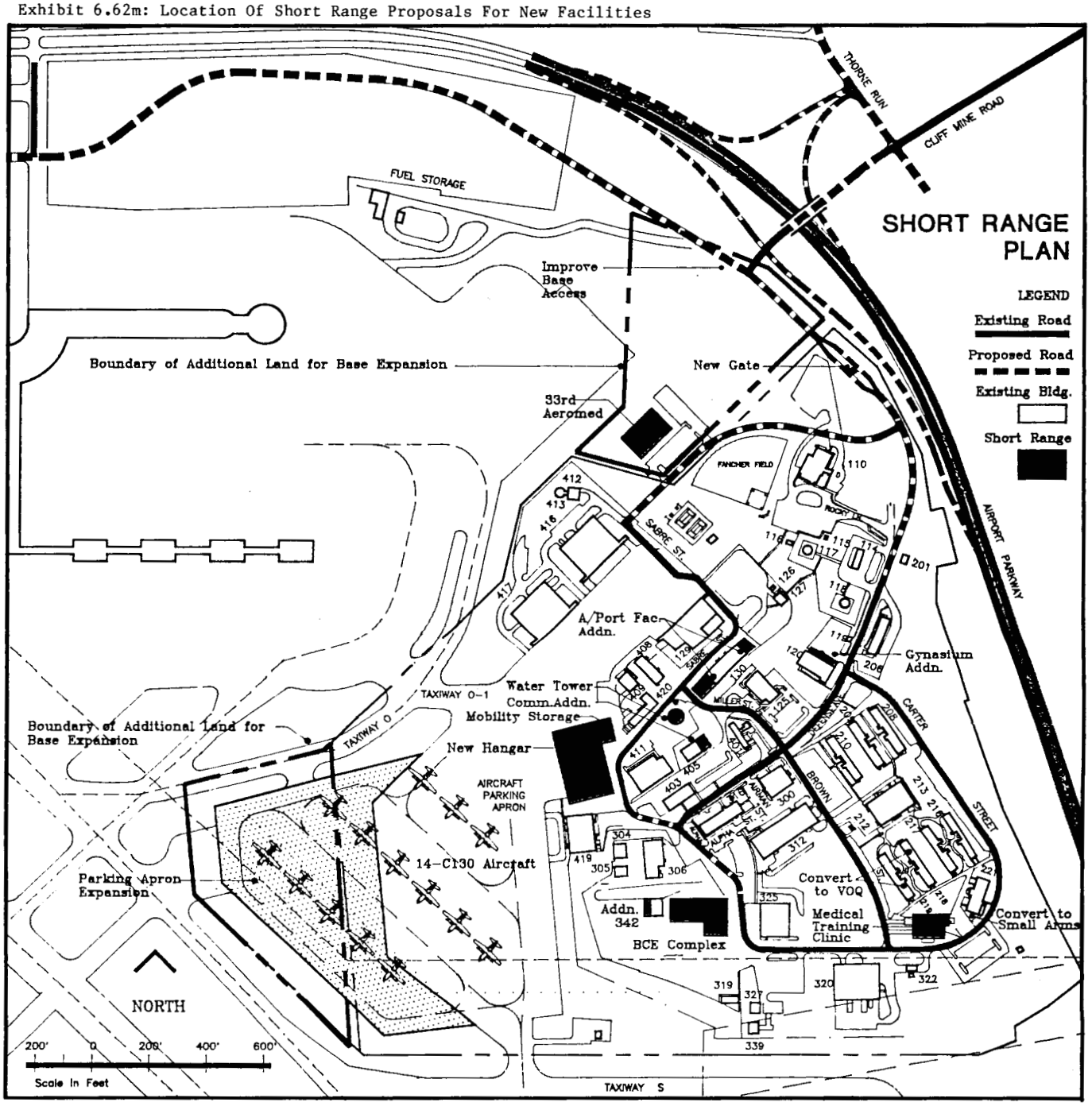
...A new 33rd AES facility also would be built on the second tract, with access coming from a new road connecting the Entry Area with Sabre Street. A new Clinic would be built adjacent to the existing clinic.

...A new BCE facility, with two stories, would be constructed in the existing BCE area. Only open storage for the BCE facility would be permitted south of the RW building restriction line.

...A new Hangar with shops, DCM and mobility storage would be built on the site of demolished building 418. The new hangar would be required to service the C-130 expansion to 16 aircraft.

...Other proposals include altering buildings 218 and 219 for VOQ use, and upgrading 217 as a VAQ facility. Building 221 will be converted for Small Arms use.

Exhibit 6.62m: Location Of Short Range Proposals For New Facilities



SELECTED LONG RANGE PLAN

The long range plan proposals for the Pittsburgh AFRES base are described by the text, tables, and maps on these facing pages.

...GPIA New Terminal - The major changes proposed for the AFRES base are dependent upon the GPIA construction of its new passenger terminal on airport land to the west....,thereby leaving its existing terminal and apron available for another use.

...An Additional Land Lease of ±77 acres would be requested from the GPIA officials after their terminal activities are moved. Added to the previous ±17 acres requested for short range needs, the total added lease area would be ±94 acres....only slightly less than the existing AFRES area of 105.7 acres.

If less than the ±77 acres were to be available, a second option, using only ±50 additional acres, would exclude the land north of the AFRES future apron and NORTH OF fuel storage area (see Exh. 6.66m and 6.67m).

...New Aircraft - The major purpose for leasing more land from the GPIA would be to permit the 911 TAG to accommodate a new and larger aircraft, such as 16 C-141's or 12 C-17's.

...Apron Expansion, as shown by the map to the right, to accommodate 16 C-141's would require a 991' x 1,910' area (or 43.5 acres) plus space for two transient aircraft. An apron for 12 C-17's would require a 1,005' x 1,540 area (or 36 acres) plus space for two transient aircraft. The apron area could be reduced to the extent that hangar space is used for aircraft parking.

...Maintenance Hangar Expansion - To accommodate the larger aircraft, existing hangars (129, 416, 417, and the new hangar built as part of the short range plan) would have to be expanded and/or new hangars constructed. The required hangars would provide for scheduled maintenance, unscheduled maintenance, and a fuel cell dock. The hangars could fully enclose the aircraft or act as nose docks with the aircraft tail sticking out. The 16 C-141's would require four hangars, while the 12 C-17's would require only three.

...New AGE, etc. - To replace the demolished buildings 408, 409, and 420, a new facility would be built to house AGE, NDI, and the survival equipment shop for a total of approximately 12,000 square feet. As another alternative, existing hangar 129 might be used for these three functions if it's not required for continued use as a hangar.

...POL - The new POL would make use of the existing GPIA facility to the north, and permit demolition of the present POL and converting its area to landscaping and recreation. If the GPIA facility were not used for any reason, the existing POL would have to be expanded and upgraded as a second choice.

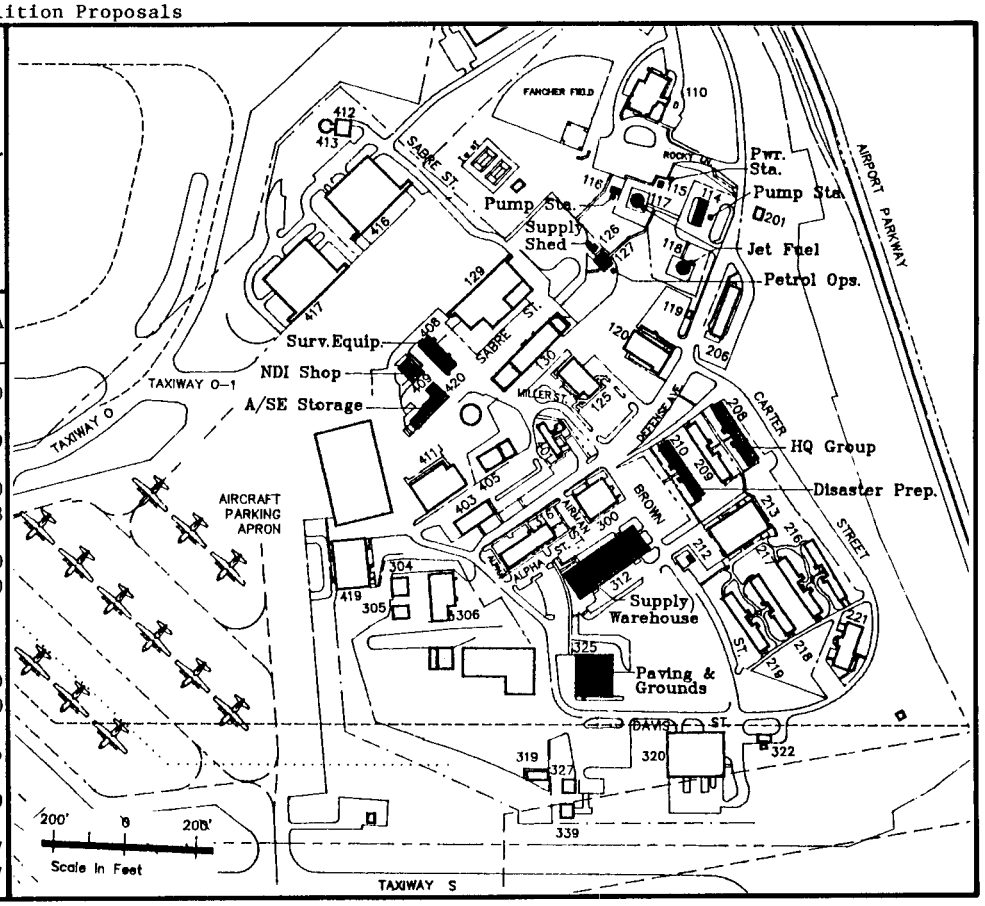
...Supply, BCE, etc. - In the southern part of the base, three activities would be allocated larger and more efficient work areas: (1) the existing Supply Building (320) would be converted to vehicle maintenance and vehicle covered storage with open storage yards adjacent; (2) the existing vehicle maintenance buildings (304,305,308) would be converted to use by BCE Roads and Grounds, adjacent to the other BCE facilities; and (3) a new Supply facility would be built opposite building 320, and the area to the west

Exhibit 6.63m: Long Range Demolition Proposals

...Location of demolition proposals →

...Listing of demolition proposals

NUM	AFC	FACILITY	AREA SF
408	2	SHP SURV EQUIP	4400
409	2	SHP NON-DESTR INSP	2699
420	2	SHP A/SE STOR FCLT	4500
114	3	PMP STN, LF	1538
115	3	ELEC PWR STN BLDG	240
116	3	PMP STN, LF	280
117	3	STOR, JET FL	
118	3	STOR, JET FL	
126	3	SHED SUP&EQUIP BSE	240
127	3	PETROL OPS BLDG	1200
312	3	WHSE SUP&EQUIP BSE	19656
325	3	BE PAV GRND FCLTY	12269
208	4	HQ GROUP (RECRUIT)	12967
210	4	CONTRACT & DP	12967



and north (where buildings 312 and 325 have been demolished) will be used for open storage.

...Upgrade 208, 209, 210 area by (1) demolishing building 208 and developing a POV parking lot; (2) upgrading building 209, VAQ; and (3) demolish 210, and replace it on site with a new administration building.

...Access & Street improvements would include a second gate, for emergency use, north of the new POL; new government vehicle only roads along the expanded apron, and new POV roads in the expansion area.

...Demolitions are listed and located to the left.
...Future expansion areas exist to the north.

Exhibit 6.65t: List Of Long Range Proposals

NUM	AFC	FACILITY	AREA
	1	PARKING APRON EXPAN	115700 SY
129	2	HANGAR ADDITION	8200 SF
416	2	HANGAR ADDITION	8200 SF
417	2	HANGAR ADDITION	14350 SF
	2	SR HANGAR ADDITION	8200 SF
	2	NDI/AGE/SURV EQUIP	12000 SF
304	3	CONVERT TO BE PAV/GR	2000 SF
305	3	CONVERT TO BE PAV/GR	1767 SF
306	3	CONVERT TO BE PAV/GR	8440 SF
320	3	CONV VEH MAINT/STOR	18544 SF
	3	SUPPLY ADM/WHSE	38635 SF
	3	REPLACE POL	
	4	SECURITY POLICE/WSSF	5000 SF
	4	ADMIN FACIL	13000 SF
	5	EMERGENCY GATE	
209	9	UPGRADE VAQ	12967 SF
216	9	UPGRADE VAQ	12967 SF

Exhibit 6.64m: Long Range New Facilities Proposals

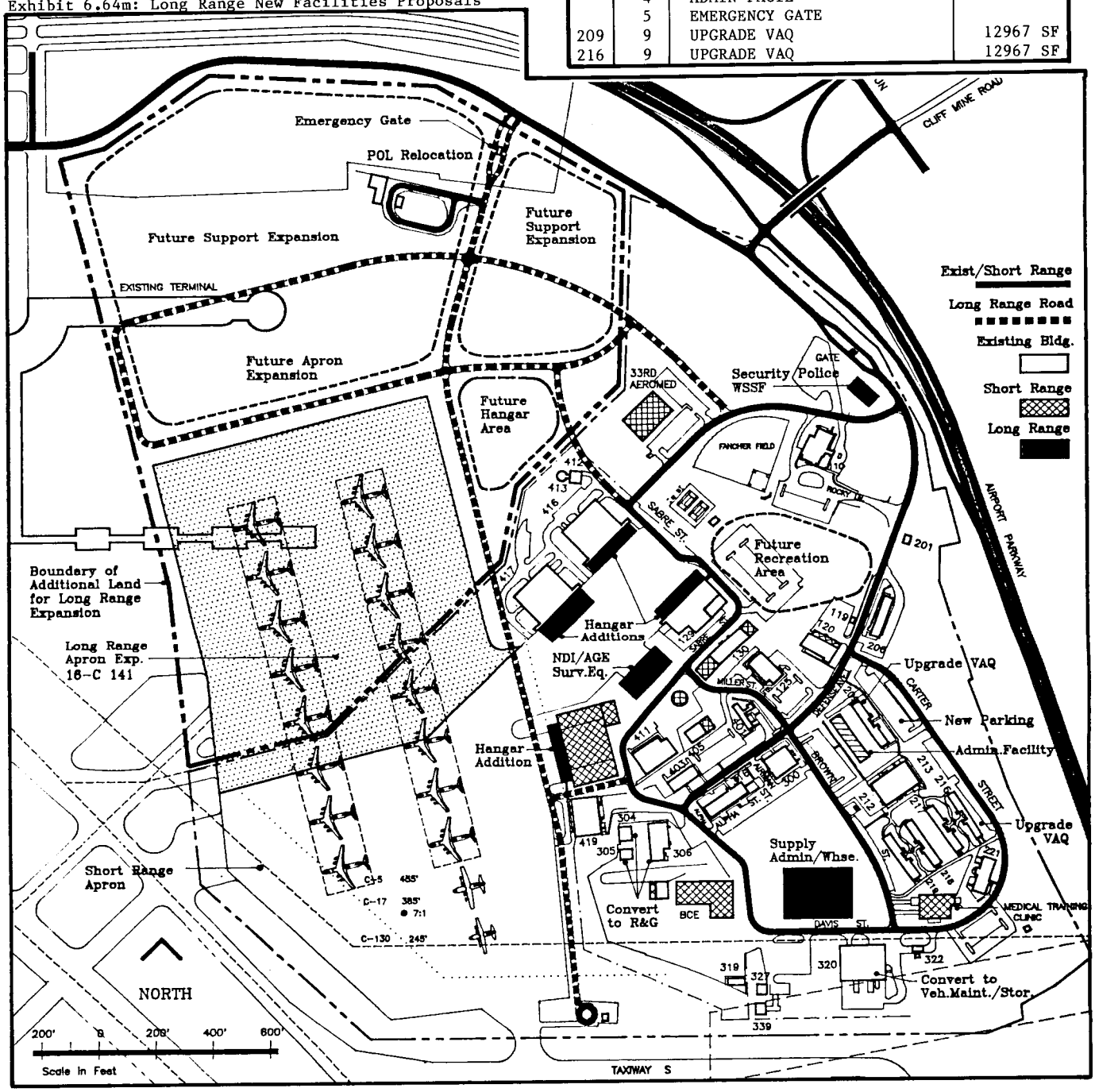


Exhibit 6.66m: Option #1: Boundary For Long Range Plan

...In Long Range Plan Option #1, it is assumed that the AFRES expansion could extend northward almost to the Airport Parkway

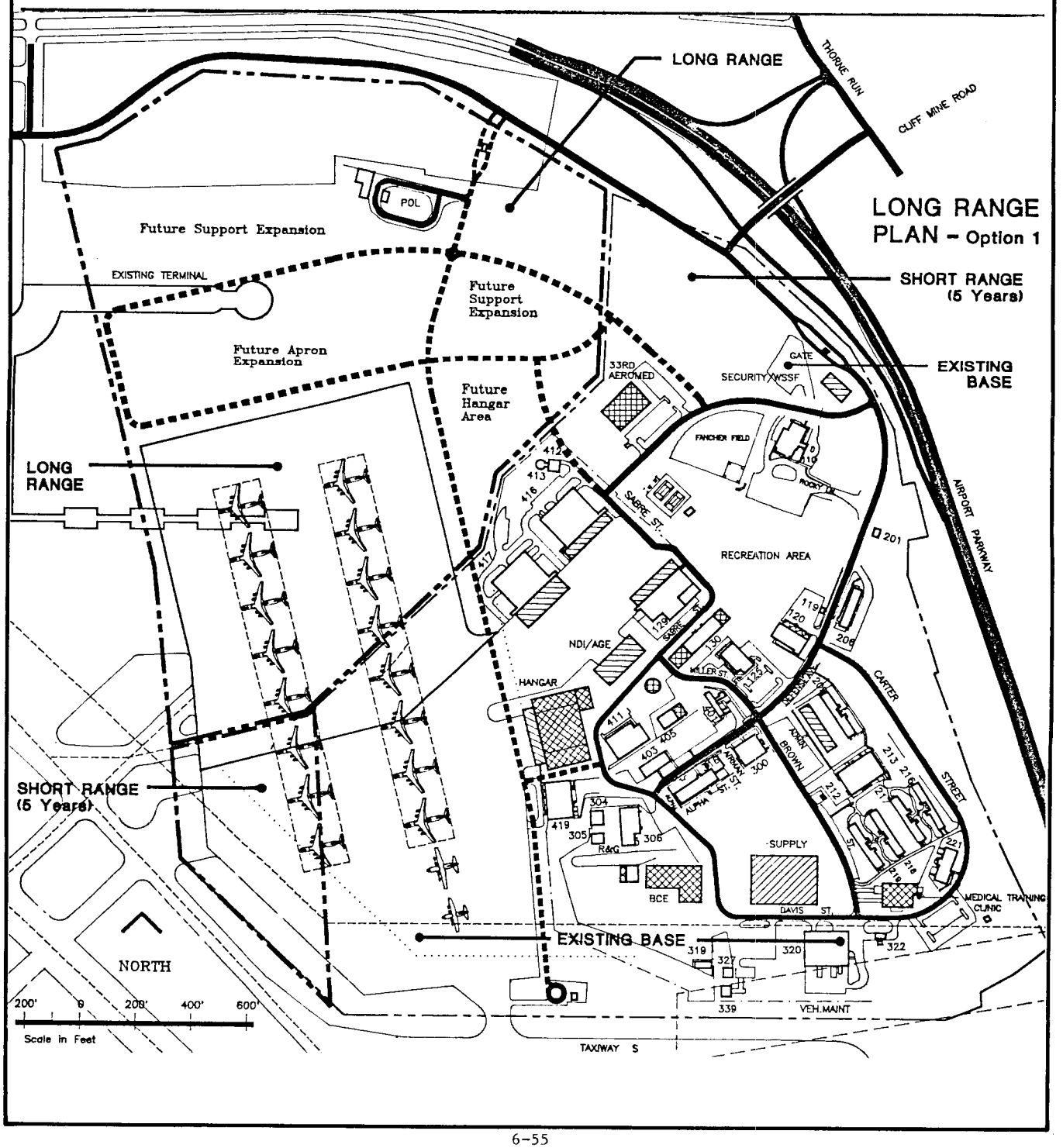
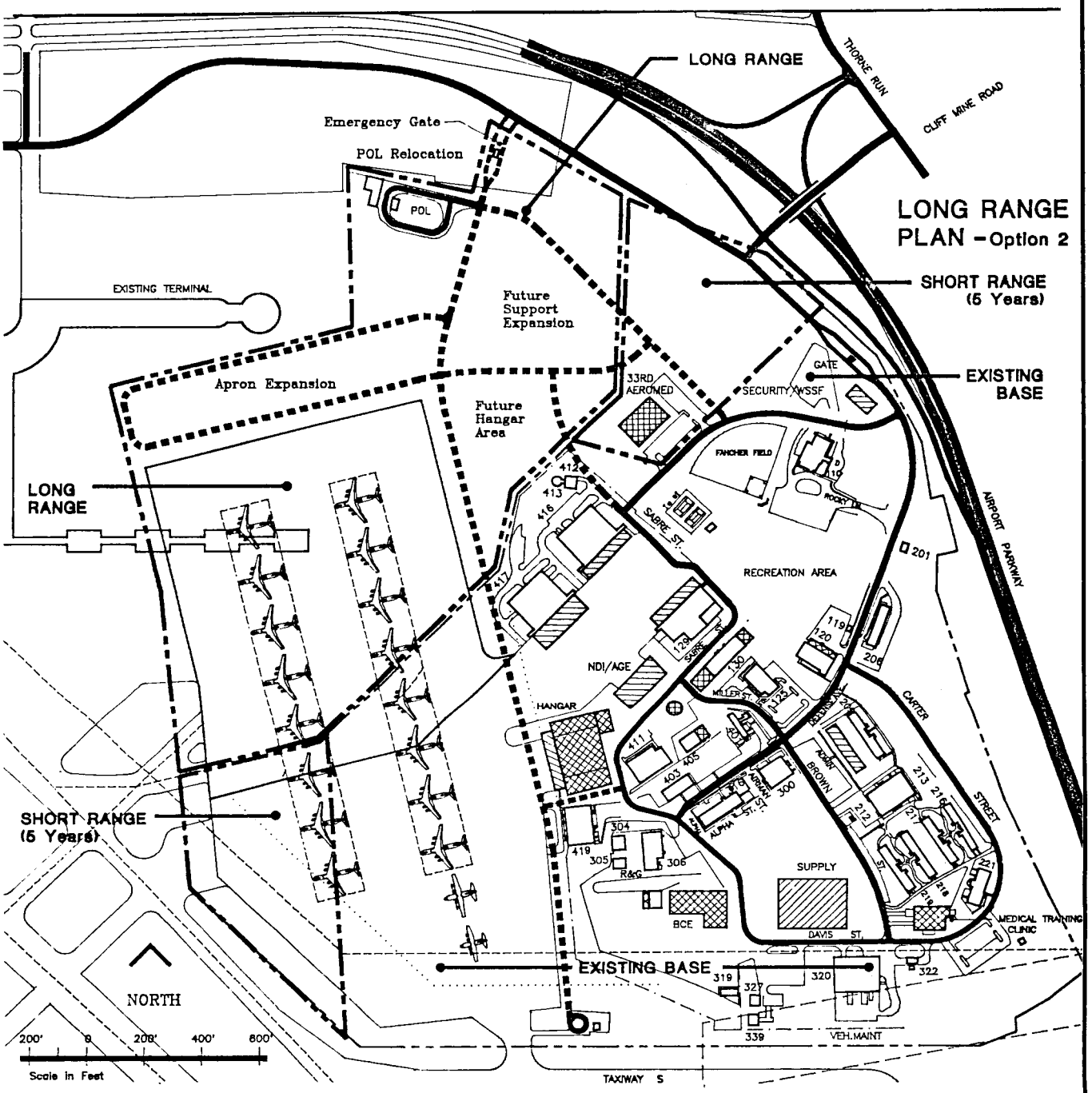


Exhibit 6.67m: Option #2: Boundary For Long Range Plan

...In Option #2 for the Long Range Plan boundary, it is assumed that the AFRES expansion would not extend as far north as the first option.



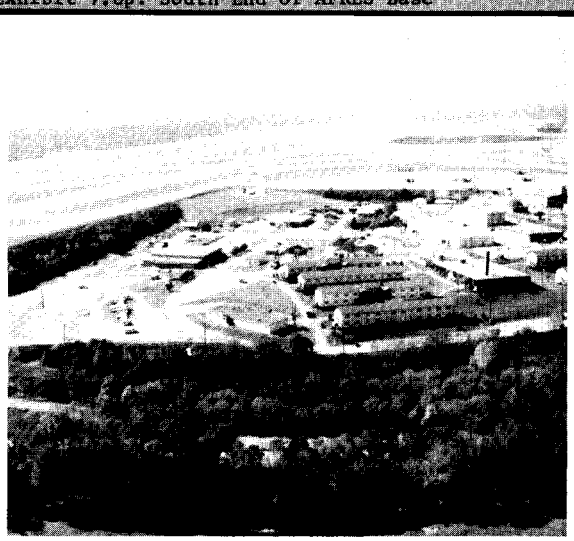
Chapter VII

NATURAL RESOURCES PLAN

For

Pittsburgh AFRES

Exhibit 7.0p: South End Of AFRES Base



INTRODUCTION

Greater Pittsburgh International Airport is located 16 miles WNW of the city of Pittsburgh, Pennsylvania. It currently occupies approximately 10,200 acres, of this acreage, 178,177 are used by the Air Force, of which 87,977 acres are leased to the Air Force Reserve. Contiguous to the land outleased to the Air Force Reserve, the Air Force owns 11.67 acres in fee with improvements controlled and used by the Air Force Reserve. This totals 99.65 acres for the Air Force Reserve installation.

Other than the aprons, taxiways, athletic fields and work areas, the general topography of the base is moderately to steeply sloping. Slopes range between three and twenty-five percent. As a result of the slopes on the base, surface water drainage is essentially from the northwest to southeast.

NATURAL RESOURCES/THE WATERWAYS

An unnamed tributary of McClaren's Run (a small stream) runs parallel to Route 60, and, in places, defines the eastern boundary of the base. This brook receives the base storm water runoff and also a significant amount of the runoff from the County Airport (Greater Pittsburgh IAP).

CONDITION OF BROOK

The above mentioned brook appears to be essentially sterile. No fish, amphibians, or macroinvertebrates were observed. No algae or complex aquatic plant life was noted in the water. While the water in the brook was relatively clear, the area of the brook channel had a distinct odor of petroleum distillates. Because stormwater drainage from the County Airport POL facility is known to outlet into this brook, this may be one obvious source of the fuel odor.

Exhibit 7.1: McClaren's Run

In 1976, #2 fuel oil was discovered in a base storm drain; the source was traced to a 5,000-gallon #2 fuel tank at building 316. Necessary repairs were made, and it is assumed that the gross effects of this spill were largely overcome in the last eleven years. This assumption leads back to the County Airport POL as a possible source of the odor mentioned above.

Stormwater runoff from Route 60 should not be a significant source of pollution unless a significant fuel spill occurs on or near this highway.

Significant fuel spills in the past, as well as occasional problems with the management of the County Airport POL Facility could easily account for the observed condition of the brook.

Recommendations

Periodically inspect all known underground storage tanks to ensure that they are free of leaks. Replace any defective tanks with corrosion resistant materials. Alert County Airport Officials to the possibility of a problem with the maintenance/management of their POL Facility (or the maintenance of the oil/-water separators).

POINT SOURCE POLLUTION

Part of the storm drainage system at the County Airport is tied directly into the base stormwater drainage system. The outlet of this portion of the base stormwater drainage system is located at the extreme southeastern end of the base. Water from this outlet travels a short distance in an open drainage ditch and then enters the channel of the above mentioned brook.

On occasion, an unidentified viscous material has been noted draining from this stormwater outlet. The material is usually greenish white in color, is extremely malodorous (possibly hydrogen sulfide), and usually causes significant discoloration (milky white) of the water in the brook for several thousand feet downstream. Attempts to trace this material back through the stormwater drainage system indicate that the source appears to be somewhere on the County Airport property. At this time the material has not been observed for several months, but the odor has occasionally been noted emanating from inlet grates in the stormwater pipe system within the Base Civil Engineering compound. Hydrogen sulfide (possibly explosive) is still a concern.

There is justifiable concern that this viscous material may be toxic in nature. DEEV now suspects the material to be related to aircraft washdown operations (or degreasing) at the County Airport (possibly detergents contaminated with oil and/or grease). Although the unnamed tributary that is described in the previous section does not presently support complex aquatic life, individuals indicated that McClaren's run had been "making a comeback" in recent years. Consequently, this viscous material, if toxic, could be responsible for setting back the regeneration of this stream.

Recommendations

Since the material of concern is being outlet from the base stormwater drainage system, the Base Environmental Coordinator is urged to:

...Work with county, state and federal agencies to determine the nature of the material.
...And if toxic, determine the source of the material and work to ensure that it will no longer be discharged from the base stormwater drainage system.

STORMWATER CULVERT OUTLETS

The culvert outlets for the base stormwater drainage system are located along the streambank of the previously mentioned unnamed tributary. Most of the culvert pipes extend several feet into the brook channel and are essentially unsupported.

Recommendations

Although this situation does not require immediate attention, some effort to stabilize and support the affected culvert outlets should be addressed in the base long range maintenance pans. After cutting the pipes back to the streambank, they may be supported and protected by one or more of the following: concrete headwalls/wingwalls, properly size and bedded rock rip-rap, or gabion baskets.

BROOK CHANNEL DEBRIS

In several locations, fallen trees have caused some debris accumulation in the brook channel. In at least one location, there is evidence that the brook has been sandbagged to raise the water level at an obstacle course crossing. A section of unused culvert pipe was also noted in the brook channel a short distance downstream of the entrance to the base.

Recommendations

Because high water can be forcibly directed against streambanks by channel obstructions, the probability of streambank erosion is significant where obstructions occur. It is therefore recommended that the fallen logs be removed from the brook channel; and those trees that are leaning significantly toward the channel, or that are seriously undermined along the streambank, be cut and removed from the immediate vicinity of the brook.

Remove the unused section of culvert pipe from the brook channel.

If sandbagging of the channel is to continue, it is suggested that a weir be formed to keep water from cutting around the ends of the sand bag dike. If possible, the sandbags should be removed when the obstacle course training is complete.

Two or three alternative booming locations to collect spilled petroleum products should be established at readily accessible points downstream of the base stormwater outlets. Booming equipment should always be maintained in a readily accessible location.

If significant streambank erosion occurs, the local USDA Soil Conservation Service office may be contacted for their recommendations. Some relatively inexpensive vegetative means of streambank stabilization would appear to be feasible in some locations.

NATURAL RESOURCES/THE LAND

The geology of this region has been extensively investigated mostly due to coal and oil explorations. In general, the area is underlain by horizontal beds of shale, siltstone, sandstone, limestone, and coal. These bedrock layers are essentially sedimentary in geologic origin, and are generally slow percolating (with the exception of the sandstones). The availability of bedrock water supplies is limited.

HYDROLOGY/SOILS

A preliminary review of the effects of limited expansion of facilities projects on peak rates of discharge from the base stormwater drainage system was conducted. This review indicated that runoff increases from the base, although measurable, will be minimal and will not significantly increase peak rates of discharge in McClaren's Run. A more complete Urban Hydrology study will be needed when a final course of action is agreed upon in the Base Comprehensive Planning process.

Although the vertical infiltration rates for the majority of the soils found on base classified them as moderately permeable, the hazard of ground water contamination due to surface spills of fuels or other toxic materials is relatively low. The high percentage of silts and clays in the various horizons should significantly limit vertical infiltration. The slowly permeable nature of most of the bedrock layers encountered within ten feet of the soil surface would tend to further inhibit vertical movement. Subsurface lateral movement of spilled materials is far more likely (e.g. the 1976 #2 fuel leak from the tank at Building 316). If a spill is immediately identified and appropriate containment action is taken, there should be little or no long term effect on ground water in the area.

There is a much higher probability that surface spills could cause direct contamination of the brook. It is therefore particularly important to have a detailed and well rehearsed spill management plan for the base with particular emphasis on protection of the stormwater drainage inlets.

Recommendations

Again, periodic inspecting of all subsurface storage tanks is recommended. Any unusually high record of fuel consumption by heating systems (frequency of tank fills) could be seen as reason enough to inspect a tank. Update the Base Spill Prevention and Response Plan and schedule regular exercises to rehearse procedures for containing, reporting and cleaning up spills.

EROSION AND SEDIMENTATION CONTROL

The fill area located in the southeast corner of the base is scheduled to be finish graded, limed, fertilized and seeded in the Spring of 1987. Revegetation of this area will significantly lower the amount of base generated sediment entering McClaren's Run. An abandoned pumphouse which used to be part of the base sewage treatment facility is partially buried in the toe of this fill area. This abandoned building is not presently on base controlled property and is fully outside of the base security perimeter fence. It is, however, a potential attractive hazard and should be brought to the attention of the appropriate County officials.

Recommendations

Report the attractive hazard nature of the abandoned pumphouse to County officials. Establish a sediment fence at the toe of the graded fill slope. The sediment fence should be staked-in-place by commercially available sediment retention fabric, or overlapped haybales. The fence should be maintained until the slope is well vegetated.

An erosion and sedimentation control plan should be part of any future activity that will result in soil disturbance over significant area. Such a plan should:

...Propose a means of containing the majority of the sediment generated by the activity.
...Address temporary and permanent erosion control practices (including details of any structures).
...Propose a landscaping and/or revegetation plan.
...Establish a schedule for completion of the above mentioned components.

The local Soil Conservation Service office may be contacted for their suggestions and assistance in the review of erosion and sedimentation control plans.

BASE LANDSCAPING CONCERNS

The sloping nature of the base presents the roads and grounds maintenance staff with some difficulty during normal mowing operations. Where lawn areas are particularly steep, hand mowing is difficult and can also be a safety hazard. Although specialty equipment is available to assist in these mowing operations, alternative treatment of these slopes may be considered.

There are a few steep slopes around the Civil Engineering Compound and the slopes behind the base gym. The vegetation on these slopes was originally planted for its wildlife and conservation benefits. In its present condition, however, some thinning and maintenance is in order. Dense growth of shrubs and small trees will often suppress grasses and other ground covers. Without a reasonably good ground cover on these slopes, they can be more susceptible to erosion.

Herbicides are presently being used along security fences in several locations on base. This practice is a logical and cost effective means of suppressing plant growth in areas that are otherwise difficult or awkward to maintain.

Suggestions for vegetative screening of the POL facility were requested by the BCE's staff. The location of the facility and the limitations of the site may ultimately rule out plant materials as an effective screening alternative. Growth time and limited rooting area makes the use of most evergreen species difficult if not impractical.

The base has had varying degrees of success in establishing Chemung Crown Vetch as a conservation planting. This ground cover is especially effective in maintaining steep slopes that are considered "no-mow" areas. Some suggestions for improving the results obtained with this plant material follow.

Recommendations

To eliminate the safety hazard associated with mowing of steep lawn areas, plantings of low growing shrubs and/or dense growing ground covers may be considered. Because there are a number of sites on base that could be considered for this type of planting, it is recommended that a qualified landscape designer or landscape architect be contracted. A professionally prepared plan could combine the practical reasons for such a product with the additional advantage of enhancing the aesthetic appeal of the base. Plantings that will require minimal maintenance should be emphasized.

The steep slopes that are not regularly mowed and are essentially covered by small trees and shrubs should be thinned out and pruned. Clumps of shrubby growth ± 10 feet in diameter should be left randomly spaced on the slopes. Approximately 50 percent of the slope should be left shrub covered. If sufficient ground cover is not already in place, the remainder of the slope should be seeded to legumes and/or grasses. This configuration will allow for sustained songbird habitat and cover for rabbits, while ensuring adequate ground cover is maintained on the slopes. Some hand labor will be required annually in order to maintain these areas. The multiflora rose that is found in quantity on these slopes will spread quickly if it is not pruned back. While there may be a temptation to eliminate the rose entirely, it should be maintained. The roses provide excellent cover and food for rabbits and several types of songbirds. Again, a landscape professional may be of assistance in providing a plan for these slopes.

Continued use of herbicides to maintain open paths along security fences is endorsed. One herbicide in particular may be considered for future use. Glyphosate, commercially available as "Round-Up", is a systemic material that must be applied to actively growing vegetation in order to kill it. Consequently, its application can be timed to effectively control only those plants that are targeted. It has an additional advantage in that its effects are not residual. It is suggested that the State of Pennsylvania Cooperative Extensive Service be contacted for additional herbicide and/or pesticide information. This agency would also be familiar with those chemicals that are legally registered for use in the state and may have an alternative recommendation that will be equally as effective.

Effective vegetation screening of the existing POL facility does not seem practical. If, however, the services of a landscape professional are obtained for the above mentioned planning work, it is suggested that he or she be consulted on this subject also.

Chemung Crown Vetch is one of the more practical ground cover species that is used in revegetation of steep slopes. It combines minimum maintenance (no-mow) with excellent ground cover results that are aesthetically pleasing. To improve the results obtained with this plant material, first take a soil sample of the area in which it is to be planted. This soil sample should be analyzed through the soil testing program available from the Penn State Cooperative Extension Service. Written recommendations for the amount of lime and fertilizer that should be applied to the seedbed will be mailed to you when the analysis is complete. An alternative planting may also be recommended if for some reason the soil cannot be easily amended to support crown vetch. In some instances, direct planting of seedling plants may be more effective. Keep in mind that new seedlings or plantings will have improved chances of success if they are planted during good seasonal growing conditions, irrigated as necessary, and adequately fertilized and maintained.

WILDLIFE

Prior to installation of the new security fence in 1986/1987, an occasional white-tailed deer has been known to cross the base property in the wooded area adjacent to Route 60. Small game noted were cottontail rabbits and woodchucks. Occasional skunks and raccoons have also been reported. There is a reasonably good food supply for various species of songbirds, especially in the shrubby growth of conservation plantings on the slopes behind the base gym and the Civil Engineering Compound. However, a relatively small number of bird species were noted. This observation may be explained by the somewhat limited availability of untainted water, and the absence of many of the insects that are normally associated with stream ecosystems.

In recent years, the woodchucks on base have become a problem. Some efforts have been made to live trap them and transport them off base. So far the results have been somewhat successful.

Recommendations

Continued live trapping of woodchucks is an acceptable means of control. If, however, a more direct and immediate solution to the problem is desired, gassing their burrows with one of many commercially available products is a reasonable alternative. In any event, they should not be fed or kept as pets. Display of aggressive behavior in animals that are normally shy and retiring is usually seen as a sign of possible rabies. Feeding these animals and easing their instinctive fear of man only confuses the issue. Consequently if aggressive behavior continues, shooting the offending animal may be the only recourse available.

Because the potential for significant enhancement and/or management of wildlife habitat is severely limited by the condition of the brook and the limited acreage available on base, preparation of a detailed wildlife management plan would be nothing more than a paper exercise. It is suggested that the Base Land Management Plan simply provide a list of County, State, and Federal Wildlife professionals who may be consulted in the event that a specific problem arises.

If the base obstacle course is moved, the area it presently occupies may have some potential for expansion of the base jogging trail (a paved patch adjacent to the security fence), as a nature walk, or as a picnic area.

HISTORICAL AND ARCHAEOLOGICAL PLAN

There are no limitations to building on the installation or even on the 10,200 acres of the airport because of historical or archaeological restrictions.

Chapter VIII

ENVIRONMENTAL QUALITY PROTECTION PLAN

For

Pittsburgh AFRES

Exhibit 8.0p: Stream Flowing Through 911th TAG

INTRODUCTION

Environmental quality affects all physical and operational aspects of the Pennsylvania Air Force Reserve base at Pittsburgh IAP. The Environmental Quality Protection Plan summarizes those major programs designed to maintain and enhance the base's environment: the Installation Restoration Program, the Environmental Compliance Review, the Oil and Hazardous Substance Contingency Plan and the Hazardous Waste Management Plan. Each of these are described in detail in the following sections.

INSTALLATION RESTORATION PROGRAM

The Department of Defense (DOD) has developed a program to identify and evaluate past hazardous material disposal sites on DOD property, to control the migration of hazardous contaminants, and to control hazards to health or welfare that may result from these past disposal operations. This program is called the Installation Restoration Program (IRP).

Methodology

During the course of this project, interviews were conducted with base personnel (past and present) familiar with past waste disposal practices; file searches were performed for past hazardous waste activities; interviews were held with local, state and Federal agencies; and field and helicopter reconnaissance inspections were conducted at past waste activity sites. Five sites at the Pennsylvania Air Force Reserve Facility were identified as potentially containing hazardous contaminants resulting from past activities. Four of these sites have been assessed using a Hazard Assessment Rating Methodology (HARM) which takes into account factors such as site characteristics, waste characteristics, potential for contaminant migration, and waste management practices. The rating system is designed to indicate the relative need for follow-on action of the IRP program. Sites which do not receive high HARM scores are not necessarily precluded from follow-on action; the purpose of follow-on investigation is to determine if the site poses a threat to human health or the environment.

Findings and Conclusions

One of the goals of the IRP study is to identify sites having the potential for environmental contamination resulting from past waste disposal practices and to assess the possibility of contaminant migration from these sites. The conclusions given below are based on field inspections, review of records and files, review of the environmental setting, and interviews with base personnel, past employees, and Federal, state and local government employees and consideration of the environmental setting of each site.

The exhibit below contains a list of potential contamination sources identified at 911th TAG and a summary of the HARM scores for these sites. The locations of these sites are shown by the exhibit on the next page.

All four sites identified were determined to have potential for contamination of soil or ground water. Descriptions of the sites are given in greater detail as follows:

Fuel Line Break (Building 316): There is sufficient evidence that the area of Building 316's fuel oil storage tank has potential for creating environmental contamination and a follow-on investigation is warranted. It has been estimated that 460 gallons of oil escaped from the tank through a broken pipe before the leak has detected and the pipe replaced. There have been no excavations of contaminated soil or any indication of extent of contamination.

The leak was detected when oil was found to be entering the storm sewer approximately 20 feet from the tank. Based on this condition it can be assumed that some migration of product has taken place. Soil between the tank and the sewer has not been removed and there have been no analyses of soil or ground water to determine the extent of migration. It is estimated that most of the 460 gallons of fuel that were reportedly discharged from the tank remain in the ground. The site received a HARM score of 53.

Drum Storage Area (Building 416): There is sufficient evidence that the Drum Storage Area at Building 416 has potential for creating environmental contamination and a follow-on investigation is warranted. The area was used from 1974 until 1982 for storage of waste oil and fuel. This area replaced the previous drum storage area that was closed when Building 408 was constructed. It has also been reported that a large amount of spillage occurred with no containment mechanism; the area had a gravel base floor. In 1984, when Building 416 was constructed at this site, some excavation occurred with material dumped over the bank by the tennis courts. Excavation was, however, minimal with only sufficient soil removed to prepare the building site for the slab foundation.

A potential concern at this site exists because of the mix of oils and solvents stored in the area. It is possible that poly-chlorinated biphenyl (PCB) oil was mixed with other waste oils. Although PCB's are not normally soluble in water, the presence of solvents spilled in the area would tend to mobilize PCB's and could promote migration of PCB's to groundwater. The site received a HARM score of 46.

Exhibit 8.1t: Summary Of Waste Sites At 911th TAG

Rank	Site	Waste Type	HARM Score
1	Fuel Line Break -Building 316	Heating Oil	53
2	Drum Storage -Building 416	Solvents	46
3	Drum Storage -Building 408	Solvents	44
4	PCB Storage -Building 342	PCB	43
5	JP-4 Storage -Building 114	JP-4	-

Drum Storage (Building 408): There is sufficient evience that the Drum Storage Area at Building 408 has potential for creating environmental contamination and a follow-on investigation is warranted. The area was used from early 1950 until 1974 for storage of waste oil, solvents and fuels. Heavy spillage was reported during its use as the floor was a gravel base with no provisions for containment. The area was chosen for construction of a new building (Building 408) and some excavation occurred. The excavated material was spread as fill around the base.

The same concern for the potential for PCB contamination described for the storage area at Building 416 exists for this site. This site was the on-base collection storage area for liquid wastes generated by the Reserve and any type of liquid, including PCB oils, could have been stored (and spilled) at this location. This site received a HARM score of 44.

PCB Storage Area (Building 342): There is sufficient evidence that PCB storage area at the location now occupied by Building 342 has the potential for causing environmental contamintion. The site was used to store PCB transformers; interviewees have indicated that this area was used to store leaking transformers prior to the rejection of the transformers by Letterkenny and that the soil at the site was stained with oil from the transformers. There has been no estimate made of the quantity of PCB's that may have leaked at this location.

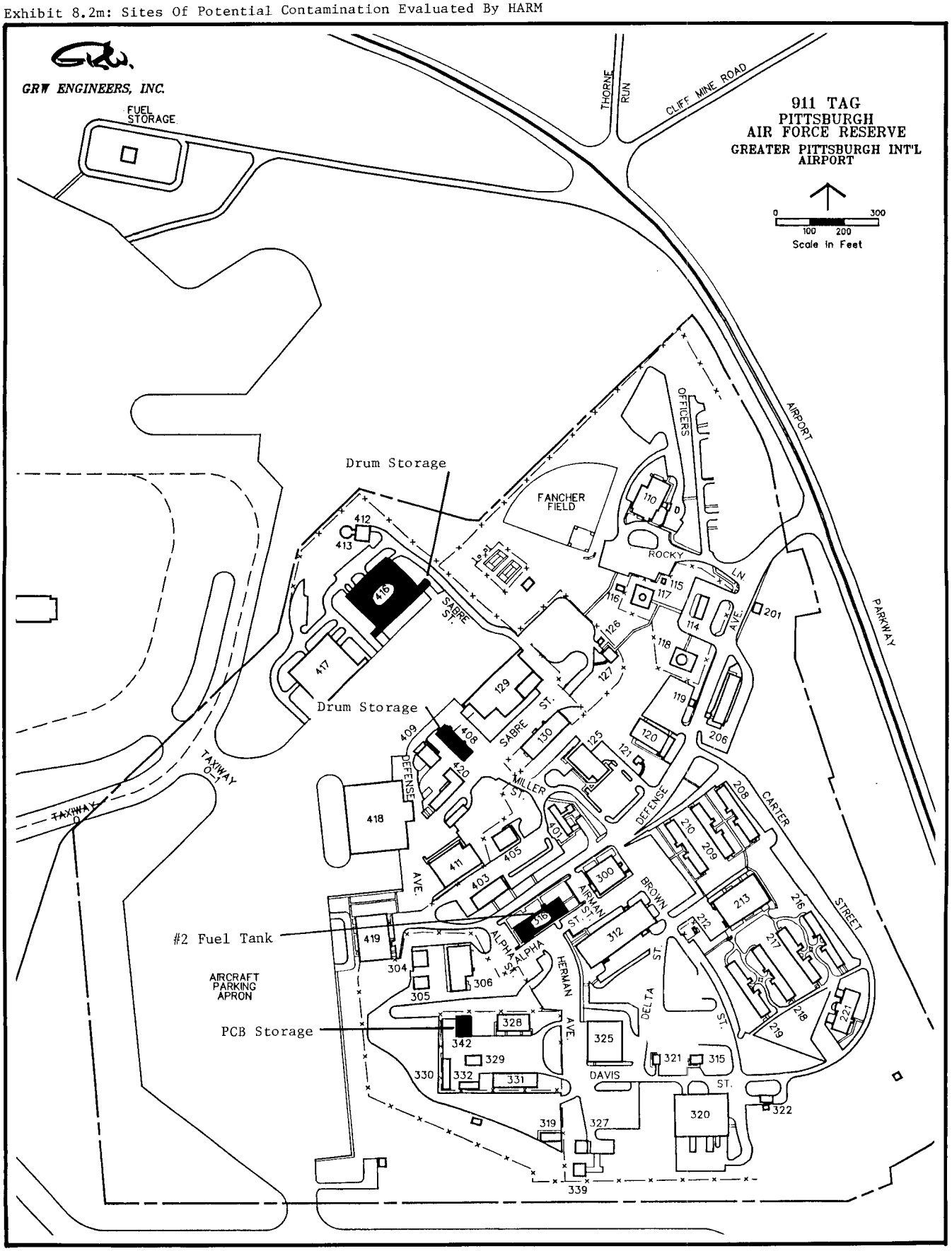
The site is now covered by Building 342. Some excavation took place in conjunction with building construction and the excavated material was deposited in the surrounding area creating the possibility that PCB contaminated soil has been spread around the area. This site has received a HARM score of 43.

JP-4 Storage Area (Building 114): There is sufficient evidence that the JP-4 storage area at Building 114 has potential for creating environmental contamination and a follow-up investigation is warranted. The area has been used since 1953 to store airplane fuel. According to base officials, ground contamination has been noted at or near the facility. This site was not HARM rated.

Recommendations

The investigations have been designed to determine if contamination does exist and to further asess the potential for contaminant migration at each identified site. The recommended action is generally a one-time sampling program using indicator parameters for the detection of suspected contaminants. They are designed on a site-by-site basis to verify the presence or absence of contamination at a site, and to further assess the potential for adverse environmental impact from contamination should it be present at a site. Should contamination be identified at a site, the sampling program may need to be expanded to further define the extent of contamination. Presently these recommendations are being implemented at the Building 342 site.

Exhibit 8.2m: Sites Of Potential Contamination Evaluated By HARM



It is recommended that prior to installation of groundwater monitoring wells, geophysical surveys be conducted at certain sites in order to delineate leachate plumes migrating from the site. The recommended geophysical techniques are electrical resistivity and/or electromagnetic conductivity. The results of these surveys should be used to finalize the selection of monitoring well locations. During well drillings, it is recommended that the cuttings/samples should be examined with an organic vapor analyzer or similar instrument to provide further data on presence or absence of contamination. In addition, appropriate safety precautions should be taken during drilling and sampling.

The recommendations are detailed below:

Fuel Line Break (Building 316): This site has the potential for causing environmental contamination and monitoring is recommended. The media of concern as contaminant receptors are soil and groundwater. Soil in the area of the leak has most certainly been affected since the leaking product migrated through the soil and into the storm sewer. It is not known whether the product also migrated beyond the storm sewer or if all product was collected by the sewer. It is also not known if the product has migrated to groundwater. It is therefore, recommended that three soil borings be constructed between the fuel line and the storm sewer. Borings should be accomplished using continuous split spoon sample collection. Each sample should be examined to determine if there is visible evidence of contamination; it is assumed that each boring, completed to the water table will be fifteen feet deep and result in collection of samples that can be composited for the five to ten foot interval and the ten to fifteen foot interval. Therefore, six samples will be analyzed for the parameters of oil and grease, volatile organic constituents (VOC), Benzene, total organic halogens (TOH), and PCB's. One soil boring shall be extended to ten feet below the water table and completed as a groundwater monitoring well.

In order to determine if product has migrated beyond the storm sewer, one additional soil boring shall be completed on the down-gradient side of the storm sewer. This boring shall be sampled and analyzed as discussed above. This boring should also be extended and completed as a groundwater monitoring well as described above. Both monitor wells should be sampled for pH, total dissolved solids, oil and grease, volatile organic constituents (VOC), total organic halogens (TOH) and PCB's.

Drum Storage (Building 416): This site has the potential to be a source of contamination and additional investigation is warranted. Soil sampling at this location is not feasible since the actual storage area has been covered by construction of Building 416 and the concrete pad in front of the building. The recommended investigation, therefore, is installation and sampling of two down-gradient and one up-gradient groundwater monitoring wells. Because the site is in a built-up area of the base, it will be necessary to install the wells through the apron in front of the building. It is recommended that the down-gradient wells be located within 50 feet of the building. Each well should be sampled and analyzed for the following parameters; pH, total dissolved solids, oil and grease, volatile organic constituents (VOC), total organic halogens (TOH), PCB's.

Drum Storage (Building 408): This storage site has been determined to have the potential for causing environmental contamination. This site has also been covered by construction and soil sampling is not feasible. The recommended investigation, therefore, is the installation and sampling of two down-gradient wells and one up-gradient well. Because of the developed nature of the site area, it will probably be necessary to drill through paved areas in order to construct the wells. All wells should be sampled on the following data: pH, total dissolved solids, oil and grease, volatile organic constituents (VOC), total organic halogens (TOH), and PCB's.

PCB Storage (Building 342): This site has the potential for being a source of contamination to both soil and groundwater. The site itself has been covered by construction and some soil from the site area has been spread in the vicinity and some contamination may have been associated with these soils. It is, therefore, recommended that a sampling grid be laid out around building 342. (Note: Since this recommendation was made, samples of the upper six inches of soil were collected and analyzed, and showed less than one part per million of PCB's.)

ENVIRONMENTAL COMPLIANCE REVIEW

In November of 1985, HQ AFRES assisted the 911th TAG/DE by conducting an evaluation of existing environmental programs at the installation. In order to provide an orderly approach to this evaluation process, the AFRES team used Volume 1 of the U.S. Air Force Environmental Compliance Assessment and Management Program (ECAMP) Guidance Manual as a standard. This manual is organized into major environmental sections which in turn provide orderly checklists that outline minimum standards in each area. As a result of this evaluation, several areas requiring further attention were noted and specific recommendations for improvement or correction were submitted. The 911th TAG has corrected many deficiencies and has made significant progress in addressing others. However, additional work is recommended in the following paragraphs.

FINDINGS

The Air Force Reserve base at Pittsburgh IAP has several sources of air emissions including the following: cold tank degreasers, fuel storage tanks, paint spray booths, and paint remover tanks. There are no sources which emit pollutants in quantities greater than 100 tons per year. During the Environmental Compliance Review, (ECR), the air emission permits and associated files were reviewed and physical inspections were made of paint sray booths, degreasing and paint remover tanks, and fuel storage areas.

Air Emissions

Each Air Force facility is required to conduct an air emissions inventory which lists all sources of air pollution and estimates the total emissions of each pollutant. No emissions inventory has been conducted, consequently the requirements for the yearly update were not being met.

Wastewater Discharges

Sanitary wastewater from the Greater Pittsburgh IAP is treated by Moon Township Sewage Treatment Plant which flows from the Air Force area into the Airport collection system. Industrial wastewater consists primarily of effluents from aircraft and vehicle maintenance activities. Stormwater discharges from the Air Force Reserve area to an unnamed tributary of McClaren's Run. Spill response and containment in the area will be difficult. If the spill was not contained at the source, the moderate to steeply sloping topography in the area would lead to rapid runoff. Access to the probable spill routes is limited.

There are no National Pollutant Discharge Elimination System permits for point source discharges to the watercourse. Since there are no permitted discharges, discharges from the installation must be only uncontaminated stormwater. Air Force Regulations require that installations establish a water quality surveillance and monitoring program to ensure compliance with Federal, state and local requirements. No programs exist at the installation.

Installations which discharge wastewater to Publicly Owned Treatment Works (POTW) are required to comply with certain discharge limitations established by the POTW. A copy of the local regulation was not available at the installation. In general, prohibited discharges are those discharges which can cause fire or explosion, corrosion problems, viscous obstructions, and/or excessive heat. In addition, slug discharges of materials which interfere or overload treatment operations are prohibited. Discharge of toxic and hazardous materials are either limited or prohibited. The required water quality surveillance and monitoring program should include discharges to the POTW. POTW at Moon Township have encountered some problems with industrial discharges from the Airport, specifically discharges of ethylene glycol antifreeze solutions. typical discharges from Air Force installations which cause problems for the POTW and may be prohibited or limited are: slug discharges of Air Force firefighting foam (AFFF), toxic and flammable discharges from maintenance activities, and grease from food preparation facilities.

Solid Waste

Refuse collection and disposal is by contract. Refuse is disposed of off the installation at a privately owned landfill. There are no sanitary landfills on the installation.

Each Air Force installation has the responsibility for the proper disposal of solid waste generated by Air Force operations. This responsibility includes assurance that off-base landfills which receive Air Force solid wastes are licensed and are operated in compliance with the conditions of the permits. No actions have been taken to determine if the off-base landfill has the required permits and is being operated properly.

Hazardous Waste

The Air Force Reserve base at Pittsburgh IAP generates several hazardous wastes including spent paint remover solutions, spent solvents and paint waste. The approximate quantity of hazardous waste appears to be less than 2200 pounds per month. There is a contract to furnish small degreasing units and to replace used solvent with new material. The solvent used in these units is a high flash point petroleum solvent. The contractor removes the contaminated solvent, recycles the material at an off-base facility and furnishes clean solvent. Hazardous wastes are currently stored at Building 310. This facility is a fenced concrete slab. This facility is used for the temporary storage of hazardous waste awaiting pick up by the Defense Reutilization and Marketing Office (DRMO) contractor.

The Hazardous Waste Management Program at the installation is inadequate to assure compliance with state and Federal hazardous waste regulations. Noncomplying conditions were identified in the following areas:

Waste Stream Identification and Control: Current procedures used at the installation, outlined in the Hazardous Waste Management Plan, are inadequate to insure *waste stream identification and control*. The master list of waste generated do not include quantities, EPA hazardous waste codes, and specific generator information. The contents of several drums at the accumulation point are not known and not indicated on the containers. The DRMO requires information on the contents before disposal actions can be processed.

Storage of Large Quantities: The maximum quantity of hazardous waste which may be stored at the installation is 2200 pounds/1000 kilograms. When this quantity has been reached, all hazardous waste must be removed within 90 days. The maximum quantity of hazardous waste is often exceeded at the accumulation.

Inspection of Containers: The required inspection program does not exist.

Training Program: The required training program does not exist and training records are not maintained.

Contingency Plan and Emergency Procedures: Each accumulation point must be addressed in a contingency plan or emergency procedures. The base has an Oil and Hazardous Pollution and Contingency Plan. The recommended procedure to comply with Contingency Plan requirements of hazardous waste management regulations is the inclusion of these requirements in a base Spill Response Plan (SRP). The SRP combines the requirements of the Spill Prevention Countermeasures and Control Plan, the Oil and Hazardous Substances Pollution Contingency Plan and hazardous waste management contingency plan and emergency procedures.

Pesticides

All pest control operations are conducted in-house with both State and DOD certified personnel (1 Civilian/1 Reservist). Required semi-annual physical examinations are performed on personnel involved in pest control operations. The Pest Control Shop, currently under construction, will include storage, mixing, and decontamination facilities.

No state licenses or permits are required for limited pest control operations. DOD certification is accepted by the state. Uncertified personnel currently work under the direct supervision of DOD certified personnel when pest control operations are performed.

The required physical examinations are not being performed. New employees are required to have a physical examination within 30 days after beginning work, and all employees are required to have semi-annual examinations performed.

Facilities used for pest control are inadequate. There are no facilities for mixing or decontamination.

Although the current storage area for pesticides is adequate for the storage of small quantities of pesticides (less than 40 gallons), two deficiencies were noted: spill absorbent materials were not available and an inventory of chemicals was not displayed outside the storage facility.

Poly-Chlorinated Biphenyl (PCB)

The installation uses, stores, and disposes of PCB's and PCB equipment. PCB's are contained in electrical equipment (transformers, capacitors, switches, etc.). When electrical equipment containing PCB's is taken out of service, the Disposal Turn-in Document is processed through the servicing DRMO for disposal by service contract. Inspection, servicing, and labeling of PCB equipment in service is performed by the electrical shop in Civil Engineering. PCB items awaiting disposal are stored at the Hazardous Waste Compound (accumulation point).

Federal regulations applicable to the management of PCB's were promulgated pursuant to the Toxic Substance Control Act. The following noncompliance areas were identified:

..Failure to mark PCB items taken out of service and placed into storage with the date taken out of service.

..Storing PCB items in a facility which does not meet the requirements for a PCB Storage Facility for longer than 30 days.

POL Management

The installation stores and uses a wide variety of petroleum products including jet fuel, motor vehicle fuel, petroleum solvents, heating fuel, oils and lubricants.

The installation did not have a current Spill Response Plan (SRP). The SRP combines the requirements of the Spill Prevention Control and Countermeasures (SPCC) Plan, the Oil and Hazardous Substance Pollution Contingency (OHSPC) and hazardous waste requirements for contingency plan/emergency procedures. A current OSHPC plan had been prepared, but no training or spill response exercises had been conducted. The SPCC plan has not been revised, updated, and approved by a Registered Professional Engineer in Pennsylvania.

Hazardous Materials

The installation does not transport hazardous materials on public roads; does not maintain bulk storage of acids; and does not use general purpose warehouse space for the storage of hazardous materials. Hazardous materials are stored in facility number 319. This facility was completed in 1983 and was specifically designed for the storage of hazardous materials.

A master listing of hazardous materials/storage areas is maintained both in supply and in the bioenvironmental section.

Relevant regulations, direction, and guidance are maintained by the installation.

The Hazardous Material Storage Building is a relatively new single story building constructed with concrete floors and concrete block walls. The roof is steel girder and corrugated metal construction. The building is designed with six storage compartments, each separated from the other by blank concrete block walls with liquid tight wall and floor joints. Each section has a separate outside entry via a fire resistant metal door, as well as a separate ventilation system consisting of louvers near the floor and ceiling. The louvers exhaust directly to the exterior of the building. Circulation of air across the floor appeared to be adequate even though no mechanical exhaust ventilation exists. The storage facility is not within 50 feet of another building. There is no sprinkler or other equivalent fire protection system. Materials are in separate compartments of the building as follows:

...Corrosive/nonflammables

...Oil and Lubricants

...Paint and Painting Materials

...Oxygen

...Other Compressed Gas

...Civil Engineering Storage (primarily paint)

There are clear exterior markings identifying each compartment of the building and the basic contents thereof. Stacked containers on the inside are raised from the floor and separated by type. Each stack has the markings of the containers clearly visible and each container is clearly labeled. All stored containers were tightly sealed. The largest stack contained 80 gallons of paint in five-gallon drums. The average stack contained three to four drums of five-gallon capacity. No stack was more than three feet high. Three or more feet separated each stack.

There was no fire extinguisher on the outside of the building. Each separate compartment had an 11BC fire extinguisher in the interior readily accessible to the entire compartment.

The storage facility is adequate for its use and is operated properly.

RECOMMENDATIONS

The base Environmental Coordinator will perform annual self inspections of the base environmental programs. These inspections will be conducted using Volume I of the ECAMP Manual as an inspection checklist. Resolution of significant discrepancies will be addressed in an annual Base Environmental Program Workplan.

Air Emissions

A complete air emissions inventory as required by Air Force Regulation is recommended for the installation. The Base Bioenvironmental Engineer should be the OPR for this activity. Three specific types of air emission sources should be identified and quantified. They are: all sources of volatile organic compounds (VOC's); particulates, sulfur dioxide, and nitrogen oxides from fuel burning at steam and hot water generation plants and boilers; and, emission of nitrogen oxides and hydrocarbons from motor vehicles and AGE equipment.

Wastewater Discharges

The present Draft Water Quality Monitoring Plan for stormwater discharges to McClaren's Run should be finalized and implemented as soon as possible. Based on initial results of this testing, a determination can then be made as to the need for an NPDES permit for this installation. Testing water upstream of the base discharge points and at the point in the stormwater drainage system where water from the County Airport aprons enters the base storm water drainage system is especially important in gauging the significance of the installation's discharges to the brook. After test results are reviewed with local, state, and federal officials, application for an NPDES permit will be made if warranted.

Solid Waste

Although not a regulatory requirement, a good management practice is to conduct periodic visits to the off-base landfill to determine if permit conditions are being met. Base officials should also contact state and local solid waste management agencies to determine the compliance status of the landfill.

Another good management practice is to conduct periodic inspection of dumpsters to determine if prohibited materials are being laced in dumpsters.

Hazardous Waste

An updated base hazardous waste management plan has been prepared for this installation. This plan should be reviewed and updated as necessary to reflect changes in state or federal regulations, Air Force Regulations, and/or changes in base personnel, facilities, or operating procedures. An aggressive hazardous waste management/handling training program should be planned and implemented for all Generator Accumulation Point Managers and the Base Accumulation Point Manager/alternate.

The base Spill Response Plan should be updated and reviewed annually. Regular rehearsals of this plan should be incorporated into base disaster preparedness training exercises. All shops and satellite facilities should be regularly trained as to how to respond in the event of a significant spill.

PESTICIDES

Insure that all personnel performing pest control operation shave received DOD certification.

Establish the required medical service programs to monitor pest control operations. Physical examinations for pest control personnel and monitoring pesticides application in food service areas are two examples.

Establish procedures for the review and approval of all pesticides used on the installation (both in-house and by contract).

Continue with the design and construction effort for the pest management facility. Recommend that the drain line from the storage room be deleted for the proposed facility. A spill containment barrier should be placed between the mixing/formulation area and drain. The base should continue to conform to Commonwealth of Pennsylvania requirements associated with the application of pesticide materials (insecticides, herbicides, rodenticides, fungicides, etc.) on the installation.

Poly-Chlorindated Biphenyl (PCB)

When PCB items are taken out of service and placed into storage, the date which the items was taken out of service should be placed on the item or attached to it. When the time is placed into another container (over-pak drum), the date should also be placed on or attached to the exterior of that container. The items should be arranged so that the date is visible to the inspector.

The time required to accomplish disposal through DRMO will nearly always be greater than 30 days. The alternative storage measures which have been implemented should be continued. A PCB storage facility probably cannot be justified based on the number of PCB items which remain in service and the future storage requirements.

POL Management

Complete a base Spill Response Plan using the Guidance and Sample Plan which was forwarded in March 1983.

Hazardous Materials

Install a fire extinguisher of at least 10BC on the exterior of the building.

OIL & HAZARDOUS SUBSTANCES CONTINGENCY PLAN

The Congress has declared that it is the policy of the United States that there should be no discharge of oil or other hazardous substance into or upon the navigable waters of the United States, the adjoining shorelines, or the contiguous zone. Under this policy, all federal agencies are responsible for mini-

mizing the occurrence of spills, for developing the capability to respond promptly in cases of spills from facilities they operate or supervise, and for making resources available for national spill response operations. The National Oil and Hazardous Substances Pollution Contingency Plan was prepared by authority of the Clean Water Act. The President delegated to the Council on Environmental Quality Authority and Responsibility to prepare, publish, revise and amend a national contingency plan for the removal of oil and hazardous substances. It provides a mechanism for coordinating and integrating Federal, state and local response to pollution incidents that occur in all United States navigable water, their tributaries, and adjoining shorelines. All Federal agencies have been directed to develop emergency plans and procedures for dealing with all types of water pollution incidents, regardless of where they occur.

The possibility of accidental spills of oil or other substances into the watershed draining the base must be considered. Depending on the nature of the spill, McClaren's Run, Montour Run and eventually the Ohio River could become contaminated. 911th TAG base will be required to institute clean-up actions for any pollution spills that occur on, or by facilities it controls or supervises. The 911th TAG base may be called upon to furnish resources (manpower, equipment, materials) for a coordinated Federal response to non-Air Force caused pollution spills.

The mission of the Oil and Hazardous Substances Contingency Plan is to support the National Oil and Hazardous Substances Pollution Contingency Plan and the USAF Oil and Hazardous Substance Pollution Contingency Plan. This can be done by the following:

..Developing appropriate measures to prevent accidental pollution incidents.

..Eliminating sources of potential pollution spills.

..Instituting an effective system for discovering and reporting the existence of pollution spills.

..Providing a timely response, by trained personnel with sufficient equipment and materials to clean-up pollution spills and restore the environment to its former state.

The 911th TAG base is responsible for minimizing the occurrence of pollution spills and developing the capability to respond promptly in instance of spills from facilities they operate or supervise. The Department of the Air Force is responsible for cleaning up oil spills or other hazardous substance that occur on Air Force property, and, in so far as possible, for restoring the environment to its pre-spill condition. The actions taken to respond to a Pollution Spill are as follows:

..Discovery and Notification
..Evaluation and Initiation of Action
..Containment and Countermeasures
..Clean-up, Mitigation and Dispersal
..Documentation and Cost Recovery

HAZARDOUS WASTE MANAGEMENT PLAN

The Congress, in its Resource Conservation and Recovery Act of 1976, directed the Environmental Protection Agency (EPA) to promulgate regulations to protect human health and the environment from the improper management of hazardous waste. In implementing the requirements of the Act, the EPA charged the Department of Defense with the task of compiling a Department-wide hazardous waste management plan which will comply with their procedural requirements. Within the Department of Defense this task has been epitomized in DOD Memorandum, and, Defense Environmental Quality Program Policy Memorandum. Its implementation within the Department of the Air Force is presented in Air Force reference documents and the series of RORA Implementing Instruction for the Hazardous Waste Management Program. Therein policy is established, responsibilities are assigned, and guidance is provided to recover and dispose of recoverable and waste liquid petroleum products. These directives require that all HQ USAF offices, major commands, and all subordinate activities establish and implement operating and accounting procedures to manage this task. This Hazardous Waste Management Plan serves these objectives.

The mission of this Hazardous Waste Management Program is to provide a formal plan which will determine responsibility and set forth those procedures necessary to comply with the Hazardous Waste Manage ment provision and the referenced Implementing Instructions for the Hazardous Waste Management Program. This involves a specific identification of the sources of generation, nature of the accumulation facility including its management, inspection, recordkeeping, safety provisions and disposal method. Ultimately, the plan represents an inventory, documentation and tracking format for all hazardous wastes regularly generated on the facility.

Exhibit 8.3p: **Typical Hazardous Safety Signage**

Chapter IX

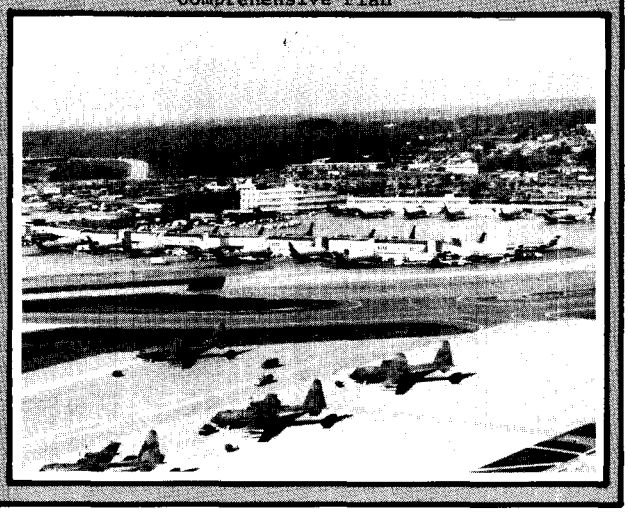
BASE LAYOUT AND VICINITY

For

Pittsburgh AFRES Base

Comprehensive Plan

Exhibit 9.1p: Oblique Aerial Photos Were Taken As As Part Of The Pittsburgh AFRES Base Comprehensive Plan



INTRODUCTION

As part of the comprehensive plan project for the Pittsburgh AFRES Base, several aerial photos and map TABs were produced.

Most of the map TABs are similar to those found in a civilian community's public works and planning departments, primarily to indicate the existing conditions, although a few will describe future needs and proposals.

For the Pittsburgh AFRES, the map TABs included 40 different titles with a total of 61 final map sheets. They comprise almost all areas encompassed by the standard Air Force Statement of Work for comprehensive plan mapping.

The process of producing the map TABs included aerial photography, field control, photogrammetric compilation, interactive graphic manipulation, and field research and verification. A listing of these end products is provided by Exhibit 9.4t, while the sheet layout for the TABs is shown by Exhibit 9.5m.

After the completion and acceptance of the mapping, all digital map information will be translated to the Intergraph Standard Interchange Format (ISIF) for final delivery of computer tapes.

AERIAL PHOTOGRAPHY, STEP #1

Vertical aerial photography of the Pittsburgh AFRES was taken at negative scales of 400', 500', 700', 800', 1,000', and 2,700'. Oblique aerial photos also were taken from all points of the compass. The photography, in color and black and white was completed in November of 1986.

The aerial photography scales at 500 feet, 1,000 feet and 2,700 feet were used for photographic enlargements, wall displays and planning purposes.

The 400 foot and 800 foot negative scale photography was used for the photogrammetric mapping compilation.

Overall more than 105 aerial photos were taken over the Pittsburgh AFRES Base.

Exhibit 9.2m: Title Box Example For 911th TAG

DEPARTMENT OF THE AIR FORCE
DIRECTORATE OF ENGINEERING AND SERVICES DCS/LEE WASHINGTON D.C.
911TH TACTICAL AIRLIFT GROUP
U. S. AIR FORCE RESERVE
BASE LAYOUT
GREATER PITTSBURGH INTERNATIONAL AIRPORT
PITTSBURGH PENNSYLVANIA

SCALE 1 : 100'	DATE : MAY 30, 1987	TAB NO. C-1.1
BASE COMPREHENSIVE PLAN DIRECTIVE AFR 86-4		
GRW ENGINEERS, INC. LEXINGTON, KY		SHEET OF 4

FIELD CONTROL, STEP #2

The field survey control for the photogrammetric mapping phase of the project was accomplished by a field survey team from the consultant's staff.

The survey points captured consisted of pre-panel points (panels placed before the aerial photography was flown) and photo points that were selected from the aerial photography.

From the field control points, additional photo control for photogrammetric compilation was generated by computer analytic triangulation.

PHOTOGRAMMETRIC COMPILATION, STEP #3

The topographic base maps for the Pittsburgh AFRES Base were drawn at 1"=100' scale using the 400 foot negative scale aerial photography.

The base maps were produced on Kern PG-2 stereo equipment, with data collected through a KORK digital collection system.

After compilation, the digital files were translated into a SYNERCOM interactive graphics system. The resulting maps comprised the C-1.1 TAB for the base.

Strict control was exercised throughout the compilation and translation process to ensure that the 1"=100' scale TABs were within National Map Accuracy Standards.

INTERACTIVE GRAPHICS, STEP #4

After compilation and translation of the base map information to the SYNERCOM system, the digital files were cleaned up and manipulated to produce the final map sheets.

From the 1"=100' scale files, the other C TABs at 1"=50' and 1"=200' were produced.

The 1"=800' scale C-1.3 base map for the Greater Pittsburgh International Airport was digitized into the Synercom system from maps previously produced and made available by GPIA officials.

FINAL MAP PLOTTING AND TRANSLATION, STEP #5

All of the ink-on-mylar final maps for the C-1 through C-1.3 TABs were generated by the Calcomp Plotter. The topographic information, however, underwent some extra steps. The topo was produced the first time, with no other information, by the Calcomp Plotter. These sheets were screened in the photo lab to subdue the line weights. The resulting photo mylar was placed on the Calcomp Plotter and all other information was plotted on top of the screened contours.

A second method for achieving the same end result (especially if two or more mylar copies are needed) would conist of (1) plotting the topo on one sheet, (2) plotting all other information on a second sheet, and (3) using the photo lab for screening of topography and production of the composite mylar.

VICINITY AND REGIONAL MAP TABS

The following process was used in preparing the C-3: Regional Location Map at 1"=4 miles scale, and the C-4: Vicinity Location Map at 1"=1 mile scale:

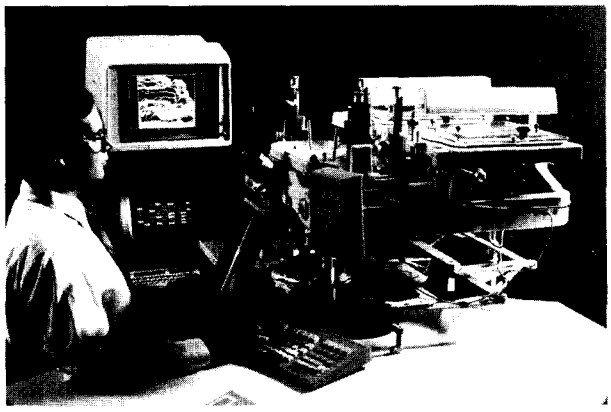
...USGS maps, used to form the underlying base, were transferred onto photo mylar.

...Overlay information was developed on top of the photo mylar at a work station and digitized into the computer.

...The photo mylar was placed on the Calcomp Plotter and the overlay information was plotted on top to form the final composite. Or, as was described in Step #5, a second method for making the final composite (especially two or more copies) would use the photo lab.

Exhibit 9.3p: Automated Drafting Equipment Used In Preparation Of Pittsburgh AFRES Base Map TABs

..Kern PG-2 Stereo Equipment And KORK Digital Collection System



..Intergraph Workstation

E...END PRODUCTS SUBMITTAL RECORD

	END PRODUCT ITEM	SHTS.	FIRST SUB.	SECOND SUB.	FINAL SUB.
AERIAL PHOTOGRAPHY	AP-1 CAMERA CALIBRATION REPORT			N/A	N/A
	AP-2 AERIAL PHOTOGRAPHY FLIGHT PLAN	1		N/A	N/A
	AP-3 COLOR NEGATIVES, 9"X9" VERTICAL , 1 SET (a) 400 scale negs vertical	1		N/A	N/A
	(b) 800 scale negs vertical	1		N/A	N/A
	(c) spot shot vertical cantonment area 1"=1000'	1		N/A	N/A
	(d) spot shot vertical 1"=700' scale	1		N/A	N/A
	(e) spot shot vertical airport area 1"=2700' scale	1		N/A	N/A
	AP-4 BLACK AND WHITE NEGATIVES ONE SET (a) 500 scale negatives vertical	1		N/A	N/A
	(b) spot shot vertical cantonment area 1"=1000'	1		N/A	N/A
	(c) spot shot vertical cantonment area 1"=700'	1		N/A	N/A
	(d) spot shot vertical airport area 1"=2700'	1		N/A	N/A
	AP-5 COLOR CONTACT PRINTS FROM AP-3,5 ALTITUDES VERTICAL , 2 SETS	2		N/A	N/A
	AP-6 BLACK AND WHITE CONTACT PRINTS FROM AP-4 2 SETS	2		N/A	N/A
	AP-7 AERIAL OBLIQUES OF RESERVE AREA AND RUNWAY, COLOR AND B&W NEGS, 8 EACH	8		N/A	N/A
	AP-8 COLOR AND B&W CONTACT PRINTS FROM AP-7, 9"X9" OBLIQUES, 2 SETS	2		N/A	N/A
	AP-9 COLOR PHOTO ENLARGEMENTS OF AP-3 (C), 1"=200', 3 TOTAL	3		N/A	N/A
	AP-10 COLOR PHOTO ENLARGEMENTS OF AP-3 (e), 1"=400' 3 TOTAL	3		N/A	N/A
	AP-11 BLACK AND WHITE PHOTO ENLARGEMENTS OF AP-4 (b) 1"=200', 3 TOTAL	3		N/A	N/A
	AP-12 BLACK AND WHITE PHOTO ENLARGEMENTS OF AP-4 (a) 1"=400', 3 total	3		N/A	N/A
	AP-13 BLACK AND WHITE PHOTO INDICES OF ALL VERTICAL PHOTOGRAPHY, 18"X24", 2 MYLAR, AND 2 PAPER PRINTS EACH	4		N/A	N/A
	AP-14 BLACK AND WHITE PHOTO ENL., 4 SHEETS 25"X25" IMAGE AT 1"=100', 2 MYLARS AND 2 PAPER PRINTS EACH	4		N/A	N/A
FIELD CONTROL	FC-1 PRE-FLIGHT CODING OF UTILITIES			N/A	
	FC-2 PRE-FLIGHT PANELING FOR PHOTO CONTROL			N/A	
	FC-3 HOR. & VERT. PHOTO CONTROL IN FIELD, OFFICE COMPS., & PLACE CONTROL COORDS ON COLOR PHOTOS			N/A	
	FC-4 AERIAL TRIANGULATION HOR. & VERT. COMPUTER CONTROL SOLUTION, REPORT			N/A	
	FC-4.2 VERTICAL CONTROL FOR UTILITIES			N/A	
	FC-5 AERIAL FILM DIAPOSITIVES FOR MAPPING 10"X10" 1 SET			N/A	
	FC-6 FIELD SURVEY REPORT TO INCLUDE IN BASE MAP COMPONENT OF COMP. PLAN			N/A	N/A

MAP TABS	COVER SHEET AND INDEX	2	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	B-6 INSTALLATION RESTORATION PROGRAM, 1"=100' 1 SHEET	1	☐ PENCIL COPY	☐ FIRST PLOT	☐ FINAL PLOT
	C-1 BASE LAYOUT 1"=50' 2' CONTOUR INT., 9 SHTS	9	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	C-1.1 BASE LAYOUT 1"=100' 2' CONTOUR INTERVAL 4 SHEETS, PHOTO COMPILED	4	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	C-1.2 BASE LAYOUT 1"=200' 5' CONTOUR INTERVAL	1	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	C-1.3 BASE LAYOUT 1"=800' 10' CONT INTERVAL	1	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	C-3 REGIONAL MAP 1"=4 MILES	1	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT
	C-4 VICINITY MAP 1"=1 MILE	1	☐ FIRST PLOT	☐ SECOND PLOT	☐ FINAL PLOT

Exhibit 9.4t: Listing Of End Products And Number Of Submittals For Aerial Photography, Field Control, And The "C" Map TABs

SHEET LAYOUT FOR ALL MAP TABs

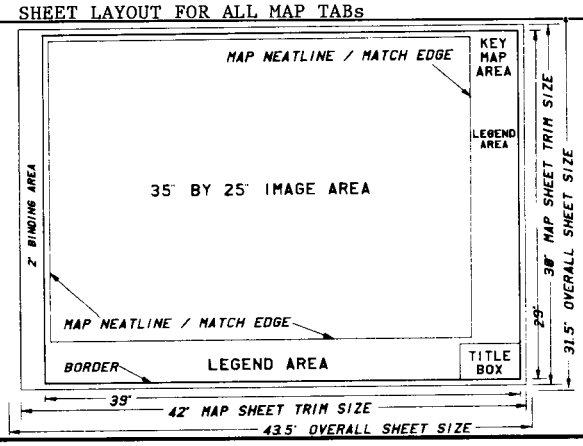


Exhibit 9.5m:

Index

And

Sheet Layout

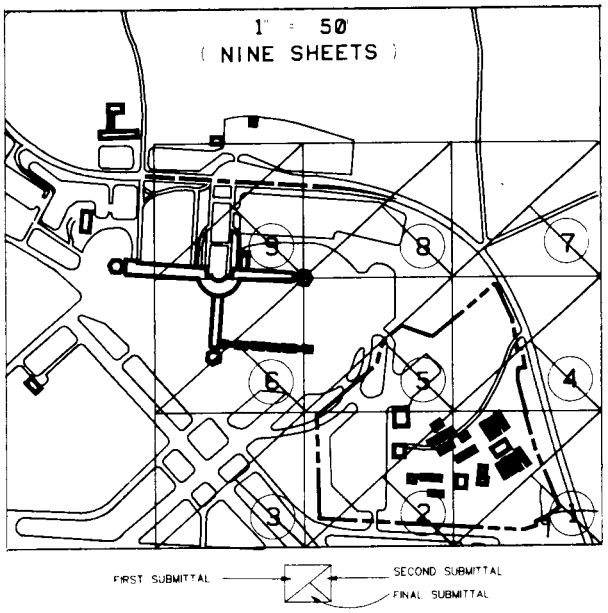
For

Pittsburgh AFRES Base

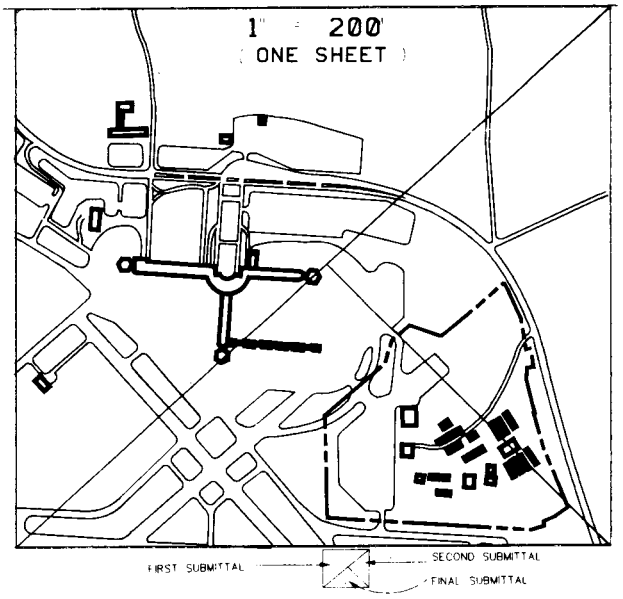
Map

TABs "C"

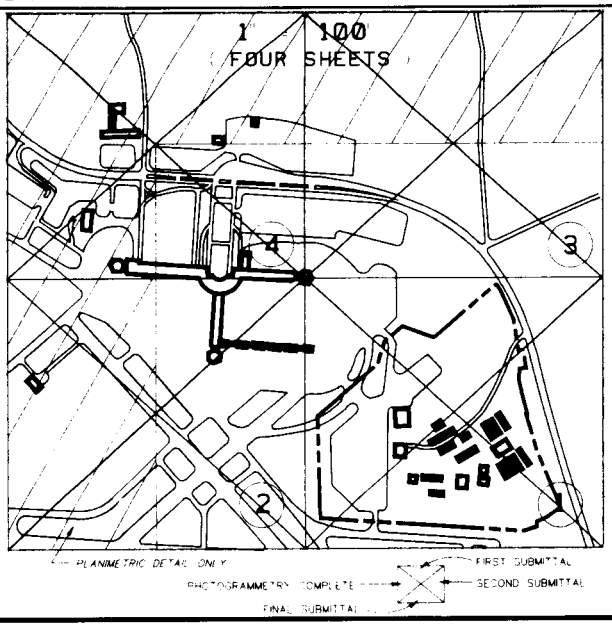
INDEX FOR 50' SCALE MAP TAB C-1 COVERAGE



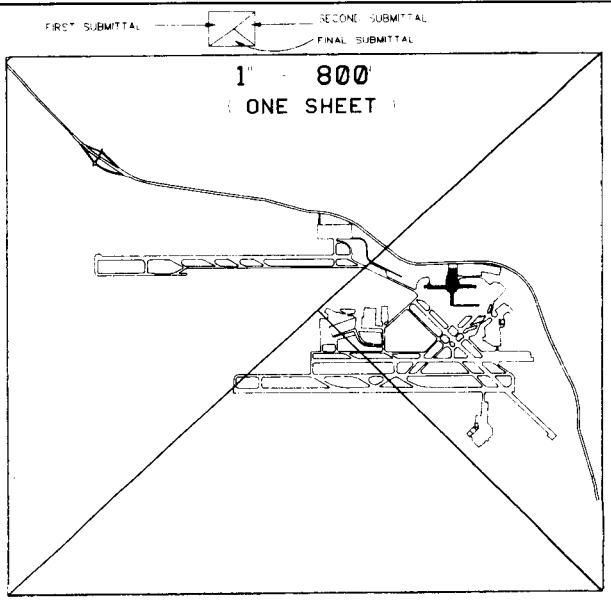
SINGLE SHEET TAB C-1.2 COVERAGE, 200' SCALE



INDEX FOR 100' SCALE MAP TAB C-1.1 COVERAGE



SINGLE SHEET TAB C-1.3 COVERAGE, 800' SCALE



Chapter X

LAND USE PLAN

FOR THE

PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

INTRODUCTION

This chapter will inventory and analyze the existing Pittsburgh AFRES Base land use, and describe the future land use plan as selected in Chapter VI. The major sections in the chapter will be:

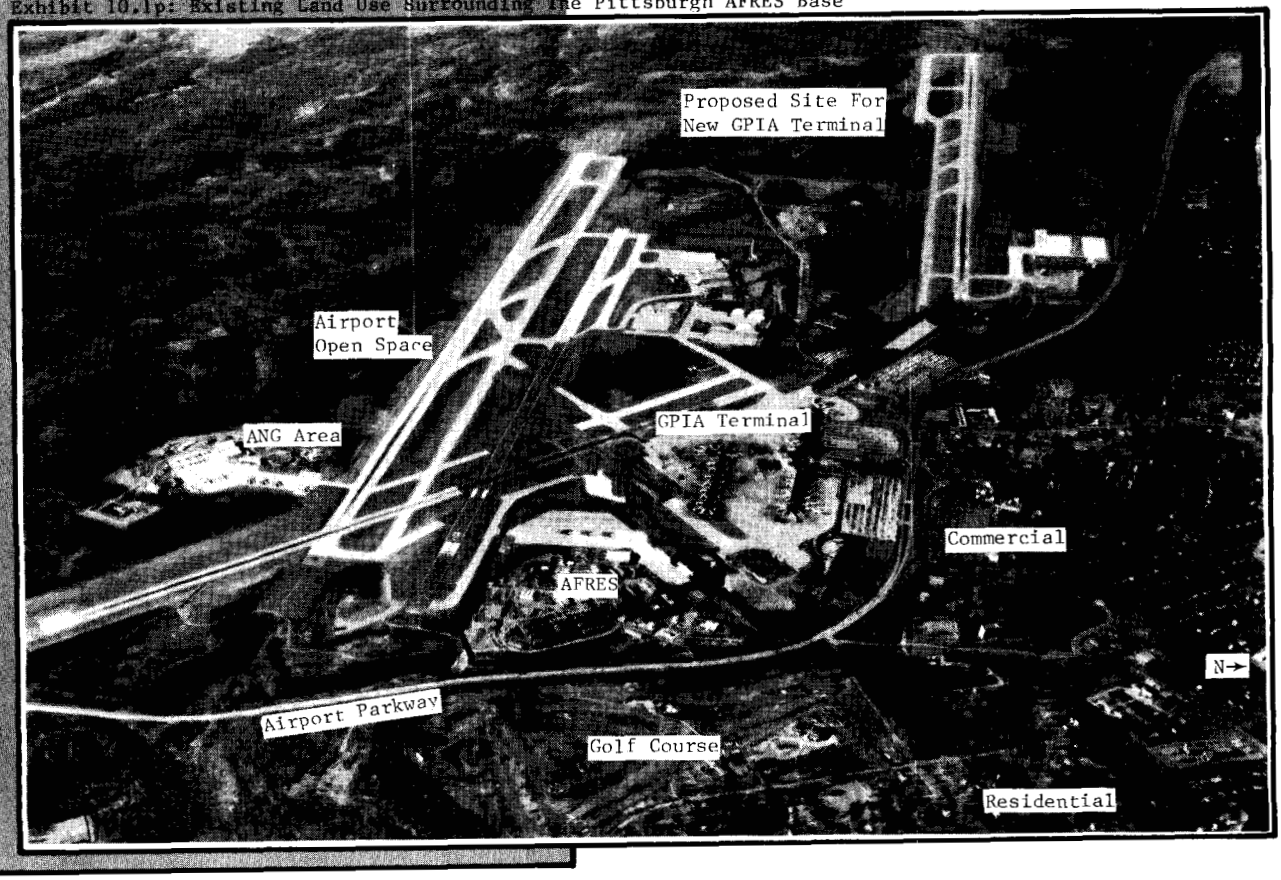
...Existing Surrounding Land Use
...Existing Base Land Area
...Existing Base Land Use
...Needs, Objectives, Constraints and Alternatives
...The Selected Land Use Plan

EXISTING SURROUNDING LAND USE

The surrounding land use, as illustrated by the photo below, includes the following:

...To the SOUTH are two parallel runways, the Pennsylvania Air National Guard area, and considerable open space wisely retained by local officials for Airport use:
...To the WEST is a crosswind runway, the Passenger Terminal Building for the Greater Pittsburgh International Airport (GPIA), General Aviation buildings, and another runway. The new GPIA Terminal will be built further west of the General Aviation Area.
...To the NORTH is more of the GPIA Terminal area, private commercial buildings, and Moon Township residential.
...To the EAST is a golf course, Moon Township residential properties, and open area.

Exhibit 10.1p: Existing Land Use Surrounding The Pittsburgh AFRES Base



EXISTING LAND AREA

At present, the total base land area is 105.7 acres, as delineated by the aerial photograph shown below.

For land use measurement purposes, the area will be subdivided as shown by the table below and by the map to the right. Each of the four quadrants contain 21 to 29 acres....and the two halves contain 50 to 55 acres.

Exhibit 10.2t: Areal Units Land Area

Areal Unit	Acres	%
...ENTIRE BASE.....	105.7	100.0%
...North Half.....	55.4	52.4
...Northeast Quad.....	26.7	25.3
...Northwest Quad.....	28.7	27.1
...South Half.....	50.3	47.6
...Southeast Quad.....	21.2	20.1
...Southwest Quad.....	29.1	27.5

Exhibit 10.4m: Areal Unit Subdivisions

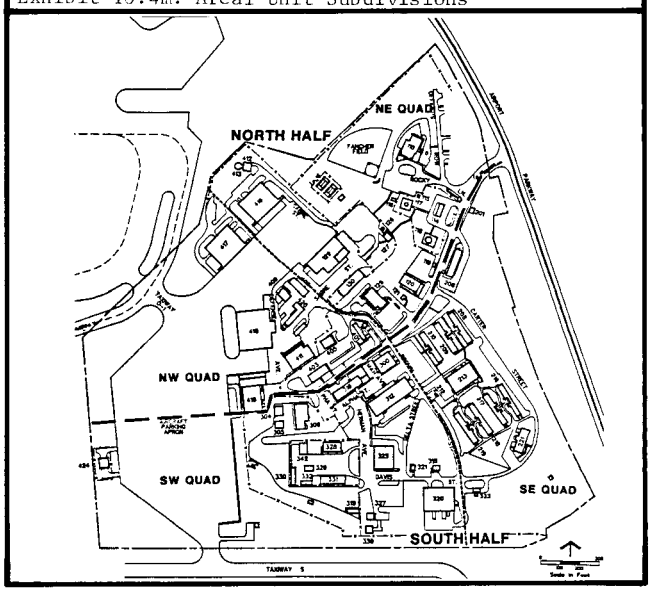
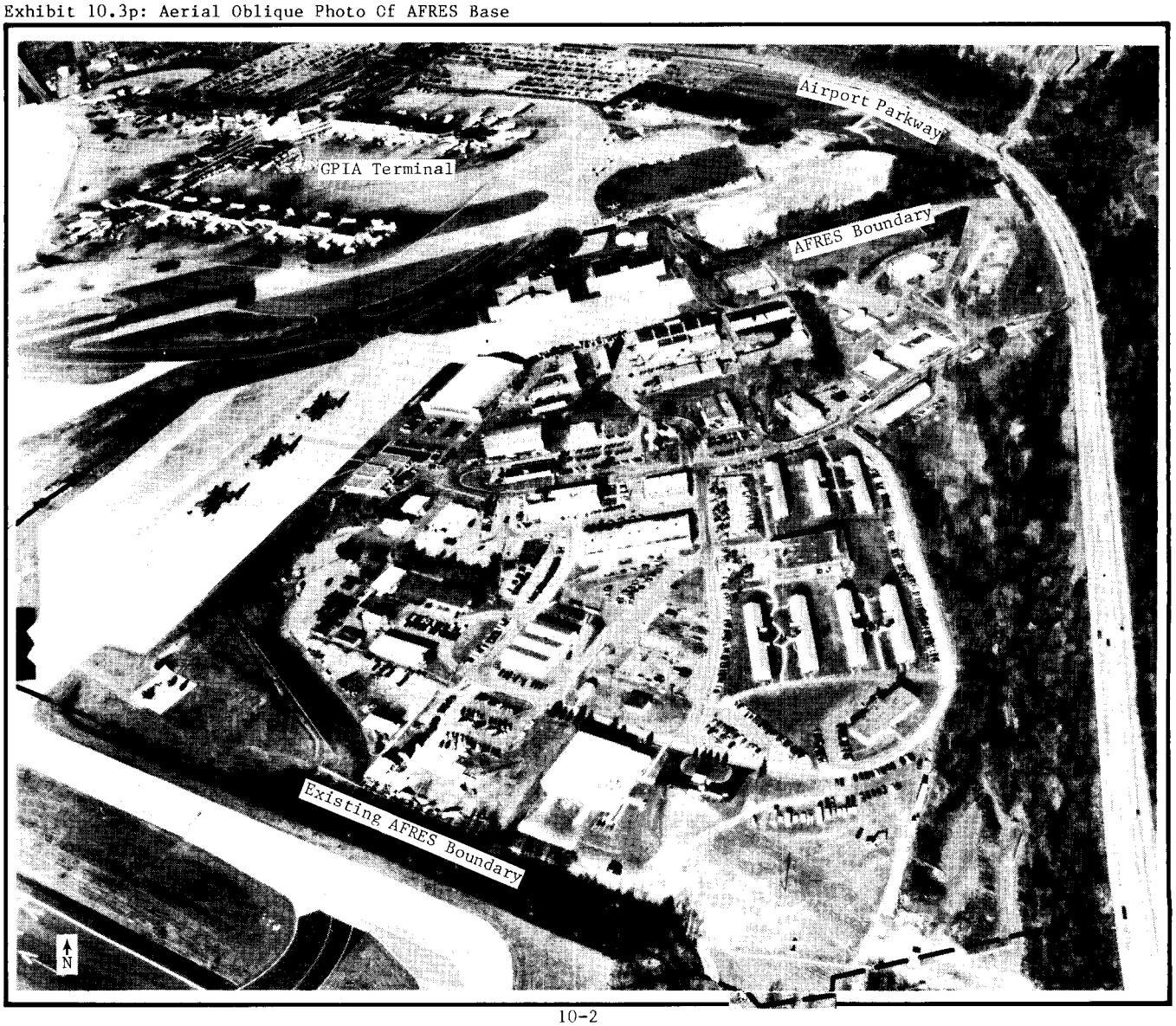


Exhibit 10.3p: Aerial Oblique Photo Of AFRES Base



LAND USE CLASSIFICATION SYSTEM

For comprehensive planning purposes, the Air Force has developed its own system for classifying land use. As shown by the table below, all land uses are placed under one of 12 categories. Typical buildings, or other uses, belonging to each category are listed, along with their category code number.

For mapping purposes,the system also assigns a color for each category....such as gray (Prismacolor pencil #936) for Industrial land use....or an orange color (Prismacolor pencil #918) for Adminstrative land use.

The two exhibits to the right are based on the real property inventory for the AFRES base:

...The first listing organizes the properties by facility number, from 100 through 6499. In the fourth column, under "AFC", the Air Force land use code has been added for each property.
...The second listing organizes the properties by Air Force land use code. Some land uses are not reflected by the property list, such as 1..Airfield; 8..Housing (Accomp.); 11..Open Space; and 12..Water.

Exhibit 10.5t: The Air Force Land Use Classification System

1..AIRFIELD.....brown-945*
(non-paved areas are white)
- 111-111..Runway
- 111-115..Overrun
- 112-211..Taxiway
- 113-321..Apron
- 116-661..Arm/disarm Pad

2..AIRCRAFT OPER. & MAINT...dk.blue-902
- 211-111..Aircraft Hangar
- 211-154..Aircraft Org'n Maintenance
- 211-152..General Purpose Shop (A/C)
- 610-129..Maintenance Control Ofc.
- 218-712..AGE Shop Maintenance
- 211-157..Engine I&R
- 211-179..Fuel Maintenance Dock
- 211-159..Corrosion Control Facility
- 211-153..NDI Shop
- 217-712..Avionics Shop
- 171-618..Field Training Det. (on F/L)
- 141-453..Base Operations
- 141-459..Crew Readiness Facility
- 141-753..Helicopter Operations
- 149-962..Control Tower
- 141-6XX..Weather Facility
- 171-875..Munit. Load Crew Trng. Fac.
- 730-142..Fire Station-Crash/Rescue
- 141-782..Air Freight Terminal
- 141-784..Passenger Terminal
- 141-753..Squadron Ops/Flight Trng.
- 116-672..Aircraft Wash Rack
- 211-193..Sound Suppressor
- 211-154..Aircraft Maintenance Unit
- 149-512..Missile Launch Sites
  - ..Radar/Acft. Guidance Systems
  - ..Primary Radar Station Facil.

3..INDUSTRIAL.....gray-936
- 610-122..Base Supply Admin.
- 442-758..Warehouse, Supply & Equip.
- 442-628..Shed, Supplies & Equipment
- 452-252..Open Storage, BCE
- 610-142..Commercial Transportation
- 610-121..Vehicle Operations Admin.
- 214-425..Vehicle Maintenance Shop
- 214-467..Refueling Vehicle Shop
- 214-428..Vehicle Parking Shed
- 852-261..Vehicle Ops. Parking
- 214-428..Vehicle Ops. Storage
- 214-422..Vehicle Wash Rack
- 452-258..Open Storage, LGT
- 610-127..Base Engineering Admin.
- 219-944..BE Maintenance Shop
- 219-946..BE Covered Storage
- 219-947..BE Storage Shed
- 219-943..BE Pavements & Grounds
- 452-252..BE Open Storage
- 131-111..Communication Maint. Fac.
- 821-XXX..Heating Plant
- 821-XXX..Central Refrig. Plant
- 831-XXX..Sanitation Facility
- 171-212..Flight Simulator
- 841-XXX..Water Facilities
- 730-142..Fire Station-structural
- 218-842..Locomotive Maintenance
- 121-111..POL Ops. Building
- 126-925..Truck Fill Stand
- 121-111..Fuel Storage
- 124-1XX..Operating Storage
- 171-618..Field Training Det. (SPs)
- 171-476..Small Arms Training
- 179-475..Small Arms Range
- 218-183..Test Cell
- 610-913..Disaster Preparedness

3..INDUSTRIAL (continued)
- 179-511..Fire Training Facility
- 730-84X..Kennel/Kennel Support
- 730-836..Reserve Fire Team Fac.
- 610-717..Base Printing Plant
- 215-552..Armament Maint/Storage
- 141-743..Photo Lab
- 131-114..MARS Radio
- 813-231..Electric Substations
- 218-852..Survival Equipment Shop
  - ..Other Utility Facilities
  - ..Weapons/Munitions Stor. Area
  - ..Various Research Facil./Labs

4..ADMINISTRATIVE.....orange-918
- 141-383..Audio Visual Fac.
- 141-389..Television Prod. Center
- 730-441..Education Center
- 610-911..Social Action Fac.
- 610-249/243..Wing/Group Headquarters
- 610-111..Area Defense Council Office
- 610-112..Law Center
- 141-641..Command Post
- 131-111..Telecom Center
- 610-119..CBPO
- 610-128..Civilian Personnel
- 610-128..Family Services
- 610-119..Family Hsg. Mgmt.
- 740-717..Red Cross
- 442-768..Warehouse, Forms & Pubs.
- 610-243..DCO Staff
- 610-243..DCM Staff
- 730-243..SP Group HQs.
- 730-835..Security Operations
- 730-832..Central Security Cntl.
- 730-832..SP Control & ID
- 730-839..Traffic Check House
- 610-711..Data Processing Plt.

5..COMMUNITY (COMMERCIAL).....red-926
- 730-717..Clothing Sales
- 740-153..Bank
- 740-155..Credit Union
- 740-255..Thrift Shop
- 740-382..Commissary
- 432-283..Cold Storage, BSE
- 740-382..Exchange Branch
- 740-381..Exchange Cafeterias
- 740-383..Exchange Service Station
- 740-384..Exchange Laundry
- 740-388..Exchange Sales Store
- 740-389..Exchange Service Outlet
- 740-387..Exchange Warehouse
- 740-385..Exchange Maintenance Shop
- 740-386..Exchange Administration
- Clubs Dining
- 740-612..Airmens' Club
- 740-617..NCO Club
- 740-618..Officers' Club
- 722-351..Airmens' Dining Hall
  - ..Dry Storage, Oil Support
- Indoor Recreational
- 740-674..Gym
- 740-673..Fieldhouse
- 740-873..Theater
- 740-671..Bowling Center
- 740-316..Recreation Center
- 740-664..Arts-Crafts Center
- 740-665..Auto Hobby Shop
- 740-883..Youth Center

6..COMMUNITY (SERVICE).....pink-929
- 730-78X..Educational Depend. Schools
- 730-43..Post Office
- 740-675..Library
- 740-884..Child Care Center
- 730-771..Chapel
- 730-771..Religious Ed. Center
- 730-441..Education Center

7..MEDICAL.....violet-932
- 520-634..Veterinarian Facility
- 510-001..Hospital & Dental Clinic
  - ..Medical Storage

8..HOUSING (ACCOMPANIED).....yellow-915
- 711-1XX..Family Housing
- 740-457..TLF
- 740-459..TLF Support
- 712-244..Trailer Court
- 442-769..Housing Supply Storage
- 610-119..Housing Office

9..HOUSING (UNACCOMP.)...ylw. ochre-942
- Bachelor Housing
- 724-415..BOQ
- 721-312..UEPH
- Visitor Housing
- 724-417..VOQ
- 721-315..VAQ

10.OUTDOOR RECREATION.....dk. green-908
- 730-347..Tennis Courts
- 750-172..Baseball, Junior Fields
- 750-175..Football Fields
- 750-177..Track
- 750-178..Softball Fields
- 750-349..Recreation Court
- 750-371..Recreation Pavilion
- 750-42X..Golf Course
- 750-422..Golf Clubhouse
- 750-583..Riding Stable
- 750-814..Outdoor Pool
- 750-811..Swimmers' Bath House
- 750-611..Fam Camps
- 740-642..MWR Supply/Storage
- 750-581..Outdoor Ranges
  - ..Parks/Picnic Areas
  - ..Beaches
  - ..Outdoor Drill, Train. Areas

11.OPEN SPACE.....lt. green-910
- ..Conservation areas, forest stands, grazing areas
- ..Required buffer space--safety clearances, security areas, utility easements

12.WATER.....lt. blue-905
- ..On-base ponds, lakes, major streams

*Color and Prismacolor pencil number for preparing colored land use maps. (From 10-85 SOW.)

Exhibit 10.6t: Facilities By Facility Number

NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00100	A	730839	4	TRAFFIC CHK HSE	144 SF		59
00110	A	740615	5	OPEN MESS, CONSOL	9139 SF		57
00113	A	125977	3	PMP STN, LF	131 SF		58
00114	A	125977	3	PMP STN, LF	1538 SF		53
00115	A	811149	3	ELEC PWR STN BLDG	240 SF		71
00116	A	125977	3	PMP STN, LF	280 SF		58
00117	V	411135	3	STOR, JET FL		2914 BL	55
00118	V	411135	3	STOR, JET FL		4381 BL	54
00119	A	824462	3	GAS METER FACILITY	336 SF		
00120	A	740674	5	GYMNASIUM	7070 SF		55
00121	A	219944	3	BE MAINT SHP	380 SF		45
00125	B	217712	2	SHP, AVIONICS	12146 SF		82
00126	A	442628	3	SHED SUP&EQUIP BSE	240 SF		85
00127	A	121111	3	PETROL OPS BLDG	1200 SF		79
00129	B	211173	2	MAINT DOCK, L/A	20138 SF	1 EA	70
00130	A	171873	2	A/PORT TNG FCLTY	7500 SF		75
00130	F	171873	2	A/PORT TNG FAC ADDN	4600 SF		-0
00201	A	730835	4	SP OPERATIONS	511 SF		56
00206	A	724417	9	VOQ (01-010)	12095 SF	50 PN	55
00208	B	610243	4	HQ GROUP	12967 SF		52
00209	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00210	B	610913	4	DISASTER PREP	12967 SF		52
00212	V	813231	3	ELEC SUBSTATION		1000 KV	44
00213	B	722351	5	DH, AMN(DET)	21426 SF	1110 PN	52
00216	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00217	A	721315	9	DORM, VAQ	12967 SF	56 PN	52
00218	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00219	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00221	A	510411	7	AF CLINIC	6173 SF	9 PS	57
00300	B	740388	5	EXCH, SALES STORE	8000 SF		86
00304	A	214425	3	VEH MAINT SHP	2000 SF		85
00305	A	214425	3	VEH MAINT SHP	1767 SF		56
00306	B	214425	3	VEH MAINT SHP	8440 SF		77
00312	B	442758	3	WHSE SUP&EQUIP BSE	19656 SF		55
00315	A	141753	2	SQ OPS	1000 SF		52
00316	B	171445	2	RES FORCES OPL TNG (HQ)	22131 SF		76
00319	A	442257	3	HAZARD STOR, BSE	1200 SF		83
00320	A	442758	3	WHSE SUP&EQUIP BSE	18544 SF		86
00321	A	442628	3	SHED SUP&EQUIP BSE	462 SF		54
00322	A	123335	3	VEH FL STN	174 SF	3 OL	86
00325	B	219943	3	BE PAV GRND FCLTY	12269 SF		54
00327	V	452255	3	CE STOR SAND	1200 SF		79
00328	A	610127	3	BSE ENGR ADMIN	4800 SF		53
00329	A	219944	3	BE MAINT SHP	1221 SF		49
00330	A	219947	3	BE STOR SHED	1822 SF		55
00331	A	219944	3	BE MAINT SHP	5166 SF		53
00332	A	219946	3	BE STOR CV FCLTY	1200 SF		64
00339	V	442257	3	HAZARD STOR, BSE	1344 SF		84
00342	A	219946	3	BE STOR CV FCLTY	2400 SF		83
00401	A	730771	6	CHAPEL, BASE	2626 SF	100 SE	45
00403	A	610128	4	BASE PERSONNEL OFC	4160 SF		45
00405	A	131111	2	COMM FCLTY	3072 SF		72
00405	F	131111	2	COMM FCLTY ADDN	1692 SF		SR
00406	V	690432	3	FLAG POLE, BSE		1 EA	45
00408	A	218852	2	SHP SURV EQUIP	4400 SF		75
00409	A	211153	2	SHP NON-DESTR INSP	2699 SF		75
00411	A	211157	2	SHP A/M ENG I&R	11805 SF		82
00412	V	843316	3	FOAM EQUIPMENT FAC	1820 SF	25 GM	84
00413	V	843319	3	FR DELUGE MATL STOR	1500 SF	165 KG	84
00414	A	211154	2	SHP A/M ORGL	1637 SF		57
00416	A	211179	2	MAINT DOCK, FL SYS	24314 SF	1 EA	84
00417	A	211111	2	HG MAINT	24314 SF		84
00418	B	211152	2	SHP ACFT GEN PURP	48793 SF		45
00419	B	141753	2	SQ OPS	23889 SF		78
00419	V	813231	3	ELEC SUBSTATION		150 KV	78
00420	A	218712	2	SHP A/SE STOR FCLT	4500 SF		75
05842	V	750371	10	O/D RECTN PAVILION	864 SF	1 EA	83
06496	V	211193	3	TST STD		1 EA	81
06497	V	750581	10	MISC O/RECTN FCLTY		1 EA	83
06498	V	750178	10	ATHLT FLD SOFTBALL	2 AC	1 EA	82
06499	V	750347	10	CRT, TENNIS		1 EA	80

Exhibit 10.7t: Facilities By AF Land Use Code

NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00125	B	217712	2	SHP, AVIONICS	12146 SF		82
00129	B	211173	2	MAINT DOCK, L/A	20138 SF	1 EA	70
00130	A	171873	2	A/PORT TNG FCLTY	7500 SF		75
00130	F	171873	2	A/PORT TNG FAC ADDN	4600 SF		-0
00315	A	141753	2	SQ OPS	1000 SF		52
00316	B	171445	2	RES FORCES OPL TNG	22131 SF		76
00405	F	131111	2	COMM FCLTY ADDN	1692 SF		SR
00405	A	131111	2	COMM FCLTY	3072 SF		72
00408	A	218852	2	SHP SURV EQUIP	4400 SF		75
00409	A	211153	2	SHP NON-DESTR INSP	2699 SF		75
00411	A	211157	2	SHP A/M ENG I&R	11805 SF		82
00414	A	211154	2	SHP A/M ORGL	1637 SF		57
00416	A	211179	2	MAINT DOCK, FL SYS	24314 SF	1 EA	84
00417	A	211111	2	HG MAINT	24314 SF		84
00418	B	211152	2	SHP ACFT GEN PURP	48793 SF		45
00419	B	141753	2	SQ OPS	23889 SF		78
00420	A	218712	2	SHP A/SE FAC (AGE)	4500 SF		75
00113	A	125977	3	PMP STN, LF	131 SF		58
00114	A	125977	3	PMP STN, LF	1538 SF		53
00115	A	811149	3	ELEC PWR STN BLDG	240 SF		71
00116	A	125977	3	PMP STN, LF	280 SF		58
00117	V	411135	3	STOR, JET FL		2914 BL	55
00118	V	411135	3	STOR, JET FL		4381 BL	54
00119	A	824462	3	GAS METER FACILITY	336 SF		
00121	A	219944	3	BE MAINT SHP	380 SF		45
00126	A	442628	3	SHED SUP&EQUIP BSE	240 SF		85
00127	A	121111	3	PETROL OPS BLDG	1200 SF		79
00212	V	813231	3	ELEC SUBSTATION		1000 KV	44
00304	A	214425	3	VEH MAINT SHP	2000 SF		85
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00312	B	442758	3	WHSE SUP&EQUIP BSE	19656 SF		55
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00320	A	442758	3	WHSE SUP&EQUIP BSE	18544 SF		86
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00325	B	219943	3	BE PAV GRND FCLTY	12269 SF		54
00327	V	452255	3	CE STOR SAND	1200 SF		79
00328	A	610127	3	BSE ENGR ADMIN	4800 SF		53
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00330	A	219947	3	BE STOR SHED	1822 SF		55
00331	A	219944	3	BE MAINT SHP	5166 SF		53
00332	A	219946	3	BE STOR CV FCLTY	1200 SF		64
00339	V	442257	3	HAZARD STOR, BSE	1344 SF		84
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06496	V	211193	3	TST STD		1 EA	81
00100	A	730839	4	TRAFFIC CHK HSE	144 SF		59
00201	A	730835	4	SP OPERATIONS	511 SF		56
00208	B	610243	4	HQ GROUP	12967 SF		52
00210	B	610913	4	DISASTER PREP	12967 SF		52
00403	A	610128	4	BASE PERSONNEL OFC	4160 SF		45
00110	A	740615	5	OPEN MESS, CONSOL	9139 SF		57
00120	A	740674	5	GYMNASIUM	7070 SF		55
00213	B	722351	5	DH, AMN(DET)	21426 SF	1110 PN	52
00300	B	740388	5	EXCH, SALES STORE	8000 SF		86
00401	A	730771	6	CHAPEL, BASE	2626 SF	100 SE	45
00221	A	510411	7	AF CLINIC	6173 SF	9 PS	57
00206	A	724417	9	VOQ (01-010)	12095 SF	50 PN	55
00209	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00216	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00217	A	721315	9	DORM, VAQ	12967 SF	56 PN	52
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05842	V	750371	10	O/D RECTN PAVILION	864 SF	1 EA	83
06497	V	750581	10	MISC O/RECTN FCLTY		1 EA	83
06498	V	750178	10	ATHLT FLD SOFTBALL	2 AC	1 EA	82
06499	V	750347	10	CRT, TENNIS		1 EA	80

EXISTING LAND USE

The existing land use at the Pittsburgh AFRES Base is described by the text on this page; the exhibit below shows the acreage tabulation of land use by areal unit and Air Force land use code; and the location of facilities by organization and color is provided by the map on the facing page.

Observations on the land use distributions by Air Force code include the following:

...The Airfield Clearance Areas which affect the AFRES base are located on the southern side of the base. The Airfield Restrictions exhibit of page 6-12 shows several building violations of the building restriction line.

...The Airfield Pavement Area is concentrated on the west side.

...The Aircraft O&M activities are concentrated in the northwest quadrant.

...Industrial land use is distributed in the northeast and southwest quadrants, with very small areas in the northwest and southeast quadrants.

...Except for the Entry Gate in the northeast quadrant, the majority of Administrative land use is concentrated in the middle of the base; and it is interspersed with Commercial, Service, Unaccompanied Housing, Industrial and Aircraft O&M uses.

...Unaccompanied Housing use is located in the southeast quadrant, as is the Medical land use area.

...Outdoor Recreation land use is located in the northeast quadrant.

...Open Space is located predominately along the eastern border; additional open space areas occur in small amounts mainly on the south side.

...No areas of Water are located on the base; however, a small stream runs parallel to Airport Parkway and, in places, defines the eastern boundary of the base.

The following listing shows the land uses ranked by acreage, from highest to lowest:

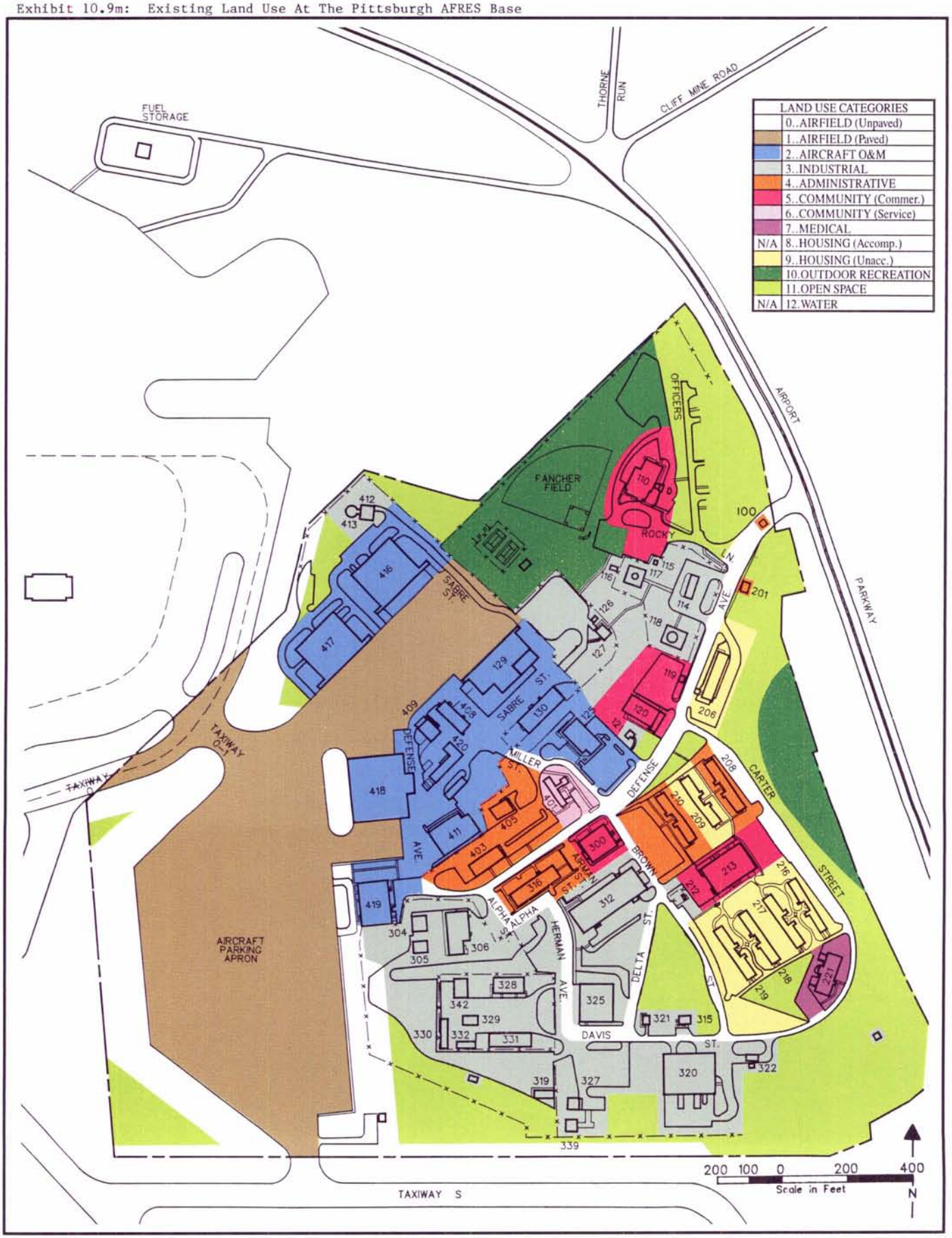
Exhibit 10.8t: Land Use Rankings

Land Use	Acres or Percent	
...Airfield Pavement.....	20.6 acres or	19.5%
...Industrial.....	19.1 acres or	18.1%
...Open Space.....	18.3 acres or	17.3%
...Aircraft O&M.....	11.1 acres or	10.5%
...Outdoor Recreation....	8.2 acres or	7.8%
...Administrative.....	5.5 acres or	5.2%
...Unaccompanied Housing.	5.2 acres or	4.9%
...Community Commercial..	4.9 acres or	4.6%
...Medical.....	1.0 acres or	0.9%
...Community Service.....	0.8 acres or	0.8%
...Water.....	0 acres or	0 %

Exhibit 10.7t: Existing Land Use Acreage, By Areal Unit Hierarchy And Air Force Land Use Cateorgy

Land Use → / Acres / Areal Unit ↓	0 Airfield Clearance	1 Airfield Pavement	2 Aircraft O&M	3 Industrial	4 Administrative	5 Community: Commercial	6 Community: Service	7 Medical	8 Housing: Accompanied	9 Housing: Unaccompanied	10 Outdoor Recreation	11 Open Space	12 Water	Total Acres	%
% of Base	10.4%	19.5%	10.5%	18.1%	5.2%	4.6%	0.8%	0.9%	0	4.9%	7.8%	17.3%	0	-	100.0
Entire Base	11.0	20.6	11.1	19.1	5.5	4.9	0.8	1.0	0	5.2	8.2	18.3	0	105.7	100.0
North Half	8.0	13.3	11.1	5.0	2.2	3.2	0.8	-	-	-	6.2	5.6	-	55.4	52.4
NE Quad	-	2.3	5.0	5.0	-	3.2	-	-	-	-	6.2	5.0	-	26.7	25.3
NW Quad	8.0	11.0	6.1	-	2.2	-	0.8	-	-	-	-	0.6	-	28.7	27.1
South Half	3.0	7.3	-	14.1	3.3	1.7	-	1.0	-	5.2	2.0	12.7	-	50.3	47.6
SE Quad	-	-	-	1.1	2.4	1.1	-	1.0	-	5.2	2.0	8.4	-	21.2	20.1
SW Quad	3.0	7.3	-	13.0	0.9	0.6	-	-	-	-	-	4.3	-	29.1	27.[illegible]

Exhibit 10.9m: Existing Land Use At The Pittsburgh AFRES Base



NEEDS

Some of the existing and future base needs that should be considered by plan proposals would include the following:

...Airfield Clearance Areas - The Building Restriction line runs along Davis Street, 750' from the centerline of the adjacent runway. Future building development needs to omit this area, while appropriate uses need to be found.

...Airfield Pavement Area consists primarily of aircraft parking apron on the AFRES property. Existing and future needs include additional land lease to permit apron expansion to accommodate more aircraft.

...Aircraft O&M Areas - The steep topography and the irregular shape of the AFRES site have forced the aircraft maintenance hangars into an awkward location....one that is not conducive to efficient aircraft movement, nor proper relation to their facilities. The two buildings pre-empting the best hangar locations are buildings 418 and 419 (Squadron Operations and Shops). For the future, more efficient and safer hangar locations are needed.

...Industrial Land Use for BCE, Supply and Vehicle Maintenance activities are located in the SW quadrant of the base. Future needs include observing the building restriction line (BRL) along Davis Street for new activities, accommodating programmed new buildings and locating sites permitting better consolidation of activities. Also, a new POL site is needed.

...Housing And Recreation Land Use is concentrated on the east side of the base, adjacent to the Airport Parkway. The only non-housing/recreation uses in this strip are the POL and office use of some of the dormitories. New locations are needed for the POL and offices, and their sites converted to dorm and recreation uses.

...Additional Land, leased from the GPIA, would be needed in order to achieve some of the expansion or locational moves previously described. Also, more land could open the opportunity for additional land use shifts and accommodation of more activities.

OBJECTIVES, CONSTRAINTS & ALTERNATIVES

Objectives to be achieved in future planning were previously enumerated on pages 5-7, 5-8, 6-15 and 6-16. In addition to those objectives, the exhibit on the next page describes locational guidance that will be helpful for land use decisions.

Constraints to plan development, and alternative concepts for future development were previously described in Chapter VI and will not be repeated here.

Exhibit 10.11p: POL Needs New Location In Future

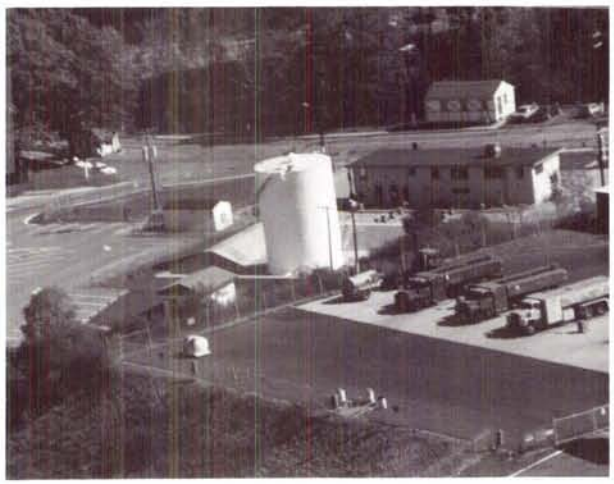


Exhibit 10.10p : Future Needs Include Apron Expansion And Improved Hangar Location

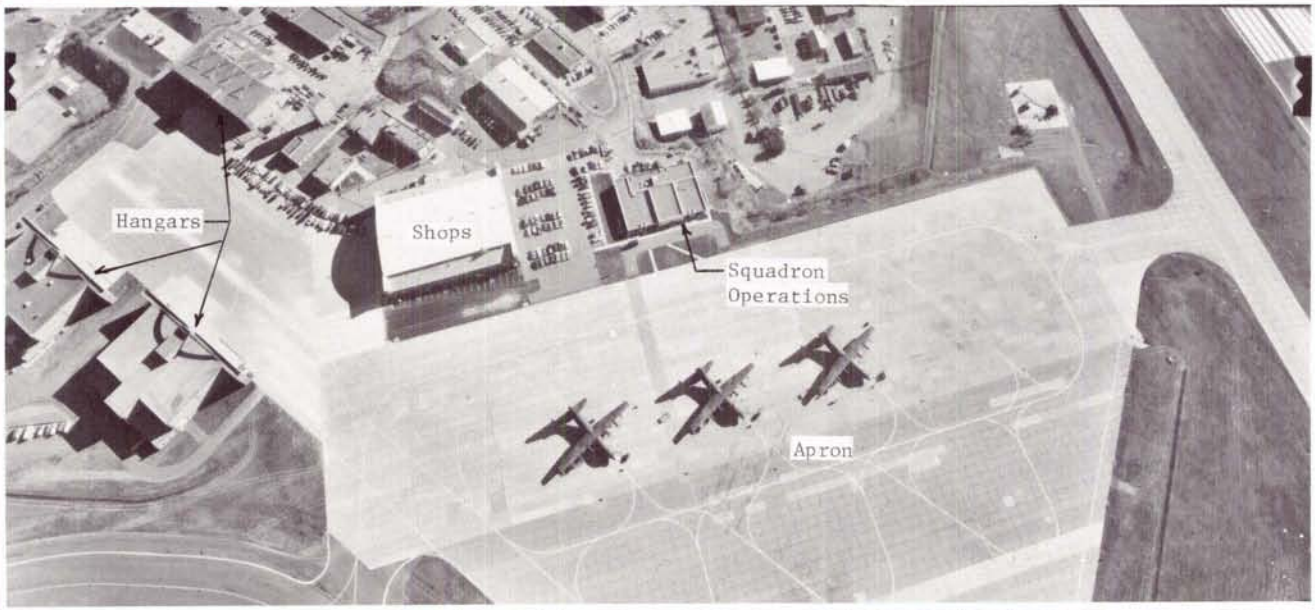


Exhibit 10.12t: Locational Guidance For Air Base Land Use Areas*

0..AIRFIELD CLEARANCE AREAS - In addition to height restrictions, building setbacks are required to protect aircraft moving under their own power along runways, taxiways, and aircraft parking aprons. The height and setback criteria must conform to either military or Federal Aviation Administration criteria, depending on whether the Air Base unit is located at a civilian airport or military installation.

- -

1..AIRFIELD PAVEMENT AREAS - include runways, taxiways, parking aprons, alert areas, and arm/ disarm areas. Their design criteria are covered by Air Force regulations. The airfield runway, directionally positioned to maximize use of prevailing winds, should have the highest locational priority of any facility. The aircraft parking aprons generally will be parallel, and as close as possible to the runway. Where land is available, runways and aprons should be configured to accommodate the maximum size aircraft that could potentially use the airfield.

- -

2..AIRCRAFT OPERATIONS & MAINTENANCE AREAS - For aircraft access, these buildings should be located adjacent to aprons or taxiways: maintenance hangars, fuel cell/corrosion control docks, Weapons Calibration Shelter, and engine testing facilities (hush houses). Buildings not requiring aircraft access, but which should be adjacent to other aircraft maintenance facilities, include Engine Inspection & Repair (I/R), Avionics, Weapons & Release Systems, Non-Destructive Inspection (NDI), and AGE shops.... as well as Operations buildings such as Squadron Operations, Flight Simulators and Fire/Rescue stations. Fire/Rescue must have direct access to the flightline without crossing other traffic. Control Towers should have uninterrupted vision of all apron, taxiway, and runway areas.... while also observing required building height restrictions.

NOTE: The above three land use categories have the highest locational priorities at an Air Base. The remaining nine categories, while having a lesser priority, also have important locational criteria to be observed.

- -

3..INDUSTRIAL LAND USE AREAS do not compete with the above land uses for priority, but they do require locations from which they can adequately service the entire base. The major industrial areas pertain to the following activities:

...Base Civil Engineer (BCE) administration and shop areas to maintain, operate, and administer buildings, streets, fences, utilities, POV parking lots and other facilities.

...Base Supply - for purchase, storage, and distribution of parts, fuel, equipment, supplies, etc. A location that permits quick access to hangars for acquisition of aircraft parts is important.

...Vehicle Maintenance - responsible for maintenance, storage, and operation of government cars, trucks, and other vehicles.

Note: Some of the hazardous industrial land uses require a location permitting one or more safety radii around them: fuel storage and dispensing, munitions storage, hot cargo, fuel truck parking, liquid oxygen/nitrogen storage, hydrazine storage.

4..ADMINISTRATIVE LAND USE AREAS are intended to accommodate facilities such as Wing/Group Headquarters, Security Police, Entry Gates (or Traffic Checkhouse), Family Services, Personnel, Law Center, Audio Visual, Education etc. Headquarters should have a location that is protected but convenient to the Main Gate and central to the entire base. Entry gates should have ample room for stacking incoming and outgoing vehicles without interfering with traffic on other streets. Family oriented services and employment should be convenient to the Main Gate and/or base community center.*1

- -

5..COMMUNITY-COMMERCIAL includes land use areas for the Base Exchange, Commissary, banks and credit unions, dining and clubs, and indoor recreation (gym, theater, youth center, etc.). Most should conform to community center criteria.*1

- -

6..COMMUNITY-SERVICE land uses also should generally conform to community center criteria.*1 They include schools, post office, child care, library, chapel, and religious and education centers.

- -

7..MEDICAL LAND USE includes hospital, dental clinic, and veterinarian....all of which should conform to community center needs.*1

- -

8..HOUSING-ACCOMPANIED includes family housing, Transient Lodging Facility (TLF), and related. These areas should observe proper noise contours, be accessible from Main Gate with minimum driving through other base areas, have no through traffic, and be convenient to the community center and schools.

- -

9..HOUSING-UNACCOMPANIED includes bachelor and visitor housing, generally dormitory style, in BOQ, UEPH, VOQ, and VAQ. Locational criteria is similar to family housing although the two residential areas should not be mixed, and the unaccompanied areas should be closer to their daily work areas for access.

- -

10..OUTDOOR RECREATION includes ball fields, tennis courts, outdoor swimming pools, riding stables, family camps, golf courses, parks, picnic areas, RV parking, etc. These locations should conform to community center criteria*1 as much as possible. Where large acreage (golf course, parks, etc.) precludes a community center location, access should be convenient and not require travel, if possible, through Air Base work areas.

- -

11..OPEN SPACE pertains to non-recreation land that does not contain buildings, parking lots, or other built improvements. Generally, three types of open space should be considered:

...Permanent Open Space for landscaping around buildings, building or street setbacks, wooded areas, endangered flora/fauna habitat.
...Future building area reserve sites
...Required Buffer Space for Quantity Distance (QD) criteria or safety zones, security areas, utility easements, etc.

- -

12..WATER AREAS pertains to on-base ponds, lakes, or major streams.

*1Community Centers at an Air Base attempt to centralize land use activities providing various services to staff and their families such as retailing, recreation, social services, worship.

*GRW Engineers, Inc., WHQ 10/86

LONG RANGE LAND USE PLAN

The long range land use change possibilities are tabulated below, located by the map to the right, and further described in the following text.

ACREAGE INCREASE

A potential overall land area increase of ±94 acres is shown for the long range plan. Most of this increase would be north of the existing base, and would be used for apron expansion, several new facilities (POL, new entry road and 33rd AeroMed) and an open space reserve for future apron, hangar, or support needs. This additional land would have to be leased from the Greater Pittsburgh International Airport (GPIA).

0 and 1...AIRFIELD LAND USE

The airfield clearance pertains to the 125' building line setback from the apron. This area increases slightly to accommodate the apron expansion.

The apron expansion of ±35 acres is the largest increase of any of the "active" land use categories. Sixteen C-141 aircraft, as well as two transient aircraft, could be housed on the apron. Reserve land to the north could be used to expand the apron further if more, or larger, aircraft were acquired.

2...AIRCRAFT O&M LAND USE

The small increase in aircraft O&M land use occurs with the construction of the hangar additions and new hangar. Reserve land to the north could be used by this activity if additional hangars, or related facilities, were needed. Generally, this activity remains concentrated in its present location.

3...INDUSTRIAL LAND USE

Industrial land use, with a three acre increase, remains primarily in the southwest portion of the base....except for the POL relocation to the north area. Within the southwest area, however, the following major moves are scheduled: BCE activities will concentrate around the existing BCE area; Supply will be concentrated within the Brown-Davis Streets loop; and Vehicle Maintenance/storage will be concentrated south of Davis Street.

4...ADMINISTRATIVE LAND USE

Administrative land use acreage remains the same, but there are two locational shifts: Building 208 is demolished and replaced by dormitory POV parking, and a new Security Police facility is added near the new Main Gate. Overall, however, the administrative land uses would remain concentrated along Defense Avenue in the vicinity of the HQs building.

An emergency/secondary gate also is shown in the new northern area for use during rush hours, UTA weekends, and for special delivery needs.

5 and 6...COMMUNITY LAND USE

The community-commercial and community-service land uses remain unchanged for the future, retaining their present locations and acreage figures. All are well located in relation to the people they serve: the consolidated open mess is near the entry gate, while the other uses (gym, chapel, BX, and dining hall) are in the base central area near dormitories and major work areas.

7...MEDICAL LAND USE

Medical land use increases by three acres when the clinic moves from building #221 to an adjacent new facility with a new parking lot across the street; and a new 33rd AeroMed facility is built near the ballfield.

8 and 9...HOUSING LAND USE

The only base housing is the dormitories for unaccompanied personnel. No change is made in the location of these facilities, although an acre of POV parking is added for dormitory #209 when the administrative facility #208 is demolished.

10, 11, & 12...OUTDOOR RECREATION, OPEN SPACE & WATER

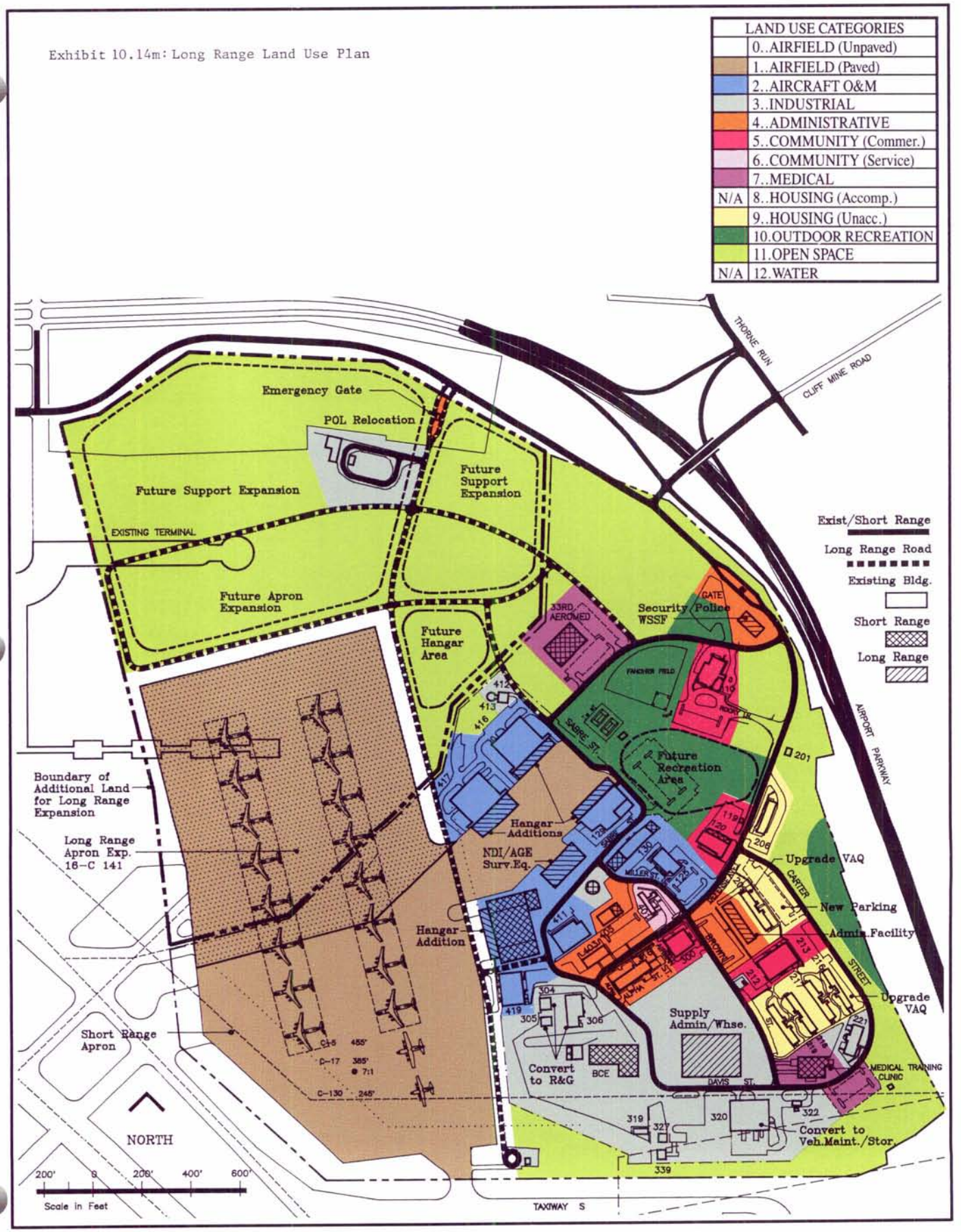
The outdoor recreation area is expanded by taking over the existing ±4 acre POL site when the POL is moved to its new location. This will provide an excellent concentration of facilities (open mess, outdoor recreation, gym) to serve the nearby dorms. Open space increases by 46 acres. Most of this is in the area to be acquired from GPIA, and would not be permanent open space, but rather, a reserve for future facility needs. There is no water land use.

Exhibit 10.13t: Long Range Land Use Changes*

Air Force Land Use Category	Existing		Long Range		Change	
	Acres	%	Acres	%	Acres	%
0..Airfield, Clearance.....	11	10%	12	6%	1	9%
1..Airfield, paved..	21	20	55	28	34	162
2..Aircraft O&M.....	11	11	12	6	1	9
3..Industrial.....	19	18	22	11	3	16
4..Administrative...	6	5%	6	3%	0	0
5..Community, Commercial.....	5	5	5	3%	0	0
6..Community, Service.....	1	1	1	1	0	0
7..Medical.....	1	1%	4	2%	3	300%
8..Housing, Accompanied.....	0	0	0	0	0	0
9..Housing, Unaccompanied....	5	5	6	3	1	20
10..Outdoor Recreation.....	8	8%	12	6%	4	50%
11..Open Space.....	18	17	64	32	46	256
12..Water.....	0	0	0	0	0	0
TOTAL	106	100	200	100	94	89%

*All figures rounded to nearest whole number.

Exhibit 10.14m: Long Range Land Use Plan



Chapter XI

AIRFIELD AND AIRFIELD OPERATIONS

FOR THE

PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

Exhibit 11.1p: C-130 On Main Apron

INTRODUCTION

The purpose of this chapter is to present the operations of the 911 TAG as well as the inventory, analysis, needs, and plans for...

...Airfield Facilities
...Airfield Pavement
...On Base Obstructions/Clearances
...approach Departure Obstructions
...Airspace Obstructions
...Aircraft Parking - Existing and Proposed
...Airfield Lighting System

at Pittsburgh Air Force Reserve, 911th TAG located at the Greater Pittsburgh International Airport (GPIA).

OPERATIONS

The air operations at the 911th TAG focus on the eight H-model C-130's assigned. These aircraft replaced eight A-model C-130's in 1987.

The primary missions governing the 911th TAG operations is to provide command and staff supervision of tactical airlift squadrons and assigned support units engaged in providing tactical airlift support for airborne forces, other personnel, equipment, supplies, and aeromedical evacuation of patients within the theatre of operations.

The C-130's accomplish approximately 100 aircraft movements per month. This compares to about 1,200 daily operations for the entire airport.

Routine flight training such as "touch and go's" is accomplished at Rickenbacker AFB and other airports due to the congested traffic at GPIA.

AIRFIELD FACILITIES

The primary airfield facilities utilized by the 911th TAG and other tenants, are the runway and taxiways operated and maintained by GPIA and shown on the following page. The facilities owned and maintained by the 911th TAG are their aprons and connecting taxiways located at the east end of the airport just northeast of the intersection of runways 14/32 and 10R/28L.

The 911th TAG airfield pavements were initially constructed in 1944-45 and 1951.

These pavements include primarily...

...East Apron (part of C-130 parking apron)
...West Apron (part of C-130 parking apron)
...North Apron (access apron to hangars)
...Taxiway K
...Taxiway O-1

and are described in more detail under the airfield pavement section.

RUNWAYS/TAXIWAYS

The Greater Pittsburgh International Airport serves all of the runway needs for the 911th TAG.

As shown by the exhibit below there are four active runways at GPIA. Two of these runways, 10L/28R and 10R/28L are CAT I precision instrument runways with ILS (instrument landing system).

Runway 32R is also a CAT I, ILS runway, but the 14L approach from the other end is non-precision instrument. Runway 10C/28C is a non-precision instrument runway.

The 911th TAG uses 28C for most takeoffs. When winds are from an easterly direction, the 911 TAG uses the same runway(s) as the commercial airliners. All landings are on the same runways being utilized by the commercial airliners. Access to the runways and return to the AFRES apron is as directed by ground control to either taxiway K or O-1.

LANDING ARRESTORS

The 911th TAG does not have fighter aircraft at GPIA and does not need landing arrestors. There are three landing arrestor systems available, however, to 911th TAG, the Air National Guard, or itinerant aircraft. These landing arrestors are located as follows:

...BAK 12 as Runway 10L Approach
...BAK 14 at Runway 10R Approach
...BAK 14 at Runway 28L Approach

Exhibit 11.2m: Greater Pittsburgh International Airport - Airfield Facilities

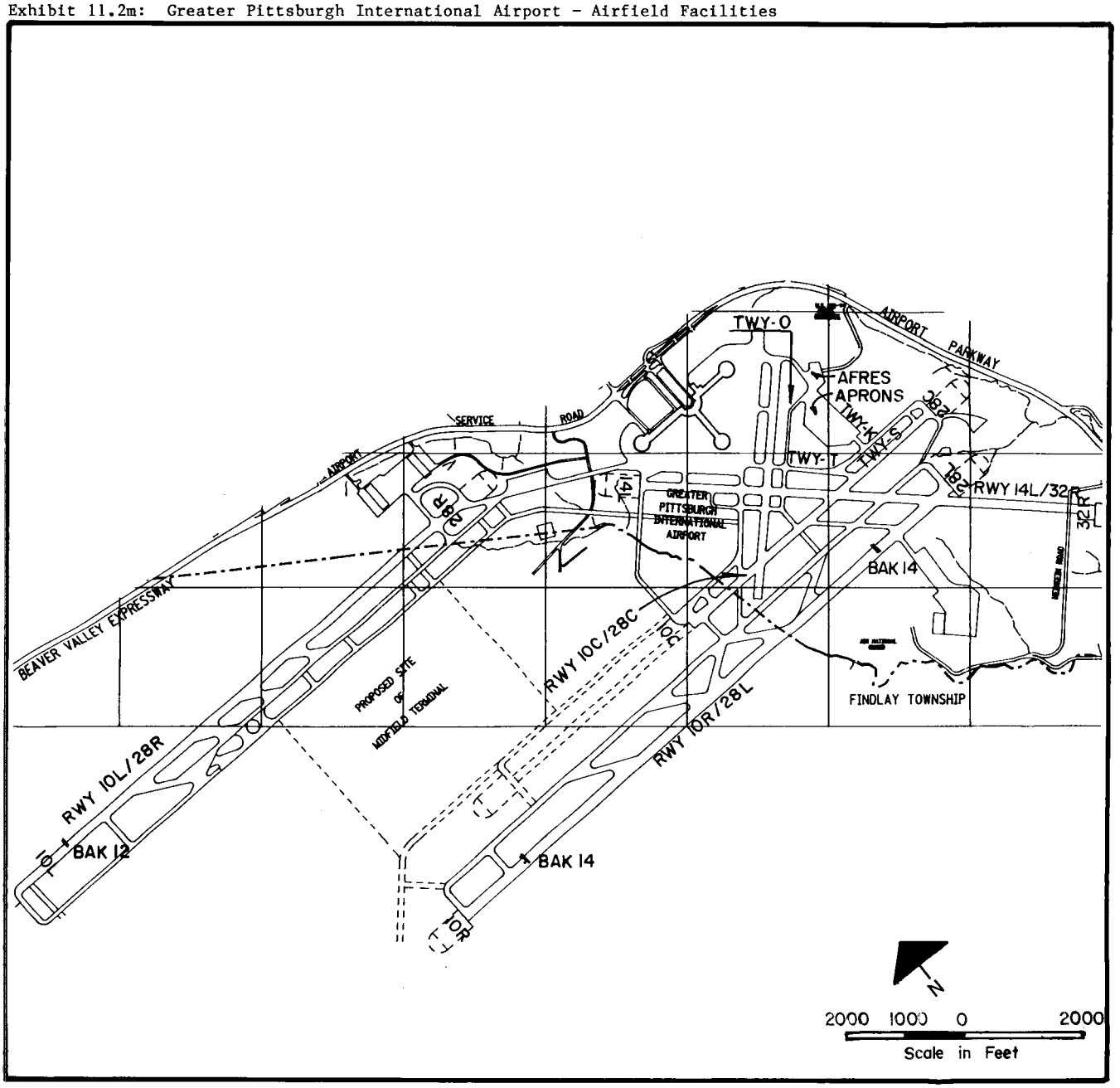
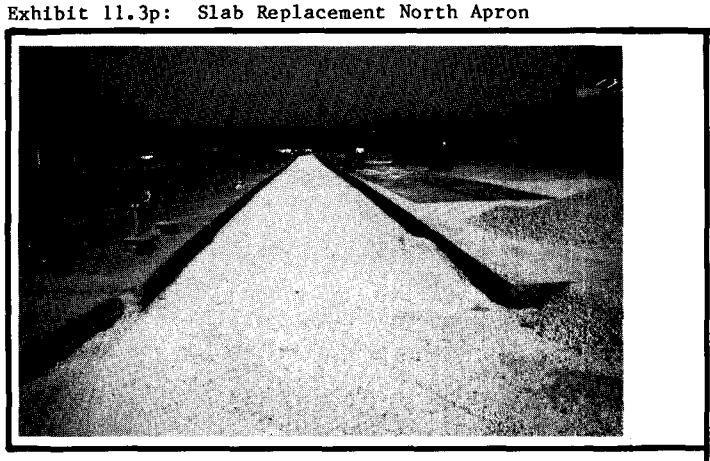
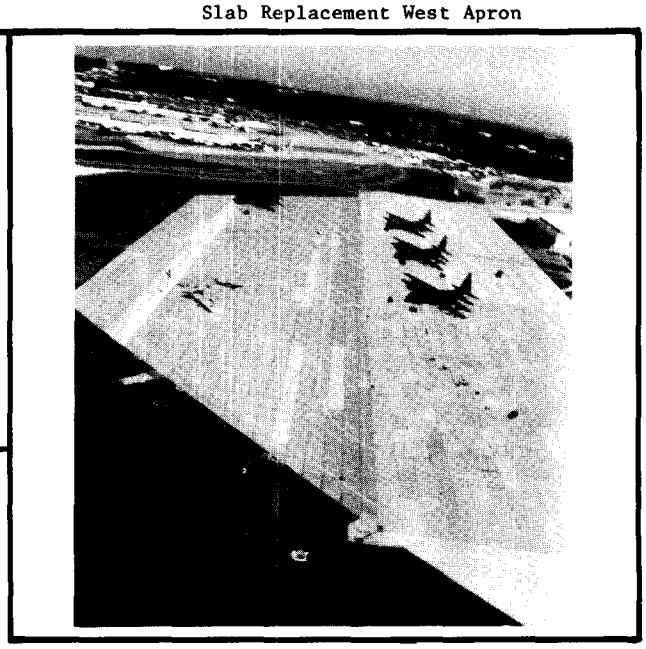


Exhibit 11.3p: Slab Replacement North Apron



Slab Replacement West Apron



AIRFIELD PAVEMENT

The 911th TAG pavements, thicknesses, types, and construction chronology are shown on the following page.

Most of the 6.5 inch thick slabs of the east apron have been replaced since 1982. The replacement slabs consist of 10 inches P.C.C. over 6 inches of compacted aggregate over compacted sub-base.

The heaviest traffic areas of the north access apron had the concrete removed and replaced in 1986, as shown by the photograph above.

The photograph above right readily shows the light colored areas of replacement slabs for the west apron. The west apron slab replacement work was accomplished in 1983. The east apron random slab replacement was accomplished in three annual phases during 1980, 1981, and 1982.

PAVEMENT EVALUATION STUDY

An Airfield Pavement Evaluation Report was accomplished for the 911th TAG in 1980-81. The field sampling, inspection, testing, and report preparation was accomplished by the Air Force Engineering and Services Center of Tyndall Air Force Base.

This report shows the pavement types and thicknesses, physical condition of the pavement, chronology of pavement construction, and allowable gross loads from various aircraft for the several pavement configurations. The table below summaries the allowable gross loads from this report, based on structural evaluation, not pavement condition.

Exhibit 11.4t: Allowable Gross Loads (AGL) For Aircraft (KIPS)

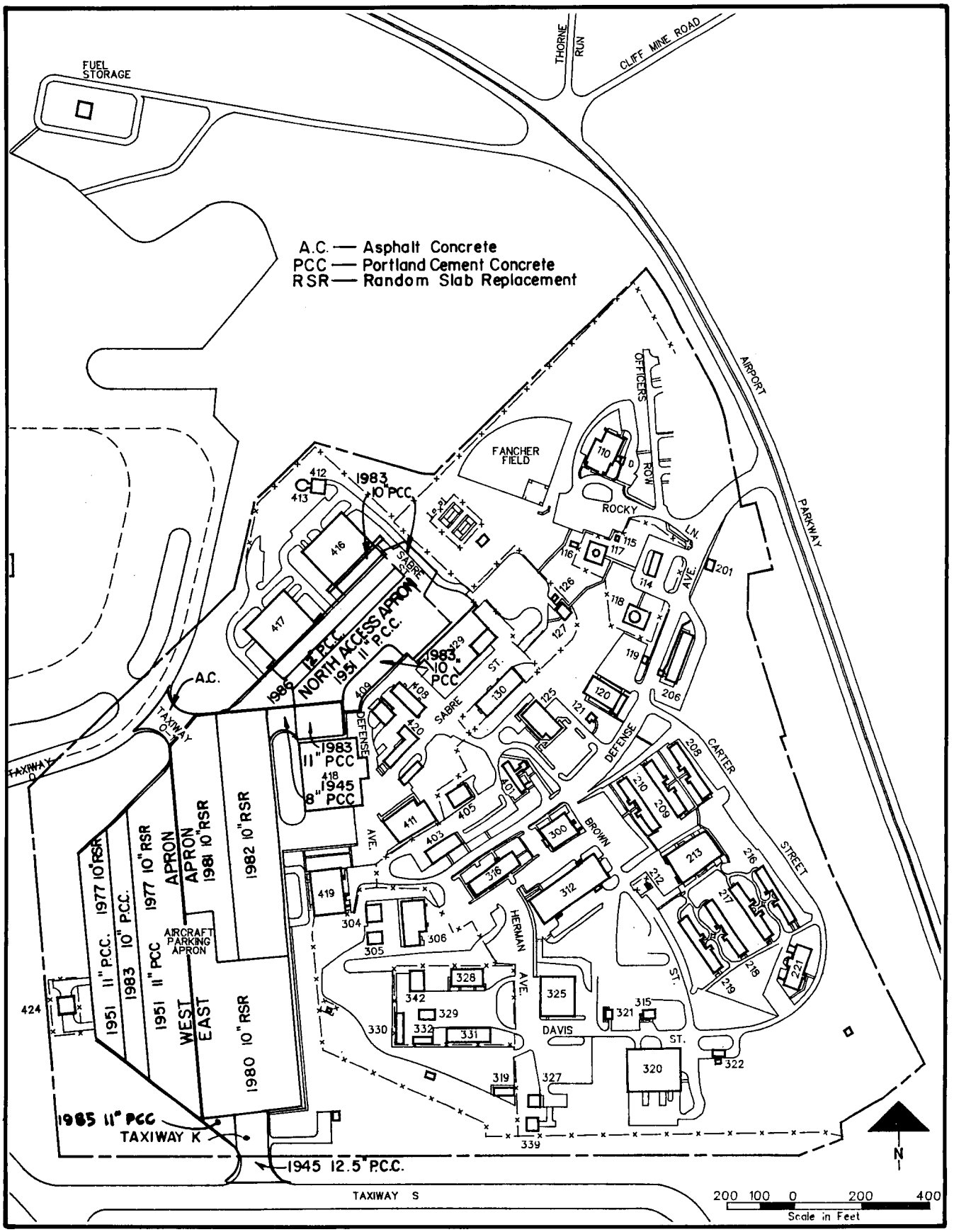
Aircraft Type	Capacity Operations				Full Operations			
	T/W - K	East Apron*1	West Apron	North Apron	T/W - K	East Apron*1	West Apron	North Apron
Fighter	50 (45)	30 (25)	50	40	65+ (55)	35 (30)	35	50
F-111	60 (55)	A (A)	60	A	75 (65)	50 (A)	50	60
C-130	110 (95)	90 (A)	130	105	120 (105)	110 (80)	110	125
C-141	135 (115)	125 (A)	180	140	150 (130)	155 (105)	155	170
KC-135	135 (115)	125 (A)	180	140	150 (130)	155 (105)	155	170
C-5	405 (345)	355 (A)	520	410	455 (380)	425 (A)	425	495

+Denotes AGL greater than the maximum gross weight of the indicated aircraft
A Denotes AGL less than the empty weight of the indicated aircraft
(45) Denotes frost capacity AGL
*1 AGL based on 6.5" thick PCC slabs, not 10" replacement slabs. New slabs should approximate AGL of west apron.

Capacity Operational Category - The pavement is able to sustain this loading for unlimited operations for more than 10 years.

Full Operational Category - The pavement is able to sustain this loading for normal operations for 1 to 2 years.

Exhibit 11.5m: AFRES Apron/Taxiway Pavements



ON-BASE OBSTRUCTIONS/CLEARANCES

The purpose of this section is to define and delineate the airfield clearances relative to the 911th TAG base and to describe any apparent obstructions or violations of these clearances.

REGULATIONS

The regulations governing the airfield clearances for the Greater Pittsburgh International Airport are the Federal Aviation Regulations (FAR Part 77) and FAA Advisory Circulars 150/5300-4B and 150/5300-12.

The regulations governing the 911th TAG base include those for GPIA as well as the pertinent Air Force regulations for the apron and its taxiways. The Air Force regulations that apply are found in AFR 86-14.

The exhibit below shows the civil airport imaginary surfaces as copied from FAR Part 77. These surfaces and other airfield restrictions affecting the 911th TAG include...

..Civil Regulations - FAR Part 77

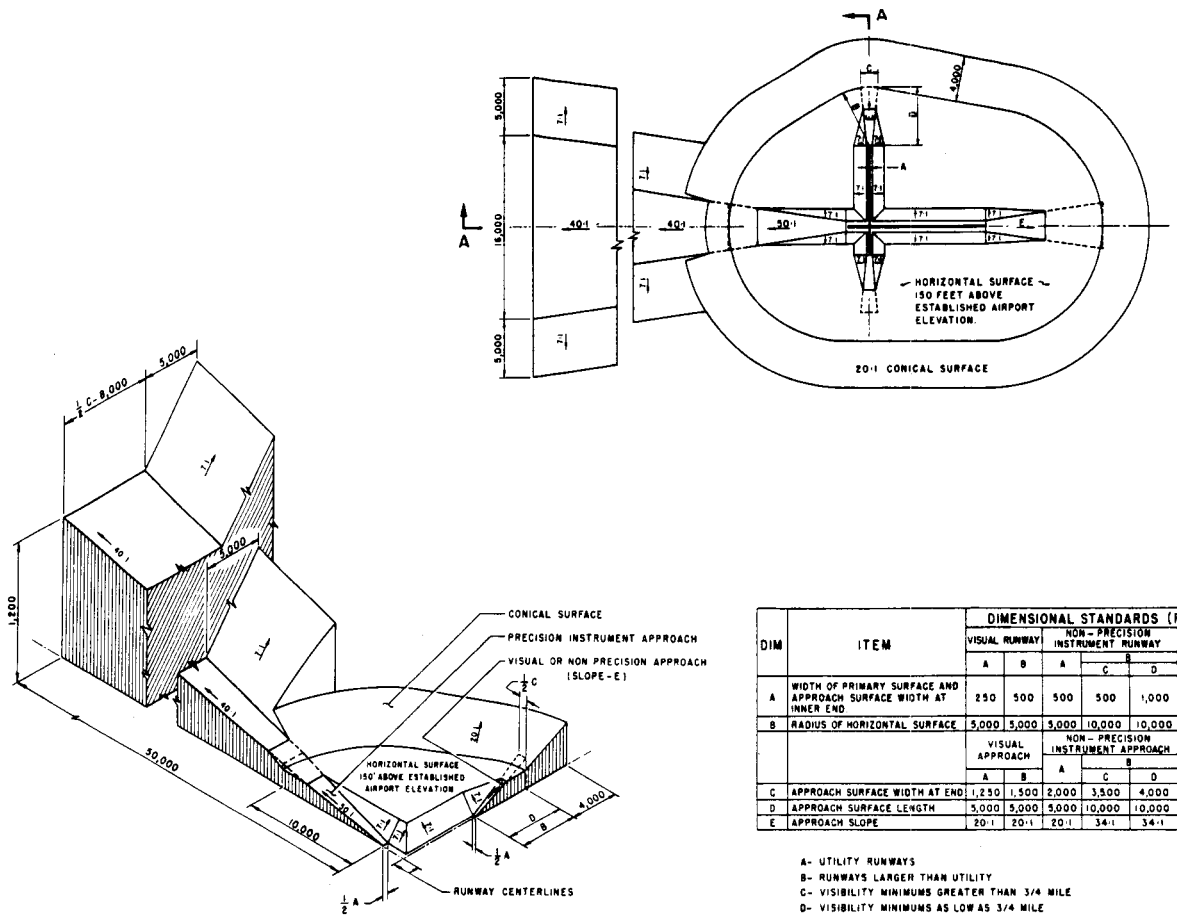
...Approach-Departure Surface
...Approach-Departure Clear Zone
...Primary Surface
...Transitional Surface from Primary & Approach/Departure
...Obstacle Free Zone
...Building Restriction Line
...Parking Setback
...Inner Horizontal Surface

..Military Regulations - AFR 86-14

...Apron Clearance Line
...Taxiway Lateral Clearance

The exhibits on the following two pages show the existing airfield clearances affecting the 911th TAG as well as those which will result from runway 28C being upgraded to a precision approach runway.

Exhibit 11.6p: Imaginary Surfaces For Civil Airports FAR Part 77



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
					C	D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B		
					C	D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A- UTILITY RUNWAYS
B- RUNWAYS LARGER THAN UTILITY
C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
D- VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
* PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET

Airfield Restriction Definitions

The Approach-Departure Clearance Surfaces are combination inclined and horizontal planes, symmetrical about the runway centerline extended. The inclined plane flares outward and upward from the primary surface, beginning with the same width as the primary surface and with the centerline elevation of the runway end. The inclined planes for these runways have a slope ratio of 50:1 for precision approach and 34:1 for non-precision approach.

The Primary Surface includes a surface on the ground centered lengthwise on the runway and extending 200 feet beyond each end of the runway. The width of this surface is 1,000 feet for the precision approach runways and 500 feet for the non-precision.

The Transitional Surfaces slope upward from the primary surface and approach-departure surfaces at a slope ratio of 7:1.

The Obstacle Free Zone (OFZ) is...

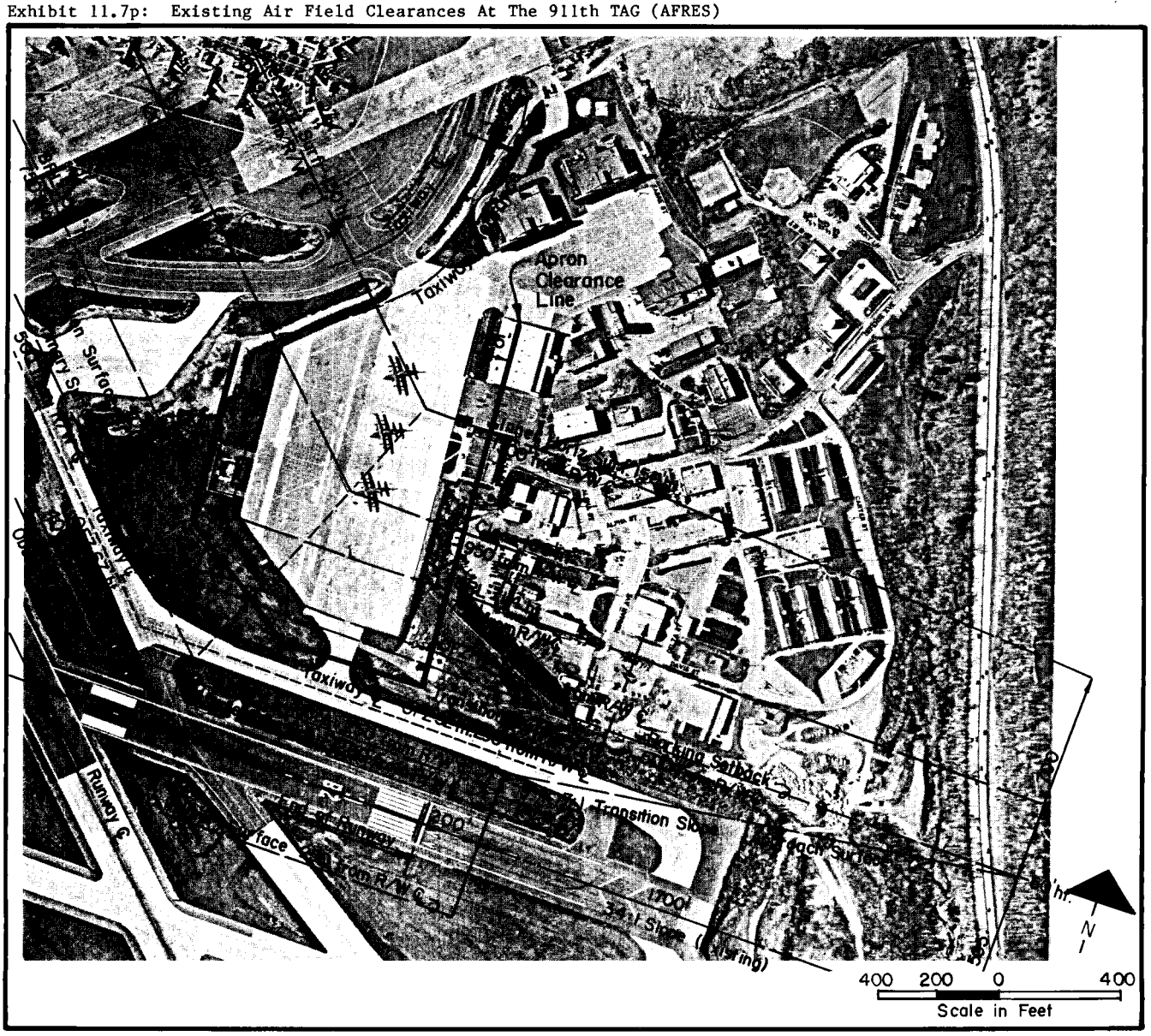
...Comprised of the runway OFZ, the approach OFZ and the transitional surface OFZ.

...Free of all objects, except frangible air navigational aids (NAVAIDS).

...Clear of vehicles as well as parked, holding or taxiing aircraft in the proximity of an airplane conducting an approach, missed approach, landing, takeoff, or departure.

The Runway OFZ is the space above a surface longitudinally centered on the runway, with the surface elevation following that of the runway centerline, extending 200 feet beyond each end of the runway, and its width for these runways is 180 feet plus the wingspan of the most demanding airplane, plus 20 feet per thousand feet of airport elevation, or 400 feet, whichever is greater.

Exhibit 11.7p: Existing Air Field Clearances At The 911th TAG (AFRES)



The Approach OFZ is the space above a surface having the same width as the Runway OFZ and rises at a slope of 50:1 into the approach area beginning 200 feet from the runway threshold. It applies only to runways with an approach lighting system.

The Inner-Transitional Surface OFZ is the space above a surface sloping 3:1 laterally from the edges of the Runway OFZ and approach OFZ and ends at 150 feet height above the airport elevation. This surface applies only to precision instrument runways.

The Building Restriction line is a line paralleling both sides of these runways, 750 feet from runway centerlines, extending longitudinally to intersect the runway clear zone, where buildings are not permitted between these lines and their respective runways.

The Parking Setback line parallels each runway, 500 feet from the centerline and extending to intersect the clear zones. No vehicles are permitted to park between this line and the runway.

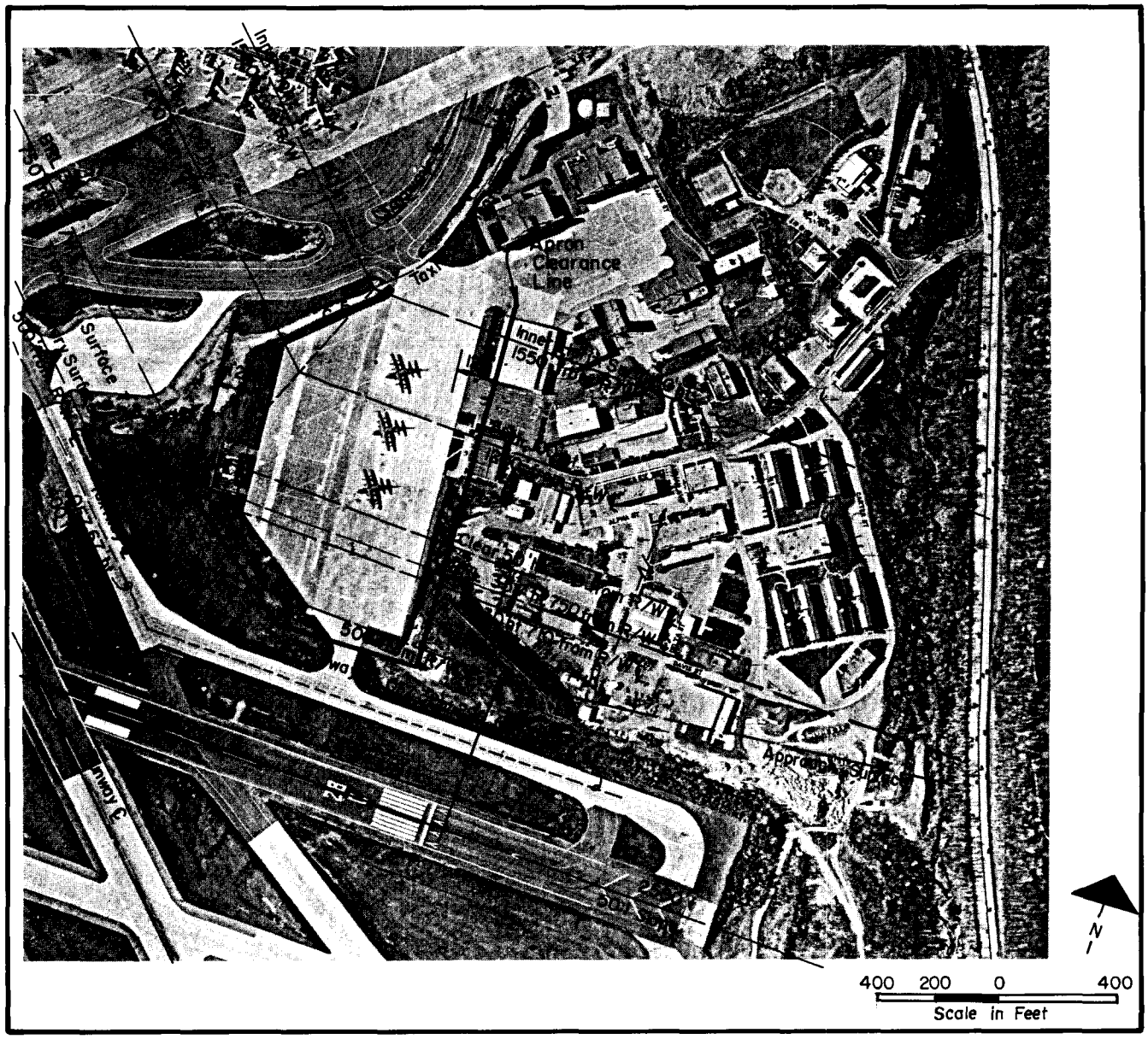
The Inner Horizontal Surface lies 150 feet above the established airport elevation.

The Apron Clearance line runs with the apron edge at a distance of 125 feet from the edge.

The Taxiway Lateral Clearance lines run parallel with the taxiway and are measured 200 feet from the taxiway centerline.

Areas within the Primary Surface, Clear Zone, and Lateral Clearance lines are to be free of fixed and movable obstacles. The Approach-Departure and Transitional Surfaces are to have no objects penetrating them.

Exhibit 11.8p: Airfield Clearances At 911th TAG To Result From R/W 28C Precision Approach



ON-BASE OBSTRUCTION

There are several on-base obstructions at the 911th TAG that violate the airfield setback lines or imaginary surfaces. The table to the right lists the obvious obstructions. The preceding exhibits show the clearances which are violated.

The buildings which are located between the runway and building restriction line are below the runway elevation. All obstructions should have waivers.

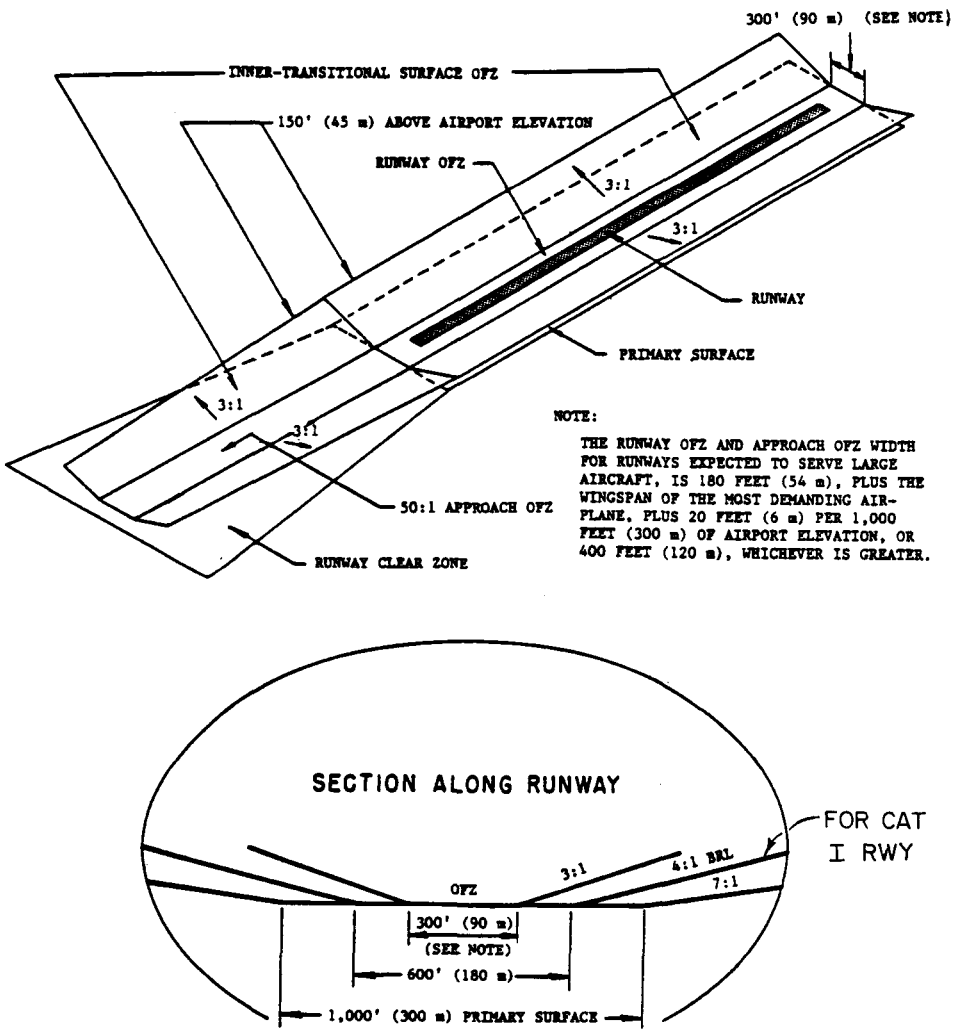
APPROACH-DEPARTURE/AIRSPACE OBSTRUCTIONS

The approach-departure and airspace obstructions for GPIA are shown separately by Tabs E-2, E-3, and E-4 due to the large area of coverage.

Exhibit 11.9t: On-Base Airfield Obstructions

Description	Clearance
Building 319	Building Restriction Line
Building 320	Building Restriction Line
Building 327	Building Restriction Line
Building 339	Building Restriction Line
Building 418	Apron Setback
Building 419	Apron Setback
Building 424	Apron Setback
Building 322	Building Rest. Line

Exhibit 11.10p: Obstacle Free Zone (OFZ) For Precision Instrument Runway



AIRCRAFT PARKING

As shown by the exhibit below there is apron parking for seven C-130's. There are also two hangars and one nose-dock which provide cover for one C-130 aircraft each during specific maintenance procedures.

Building 418 is an old C-123 hangar, but it is not large enough to accommodate a C-130.

A listing of the existing C-130 parking positions includes...

Location		No. of Spaces
	Apron	7
Bldg. 129	Nose Dock	1
Bldg. 416	Fuel System Maint. Dock	1
Bldg. 417	Maintenance Hangar	1
Total C-130 Parking Available		10

Exhibit 11.11m: Existing Parking At The 911th TAG

AIRCRAFT PARKING NEEDS

Should the opportunity arise at the 911th TAG for an expanded mission with more C-130's, then additional apron parking would be required. The following page shows how the existing apron could be expanded.

A different mission assignment with larger aircraft would also necessitate more apron area. Several alternatives for location and sizing of aprons for various aircraft are included in the alternatives chapter of this report. Aircraft considered include C-130, C-141, C-5A, and C-17.

Immediate Needs

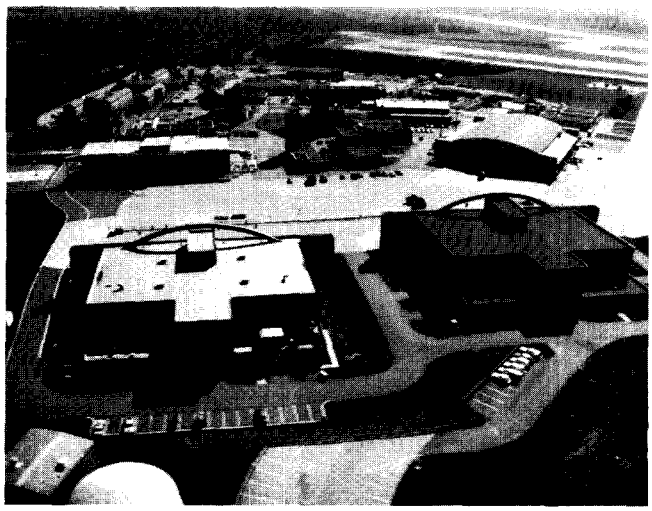
Immediate needs for the aircraft parking areas include selective slab replacement where the slabs have failed structurally or have deteriorated on the surface to a degree that they are a source of F.O.D. (foreign object damage) for the aircraft.

Some of these needs have been met in recent years for the parking apron and are currently being accomplished for the access apron (north apron).

The remainder of the old 1945, 6 inch and 8 inch slabs should be replaced since their piecemeal replacement is more costly. This would upgrade the load rating for the main parking apron where the old slabs occur.

Exhibit 11.12p: Existing Parking Facilities At The 911th TAG

The access apron (north apron) provides access to the Nose Dock, Fuel System, and Maintenance Hangars. It also provided access to the old C-123 hangar. If you look closely, the access apron concrete slab replacement work can be seen...



The 911th TAG apron with GPIA terminal in the background...

The 911th TAG parking apron...

EXISTING PARKING PROPOSAL

The exhibit below shows the existing proposal for expanding the aircraft apron to accommodate fourteen C-130 aircraft. This would double the available apron parking.

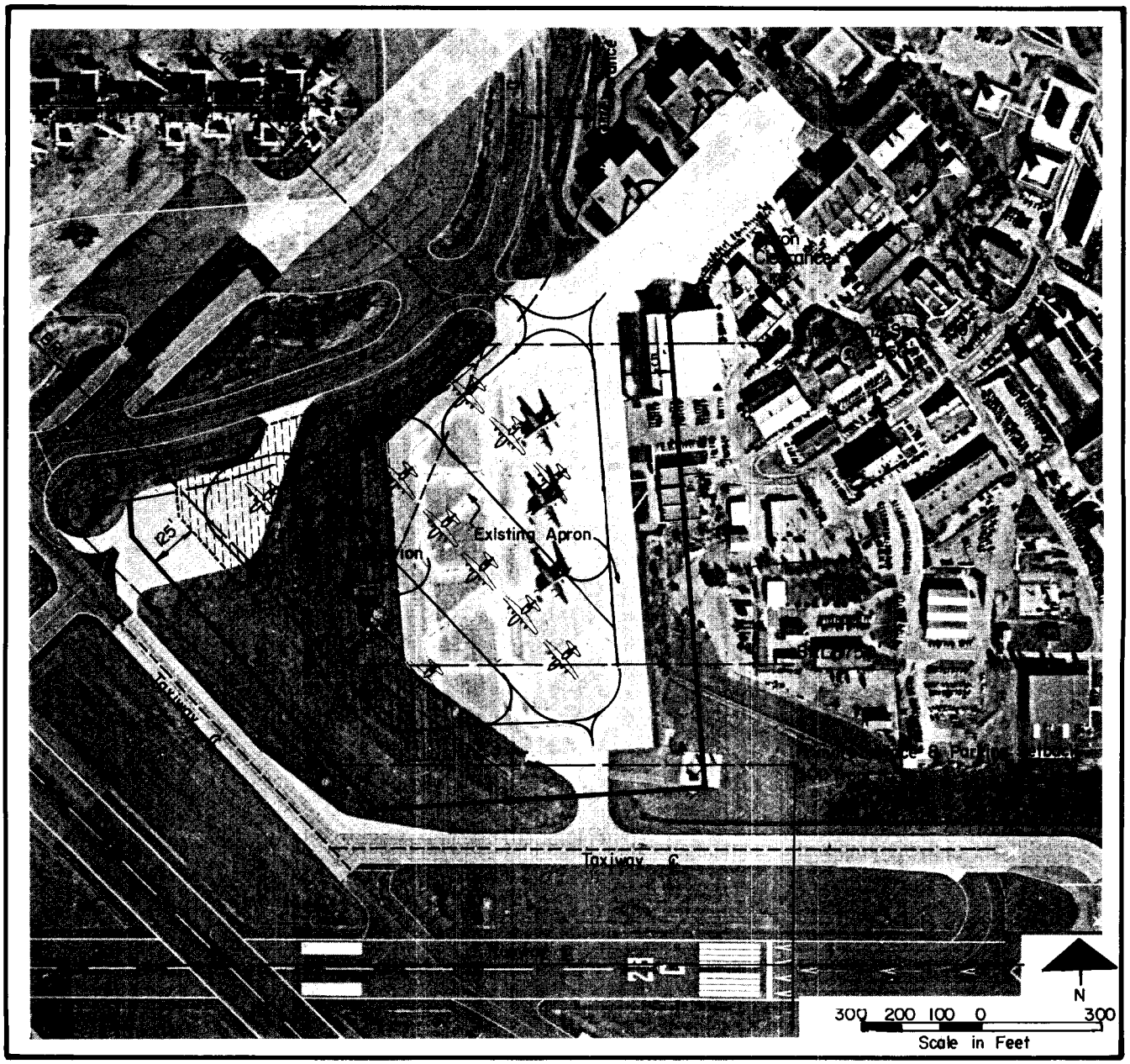
The 911th TAG could double their existing assignment of eight aircraft if fourteen are parked on the apron and two in the hangars.

In July of 1983 the DD 1391 request for funding was submitted for this project. The major work elements include the proposed concrete pavement and base course with minor elements including storm drainage, demolition and others.

A summary of the DD 1391 cost estimate of July 1983 is as follows:

Item	Unit	Quantity	Unit Cost	Cost (1,000)
11" Concrete Pavement w/ 6" Base	S.Y.	40,100	100.00	4,010
Storm Drainage	L.S.			43
Demolition	L.S.			7
Relocation	L.S.			5
Total				4,065

Exhibit 11.13m: Existing Proposal For Apron Expansion



ALTERNATIVE PARKING PROPOSALS

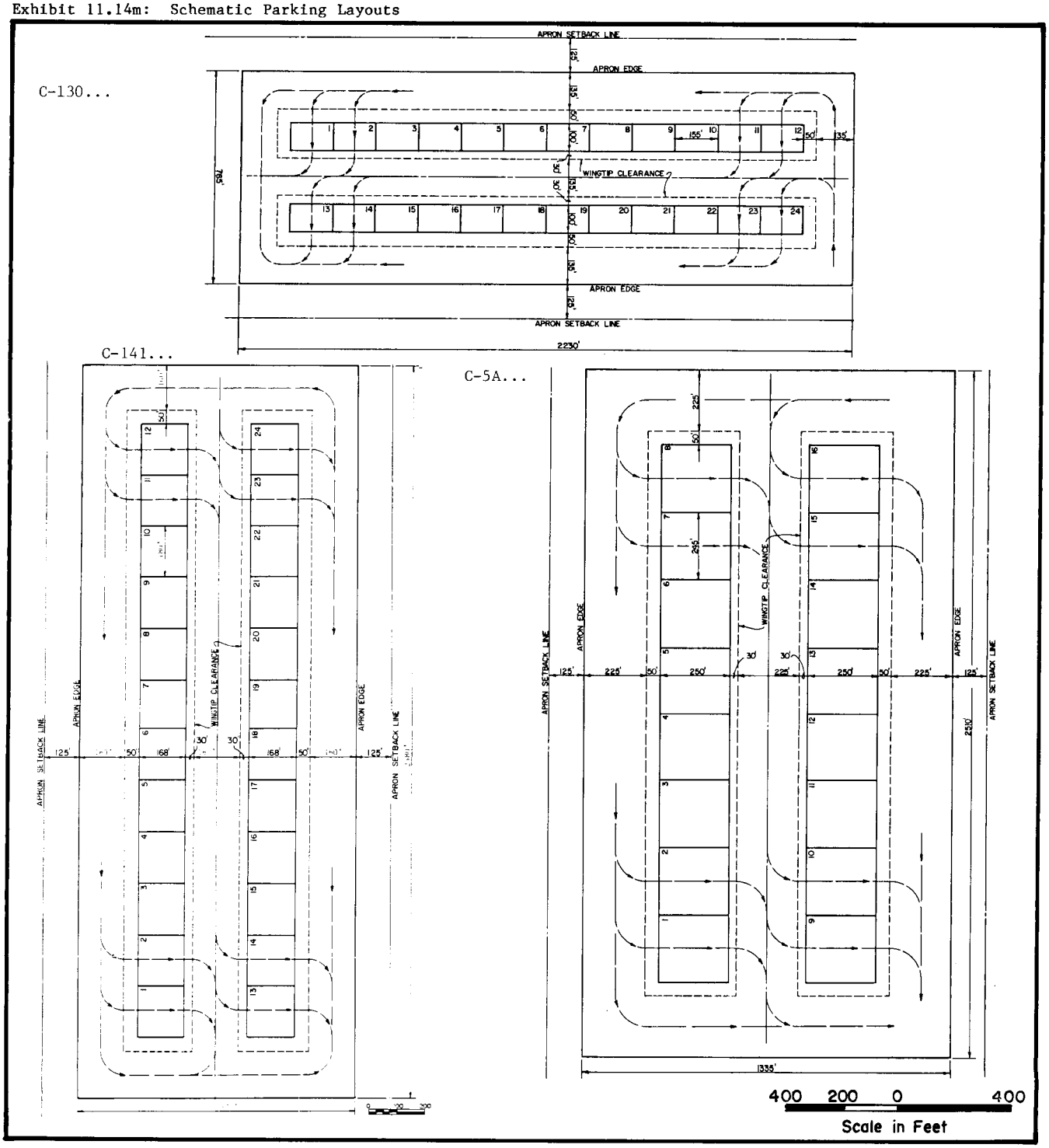
Several alternative aircraft parking proposals are presented in the alternatives chapter of this report. These proposals include a review of cargo aircraft including...

...C-130's
...C-141's
...C-5A's

A schematic parking layout with dimensions for each of these aircraft is shown below. The length and wingspan for these aircraft are...

Aircraft	Length	Wingspan
C-130	97.7'	132.6'
C-141	168.3'	160.0'
C-5A	247.8'	222.8'

Exhibit 11.14m: Schematic Parking Layouts



SHORT RANGE AIRFIELD PLAN

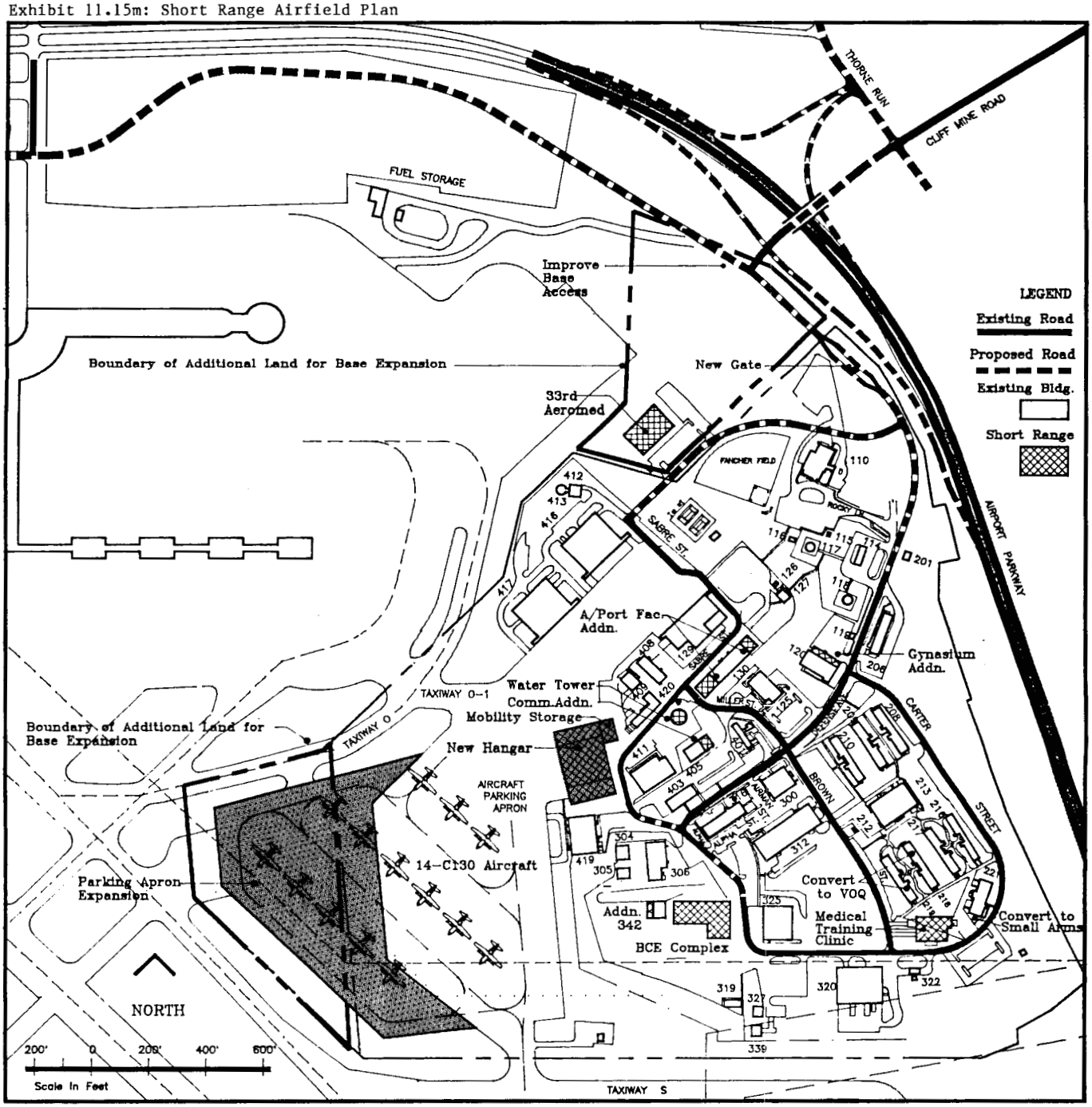
The short range airfield plan anticipates that the existing mission could be expanded by adding up to 16 C-130 aircraft. This would require additional aircraft parking apron and a new maintenance hangar.

Apron expansion would depend on the acquisition of more land (see boundary below) from the Greater Pittsburgh International Airport (GPIA).

The exhibit below shows the required aircraft apron expansion on the west side and adjacent to the existing apron. The apron expansion would approximate 50,000 square yards and would accommodate 14 aircraft, with the other two C-130's assumed sheltered by two of the hangars.

The additional hangar space would be provided by a new maintenance hangar located where Bldg. 418 is presently located. It would contain 53,000 square feet for dock space, shops, DCM, and mobility storage.

Exhibit 11.15m: Short Range Airfield Plan



LONG RANGE AIRFIELD PLAN

The long range airfield plan anticipates that a mission change could assign larger aircraft.

Utilizing C-141 aircraft and assuming that 16 could be assigned, the required airfield facility additions are shown by the exhibit below.

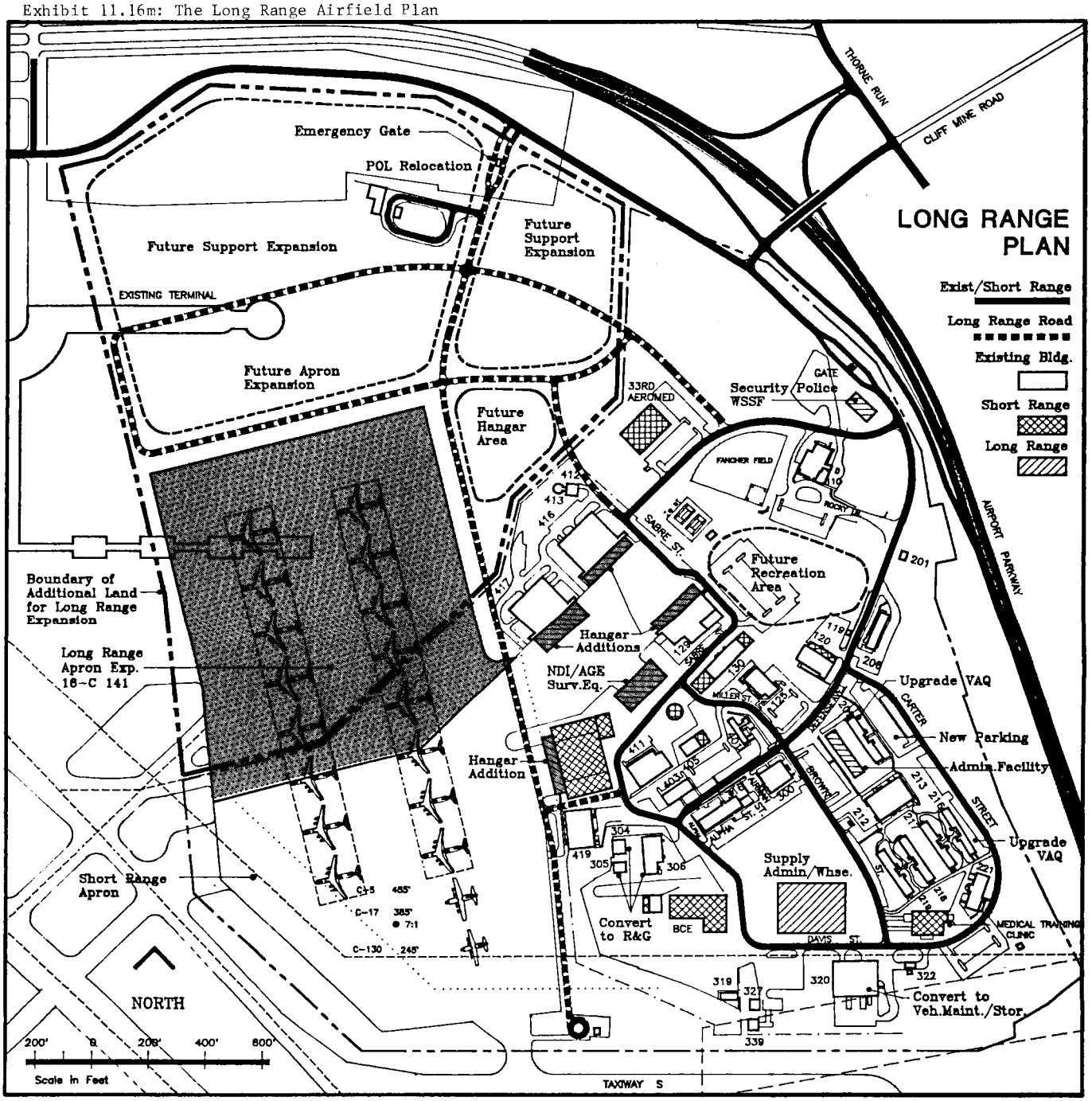
Apron expansion and additional areas for future hangars or apron, as shown below, would be dependent upon gaining additional land from the GPIA.

The building additions would require a new NDI/AGE shop to support these aircraft and hangar "eyebrows" to convert the existing hangars from C-130 to C-141 capacity.

The aircraft apron expansion would be approximately 135,000 square yards in area and would be contiguous to and on the north side of the short range expanded apron.

All apron pavement, both short and long range, would require design loads equivalent to the most demanding aircraft--the C-141, or require upgrading when the new aircraft were assigned.

Exhibit 11.16m: The Long Range Airfield Plan



Chapter XII

UTILITIES ANALYSIS AND PLAN

For

Pittsburgh AFRES

INTRODUCTION

The purpose of this chapter is to present an overall view of the utilities serving the Pittsburgh Air Force Reserve (AFRES) base, and to develop a general plan for meeting existing and future utility needs.

In order to function properly, each building on the AFRES base must be connected to various utility systems that provide energy or information to each facility, or carry waste away. These utilities and their generalized locations, are illustrated in cross section by the exhibit below, and in plan view by the exhibit below right.

UTILITIES INCLUDED

In this chapter, a generalized plan will be developed for the following utilities and related activities:

...Solid Waste Disposal

...Storm Drainage Disposal

...Sanitary Sewage Disposal

...Heating and Natural Gas Supply

...Water Supply

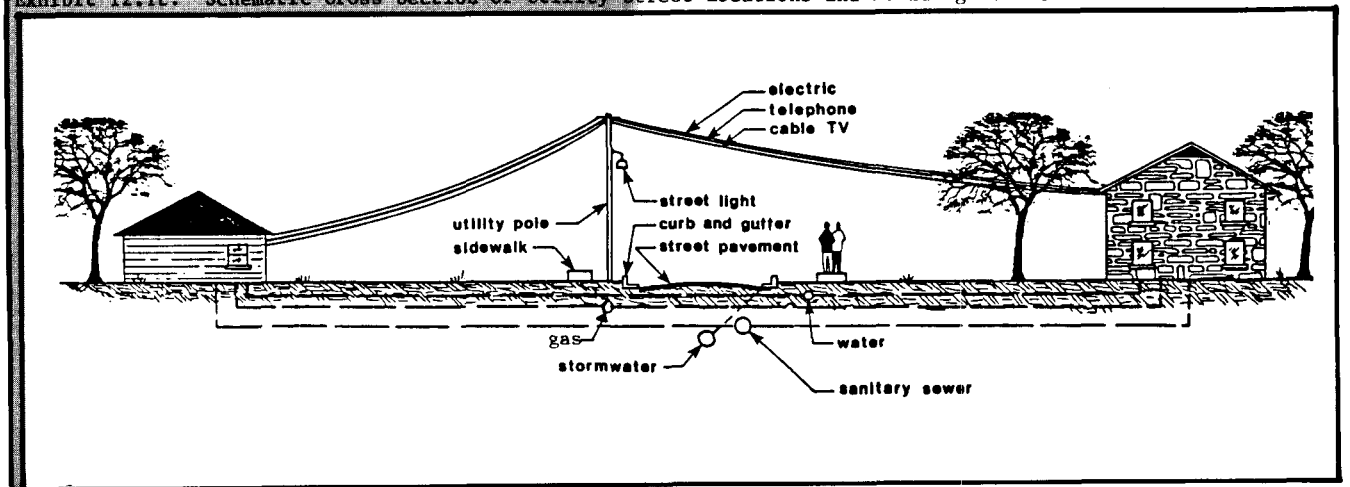
...Electric Supply and Street Lighting

...Liquid Fuels Supply

...Cathodic Protection System

Where practical, the person serving capacity of the utility systems will be determined and compared to the existing effective population of 670 persons and the estimated future effective population of 890 persons.

Exhibit 12.1t: Schematic Cross Section of Utility Street Locations and Building Connections.



STUDY PROCEDURE

Although the study procedures cannot be exactly the same for each utility, the general approach will include:

...Utility supply source description.
...Contract for supply and rates description.
...Usage amount tabulation.
...Inventory and analysis of the utility components.
...Objectives and constraints in meeting any needs.
...Recommendations to meet observed existing needs.

Completing the above steps will provide one with an overview of the nature, needs, and proposals for existing utilities...but, will not include utility recommendations to serve future expansion. These expansion proposals, however, will be provided at the end of the chapter.

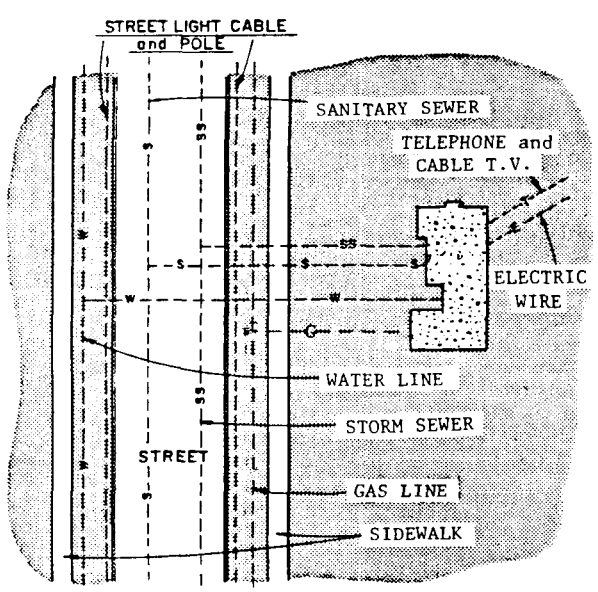
GENERALIZED COST SUMMARY

The estimated cost of proposals for the generalized utility systems are summarized by the exhibit to the right. A more detailed breakdown for each utility is contained in later sections of this chapter.

The incidental items such as pipe bends, valves, etc., are not listed separately but their costs are covered.

The unit prices utilized for these utilities are based on expected local prices. These prices also assume that conventional material types will be utilized.

Exhibit 12.2m: Schematic Plan View of Utilities



..Plan View of Utility Connections to Buildings

Exhibit 12.3t: Summary of Estimated Utility Costs

Utility	Estimated Cost $
...Solid Waste	
Contract for rental/usage to be negotiated with private companies	N/A
...Natural Gas	
..Existing	N/A
..Short Range	161,000
..Long Range	46,500
TOTAL	207,500
...Storm Drainage	
..Existing	4,500
..Short Range	365,500
..Long Range	522,500
TOTAL	892,500
...Sanitary Sewage	
..Existing	N/A
..Short Range	34,000
..Long Range	117,000
TOTAL	151,000
...Water Supply	
..Existing	779,250
..Short Range	115,350
..Long Range	145,350
TOTAL	1,039,950
...Liquid Fuels	
Relocation of POL facility	N/A
...Cathodic Protection	
None proposed	N/A
...Electric	
..Existing	50,150
..Short Range	87,350
..Long Range	379,200
TOTAL	516,700
...Street and Area Lighting	
..Existing	17,325
..Short Range	4,625
..Long Range	15,790
TOTAL	37,740
GRAND TOTAL	2,845,390

SOLID WASTE DISPOSAL

The Pittsburgh solid waste disposal system will be described as follows:

...Inventory
...Needs
...Objectives and Constraints
...Recommendations

INVENTORY

The existing Pittsburgh solid waste removal and disposal is accomplished by a private contractor:

Mazzaro Coal and Disposal Company
P.O. Box M
Clinton, PA 15026
Phone: (412) 695-0629

The contract is bid every three years. The total amount of the contract, which includes landfill costs, is $17,136.00 per year.

The contractor presently provides 22 containers (shown right) which are emptied three times per week. The locations of these containers are shown by the exhibit on the next page.

After collection, Mazzaro Coal and Disposal Company transports the solid waste to a landfill located at the address given above. The landfill is owned and operated by the contractor. According to Mazzaro officials, the expected life of the landfill is 40 - 50 years.

NEEDS

The existing Pittsburgh AFRES solid waste disposal scheme satisfies the current needs of the base. However, dumpsters should be screened to minimize visual impact and or located in less conspicuous but still accessible positions.

The construction of new facilities will produce additional demands on the solid waste disposal system and adjustments should be made to include these additional demands.

RECOMMENDATIONS

The Pittsburgh AFRES base should continue to employ a private contractor to provide cost effective waste collection. This contractor should continue to furnish and locate containers as shown by the exhibit to the right.

Collection should be continued with the present frequency incorporating a looping truck route for greater efficiency.

Exhibit 12.4p: Typical Refuse Container

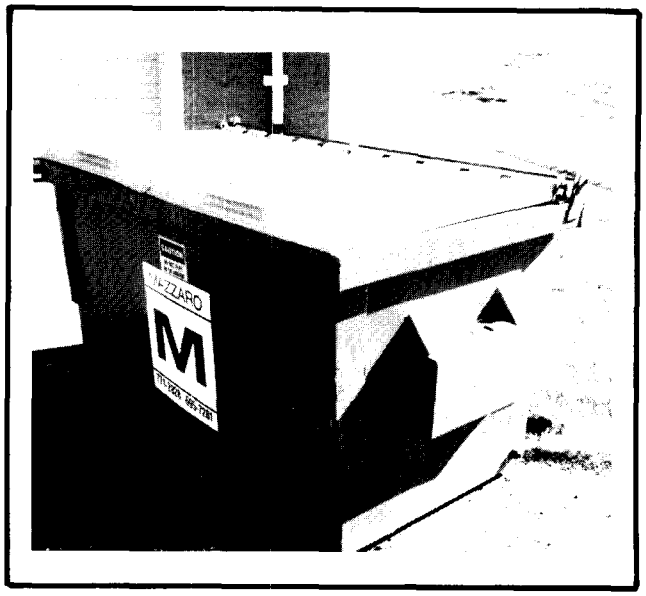
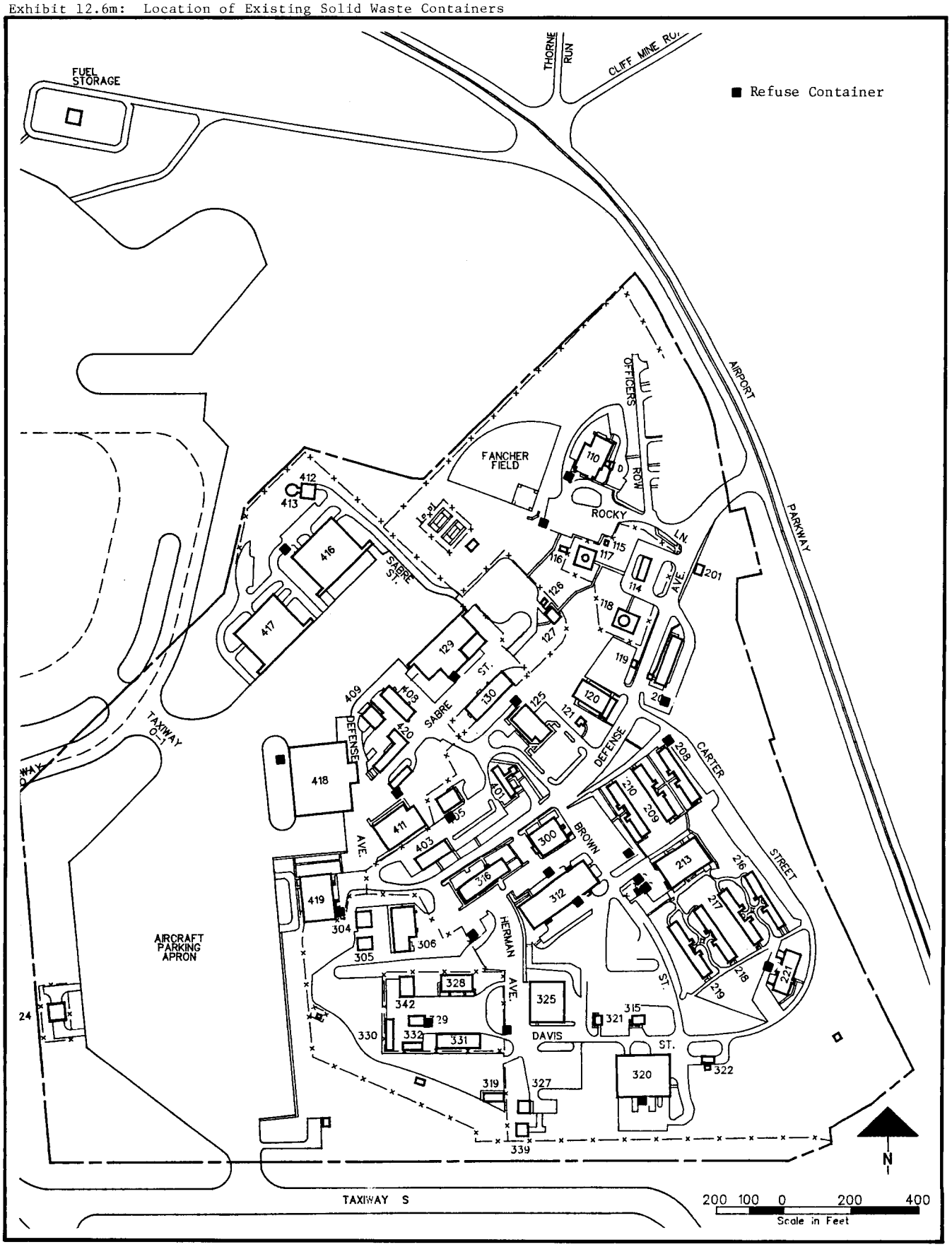


Exhibit 12.5t: Existing Solid Waste Disposal

Building No.	No. of Containers	Pickup Frequency
Francher Field	1	3 times/week
110	1	3 times/week
125	1	3 times/week
129	1	3 times/week
206	1	3 times/week
208	1	3 times/week
210	1	3 times/week
213	2	3 times/week
221	1	3 times/week
312	3	3 times/week
320	1	3 times/week
325	1	3 times/week
329	1	3 times/week
405	1	3 times/week
411	1	3 times/week
416	1	3 times/week
418	1	3 times/week
419	1	3 times/week

Exhibit 12.6m: Location of Existing Solid Waste Containers



STORM DRAINAGE SYSTEM

The Pittsburgh AFRES storm drainage system will be described under the following headings:

...Inventory
...Needs
...Analysis
...Objectives and Constraints
...Proposals
...Recommendations

INVENTORY

The Pittsburgh AFRES base is located within the Ohio River drainage basin. There are approximately 172 acres of land within the base boundaries. The general topography of the base is moderately to steeply sloping, with slopes ranging from 3 to 25 percent. As a result of this topography, surface water drainage is essentially from northwest to southeast.

Surface runoff from the base flows directly into McClaren's Run (a small stream), which runs parallel to Route 60, and in places, defines the eastern boundary of the base. (See exhibit below) This stream receives the base stormwater runoff and a significant amount of the runoff from the Greater Pittsburgh IAP.

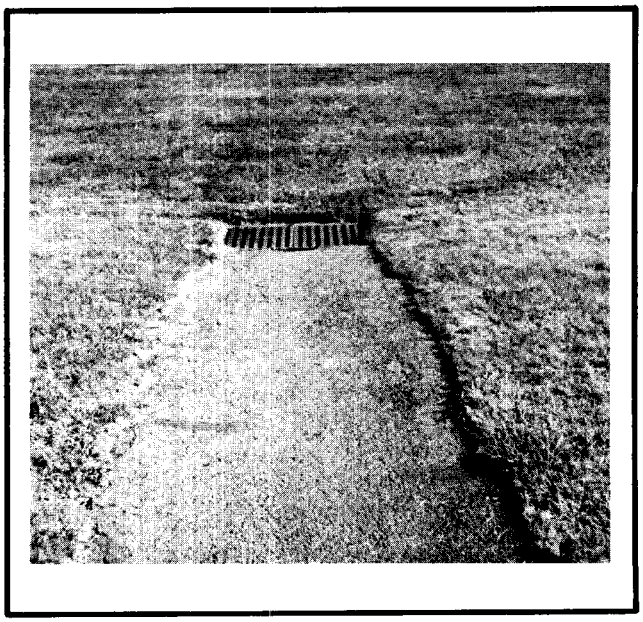
The Pittsburgh AFRES drainage system consists of a network of surface channels, roadside channels and pipe/inlet systems. Storm drainage is gathered by catch basins located throughout the base. (See exhibits above and below right) This stormwater is then transmitted through various piping networks and outletted to the major base channels mentioned previously. The base storm drainage system is shown by the exhibit on the following page.

The climate in the Pittsburgh AFRES area is generally a humid continental type modified only slightly by its nearness to the Atlantic Seaboard and the Great Lakes. The last spring temperature of 32 degrees usually occurs in late April and the first in late October.

Precipitation is distributed well throughout the year. The average annual precipitation (for 30 year period) is 36.26 inches. During the winter months about a fourth of precipitation occurs as snow and ice. The first appreciable snowfall generally occurs in late November and usually the last occurs in April. Snow lies on the ground in the suburbs on an average of about 33 days during the year.

Exhibit 12.7p: McClaren's Run

Exhibit 12.8p: Typical Stormwater Catch Basin



NEEDS

The needs of the Pittsburgh AFRES storm drainage system are based on the Department of Air Force Technical Manual AFM 88-5 and standard stormwater practice. In general, the storm drainage system should

Exhibit 12.9p: Surface Channelization

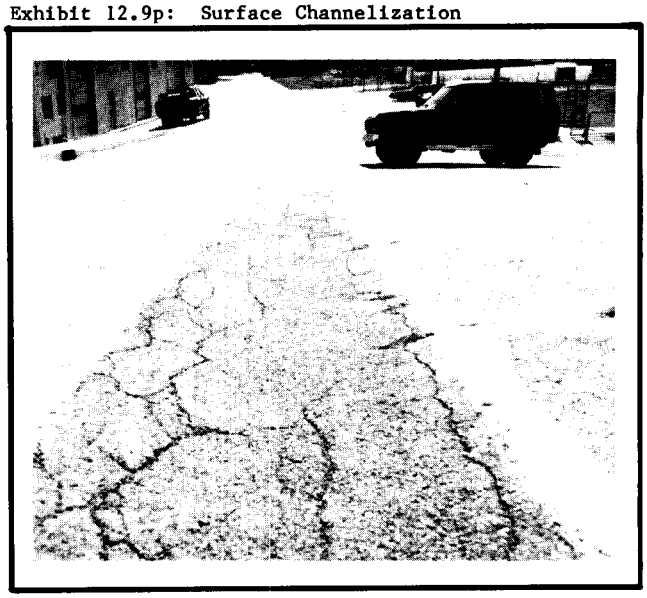


Exhibit 12.10m: Storm Drainage System

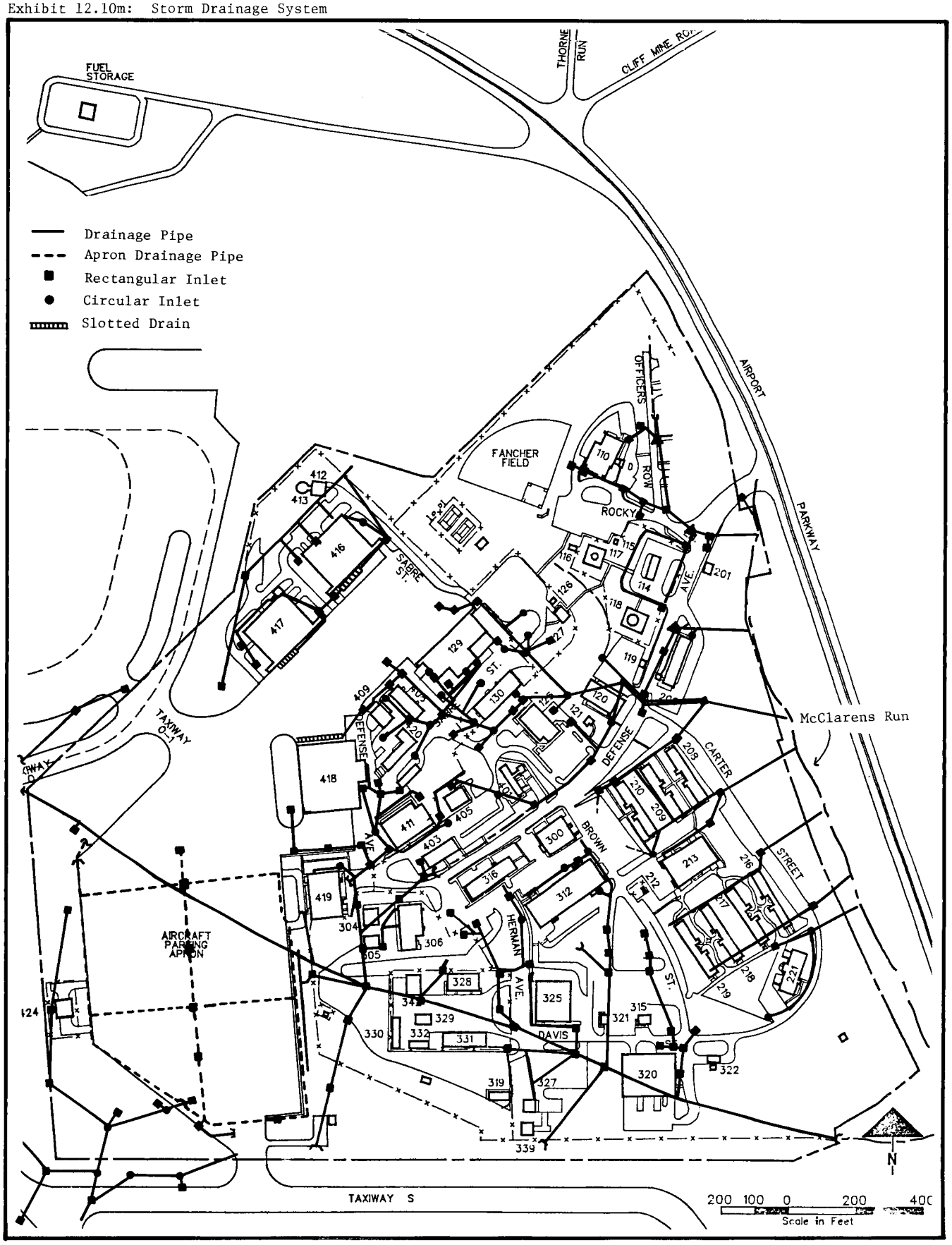
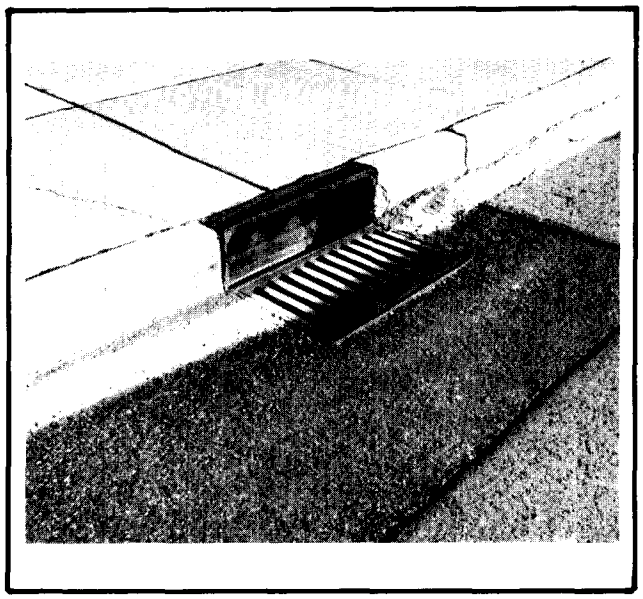


Exhibit 12.11: Well-Maintained Storm Drain Inlet



be able to handle stormwater flows resulting from a ten year rainfall event without ponding.

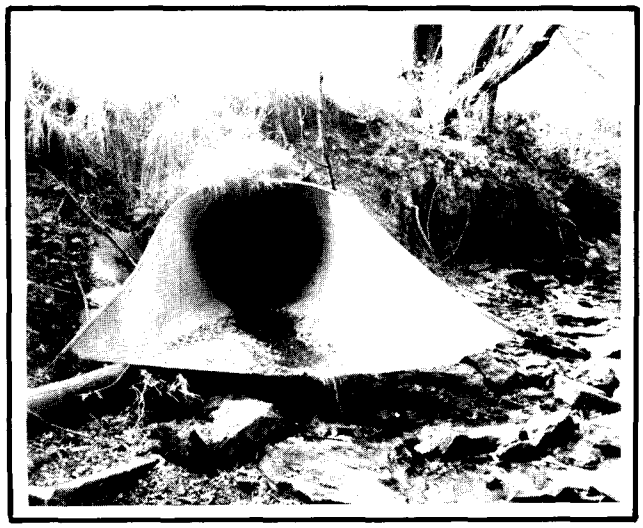
There is a need for the general maintenance and up-keep of the drainage system. All catch basins, manholes, culvert sections and spillways should be free of natural and manmade obstacles/debris, which may inhibit normal stormwater flow.

ANALYSIS

The base storm drainage system appears to be effective in handling rainfall in all base areas. According to base officials the drainage system has been properly sized to maintain a ten year frequency flood.

In several locations, fallen trees have caused debris to accumulate in McClaren's Run, inhibiting normal stormwater drainage. During heavy rainfall, an occasional catch basin becomes filled with grass and debris, which may restrict stormwater flow. (See exhibit above)

Exhibit 12.12p: Culvert Sections At McClaren's Run



The culvert outlets for the base stormwater drainage system are located along the stream bank of McClaren's Run. Most of the pipes extend several feet into the brook channel and are essentially unsupported. (See exhibit below.) The apron drainage system flows into the airport system and discharges into an unknown location.

The parking areas in front and in back of building 320 experience occasional ponding due to inadequate drainage facilities.

OBJECTIVES AND CONSTRAINTS

The objectives of the Pittsburgh AFRES drainage system includes the following:

...Provide adequate collection system along the roads and aircraft parking areas to prevent flooding and ponding for the ten year frequency rainfalls.

...Control site erosion during and after construction.

...Stormwater retention to retain the additional water developed by a new building site.

The constraint for the stormwater drainage system is the erosion potential of the soil and the steepness of the sloping terrain.

PROPOSALS

The proposals for the Pittsburgh AFRES storm drainage system includes the following: (See exhibit below for cost summary)

...Maintain all drainage channels and catch basins, keeping them free of debris.

...Support with concrete headwalls and cut back culvert sections extending into McClaren's Run.

...Consider the erosion potential of the soils during future construction.

...Install catch basins in low lying areas surrounding building 320.

RECOMMENDATIONS

It is recommended that the proposed stormwater improvements be defined and implemented as new project development occurs. This would minimize cost and avoid reconstruction. The base should find the location of the airport drainage system discharge.

Continuation of the maintenance on the storm drainage system (cleaning of debris and clearing of catch basin grates) should improve the overall performance of the system during a major storm event.

Exhibit 12.13t: Cost Summary For Storm Drainage

Item	Cost $
..Cut back culvert sections.....	500
..Construct headwalls at each culvert.....	2,000
..Catch basins.....	2,000
..Maintenance of drainage system....	Variable
TOTAL	4,500

SANITARY SEWER SYSTEM

The Pittsburgh AFRES sanitary sewer system will be described under the following headings:

...Inventory
...Needs
...Analysis
...Objectives and Constraints
...Proposals
...Recommendations

INVENTORY

The Pittsburgh AFRES base area is served by the Moon Township Municipal Authority Wastewater Treatment Plant. This plant also serves Greater Pittsburgh International Airport and neighboring municipalities located within the Montour Run/McClaren's Run drainage area.

In 1974, construction was completed on the Moon Township wastewater treatment facility. The plant is designed to provide wastewater treatment of 2.5 million gallons per day. An activated sludge process and its modifications are used to produce effluent quality mandated by the State and Federal regulatory agencies. This effluent is discharged into Montour Run.

The essential processes of the municipal wastewater treatment plant are the following:

...Comminution and screening
...Grit removal
...Primary and final settling
...Aeration
...Disinfection
...Gravity thickening of sludge
...Anaerobic digestion of sludge
...Chemical conditioning of sludge
...Dewatering sludge by vacuum filtration

The exhibit below shows how these processes are coordinated together to provide wastewater treatment.

BASE COLLECTION SYSTEM

The sanitary sewage on Pittsburgh AFRES base is collected through approximately 12,000 feet of pipe, ranging in size from 6 inches to 15 inches. There are fifteen oil/water separators located at various facilities around the base. See exhibit on the following page for the layout of the sanitary sewer system. The entire system is gravity flow; with all wastewater flowing to the east side of the base where it ties into the regional wastewater system at three locations.

Exhibit 12.14m: Moon Township Municipal Authority, Wastewater Treatment Plant

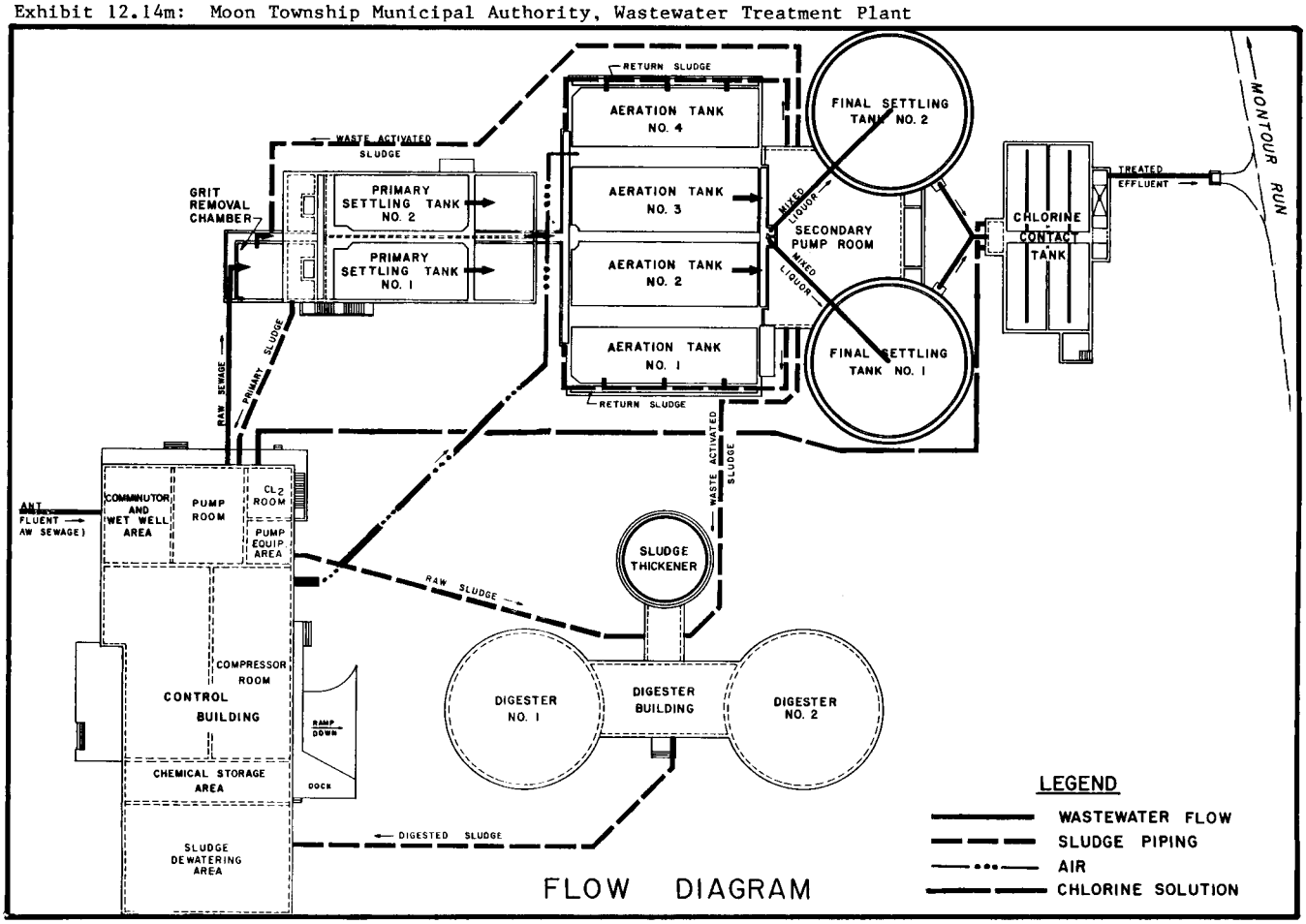
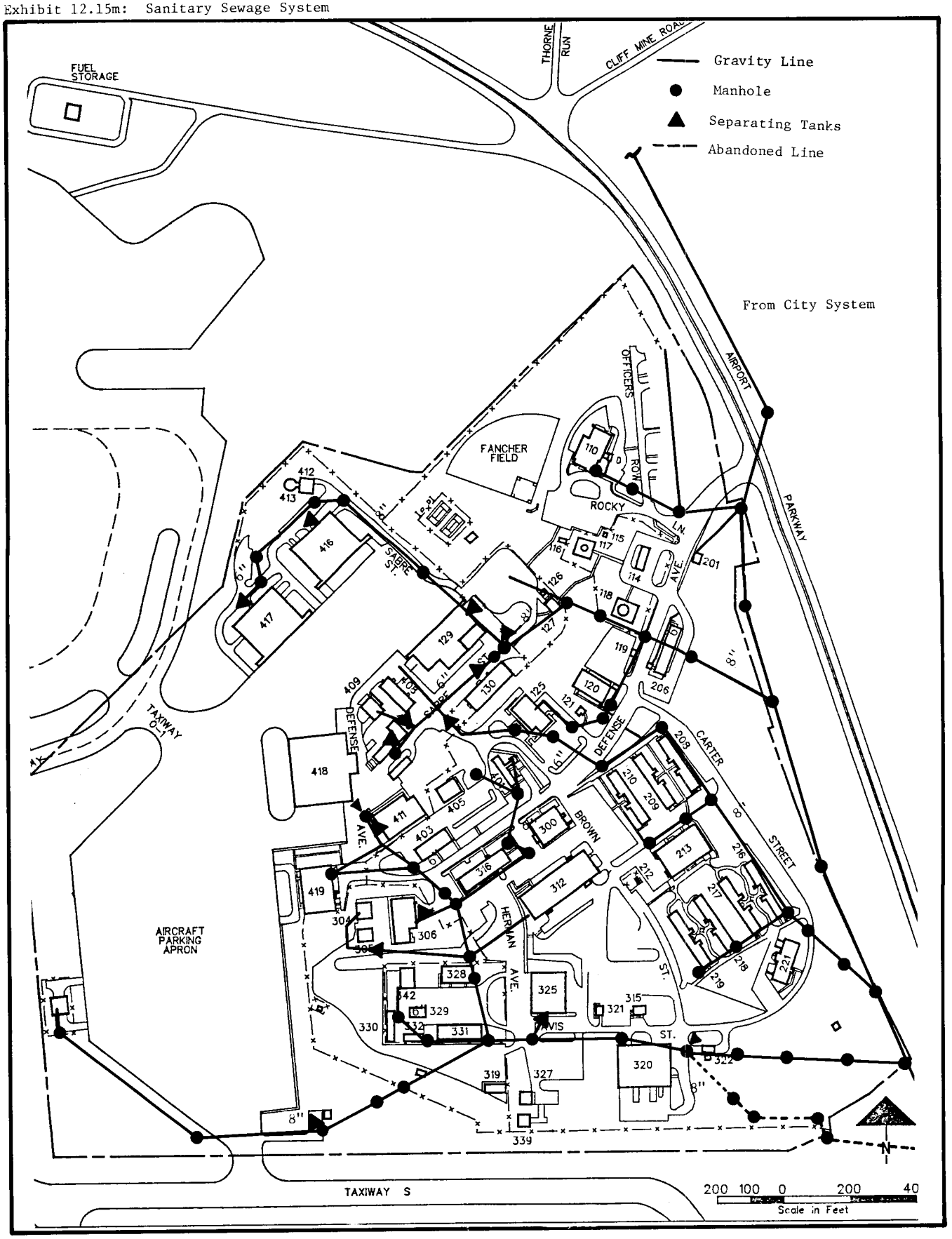


Exhibit 12.15m: Sanitary Sewage System



The base presently has no effluent metering system for the sanitary sewage system. The sewage charge is based on a percentage of the water used. The current rate being charged for sewage treatment is $1.50 per 1000 gallons of water used. The Pittsburgh AFRES base uses an average of 1,566,500 gallons of water per month. See exhibit below for water usage and sewage charges for 1986.

NEEDS

The needs of Pittsburgh AFRES sanitary system are derived from guidelines found in the Department of Air Force Technical Manual 88.11-1, -3 and -6. Generally requirements and subsequent needs of the system are as follows:

General Requirements

...Design for expected peak rate of flow
...Minimum sewer line size...8-inch
...Minimum scouring velocity in line...2 fps

Typical sanitary system flows can be estimated by taking a percentage of the domestic water consumption. According to AFTM 88.11, the maximum average flow for an Air Force installation should equal 100 gallons per capita-day, which is 66 percent of the maximum water value of 150 gpcd. Therefore, the maximum daily flow values for the Pittsburgh sanitary system should be as follows:

...Average Weekday Flow: 153 persons x 100 gpcd = 15,300 gpd

...Average Weekend Flow: 670 persons x 100 gpcd (UTA Weekend) = 67,000 gpd

Exhibit 12.16t: 1986 Water Usage/Sewage Charge

Month	Water Usage (gallons)	Sewage Charge
January	1,954,000	2,931.00
February	2,056,000	3,084.00
March	3,468,000	5,202.00
April	2,960,000	2,940.00
May	1,658,000	2,487.00
June	983,000	1,474.50
July	801,000	1,201.50
August	794,000	1,191.00
September	939,000	1,408.50
October	976,000	1,464.00
November	1,346.,000	2,019.00
December	1,863,000	2,794.50
AVE/Month	1,566,500	2,349.75
AVE/Day	51,501	77.25
TOTALS/YR	18,798,000	28,197.00

...Average Weekend Flow: 890 persons x 100 gpcd (Future UTA Weekend) = 89,000 gpd

To insure efficiency of a sewer system, rehabilitation of sewer lines, manholes and connections is needed. A regular maintenance schedule should also be followed.

An economically efficient sewer system utilizes sewage effluent metering. This allows leak detection and peak flow periods to be determined with less difficulty.

ANALYSIS

In August, 1982 a Sewer System Evaluation Study (SSES) was performed on the Pittsburgh AFRES sanitary sewer system.* This study was performed for measuring flow and comparing this to the calculated flow. Deficiencies in the system were found such as cracked manholes, leaking pipes and joints, and obstructions in pipes. According to base officials, improvements have been made concerning the recommendations made in the SSES.

The lack of sewage effluent metering makes the analysis of the sewer system difficult. Presently, it cannot be determined how much sewage the base generates. If inflow/infiltration problems occur, it could take months to detect these problems. An effluent metering system would aid in rapidly detecting these type of problems. However, the feasibility of installing effluent metering may not be cost beneficial.

Overall, the current sanitary system seems to be functioning properly, with only minor improvements needed.

OBJECTIVES AND CONSTRAINTS

The objective of the Pittsburgh AFRES sanitary sewer system is the collection and transportation of sewage, under general requirements, to the point of discharge into regional treatment system.

The constraint of the sanitary system is the lack of effluent metering which makes it difficult to determine the exact amount of sewage discharge.

PROPOSALS

The proposed improvements to the Pittsburgh AFRES sanitary system include the following:

General Maintenance Schedule...

...Smoke testing @ 5-year intervals; annual manhole inspection
...Inspect all oil water separators semiannually

RECOMMENDATIONS

The proposed improvements should enable the base sanitary system to operate more efficiently. Instances of excess infiltration or needless inflow to the sanitary system should be either prevented or rapidly detected and corrected.

*Betz, Converse and Murdoch, Inc. Consulting Engineers, Pittsburgh, Pennsylvania

CENTRAL HEATING AND NATURAL GAS SYSTEM

The Pittsburgh AFRES heating and natural gas systems are dependent on each other, with the natural gas providing the fuel necessary for thermal heat and hot water production. This system will be described under the following headings:

...Inventory
...Needs
...Analysis
...Objectives and Constraints
...Proposals
...Recommendations

INVENTORY

The regional natural gas supplier for the Pittsburgh AFRES is the Peoples Natural Gas Company (P.N.G.C.) located in Pittsburgh, Pennsylvania.

Natural gas enters the base at the northeast side via a 6-inch steel line. The main meter house, (see building 119 below) reduces the line pressure incoming from 40 lbs. to 8 ounces for base usage. Further pressure reduction takes place at the regulator where the gas enters each building. (See exhibit below right) The distribution system consists of a 6-inch main line with 2 and 4-inch service lines to the buildings. (See exhibit on opposite page) The entire system is cathodically protected by anode beds on the north end of the base.

The Peoples Natural Gas Company in 1985 provided the base with 41.4 million cubic feet of natural gas. Charging the following rates:

...30 MCF* - $5.5579/MCF
...470 MCF - $5.1816/MCF
...1500 MCF - $5.0079/MCF
...2000 MCF - $4.7597/MCF

(See exhibit above right for consumption data)

*MCF - Thousand cubic feet

Exhibit 12.17p: Main Meter House - Building 119

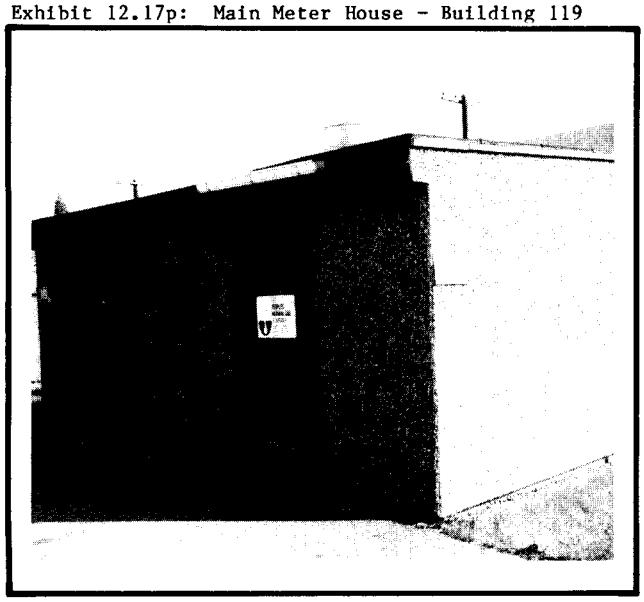


Exhibit 12.18t: 1986 Gas Consumption

Month	Consumption (1,000 cubic feet)	Cost $
..January	7,884	40,028.00
..February	6,758	34,402.00
..March	6,118	31,205.00
..April	3,145	16,339.00
..May	1,574	8,384.00
..June	528	2,889.00
..July	365	2,008.00
..August	393	2,160.00
..September	482	2,644.00
..October	1,851	9,840.00
..November	4,741	22,182.00
..December	5,864	27,274.00
TOTAL/YEAR	39,703	199,355.00
AVERAGE PER MONTH	3,309	16,613.00

The responsibility of maintaining the base line to the meter housing (building 119) belongs to the Peoples Natural Gas Company. All other natural gas distribution lines on base are the responsibility of the heat shop located on the base.

Thermal energy is supplied to Pittsburgh AFRES by the natural gas system via steam or hot water through conversion in either centrally fired or individual boiler facilities. Approximately 58 facilities, with a total area of 480,289 square feet, are served by the natural gas system.

Exhibit 12.19p: Typical Natural Gas Regulator

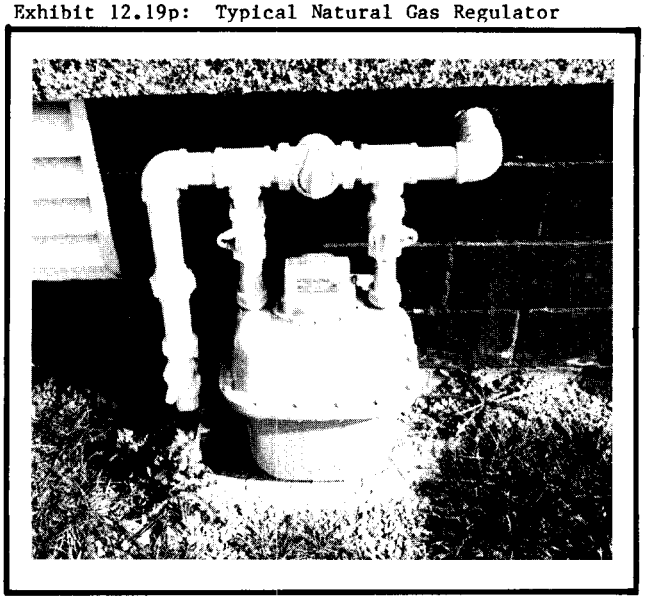
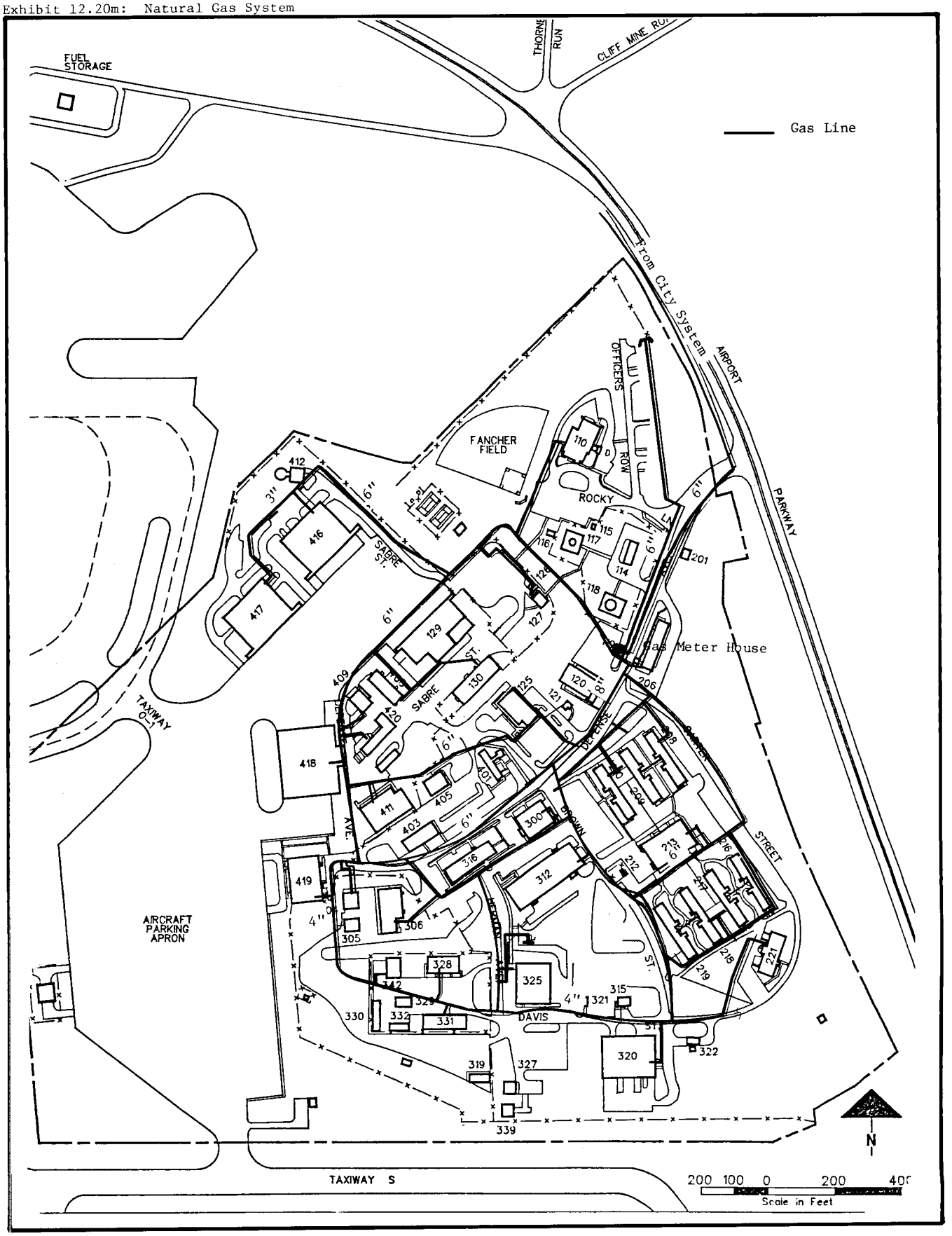


Exhibit 12.20m: Natural Gas System



There is only one central heating plant on the base at this time. The system is located in the basement of the dining hall (building 213) and provides heat for the seven dormitories. (See exhibit below) The hot water boiler is a Cyclo-Therm 200 horsepower, which was installed in 1952 with a capacity of 7.3 million btus/hour. Presently it provides a low pressure supply of hot water for the dormitories and dining hall.

A Cleaver Brooks steam boiler was installed in 1985, which has a capacity of 1.5 million btus/hour. This 40 psi, high pressure steam boiler provides steam for cooking facilities. Paloma units provide domestic hot water to the dormitories.

The remaining inventory consists of 37 hot water heaters and 71 convector heaters located in various facilities on the base. There are 20 units that have been in use for thirty years or more.

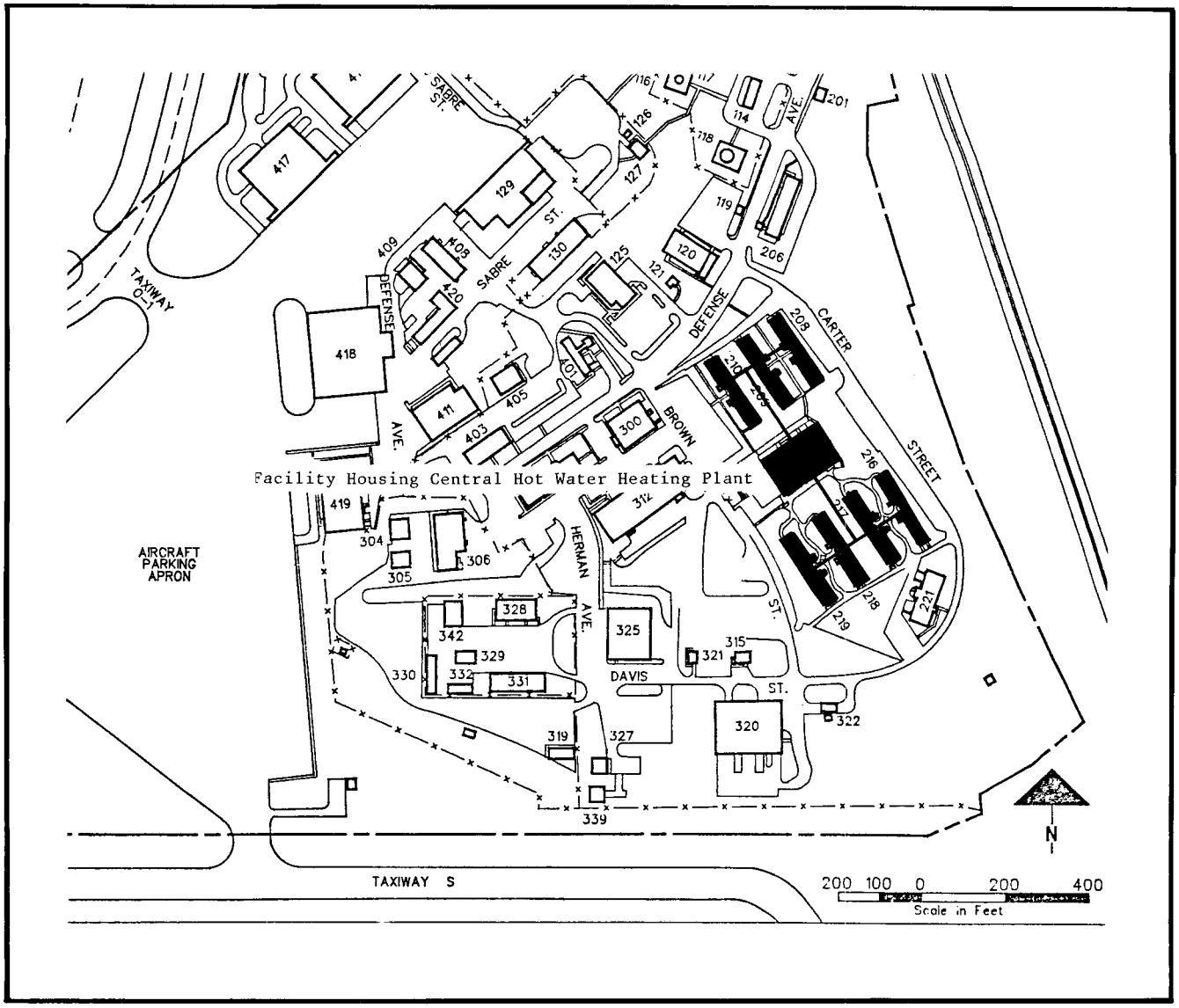
NEEDS

The needs of Pittsburgh AFRES natural gas and heat distribution systems are directly proportional to future expansion and growth of base facilities. These needs are based on the Air Force Energy Technical Letter (ETL) 83-10. The ETL establishes energy consumption levels for specific facility types in various regions of the country.

An important factor in determining the heating and cooling needs of a particular building in a certain geographical area is the amount of "heating degrees days" and "cooling degree days" for that area. These terms are explained in the following paragraphs:

...Heating Degree Days - The degree day value for any given day is the difference between 65 and the mean daily temperature. For a mean daily temperature of 50° F, the number of degree days is 65 minus 50 or 15 degrees. Degree days are a measure of the severity of the entire season and are directly proportional to fuel consumption.

Exhibit 12.21m: Central Hot Water Heating Plant And Distribution Lines



...Cooling Degree Days - Based on the average number of days that the dry bulb temperature of 93° F and 80° F and the wet bulb temperature of 73° F and 67° F are equal or exceeded during the warmest six consecutive months as determined from the monthly mean wet bulb temperature.

The average heating degree days per year, 30 year average (65° F base) for Pittsburgh AFRES, Pittsburgh, Pennsylvania area is 5,742. The prevailing winds, for design purposes, are out of the west southwest (SWS).

The average cooling degree days per year, 30 year average is 598. The prevailing wind direction for summer design purposes is from the west southwest.

Other temperature characteristics of the base area include the following:

	Coldest Month	Warmest Month
...Month	January	July
...Average High Temp	28.7° F	80.9° F
...Average Low Temp	15.5° F	60.1° F
...Historical Extremes	-18.0° F	99.0° F
...Average Temp	22.1° F	70.5° F

These weather characteristics place Pittsburgh AFRES in Region Two as described in ETL 83-10. Using the Design Energy Budget (DEB) for this region, the energy consumption for thermal heat and hot water production should be *2.1 billion btus/month. (See exhibit on the following page for the design energy budget)

Presently, there is a need for better utilization of thermal energy used for heating base facilities. These facilities are not efficient in their ability to retain heat and should be corrected to take advantage of the positive aspects of energy conservation and management. Doing this should in turn lower natural gas consumption.

ANALYSIS

An analysis of Pittsburgh AFRES natural gas and central heating was performed to determine the operating efficiency of the system.

The natural gas distribution system, with high consumption demands, should be able to provide gas with an adequate operating pressure. The existing supply can be increased from 8 ounces to 40 lbs. depending on the natural gas demands. The existing natural gas system should have no problem handling any reasonable demands placed on it by future facility expansion.

Using the Design Energy Budget and comparing it to the actual natural gas consumption, an efficiency of the overall system is found. (Conversion factors from cubic feet of gas to btus is specified in previously mentioned ETL 83-10.)

*The DEB is normally used for design of new facilities. The values were retrofitted to be used for existing buildings, which may account for a slight error. The design energy consists of space heating, space cooling, domestic hot water, ventilation and lighting loads, excluding process loads.

...Estimated D.E.B. = 25,000,000,000 Btu/yr

...1986 Actual Natural Gas Consumption = 39,703,000,000 Btu/yr

The natural gas and heating system is using 64% more energy than the Design Energy Budget shows it should. The actual energy consumption should fall within 10% of the estimated figure if optimum efficiency is to be met.

There are several factors that could be accountable for the excessive energy consumption. Examples of these are as follows:

...Facilities with large windows and doors that are frequently opened and closed, (such as hangar buildings) will have an increase in the production of heat.

...The service life of many heating system components has exceeded the recommended efficient service life. (See exhibit below)

...There may be heat losses due to poor facility insulation throughout the base.

Exhibit 12.22t: Equipment Service Life*

Equipment Item	Median Years
Air conditioners	
Window unit	10
Residential single or split package	15
Commercial through-the-wall	15
Water-cooled package	15
Computer room	15
Heat pumps	
Residential air-to-air	b
Commercial air-to-air	15
Commercial water-to-air	19
Roof-top air conditioners	
Single-zone	15
Multizone	15
Boilers, hot water (steam)	
Steel water-tube	24 (30)
Steel fire-tube	25 (25)
Cast iron	35 (30)
Electric	15
Burners	21
Furnaces	
Gas- or oil-fired	18
Unit heaters	
Gas or electric	13
Hot water or steam	20
Radiant heaters	
Electric	10
Hot water or steam	25
Air terminals	
Diffusers, grilles, and registers	27
Induction and fan-coil units	20
VAV and double-duct boxes	20
Air washers	17
Duct work	30
Dampers	20
Fans	
Centrifugal	25
Axial	20
Propeller	15
Ventilating roof-mounted	20

*Obtained from a nation-wide survey conducted in 1977 by ASHRAE TC 1.8 (RP 186).

Exhibit 12.23t: Design Energy Budget (DEB)

BUILDING #	AREA (ft^2)	D.E.B. (Mbtu/ft^2/yr)	D.E.B. adjusted (Mbtu/ft^2/yr)	D.E.B. total (btu/yr)
110	9139	65	56.5	5.2E+08
113	131	30	25.0	3275000
114	1538	30	25.0	38450000
115	240	25	20.5	4920000
116	280	30	25.0	7000000
120	7070	55	47.5	3.4E+08
121	380	80	70.0	26600000
125	12146	80	70.0	8.5E+08
127	1200	30	25.0	30000000
129	20138	80	70.0	1.4E+09
130	7500	30	25.0	1.9E+08
201	511	45	38.5	19673500
206	12095	63	54.7	6.6E+08
208	12967	63	54.7	7.1E+08
209	12967	63	54.7	7.1E+08
210	12967	63	54.7	7.1E+08
213	21426	82	71.8	1.5E+09
216	12967	63	54.7	7.1E+08
217	12967	63	54.7	7.1E+08
218	12967	63	54.7	7.1E+08
219	12967	63	54.7	7.1E+08
221	6173	75	65.5	4.0E+08
300	8000	75	65.5	5.2E+08
304	2000	80	70.0	1.4E+08
305	1767	80	70.0	1.2E+08
306	8440	80	70.0	5.9E+08
312	19656	30	25.0	4.9E+08
315	1000	45	38.5	38500000
316	22131	50	43.0	9.5E+08
319	1200	30	25.0	30000000
320	18544	30	25.0	4.6E+08
322	174	30	25.0	4350000
325	12269	50	43.0	5.3E+08
328	4800	45	38.5	1.8E+08
329	1221	80	70.0	85470000
331	5166	80	70.0	3.6E+08
342	2400	30	25.0	60000000
401	2626	45	38.5	1.0E+08
403	4160	45	38.5	1.6E+08
405	3072	45	38.5	1.2E+08
408	4400	30	25.0	1.1E+08
409	2699	80	70.0	1.9E+08
411	11805	50	43.0	5.1E+08
412	1820	30	25.0	45500000
414	1637	80	70.0	1.1E+08
416	24314	80	70.0	1.7E+09
417	24314	80	70.0	1.7E+09
418	47653	80	70.0	3.3E+09
419	23889	50	43.0	1.0E+09
420	4500	30	25.0	1.1E+08
424	2319	30	25.0	57975000
			TOTAL (BTU/YR)	2.5E+10
			TOTAL (BTU/MONTH)	2.1E+09
			TOTAL (BTU/HR)	2837879.

Mbtu = Millions of btu's

OBJECTIVES AND CONSTRAINTS

The objectives of Pittsburgh AFRES central heating and natural gas system include the following:

...Source - To retain the most economical supply of energy to the base natural gas heating system.

...Supply - To provide adequate amounts of energy to satisfy the needs of each facility and future facilities on the base without extensive reconstruction.

...Distribution - To convert raw energy to heat in an efficient and economical manner without loss of pressure and capacity.

...Maintenance - To maintain equipment in proper working order as well as usage of inventory records. Incorporate individual facility metering whenever possible.

The constraints on the heating and natural gas system include the following:

...Facilities using the system cannot be analyzed properly for natural gas usage, due to lack of individual metering.

...The efficiency of the system components are restricted, due to the service life of the components being exceeded. Many of the base systems exceed expected service life values making improvements imminent.

PROPOSALS

The proposals for the heating and natural gas systems are as follows:

...Implement preventative maintenance schedule as shown by the exhibit below on right side of page.

...Add individual metering to facilities using natural gas system.

...Analyze efficiency of each building, which uses the heating and natural gas system, to find deficiencies in the retainment of heat.

...Add a double set of doors to provide a buffer zone in the facilities that get a lot of in and out pedestrian traffic.

...Replace boiler plant in building 213 with a more advanced and efficient model.

...Replace all individual boilers and convector heaters that are more than 25 years old.

...Replace natural gas lines that are more than 25 years old with new polyethylene pipe.

RECOMMENDATIONS

Implementation of the proposals shown above will make the heating and natural gas system more economic and much more efficient.

Exhibit 12.24t: Cost Of Heating/Natural Gas Proposals

Item	Cost $
..Installation of 50 new gas meters @ $1,000 each.....	50,000
..Construction of buffer zone in each public building.....	variable
..Replacement of boiler plant in building 213, with new plant.....	100,000
..Replacement of old boilers and convector heaters.....	variable
..Replacement of old natural gas lines.....	variable
TOTAL	150,000+

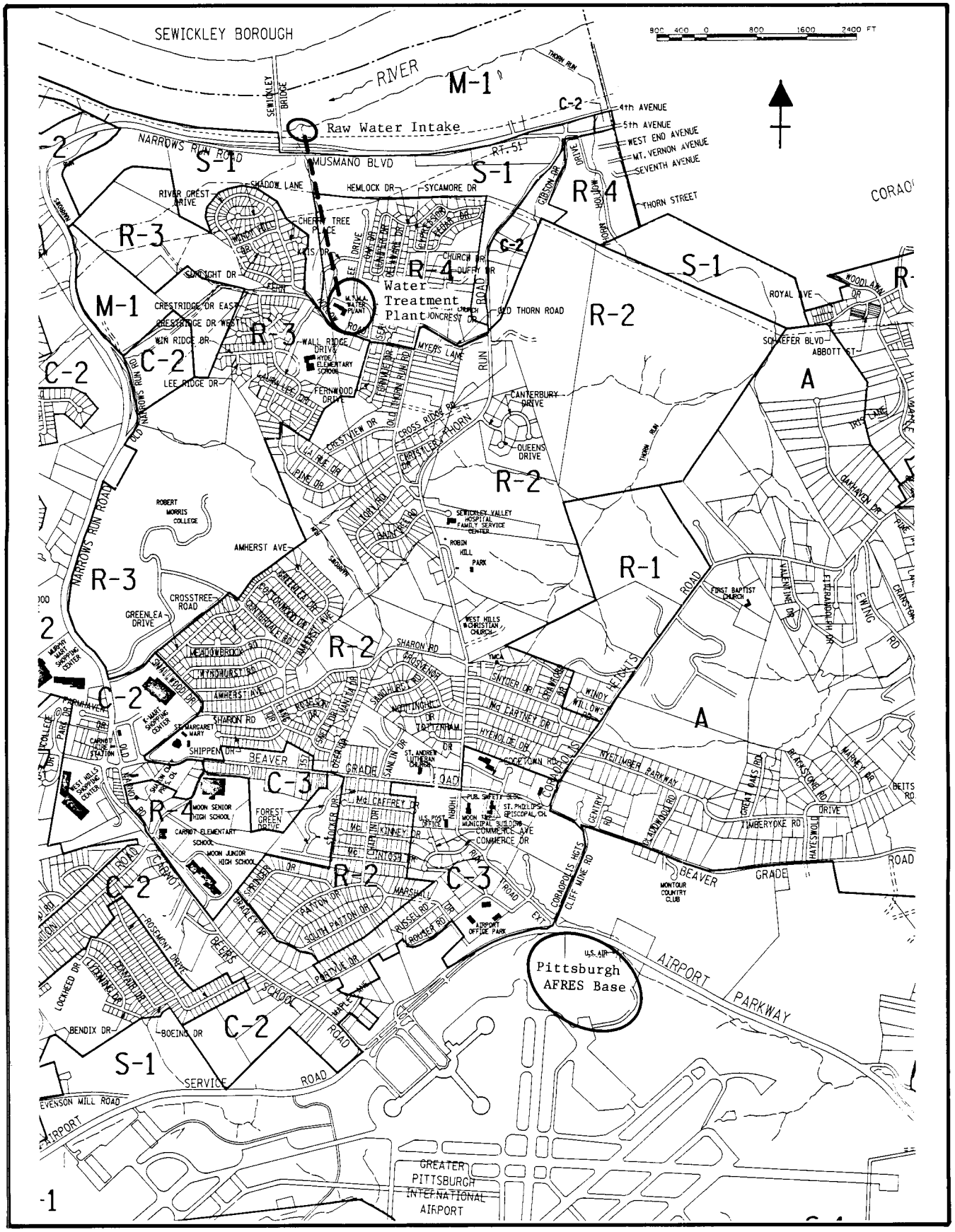
The metering is of great importance for energy monitoring of facilities and should allow determination of where the inefficiencies exist.

Estimates for costs of proposals for improvement of heating and natural gas system is shown by the exhibit above.

Exhibit 12.25t: Preventative Maintenance Schedule

Item Description	Periodicity
Routine Check - Low Fuel, Combustion	Daily
Check Pressure and Temperature	Daily
Maintain Generally Clean Lines	Daily
Lube Blowdown Valves	Weekly
Clean Area - Strainers	Weekly
Lube Bearings	Monthly
Lube, Clean and Cycle Valves	Monthly
Check Lighting and Firefighting Devices	Monthly
Test Safety Devices	Monthly
Clean Motors Internally	Annually
Inspect and Open Boilers	Annually
Test Hydrostatically	Annually
Test Electric Circuits	Annually
Calibrate Gauges and Meters	Annually
Test Discharge to Rated Capacity	Annually
Test High and Low Water Alarms	Annually

Exhibit 12.26m: Location Of Moon Township Municipal Authority Raw Water Intake And Treatment Facility



WATER SUPPLY SYSTEM

The Pittsburgh AFRES water supply system will be described under the following headings:

...Inventory
...Needs
...Analysis
...Objectives and Constraints
...Proposals
...Recommendations

INVENTORY

The potable water supply to the base distribution systems is provided by the Moon Township Municipal Authority. The raw water source of the Moon Township system is an alluvium deposit of sand and gravel in the flood plain of and beneath the Ohio River. Three 1,400 gallon per minute (gpm) vertical turbine pumps located on the banks of the Ohio River offer raw water through a 20-inch transmission main extending approximately 3000 feet to the water treatment facility. The location of these water supply facilities is shown by the exhibit on the previous page.

The water treatment facility, constructed in 1964-65, has a nominal capacity of 3.5 million gallons per day (mgd). The treatment process at this facility includes the following:

...Raw Water Intake
...Chlorine Contact
...Chemical Rapid Mix
...Primary Settling
...Secondary Settling
...Rapid Sand Filtration
...Chlorination /Clearwells
...Fluoridation

The treated water is then pumped through a 20-inch main to the municipal distribution system.

AFRES Distribution System

As previously mentioned, the Pittsburgh AFRES obtains its potable water supply from the Moon Township Municipal Authority water distribution system. Water service enters the base through an eight-inch line located along Airport Parkway. The main water meter and valve pit located in front of facility 114 tabulates flow in this line for use in billing by the Township. The average water pressure supplied to the base is 90 pounds per square inch (psi).

The base distribution system consists of approximately 13,000 linear feet of water line varying in size from four to eight inches in diameter. Various types of pipe are incorporated into the system including asbestos cement, ductile and cast iron, and poly-vinyl chloride (PVC) pipe. The predominant pipe material is cast iron, most of which has been in place for more than 25 years. The base water system is shown by the exhibit on the following page.

The water distribution system does not incorporate any potable storage facilities at the present time. However, base officials are considering constructing a 300,000 gallon elevated tank in the near future. This facility would be located on top of a knoll between buildings 405 and 408.

Water Usage

The exhibit below shows the AFRES water system consumption for years 1985-86. The greatest monthly usages typically occurred during the winter months.

The maximum existing effective population for the Pittsburgh AFRES base equals 670 persons*. According to the base, in 1987 the average through the week consumption was 20,000 gallons/day. The average gallons per capita per day was 30 gpcd (20,000 gal/day ÷ 670 persons = 30 gpcd).

Department of the Air Force Manual AFM 88-10, Chapter 1, indicates the per capita water allowance for this base should be 150 gpcd. As can be seen, the calculated value of 30 gpcd is substantially lower than 150 gpcd.

A close look at the existing effective population value of 670 reveals an important fact. The Pittsburgh AFRES conducts Unit Training Assemblies (UTA) on the average of one weekend per month. The value of 670 persons incorporates these weekend peaks, thus distorting the existing effective population for the month.

*See Chapter V, page 5-5.

Exhibit 12.27t: AFRES Consumption Data For 1985-86

Month	Consumption (gallons) 1985	1986
January	1,951,000	1,954,000
February	1,011,000	2,056,000*
March	887,000	3,468,000*
April	1,146,000	1,960,000*
May	1,538,000	1,658,000
June	1,258,000	983,000
July	861,000	801,000
August	980,000	794,000
September	817,000	939,000
October	884,000	976,000
November	887,000	1,346,000
December	1,323,000	1,863,000
TOTAL	13,543,000	18,798,000
Average	1,128,583	1,257,111*

*Significant water leak found: Avg. for 9 months only

Exhibit 12.28m: Existing Pittsburgh AFRES Water Supply System

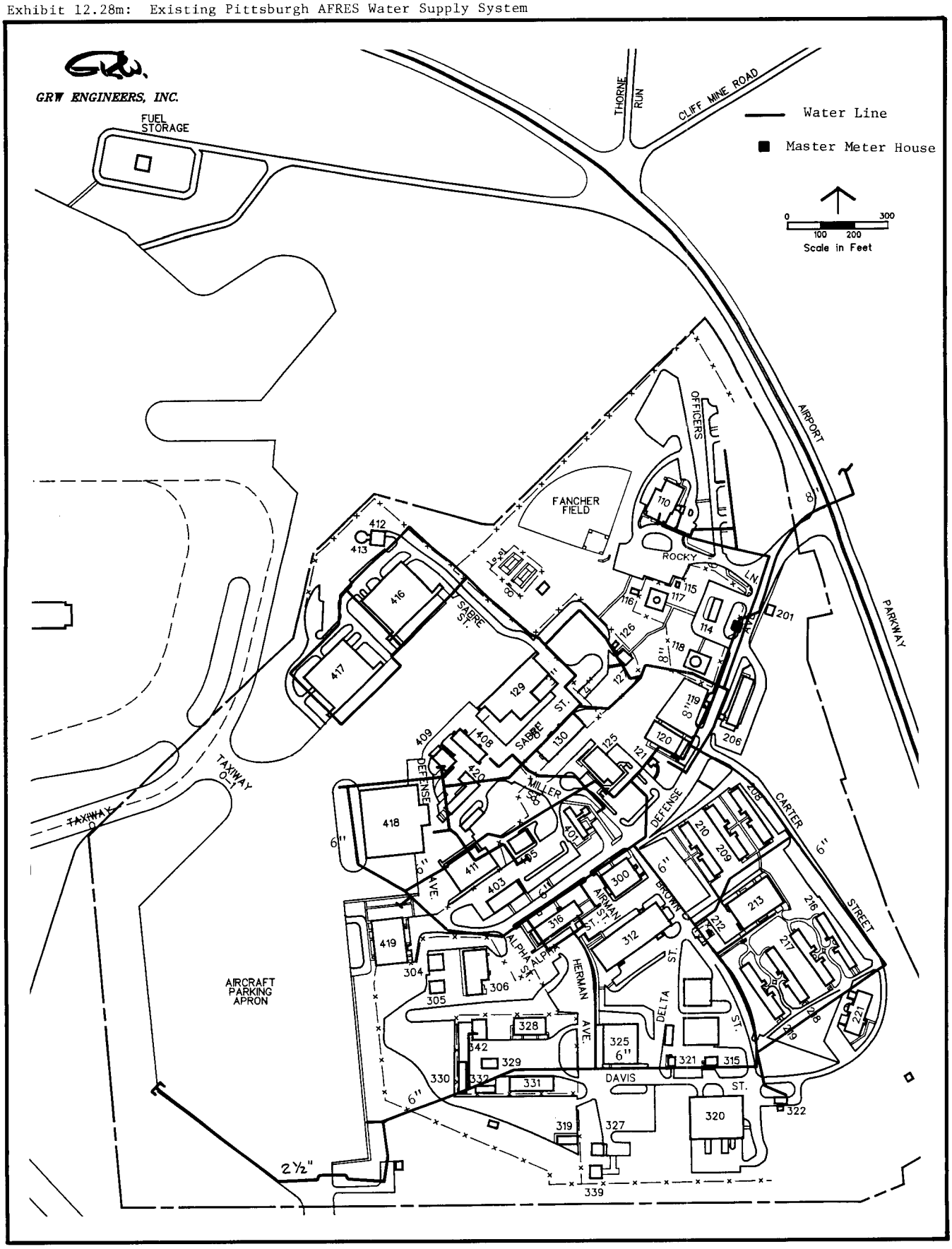
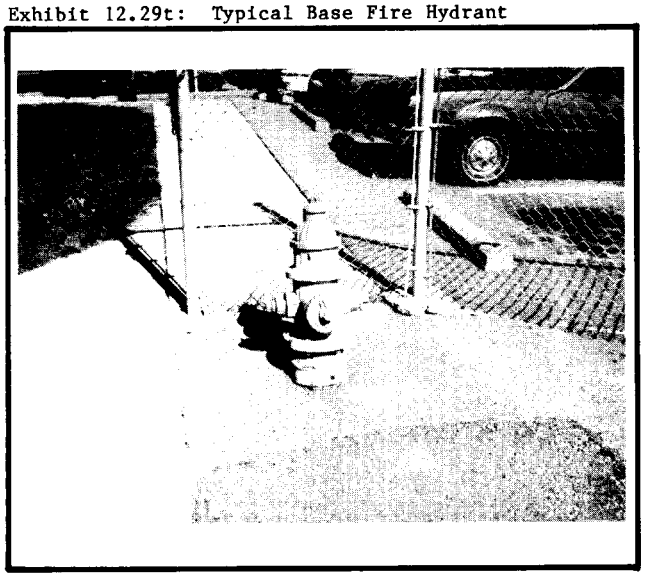


Exhibit 12.29t: Typical Base Fire Hydrant



Using the population figures for the weekday and UTA weekends separately, the existing effective populations would be as follows:

...Weekday Existing Effective Population

459 persons x 1/3 (8-hour day) = 153 persons

...UTA Weekend Existing Effective Population

330 persons (24-hour day) = 330 persons

1,017 persons x 1/3 (8-hour day) = 339 persons

Rounded Total 670 persons

Incorporating the percentage of time over a monthly period that each effective population exists, the per capita consumption for the AFRES base would be as follows:

$$\text{gpcd} = \frac{20{,}000 \text{ gallons/day}}{1/30 \text{ (UTA)} \times 670 + 29/30 \text{ (weekday)} \times 153}$$

$$\text{gpcd} = \frac{20{,}000 \text{ gal/day}}{170 \text{ persons}}$$

gpcd = 117.6 gallons per capita per day

This value should more closely represent the actual consumption per person on the base. Factors which could contribute to the excess consumption in comparison to the standard 150 gpcd are as follows:

...The 150 gpcd value does not include water usages such as aircraft washing, irrigation, and flow testing.

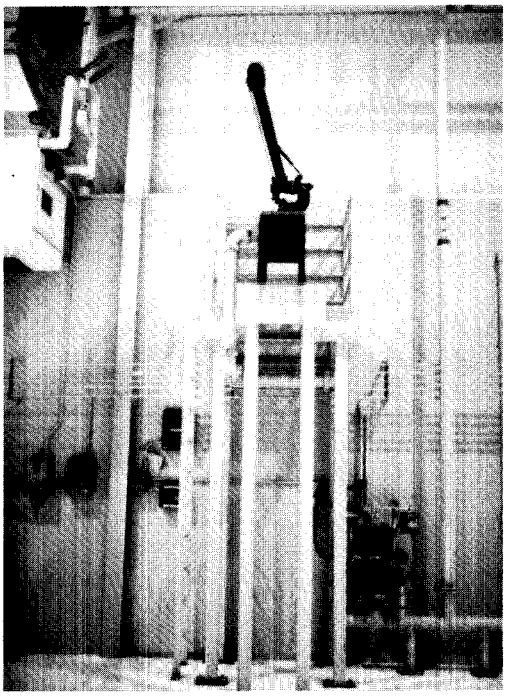
...The distribution system may have minor leaks which had gone undetected during 1985.

For the purposes of simulating peak conditions, the Air Force value of 150 gpcd and the maximum effective population of 670 persons will be used.

Fire Protection

Fire protection basewide is aided by the existence of approximately 40 fire hydrants (shown left) and numerous facility sprinkler systems located throughout the base. Supplemental fire protection for aircraft hangars 416 and 417 is provided by a dedicated oscillating AFFF fire suppression system. Water for the system is supplied by a 165,000 gallon ground storage tank located behind hangar 416. A pumping facility located beside the storage tank houses two 4,800 gpm pumps (primary and backup) which drive the system. Also housed in this building are four 1,200 gallon foam tanks (2 primary and 2 backup) which mix with the deluge water during system operation. The exhibit below shows the storage and pumping facility as well as a typical oscillating nozzle located in a hangar facility.

Exhibit 12.30p: Dedicated AFFF Fire Suppression Sys.



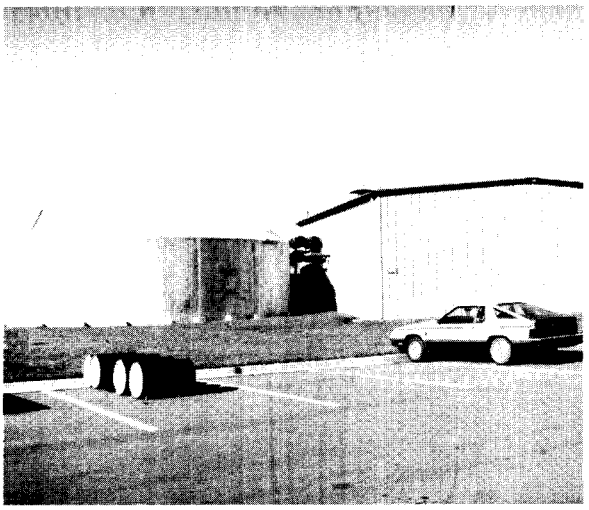


Exhibit 12.31t: System Demands And Requirements

General Requirements		
..Normal Distribution Pressure....		60- 90 psi
..Distribution System Pressure During Fire Demand.....		20 psi residual
Domestic Demand (future)		
..Average Demand 150 gpcd x 890 persons	=	133,500 gpd
133,500 gpd ÷ 1,440 min/day	=	92.7 gpm
Fire Flow Demand And Storage Requirements		
..+ Sprinkler (Bldg. 418) - 0.1 gpm x hangar area (ft^2)		
	=	4,765 gpm for 10 minutes
	=	47,650 gallons
..+ Hose Stream Demand -		2,000 gpm for 60 minutes
	=	120,000 gallons
..+ Half Domestic Usage -		(92.7 ÷) for 60 minutes
	=	2,781 gallons
..+ Industrial or Other Demands	=	0 gallons
..- Water to System/Other Sources	=	0 gallons
Total Volume of Water to be Stored		170,431 gallons

NEEDS

The needs of the Pittsburgh AFRES base are founded on the Department of the Air Force Technical Manual 88-10 chapters one, four, five, and six. The requirements and subsequent needs or demands on the system are outlined in the exhibit shown above.

As previously mentioned, Unit Training is conducted at the base on the average of one weekend per month. This UTA weekend represents the maximum demand that is put on the distribution system. Therefore, the maximum future effective population is calculated based on this weekend along with future population forecasts by base officials. The maximum future effective population used in this report section is as follows:

...future maximum dormitory population for 24-hour period	330 persons
...plus 1/3 of future maximum population for 8-hour period 2,000 - 330 = 1,670 x 1/3 =	557 persons
...equals future effective population	890* persons

*Based on data provided in Chapter V, page 5-5.

ANALYSIS

A computer analysis of the existing water system was performed to assess the capacity of the system. The main concern was the ability of the system to handle base fire flows especially when multiple hose streams were needed at various aircraft hangars.

The University of Kentucky Pipe Network Analysis Program was used to analyze the system. This program assumes steady flows and pressures throughout the system. Input data to the computer program consisted of the following:

...Line Sizes
...Line Lengths
...Junction and Line Numbers
...Friction Factors
...Demands
...Entrance Pressures and Conditions

Peak demand conditions were modeled for the AFRES system as follows:

...Fire at hangars 417 or 418 using two 1,000 gpm hose streams for one hour.
...Pressure supplied to the base by the regional system assumed to average 90 psi.
...Proposed elevated storage tank assumed to have an overflow elevation of 1,273 feet.

The exhibit shown on the following page is a schematic of the existing water distribution system showing the locations of critical points used in the computer analysis. Also shown is the probable location of the proposed elevated storage tank.

The results of one computer scenario are shown by the exhibit on the following page. This scenario explored the ability of the existing distribution system to fight a fire at hangar 417. The results show that when hydrant demands are placed on the system at this location, the residual pressure around the hangar drops well below the minimum 20 psi to around 0. This situation is not sufficient and could prove costly if either hangar 416 or 417 were to catch fire.

Additional computer scenarios were run to assess the impact of the proposed elevated storage tank on the distribution system. Runs were made assuming the following:

...the elevated tank floating on the existing system with a fire at hangar 417

...the elevated tank floating on the existing system with a fire at hangar 418

...the elevated tank supplying all water/pressure with a fire at hangar 417

...the elevated tank supplying all water/pressure with a fire at hangar 418

The results of these simulations showed very little difference in overall system residual pressures between the floating and independent tank configurations. All of the simulations provided adequate flow rates and pressures to hangar 418 (including 35 psi to sprinkler). However, none of these configurations managed to provide the 2,000 gpm to hangar 417 without dropping the residual pressures in the hangar area to around 0 psi.

Exhibit 12.32m: Water System Schematic For Computer Analysis

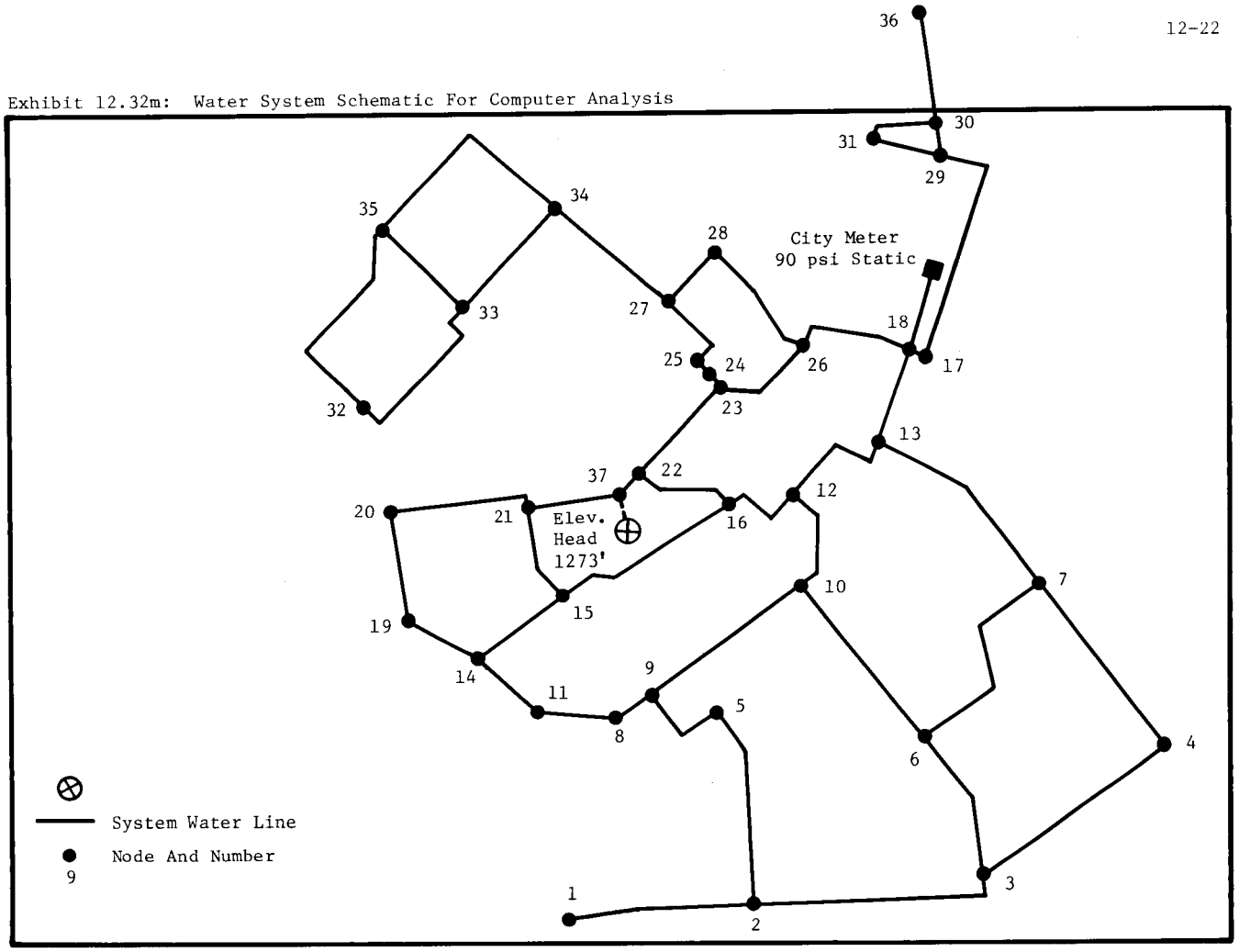


Exhibit 12.33t: Computer Simulation Results Of A Fire At Hangar 417 Utilizing The Existing Water System

PIPE NO.	NODE NOS.		FLOWRATE	HEAD LOSS	PUMP HEAD	MINOR LOSS	VELOCITY	HL/1000
1	1	2	-1.29	.00	.00	.00	-.01	.00
2	2	3	-109.73	-.16	.00	.00	-.70	-.31
3	3	4	-157.06	-.28	.00	.00	-1.00	-.59
4	2	5	107.15	.46	.00	.00	1.22	1.18
5	3	6	46.05	.10	.00	.00	.52	.25
6	4	7	-158.35	-.25	.00	.00	-1.01	-.60
7	5	9	105.86	.38	.00	.00	1.20	1.88
8	6	10	141.77	.56	.00	.00	1.61	1.99
9	7	13	-256.66	-.66	.00	.00	-1.64	-1.47
10	11	14	170.19	.75	.00	.00	1.93	4.54
11	8	11	171.48	.78	.00	.00	1.95	4.60
12	8	9	-172.77	-.42	.00	.00	-1.96	-4.67
13	9	10	-68.20	-.34	.00	.00	-.77	-.83
14	10	12	72.28	.19	.00	.00	.82	.93
15	14	19	94.57	.27	.00	.00	1.07	1.53
16	14	15	74.33	.22	.00	.00	.84	.98
17	15	16	-87.99	-.14	.00	.00	-.56	-.33
18	12	16	556.86	2.18	.00	.00	3.55	10.04
19	12	13	-485.87	-2.04	.00	.00	-3.10	-7.80
20	13	18	-743.82	-3.60	.00	.00	-4.75	-17.17
21	17	18	-6.45	.00	.00	.00	-.04	.00
22	19	20	93.28	.33	.00	.00	1.06	1.49
23	20	21	91.99	.45	.00	.00	1.04	1.45
24	15	21	161.03	.83	.00	.00	1.83	4.10
25	21	22	251.73	.58	.00	.00	1.61	2.31
26	16	22	467.58	1.55	.00	.00	2.98	7.27
27	22	23	718.02	3.94	.00	.00	4.58	15.08
28	23	26	-147.42	-.19	.00	.00	-.94	-.86
29	18	26	1294.88	13.13	.00	.00	8.26	47.93
30	17	29	5.16	.00	.00	.00	.06	.01
31	29	30	3.44	.00	.00	.00	.04	.00
32	30	36	1.29	.00	.00	.00	.01	.00
33	30	31	.86	.00	.00	.00	.01	.00
34	29	31	.43	.00	.00	.00	.00	.00
35	23	24	864.15	20.54	.00	.00	22.06	662.67
36	24	25	862.86	29.74	.00	.00	22.03	660.84
37	26	28	1146.17	45.16	.00	.00	13.00	155.20
38	25	27	861.57	16.37	.00	.00	9.78	91.48
39	27	28	-1144.88	-21.68	.00	.00	-12.99	-154.88
40	27	34	2005.16	33.50	.00	.00	12.80	107.72
41	32	33	-53.91	-.05	.00	.00	-.34	-.13
42	33	34	-1162.84	-11.31	.00	.00	-7.42	-39.27
43	32	35	52.62	.06	.00	.00	.34	.13
44	33	35	107.54	.11	.00	.00	.69	.48
45	34	35	841.03	11.42	.00	.00	5.37	21.55
46	0	19	2046.44	20.14	.00	.00	13.06	111.86
47	6	7	-97.02	-.53	.00	.00	-1.10	-1.60

JUNCTION NUMBER	DEMAND	GRADE LINE	ELEVATION	PRESSURE
1	1.29	1267.90	1087.00	78.39
2	1.29	1267.90	1086.00	78.83
3	1.29	1268.07	1088.00	78.03
4	1.29	1268.34	1081.00	81.18
5	1.29	1267.44	1119.00	64.32
6	1.29	1267.96	1113.00	67.15
7	1.29	1268.60	1074.00	84.33
8	1.29	1266.65	1129.00	59.65
9	1.29	1267.06	1125.00	61.56
10	1.29	1267.41	1129.00	59.98
11	1.29	1265.86	1133.00	57.57
12	1.29	1267.22	1110.00	68.13
13	1.29	1269.26	1088.00	78.55
14	1.29	1265.11	1139.00	54.65
15	1.29	1264.89	1138.00	54.99
16	1.29	1265.04	1123.00	61.55
17	1.29	1272.86	1088.00	80.11
18	1.29	1272.86	1089.00	79.67
19	1.29	1264.85	1143.00	52.80
20	1.29	1264.52	1145.00	51.79
21	1.29	1264.07	1144.00	52.03
22	1.29	1263.48	1139.00	53.94
23	1.29	1259.54	1137.00	53.10
24	1.29	1239.00	1137.00	44.20
25	1.29	1209.26	1138.00	30.88
26	1.29	1259.73	1127.00	57.52
27	1.29	1192.89	1138.00	23.78
28	1.29	1214.57	1137.00	33.61
29	1.29	1272.86	1089.00	79.67
30	1.29	1272.86	1091.00	78.81
31	1.29	1272.86	1102.00	74.04
32	1.29	1148.02	1146.00	.88
33	1001.29	1148.08	1141.00	3.07
34	1.29	1159.39	1140.00	8.40
35	1001.29	1147.96	1149.00	-.45
36	1.29	1272.86	1095.00	77.07

THE NET SYSTEM DEMAND = 2046.44

SUMMARY OF INFLOWS(+) AND OUTFLOWS(-) FROM FIXED GRADE NODES

PIPE NUMBER	FLOWRATE
46	2046.44

Exhibit 12.34t: Results Of Computer Analysis, Incorporating Distribution Line Improvements

PIPE NO.	NODE NOS.		FLOWRATE	HEAD LOSS	PUMP HEAD	MINOR LOSS	VELOCITY	HL/1000
1	1	2	-1.25	.00	.00	.00	-.01	.00
2	2	3	108.53	.16	.00	.00	.69	.30
3	3	4	151.77	.26	.00	.00	.97	.56
4	2	5	-111.03	-.49	.00	.00	-1.26	-1.27
5	3	6	-44.49	-.10	.00	.00	-.50	-.23
6	4	7	150.52	.23	.00	.00	.96	.55
7	5	9	-112.28	-.42	.00	.00	-1.27	-2.10
8	6	10	-138.87	-.54	.00	.00	-1.58	-1.92
9	7	13	242.40	.60	.00	.00	1.55	1.32
10	11	14	-194.26	-.96	.00	.00	-2.20	-5.80
11	8	11	-193.01	-.97	.00	.00	-2.19	-5.73
12	8	9	191.76	.51	.00	.00	2.18	5.66
13	9	10	78.23	.44	.00	.00	.89	1.08
14	10	12	-61.89	-.14	.00	.00	-.70	-.70
15	14	19	-146.63	-.60	.00	.00	-1.66	-3.44
16	14	15	-48.89	-.10	.00	.00	-.55	-.45
17	15	16	234.69	.88	.00	.00	1.50	2.03
18	12	16	-525.22	-1.96	.00	.00	-3.35	-9.01
19	12	13	462.09	1.86	.00	.00	2.95	7.11
20	13	18	703.24	3.25	.00	.00	4.49	15.47
21	17	18	-6.25	.00	.00	.00	-.04	.00
22	19	20	-147.88	-.77	.00	.00	-1.68	-3.50
23	20	21	-149.13	-1.11	.00	.00	-1.69	-3.55
24	15	21	-284.82	-2.38	.00	.00	-3.23	-11.78
25	21	37	-435.20	-1.26	.00	.00	-2.78	-6.36
26	16	22	-291.79	-.65	.00	.00	-1.86	-3.03
27	22	23	1316.76	12.11	.00	.00	8.40	49.44
28	23	26	-166.56	-.24	.00	.00	-1.06	-1.07
29	18	26	695.74	4.16	.00	.00	4.44	15.17
30	17	29	5.00	.00	.00	.00	.06	.01
31	29	30	2.38	.00	.00	.00	.03	.00
32	30	36	1.25	.00	.00	.00	.01	.00
33	30	31	-.12	.00	.00	.00	.00	.00
34	29	31	1.37	.00	.00	.00	.02	.00
35	23	24	1482.07	1.91	.00	.00	9.46	61.54
36	24	25	1480.82	2.77	.00	.00	9.45	61.45
37	26	28	527.93	10.75	.00	.00	5.99	36.93
38	25	27	1479.57	10.98	.00	.00	9.44	61.35
39	27	28	-526.68	-5.15	.00	.00	-5.98	-36.77
40	27	34	2005.00	33.50	.00	.00	12.80	107.70
41	32	33	-53.89	-.05	.00	.00	-.34	-.13
42	33	34	-1162.77	-11.31	.00	.00	-7.42	-39.27
43	32	35	52.64	.06	.00	.00	.34	.13
44	33	35	107.63	.11	.00	.00	.69	.48
45	34	35	840.98	11.42	.00	.00	5.37	21.55
LINE	46 IS CLOSED							
47	6	7	93.13	.59	.00	.00	1.06	1.49
48	0	37	2046.25	3.44	.00	.00	13.06	68.80
49	37	22	1609.80	3.87	.00	.00	10.27	71.72

JUNCTION NUMBER	DEMAND	GRADE LINE	ELEVATION	PRESSURE
1	1.25	1262.47	1087.00	76.04
2	1.25	1262.47	1086.00	76.47
3	1.25	1262.31	1088.00	75.53
4	1.25	1262.05	1081.00	78.45
5	1.25	1262.96	1119.00	62.38
6	1.25	1262.40	1113.00	64.74
7	1.25	1261.82	1074.00	81.39
8	1.25	1263.89	1129.00	58.45
9	1.25	1263.38	1125.00	59.96
10	1.25	1262.94	1129.00	58.04
11	1.25	1264.86	1133.00	57.14
12	1.25	1263.08	1110.00	66.34
13	1.25	1261.22	1088.00	75.06
14	1.25	1265.82	1139.00	54.96
15	1.25	1265.92	1138.00	55.43
16	1.25	1265.04	1123.00	61.55
17	1.25	1257.97	1088.00	73.65
18	1.25	1257.97	1089.00	73.22
19	1.25	1266.42	1143.00	53.48
20	1.25	1267.19	1145.00	52.95
21	1.25	1268.30	1144.00	53.86
22	1.25	1265.69	1139.00	54.90
23	1.25	1253.58	1137.00	50.52
24	1.25	1251.67	1137.00	49.69
25	1.25	1248.90	1138.00	48.06
26	1.25	1253.81	1127.00	54.95
27	1.25	1237.92	1138.00	43.30
28	1.25	1243.07	1137.00	45.96
29	1.25	1257.97	1089.00	73.22
30	1.25	1257.97	1091.00	72.35
31	1.25	1257.97	1102.00	67.59
32	1.25	1193.06	1146.00	20.39
33	1001.25	1193.12	1141.00	22.58
34	1.25	1204.42	1140.00	27.92
35	1001.25	1193.00	1149.00	19.07
36	1.25	1257.97	1095.00	70.62
37	1.25	1269.56	1143.00	54.84

THE NET SYSTEM DEMAND = 2046.25
SUMMARY OF INFLOWS(+) AND OUTFLOWS(-) FROM FIXED GRADE NODES

PIPE NUMBER	FLOWRATE
48	2046.25

After exhausting the supply scenarios in an effort to provide adequate pressures to the hangar 416/417 area, it became evident that a problem must exist within the distribution system. Closer scrutiny of the computer results shown on the previous page revealed a significant head loss in several lines leading to the 416/417 area. Specifically, line numbers 35 and 36 showed elevation head losses of around 600 feet per 1000 linear feet of line. This loss stems from the fact that four and six-inch lines (lines 35 and 36 are 4") are the only avenue by which eight-inch supply lines can provide water to the eight-inch service lines located in the 416/417 area.

An additional computer run* was made assuming that line numbers 35, 36, and 38 (six-inch) were replaced with eight-inch pipe. The results of this scenario are shown by the exhibit above. As can be seen, the residual pressures at the location of the fire demand increased to around 20 psi; which satisfied the minimum stated earlier in this report section. The total length of line involved in this replacement would only amount to roughly 260 feet.

The remaining concern which surfaced through the computer analysis deals with whether the elevated tank should float on the system or operate as the only source of pressure for the system. According to several computer runs, the proposed tank only provides about 10-20 percent of the flow to a fire while floating on the system. This percentage is even less for general domestic demand. The water in the tank would tend to stagnate as a result of this disproportionate flow. This problem would not occur if the tank were the only source of pressure to the base. The high water level in Moon Township is 1,300 feet which is above our proposed water tower elevation of 1,273 feet. Care should be taken not to exceed 1,300 feet with the base tower.

*Elevated tank assumed independent for this scenario.

OBJECTIVES AND CONSTRAINTS

The objectives of the water supply system include the following:

...Supply and Storage - Provide adequate water supply and storage to meet duration, rates of flow, and residual pressure requirements for domestic demands and fire protection. Utilize outside sources of water for a more convenient source of supply.

...Distribution - Deliver duration, rates of flow, and residual pressure of water for domestic demand and fire protection. Incorporate system which loops to maintain partial service when lines are temporarily cut off.

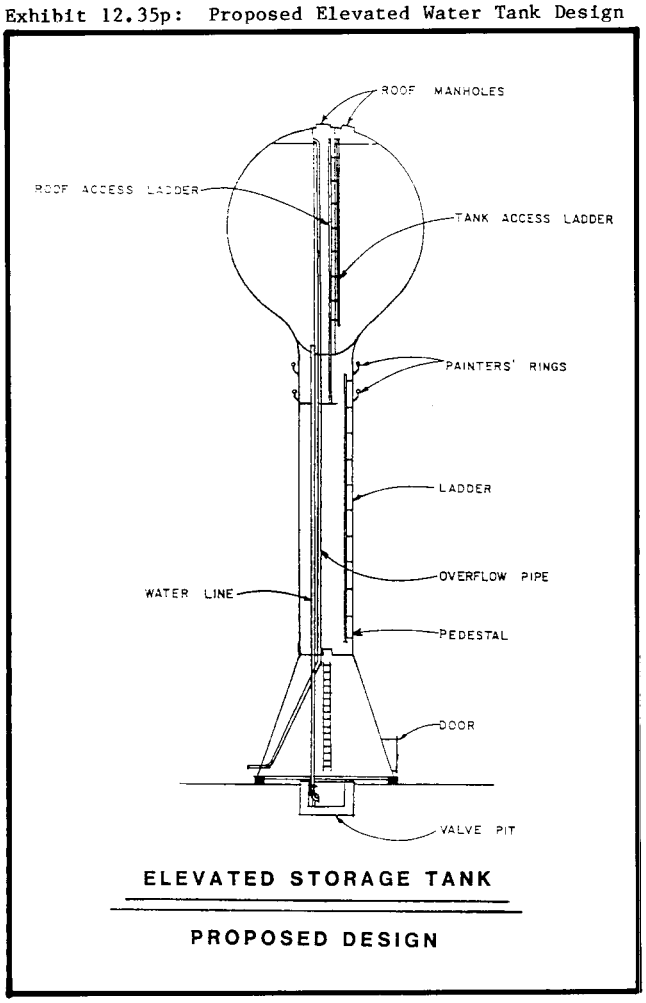
The constraints on the water supply system include the following:

...There are no potable water storage facilities located on the base. Should a fire demand occur, the base is solely dependent on what water the city can supply at that time.

...The location and height of a new elevated tank are restricted by the airfield and airspace clearance criteria associated with the two runways which scissor the higher side of the base.

...The topography of the base causes a great deal of water pressure loss since the present city supply enters at the lowest base elevation. The hangar facilities are located some 60 feet higher than the point of water entry to the base.

Exhibit 12.35p: Proposed Elevated Water Tank Design



PROPOSALS

The proposed major improvements to the existing AFRES water supply system are as follows:

...Replace line numbers 35, 36, and 38 which run from node 23 to node 27 (shown right). These lines are undersized for the amount of flow to be conveyed causing serious head loss problems.

...Construct the elevated water storage already proposed for F.Y. 1990. The tank should be built as high as the airspace clearance criteria will allow.

...Construct a dedicated eight-inch line from the city service meter to the elevated storage tank. Flow in this line should be regulated by a pressure switch located at the tank. A bypass line with appropriate valving should also be installed so that water is still available when the tower is down for maintenance.

...Abandon the existing city service line to the water distribution system. The water supplied by the city system should be used to fill the new tank through the dedicated eight-inch line.

...Effluent flow metering should be incorporated into the construction of the new tank. This should allow base officials a means to confirm billing information received from Moon Township Municipal Authority.

Exhibit 12.36t: Water Improvements Cost Estimate

Item	Cost $
..Line replacement from node 23 to 27 250 L.F. 8" - line A $17/LF	4,250
..New 300,000 gallon elevated tank	750,000
..Dedicated service line to tank 1,000 L.F. 8" - line @ $17/LF	17,000
..Valve pressure switching system	N/A
..Effluent water meter at tank	8,000
TOTAL	779,250

...All new and replacement water lines should be of PVC type.

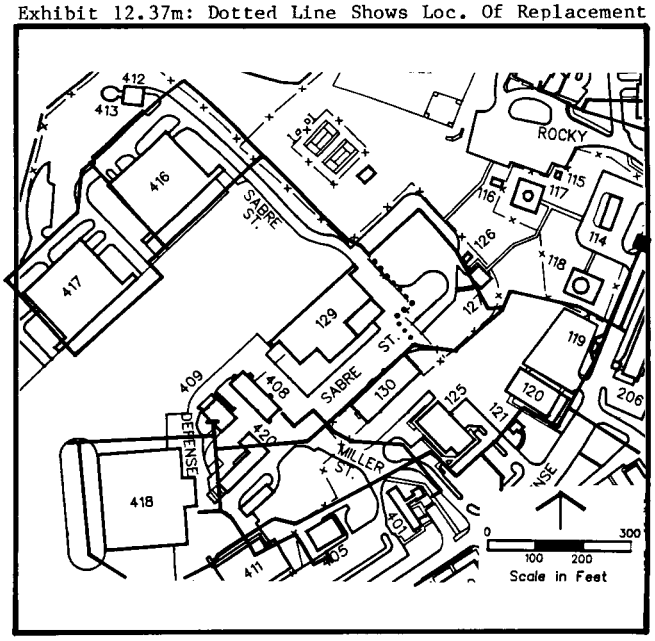
Recommendations

The proposed recommendations to the AFRES base water supply system fulfill the needs and objectives stated earlier in this section. The new elevated tank should prove to be a more reliable source of water supply/pressure when a base fire demand occurs. Operating the tank as the sole source of water to the base should guarantee the water is always potable. If the tank were floating on the existing system, the stored water would stagnate because the city pressure would command the system.

Replacement of the undersized lines (shown below) should allow ample flow of water to hangars 416/417 in the event of a fire.

Estimates of construction quantities and costs for the proposed water system improvements are shown by the exhibit above. The total estimated cost is $779,250.

Exhibit 12.37m: Dotted Line Shows Loc. Of Replacement



LIQUID FUELS SYSTEM

The Pittsburgh AFRES liquid fuels system will be described under the following headings:

...Inventory
...Needs
...Analysis
...Objectives and Constraints
...Proposals
...Recommendations

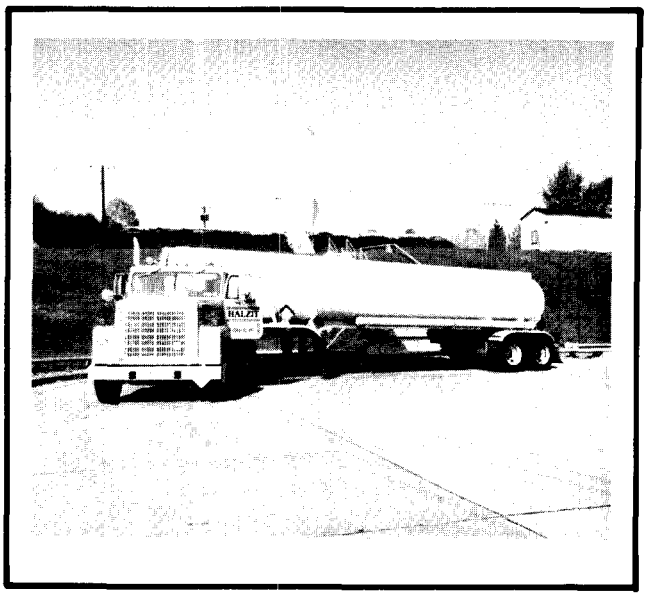
INVENTORY

The existing liquid fuels system receives, stores and dispenses JP-4 jet fuel, MOGAS (regular and unleaded) and Diesel fuel. In addition, other materials such as #2 heating fuel, liquid oxygen and de-icing fluid are also handled in the overall system.

Fuel is shipped from Columbus, Ohio, by Standard Oil Company. An average of 130,000 to 140,000 gallons per month is delivered. The maximum number of deliveries is four per day, with each tanker holding 7,250 gallons. Unloading time takes an average of 25 minutes per truck.

The Petroleum, Oil and Lubricants (POL) facility is located on the northeast side of the base, near the main gate. (See exhibit below) JP-4 jet fuel is the principal liquid fuel handled by this tank farm. This fuel is used for fueling the C-130's and other type of aircraft. The fuel is pumped off the tanker trucks and stored in the two above ground tanks. (See exhibit above right) These storage tanks, #117 and #118 hold 2,914 barrels and 4,381 barrels of JP-4 jet fuel respectively. Also at building 114 there are two underground, JP-4 jet fuel storage tanks, with a combined capacity of 1,190 barrels (50,000 gallons).

Exhibit 12.39p: Typical Fuel Delivery Truck



Fuel is pumped from the storage tanks, 30 feet uphill to the truck refueling station. Aircraft refueling trucks are loaded here, and fuel is then transported directly to the aircraft on the parking apron. (See exhibit below)

Various types of MOGAS are utilized at the Pittsburgh AFRES base including regular and unleaded gasoline and diesel fuel. These fuels are used to power several types of ground vehicles and as fuel for emergency electrical and fire fighting systems.

Heating oil is stored throughout the base at facilities which have heating demands. A complete table of fuel tanks with types of usage is shown by the exhibit on the opposite page.

Exhibit 12.38p: Aerial View Of Existing POL Facility

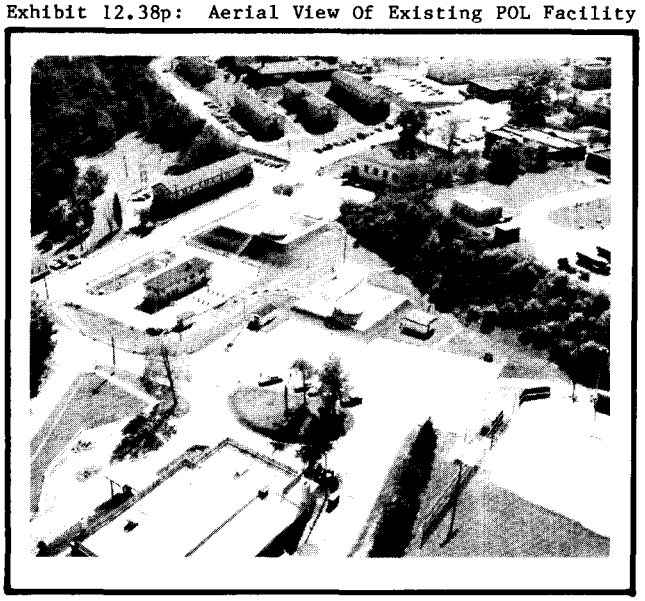


Exhibit 12.40p: Aircraft Refueling Trucks

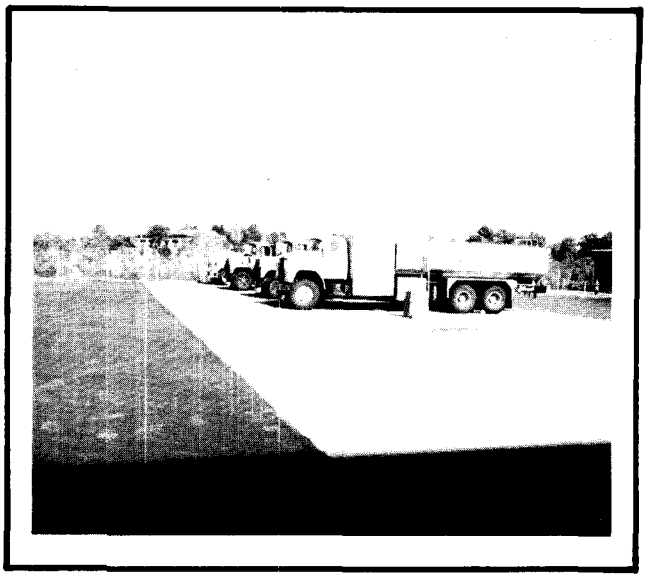


Exhibit 12.41t: Inventory Of Fuel Storage Tanks*

Facility No.	Type of Fuel	Capacity (barrels/gallons)	Install Date
114	Product Recovery	6/250	1972
117	JP-4	2,914/122,377	1955
118	JP-4	4,381/184,005	1954
114	JP-4 JP-4	595/25,000 595/25,000	1953 1953
322	Diesel	119/5,000	1986
5517	Diesel	8.5/360	1985
322	Regular Unleaded	119/5,000 119/5,000	1986 1986
420	MOGAS	119/5,000	1981
5517	MOGAS	8.5/360	1985
306	#2 Htg.	36/1,512	1977
316	#2 Htg.	119/4,998	1976
419	#2 Htg. Diesel	119/4,998 6/285	1979 1979
416	#2 Htg.	72/3,000	1984
412	Diesel	8.3/350 8.3/350	1984
125	#2 Htg.	48/2,000	1984
411	#2 Htg.	190/8,000	1982
114	AVLUBE	119/5,000 (abandoned)	1953
5519	Liquid Oxygen	2-400 gal tanks	N/A
5520	A/C De-icing	43/1,800 43/1,800	N/A N/A

*All tanks are made of steel.

Exhibit 12.42t: Allowable Fuel Storage

Fuel Type	Stored Authorized (needed)
JP-4 (jet fuel)	5,000 barrels or 210,000 gallons: 3 refuelers at 5,000 gallons each: 1 refueler at 1,500 gallons
MOGAS - (unleaded)	10,000 gallons
Diesel	5,000 gallons
Heating Oil	As economically justified

NEEDS

The needs of the Pittsburgh AFRES base are founded on the requirements specified in the Air Force Technical Manual AFM 86-2, chapter 24. The allowable fuel storage is shown by the exhibit below left.

An efficient fuel storage area should have the following characteristics:

...Located so that minimal pumping is required to transport fuel to refueling station.

...Located above ground for environmental reasons; and an area that is not penetrable by outside forces.

ANALYSIS

The existing liquid fuels supply, storage and distribution system does not meet the specified needs of Pittsburgh AFRES base.

The POL facility is located at the base of a hill and requires fuel to be pumped to an elevation that is 30 feet higher (1110 contour to 1140 contour). The system piping is 35 years old and water hammers badly. The pumping equipment is old but seems to be in good working order. Due to the age of the pumps, repair parts may be difficult to locate. The ground underneath the system is becoming saturated with aircraft fuel thus suggesting leaking pipes and/or storage tanks. This leaking creates serious environmental problems. The POL site will be studied in the IRP program. A hydrostatic pressure test of POL piping will be performed this year (required every 5 years by regulation). This test should reveal any leaks in the system.

The POL facility is located within 400 feet of the main gate and property boundary. This makes the facility vulnerable to outside sabotage.

OBJECTIVES AND CONSTRAINTS

The objectives of the Pittsburgh liquid fuels system include the following:

...Provide adequate delivery schedules and storage to satisfy liquid fuel needs.

...Locate fuel storage area to optimize deliveries and usage.

...Store fuels in a manner such that environmental hazard potential is minimized and security maximized.

The constraints on the liquid fuels system include the following:

...Age of tanks, pipes and pumps.

...Storage facilities located close to base property boundary, making security difficult.

PROPOSALS

The proposals for the Pittsburgh AFRES liquid fuels system include the following:

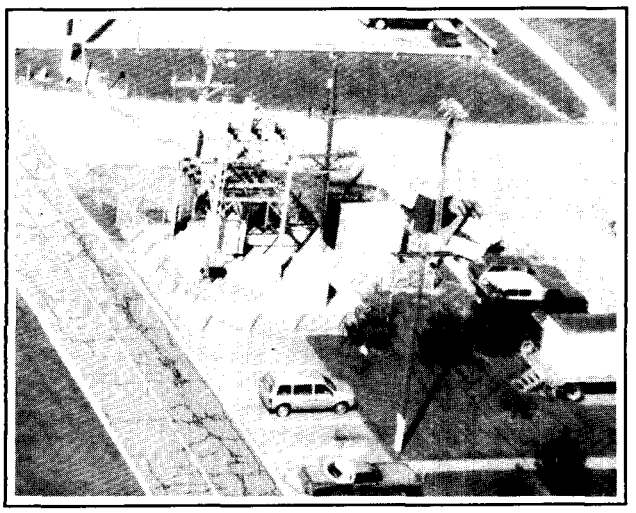
...Relocate and replace existing POL facility.

...Maintain regular maintenance schedule, insuring proper efficiency of system.

RECOMMENDATIONS

The POL facility is inadequate and replacement is suggested as soon as possible. It should be reallocated to an area where security and topography are not a problem.

Exhibit 12.43p: Aerial View of the Substation



ELECTRICAL SYSTEM ANALYSIS

The electrical distribution system for the Pittsburgh Air Force Reserve, 911th Tactical Airlift Group, serving an existing effective population of 670 persons, will be analyzed in terms of the source of supply and the existing distribution system throughout the Base. Observed shortcomings in the system, if any are identified, will be itemized and possible alterations explained.

The electrical analysis will consist of the following topics:

...Power supply source,
...Electrical rate schedule,
...Electrical loading history,
...Electrical usage per capita,
...Inventory and analysis of the existing system,
...Existing and future needs,
...Alternatives for improving the system and
...Recommendations.

POWER SUPPLY SOURCE

Electrical power is supplied by the Duquesne Light Company through its 23,000 volt distribution system. The map on the next page shows the Duquesne Light Company lines which are on the base.

The actual service is a dual feed through the substation on the base and has an isolation breaker which provides the capability to serve the base from either of two directions in the event of a failure to any section of the line.

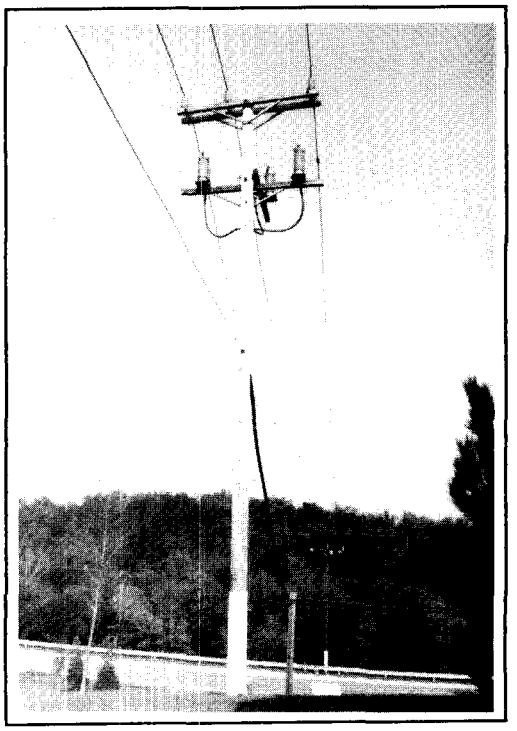
The primary circuit serving the AFRES feeds out of Duquesne's Montour Substation located approximately four miles east of the base. This circuit consists of a combination of three conductor 500 MCM aerial cable and bare 336 MCM aluminum on arms and insulators. A safe thermal rating for 336 MCM aluminum is 430 amps which converts to 17,130 KVA on the 23 KV system. The 500 MCM copper cable is rated at 465 amps or 18,524 KVA.

The secondary feed is from Russell Burdsall and Ward Substation approximately three miles north of the base. This is considered the emergency feed for the entire airport area. The wire consists of some 336 MCM aluminum but is predominately 1/0 solid copper conductor. The 1/0 wire can carry 260 amps, which yields a capacity of 10,358 KVA at 23 KV. This 'closed loop' feed provides a continuous service even when a failure occurs to one of the feeding circuits.

The 1,000 KVA substation transformer, shown to the left and on the next page, is owned and maintained by Duquesne Light even though it is situated inside the AFRES fenced substation west of the Dining Hall, building 213. This transformer steps the voltage down from 23 KV to 4.16 KV and supplies the adjacent vacuum circuit breakers owned by the reserve. Duquesne Light has mobile 1,000 KVA transformers, one of which can be placed in service within 12 hours in the event of a failure to the existing unit.

The electrical service as provided by Duquesne Light is adequate to supply any expected load increases and is as reliable as a utility can supply. When it is considered that the substation capacity can be increased in short order. Duquesne officials have stated that they would desire 12 to 18 months notice, however the time would be shorter if the needed unit were in stock.

Exhibit 12.44p: Duquesne Light's 23 KV Lines Feeding Up From Carter Street



ELECTRICAL RATE SCHEDULE

The Pittsburgh AFRES is billed according to Duquesne Light's rate schedule GL, which stands for General Service Large. This rate is available for all the standard electric services taken on a customer's premises where the demand is not less than 300 kilowatts. The monthly rate reads as follows:

CAPACITY CHARGE
...First 300 KW or less of Demand....$3,650.00
...Additional KW of Demand at.....9.59 per KW

ENERGY CHARGE
...All kilowatt-hours at.....3.23 cents per KWH

Exhibit 12.45m: Duquesne Light's 23 KV Lines Through the Base

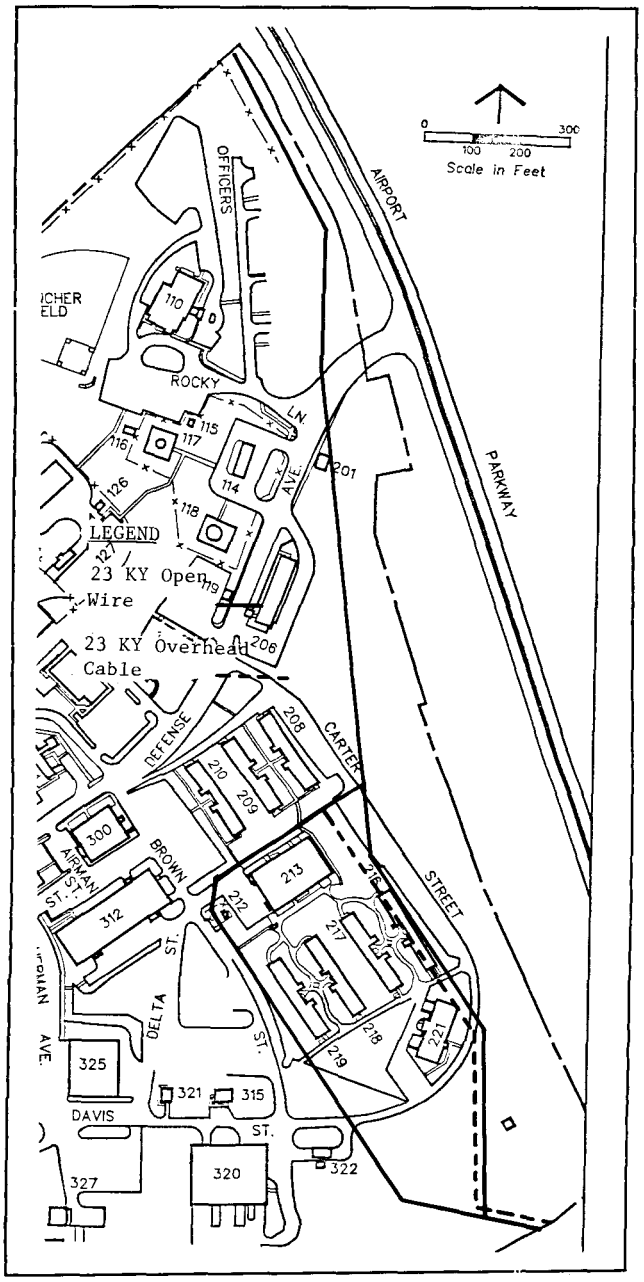
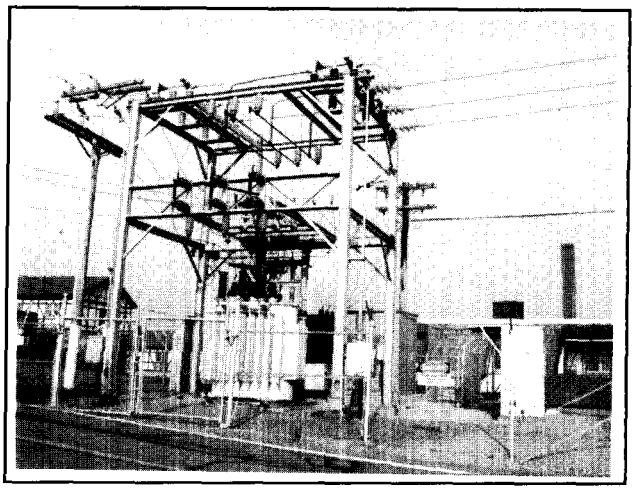


Exhibit 12.46p: View of the Substation Showing the Duquesne Light Lines In and Out



MINIMUM CHARGE
...The Minimum Charge shall be the Capacity Charge based on 50% of the Contract On-Peak Demand, but not less than $3,650.00.

POWER FACTOR
The power factor charge is arrived at by multiplying the above charges by a value which is a combination of real and reactive KWH. This factor is calculated by dividing the reactive kilovolt-ampere hours by the kilowatt hours, then multiplying by 0.6 and adding 0.8. This has the effect of raising the total cost if the power factor is less than 95% and would double the cost at 45% power factor. The correction factor gives a good economical reason to hold the power factor high. It will be shown that the power factor on the base is maintained at a proper level.

RIDERS
Bills rendered under this schedule are subject to the charges stated in any applicable rider. The rider which has the most effect on the Pittsburgh AFRES is Rider No. 5 - Off Peak Service.

...Where a customer has a separately measured Demand and is supplied by any standard service voltage and where such customer so operates that the maximum Demand created during any billing period occurs during Off-Peak hours, the bills will be calculated using the Billing Demand defined on the applicable Rate and any other applicable Riders.

...The Billing Demand is the On-Peak Demand except where the Off-Peak Demand is more than two times the On-Peak Demand. Then the Billing Demand will be 50% of the Off-Peak Demand. The On-Peak hours shall be between 8:00 A.M. and 10:00 P.M. of each day throughout the year except Saturdays, Sundays and generally observed holidays. The remaining hours shall be designated as Off-Peak.

This is commonly referred to as time-of-day metering and is very beneficial to the AFRES because the peak load normally occurs during meetings, which are on weekends and during the off-peak time. This will be pointed out again in the next section.

ELECTRICAL LOADING HISTORY

The billing records for FY83 through FY86 are shown in the exhibit to the right. This table shows the monthly on-peak and off-peak demand, kilowatt-hour consumption and the total charge from Duquesne Light.

An asterisk is placed to the right of the highest of the on-peak and off-peak demands. During the four years recorded, all but 17 of the highest demands occurred during the off-peak period. This is true because of the fact that the weekends, when meetings occur, are considered off-peak. However the base has been charged according to the on-peak demand every month during the period. This shows the advantage of the time-of-day metering for the Pittsburgh AFRES.

It should be noted that the base power factor is such that no charge has been added.

The annual cost has gone up 38% during the four years while the consumption has raised slightly less than 32% and the demand about the same. The annual cost is approaching a quarter of a million dollars.

ELECTRICAL USAGE PER CAPITA

The Pittsburgh AFRES Base has permanent residents on the grounds, even though many of them are quite transient in nature. The most crowded conditions occur during the weekends when meetings are in session. This is evidenced by the fact that the electrical demands are higher during the weekends.

This combination of reservists and residents yields an effective population of 670 persons, which will be used to establish a per capita electrical load on the base. The highest demand was 906 KW in August 1986. This yields an effective demand requirement of 1.35 KW per person.
...906 KW / 670 persons = 1.35 KW per person

The Duquesne Light feed is not a limiting factor, since their officials have stated that they will provide any needed substation capacity. A logical, yet conservative, approach is to assume that the limiting factor is the smallest of the two feeds to the base. That is the 1/0 copper emergency feed which has a thermal rating of 260 amps, or 10,358 KVA at 23 KV.
...260 amps * 23 KV * sqr3 = 10,350 KVA

It will be shown later that the wire capacity on the base is the real limiting factor. One section of #6 copper, rated at 792 KVA, could be required to serve a peak demand of 618 KW which is 68% of the capacity of the wire. This would allow each person to use 1.99 KW or, at the present level of 1.35 KW per person, would allow the effective population to increase to 670 persons.

...1.35 KW/person / 0.68 = 1.99 KW per person
...670 persons / 0.68 = 985 persons

The future maximum effective population is projected as 890 persons. But it can be expected that more and newer, modern facilities will raise the per capita requirements. The existing office buildings and dormitories are being programmed for air conditioning systems which will increase the base load. With this in mind, some increases in capacity of cable and of the main substation may be required.

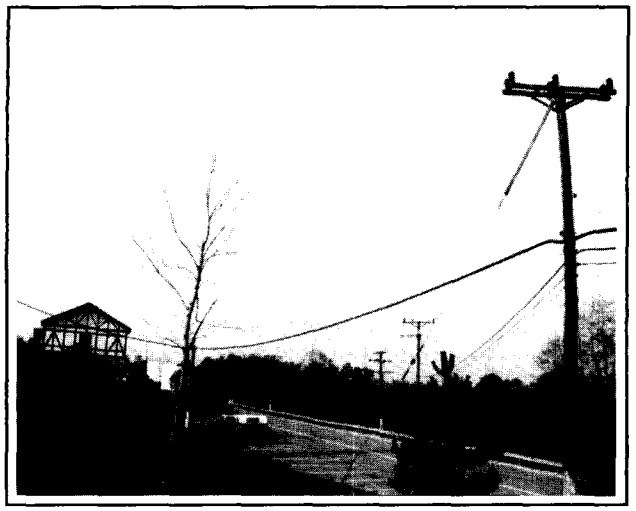
Exhibit 12.47t: Electrical Loading History

MONTH	ON-PEAK		OFF-PEAK		CONSUMPTION	COST
FY 1986						
Sep 17	845	*	667		243,600	$17,966.15
Aug 15	854		906	*	297,600	19,872.73
Jul 17	828	*	670		254,400	18,086.93
Jun 16	795		873	*	244,800	17,490.73
May 16	740		783	*	286,800	18,435.11
Apr 16	749		773	*	285,600	18,562.07
Mar 17	834		893	*	318,000	20,592.15
Feb 13	827		844	*	328,800	20,908.68
Jan 15	817	*	753		306,000	19,991.24
Dec 17	755		825	*	283,200	18,550.78
Nov 25	661	*	570		219,600	15,202.44
Oct 15	687		747	*	238,800	16,049.18
FY 86 TOTALS					3,307,200	211,708.19
FY 1895						
Sep 13	778		806	*	253,200	17,463.90
Aug 14	805		808	*	290,400	19,040.59
Jul 16	723		746	*	234,000	16,240.04
Jun 14	719	*	583		232,800	16,157.94
May 15	711		742	*	262,800	17,132.12
Apr 16	730	*	723		270,000	17,850.84
Mar 15	700	*	642		273,600	17,862.24
Feb 13	757		838	*	338,400	20,509.57
Jan 15	742	*	624		247,200	16,742.14
Dec 14	743		818	*	307,200	18,935.94
Nov 14	651		720	*	226,800	15,153.53
Oct 15	675	*	560		218,400	15,076.16
FY85 TOTALS					3,154,800	208,165.01
FY 1984						
Sep 13	703		711	*	243,600	16,253.79
Aug 13	714		776	*	232,800	15,966.55
Jul 16	776	*	696		238,800	16,770.12
Jun 14	752	*	730		268,800	17,629.97
May 15	743	*	634		246,000	16,718.93
Apr 13	740	*	703		270,000	16,694.47
Mar 15	747		772	*	295,200	17,033.97
Feb 15	740		759	*	302,400	17,192.45
Jan 13	714		732	*	270,000	15,936.81
Dec 14	704	*	701		252,000	15,281.17
Nov 15	641		657	*	208,800	13,339.65
Oct 13	671	*	609		183,600	12,787.32
FY84 TOTALS					3,012,000	191,605.20
FY 1983						
Sep 14	707		733	*	220,800	13,948.80
Aug 15	685		732	*	226,800	14,564.64
Jul 14	670		694	*	208,800	14,161.34
Jun 14	618		697	*	182,400	12,763.06
May 16	618	*	541		208,800	13,690.64
Apr 15	592		681	*	206,400	13,126.16
Mar 16	606		645	*	226,800	13,749.77
Feb 15	626		678	*	247,200	13,659.84
Jan 13	595	*	516		192,000	11,030.27
Dec 15	616		684	*	207,600	11,629.40
Nov 17	560		611	*	193,200	10,781.91
Oct 15	583		632	*	175,200	10,425.46
FY83 TOTALS					2,496,000	153,531.29

INVENTORY and ANALYSIS of the EXISTING SYSTEM

The electrical distribution system for the Pittsburgh AFRES is shown on the map in the exhibit on the next page. The feed is from Duquesne Light at 23,000 volts. Duquesne Light owns the 1,000 KVA transformer which steps the voltage down to 4,160 volts. From the transformer, cables feed to the double vacuum circuit breaker shown in the exhibit below. This consists of two breakers which are owned by the Pittsburgh AFRES.

Exhibit 12.48p: Overhead Facilities on Carter Street



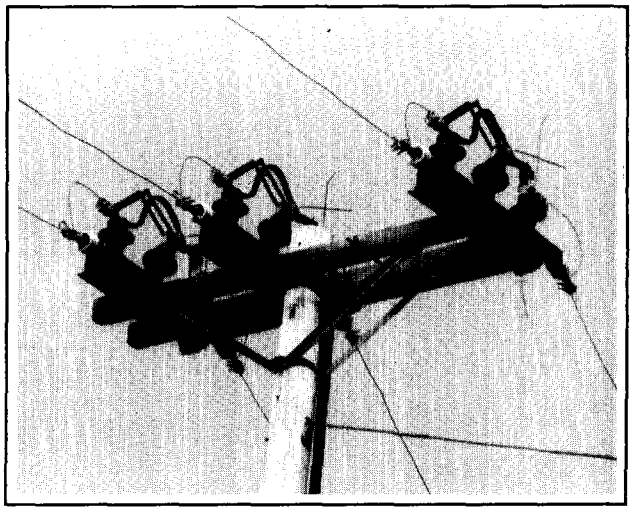
Two feeders run out of the substation, one underground and one overhead. The underground feeder proceeds south along Brown Street and serves building #320 and #322.

The other feeder serves the vast majority of the load on the base. It is predominantly overhead and is operated as a closed loop system, actually a double loop. Gang operated air break switches (GOABS), such as the set shown in the exhibit above right, are used to open the loops if and when needed. In-line fused cutouts are also utilized to isolate portions of the system and to protect against short circuits.

This closed loop operation should not be confused with the automatic loop operation of the Duquesne Light 23 KV circuits feeding the base. It was noted that if a problem occurred on the primary circuit, then the feed would switch to the emergency circuit automatically. The closed loops on the Pittsburgh AFRES base are manual, thus must be switched by hand if and when a problem occurs.

One of the loops leaves the substation and proceeds east to Carter Street. An underground line feeds south to serve building 221. However the main feed goes north to Defense Avenue, then to the Main Gate and on to the Officers Mess. A short underground line runs to the service at Fancher Field. It then picks up overhead and winds south and west past buildings #118, #130 and #121 to Defense, then on Defense and Brown where the loop is closed.

Exhibit 12.49p: Gang Operated Air Break Switches



The other, more heavily loaded loop leaves the substation north on Brown. It is the same overhead wire as noted for the loop above along Brown, Defense and on to building #130. From there, it turns west and winds through, and serves, the hanger area. An underground run is utilized between buildings #418 and #306. Overhead lines finish the loop which closes at Brown Street. Along this last stretch, the Headquarters and the Engineering Complex are served.

The majority of the overhead lines are #6 hard drawn copper wire. Conservatively this wire is rated at 110 amps which converts to 792 KVA. The underground runs are made up of #2 copper cable which has a thermal rating of 155 amps or 1,116 KVA.

...Construction. The overhead construction is of the 'open' wire type connected to insulators attached on eight foot arms. A typical pole is shown in the exhibit below. Observation of the system shows no glaring safety violations. The gang operated air break switches appear to be old, but they are operated on a systematic basis to insure their capability when needed. It was noted that a replacements of these switches had been budgeted.

Exhibit 12.50p: Overhead Primary and Secondary

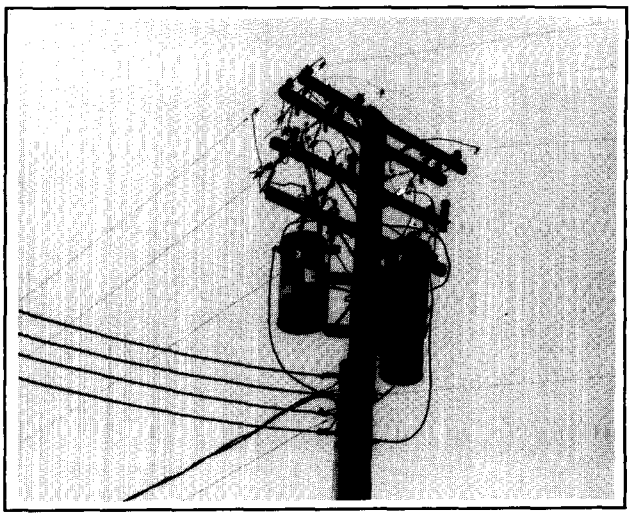


Exhibit 12.51m: 4,160 Volt Lines On The Pittsburgh AFRES Base

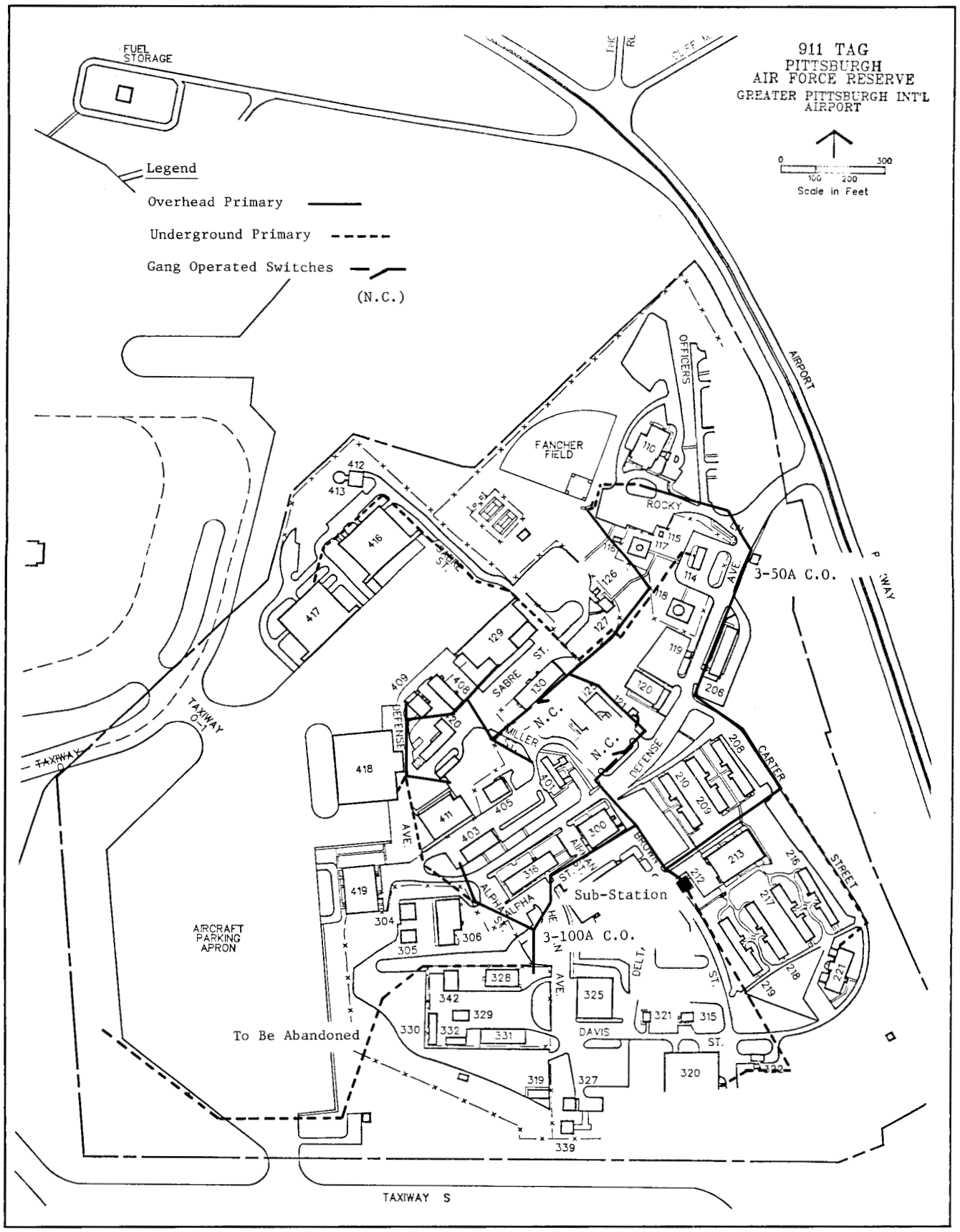


Exhibit 12.52p: Pad Mounted Transformer

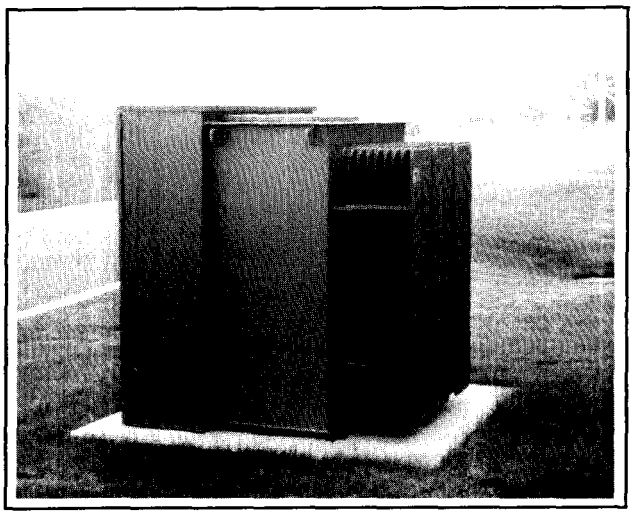


Exhibit 12.53t: List of Transformers

Transformer Number/Size	Facility Number
Underground Feeder	
75 *	320
2-5	322
85 KVA	
North Loop	
1-500	213
4-37.5	221
37.5	120
3-15	206
3-37.5	115
3-50	110
3-15	Sports Area
3-50	114
3-25	127
300	416
300	417
1865 KVA	
Both Loops	
3-100	125
3-50	120
450 KVA	
South Loop	
3-50	401
3-100	129
3-100	408
3-167	409
150 *	418
3-100	411
45 *	403
3-50	306
3-37.5	328
3-100	316
1-45	300
1-25	300
2,378.5 KVA	
TOTAL 4,778.5 KVA	
* - Indicates three phase unit	

...Loads. The exhibit to the left lists each bank of transformers on the Pittsburgh AFRES Base. The transformers are in the order they are encountered along the feeder and are further segregated by loop.

The total connected transformer capacity in 26 single and three phase banks is 4,778.5 KVA. The highest recorded demand was 906 KW in August of 1986. This converts to a load factor of 19%. This value is about 2% or 3% higher than is found on most Reserve and Guard Bases, which means that the Pittsburgh AFRES is making better utilization of its transformers.

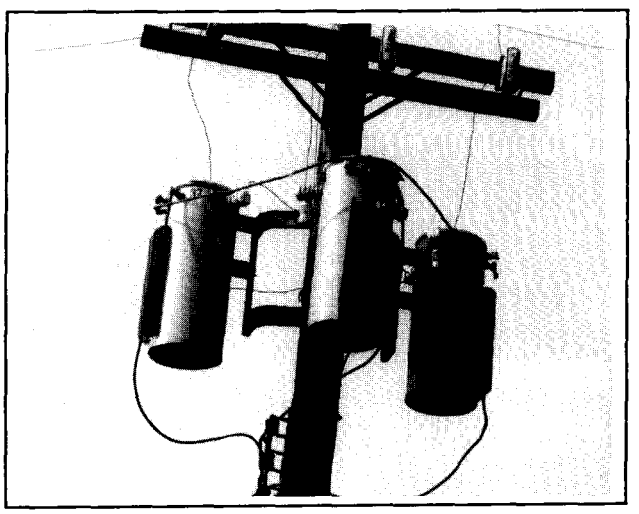
...906 KW / 4,778.5 KVA = 0.1896 load factor

A check of the feeders shows that the most heavily loaded portion is the south loop which feeds through the hanger area and has 2,378.5 KVA connected. Another 450 KVA of transformers are connected to the section where the two loops are together. This yields a total load of 2,828.5 KVA on that section of #6 copper wire, which has a thermal capacity of 792 KVA. Using the load factor of 19%, the actual demand calculates to be 537 KW or 68% of the thermal capacity of the wire.

...2,378.5 KVA + 450 KVA = 2,828.5 KVA
...2,828.5 KVA * 0.19% L.F. = 537 KVA at Peak
...537 KW / 792 KVA * 100 = 68% of capacity

In a loop operation the current is divided and feeds both ways from the source. Electricity always takes the easiest path, thus the current divides so that there is no current in the line at the electrical midpoint. It is conceivable that the load is evenly divided between the two sections of the loop and the wire is about 34% loaded at peak. Nevertheless, the wire must be capable of carrying the load in the worst case. And that case is when a problem has occurred and the loop is operating open, or one way. Then the wire would be 68% loaded at peak.

Exhibit 12.54p: Pole Mounted Transformer Bank

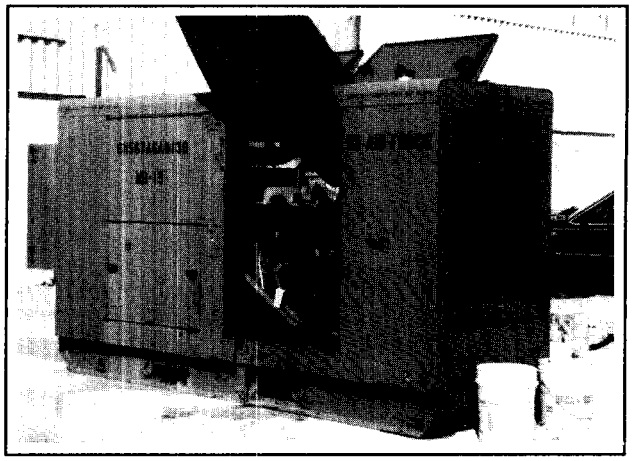


...Voltage drop and line losses. The system is small enough and the wire sizes are adequate that neither voltage drop or heat losses in the line are sizable enough to cause operating problems or substantial costs.

Exhibit 12.55t: Emergency Generators

BLDG	GENERATOR DETAILS
115	Consolidated Diesel Generator 60 KW 120/208 v, 3 ph, 60 HZ A.C. Fuel 20 gallons (8 hours operation)
213	Dynamic Corporation Diesel Generator 150 KW 120/208 V-240/416 V, 3 ph, 60HZ A.C. Fuel 107 gallons (8 hours operation)
221	Onan Div. of Studebaker gasoline generator 5 KW 120/240 V, 1 ph or 120/208 V, 3 ph, 60HZ A.C. 5 gallons automotive gasoline (10.72 gallons for 8 hour operation).
331	H.K.Porter Diesel generator 30 KW 120/208 V or 240/416 V, 3 ph, 60HZ A.C. Fuel 26 gallons (8 hour operation)
405	Fermont Dynamics Diesel generator 60 KW USAF Model MB-17 120/208 V or 240/416 V, 3 ph, 60HZ A.C. Fuel 42.5 gallons (8 hour operation)
418	Onan-Wisconsin Motor Co. gas generator 5 KW 120/240 V, 1 ph or 120/208 V, 3 ph, 60HZ A.C. Fuel 5 gallons automotive gasoline (10.72 gallons for 8 hour operation.
419	Onan-Ford Diesel generator 30 KW 208/240/480 V, 3 ph, 60HZ A.C. Fuel 2.6 gal/hour (10 gal. tank at generator). 250 gallon tank underground.
328	Fermont Manufacturing Diesel generator 30 KW 120/208 V, 3 ph, 60HZ A.C. Fuel 26 gallons (8 hour operation).
416	Onan-Cummins Diesel generator 155 KW 120/208 V, 3 ph, 60HZ A.C. Fuel available for 8 hour operation.
316	Fermont Dynamics Diesel generator 150 KW 120/208 V or 240/416 V, 3 ph, 60HZ A.C. Fuel available for 8 hour operation.
331	Milwaukee Electric Company 3.75 KW 120/240 V, 1 ph, 60HZ A.C. Fuel Tank cap. is 1.5 gal. for 3 hr. operation. This is a portable unit.
	There is also a 62.5 KVA motor/generator set at building 416 to provide 400 Hertz service the planes themselves. The specs are as follows:
416	Essex Electro Engineers, Inc. Motor-gen., skid mounted, Type MD-4, 62.5 KVA INPUT: 220/440 V, 3 ph, 60 HZ OUTPUT: 120/208 V, 3 ph, 4 wire, WYE connected, 175 amp, 400 HZ, 62.5 KVA, 0.8T, 0.8PF.

Exhibit 12.56p: Generator Behind Headquarters



...EMERGENCY GENERATORS have been placed to serve all facilities which are critical enough to justify the emergency backup. The exhibit to the left gives a detailed description of each generator, while the table on the next page can be used as a quick reference for all generators.

The emergency generators are either gasoline or diesel powered. Tank capacity and hours of operation with that amount of fuel is listed in the table. Most of them have fuel for eight hours of operation on hand. However, additional fuel can be delivered by truck and base personnel think that the generators could be operated for any required period.

All generators are manually started. Because of the critical nature of the communication system, there is a desire to have the unit at building 405 (the phone center) automatically started.

The generator at building 416, shown in the exhibit below, is semi-mobile. It is designed to be moved to, and serve, building 417 when needed.

All emergency generators are run for an hour each month to insure that they are in good working order. These test runs are made with at least 60% load on the generator.

Exhibit 12.57p: Emergency Generator and Small 400 HZ generator at Building 416

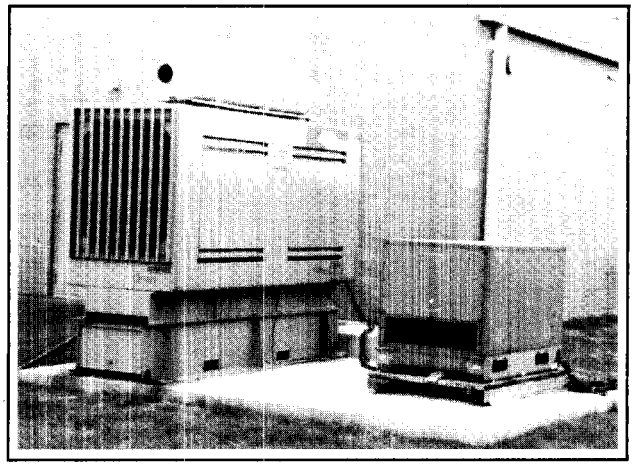


Exhibit 12.58t: Brief Summary: Emergency Generators

Priority	Location	Manufacturer	KW	Start	Max Run Time
1	419	Ford	30	M	8 hrs
2	405	Fermont	60	M	8 hrs
3	115	Fermont	60	M	8 hrs
4	418	Onan	5	M	4 hrs
5	416	Onan	155	M	8 hrs
6	213	Fermont	150	M	8 hrs
7	221	Hollingsworth	5	M	4 hrs
8	328	Fermont	30	M	8 hrs
9	331	Fermont	60	M	8 hrs
10	331	Milwaukee	3.75	M	4 hrs
11	316	Fermont	150	M	8 hrs
12	306	Hollingsworth	5	M	4 hrs

EXISTING and FUTURE NEEDS

The feed from Duquesne Light is as reliable as can be provided by a utility.

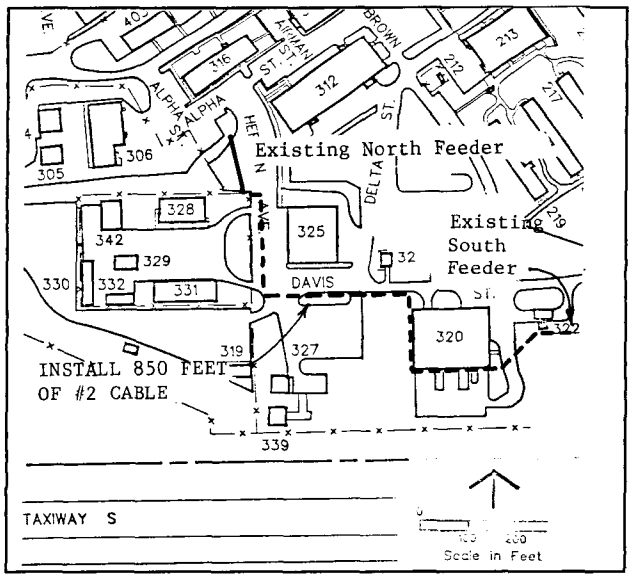
The electrical system at the Pittsburgh AFRES Base is quite adequate to serve the existing needs of the base.

The only needs which were pointed out in the previous pages were:
...Changing the emergency generator at building 405 (the phone center) to automatic start and
...Replacing the gang operated switches.

The south feeder has very little load on it while the north, predominantly overhead, feeder carries most of the load. There is a need to balance the load between these two feeders which will add to the overall capacity.

Another need, although not critical to the operation, is to place all lines underground. This would minimize weather related outages and reduce the exposure to the possibility of terrorism to the electric system itself. Larger underground cable would also increase the load carrying capacity in the system.

Exhibit 12.59p: Proposed Route of Tie Line



ALTERNATIVES for IMPROVING the SYSTEM

The few needs which were addressed in the previous section will be explored along with alternative solutions.

The replacement of the gang operated switches and the adding of automatic start to the generator at building 405 are rather cut and dry, thus do not lend themselves to alternative solutions.

The north and south feeders can be tied together by installing 850 feet of underground cable along Davis Street and Herman Avenue from building #320 to the Engineering Building #328. The switch between the two feeders will remain open during normal operation, thus taking advantage of both vacuum breakers. In case of a failure, switching can be accomplished so that either feeder can pick up some or all of the load from the other feeder. The cost of construction will be approximately $50,150.

...850 feet of cable in duct @ $59/ft.....$50,150

This will be examined further in the proposals section of this chapter

Placing the overhead facilities underground can be accomplished with several approaches. Installing the cables in duct is preferred over direct buried and complies with AFR 88-15, paragraph 16-30, of Dec 1985 which states "All primary underground cables shall be installed in concrete encased non-metallic ducts or concrete encased galvanized rigid steel conduits". Extra ducts should be considered for telephone and television cables. Replacing all of the overhead facilities with the equivalent underground facilities would cost about $556,880 to complete. This would include four sets of pad mounted switches, costing between $4,000 and $8,000 per set according to type, to serve the same purposes as the present gang operated switches and in-line fuses.

...5,320' of cable in duct @ 59/ft.....$313,880
...10 manholes @ 10,000.....80.000
...4 sets of pad mounted switches @ 6,000.....24,000
...27 transformers @ 5,150 average.....139.000
$556,880

The substation is located near the center of the base. This minimizes line losses and voltage drop and adds to the overall security of the Base itself.

RECOMMENDATIONS

The electrical distribution system has been maintained well. Therefore the recommendations for improvements are minimal.

It is recommended that a tie be installed between the north and south feeders at a cost of $50,150.

Plans to replace the gang operated switches should be followed through. Automatic starting should be added to the generator at the phone center.

Placing all facilities underground would have many advantages, but does not justify the expense all at once. Nevertheless it is recommended that all new lines be installed underground. Furthermore, when the existing facilities are rearranged or rebuilt, they should be placed underground.

STREET and AREA LIGHTING

The present street and area lighting for the Pittsburgh AFRES will be addressed in this section. The analysis will consist of the following topics:

...Inventory and analysis of the lighting system,
...Existing needs and alternative solutions and
...Recommendations.

INVENTORY and ANALYSIS of the LIGHTING SYSTEM

The present street and area lighting is a mixture of High Pressure Sodium and Mercury Vapor in several types of fixtures. The cantonment area lighting will be explained and evaluated, then the flight line lighting will follow the same approach.

...Cantonment Area Lighting. A drive through the area proved that lighting is adequate except for a few areas. The following are observations of that drive through.
...The industrial area is lit well enough for security.
...Carter Street has several dark stretches. Brown Street is mostly dark. The electrical substation should have more light.
...Some of the parking lots have no designated lights.
...There are two lights in front of Headquarters, but one at the corner of Herman Street and Defense Avenue would really help. There are no lights behind the Headquarters building.
...There is a light at the fence of the Civil Engineers Building, but none in the parking lot or around the buildings.
...The decorative lighting in the parking lot at Defense Avenue and Miller Street were off when the drive through was made.
...Most parking lots are NOT lit well. The need for more parking lot lighting is an operational question.
...The Consolidated Open Mess is lighted well.
...The Guard Building at the main entrance is well lit with fixtures away from the building itself. The building is not spotlighted.
...Security says the back roads could use some more lighting, especially Carter Street by the dispensary, Brown Street and around the barracks.

Exhibit 12.60p: Open Bottom Mercury Fixture

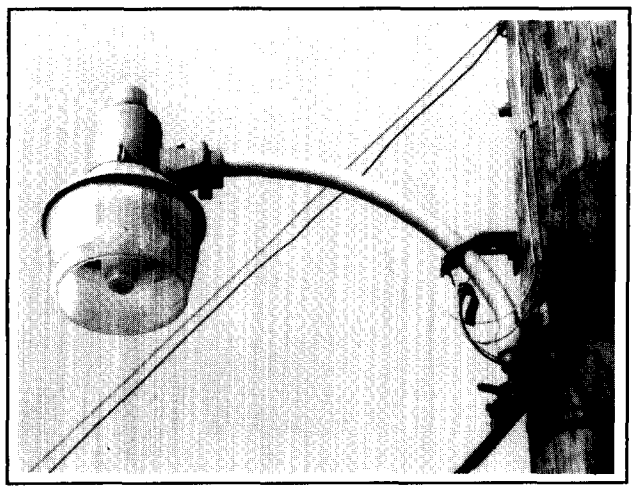
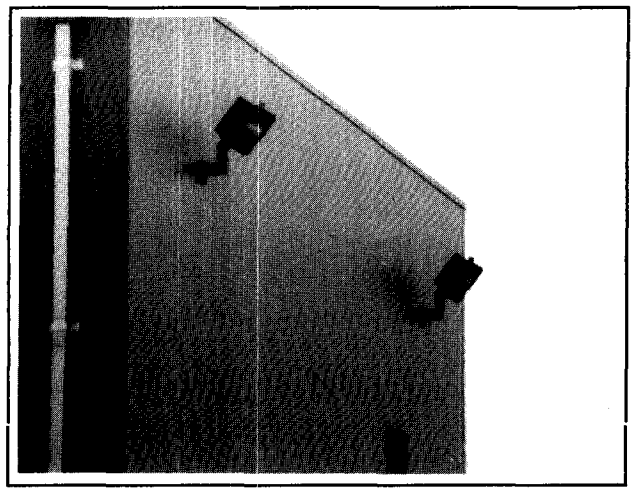


Exhibit 12.61p: The Aprons are Lighted by Building Mounted Flood Lights



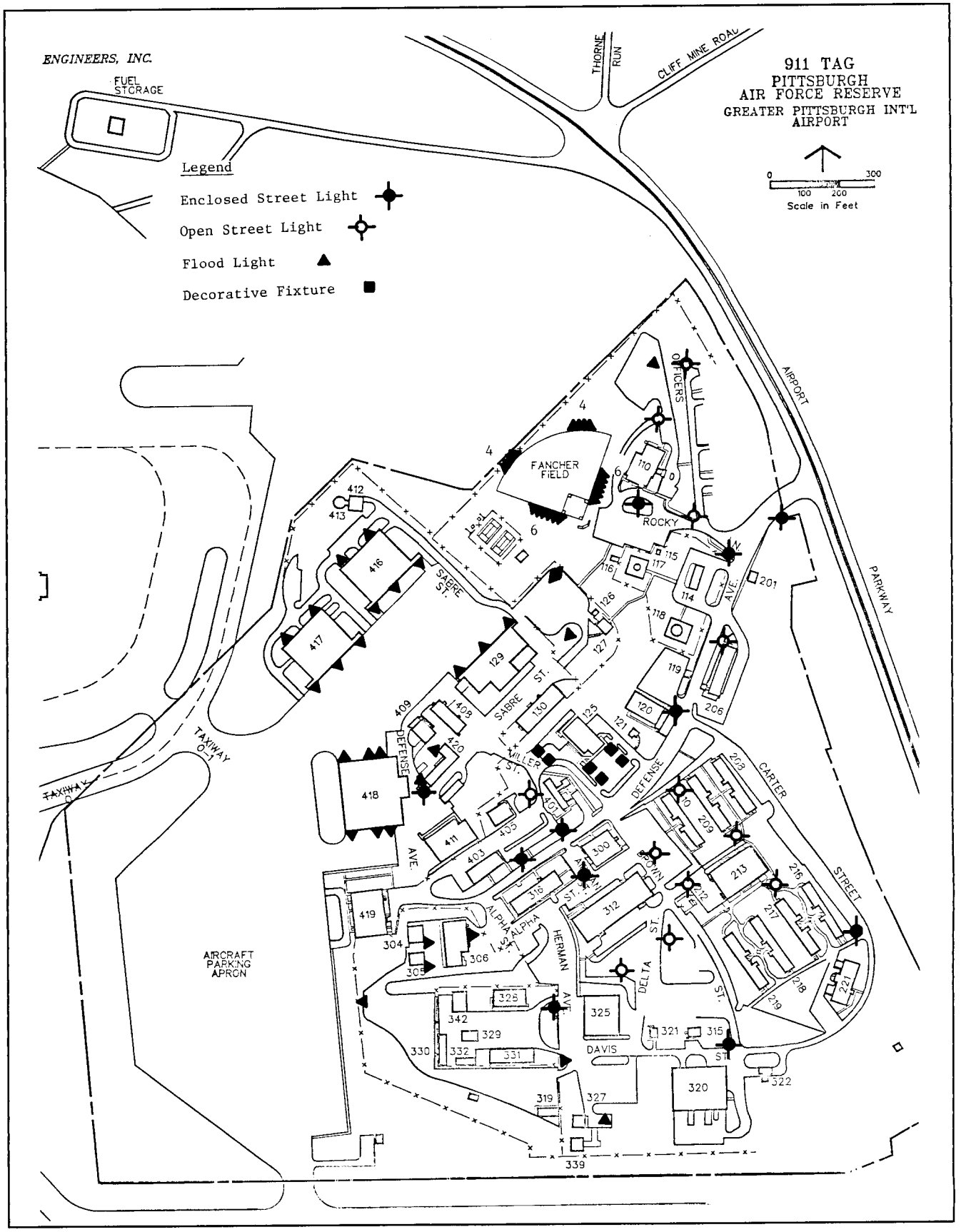
...Lighting the Flight Line. The apron is lighted by flood lights attached to the hangers themselves as shown in the exhibit above. This does not light the flight line enough to perform work on the aircraft. There are dark spots near the buildings. And out on the apron the light goes down (off) dramatically about 150 feet from the buildings.

The hill beside the apron is not lighted at all. There is no operational need, however the lack of lights presents the possibility of invaders not being seen.

...Lighting Summary. The lighting is adequate for the needs of the base. It was pointed out above that Carter and Brown Streets are not lighted enough for security purposes. And the apron lighting is marginal.

Exhibit 12.62p: Decorative Fixtures Enhance Landscape

Exhibit 12.63m: Location of Outdoor Lights on the Pittsburgh AFRES Base



EXISTING NEEDS and ALTERNATIVE SOLUTIONS

In this section the lighting needs will be identified and alternative solutions examined.

It was noted that Carter and Brown Streets are dark. The map below shows proposed locations for four fixtures on Carter Street and two on Brown Street. These additions will provide lighting for security and will also give more lighting for the substation.

The Headquarters building is partially lighted. By adding two more lights on the west side, as shown on the map below, the building will be lighted much better.

250 watt high pressure sodium fixtures would be preferred for all of these lights. The eight fixtures, each with poles, will cost approximately $5,400.

...8-250 wt HPS lights with poles @ $675.....$5,400

Additional lighting is needed between the dorms. This should be done for purposes of safety and security. Either 175 watt mercury or 150 watt high pressure sodium fixtures would be preferred. The addition of five fixtures at the locations noted in the exhibit on the next page will add to the existing lights and cover the housing area. This installation will cost $3,075.

...5-150 wt HPS Lights with Poles @ 615.....$3,075

The lighting of the flight line was noted as being minimal. There is some lighting around the hanger area. However, the principal need is for lighting of the aircraft parking apron. By attaching two 400 watt high pressure sodium flood lights on building #418 and two on building #419, half of the parking apron will be lighted. Then, by placing four more flood lights on two poles south of #419, the remainder of the apron will receive light. These eight flood lights are shown on the map to the right. The heights of these poles will be dictated by the landing clearance requirements of the airport. The southern most pole will be in close proximity to runway 28. A waiver may be required to erect these poles.

Exhibit 12.64p: Sports Lighting at Fancher Field

Exhibit 12.65p: Enclosed Lighting Fixture, Main Gate

Another need is to light the hillside which drops off the edge of the apron so that security personnel can observe anyone invading the hills themselves. This is considered because of the fear of terrorism. Flood lights can be used in conjunction with the apron lighting noted in the paragraph to the left.

Two 150 watt high pressure sodium flood light fixtures facing down the hill will provide adequate security.

The pole heights are in question. However, it is estimated that the flood lights for the aircraft parking apron and the hillside next to the apron will cost $10,600.

...2-Steel Poles @ 3,800.....$7,600
...8-400 wt HPS flood lights @ 315.....2,520
...2-150 wt HPS flood lights @ 240.....480
$10,600

Many of the parking lots are not lighted. At least minimal lighting is needed for safety and security in these lots.

One thought is to place the outdoor lights on time clocks so that they will not come on until after 10:00 P.M. in the evening and turned off before 8:00 A.M. in the mornings. This would assure that the lighting load would not be a part of the on-peak demand. However, when it is considered that the lights only operate during darkness which, during the week days, occurs when most base operations are closed down. The only on-peak time when the lights could be operating occurs during the winter when demand is at a low. Therefore, the outdoor lighting does not add a significant amount to the peak demand.

LIGHTING RECOMMENDATIONS

The lighting on the Pittsburgh AFRES base is primarily for security purposes. A few needs were addressed in the last section and the following recommendations are made.

High pressure sodium fixtures should be installed on Carter and Brown Streets as noted. It is also recommended that two additional lights be placed on the west side of Headquarters.

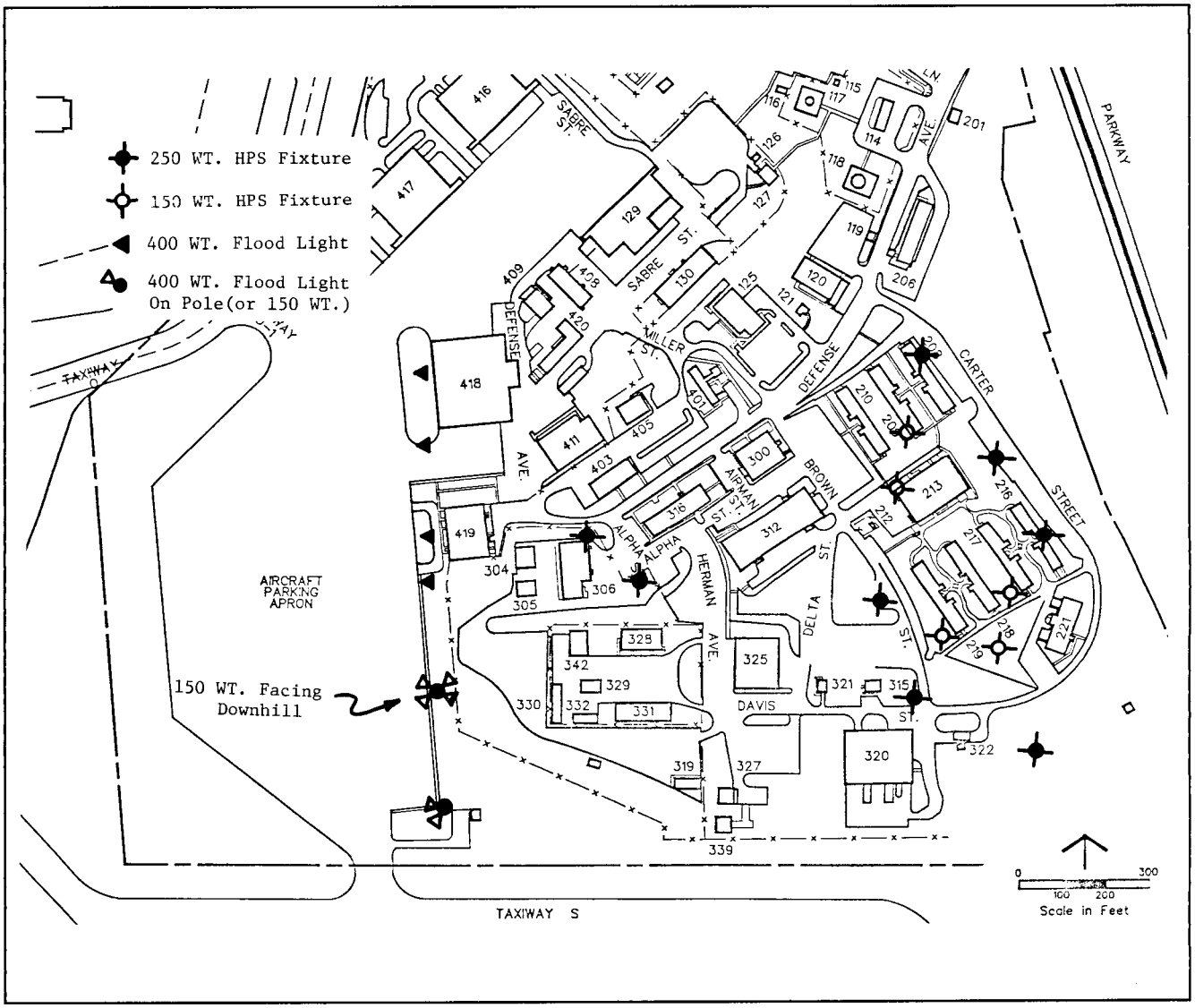
It is recommended that five 150 watt HPS fixtures be installed in the dormitory area for reasons of safety and security.

The aircraft parking apron should be lit with 400 watt high pressure sodium flood lights. 150 watt HPS floods can be aimed down the adjoining hillside for security against trespassers.

Each of the lighting recommendations is listed in the following table.

...6 lighting fixtures on Carter & Brown.....	$4,050
...2 lighting fixtures by Headquarters.....	1,350
...5 lighting fixtures in the dormitory area...	3,125
...8 flood lights for the Apron with 2 Poles...	8,200
...2 flood lights for the Hillside.....	600
	$17,325

Exhibit 12.66m: Recommended Lighting Additions



CATHODIC PROTECTION

Cathodic protection is a process for reducing or eliminating corrosion on a metallic structure in contact with a corrosive electrolyte, by introducing an electrolytic action greater in strength and opposite in direction to the electrolytic activity, corrosion, which would otherwise take place.

Cathodic protection works because almost all corrosion is electrolytic in nature; that is, it involves contact between a metal and an electrically conductive solution (soil); the corrosion is accompanied by a flow of current, in the metal, in the electrolyte, and from one to the other.

There are two basic methods to apply cathodic protection, although there are many variations of these methods.

One method uses anodes that are energized from an external DC power source. Anodes are installed in the electrolyte (earth) in this type of protection system and are connected to the positive terminal of the DC power source (as shown by the exhibit to the right). This type of system is often referred to as a rectifier type system, since the power is almost always a rectifier unit.

The second method uses galvanic anodes that have a natural difference of potential with respect to the structure to be protected (see exhibit to the right). Anodes used are made with respect to the protected structure. These anodes are connected electrically, directly to the structure to be protected.

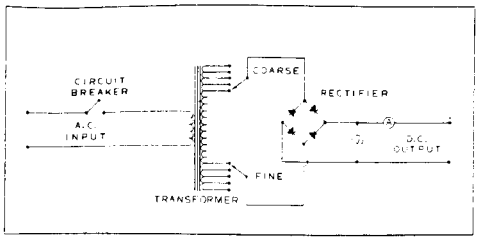
The rectifier type system is designed to deliver relatively large currents from a limited number of anodes in most cases, while the galvanic anode type system is designed to deliver small currents from a large number of anodes.

Each method of applying cathodic protection has special characteristics that make it more applicable to a particular problem. A comparison of these characteristics is shown in the exhibit below.

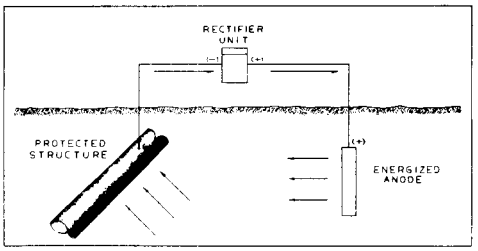
Exhibit 12.67t:Comparison Methods Of Cathodic Prot.

Galvanic	Rectifier
1. Requires no external power.	..External power required.
2. Fixed driving voltage.	..Voltage can be varied.
3. Limited current.	..Current can be varied.
4. Usually used where current requirements are small.	..Can be designed for almost any current requirements.
5. Usually used in lower resistivity electrolytes.	..Can be used in almost any resistivity environment.
6. Interference with neighboring structures in underground applications is usually negligible.	..Interference with neighboring structures in underground applications must be considered.

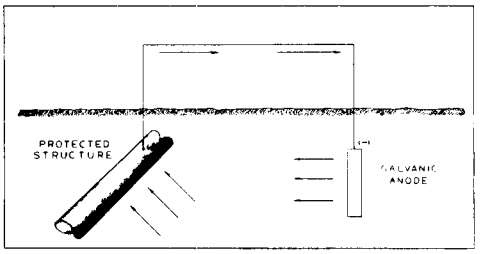
Exhibit 12.68p: Cathodic Protection



Single-Phase, Full Wave Bridge Rectifier



Cathodic Protection—Rectifier Type



Cathodic Protection—Galvanic Anode Type

INVENTORY, NEEDS AND RECOMMENDATIONS

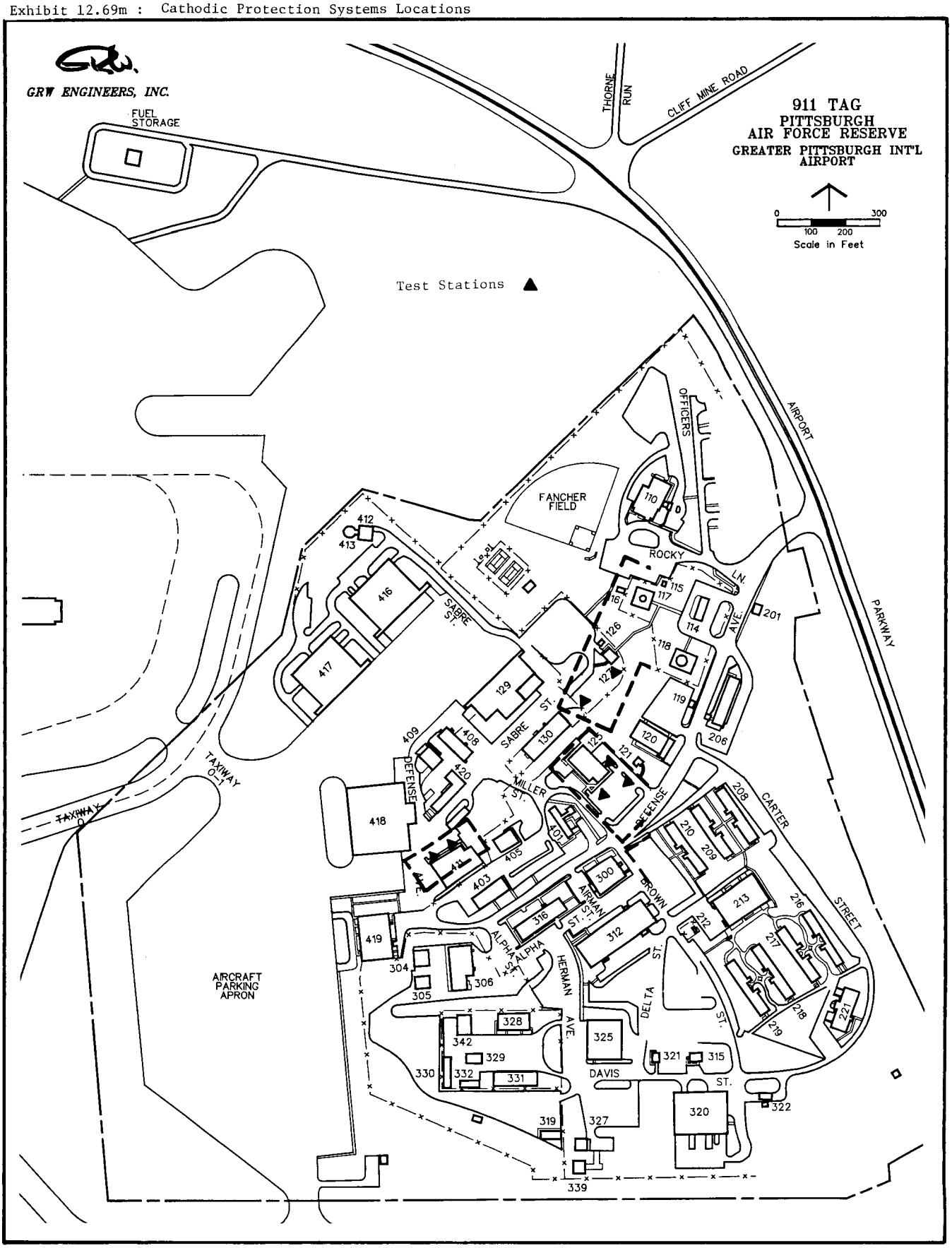
The following Pittsburgh AFRES systems are cathodically protected.

...Natural Gas system
...Underground 6" line at POL facility
...Hot water heating lines at barracks

All cathodic protection on base utilizes anode beds. The locations of these beds are shown by the exhibit on the next page.

Equipping other existing metallic structures with cathodic protection would not be cost effective. However, future structures should be checked for cathodic protection needs, especially since cathodic protection is the cheapest during initial construction. All new underground utility lines and tanks should be non-metallic type where practical to eliminate corrosion problems and need for cathodic protection. The new water tower proposed for FY 89 should be cathodically protected.

Exhibit 12.69m : Cathodic Protection Systems Locations



UTILITY PROPOSALS FOR FUTURE PLAN

For each utility, this section of the chapter will summarize three types of improvement needs:

...Existing utility improvements needed for the present situation, with no regards for any future changes.

...Short range needs will reflect any additional utility improvements necessary to serve the short range development plan described in Chapter Six.

...Long range needs will reflect any additional utility improvements necessary to serve the long range development plan described in Chapter Six.

The exhibit to the right lists each utility and the *estimated costs of improvements* by phase.

The PAFRES utility proposals have cost estimate totals for each phase as follows:

Existing Needs.....	$ 851,225
Short Range Needs.....	$ 767,825
Long Range Needs.....	$1,226,340
TOTAL	$2,845,390

These costs are indicative of the degree of changes. The *existing needs are significant*, the short range needs modify the utility systems moderately. The long range needs accommodate the major expansion of new aprons, hangars, and other large facilities to meet base needs for many years.

The POL area is due to be moved under the long range proposal. Due to the unique task of moving a POL station, the systems cost estimate cannot be determined at this time. (The existing POL area is shown by the photo below.) The proposed relocation site is shown on page 6-53.

Exhibit 12.70p: Existing POL Area At PAFRES Base

Exhibit 12.71t: Summary Of Utility Proposals Costs

Utility	Estimated Cost $
...Solid Waste	
Contract for rental/usage to be negotiated with private companies	N/A
...Natural Gas	
..Existing	N/A
..Short Range	161,000
..Long Range	46,500
TOTAL	207,500
...Storm Drainage	
..Existing	4,500
..Short Range	365,500
..Long Range	522,500
TOTAL	892,500
...Sanitary Sewage	
..Existing	N/A
..Short Range	34,000
..Long Range	117,000
TOTAL	151,000
...Water Supply	
..Existing	779,250
..Short Range	115,350
..Long Range	145,350
TOTAL	1,039,950
...Liquid Fuels	
Relocation of POL facility	N/A
...Cathodic Protection	
None proposed	N/A
...Electric	
..Existing	50,150
..Short Range	87,350
..Long Range	379,200
TOTAL	516,700
...Street and Area Lighting	
..Existing	17,325
..Short Range	4,625
..Long Range	15,790
TOTAL	37,740
GRAND TOTAL	2,845,390

SOLID WASTE PROPOSAL SUMMARY

The existing PAFRES solid waste disposal is accomplished by a private contractor:

Mazzaro Coal and Disposal Company
P.O. Box M
Clinton, PA 15026
Phone: (412) 695-0629

The contract is bid every three years. The total amount of the contract, which includes landfill costs, is $17,136.00 per year.

It is recommended that the entire solid waste collection system be contracted to private companies such as Mazzaro by competitive bid. This should be accomplished for existing waste disposal needs, short range and long range needs.

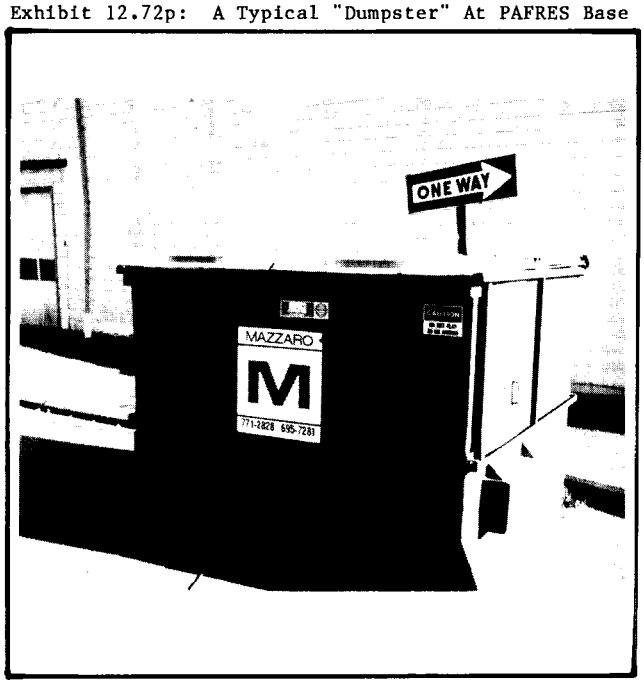
In the short range recommendations, there should be three additional containers on the base. Due to the demolition and expansion of facilities in the short range plan, there are some dumpsters to be removed while others are added.

Care should be taken to minimize the visual impact of the location of the dumpsters, but also placing them in accessible positions.

In the long range recommendations, three additional containers may be needed. This increase is due to the expansion of facilities from the short range to the long range proposals.

The "dumpsters" should be located at each major solid waste generation point within a reasonable walking distance of the buildings and with acceptable packer truck access. A typical "dumpster" is shown in the photo below.

Exhibit 12.72p: A Typical "Dumpster" At PAFRES Base



NATURAL GAS SYSTEM PROPOSALS SUMMARY

The proposed natural gas system improvements include a detailed heating analysis, improving metering facilities and installing new pipe lines to accommodate new facilities.

A cost summary for the existing, short range and long range proposal is shown in the exhibit below.

The existing proposals for PAFRES base include the following:

...Implement preventative maintenance schedule.
...Analyze efficiency of each building, which uses the heating and natural gas system, to find deficiencies in the retainment of heat.

The short range proposals for the base are as follows:

...Add individual metering to facilities using natural gas system.
...Add a double set of doors to provide a buffer zone in the facilities that get a lot of in and out pedestrian traffic.
...Replace boiler plant in building 213 with a more advanced and efficient model.
...Replace all individual boilers and convector heaters that are more than 25 years old.
...Replace natural gas lines that are more than 25 years old with new polyethylene pipe.
...Addition of gas line loop shown by exhibit on next page.

The long range proposals are as follows:

...Addition of loop on north end of base to serve future facility expansion (see long range exhibit on following page).

Exhibit 12.73t: Cost Of Heating/Natural Gas Proposals

Item	Cost $
...Short Range	
..Installation of 50 new gas meters @ $1,000/ Each	50,000
..Construction of gas line loop, 1100'	11,000
..Construction of buffer zone in each public building	variable
..Replacement of boiler plant in building 213, with new plant	100,000
..Replacement of old boilers and convector heaters	variable
..Replacement of old natural gas lines	variable
...Long Range	
..Construction of 4,650' gas line loop on north end	46,500
TOTAL	207,500

Exhibit 12.74m: Proposed Short Range Improvements For Natural Gas System

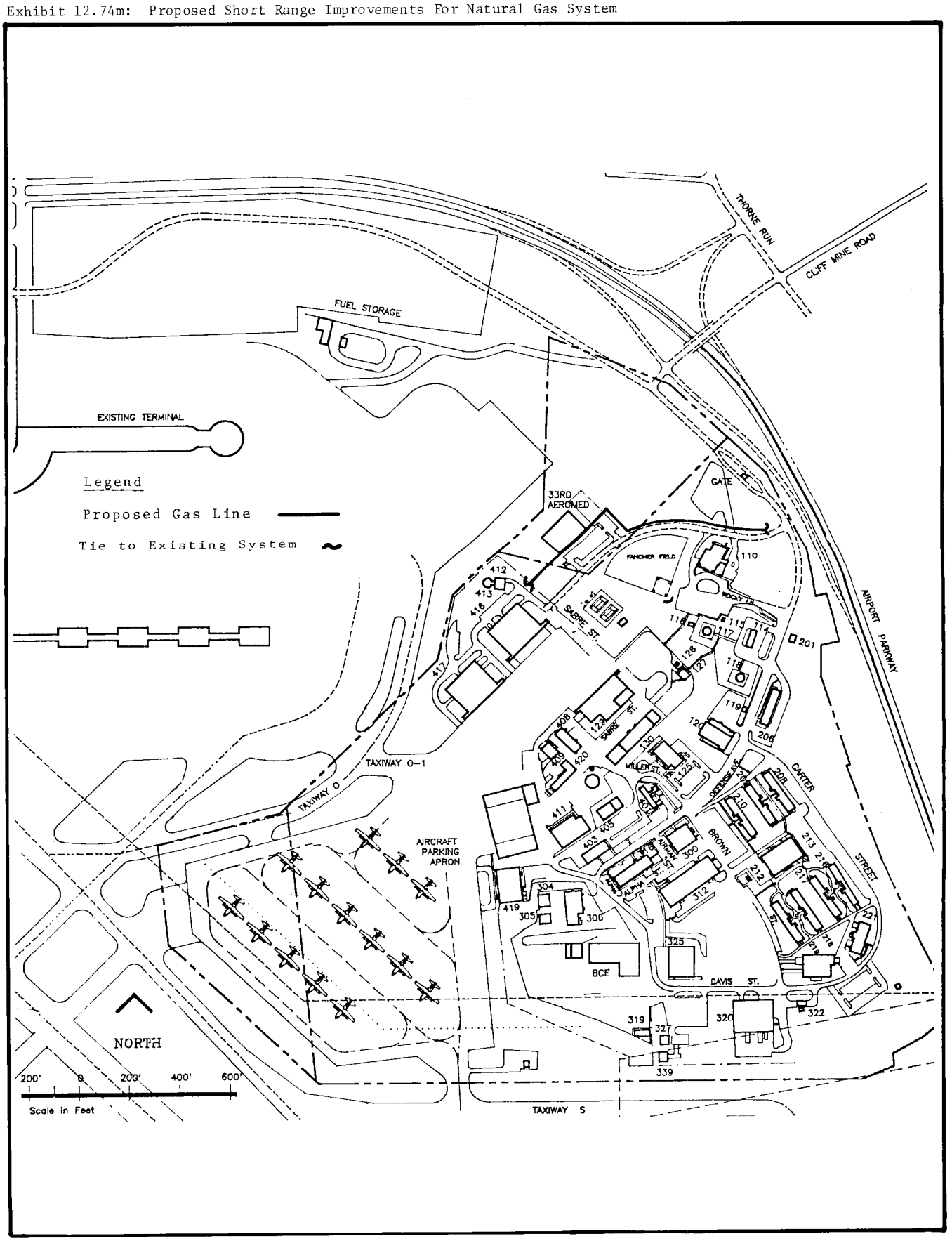
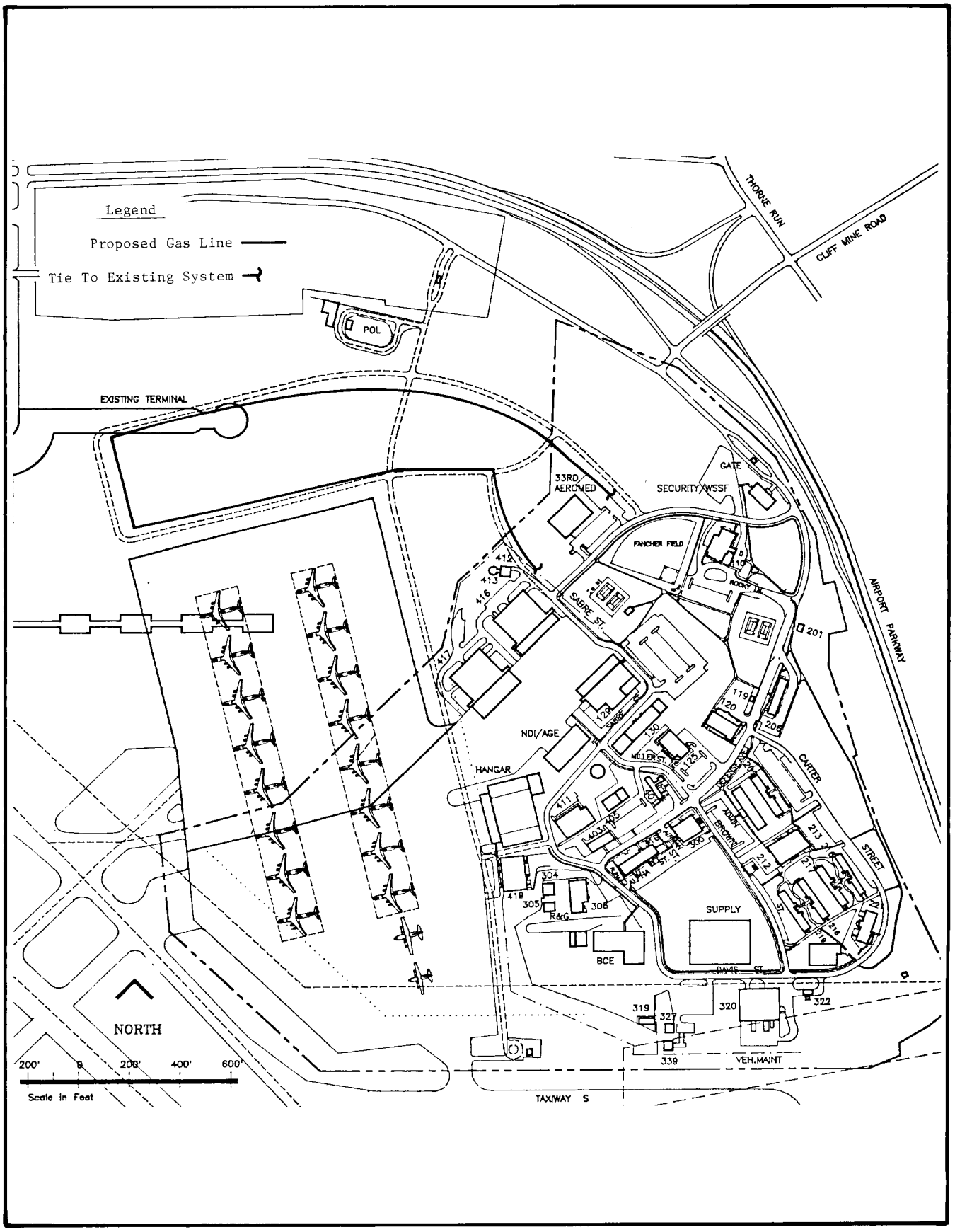


Exhibit 12.75m: Proposed Long Range Improvements For Natural Gas System



STORM DRAINAGE PROPOSALS SUMMARY

The Pittsburgh AFRES drainage system consists of a network of surface channels, roadside channels and pipe/inlet systems. Storm drainage is gathered by catch basins located throughout the base.

The proposed storm drainage improvements should help make areas available for future building development; provide drainage from the future aircraft parking aprons; and control fuel spills from the aircraft parking areas.

The storm drainage cost summary for the existing, short and long range proposals is shown by the exhibit to the right.

The existing needs for the PAFRES base include the following:

...Maintain all drainage channels and catch basins, keeping them free of debris.

...Support with concrete headwalls and cut back culvert sections extending into McClaren's Run.

...Install catch basins in low lying areas surrounding building 320.

The short range needs for PAFRES base are shown by the exhibit on the following page and described as follows:

...Install a storm drainage subsystem to service the proposed short range addition to the aircraft parking apron. This new system should include a north-south pipe/inlet system with catch basins every 250 feet and a subgrade piping network running the circumference of the apron.

Exhibit 12.76p: McClaren's Run

Exhibit 12.77t: Storm Drainage Costs Summary

Proposal	Estimate Cost
...Existing	
..Maintenance of drainage system	variable
..Construct concrete headwalls at each culvert ..	2,000
..Cut back culvert sections	500
..Install batch basins ...	2,000
...Short Range	
..Storm drainage pipe 18" - 60" RCP 4400'	308,000
18" perforated line 4,100'	41,000
..Install catch basins - 11 @ $1,500/Each	16,500
...Long Range	
..Storm drainage pipe (for apron) 60" RCP 3,000'	330,000
18" perforated line 4000'	40,000
..Install catch basins - 25 @ $1,500/Each	37,500
..Storm drainage pipe (north end) 24" - 36" RCP 2,300' ...	115,000
TOTAL	892,500

...Install a pipe line running east-west along the southern boundary of the base to collect the runoff from the piping/inlet system mentioned above and channel it into McClaren's Run.

...Extend the drainage subsystem servicing buildings 412, 413, 416 and 417 northeast from building 412 to service the proposed short-range plan buildings.

The long range needs for PAFRES base are shown by the exhibit following the short range exhibit and described by the following text:

...Extend the previously mentioned piping inlet system to include the further addition to the southwestern aircraft parking apron; this extension should include two more main north-south piping/inlet systems, again with catch basins placed every 250' and a subgrade network running the circumference of the rest of the parking apron.

...Construct storm water piping system to serve future expansion on the north end of the base.

Exhibit 12.78m: Proposed Short Range Improvements For Storm Drainage System

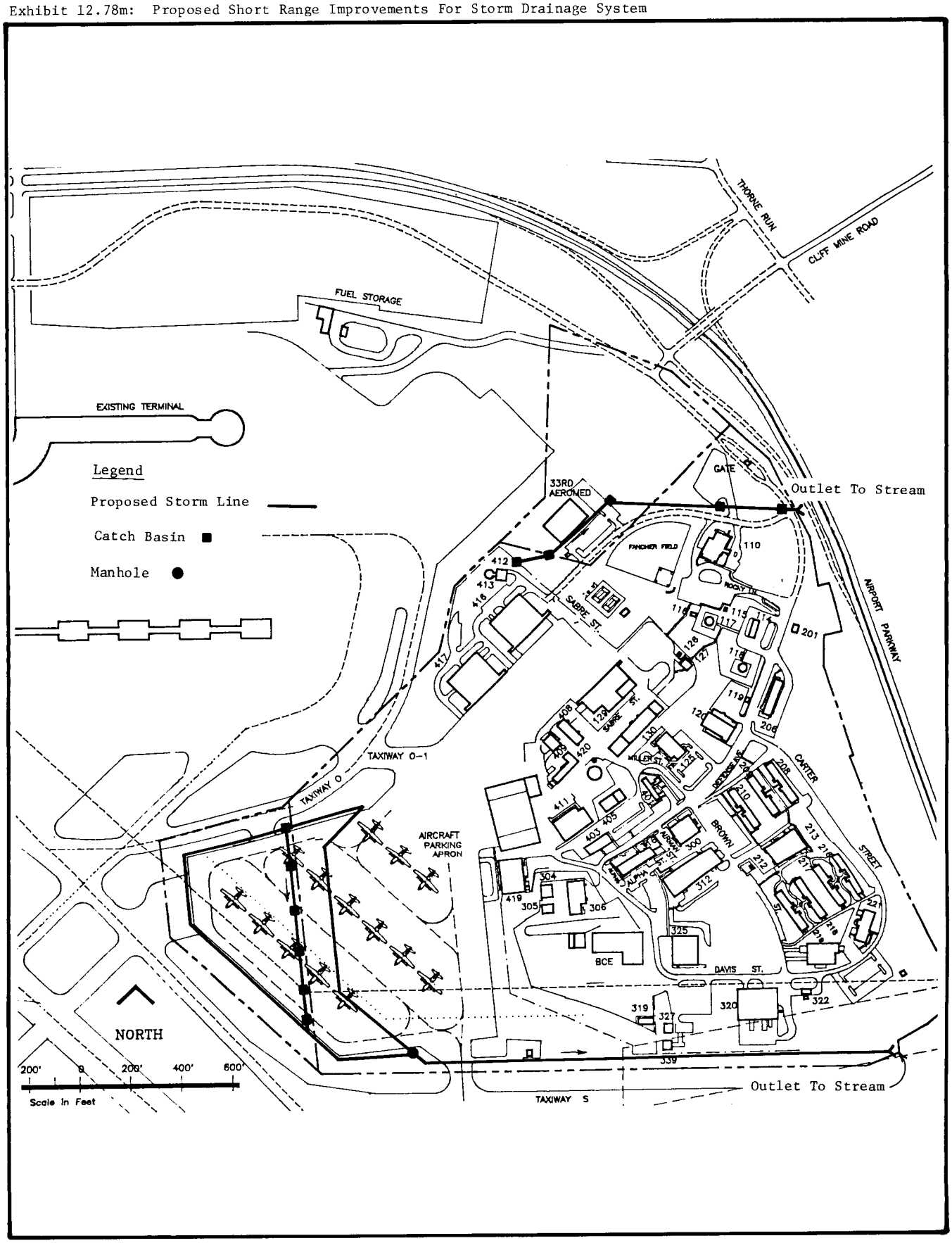
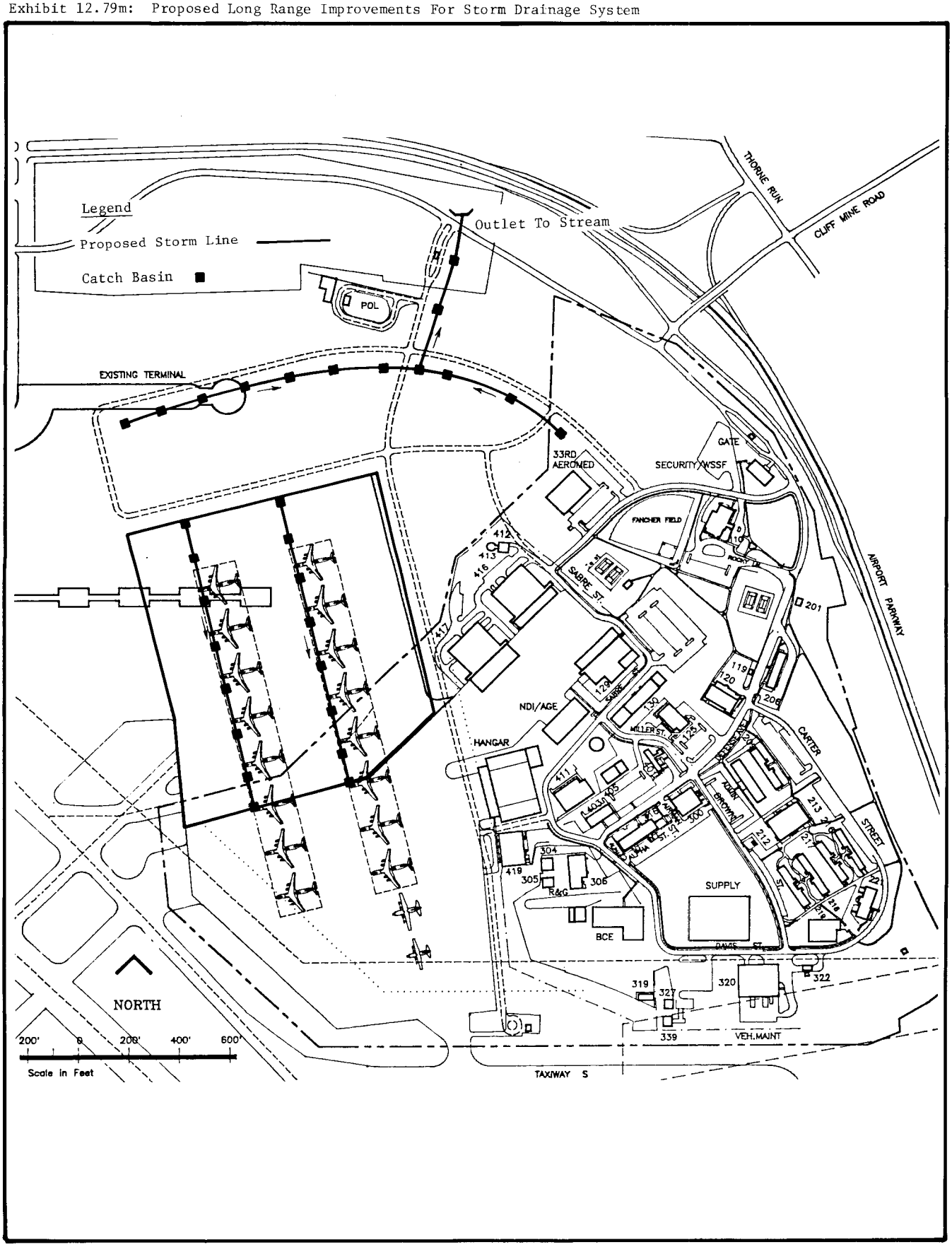


Exhibit 12.79m: Proposed Long Range Improvements For Storm Drainage System



SANITARY SEWER PROPOSALS SUMMARY

The proposed sanitary sewer system improvements are to include new eight-inch gravity sewer lines and the required additional manholes to serve the proposed short and long range facilities. An extensive general maintenance plan is also proposed. These improvements should enable the base sanitary sewer system to operate much more efficiently in the future.

The short range improvements proposed for the Pittsburgh AFRES base sanitary sewer system call for the installation of:

...Loop of eight-inch gravity sewer lines in the northeast of the base to service the proposed short-range 33rd Aeromed facility.

...Necessary manholes to service this proposed loop (i.e. one every 300 linear feet of line).

The long range improvements proposed for the base sanitary sewer system are as follows:

...Install 3,500 feet of ten-inch gravity sewer line on north end of base to serve potential areas of facility expansion.

...Install manholes every 300 linear feet of line.

Cost estimates for these proposals are shown by the exhibit below. The locations are shown by the exhibits on the following pages.

Exhibit 12.80t: Proposals Cost Summary

Proposal	Estimated Cost
...Existing	N/A
...Short Range	
..Install 1,000 feet of 10-inch gravity sewer line @ $30/LF	30,000
..Install 4 manholes @ $1000/Each	4,000
...Long Range	
..Install 3,500 feet of 10-inch gravity sewer line @ $30/LF	105,000
..Install 12 manholes @ $1000/Each	12,000
TOTAL	151,000

WATER DISTRIBUTION PROPOSALS

The proposed major improvements to the Pittsburgh AFRES water supply and distribution system include the replacement of certain undersized lines, construction of an elevated water storage tank and the addition of new water lines to accommodate proposed short and long range facilities. A more detailed description of proposals short and long range is found in the following text. Cost estimates for these proposals are shown by the exhibit below. The locations of the short and long range proposals are shown by the exhibit on the following pages.

The short range improvements proposed for the Pittsburgh AFRES base water distribution system are as follows:

...Install 4,100 feet of eight-inch water line around proposed apron expansion. This should provide the required aircraft fire protection. (including fire hydrants)

...Install 1,450 feet of eight-inch water line to serve the proposed 33rd Aeromed facility. (including fire hydrants)

The long range improvements proposed for the Pittsburgh AFRES base water distribution system are as follows:

...Install 3,250 feet of eight-inch water line around proposed apron expansion. (including fire hydrants)

...Install 3,800 feet of eight-inch water line along roadway corridors to serve potential areas of facility expansion. (including fire hydrants)

Exhibit 12.81t: Proposals Cost Summary

Proposal	Estimated Cost
...Existing	
..Carried forward from exhibit 12.36t on page 12-24	779,250
...Short Range	
..Install 5,550 feet of 8-inch water line @ $17/LF	94,350
..Install 14 fire hydrants @ $1,500/Each	21,000
...Long Range	
..Install 7,050 feet of 8-inch water line @ $17/LF	119,850
..Install 17 fire hydrants @ $1,500/Each	25,500
TOTAL	1,039,950

Exhibit 12.82m: Proposed Short Range Improvements For Sanitary Sewer System

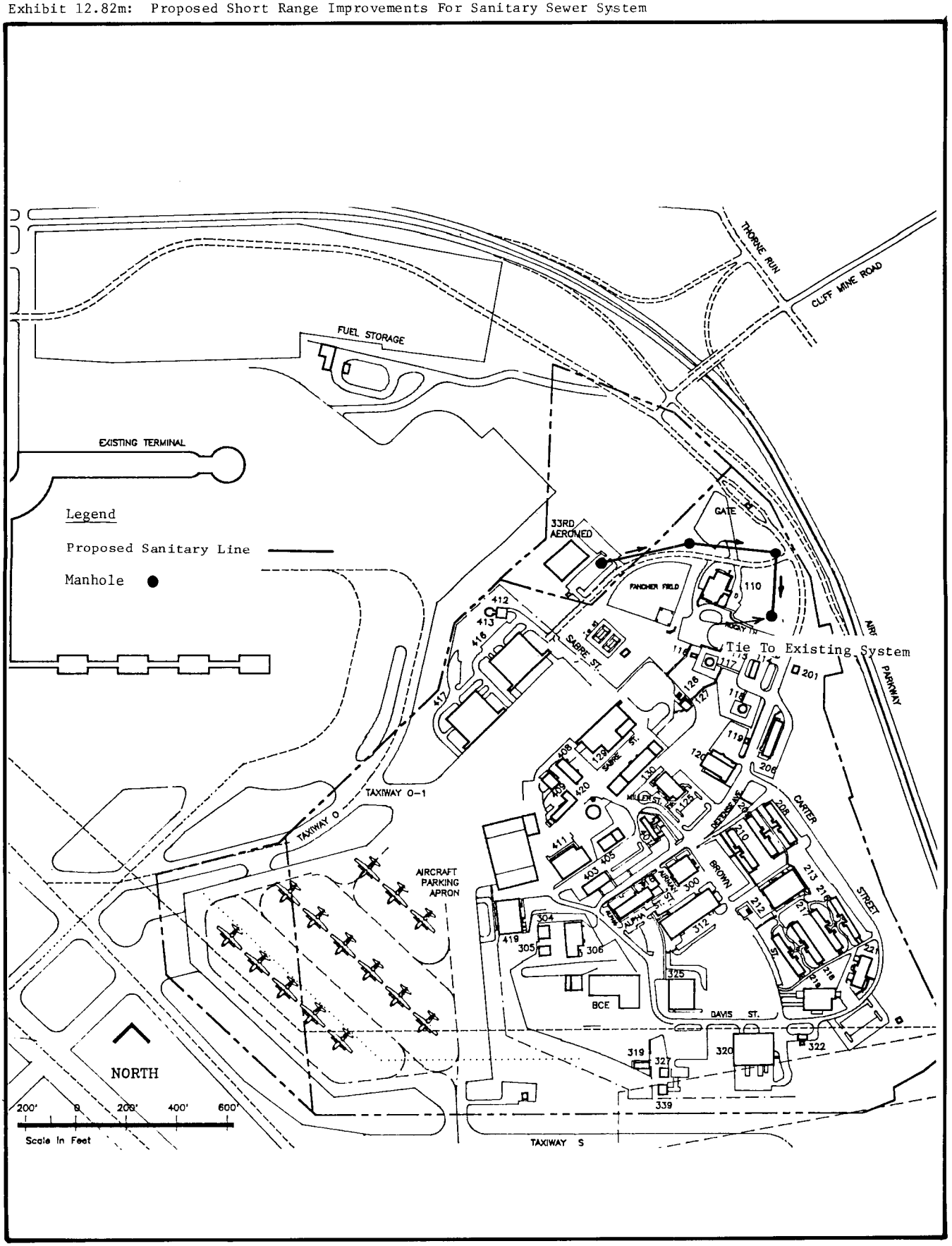


Exhibit 12.83m: Proposed Long Range Improvements For Sanitary Sewer System

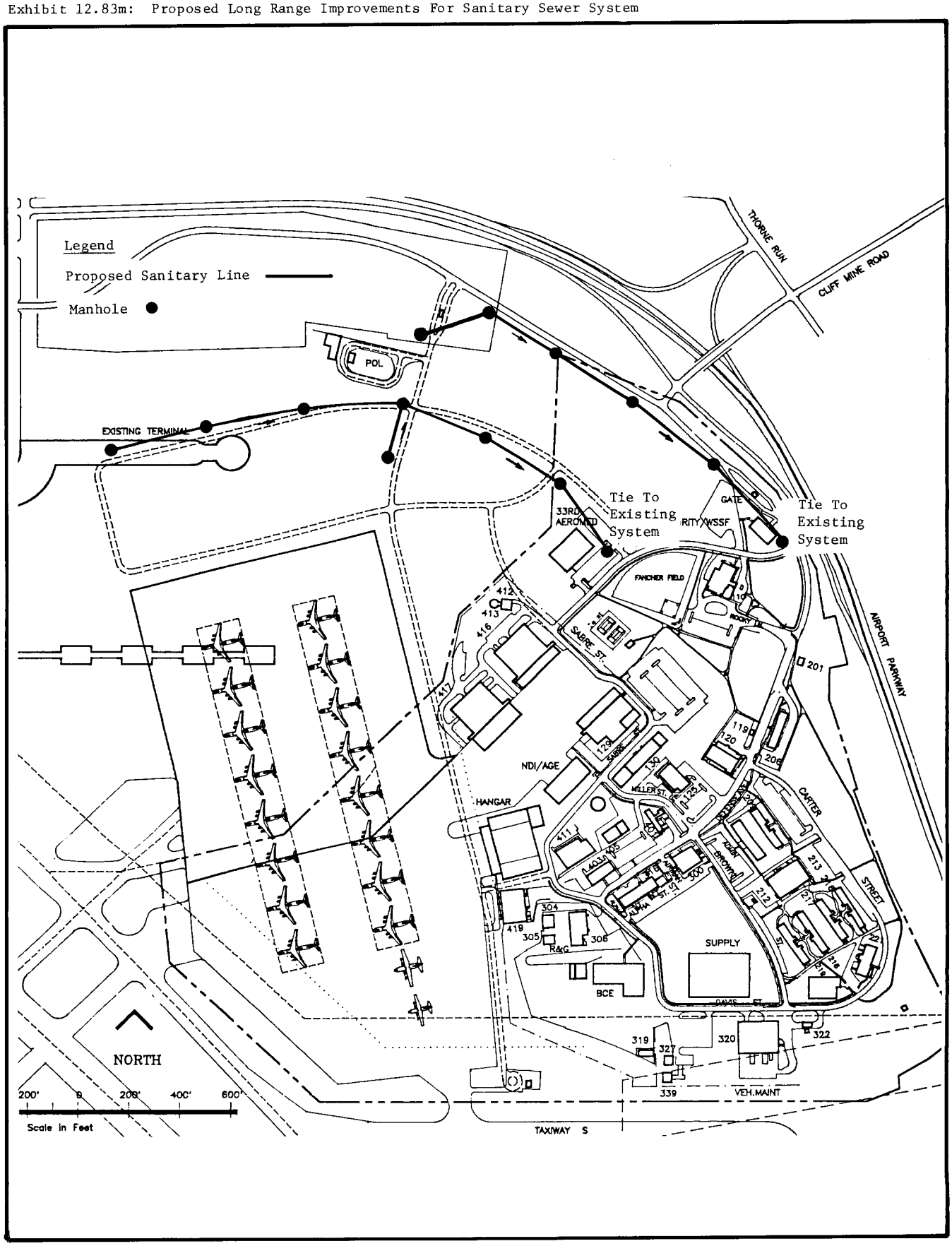


Exhibit 12.84m: Proposed Short Range Improvements For Water Distribution System

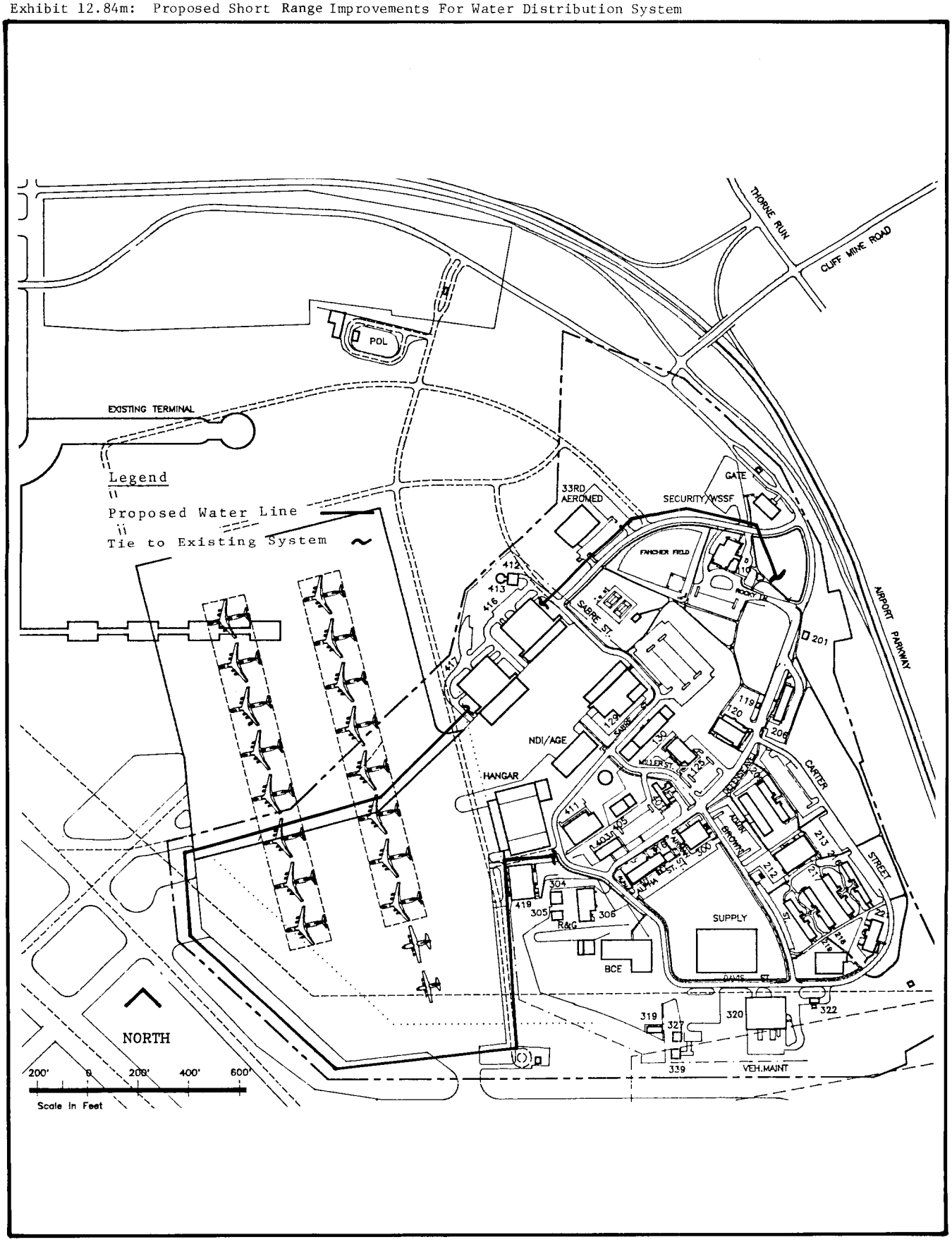
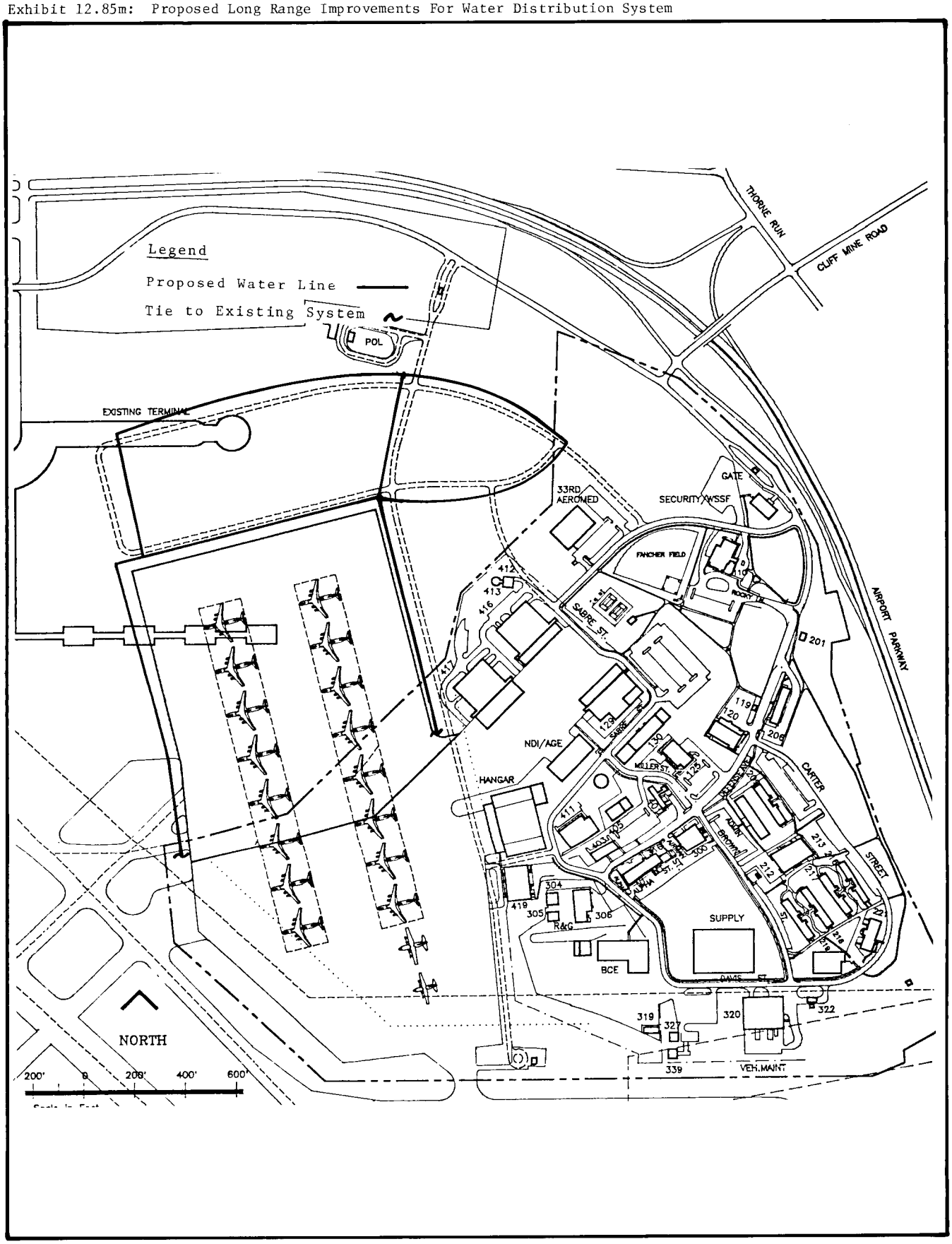


Exhibit 12.85m: Proposed Long Range Improvements For Water Distribution System



ELECTRIC DISTRIBUTION PROPOSALS

The improvements which were recommended earlier in this chapter for the electric distribution system on the Pittsburgh Air Force Reserve Base include 1)building a tie between the north and south feeders, 2)replacing the old gang operated switches, 3)adding automatic start to the generator at the phone center and 4)placing all new lines underground as well as lines which require rebuilding and/or upgrading. Detailed descriptions of the proposals for these existing needs and for the short and long range needs are found in the following text.

...The existing needs of the Pittsburgh AFRES electric distribution system include the following:

Install approximately 850 feet of underground cable along Davis Street from building #320 to the existing Engineering Building #328. This will allow the north and south feeders to be tied together in case on an emergency, thus taking advantage of both vacuum breakers at the substation.

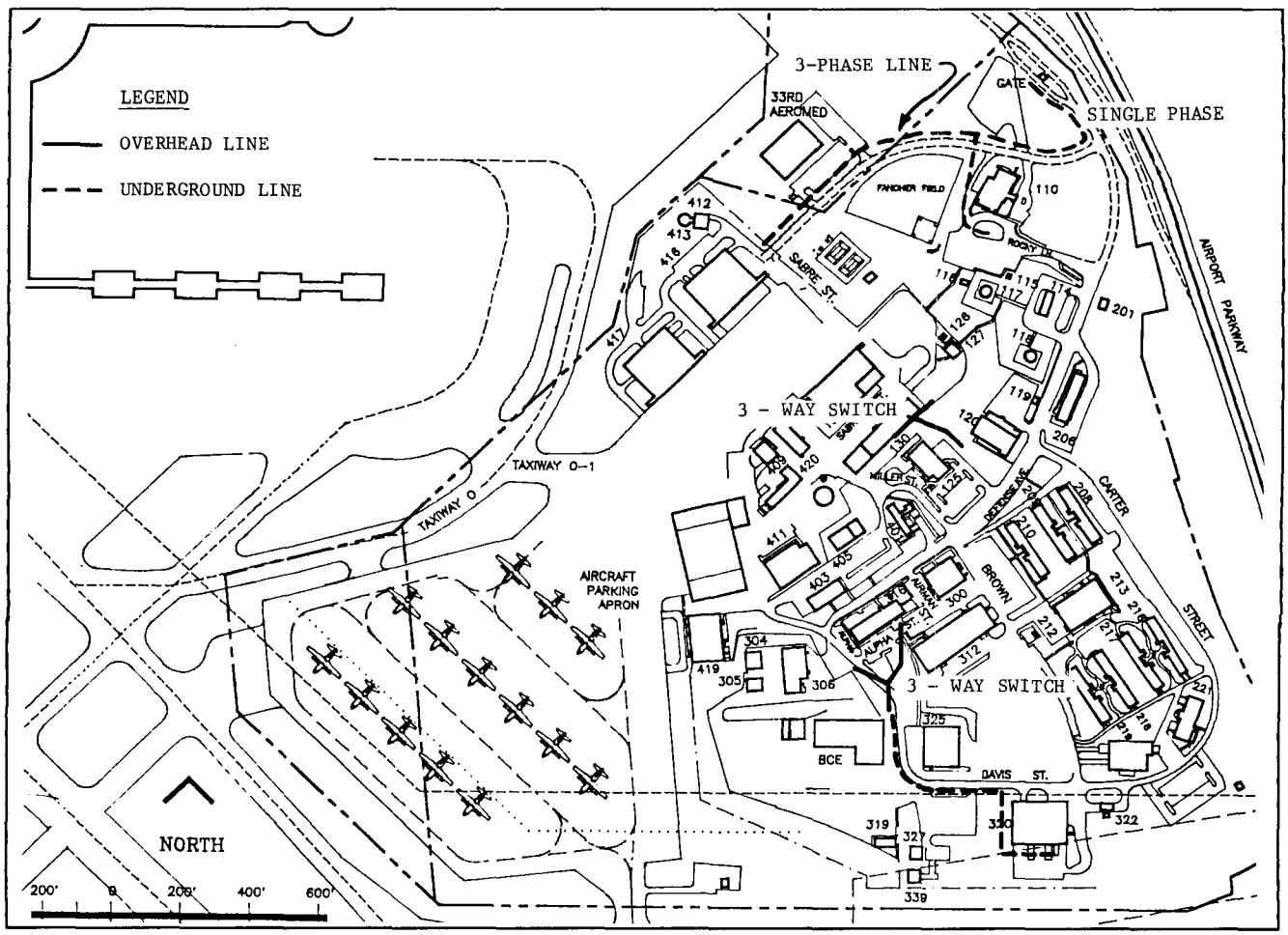
Add automatic starting to the generator at the phone center because of the critical nature of the communication system.

Replace the old gang operated switches with two sets of 3-way pole mounted switches while the overhead system is in place. These are noted on the exhibit below and will give much more flexibility in switching the load around, especially after the tie is installed between the north and south feeders. When the lines are placed underground, pad mounted switches such as the one shown on the next page can be used. The McGee-Tyson Air National Guard uses these switches extensively in their open-loop distribution system.

Exhibit 12.87t: Existing Electric Distribution Recommendations and Proposals

...Existing Recommendations ...Build a line between the north & south feeders ...Replace the old gang operated switches ...Add automatic start to the generator at the phone center ...Work toward total underground
...Short Range Proposals ...Install a feed to the new gate area ...Install a feed to the 33rd Aeromed area
...Long Range Proposals ...Remove the line from the recreational area ...Install a second substation ...Install underground cable around Loop Road

Exhibit 12.86m: Existing and Short Range Electric Distribution System Proposals



Establish a goal to place all lines underground. The most practical way to accomplish this is to install all new lines underground. And, when a section of line requires moving or rebuilding, design the replacement as an underground facility.

SHORT RANGE PROPOSALS

During the short range, the electrical system can be upgraded according to the above recommendations. One noteworthy adjustment is that the recommended construction of a line between the south feeder at building 320 and the north feeder at the existing engineering building should follow the proposed Davis Street. This is noted on the map to the left.

A feed will be required to serve the new gate, security building and 33rd Aeromed. The preferred route is to install three phase underground cable from the Officer's Club north to the new road, then west and south to Sabre St. This will also serve the long range expansion area. The new gate and security building can be served by the single phase, direct buried, line shown on the map to the left. These underground lines will cost approximately $87,350.

...1,050 feet of cable in duct @$59/ft.....$61,950
...600 feet of single phase cable @$29/ft.....17,400
...2 manholes @ $4,000.....8,000
TOTAL $87,350

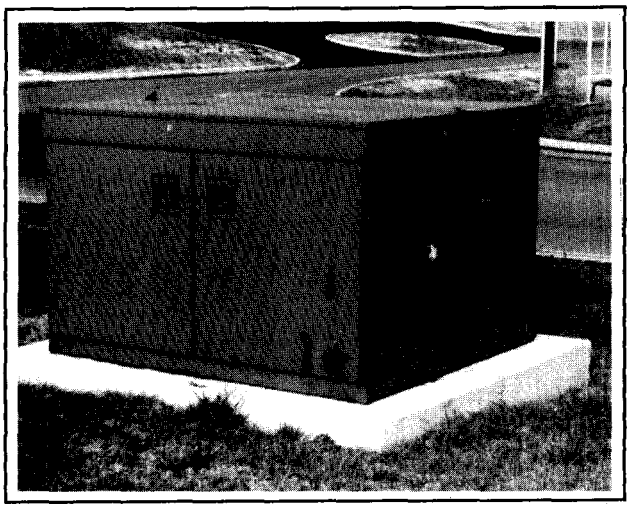
LONG RANGE PROPOSALS

The map below shows the long range plan for the Base. Many of the required electric distribution changes will be made in conjunction with construction of the new buildings.

At the present time, a pole line extends through the enlarged recreational area. It will be necessary to remove that portion of line, as shown on the map below. This removal will cost about $2,500.

...Remove poles and wire.....$2,500

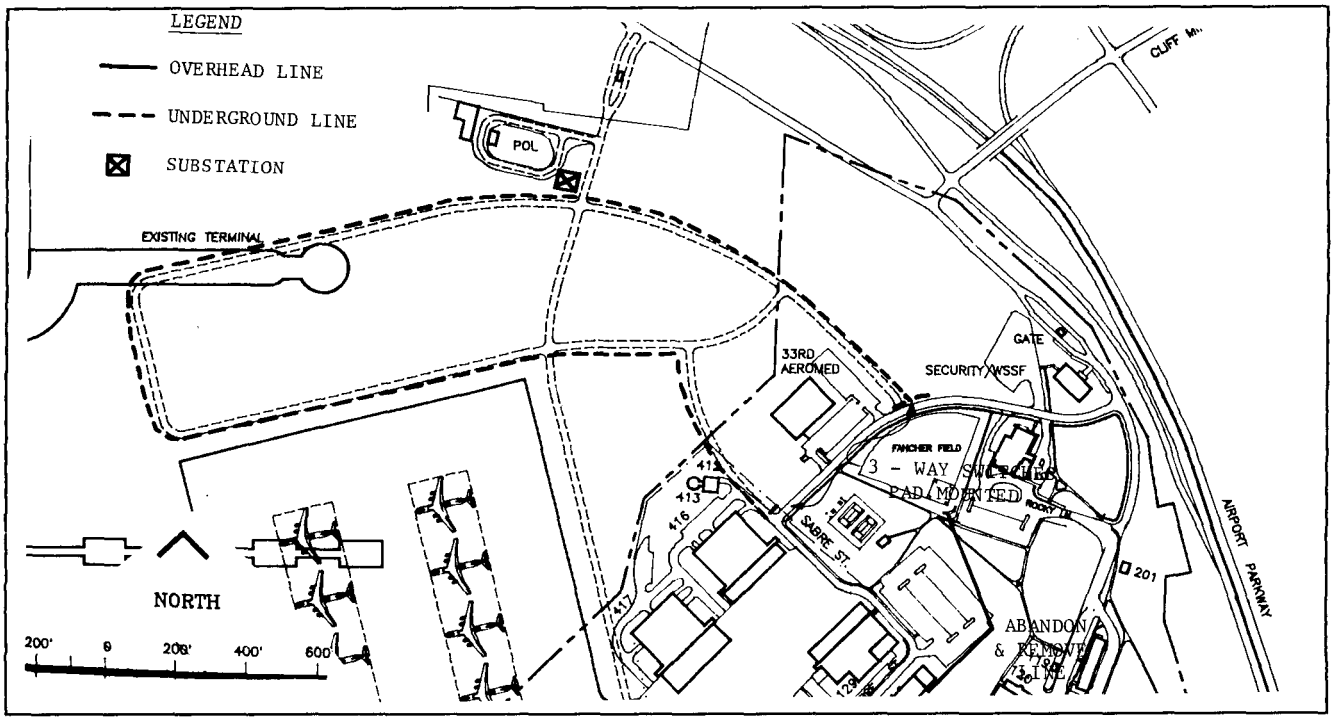
Exhibit 12.89p: Pad Mounted 3-Way Switch on the McGee-Tyson Air National Guard Base



When the Base facilities are extended into the existing terminal area, that load can best be served by contracting with Duquesne Light for a second substation. A possible site is shown on the map below along with a very preliminary underground route along the Loop Road which should tie with the existing lines as shown. If constructed, this will cost an estimated $379,000.

...Substation site and breakers.....$60,000
...4,800 feet of cable in duct @59/ft.....283,200
...9 Manholes @4,000.....36,000
TOTAL $379,200

Exhibit 12.88m: Proposed Electric Distribution System



OUTDOOR LIGHTING PROPOSALS

The outdoor lighting on the Pittsburgh AFRES base is primarily for security purposes. The recommended improvements include installing 1)high pressure fixtures on Carter and Brown Streets, 2)two additional lights on the west side of Headquarters, 3)five 150 watt HPS fixtures in the dormitory area, 4)eight flood lights for the Apron and 5)two flood lights for the hillside beside the parking apron.

...The existing lighting needs of the Base are further explained as follows:

Install High pressure sodium fixtures on Carter and Brown Streets as noted and two additional lights on the west side of Headquarters.

Install five 150 watt HPS fixtures in the dormitory area for reasons of safety and security.

The aircraft parking apron should be lit with 400 watt high pressure sodium flood lights. 150 watt HPS floods can be aimed down the adjoining hillside for security against trespassers.

SHORT RANGE PROPOSALS

The lighting additions listed before will accommodate most of the Base needs for the short and long range. Other lighting requirements are noted below.

Davis Street should become more traveled in the future. Two additional sodium vapor street lights will complete the security lighting of that street. The recommended locations are shown on the map below.

...Two 250 wt HPS lights with poles @675.....$1,350

When the new gate is installed, flood lighting can be utilized to the benefit of the security force.

...Two 150 wt HPS flood lights & poles @625....$1,250

When the road is built in front of the Aeromed, lighting should be installed to enhance the area. Though somewhat preliminary, the map below shows three high pressure sodium fixtures on that street.

...Three 250 wt HPS lights with poles @675.....$2,025

Exhibit 12.90m: Existing and Short Range Lighting Needs

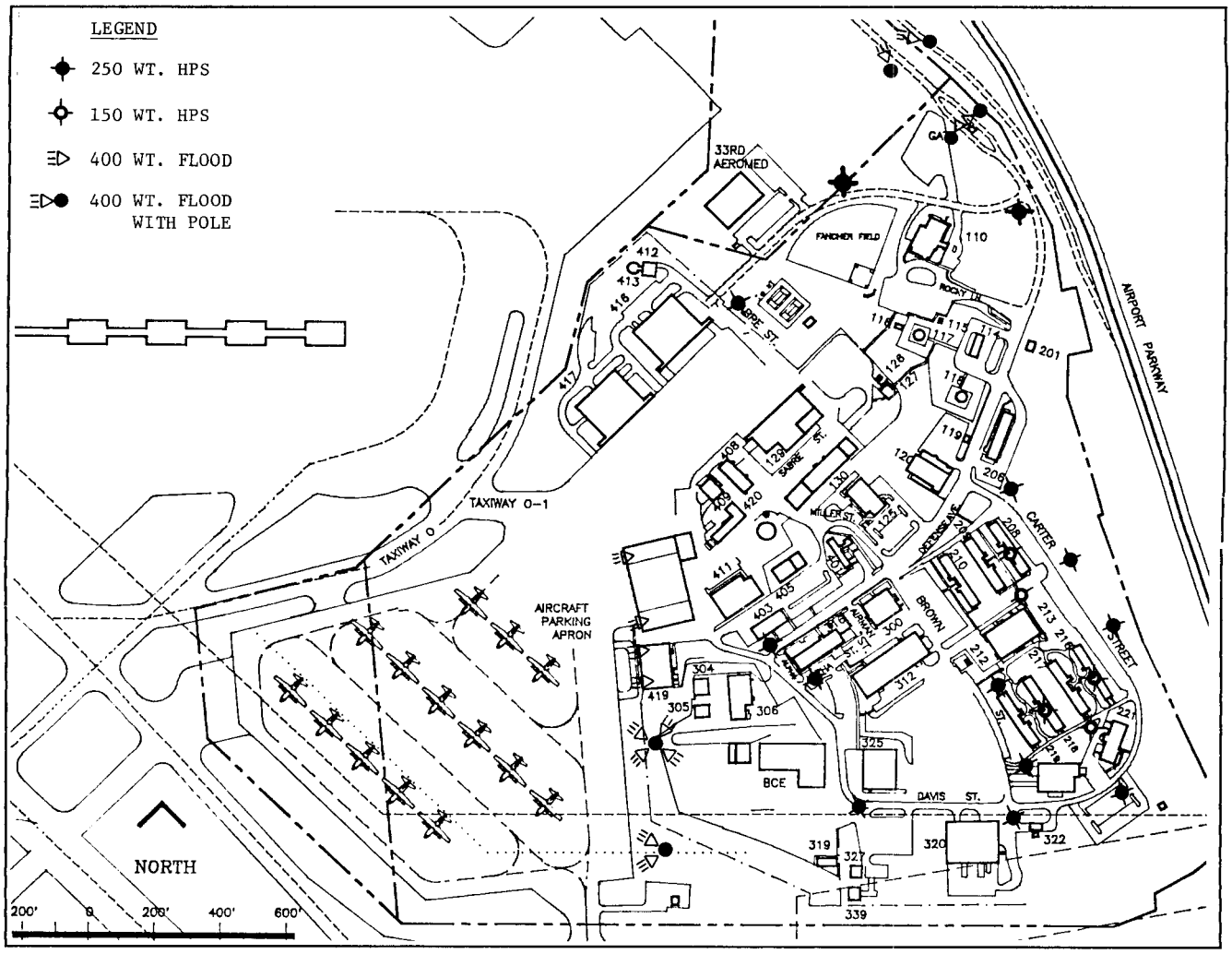


Exhibit 12.91t: Lighting Recommendations & Proposals

...Existing Recommendations ...Install 6 lighting fixtures on Carter & Brown ...Install 2 lighting fixtures by Headquarters ...Install 5 lighting fixtures in dormitory area ...Install 8 flood lights for Apron with 2 Poles ...Install 2 flood lights for the Hillside
...Short Range Proposals ...Add two lights on Davis Street ...Add two flood lights at the New Gate ...Add 3 lighting fixtures in the Aeromed area
...Long Range Proposals ...Add 3 poles and 6 floods for the extended apron ...Add 4 lighting fixtures with poles on Loop Road

LONG RANGE PROPOSALS

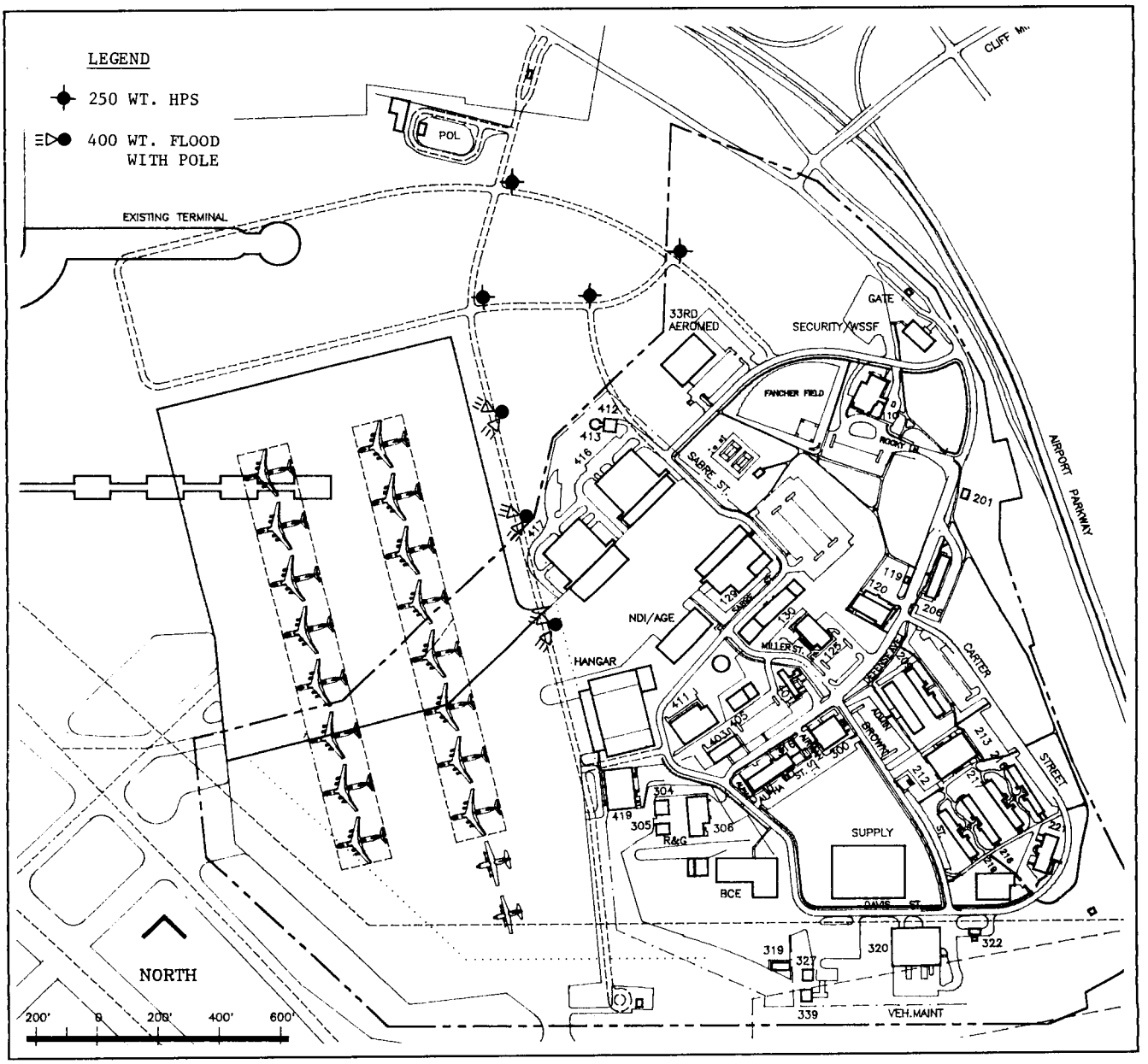
The extension of the apron during the long range will necessitate the installation of three poles and six flood lights. The approximate locations are noted on the map below.

...3 steel poles @3,800.....$11,400
...Six 400 wt HPS flood lights @315.....1,890
TOTAL $13,290

When the Loop Road is completed in the present terminal area, lighting should be installed as the facilities are designed. The four fixtures shown on the map below will be needed to illuminate the respective intersections.

...Four 250 wt HPS fixtures with poles @625....$2,500

Exhibit 12.92m: Proposed Outdoor Lighting Additions



Chapter XIII

COMMUNICATIONS PLAN

FOR THE PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

COMMUNICATIONS

This section includes COMMUNICATIONS, NAVAIDS, METEOROLGICAL FACILITIES, FIRE ALARMS and SECURITY ALARMS. Many of these systems are also included in the Pittsburgh Air Force Reserve (AFRES) Base Information Systems Plan (BISP) dated 22 January, 1986. The BISP is incorporated herein by reference and major points are summarized in this section. Additional information was obtained from existing base and vendor record documents. Field verification and updating of record documents provided were accomplished through personal observation and discussions with key AFRES Base personnel during the October, 1986 site visit and since.

COMMUNICATIONS

The Pittsburgh AFRES Base Communications System includes the Telephone System, Commercial Telephone Services, Telecommunications Center, Information Systems and Intra-Base Radio (IBR) Systems.

Telephone System

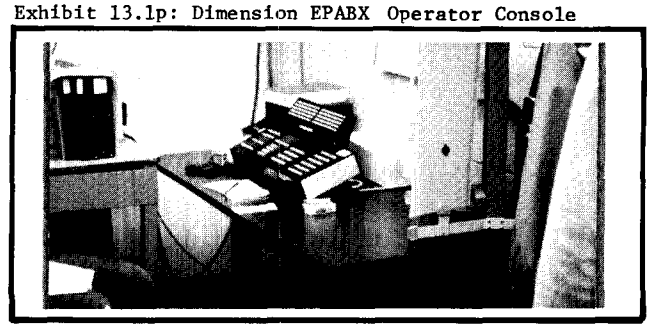
The Telephone System includes the Switching System, the Outside Plant Cable Distribution System and the Customer Premise Equipment (CPE).

Switching System

Pittsburgh AFRES Base's telephone switching system makes the appropriate connections to route calls to their desired destinations. The AFRES Base switching system also serves the Pennsylvania Air National Guard (ANG) Base. The system is a Dimension 600 Electronic Private Branch Exchange (EPABX) owned and maintained by AT&T Information Systems (ATTIS), 3 Bala Plaza, 7th Floor, Bala Cynwyd, Pennsylvania. The Dimension 600 is provided under CSA F30637-84-C-0529, P00002.

The switching equipment (see exhibit at right) is located in the Communications Center (Building 405). The system has approximately 650 telephone numbers in use at this time including 300 assigned to the ANG Base. The Dimension 600 is arranged to allow on-site entry of station and line related administrative changes such as drops, adds and modifications of classes of service. The Dimension EPABX is equipped to automatically record and print out call details for all long distance calls.

Exhibit 13.1p: Dimension EPABX Operator Console



Connection of the Pittsburgh AFRES Base telephone system to the commercial telephone network is via Bell Telephone Company of Pennsylvania's (Bell of PA.'s) Coraopolis Exchange.

Four (4) Two-Way, Direct Inward/Outward Dialing (DIOD) trunks allow local Coraopolis telephone access. Ten (10) Foreign Exchange (FX) lines provide the base local Pittsburgh telephone access.

Access to the AUTOmatic VOice Network (AUTOVON) is via fifteen (15) AUTOVON trunks. These include six (6) Network In-Dial (NID) and nine (9) Network In/Out-Dial (NIOD) Common User trunks. One (1) of the NIOD trunks is equipped for precedence pre-emption.

The Dimension EPABX's Operator Console (see exhibit, above) is located in the Building 405 telephone equipment room. Base Telephone Operators provide information and assistance as well as completing toll calls.

Access to the commercial toll telephone network from on-Base, non-coin telephones is closely controlled. Lines with Direct Digit Dialing (DDD) toll access are provided to Commanders of Pittsburgh AFRES and ANG bases as well as for AFRES Base Contracting and Reserve Recruiting offices. All other access to the DDD network is controlled by the Base Telephone Operator. Manual and automatic records are made of each call to ensure proper allocation of charges.

Outside Plant Cable Distribution System

Pittsburgh AFRB's telephone outside plant cable distribution system (see exhibit, facing page) provides connection to and between the various base facilities for purposes of telephone communications as well as for data, control, monitoring, alarm and signal circuits. The system is owned and maintained

Exhibit 13.2p: Dimension 600 Switching Equipment

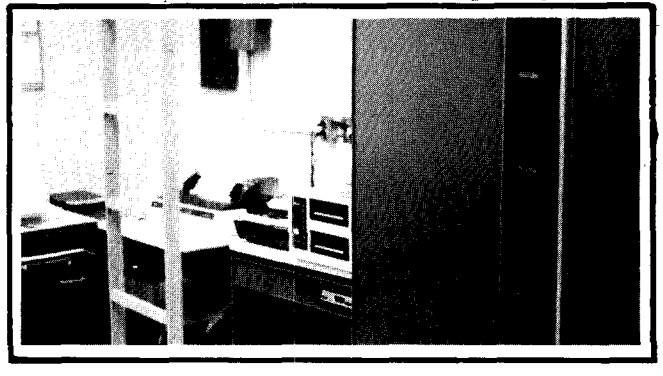


Exhibit 13.3m: Base Communications System

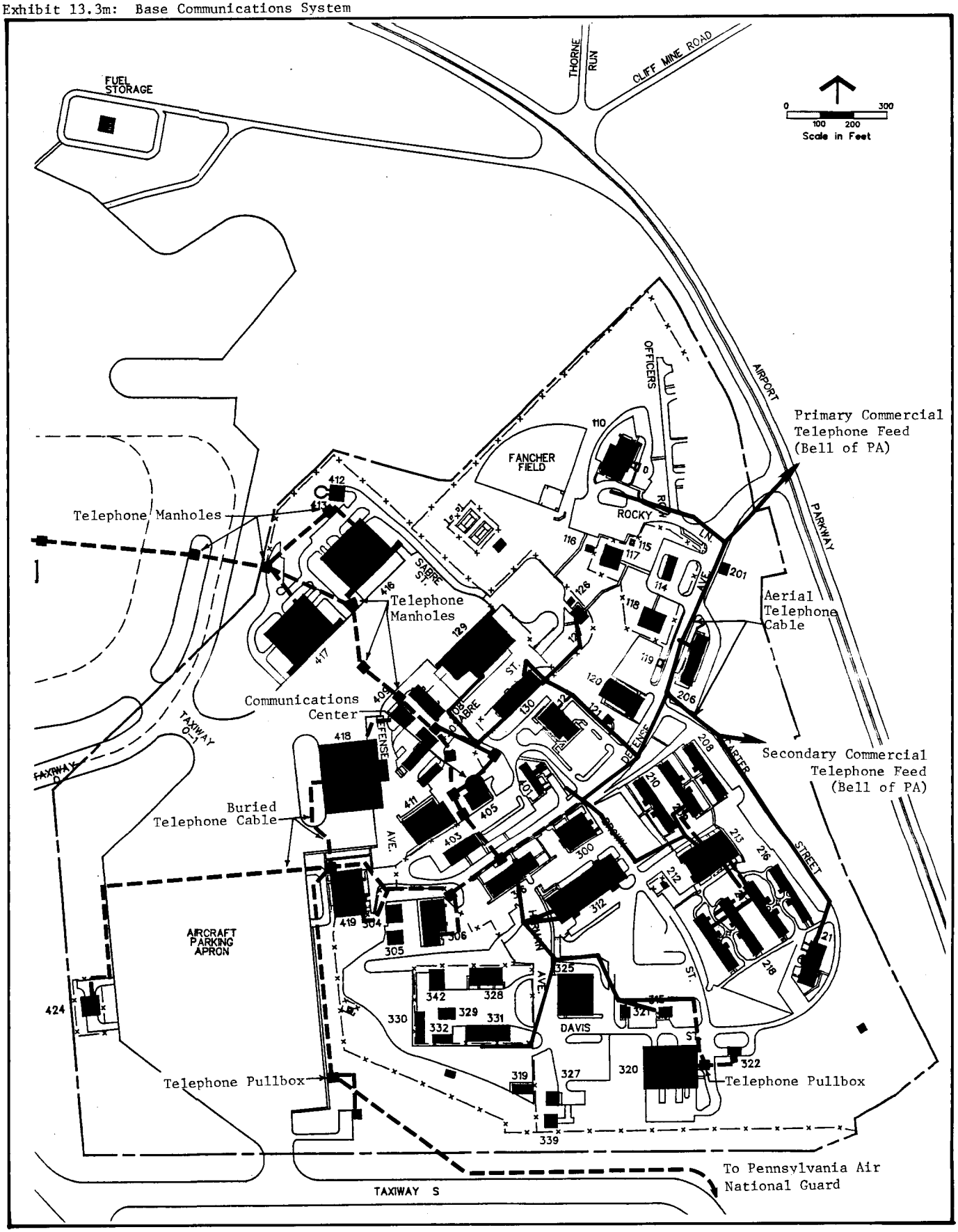
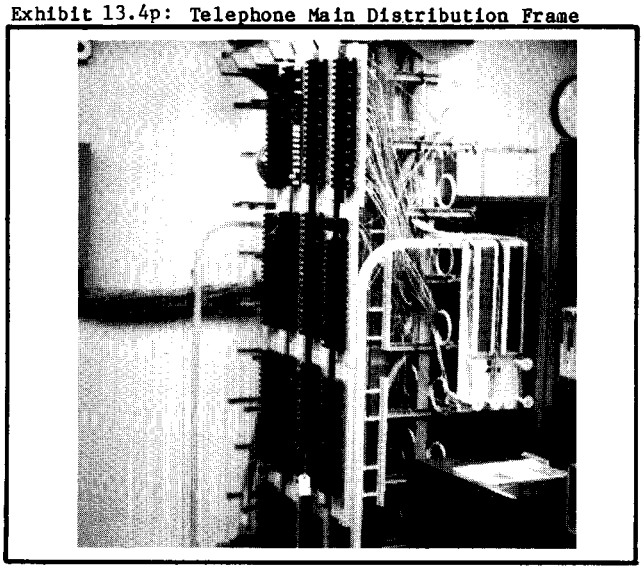


Exhibit 13.4p: Telephone Main Distribution Frame



by Bell Telephone Company of Pennsylvania, 1 Presidential Boulevard, Suite 215, Bala Cynwyd, Pennsylvania.

The outside plant cable distribution system is a combination of aerial (see exhibit, above right), direct-buried and cables in conduit. Connectivity to the ANG Base is provided by a four hundred (400) pair buried cable.

The interface point between the ATTIS-owned telephone switching system and Bell of PA.'s outside plant cable distribution system is the Main Distribution Frame (MDF) (see exhibit, above). Primary over-voltage protection (carbon gap protectors) is provided at the MDF for each of the approximately fifteen hundred (1500) outside plant cable pairs terminated thereon. The MDF is located in the telephone switchroom in Building 405 and provides access to telephone cable pairs for purposes of switching, testing and interconnection.

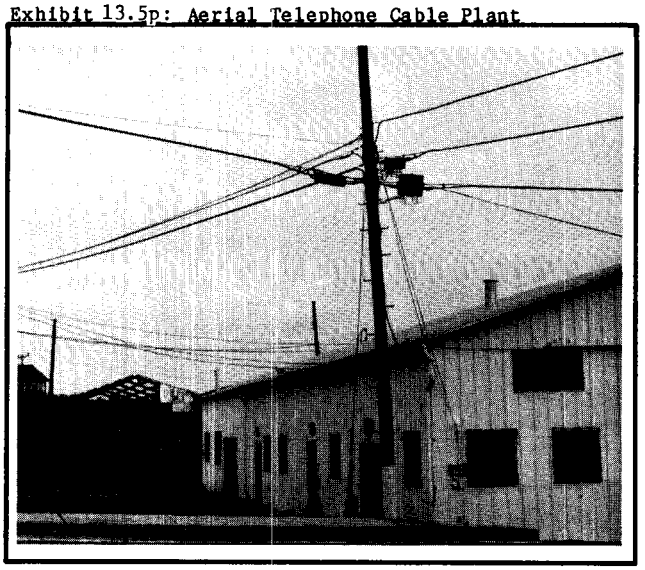
The 1500 cable pairs terminated at the Pittsburgh AFRES Base MDF include one hundred (100) Central Office (C.O.) feeder pairs which connect Pittsburgh AFRES Base telephone system to the off-base world.

The primary C.O. feeder cable emerges from a manhole in the Bell of PA. underground conduit route along Airport Parkway and enters the base near the Main Gate. A secondary C.O. feeder cable is an older, direct-buried cable routed from the ANG side of the airfield. Primary and secondary C.O. feeds enter the AFRES Base outside plant cable distribution system near the Main Gate and are routed to the Building 405 Communications Center.

Customer Premise Equipment

CPE at Pittsburgh AFRB is a combination of Government-owned and contractor-provided devices. All single line telephones on base are Government-owned. Approximately four hundred eighty-six single line telephones are in use. Multi-line telephones and special equipments are provided under contract. Special equipments at the Base include the Fire Alarm reporting and recording systems at the Greater Pittsburgh IAP Fire Station and Base Main Gate and Fire Reporting Telephones. Equipment for Primary and Secondary Crash circuits are also leased.

Exhibit 13.5p: Aerial Telephone Cable Plant



Commercial Telephone Services

Commercial telephone services at Pittsburgh AFRB include, in addition to the privately-owned portions of the base telephone system as described above, on-Base Public Coin Telephones, leased lines and circuits. Leased lines and circuits serve monitoring and control functions such as Primary and Secondary Crash Circuits, Alert Horn and Siren, Fire and Security Alarms, Base Operations Electrowriter, data lines and control circuits for IBR Systems and UHF Air-to-Ground/Ground-to-Air Radio.

Telecommunications Center

The Telecommunications Center, Pittsburgh AFRB's message center, is located in Building 405 (see exhibit, below). It provides secure record (narrative and data) communications and connects to the AUTOmatic Digital Network (AUTODIN).

Information Systems

Information Systems at PAFRB include a variety of systems. The Automatic Data Processing (ADP) Center,

Exhibit 13.6p: Communications Center (Building 405)

Exhibit 13.7t: RJETS Terminals

Using Organization	# of Terminals
Supply	6
Maintenance	5
Military Personnel	2
Civilian Personnel	2
Information Systems	2
Operations	2

also located in Building 405, is provided a Sperry System 11 computer (see exhibit, below). The system is connected to a host Sperry 1100/60 mainframe computer at Reese AFB, Lubbock, Texas via two (2) dedicated, full-period, 9600 baud circuits (one provided by AT&T, the other by Western Union).

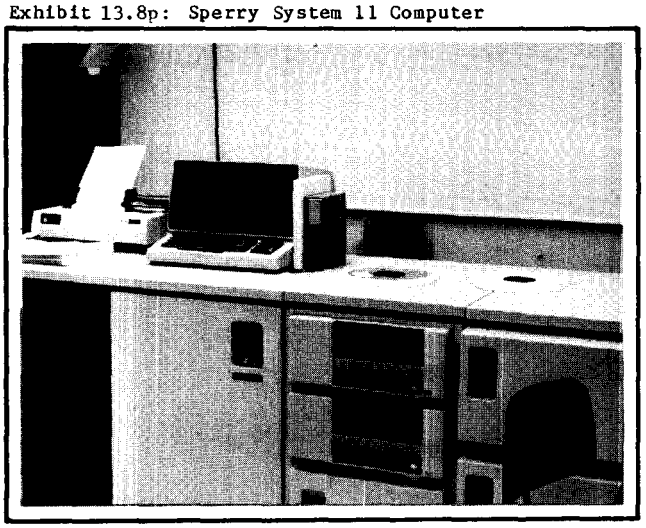
Nineteen (19) Remote Job Entry (RJETS) Terminals (see exhibit, above) provide on-base organizations access to the various management information systems in support of their activities.

In addition to the above systems, the base utilizes over thirty personal computers in day-to-day support of operations. The majority of these units are Zenith Model 100s with a handful of the more powerful Zenith 150 and 248 types. Two (2) portable Televideo XLs are in use. The quantity of personal computers in use on base is continually increasing. Some of these units utilize data communications equipment (see exhibit, above right) to interconnect with other systems.

Intra-Base Radio Systems

At Pittsburgh AFRES Base six (6) IBR nets are in use. Nets provided include Base Civil Engineering, Security Police, Motor Pool, Disaster Preparedness, Maintenance Control and Supply. IBR equipment is purchased by using organizations with maintenance provided under contract by Pittsburgh Communications Service, 9450 Perry Highway, Pittsburgh, PA 15237.

Exhibit 13.8p: Sperry System 11 Computer



Most Intra-Base Radio equipment at the Base is old and has become difficult to maintain. In addition, newer systems offer improved security through application of Defense Encryption Standard (DES) techniques. These considerations are motivating replacement of existing IBR systems with newer units as funds become available. The Security Police net has been provided the first new equipment (see exhibit, below). The new systems are not only more reliable but should give better coverage. Proposed new antenna locations promise further improvements in coverage.

COMMUNICATIONS NEEDS

The most pressing need of the Pittsburgh AFRES Base Communications System is more floor space for the Building 405 Communications Center. The Air Force-wide consolidation of Communications-Electronics and Data Processing organizations has resulted in serious overcrowding in this facility. Preliminary layouts for a building addition have been drawn. These plans should be finalized and the addition built as soon as possible to improve the functionality of this critically important organization.

The Dimension 600 Telephone Switching System is approaching the limits of its capacity. Continuing growth in telephone requirements promises to surpass these limits in the near future. This will necessitate replacement of the switching system.

The Outside Plant Cable Distribution System includes many aging aerial cables which suffer moisture-related degradation leading to poor voice performance and unsuitability for data service. Current telephone practices call for use of buried cables with moisture-retardant filling. Such cables offer improved performance and reliability with less maintenance. It is recommended the AFRES base utilize buried, filled telephone cables for all cable plant additions and replacements. Migration to a buried, filled outside cable plant will also improve the appearance of the base by reducing the amount of visible aerial cable plant.

The current program of replacement of IBRs should be completed as soon as possible. Early elimination of existing, older systems will result in reduced maintenance costs while improving serviceability.

Exhibit 13.9p: Security Police IBR Base Station

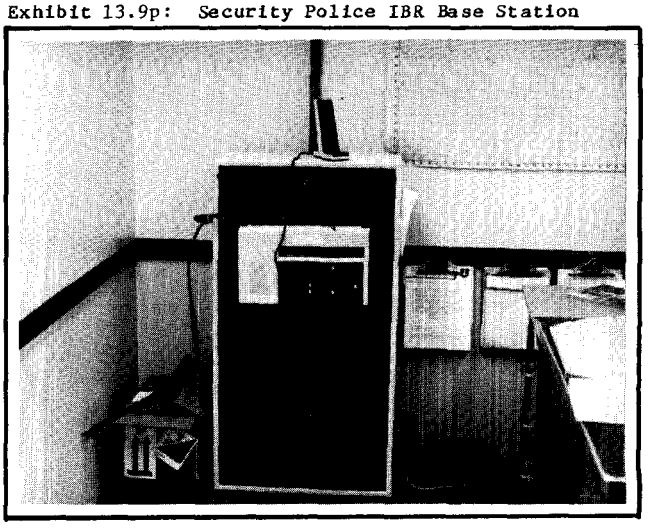
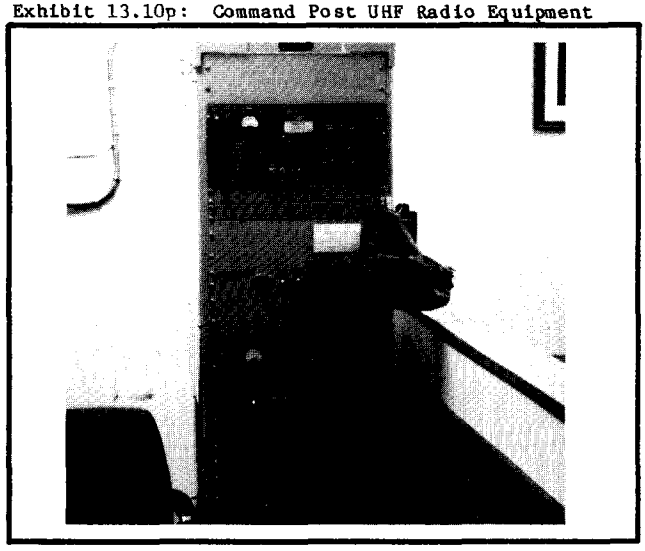


Exhibit 13.10p: Command Post UHF Radio Equipment



NAVAIDS

Greater Pittsburgh IAP provides virtually all of the NAVAIDS required for the Base. The only such systems provided by Pittsburgh AFRB are the UHF (Ultra High Frequency) Air-to-Ground/Ground-to-Air Radio transceivers (see exhibit, above). The units provided are AN/GRC-171s.

NAVAIDS NEEDS

The existing AN/GRC-171 units are adequate to their required functions.

METEOROLOGICAL FACILITIES

Pittsburgh AFRES Base Meteorological Facilities are provided by Greater Pittsburgh IAP. The sole such system equipped at the Base is the ElectroWriter which allows flight crews to obtain up-to-date information from the weather service.

METEOROLOGICAL FACILITIES NEEDS

A dial-up weather radar display would provide more complete weather information.

FIRE ALARMS

Pittsburgh AFRB's existing fire alarms report to the Main Gate House utilizing telephone cable pairs. Alarms are forwarded to the Fire Station at Greater Pittsburgh IAP where they are recorded (see exhibit, below). Although most on-base facilities have detectors (see exhibit, right) many units are fuse link type. The alarm panel at the Gate House and alerting and recording equipment at the IAP Fire Station are extremely old.

FIRE ALARM NEEDS

The base needs a major upgrade of its fire alarm system. While the fire alarm panel at the Main Gate is programmed for replacement, the existing wire-based system will experience continuing cable-related problems. To solve these problems and improve the fire alarm system's expandability and ability to meet changing needs, replacement of the present wire-based system with a radio-based system is recommended. Modernization of recording facilities at the IAP Fire Station and addition of a recording unit at the Allegheny County Fire Station would be facilitated by the proposed radio-based system.

In improving the fire alarm system, all fuse-link detectors should be replaced with combination rate-of-rise/fixed temperature type detectors. Current regulations (AFR 88-15) require combination heat and smoke detectors in living quarters. Existing units should be upgraded to the required types which give a local alarm only upon sensing smoke but signal the main reporting panel when the heat detector is activated.

SECURITY ALARMS

A limited number of Pittsburgh Air Force Reserve Base facilities are protected by security, or intrusion, alarms. Only those areas deemed to be of a critical nature and subject to possible intrusion attempts are protected.

Three (3) weapons vaults are protected by alarms. Those include the Security Police weapons vault, the Mobility weapons vault and the Weapons Systems vault.

In addition to protection of weapons, those base facilities having amounts of money are provided alarm protection. Those locations include the Base Exchange, Finance Office, the Combined Open Mess and the Credit Union.

SECURITY ALARM NEEDS

Although existing security alarms at AFRES Base are adequate to their required functions the main panel and recorder at the Main Gate are old units and difficult to maintain. Replacement of the Main Gate panel with a programmable annunciator with print-out capability is recommended to improve security alarm reliability and responsiveness to continually changing needs.

Exhibit 13.11p: Fire Alarm Recording Equipment at IAP

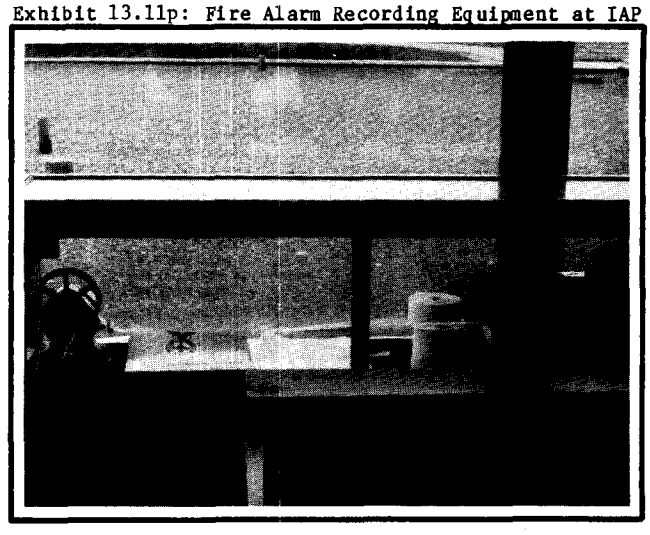


Exhibit 13.12t: Pittsburgh AFRES Base Fire Alarms

Building Number	Building Use	Type of Alarm System	Battery Backup System Provided?	Reports to Main Gate and County Fire Department
110	Club	Auto Call	Yes	Yes
114	Pump Station	Fire Lite	Yes	Yes
120	Gym	Lord Taber	No	Yes
125	Avionics	Faraday	No	Yes
127	Fuels Lab	Faraday	No	Yes
129	Maintenance Dock	Notifier	Yes	Yes
130	Aerial Port	Faraday	No	Yes
206	VOQ	Pyrotronics	Yes	Yes
208	S.P. Ops & Trns	Pyrotronics	Yes	Yes
209, 216	Dorms	Pyrotronics	Yes	Yes
210	D.P., Contracting	Pyrotronics	Yes	Yes
213	Dining Hall	Notifier	Yes	Yes
217, 218, 219	Dorms	Pyrotronics	Yes	Yes
221	Clinic	Faraday	No	Yes
300	BX, Snack Bar, etc.	Pyrotronics	Yes	Yes
306	Maintenance	Faraday	No	Yes
312	Supply	Standard Electric	No	Yes
315		Lord Taber	No	Yes
316	Headquarters	Notifier	Yes	Yes
320	Supply	Fire Control Inst.	Yes	Yes
322	Service Station	Electronic Mgt. Sys.	Yes	Yes
325	Pavement & Grounds	Lord Taber	No	Yes
328	DE Administration	Lord Taber	No	Yes
329, 331	DE Maintenance	Lord Taber	No	Yes
342	DE Supply	Pyrotronics	Yes	Yes
401	Chapel	Lord Taber	No	Yes
403	Civilian Personnel	Pyrotronics	Yes	Yes
405	Communications	Gamewell	No	Yes
408	Parachute	Faraday	No	Yes
409	NDI	Faraday	No	Yes
411	Engine Shop	Faraday	No	Yes
412	Foam Pump House	Notifier	Yes	Yes
416, 417	Maintenance Docks	Notifier	Yes	Yes
418	A/C Shops	Simplex	Yes	Yes
419	Operations	Faraday	No	Yes
420	AGE	Faraday	No	Yes

COMMUNICATIONS PROPOSAL SUMMARY

Existing needs for COMMUNICATIONS, NAVAIDS, METEOROLOGICAL FACILITIES, FIRE ALARMS and SECURITY ALARMS are discussed in the respective report sections. The effects of selected short and long range development proposals upon Pittsburgh AFRES base communications systems primarily involve additions and modifications to the communications cable plant or, Outside Plant (OSP) Cable Distribution System.

Pittsburgh AFRES base's existing communications cable plant is owned and maintained by Bell Telephone of Pennsylvania under contract. Much of Bell's on-base cable plant utilizes aerial cables of considerable age. Moisture-related cable problems are common. Although Bell of PA. provides good service response when problems occur, and their completion of service order related work is timely, the needed major upgrade of on-base cable facilities is unlikely. Despite these shortcomings, charges for the base's use of the continue to increase.

In view of the above considerations, migration to an entirely Government-owned communications cable plant is recommended. In accord with this recommendation, all base cable additions proposed herein are assumed to be Government-owned.

The Communications Proposals presented in this section include communications conduit, cables installed in conduit and direct-buried cables. Where cables are to be installed in conduit the use of expanded insulation, filled construction cables is recommended. All direct-buried cables, however, should utilize solid insulation and filled construction.

Short Range Communications Proposals

Short range base development proposals identify the area north and west of Fancher Field as a location for new and relocated facilities. In addition, modifications to present base traffic patterns are proposed that enhance Defense Avenue's use as the primary entry route to the Headquarters area of the base. To provide communications services to the main base development area, eliminate unsightly aerial telephone plant and minimize future disturbance of Defense Avenue a backbone communications conduit system is proposed (see exhibit, lower right).

The main run of the proposed conduit system will consist of four, four-inch Inner Diameter (4-4"I.D.), concrete-encased polyvinyl chloride (PVC) conduits. The four duct package begins at the Communications Center and extends to a new manhole on the northwest side of Defense Avenue. The four duct package continues along Defense Avenue passing through a second manhole at the intersection with Miller Street and ends in a manhole located between the Gymnasium (Building 120) and Avionics (Building 125).

Two (2) branch conduit runs will extend from the third manhole, both packages being 2-4"I.D. ducts. One conduit run, the main branch, will follow Defense Avenue while the other, the Sabre branch, will route to the northwest and follow along Sabre Avenue toward the new development area.

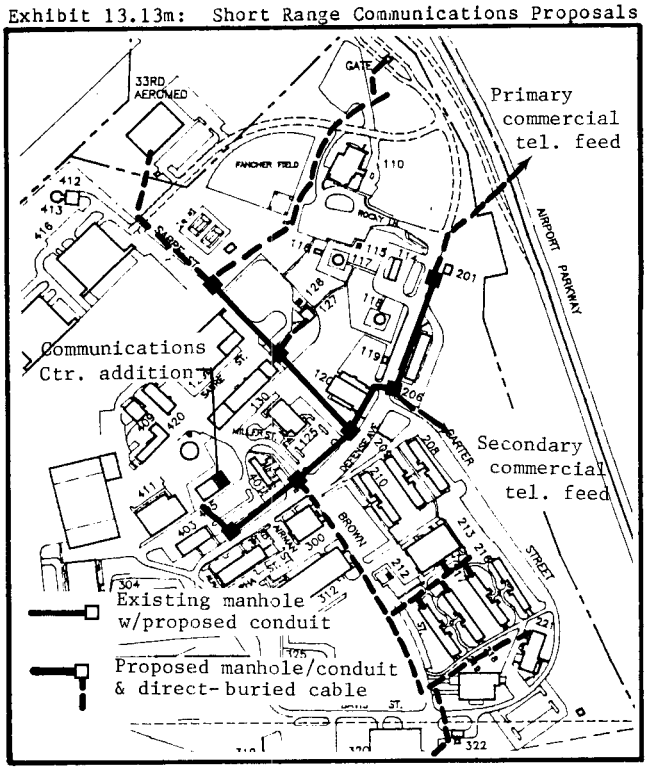
The main conduit branch will extend from the third manhole along Defense Avenue to the Carter Street intersection. The conduit will cross Defense to the north side of Carter where a fourth manhole will be placed. The branch will continue from the fourth manhole along the south and east side of Defense Avenue to a terminal manhole in the vicinity of the existing Main Gate. It is intended this manhole provide the point of interface with the commercial telephone system. The exact location of this manhole should be negotiated with Bell Telephone of Pennsylvania to assure minimum future charges to the Government.

The Sabre branch conduit run will extend from the third manhole towards the northwest passing between Avionics and the Gym and continuing along Sabre Avenue. A manhole will be located beside Sabre Avenue near the Aerial Port Training Facility (Building 130). The branch duct run extends from this manhole to the terminal manhole which will be located across from the Large Aircraft Maintenance Dock (Building 129) and the corner of the ramp.

Between the Communications Center and the first manhole at Defense Avenue, a 2400x24 cable is proposed. From the first manhole to the second manhole an 1800x24 cable is recommended. The 1800-pairs will feed a 1500x24 cable extending to the next manhole and a direct-buried four hundred pair cable proposed to feed along Brown Street.

The Brown Street feeder cable will be placed along the southwest side of Brown Street to just beyond the Dining Hall. From this point a 300x24 cable will be buried across Brown Street and extended between the Dining Hall (Building 213) and the VAQ Dormitories (Buildings 216, 217, 218 and 219). A 50x24 direct-buried cable each will serve Buildings 213, 216, 217, 218 and 219.

Exhibit 13.13m: Short Range Communications Proposals



A 200x24 direct-buried cable will extend along Brown Street from the end of the above 400 pair cable toward Davis Street. Near the Davis Street end of Building 219 the two hundred pair cable will cross Brown Street. Fifty pair direct-buried cables will serve Buildings 221, 320 and the proposed Medical Training Clinic.

A 400x24 cable is proposed between the third and fourth manholes to serve the Primary and Secondary Commercial Telephone Feeds, VOQ (Building 206) and the Infirmary (Building 221). A 300x24 cable is recommended for the last main run conduit section to the terminal manhole near the present Main Gate. Except for the 26-pair feed to Building 221, scheduled for elimination under Long Range Communications Proposals, the entire 300 pairs will be reserved for the Primary Commercial Telephone Feed.

A 600x24 is proposed for the beginning of the Sabre branch conduit run. The 600-pair cable is to extend from the manhole at Defense Avenue to the second manhole near Building 129. This cable will provide the pairs to feed Building 110, the new Gate House and the proposed Security Police/WSSF Facility. Buildings 127 and 130 will also feed from this cable with pairs remaining available for possible future service to Building 129.

A 300x24 cable will be direct-buried from this manhole to a location near the Combined Open Mess (Building 110). This cable will feed Building 110 and a 200x24, direct-buried cable extending toward the new Main Gate. A 100x24 cable will be buried to the new gate house with the remaining hundred pair reserved for the proposed Security Police/WSSF facility as shown under Long Range Communications Proposals, in this section.

A 50x24, direct-buried cable is recommended to be extended from the Sabre branch terminal manhole along Sabre Avenue to serve the proposed 33rd Aeromed building.

Pairs will remain available at the Sabre branch terminal manhole to serve future growth to the northwest and/or possible future feeds to Buildings 412, 413, 416 and 417.

A 100-pair direct-buried cable from existing Manhole #11 near Squadron Operations (Building 419) will serve the proposed hangar.

Long Range Communications Proposals

Direct-buried cables are proposed to serve the area south and east of Defense Avenue. Beginning at the manhole on the northwest side of Defense Avenue near the Communications Center that has been proposed under Short Range Communications Proposals, above, a 600x24 cable will be placed across Defense Avenue.

The 600-pair cable will extend along Defense Avenue toward the southwest to the intersection with Alpha Street near Reserve Forces Operational Training (Building 316). A 400x24 cable will be buried along the northeast side of Alpha Street to serve BCE and proposed Supply Admin/Warehouse. The 200 pairs remaining at the intersection of Defense and Alpha will remain available for extension toward Squadron Operations (Building 419).

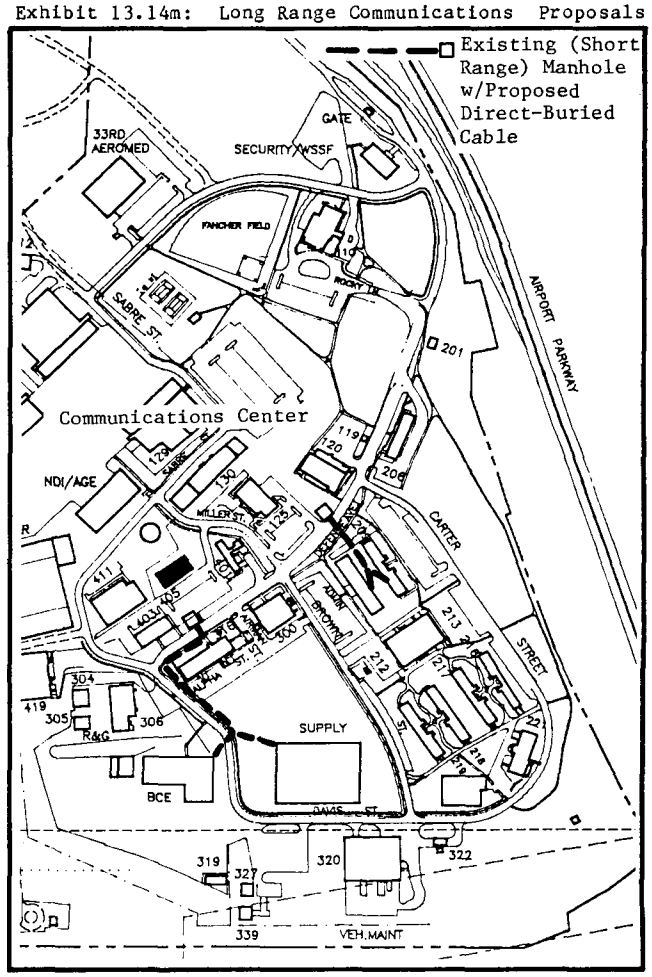
Beginning at the Defense Avenue manhole between Buildings 120 and 125 a 200x24 direct-buried cable will be placed across the street to serve Buildings 209 and 210.

Branching from the 200x24 cable recommended in Short Range Communications Proposals for placement along the proposed new street near the new Main Gate a 100x24 cable will be buried into the new Security Police/WSSF facility.

Exhibit 13.14t: Communications Proposal Cost Summary

Proposal	Cost (thousands)
Short-Range Proposals:	
Placement of Communications Conduit & Manholes	81.6
Placement of Communications Cables	61.0
Short-Range Proposals Total:	142.6
Long-Range Proposals:	
Placement of Buried Communications Cables	17.6
Long-Range Proposals Total:	17.6

Exhibit 13.14m: Long Range Communications Proposals



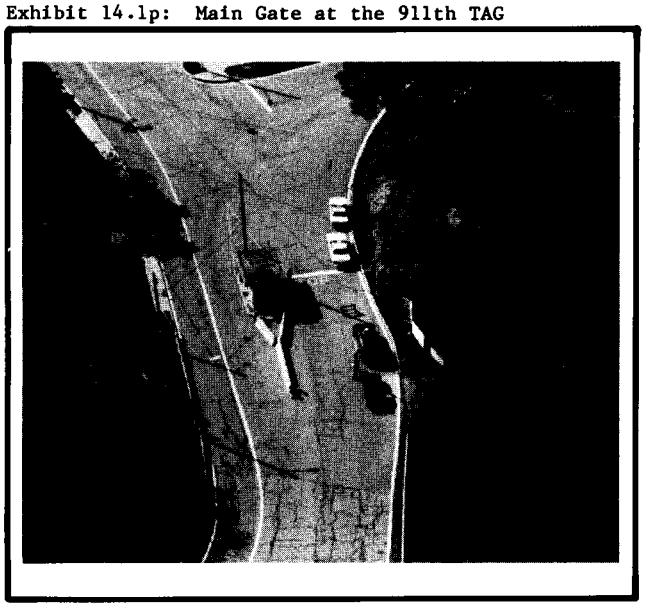
TRANSPORTATION PLAN

FOR THE

PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

Exhibit 14.1p: Main Gate at the 911th TAG



INTRODUCTION

The transportation element of the 911th Tactical Airlift Group (911 TAG) Base Comprehensive Plan (BCP) is presented in five sections, which include:

..Base Transportation System
..Regional Transportation System
..Transportation Needs
..Objectives and Constraints
..Future Transportation Systems
..Plan Summary

BASE TRANSPORTATION SYSTEM

The base transportation system includes all elements that link 911 TAG both internally and externally with the greater Pittsburgh metropolitan area and Moon township. Analyses and recommendations in the BCP are focused upon improving the transportation system's ability to support the base's operational mission.

Points of Contact

In addition to consultations conducted with base civil engineering (BCE) personnel, contacts were made with representatives of public and private transportation and engineering organizations, including:

..Gerald Bunda, Assistant Township Manager
Township of Moon
1000 Beaver Grade Road
Coraopolis, Pennsylvania 15108
(412) 262-1700

..James A. Moorcroft, P.E., Project Manager
Baker Engineers, Inc.
Greater Pittsburgh International Airport
P.O. Box 12443
Pittsburgh, Pennsylvania 15231
(412) 771-1570

..Elmer Jarvis
Mackin Engineering Company
681 Andersen Drive
Pittsburgh, Pennsylvania 15220
(412) 921-5250

EXISTING STUDIES AND RECORDS

A number of transportation studies have been done for 911 TAG, several of which concern the base's access/egress problems. Documents used during the prepartion of the BCP include federal, state, and privately-conducted transportation studies.

MTMC Report TE 82-6a-74: Traffic Engineering Study, Greater Pittsburgh International Airport, Air Force Installation, by Charles T. Cochrane, P.E. and Major Richard Hawthorne, Traffic Engineering Division, Military Traffic Management Command, Transportation Engineering Agency, Newport News, Virginia,

23606.

Greater Pittsburgh International Airport, Base Planning Study Team Report, 911 TAG, Greater Pittsburgh International Airport, Pittsburgh, Pennsylvania, 15231.

Federal Highway Administration Report, by M.A. Marks, Division Administrator, Federal Highway Administration, Harrisburgh, Pennsylvania, 17108.

In addition, planning documents obtained from the Pennsylvania Department of Transportation's (PaDOT) Planning and Traffic Division and Mackin Engineering Company were used to prepare the BCP.

BASE BACKGROUND AND CHARACTERISTICS

The 911 TAG, Air Force Reserve, occupies a 100-acre site on the Greater Pittsburgh International Airport. The primary mission of the group is providing command and staff supervision of tactical airlift squadron and assigned support units engaged in providing support for airborne forces and aeromedical evacuation. The secondary mission is to provide operation and maintenance of base facilities in support of assigned units.

Numerous units are assigned to the Air Force Reserve (AFRES) facility under 911 TAG, including:

..758 Tactical Airlift Squadron
..911 Aerial Port Flight
..911 Combat Support Squadron
..911 Consolidated Aircraft Maintenance Squadron
..911 Tactical Clinic
..911 Communications Flight
..911 Civil Engineer Squadron
..911 Mobility Flight
..911 Weapons Security Flight
..33 Aeromedical Evacuation Squadron

Tenant units based at the AFRES base include:

..1998 Information Systems Group
..United States Army Recruiting
..Tri-State Credit Union
..Army-Air Force Exchange
..Pennsylvania Department of Public Welfare
..3511 Air Force Recruiting Squadron
..Detachment AHOI/Civil Air Patrol - USAF

Total base population is 1,347, of which 1,100 are non-active reserves, 138 active reserves, 73 civilian, and 36 active-duty personnel. Effective base population, which is that figure used for utility requirement analysis, is 670 persons.

About 459 persons normally work on the installation. On weekends when Reserve Unit Training Assemblies (UTA) are held, about 1,347 military and civilian personnel are on base. Automobiles are the only available access mode, as no civilian or military mass transit system serves the facility.

ENTRANCE GATES

The installation is served by one main gate that is manned on a 24-hour per day basis. The gate is located on Defense Avenue about 100' southwest of Pennsylvania Route 60, known as the Airport Parkway.

The parkway is a heavily-travelled 4-lane divided highway, with a raised median that prevents left turns on to the parkway from Defense Avenue. No signal exists at the base's exit, and departing traffic must merge with eastbound parkway traffic.

Traffic counts taken at the base entrance gate are shown in Exhibit 14.2t. These counts show that more than 30 percent of the weekday and 50 percent of weekend traffic at the gate occurs during peak periods.

Exhibit 14.2t: *Main Gate Traffic Counts from 1984 MTMC Study*

Period	Inbound	Outbound	Total
Weekday:			
0700-0800	217	19	236
1600-1700	9	185	195
0000-2400	675	675	1,350
UTA Weekend (Saturday):			
0700-0800	534	20	554
1600-1700	40	530	570
0000-2400	1,202	1,202	2,404
UTA Weekend (Sunday):			
0700-0800	435	15	450
1600-1700	11	420	431
0000-2400	895	895	1,790

Traffic counts along the Airport Parkway in the vicinity of the main gate are shown in Exhibit 14.3t. These traffic counts were obtained from a PaDOT traffic count performed in September 1982.

Exhibit 14.3t: Airport Parkway Traffic Counts

Period	Southbound	Northbound	Total
Weekday:			
0700-0800	1,855	1,392	3,247
1600-1700	1,578	1,878	3,456
0000-2400	22,937	21,222	44,159

Departing westbound traffic must depart the base to the east and execute a U-turn at the Montour interchange, located 2.3 miles east of the base. Arriving traffic from the east must proceed 0.5 miles past the base, and make a U-turn at median turn

arounds that are east of the Greater Pittsburgh International Airport's (GPIA) main terminal. Exhibit 14.5m depicts area roadways used for access to and egress from the base.

Two problems result from the current situation at the installation:

..Air Force personnel and others arriving at or departing from the base are exposed to increased accident risk; and,

..Significant amounts of time and fuel are expended completing the circuitous route required for base access/egress.

During the last ten years, at least one fatality and numerous vehicular-damage accidents have resulted from poor entrance/exit situation at the base. Of particular concern are the ten or more aviation fuel trucks that must enter the base every week. Although the nearest hospital is located two miles from the base, ambulances must make the 5.6 mile round-trip to the Montour interchange to travel to the hospital.

The Air Force has attempted to mitigate safety hazards by arranging to have all eastbound parkway traffic stopped during the major departure surge from the base, which occurs daily at 1600. Base security personnel hold all departing traffic at the main gate until 1605, when a Pennsylvania State Police officer stops parkway traffic and allows a mass departure of all base personnel. The state police provide the officer at no cost to 911 TAG as part of a mutual arrangement between base security and the state police. In the event an officer is not available, Moon Township law enforcement personnel are called in to stop parkway traffic.

The additional miles of travel to and from the installation result in wasted time, fuel, and increased air pollution. A recent survey revealed that on a UTA weekend, 30 percent of base personnel live to the west of the base, 60 percent to the east, and 10 percent reside on base. Considering only those trips involved with personnel living to the west of the base, it is estimated that 20,500 gallons of gasoline are used annually for the required trip to the Montour interchange for departing U-turns. This additional fuel costs about $23,000, based on $1.15 per gallon, and injects 31,000 pounds of pollution into the atmosphere. These figures do not reflect commercial vehicles or similar impacts from shorter trips to the western U-turn location for access from the east. The number of U-turns made at the Montour interchange, as listed in a September 1984 MTMC study, are shown below.

Exhibit 14.4 - U-turns at the Montour Ramp

Time Period	Weekday	UTA Weekend	Total
Daily	135	200	335
Annually	33,750	4,800	38,550

In addition to the base's access problem, commercial development and vehicular activity on Cliff Mine/Thorn Run Road, located about 1,000' north of main gate, have encountered similar problems relative to access to the Airport Parkway. This has resulted in a joint efforts, involving the Air Force, Moon Township, PaDOT, and Allegheny County, to solve the access problem.

A myriad of correspondence and documentation exists indicating efforts to rectify the situation as early as 1969. A grade-separated interchange at the Thorn Run/Cliff Mine Road location, connected to the base by a new access road, has been favored as the most-viable alternative since 1977.

It should be noted that a September 1984 MTMC study recommended an at-grade, signalized interchange at the Thorn Run/Cliff Mine Road location, primarily because of its relatively low cost. This recommendation has been rejected primarily because of inherent problems associated with signalized intersections on limited-access roadways such as the Airport Parkway.

The grade-separated interchange at the Thorn Run/Cliff Mine Road location has gained the endorsement of PaDOT, Allegheny County, and the MTMC and is responsive to 911 TAG's needs. Base actions to support the interchange include application for Department of Defense (DoD) Defense Access Roadway (DAR) program funds and the removal of old family housing units along Officer's Row to facilitate the potential for on-base access to the proposed interchange.

The advent of a local private non-profit organization, called the Thorn Run Interchange Group (TRIG), has further supported the Air Force's efforts. TRIG has developed, through a private engineering consultant, detailed plans for the proposed interchange with an updated cost analysis. The implementation plan attributes one-third of the project's total cost to the Air Force. Exhibit 14.6m depicts the interchange as currently planned.

The designated Metropolitan Planning Organization (MPO) for the Pittsburgh area is the Southwest Pennsylvania Regional Planning Commission. To be eligible for federal-aid highway funding, a project must be listed in the MPO's Transportation Improvement Program (TIP), which covers a twelve-year planning period. At this time, the proposed interchange is not listed in the TIP, although efforts are being made to include the project.

According to correspondence from the division administrator of Federal Highway Administration (FHWA) to the FHWA's regional administrator, federal highway funds could be committed for the project in April 1987 if the project is included in the TIP. It was also stated that local funds could be available on three months notice.

The Moon Transportation Authority (MTA) has been formed to coordinate and finalize the funding program, necessary to construct the interchange. Although the MTA has the authority to sell bonds to fund the project, it would be unable to pay back the bonds without a commitment of funds from the state and the Air Force primarily because the local taxing authority is not large enough to develop sufficient revenue to retire the debt.

As part of the development of a planned mid-field terminal at GPIA, a Southern Parkway has been proposed. This expressway, a 6.8 mile four-lane, limited-access roadway, would bypass GPIA along its

Exhibit 14.5m: Area Roadways

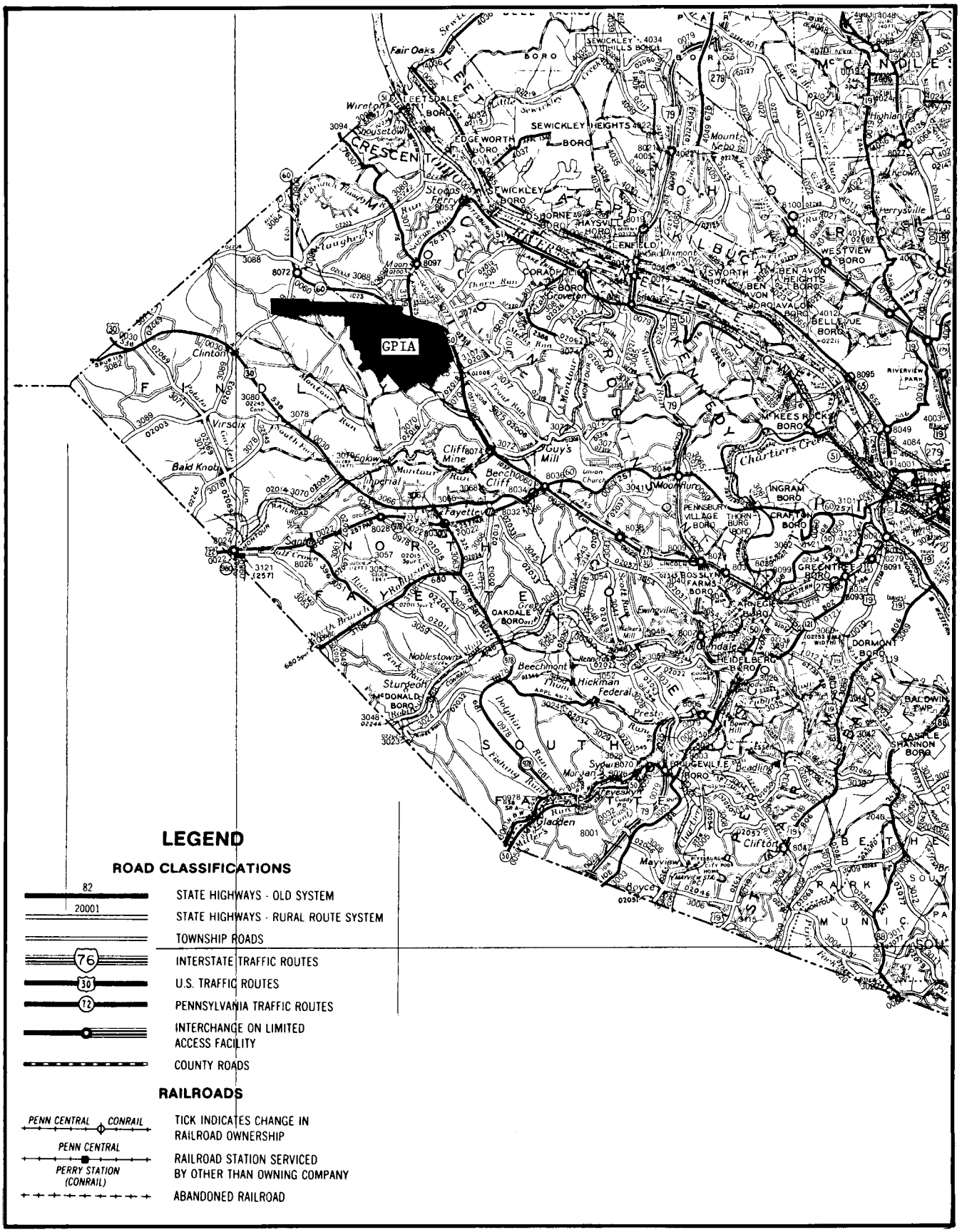
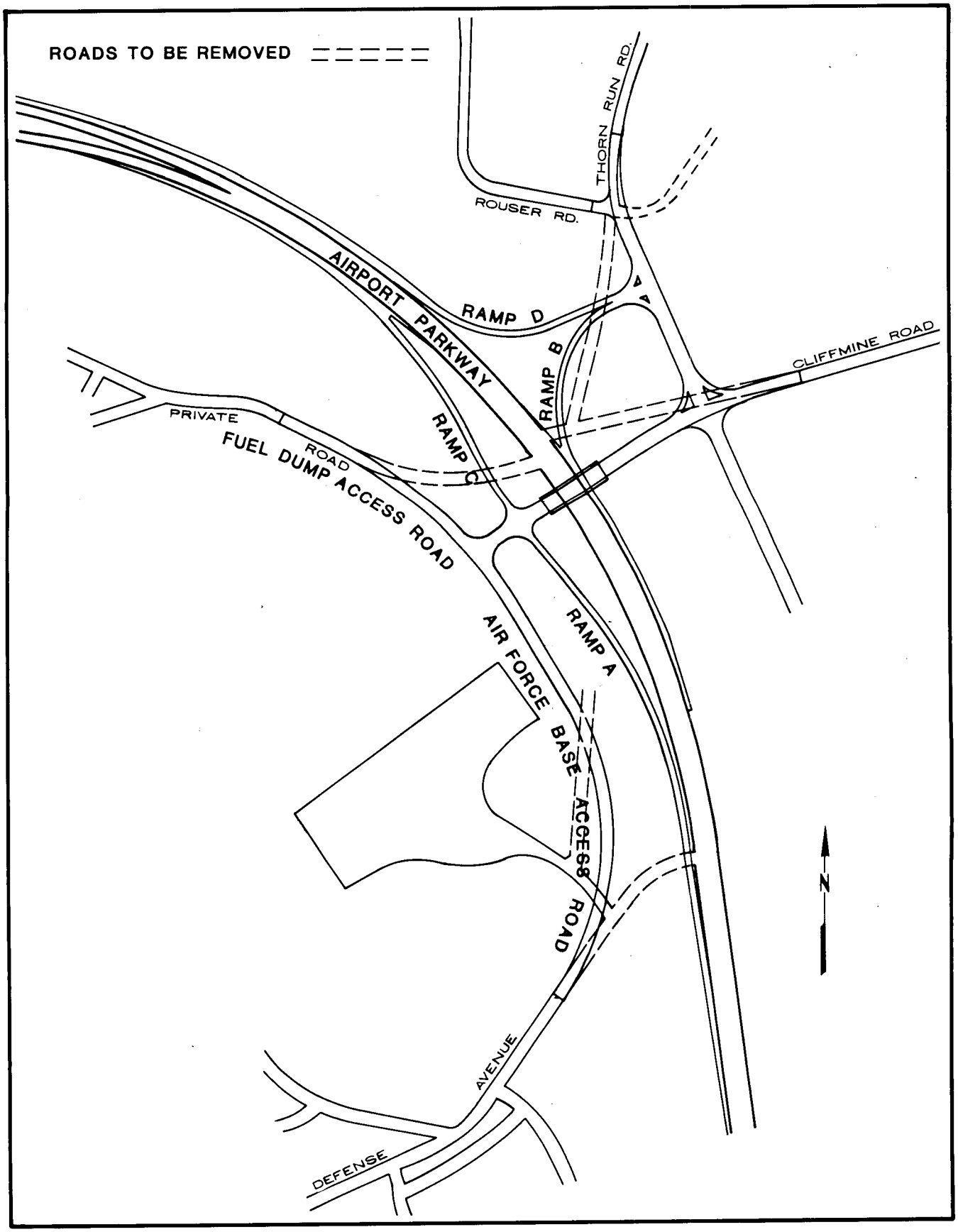


Exhibit 14.6m: Proposed Thorn Run Interchange and Air Force Reserve Base Access



southern boundary and intersect with the existing Airport Parkway at its northern and southern extremes. The proposed expressway is depicted in Exhibit 14.8m.

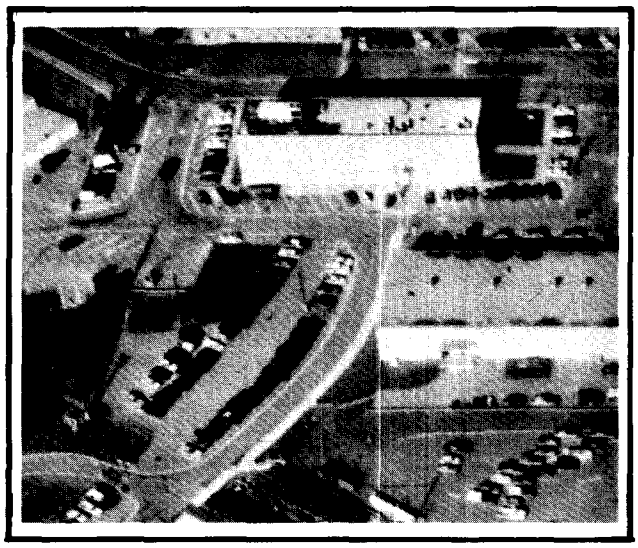
The Southern Parkway would reduce traffic on the existing Airport Parkway, which would lessen the access/egress problems at 911 TAG's main gate and Thorn Run/Cliff Mine Road. Recent engineering studies, however, indicate that traffic volumes in the base vicinity will still warrant a Thorn Run/Cliff Mine Road interchange. In addition, construction of the Southern Parkway will not occur until 1991 at the earliest.

The PaDOT Planning and Traffic Division and Mackin Engineering Company have produced forecast traffic counts for a 1990 full development scenario. These counts, shown on the second following page, reveal that the vast majority of traffic using the proposed interchange will do so in connection with development in Moon township.

STREET CHARACTERISTICS

The base's street system, as shown on the following page, consists of two collector streets, Defense Avenue and Carter/Davis Streets, that form a discontinuous loop, fed by a network of local streets. As shown on the following page, Davis Street and Defense Avenue are connected by Herman Avenue and Alpha Street. These local streets, however, cannot be classified as collectors because of several short-radius, 90 degree turns, severe grade changes, and extensive on-street perpendicular parking. Exhibit 14.7p depicts Herman Avenue and Alpha Street between Defense Avenue and Davis Street.

Exhibit 14.7p: Herman Avenue and Alpha Street



The main on-base east-west roadway is Defense Avenue, which starts at the main gate and provides access to numerous parking lots and local streets. Defense Avenue ends at the base operations, Building 419. The width of the roadway ranges from 25 to 40 feet. In some places curbs and gutters exist, while in others an asphalt berm is in place. The road is impacted by a parking lot between Carter and Brown Streets, in which perpendicular parking occurs. Other conflicts occur due to cross traffic at the POL truck offloading station and base gym, illegal parallel parking in front of the VOQ, and cars using Airman Avenue as a street rather than as an entrance to a parking lot.

The major on-base north-south roadways are Carter Street and Brown Street, south of Defense Avenue, and Miller Street and Sabre Street, north of Defense Avenue. Of these streets, only Carter Street has the width and lack of obstructions to be classified as a collector street.

Carter Street provides access to the dormitories, offices, and base clinic. Davis Street, which is an extension of Carter Street, provides access to base supply warehouse and civil engineering areas. Curbs and gutters are generally not present on these roadways. The major source of conflict to enroute traffic using Carter and Davis Streets is the presence of numerous parking lots along its entire length, some of which utilize perpendicular parking.

Brown Street provides access to dormitory and office parking areas as well as to base warehouse building 312. The roadway has no curbs or gutters. Significant amounts of perpendicular parking along the roadway reduce the roadway's utility as a major thoroughfare.

Miller Street and Sabre Street provide access to the mission operations area from Defense Avenue. While no significant conflicts exist along this roadway, security considerations would prevent this roadway from being used a major collector roadway.

It should be noted that a security fence divides the housing and administrative areas from the mission operations area. Gates exist on Defense Avenue near Building 419/411 and on Miller Street near Building 130. These gates permit the operations area to be isolated from activities that are not mission critical.

On the base's northern end, Rocky Lane provides access to the open mess, parking areas, and the base's outdoor recreation areas. Although the width of the roadway is satisfactory, the initial 100 feet of the roadway has a steep grade. During the winter months, this sloping roadway has problems with snow and ice accumulation and resultant loss of vehicular traction. Exhibit 14.11p depicts the grade problems experienced at the intersection of Defense Avenue and Rocky Lane.

Airmen Avenue, Alpha Street, and Delta Street are used to provide access to parking areas around building 312. Use of these streets as thoroughfares poses a safety problem to both pedestrians and vehicles in the area.

No on-base traffic counts have been performed for 911 TAG, either as part of this study or previously.

Consultations were conducted with base security personnel to identify those on-base locations prone to vehicle-pedestrian or vehicle-vehicle accidents. While approximately three vehicle-vehicle accidents occur per year, the location of these accidents varied from incident to incident. No vehicular-

Exhibit 14.8m: Southern Expressway - Airport Parkway Schematic Plan

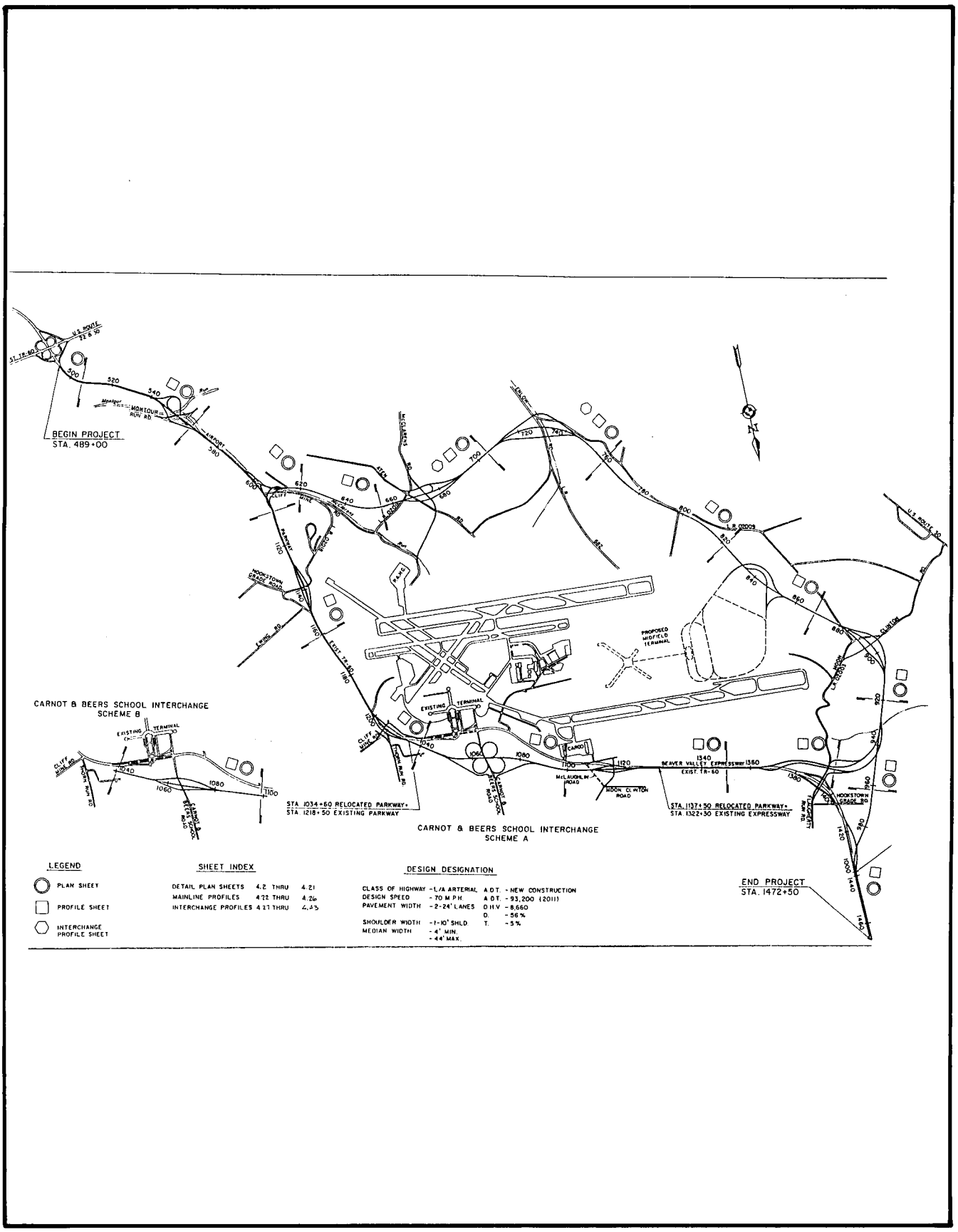


Exhibit 14.9m: 1990 Forecast Traffic Counts at the Proposed Thorn Run Interchange

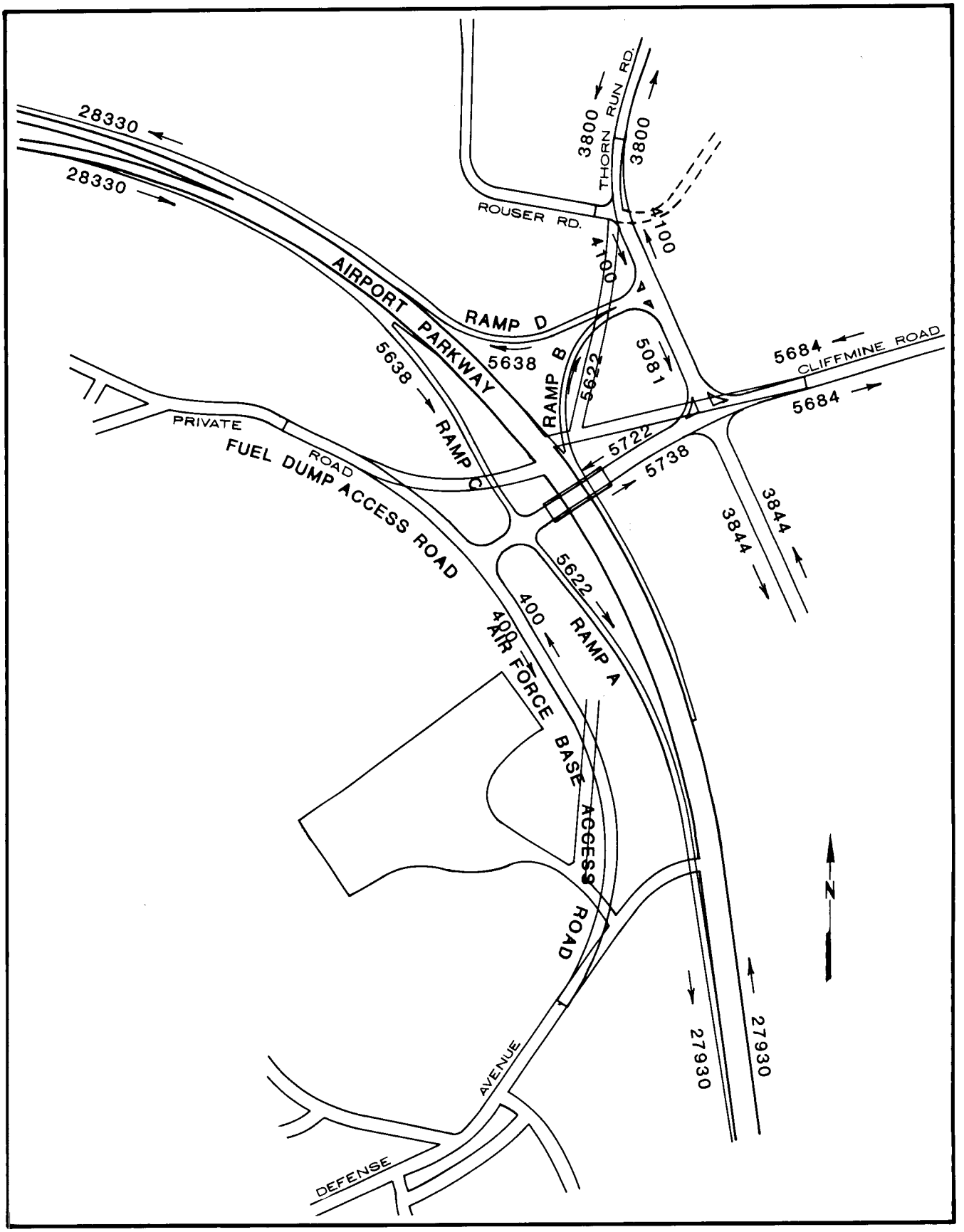


Exhibit 14.10m: On-base Roadway System

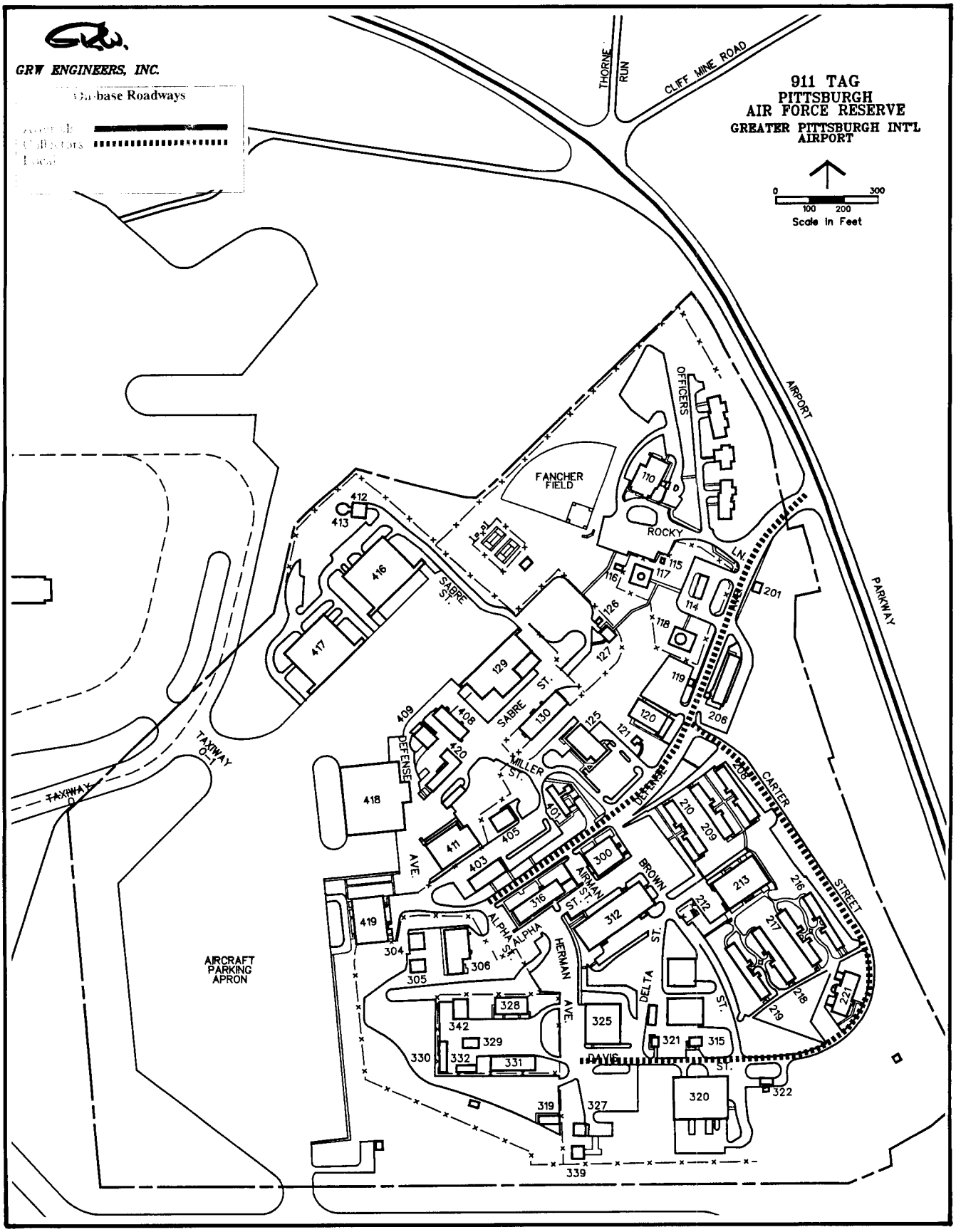
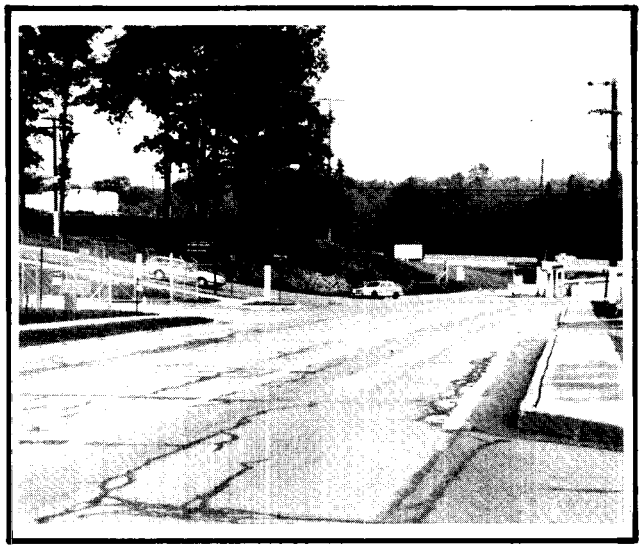


Exhibit 14.11p: Intersection of Rocky Lane and Defense Avenue



related fatalities or vehicle-pedestrian accidents were reported to have occurred on-base during the last eight years.

No on-base roads were classified as arterials. Listed below are all on-base roadways and their respective classifications. All on-base roadways, with the exception of Sabre Street between Miller Street and Defense Avenue and Defense Avenue between the main gate and the gym, are two-lane.

Exhibit 14.12t: On-base Roadway Classifications

Road Name	Between	Class
Officer's Row	Full Length	Local
Rocky Lane	Full Length	Local
Defense Avenue	Main Gate-Bldg. 419	Collector
Defense Avenue	Bldg. 419-Flt. Line	Local
Carter Street	Full Length	Collector
Davis Street	Full Length	Collector
Miller Street	Full Length	Local
Sabre Street	Full Length	Local
Brown Street	Full Length	Local
Delta Street	Full Length	Local
Herman Street	Full Length	Local
Alpha Street	Full Length	Local
Airmen Avenue	Full Length	Local

Major problems identified with the on-base road system include:

..A number of collector and local roadways have perpendicular parking along significant expanses. To reduce conflicts with through traffic and increase safety, these parking areas should be eliminated or, at the very least, restriped for angle-in parking.

..Through traffic on Airmen Avenue and Alpha Street, between Brown and Herman, should be prohibited to reduce conflicts between such traffic and parked vehicles and/or pedestrians.

..Several fire lines exist to the northwest and southeast of the dormitories. These firelanes should be labeled to prevent their use as thoroughfares.

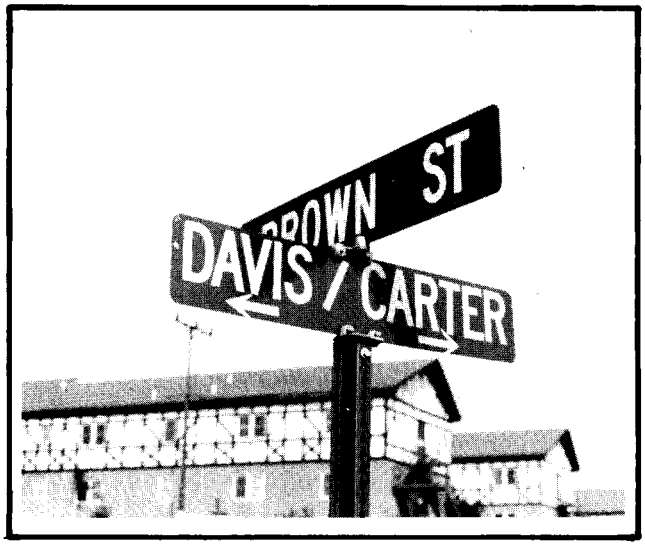
..Although improbable in the short-term, Defense Avenue and Davis Street should be joined to form a circular collector road that would service the entire base.

Signs And Signals

The vast majority of on-base intersections are controlled by stop or yield signs. The majority of these signs are in good condition and are well placed. No signalized intersections exist on-base.

Road names are well labeled throughout the base. As shown in Exhibit 14.13p, some confusion on the part of those unfamiliar with the base could result from the sudden and unexplainable change of Carter Street to Davis Street. It is recommended that this major thoroughfare have one name from end to end. The on-base speed is generally an average of 25 mph or lower, and seems to work satisfactorily. No changes are recommended.

Exhibit 14.13p: Carter/Davis Street Sign Labelling



The intersection of Brown and Delta Streets is poorly labeled. Several "Do Not Enter" signs, meant to prevent entrance to the building 213 receiving area, appear to prohibit entrance to Brown Street when approached from Delta Street.

A series of guidance signs on Defense Avenue are adequate to direct those unfamiliar with the base to common destinations. It is recommended that this guidance sign network be expanded to Carter and Davis Streets.

No widespread deficiencies were noted in regard to on-base signing and signalization.

PARKING

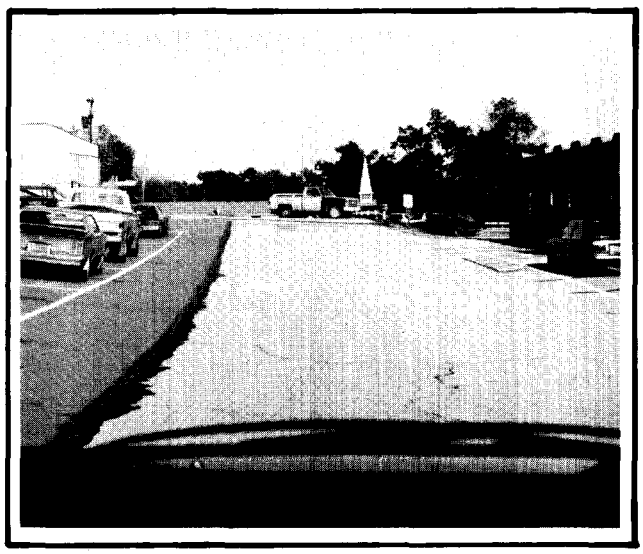
During a normal UTA weekend, up to 1200 reservists can be expected to be on-base. In addition, members of the Pennsylvania Air National Guard utilize on-base facilities, such as the VOQ and open mess. About 2800 base parking stickers have been issued by the base security police.

There are about 887 paved, marked parking spaces. Roughly a third of these spaces involve perpendicular parking that requires backing out onto a roadway. About 170 additional spaces are available, but may be unusable at times as they have a gravel surface. The location of parking areas and the number of spaces in each is depicted on the following page.

The area behind buildings 416 and 417 have about 40 parking spaces. As this area abuts the GPIA flight operations area, it is largely unused because of security considerations.

Parking space striping was found to be in poor condition in several locations throughout the base. In addition, several instances of confusing markings or parking spaces in inappropriate locations were found as shown below.

Exhibit 14.14p: Confusing Markings



It is recommended that locations for addition paved parking areas be identified. These areas could be in the form of paving currently unpaved parking areas or utilization of off-base parking at GPIA during UTAs combined with shuttle service.

As recommended earlier, on-street perpendicular parking should be eliminated or converted to angle-in parking. In addition, the approximately 19 parking locations on the flightline near building 408 and 409 should be eliminated to prevent aircraft/ground vehicle conflicts.

Parking Area H, used primarily by administrative personnel, has a steep grade perpendicular to the parking alignment. This grade could lead to minor vehicular collisions in the winter months. It is recommended that relocation or regrading of this lot be considered as part of the restructuring of the collector roadway system.

An unnamed parking area, located south of building 312, is utilized for limited parking because of its less than optimum triangular shape and the presence of two deicing fluid storage tanks downgrade from the parking area. According to Air Force personnel, these storage tanks are scheduled for relocation. Relocation of the deicing fluid storage tanks could add several parking spaces in the short term, while regrading and possible combining of this lot with Parking Area H could prove feasible in the long term.

A number of personal boats, trailers, and recreation vehicles are being stored on base, primarily in Parking Areas A and C. Removal of these vehicles could add several parking spaces.

It is recommended that all parking lots be restriped in the short term. Prior to this operation, it is recommended that a number of compact vehicle parking spaces be established. These spaces, measuring 8 by 16 feet rather than 9 by 18 feet, could result in the addition of several parking spaces.

Review of on-base handicapped parking revealed that an adequate number of spaces exist throughout the base. It is recommended that additional spaces be added at buildings 300 and 206, as well as in Parking Area H.

Parking Area M should have barricades installed to reduce the number of access points to one or two. This would assist in promoting an orderly traffic flow through the lot.

ON-BASE PEDESTRIAN TRANSPORTATION SYSTEM

The Air Force Reserve installation has a good system of sidewalks along Defense Avenue, Herman Street, Rocky Lane, the dormitory area, and in the vicinity of buildings 316 and 300. In addition, several staircases link the parking area east of building 403 with Defense Avenue and buildings 316 and 300.

After review of possible pedestrian patterns, the only deficiencies noted was the lack of a sidewalk along Carter Street from Defense Avenue to Parking Area C. Although pedestrians could walk safely between the two points via the dormitory area, the addition of a sidewalk along the direct route would be desirable.

A one mile jogging trail is currently marked on base, starting at building 120 and ending near building 216. This route, shown on the second following page, is run almost entirely on roads with no sidewalks. It is recommended that a new trail be created that would avoid the Carter/Davis Street area and would use lesser traveled roadways such as Brown Street or, alternatively, be run along the extremities of the base's outdoor recreation area.

No on-base bus or other shuttle service was reported to exist at 911 TAG.

Exhibit 14.15m: Parking Area Locations and Number of Spaces

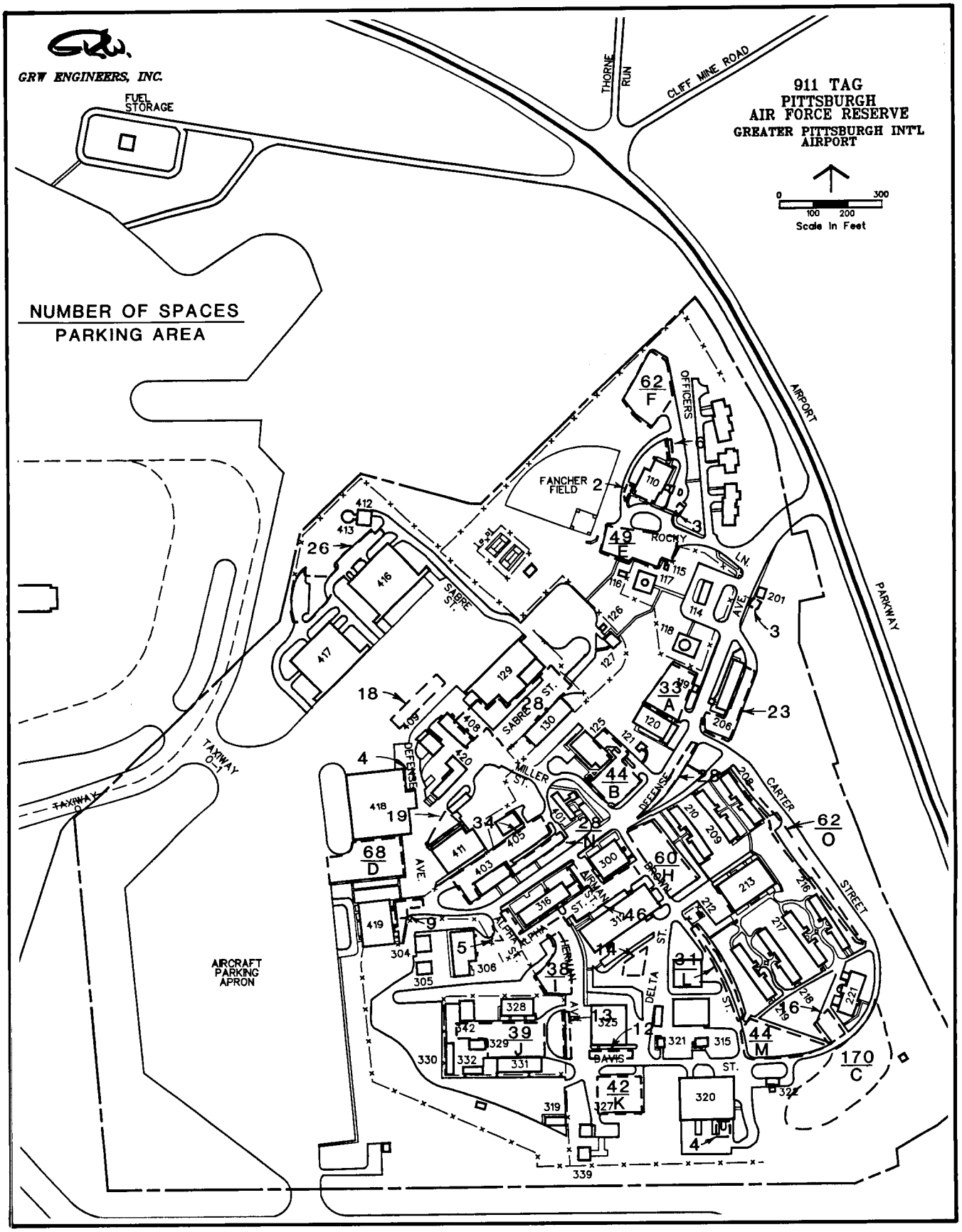
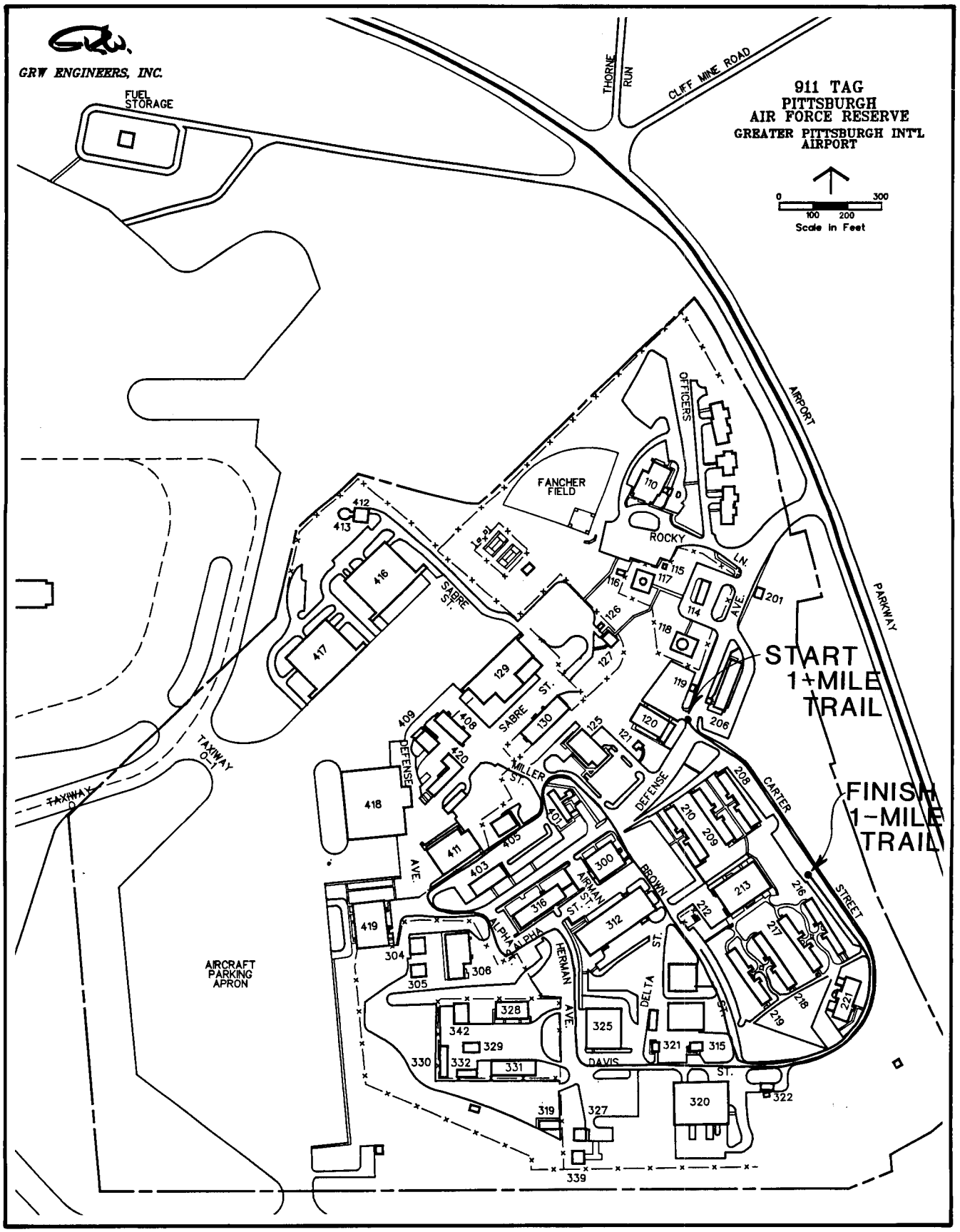


Exhibit 14.16m: On-base Jogging Trail



REGIONAL TRANSPORTATION SYSTEM

Transportation throughout the Pittsburgh region is accomplished primarily with private automobiles. Some mass transit exists in the vicinity of GPIA, although no direct service to 911 TAG is provided.

The Port Authority Transit (PAT) System operates bus and subway service in the Pittsburgh metropolitan area. Subway service is limited primarily to downtown Pittsburgh. Four buses daily, two in each direction, operated between downtown Pittsburgh and Coraopolis, via the Airport Parkway. This service, called the Airport Flyer, will discharge passengers on the parkway in front of 911 TAG's main gate. No passenger pickup is performed or allowed. The Airport Flyer departs Coraopolis for Pittsburgh at 6:38am and 8:08am, while trips depart Pittsburgh at 3:00pm and 5:10pm.

Some base personnel travel to 911 TAG using an airport limousine service that travels between Pittsburgh and GPIA. As this service will not discharge passengers on the parkway, base personnel are required to walk to the base from the GPIA main terminal, a distance of about 0.6 miles.

As shown on the following page, a series of arterials provide good access from the AFRES installation to major north-south and east-west interstate highways. The Airport Parkway East provides access from the base to Interstate Highway 79, located about 8 miles from the installation. Interstate 79 connects Pittsburgh with Erie, Pennsylvania and Interstate Highway 76 and 80 to the north, and Interstate Highway 70 and Charleston, West Virginia to the south.

GPIA is served by twelve major air carriers and numerous commuter carriers. These airlines provide direct access and connections to most major airports in the United States as well as to several points abroad. In addition to commercial service, facilities are available for corporate or privately-owned aircraft.

The Allegheny County Airport, located 17 miles southeast of GPIA, relieves congestion at the GPIA. Equipped with instrument approaches, Allegheny County Airport is used primarily by corporate aircraft.

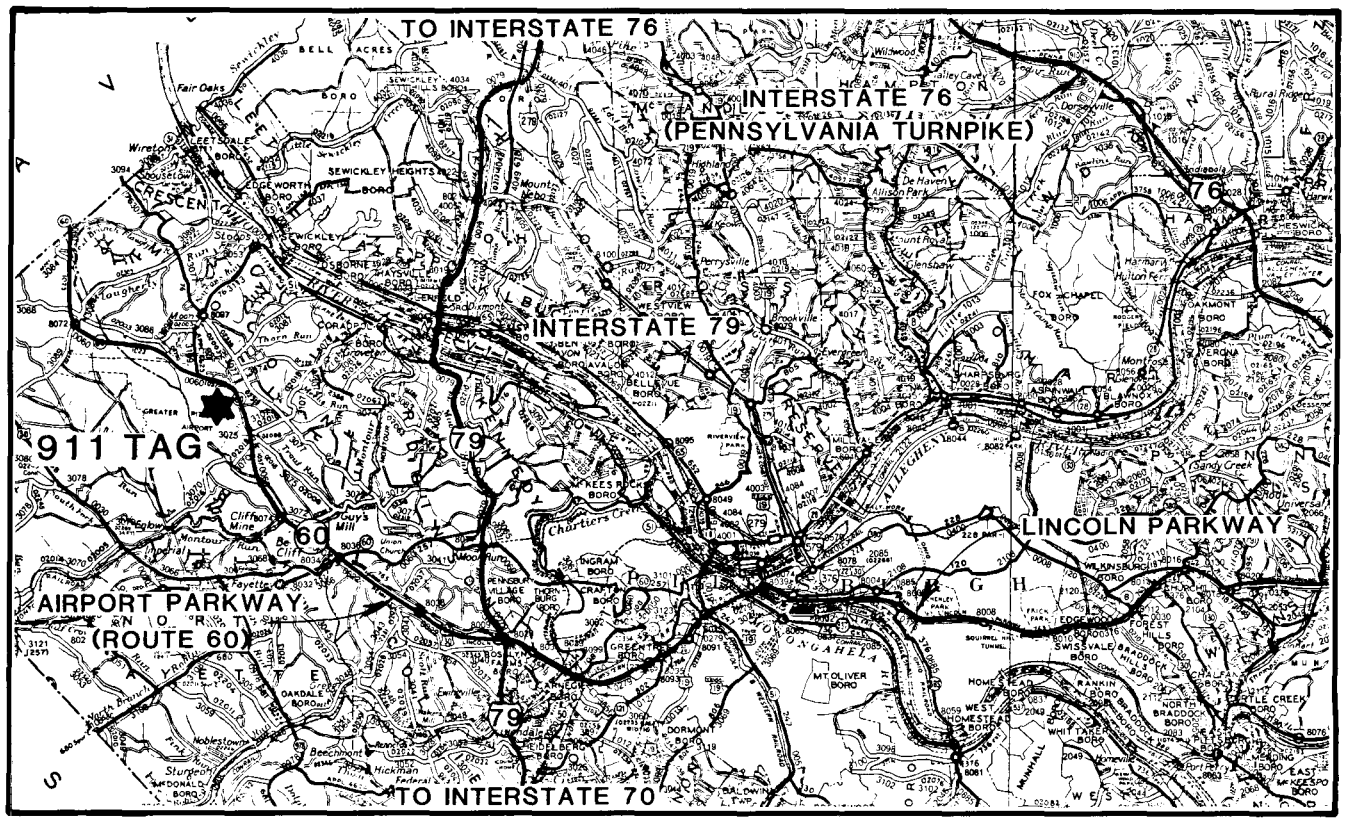
Both GPIA and Allegheny County Airport are managed by Allegheny County Department of Aviation. In addition to these two airports, five public and seven private airports are within 25 miles of downtown Pittsburgh.

Port facilities are available in Pittsburgh. Access to St. Louis, Memphis, and points south is available via the Ohio River.

No rail service exists in the vicinity of the base. Both passenger and freight rail service are available in Pittsburgh.

No pedestrian or bike pathways exist in the base's vicinity.

Exhibit 14.17m: Regional Transportation Routes



SHORT-RANGE TRANSPORTATION PLAN

The short-range plan includes a series of transportation-related improvements that will increase the ease of access both to and on the Pittsburgh AFRES installation, and include:

..A new base entry area with direct access to the GPIA and the new Thorn Run Road interchange; and,

..Improvements to the on-base roadway system that will create an organized system of collector and local roadways.

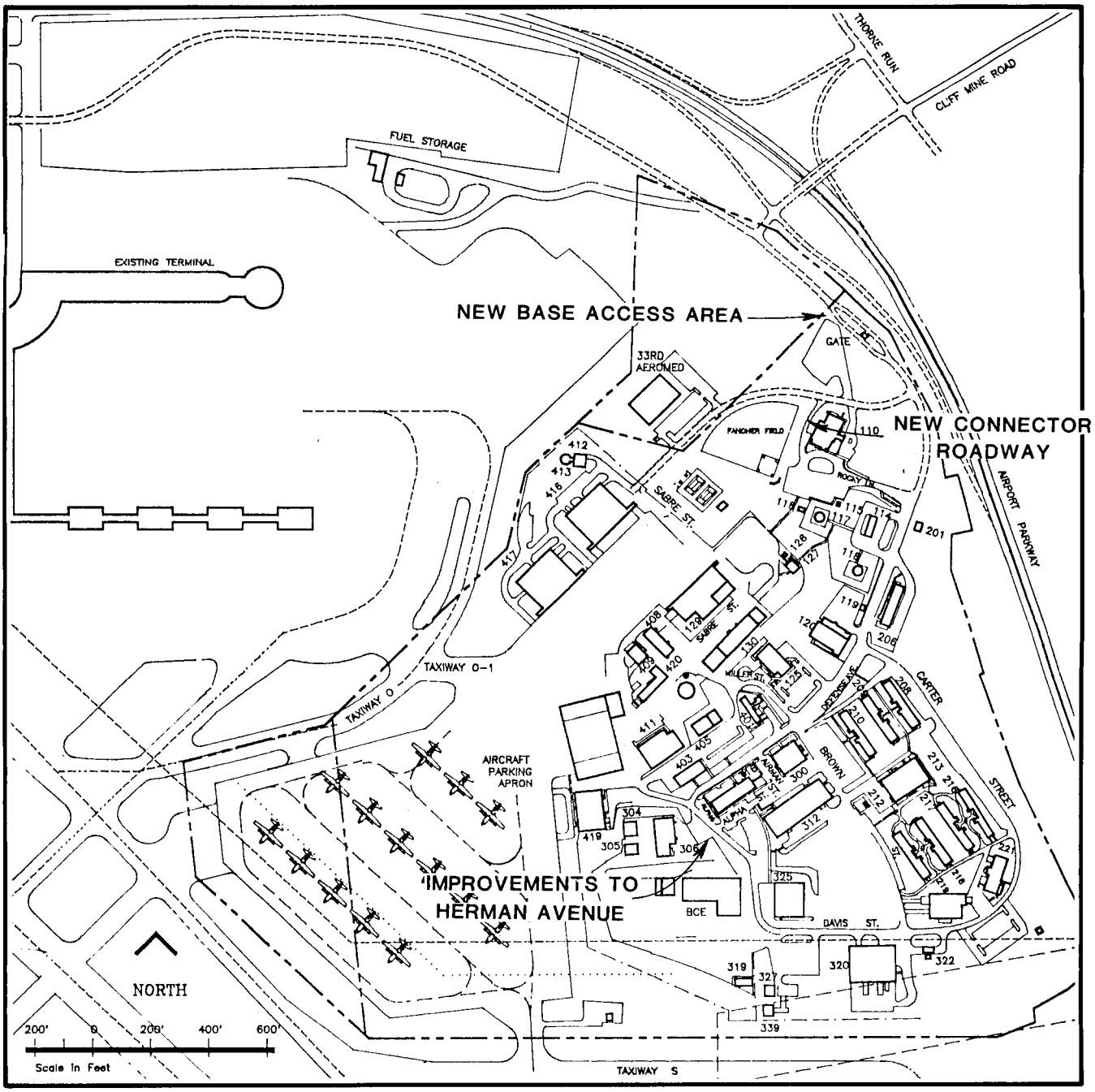
BASE ACCESS

As part of the short-range plan, the Air Force is expected to construct a new base access area adjacent to existing Parking Area L, northwest of the existing gate, and adjacent to the planned Thorn Run interchange.

Improvements planned as part of the new base access area include:

..Installation of a new traffic check house;
..Construction of a new base access roadway that will link Defense Avenue with the new main gate, the

Exhibit 14.18m: Features of the Short-Range Transportation Plan



Thorn Run Road interchange, and the GPIA; and,

..Construction of a collector roadway between Sabre Avenue and the new main gate.

The existing main gate will be closed upon completion of the new base access. A portion of the area utilized by the existing gate will be required for construction of an interchange ramp.

By constructing the new base access area in conjunction with the development of the Thorn Run Road interchange, the safety and convenience problems associated with the existing base access will be eliminated. Vehicular traffic leaving the base will be able to access the Airport Parkway by means of two high-speed entrance ramps, thereby eliminating the hazards associated with the at-grade entrance to the Parkway that is currently used. In addition, traffic leaving the base for points north and west will no longer have to proceed east to the Montour interchange to gain access to the Airport Parkway westbound.

ON-BASE ROADWAY SYSTEM

As shown below, improvements to the on-base roadway system will result in an organized system of collector roadways that will promote easy access to all points on-base.

Improvements to Herman Avenue will eliminate a series of 90-degree corners along the roadway in the vicinity of Building 316. These improvements will promote the smooth flow of traffic along Herman Avenue, while establishing a loop-type connector roadway through the southern portion of the base.

As discussed previously, a new roadway linking Sabre Street with the new base access area is included in the short-range plan. This roadway will reduce peak period traffic flows on Defense Avenue by providing an alternate route for access to or egress from the flight line area.

ON-BASE PARKING

Two additional parking areas are included in the short-range plan and are associated with the construction of a Medical Training Clinic and facilities for the 33rd Aeromedical Evacuation Squadron. These areas are shown in the exhibit to the right.

It is estimated that about 150 additional parking spaces would result from the construction of these new parking areas.

Recommended Parking Areas

The establishment of several additional parking areas is recommended for inclusion in the short-range plan. This recommendations are made as:

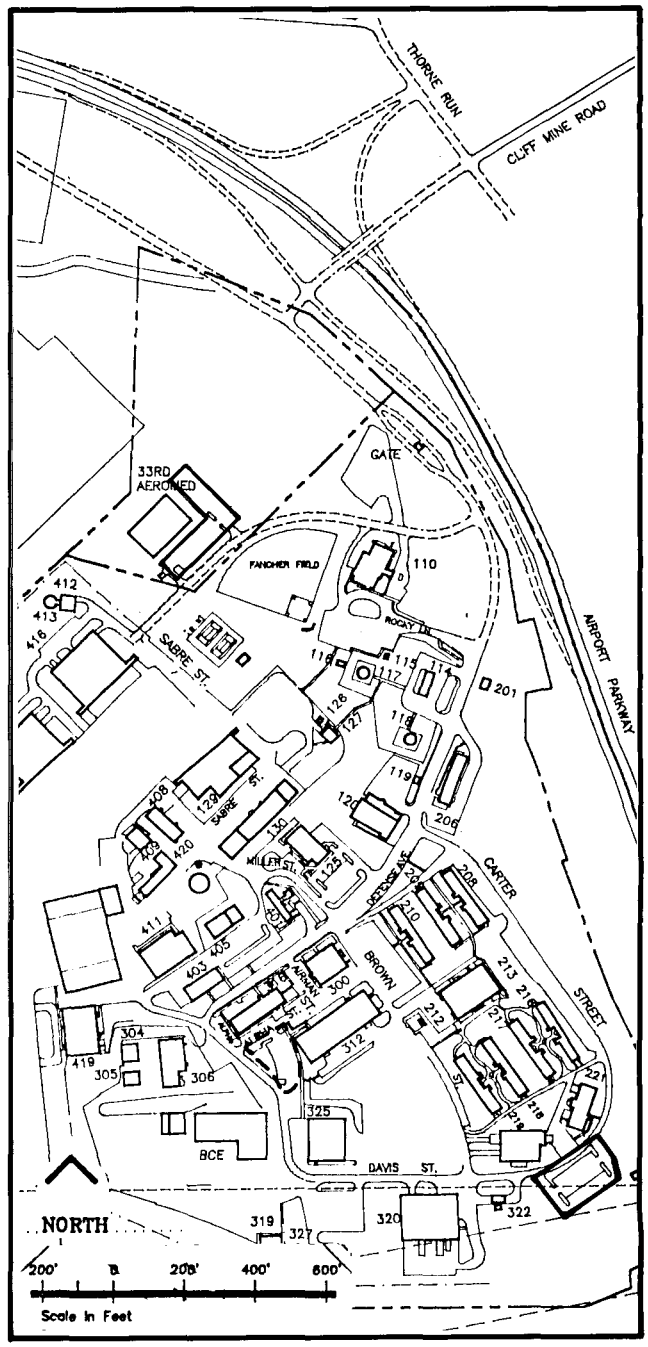
..Parking Area D will be eliminated when the new hangar and mobility storage building is constructed; and,

..Parking Area I will be eliminated when modifications are made to Herman Avenue.

To counter this loss of on-base parking capacity, two new parking areas are recommended. These areas, which are shown in the exhibit below, could serve not only to avoid any loss of parking capacity, but could result in an overall capacity increase.

Expansion of Parking Area F is recommended to provide a shuttle parking facility during UTA

Exhibit 14.19m: Short-Range Plan Parking Areas



activities. This parking area could be located outside of the base's perimeter fencing, thereby eliminating the security considerations associated with large on-base parking areas. A pedestrian gate could be established as part of the new main gate, and a on-base shuttle service used to connect the parking area with on-base housing. About 200 to 250 parking spaces could be added by the expansion of this parking area.

A second parking area should be constructed as part of the improvements to Herman Avenue. This parking area would serve administrative personnel working in Building 316. It is estimated that the 38 parking spaces lost by the elimination of Parking Area I could be regained by the construction of this new parking area.

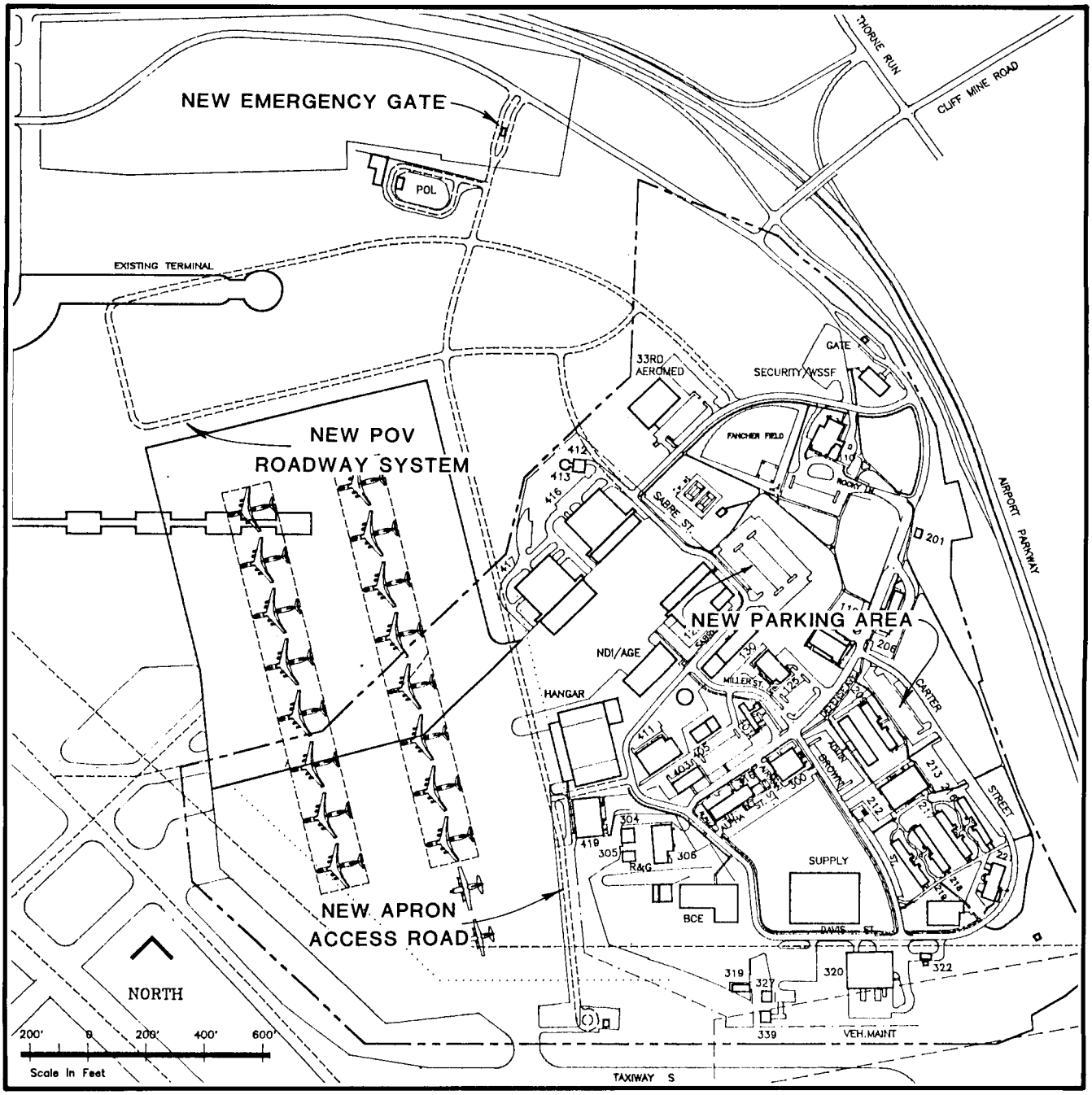
LONG-RANGE TRANSPORTATION PLAN

Transportation-related improvements planned as part of the long range plan include:

..Construction of a second, emergency-use only gate in the vicinity of the relocated POL facility;

..A new POV parking lot to serve the aircraft hangar

Exhibit 14.20m: Features of the Long-Range Transportation Plan



maintenance area will replace the existing POL refueler parking area after the POL moves to its new location. If the POL does not move, more POV parking could be added west of the new 33rd Aeromed facility or on other nearby land to be acquired from the GPIA.

..Development of a new parking area adjacent to the on-base housing area.

As part of the long-range plan, the Air Force is expected to lease an additional 77 acres from the GPIA. If less than 77 acres are available for lease, a reduced long-range plan, which utilitizes only 50 acres, would be used to guide development at the base. From a transportation planning perspective, however, no significant differences exist between the two long-range planning options.

Establishment of a second emergency-use gate would permit quick access to the POL and flight operations areas by emergency response equipment. Since the new gate would be accessible from either the GPIA or Airport Parkway, ease of access would not be affected by traffic conditions in the vicinity of the main gate or Thorn Run Road interchange.

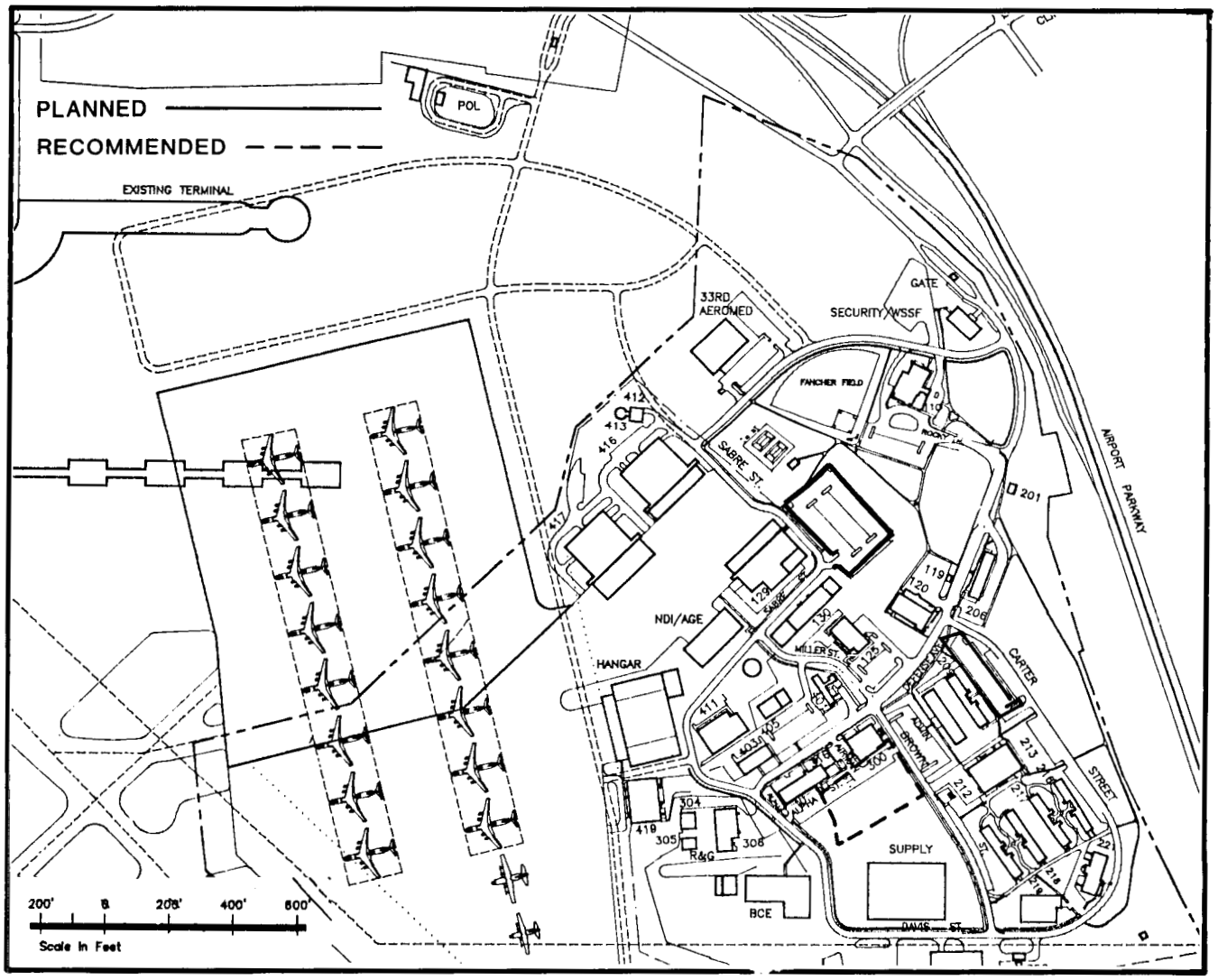
The new roadway planned for the area along the perimeter of the apron would provide mission support vehicles with quick access to all points on the flight line. Use of this roadway would be limited to government vehicles only.

Additional POV roadways are planned as part of the mission support expansion incorporated in the long-range plan. These new roadways would be connected to the existing system of collector roadways, so as to maintain a comprehensive on-base roadway system.

A new parking area is planned for the on-base housing area. This area, which is shown in the exhibit below, would be accessible from Carter Street.

Dependent upon parking demand, an additional, centralized parking area could be constructed to the north of the new supply warehouse. This area would provide easy pedestrian access to the new administration facility, as well as to the existing housing area, commissary, and administration/service buildings. The proposed location of this additional parking area, which could be constructed after the demolition of Building 312, is shown below.

Exhibit 14.21m: Long-Range Plan Parking Areas



Chapter XV

ARCHITECTURAL DESIGN GUIDELINES

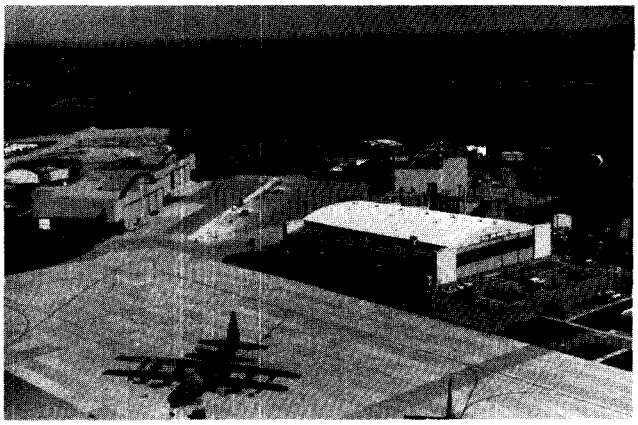
FOR THE

PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

Exhibit 15.1p: Aerial View of Base.

Exhibit 15.2: Operation and Maintenance area.



INTRODUCTION

The basic purpose of the Architectural Design Guidelines (ADG) is to enhance the appearance of the existing environment, in order to foster pride and commitment to the Air Force Reserve mission....and to help create a more visually satisfying and pleasing physical environment for the base personnel, as well as visitors to the base. This report is a summary of the more complete Architectural Design Guidelines prepared as a separate document.

In addition, the plan will help to facilitate qualitative planning, design, and development decisions critical to the base. These architectural guidelines will help to accomplish the following:

..Develop a coherent architectural character that promotes visual attraction by its continuity and consistency.

..Improve the visual organization of the installation including buildings and the spaces between the buildings.

..Reduce the impact of the base's visual liabilities and unsightly problem areas.

..Help blend the natural environment with the built environment.

The ADG will also give guidelines for the massing and siting of new buildings in accordance with the goals listed above. When new buildings are to be added to the base, their designers should consider these guidelines of this section of the report, as well as the recommendations concerning color and materials from the Exterior Master Paint Plan (EMPP) also summarized in this report.

FACILITY INVENTORY

The base currently contains about sixty buildings with a wide range of sizes, materials, styles, and functions. This complexity is a normal reflection of the Air Force Reserve mission as it has changed over the past 30 years since the base was commissioned, under a variety of Commanding Officers, architects, engineers and Air Force facility requirements.

Exhibit 15.3p: Dormitory Area.

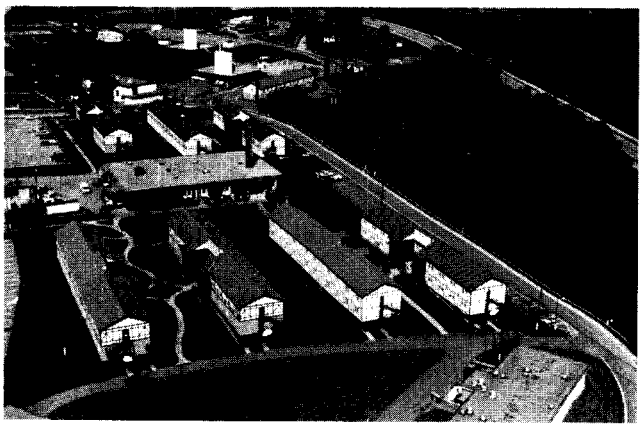


Exhibit 15.4t: Primary Building Materials

PRIMARY BUILDING MATERIALS			SF %
HBD SDG	103,375 SF	9	22.3%
MET SDG	94,321 SF	12	20.3%
CORR MET	71,814 SF	5	15.5%
BRICK	38,190 SF	3	8.2%
CONC BLK	36,813 SF	17	7.9%
STUCCO	36,049 SF	3	7.8%
CEM ASB	27,726 SF	3	6.0%
WD SHING	21,426 SF	1	4.6%
WOOD SDG	19,105 SF	3	4.1%
EXP AGGR	11,805 SF	1	2.5%
CONC	3,072 SF	1	.7%
AGGR SDG	336 SF	1	.1%
TOTAL	464,032 SF	64	100.0%

The primary materials of the base have very little consistency of appearance, with hardboard siding, metal siding and corrugated metal, in roughly equal amounts, making up about 60 percent of the exterior materials and the remaining buildings divided into nine other material choices. The distribution of building material in the base is indicated on the map which follows, Building Material Distribution. There appears to have been very little attempt to coordinate the selection of materials over the years.

Exhibit 15.5p: Hangar and Apron area.

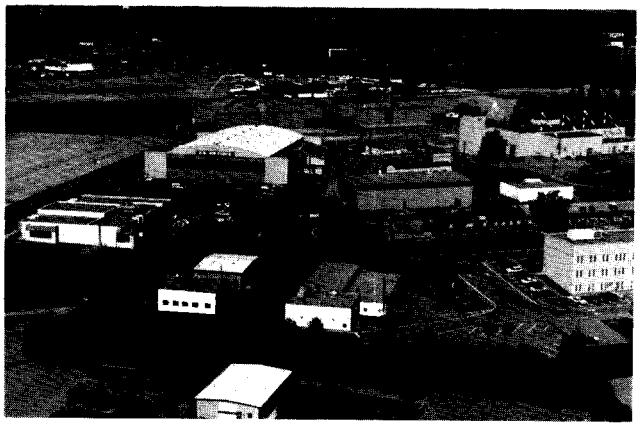


Exhibit 15.6t: Primary Building Colors

PRIMARY BUILDING COLORS			SF %
LT BLUE	152,530 SF	8	32.9%
CREAM	117,135 SF	16	25.2%
WHITE	38,555 SF	10	8.3%
DK BEIGE	35,684 SF	5	7.7%
LT GRAY	32,159 SF	5	6.9%
MD BRN	28,447 SF	4	6.1%
NATURAL	24,096 SF	4	5.2%
MD BLUE	11,361 SF	4	2.4%
DK BRN	9,139 SF	1	2.0%
MED RED	7,500 SF	1	1.6%
BEIGE	5,604 SF	4	1.2%
MIXED	1,822 SF	1	.4%
TOTAL	464,032 SF	64	100.0%

Exhibit 15.7t: Trim Colors.

TRIM COLORS			SF %
DK BRN	148,181 SF	20	31.9%
LT BLUE	75,324 SF	3	16.2%
GRAY	54,364 SF	4	11.7%
BLACK	48,759 SF	3	10.5%
WHITE	42,862 SF	9	9.2%
NATURAL	19,888 SF	2	4.3%
MD BRN	17,283 SF	3	3.7%
DK GRAY	14,772 SF	2	3.2%
ALUM	12,940 SF	2	2.8%
CREAM	6,437 SF	2	1.4%
GRAY/WH	6,173 SF	1	1.3%
GALV	5,628 SF	2	1.2%
N/A	3,920 SF	5	.8%
MIXED	1,822 SF	1	.4%
BLUE/WH	1,767 SF	1	.4%
BEIGE/GR	1,538 SF	1	.3%
LT GRAY	1,200 SF	1	.3%
DK BR/AL	1,000 SF	1	.2%
DK BLUE	174 SF	1	.0%
TOTAL	464,032 SF	64	100.0%

Building colors present the same diversity. Based upon building volume, the predominent color is light blue. Based upon the number of buildings the most common color is cream, in the Tudor design of the dormitory areas. No harmonious color scheme is evident in the balance of the buildings.

Exhibit 15.8t: Roof Form Pattern.

ROOF FORMS			SF %
FLAT	266,440 SF	32	57.4%
MD GABLE	122,197 SF	17	26.3%
ARCH	48,793 SF	1	10.5%
LO GABLE	23,493 SF	8	5.1%
LO SHED	3,109 SF	3	.7%
N/A	0 SF	2	.0%
DOME	0 SF	1	.0%
TOTAL	464,032 SF	64	100.0%

Buildings

At present, most buildings on the base have a positive character and impart a desirable image for the Air Force, for example, the newer hangars, the new Operations Building and the dormitory area. However, other areas look unattractive. Much of the southern part of the base, used for maintenance and storage, is in this category. Unscreened utility areas also contribute to unsightliness of the base.

The dominant buildings of the base are on a plateau around a taxiway and an apron. The two older hangars are corrugated metal while the two newer ones are brick and metal siding. Smaller support buildings are behind the older hangars at the edge of the plateau. These are mainly brick or painted concrete block, although two are stucco and one has aggregate siding.

Below these buildings, and west of Defense Ave., are many small utility buildings, fuel tanks, the Base Gym, and the Open Mess. These buildings use a variety of materials. The gym is under renovation and will be covered with vertical and horizontal redwood siding.

East of Defense Ave. and Brown St. is a group of residentially-scaled buildings with medium gable roofs and Tudor details applied to at least part of their facades. The main material of this group is stucco in addition to a large amount of hardboard/aggregate siding on some of the dormitories. The Dining Hall has a mansard roof of wood shingles which is its dominant feature. In contrast, the Base Infirmary, at the edge of this cluster, is a flat-roofed, concrete block building painted light yellow.

South of Defense Ave. and west of Brown St. are a number of buildings, primarily warehouses and service buildings, on a plateau about forty feet below the apron. This is the most diverse area of the base, in terms of materials, colors, upkeep, and age of buildings. Some of these buildings are slated for demolition soon. The Base Exchange, at the edge of this section and near the residential area, has some Tudor details.

Building Color

Since most of the buildings on the base, over 80%, have a natural color that is normally painted, there is great potential for harmonizing building colors of the base over the long term. Through a program of color selection and the systematic implementation of this program during the design process of each project.

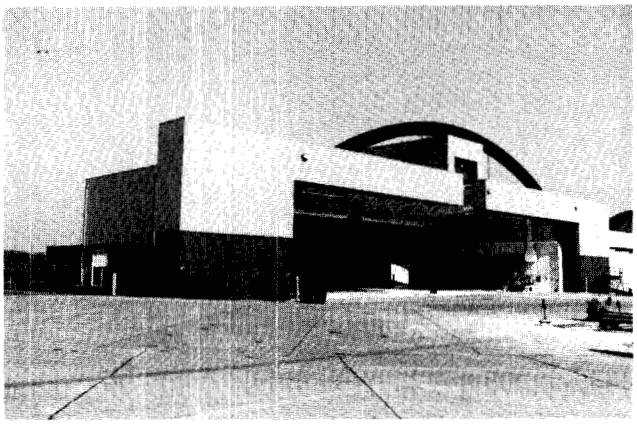
Roof Forms

The most common roof form is the flat roof, comprising over half of the buildings on the base. The gabled roof is used in over half of the remaining buildings. The pattern of roof form within the base ins indicated on the map, Roof Form Distribution, which follows.

Topography

The base is situated on a site that generally slopes from northwest to southeast, with the grade varying from 1:15 to 1:2. The only flat parts of the site are occupied by the ball field and the apron.

Exhibit 15.9p: New Hangar 417



The Operations Building, which covers about 12,000 sq. ft., has its mass broken quite effectively by the use of varied heights and setbacks and a broad band of metal siding as a fascia.

Exhibit 15.10p: Operations Building 419.

The Avionics Building, uses only one major material, brick, and covers about 6,000 sq. ft. It uses the techniques of using setbacks, stepping down the grade, varying the height of the parapet, and bands of brick patterns to create an interesting building.

Exhibit 15.11p: Avionics Building 125

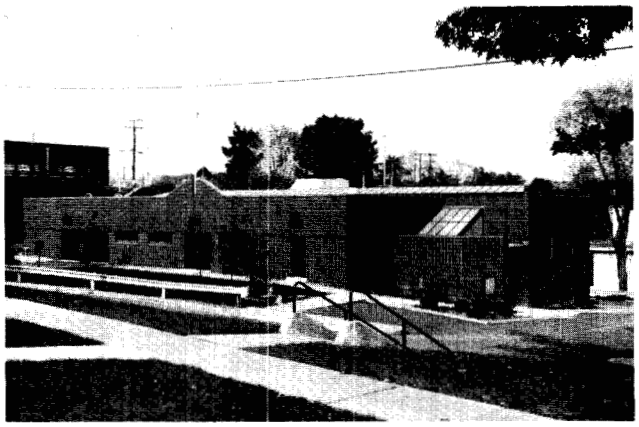
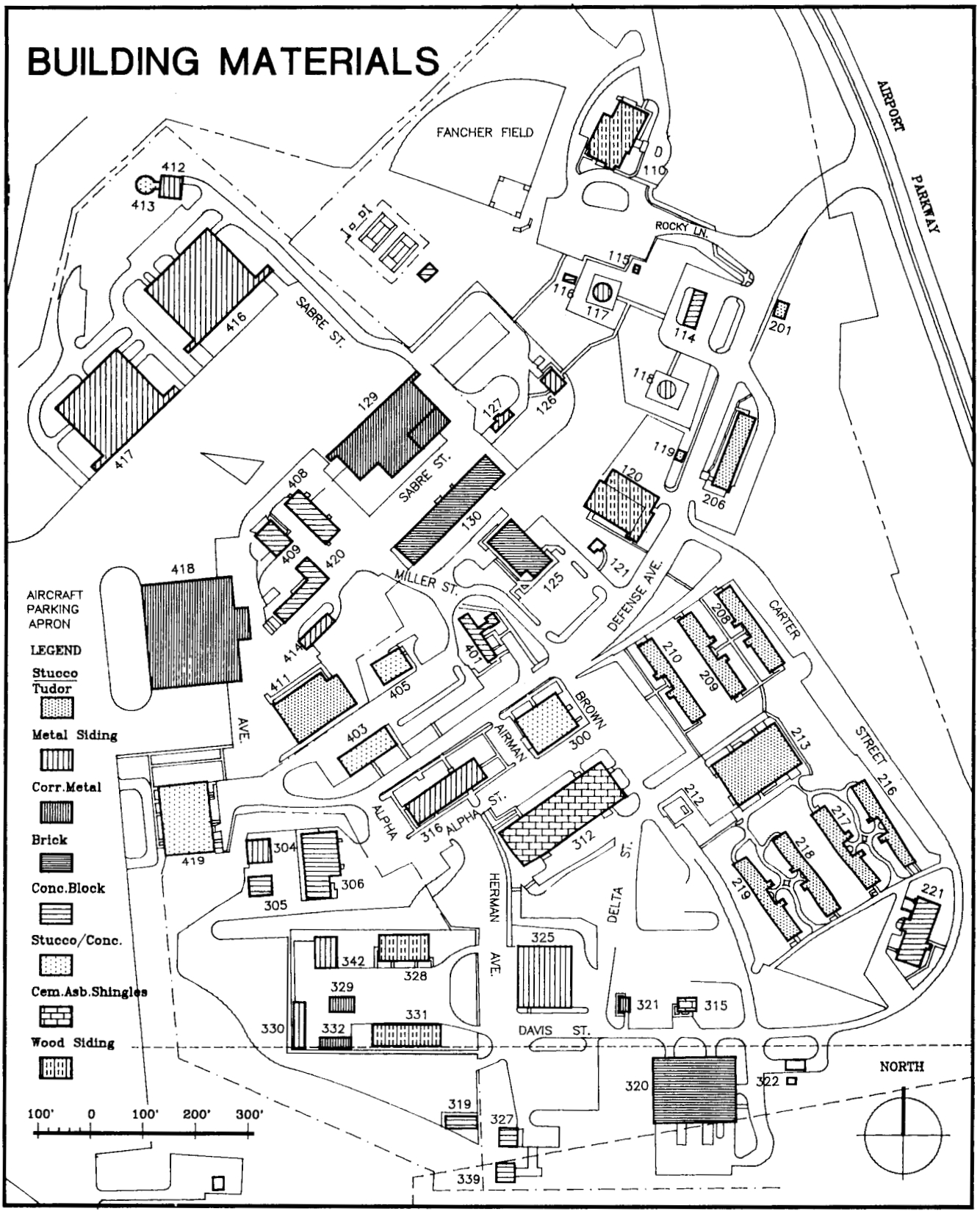


Exhibit 15.12m: Building Material Distribution Map.



BUILDING ANALYSIS

The purpose of this analysis is to determine what the base possesses in terms of building quality, style, materials, roof types, etc. in order to decide if and how it should be changed. In addition to the individual buildings, the grouping of and relationships between buildings were also considered.

Factors Considered

In analyzing the current facilities at the base and in making recommendations for the future, many factors were considered. These include:

..Condition of the buildings,

..Appearance, individually and as groups.

..Practicality of their design and materials.

..Advisability of altering existing buildings.

These factors are expressed in two significant building groups. The cluster of dormitories, while not of spectacular architectural design, was recently renovated and is well maintained. Except for the Tudor details on these buildings, no conscious architectural theme is evident on the base. This style, however, has no historical relationship to the Pittsburgh area.

The two newer hangars, while enormous at 24,314 sq. ft. each, have their mass reduced by the use of two major materials, brick and metal siding, which are each a distinctive color. The siding, which covers slightly more than the upper half of the buildings, is a medium blue which at some times blends with the sky, and thus helps further diminish the mass of the hangars.

Some of the smaller new structures serve their purposes by utilizing prefabricated metal buildings. One example is the Vehicle Maintenance Shop (#304) which covers 2000 sq. ft. It has a low gable roof with an overhang which protects the walls and makes a prominent shadowline on the walls. The building is inexpensive, easy to maintain, and functional.

An example of a functional, fireproof building is the Pump Station (#116) which is painted concrete block with a medium gable roof with shingles. It also is inexpensive, easily maintained, and functional.

Exhibit 15.13p: Vehicle Maintenance Shop 304

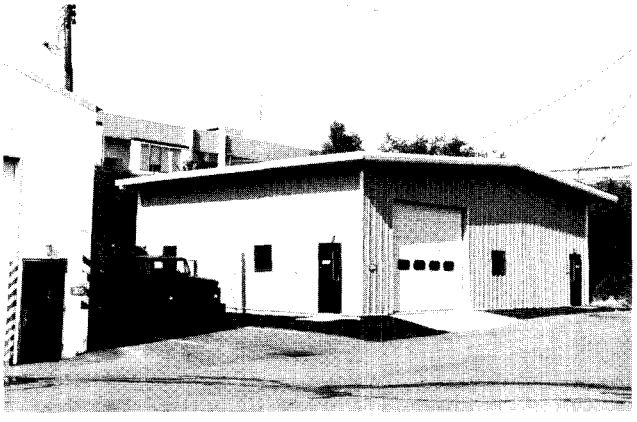
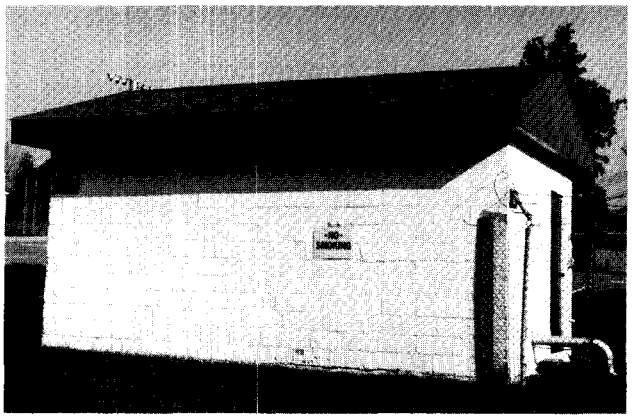


Exhibit 15.14p: Pump Station 116, Functional concrete block design.



Circulation and Parking

The location and dimensions of the existing circulation and parking system is covered in detail in Chapter 14. Except for Defense Avenue at the base entrance, this system has no strong visual impact due to its poor edge definition and direct access to parking spaces from the roadway. There are virtually no street trees to define the major circulation paths.

Site Furnishings

These elements of the landscape include:

..Power Poles and Transformers: for electric power to facilities.

..Street Lighting: and other outdoor lighting.

..Trash Disposal: containers and loading areas.

..Site Accessories: Flagpoles and displays.

..Fencing: at the perimeter and around areas needing special security.

There is very little evidence that coordinated design of site furnishings has been done on the base. The coordinated design of these elements will be discussed in the Proposals section of this report.

Exhibit 15.15p: Substation and Power Poles

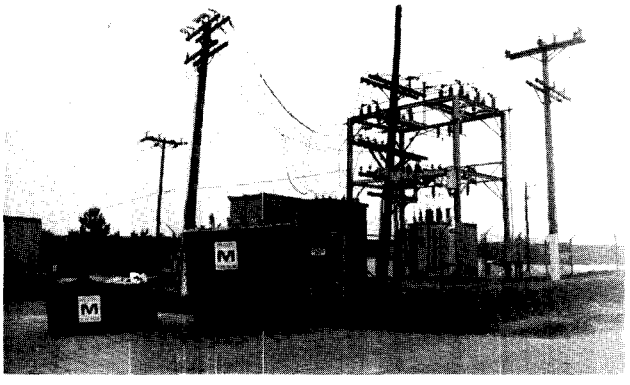
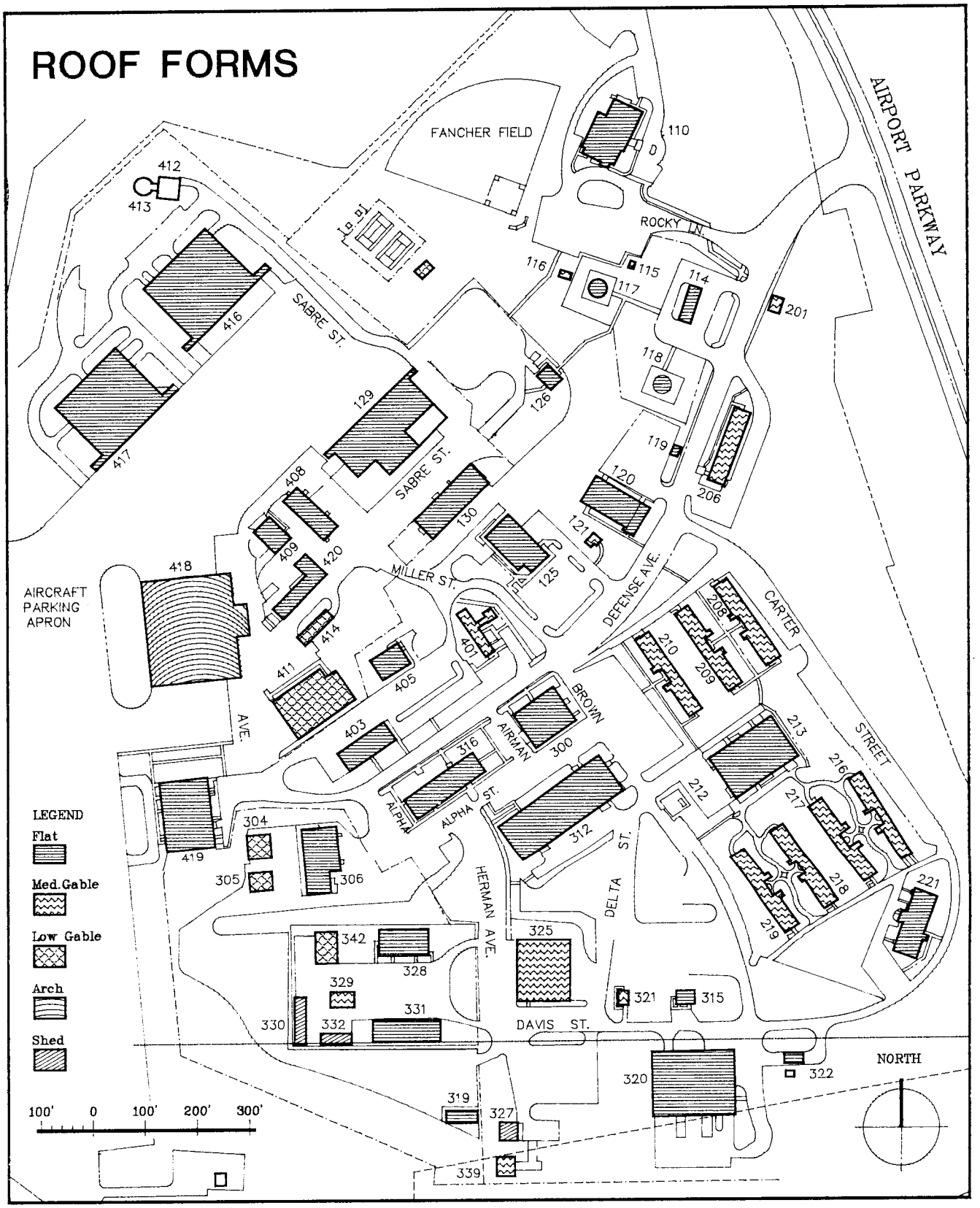


Exhibit 15.16m: Roof Form Distribution Map.



NEEDS SUMMARY

It is evident that the Pittsburgh AFRES base has had very little long-range coordination of the exterior design elements of the base during its construction over the past 40 years.

The summary below outlines the consultant's observations for each visual element on the base, and a general estimate of the needs to remedy the problem. Each element will be expanded in the Design Proposal part of this chapter, with specific recommendations for new design features and implementation.

The primary goal of the Master Plan will be to clarify the existing visual patterns and to provide guidelines for implementation of a coordinated design theme for the future.

Exhibit 15.18p: Landscaped berms between flight line area and recreation areas near gate

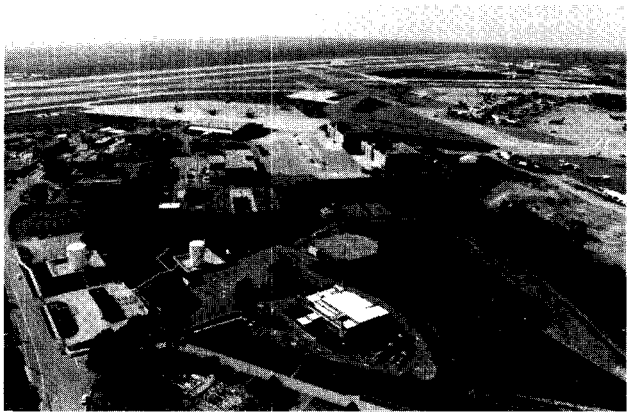


Exhibit 15.17t: Summary of Design Elements of 911th Tactical Airlift Group (AFRES) at Greater Pittsburg Airport

Element	Observation	Needs
Buildings	There appears to have been an effort to coordinate the exterior appearance of some buildings groups on the base, the new hangar and dormitory areas.	Implement a program of exterior material coordination using a common color scheme. Use this color program to unify new and refurbished buildings.
Open Storage	Visually unattractive in BCE area.	Provide screening or locations surrounded by buildings.
Circulation Systems	Aircraft circulation and government vehicles have a workable, functional system of travel. Privately owned vehicles travel is not well defined.	Implement a new street system with both strong continuity and visual accents to separate government vehicles from POV traffic.
Parking	Parking is generally available where needed. Direct access from circulation arteries has made the road system ill-defined.	Include landscaping in selected locations for screening and separation of parking from roads.
Electric Lines	Ugly overhead wires are visible in many areas of the base.	Remove overhead wires and transformers where possible.
Street Lighting	No common design for street lighting fixtures.	Select a common fixture design to fit with the base color scheme.
Fencing	Chain link fencing used throughout the base.	Provide landscaping at selected locations where appearance is important.
Trash Receptacles	Steel dumpsters used for trash storage. Visually unsightly.	Consider screening of trash containers
Landscaping	Base has few trees due to the scarcity of land. The street system has few street trees. Steep banks are well landscaped separations between flight line and other land uses.	Select a consistent system of building and roadside planting materials to unify the appearance of the base. Reserve space for landscaping in parking and street system.

OBJECTIVES

In the preceding section, an inventory of existing conditions and needs was made as a prelude to preparation of plans for the Pittsburgh AFRES Base. Of equal importance, at an early stage, is the establishment of objectives to guide the formulation of these plans. These objectives are detailed in the excellent manual, "Installation Design: Improving the Visual Environment", AFM 88-43.

..Mission Accomplishment - To continue to uphold the accomplishment of the assigned mission as the foremost objective in planning the base.

..Land Use & Buildings - Continue to seek the best locational relationship for all land use and building needs.

..Streets & Parking - To provide safe and efficient circulation systems that properly service all base buildings and activities.

..Assets - To maintain those natural and manmade features and facilities that are existing assets; to replace existing inadequate facilities, and to insure that any new facilities will become assets.

..A Quality Base - To maintain and improve the base reputation as being a quality place to work and contribute to the mission of the base.

Exhibit 15.19t: Installation Design Objectives from AFM 88-43*

Base Physical Feature	Related Objectives	
..BUILDINGS	A..Adapt building design to natural site conditions. B..Relate buildings in groups.	C..Develop a coherent architectural character. D..Preserve historic buildings and areas.
..ROADS	A..Circulation system should define a heirarchy of flow. B..Adapt roads to site conditions.	C..Improve the existing network for growth, safety, and appearance.
..PARKING	A..Reduce the visual impact of parking facilities.	B..Minimize parking requirements and land coverage.
..WALKS/BIKEWAYS	A..Provide safe and secure pedestrian and bicycle facilities. B..Provide pedestrian/bike facilites in response to potential demand	C..Create a pedestrian scaled environment with visual delight. D..Facilitate movement and access to facilities by the handicapped.
..SITE FURNISHINGS	A..Provide site furnishings appropriate to their intended function. B..Establish a coordinated system of site furnishings. C..Consolidate and simplify the design of site furnishings.	D..Provide consistency and continuity in the use of site furnishings. E..Incorporate adequate provisions for the handicapped
..LIGHTING	A..Express the appropriate image, character, and scale of and area B..Convey a sense of the installation organization.	C..Promote safety and security for night-time use of the installation. D..Minimize operational, maintenance and repair costs.
..SIGNAGE	A..Communicate necessary information effectively. B..Contribute positively to the overall visual image of the base.	C..Establish an overall signage system that is coordinated, consistent, flexible, and economical.
..LANDSCAPING	A..Preserve and enhance existing landscape resources. B..Improve overall visual quality of base.	C..Improve the environmental quality of the installation. D..Minimize maintenance requirements.

* These objectives were digested from "Installation Design: Improving the Visual Environment," 1 March 1981, Air Force AFM 88-43, Army TM 5-803-5, Navy NAVFAC P-960.

DESIGN PROPOSALS

The future overall appearance of the 911th Tactical Airlift Group at Greater Pittsburgh Airport includes more than architectural design. Due to the restraints each building has regarding function and cost, and the fact that several A/E firms are likely to be involved in the design of the structures over a period of time, it is unlikely that the architectural design of buildings alone will be sufficient to unify the appearance of the base. The visual environment includes other elements which can help to unify the overall appearance of the base, including:

..Curbing: to define the drives within the base, outside of aircraft movement areas.

..Street Furnishings: Light standards, entrances, street signs.

..Signage: incorporating the Air Force sign system.

..Entrance Features: to create a positive first impression of the base.

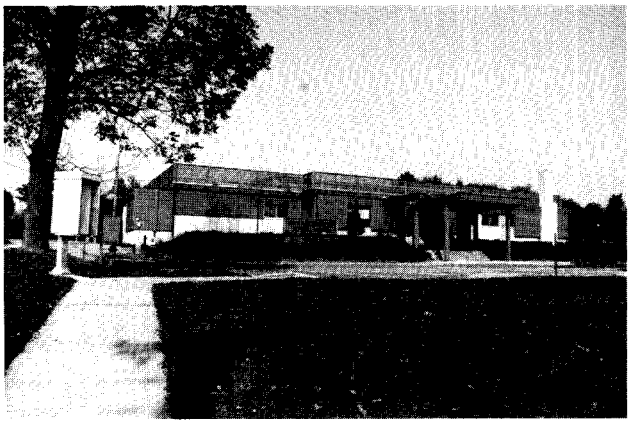
..Landscaping: using local, maintenance-efficient plant material. See Chapter 17, Landscape Development for details.

These additional elements will be discussed in turn, with detailed recommendations for implementation. It is important that all elements of the visual environment work in unison, and that a balance be achieved between the design needs of each building and the overall design theme of the base as a whole.

Exhibit 15.20t: Air Force AFM 88-43 Architectural Guidelines Introduction

> "Every installation should develop its own architectural guidelines to promote a coherent architectural character that provides visual order, clarity, interest and human scale within the installation. These architectural guidelines should be specific enough to assure basic harmony and coordination of architecture, yet flexible enough to promote variety and visual interest....."

Exhibit 15.21p: Open Mess, natural wood siding.



BUILDINGS

This Master Plan has been charged with developing a plan to unify new buildings aesthetically. Since it is likely that the buildings proposed for 911th Tactical Airlift Group at Greater Pittsburgh Airport in the short range plan will be designed by several architects, rather than a single firm, the responsibility for coordinating design is a function of the Owner, in this case, the Base Engineer.

Each architect is likely to prefer an architectural style, based on his own experience and taste which influences his design decisions for each project. Therefore, any plan which dictates a specific architectural style, "Tudor","Contemporary", "Post-Modern", "Traditional", etc. would be difficult to accomplish.

The photographs below illustrate the nature and variety of existing buildings at the base. These buildings will still comprise over half of the base after the short range plan is completed. These existing buildings were designed, for the most part, as direct solutions to functional space needs. Their style reflects this philosophy.

Design Considerations

Factors to be considered in future building design guidelines should provide for unity between old and new buildings with enough flexibility to permit innovative solutions to the design problem. These considerations include, but are not limited to:

..Energy Conservation: Buildings designed for hot, humid summers should minimize heat gain by solar radiation while maximizing shade, by use of trees and other architectural screening.

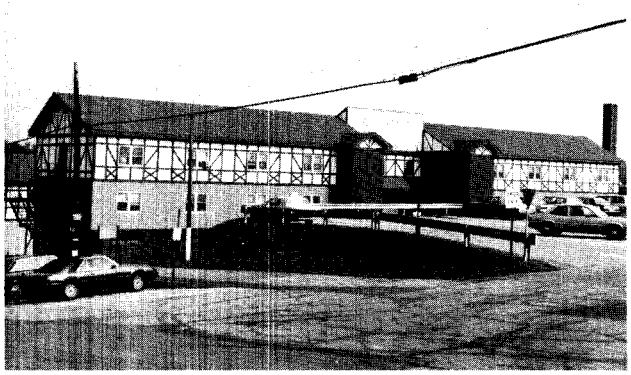
..Low Maintenance: for the exterior shell should reflect the total life-cycle cost rather than the least intitial cost.

..Clean Design: so that facilities will not become stylized in the future.

..Harmony: with existing buildings through the use of materials, color, form and scale.

..Roof Design Considerations: consistent with the function of the building.

Exhibit 15.22p: "Tudor" design dormitory building.



Architectural Design Guidelines

After reviewing the existing elements of building appearance, the following guidelines are recommended for all new construction, rehabilitation and additions to existing buildings.

It is recommended that a Design Review Board be created to review all design proposals during the schematic design phase of each project. This board would consider continuity of exterior design for each new project on the base and to act as arbiter, where design conflicts arise, between architects, engineers and landscape architects.

General

These general guidelines apply to all buildings, regardless of location. Specific color and painting recommendations are covered in more detail in Chapter 16, Exterior Master Paint Plan.

Primary Materials

Metal Buildings: The economy of metal is likely to make it the material of choice for large, industrial type buildings, such as hangars and other industrial-type structures.

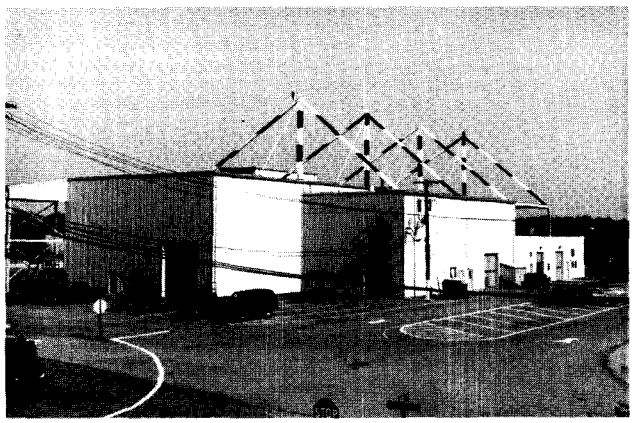
Since metal has no intrinsic color, it will be necessary to coordinate metal colors with the colors of brick and stucco to avoid a series of conflicting colors in the building pattern.

Stucco/Block: buildings are also likely to be very cost-effective for many new buildings. Their lower initial cost is offset by higher maintenance cost for painting during their life cycle. If chosen, the color should harmonize with that selected for metal buildings.

Concrete: Use same paint scheme as Block/Stucco.

Brick: match existing. Select one brick from those already used on the base. Only one brick should be chosen, based upon cost, performance and long-term availability. Brick is a common building material providing a very low maintenance, weather resistant finish to buildings of all sizes.

Exhibit 15.23p: Hangar 129, functional Roof Trusses



Secondary Materials

Metal or Stucco: should be painted in a single, common secondary wall color. The color selected should harmonize with the primary brick color selected and with the primary trim color.

Roof Style

Flat: or minimum slope. If the function of the building, i.e.: a hangar, requires a pitched roof for structural reasons this would control roof style. Hangars 418 and 129 reflect this principal in their roof design. Flat roofs are used by more than half of the existing buildings. If sloped roofs are used, it is recommended that the pitch of the roofs be the same as existing, sloped-roofed buildings. Pitched roofs should be used wherever possible.

Color

Exterior building colors should be limited to an established color palette used throughout the base. This palette should specify a limited number of subdued and harmonious colors for larger wall areas and trim. The final selection of base colors is detailed in Chapter 16, Exterior Master Paint Plan.

The selection of materials and colors for the base is very important, and should not be fixed until a strong concensus is reached by the Design Review Board. Once the palette is decided, however, color selections should not be changed without a thorough review of the entire base color system.

Exhibit 15.24p: Gymnasium, Cement Asbestos Shingles.

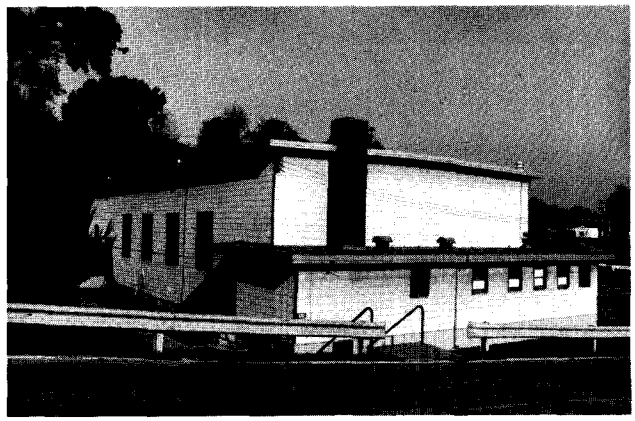


Exhibit 15.25p: Headquarters, recently remodeled.

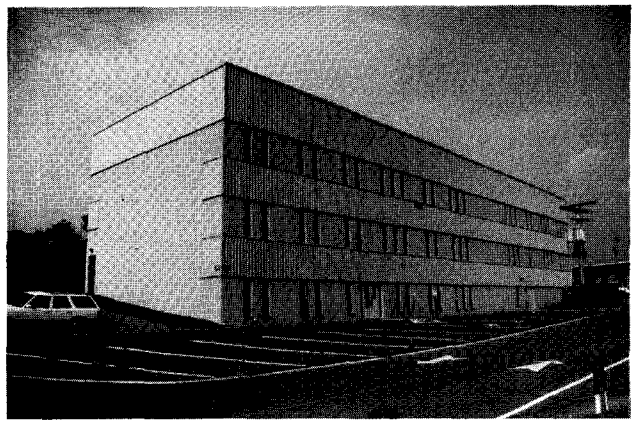


Exhibit 15.26p: Air Force AFM 88-43 Roads Guidelines

> "The road network of an installation should functionally and visually reflect a logical heirarchy of traffic circulation. The network should separate types of traffic by function, ranging from through-traffic to local traffic. The visual character of each segment should appropriately convey its role and function in the overall network....."

CIRCULATION AND PARKING

The proposed circulation plan is indicated on the following exhibit, Circulation and Parking. This plan shows an heirarchy of roads for aircraft, government vehicles, private vehicles, pedestrians and bicycles.

It will involve the construction of many roadway defining elements: Roads, Curbs, Walks, Planting Strips, Site Furnishings, Signs and markings. Its implementation will be, in most cases, incidental to the construction of buildings and other primary construction projects.

Since this program will be carried out over a period of time, it is important that the exact character of these elements be firmly established so that the various firms responsible for final design will have specific guidelines to maintain continuity of the system.

Aircraft Circulation

No major changes in the design of aircraft circulation is contemplated for the short range. The apron will be expanded to accomodate a total of 14 C-130 aircraft for the short range plan and 12 C-17 or 14 C-141 aircraft for the long range.

Government Vehicles

The government vehicles associated with the base provide most of the movement during the working day and night. Since they have permission to use all roadways and the apron, it is important that they be well marked and lighted.

Privately Owned Vehicles

A typical cross-section for the proposed entrance drive is indicated below. This road will become the introduction to the base by and official traffic and visitors. The future traffic system, with double roadways and gates at each end. This section includes the following features:

..Curbs - to define the trafficway and prevent the migration of foreign objects on to the pavement, where they might be picked up in the tires of vehicles using the aircraft apron.

..Planting/Ground Cover - to provide visual separation of roadway and open space around buildings.

..Signage - to provide direct information regarding destinations and to provide traffic control between private and government vehicles.

..Lighting - to meet Air Force lighting standards, using a standard pole/fixture common to the base.

..Pedestrian/Bicycle Intersections - safely marked, lighted. See following exhibit.

Parking

Parking standards are indicated on the following exhibits. These conform to normal dimensions for standard sized cars. Due to the reduction in the size of automobiles in recent years, it is recommended that some spaces be assigned to small car parking. This may provide space for planting of trees in parking lots without the loss of parking spaces.

Location of new parking lots is shown on the exhibit which follows, Circulation and Parking Plan. Screening for each lot which is visible from surrounding roads is recommended. This plan provides individual, rather centrally located parking for each facility.

Pedestrians/Bicycles

Sidewalks are located in several areas for pedestrian use. In other areas, pedestrian circulation uses aprons, parking lots, and other paved areas. Bike traffic uses the paved streets. The steep topography is not conducive to pedestrian and bicycle movement.

Exhibit 15.27m: Typical Cross-Section through new entrance drive when improved.

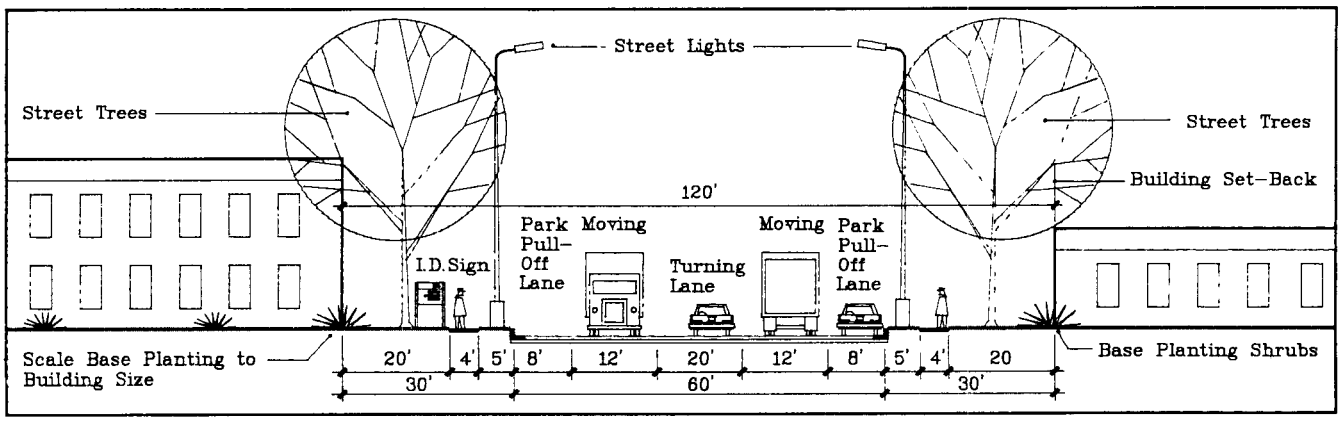


Exhibit 15.28m: Circulation and Parking Plan

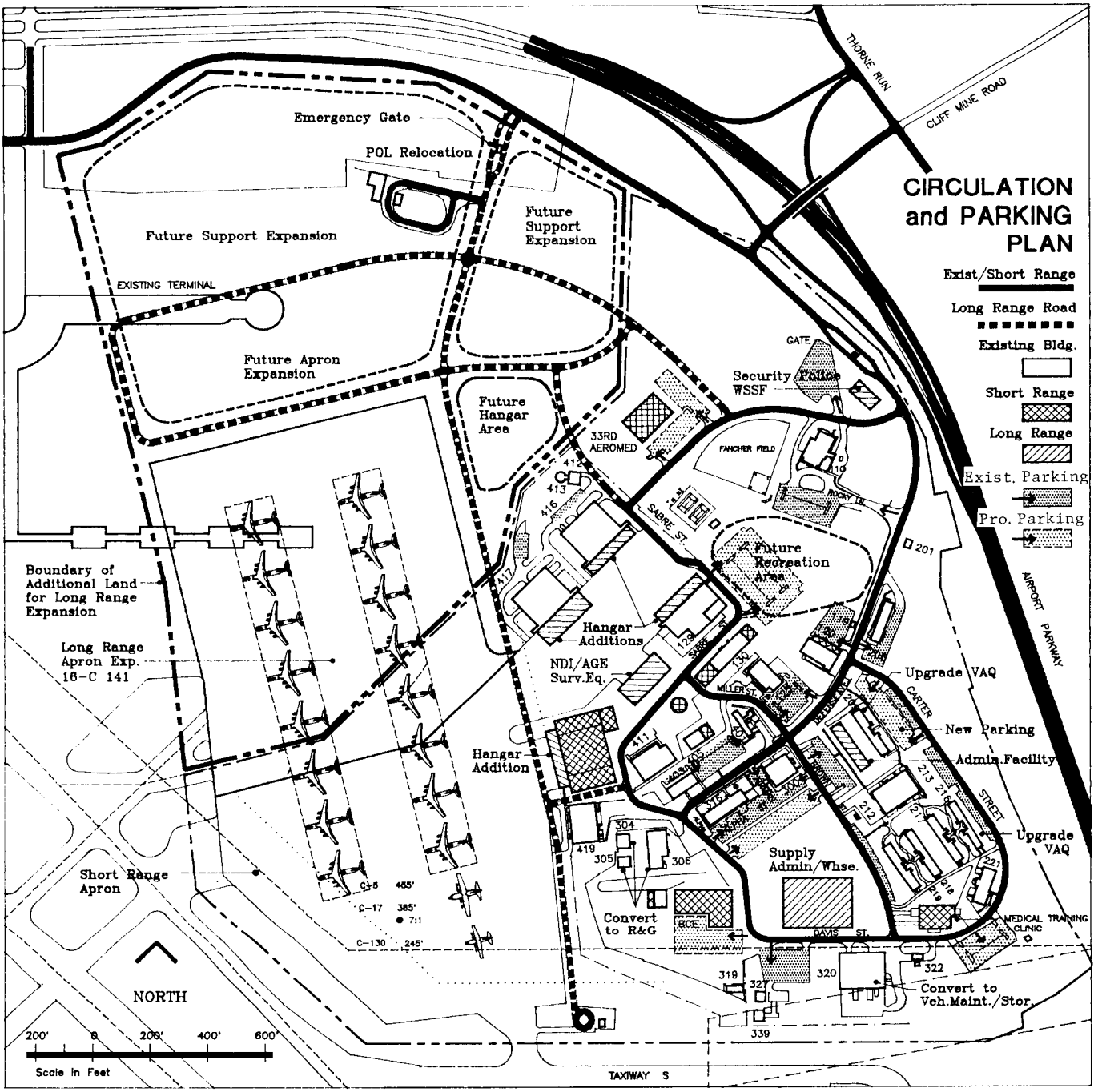


Exhibit 15.29m: Walkway/Bikeway Pavement Details

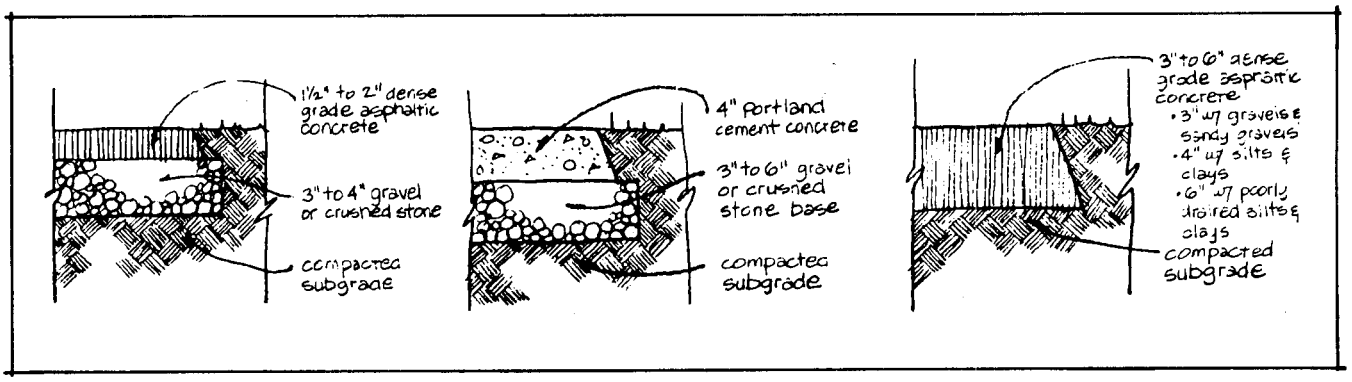


Exhibit 15.30m: Roadway/Walkway Intersection Details

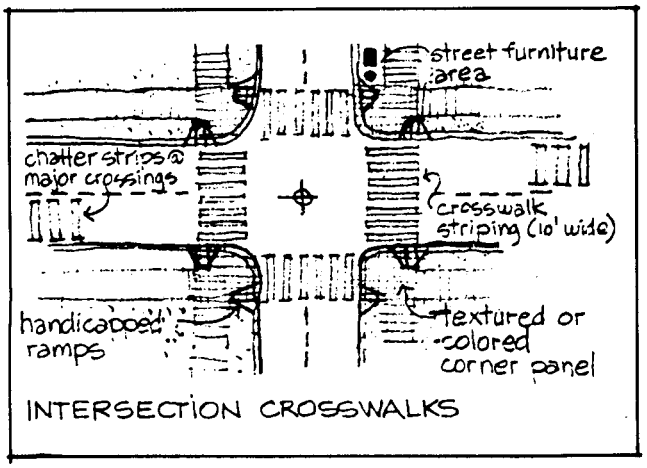
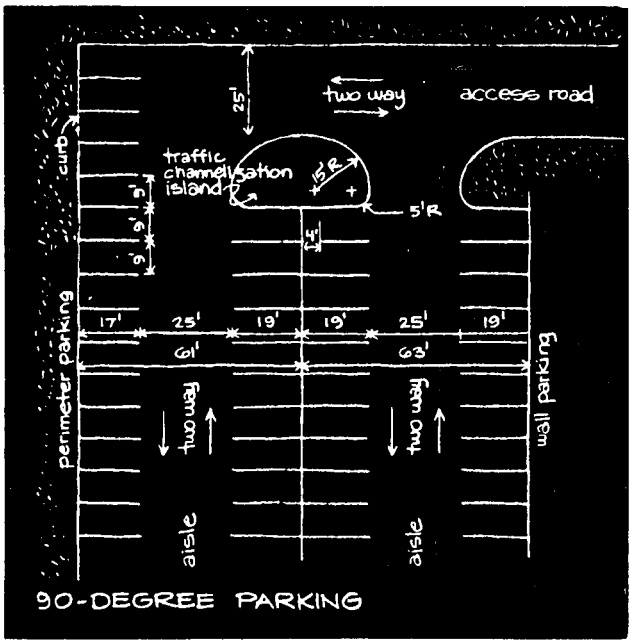
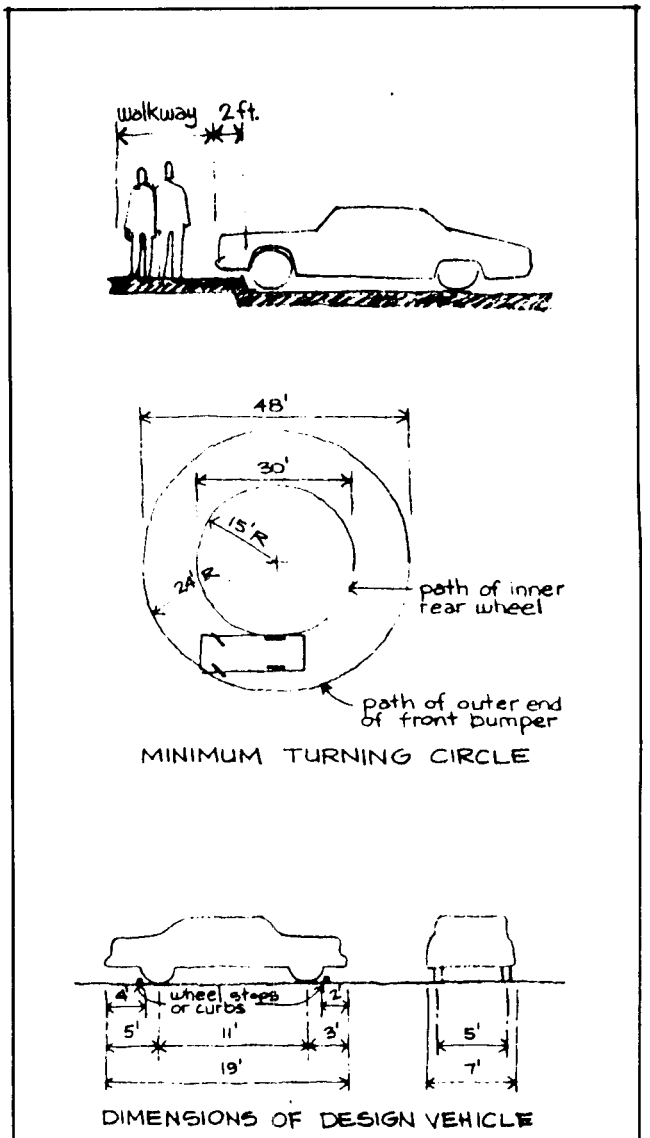


Exhibit 15.31m: Standard Parking Dimensions



Source:
"Installation Design"
Air Force AFM 88-43 - 1 March 1981

Exhibit 15.32m: Typical Vehicle and Walkway Details



SITE FURNISHINGS

Site furnishings such as lighting, trash recepta cles, fencing, benches, etc, can provide strong continuity in the overall appearance of the base, if the form, color, and character are selected to harmonize with other elements of the developed environment.

There are many choices of material, color, form and cost available in each group of furnishings. The furnishings selected should attempt be a reasonable balance between appearance, function and cost:

Lighting

The base will need to select a variety of lighting types, including:

..Roadway Lighting - to define the heirarchy of circulation routes within the base.

..Parking Lot Lighting - to provide general illumination of parking areas

..Pedestrian/Bicycle Lighting - for use during nighttime operations.

..Security Lighting - to illuminate areas where access to the base, or individual buildings is most likely.

..Accent Lighting - for Entrances, Flagpoles, Special Display Areas, Etc.

No attempt will be made in this report to determine the spacing and level of illumination for each location. Standards for these decisions exist in current technical manuals (see TM 5-811-1). What is recommended is that the materials and colors be consistent throughout the base.

Exhibit 15.33p: Lighting Standard at Avionics.

The tallest lights may reach 40 feet in height and the choice of pole materials includes concrete, steel, aluminum and wood. It is recommended that the material used for the lighting poles harmonize with the support for the signing system. Final material chosen should reflect appearance, local standards, and cost of installation and maintenance.

The considerations for each material include:

..Precast Concrete: almost maintenance free when used with aluminum bracket and fixtures.

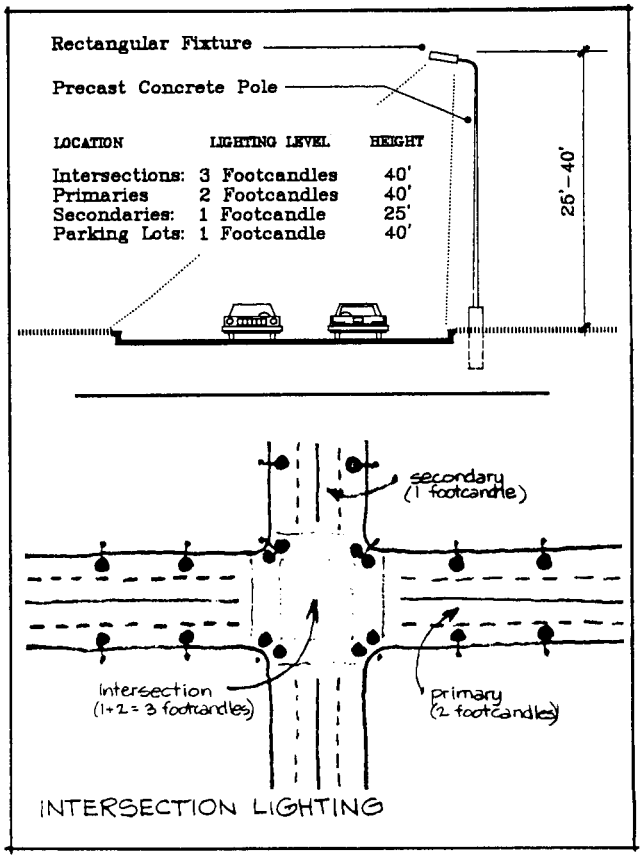
..Wood: stained or painted dark brown, to match the trim of the buildings or preservative treated. Higher maintenance costs due to periodic repainting. A rectangular section is not a "natural" form for taller poles. Round poles and unpainted poles are less attractive, more, "common". Probably the lowest initial cost.

..Rectangular Steel: painted black or dark brown. Same maintenance problem as wood. Medium initial cost.

..Round Aluminum: natural finish. This is the most commonly available light post.

Due to the medium maintenance cost and potential for matching light poles, sign posts and other trim colors, it is recommended that a precast concrete/aluminum or painted steel rectangular light pole/fixture system be used for the base.

Exhibit 15.34m: Roadway Lighting Level Standards, "Installation Design" - AFM 88-43.



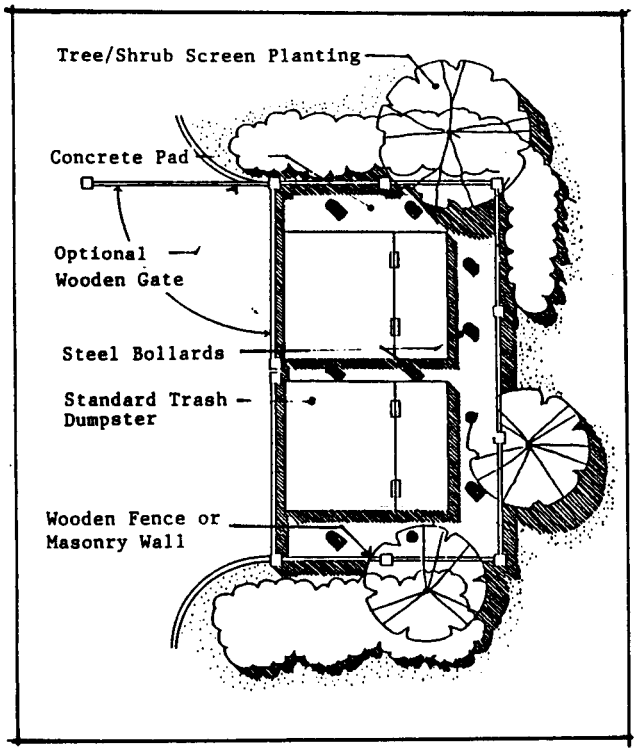
FENCING

The most practical security fencing type is, and will continue to be, chain link fencing. In order to minimize the impact of this fence type, it is recommended that it be painted black where existing fencing needs maintenance, and that dark finished fencing be used for new installations.

Where possible, landscaping should be used with fencing to soften its impact. Where wood fencing is appropriate, use rectangular designs, stained or painted neutral colors such as black or grey. See the exhibits below for typical screen fencing landscaping details.

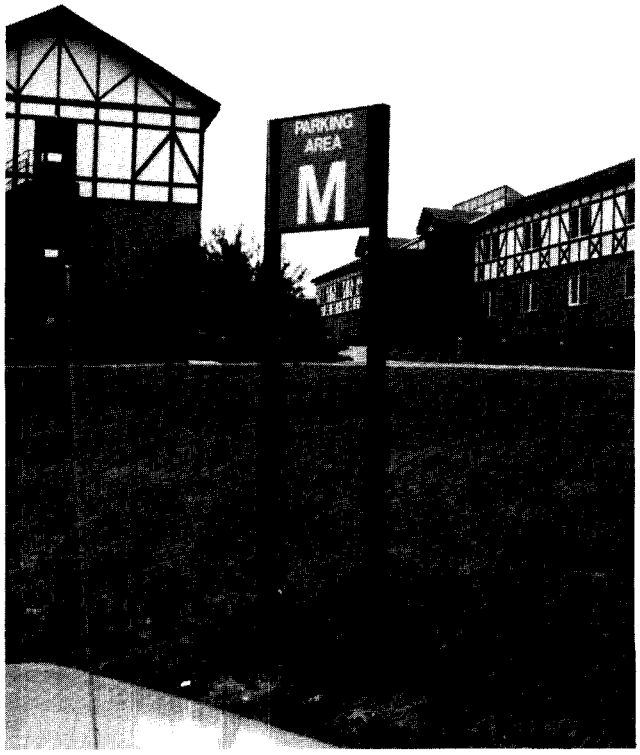
Exhibit 15.35p: Chain Link Fencing at old POL.

Exhibit 15.36m: Plan of Dumpster with wood screen.



15-15

Exhibit 15.37p: Parking Sign, Dormitory Area.



Trash Receptacles

The collection system recommended consists of screened dumpster locations convenient to offices with trash receptacles at appropriate points on the site. The appearance of these trash facilities should match that of other site furnishings; rectangular and dark in color.

Exhibit 15.38m: Public Trash Receptacle.

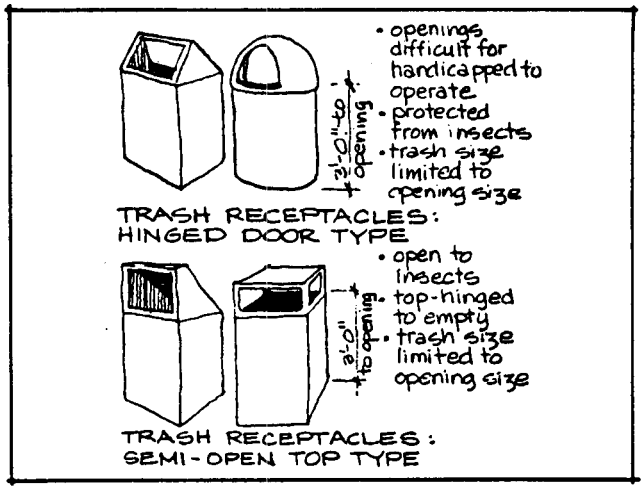


Exhibit 15.39p: Dumpster in Parking Lot

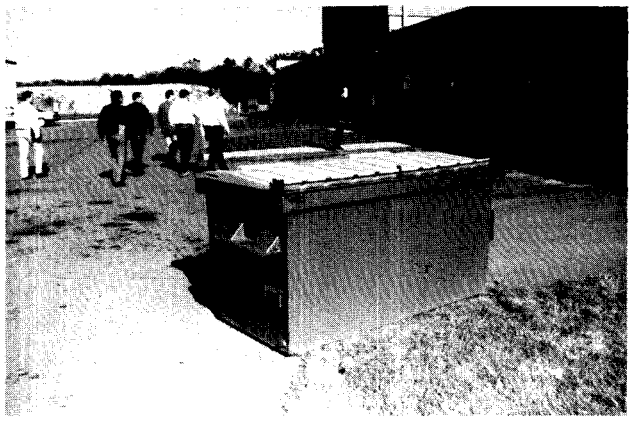


Exhibit 15.40p: Dumpster in Loading Area

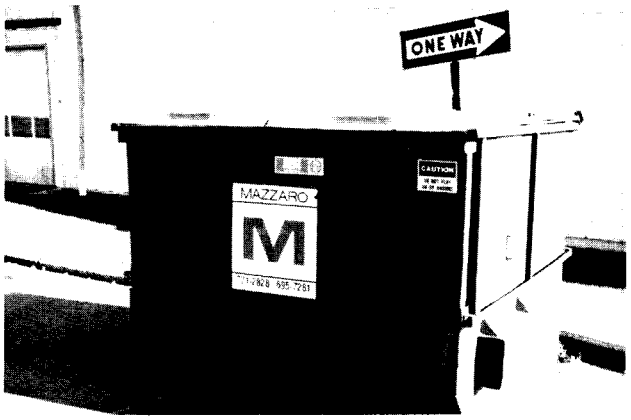


Exhibit 15.42m: Location of Dumpsters in Parking Lots

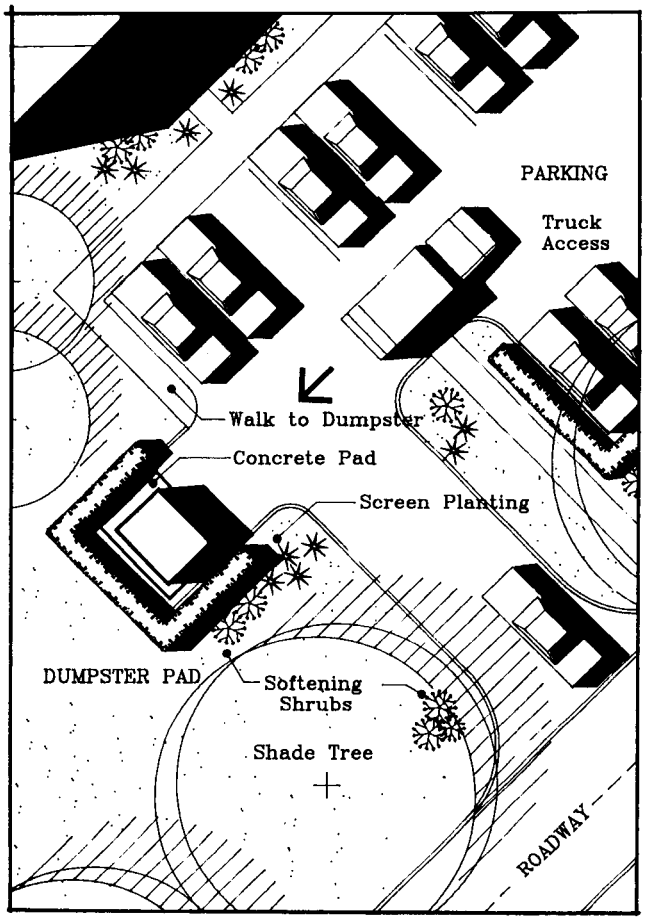
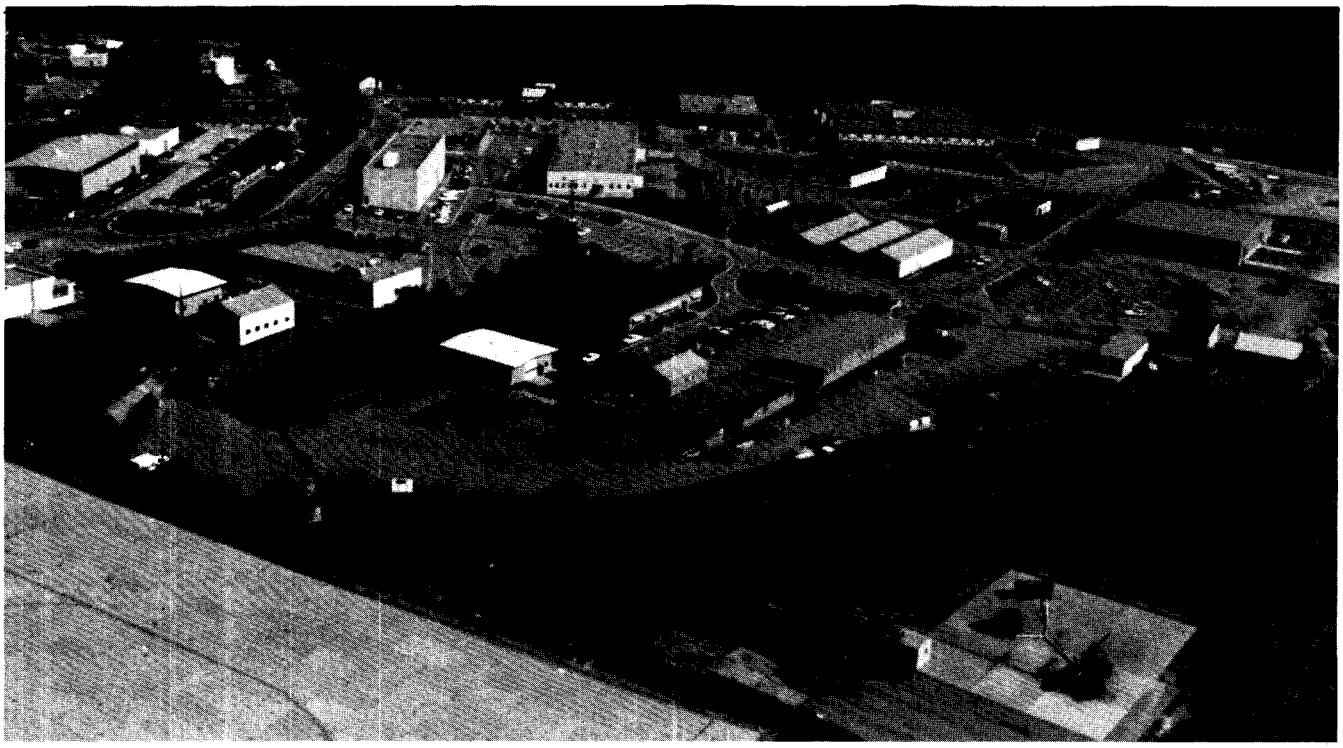


Exhibit 15.41p: Pittsburgh AFRES Base from Airfield. Open Storage and Parking Facing Airfield



SIGNAGE

The Air Force sign system is described in detail in AFP 88-40, Sign Standards. These standards are very specific and must be followed exactly as they are described. These standards include:

..Letter Style - Helvetica Mediun, Helvetica Regular

..Sign Assembly Sequence - Placement/Size of Letters Seals, Emblems, Etc.

..Exterior Signs - Location and size options for Entrance Gates, Building Identification, Community Identification, Regulation and Morale signs.

..Interior Signs - Building Directories, Office, Directional, Bulletin Boards, Etc.

Sign Details

The sign standard manual can be used as the specification for the construction of the sign system. The details included here indicate the level of detail contained in this reference.

Sign Master Plan

Each base must prepare a sign master plan, showing the location and content of every proposed exterior identification, destination, regulation and information sign on the base. The base civil engineer is responsible for developing, implementing and maintaining the sign master plan.

The exhibits below indicate the location of principal signs for the base at full development of the base, and the type sign which would be appropriate for each location.

Exhibit 15.43m: Lettering Layout, Entrance Sign

Exhibit 15.45m: Base Entrance/Regulation Sign Sizes

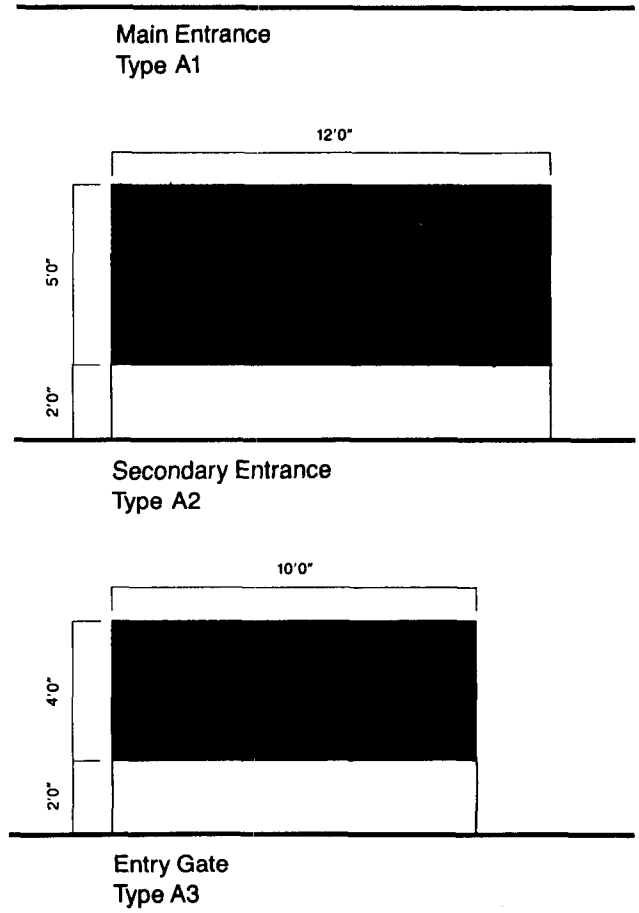


Exhibit 15.44m: Typical Exterior Signs

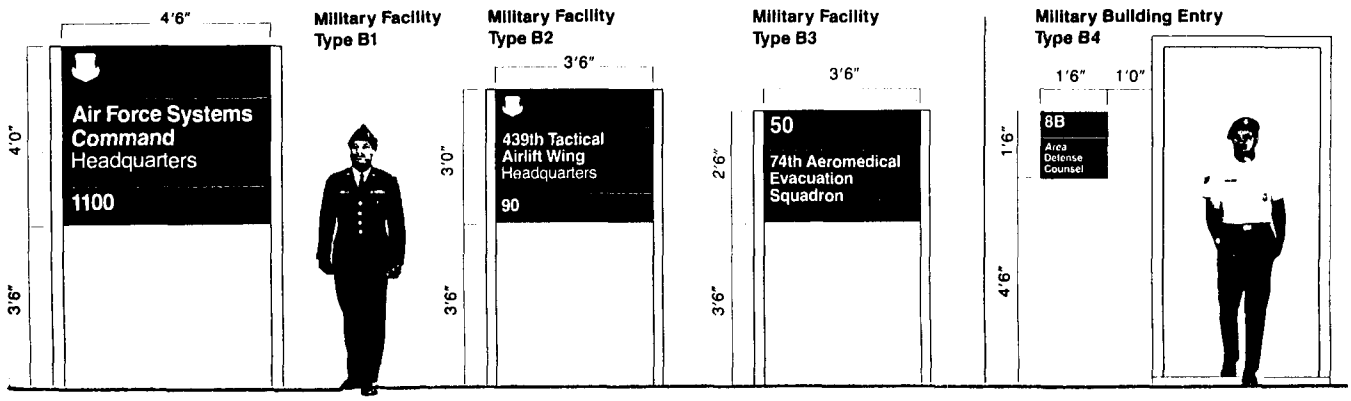
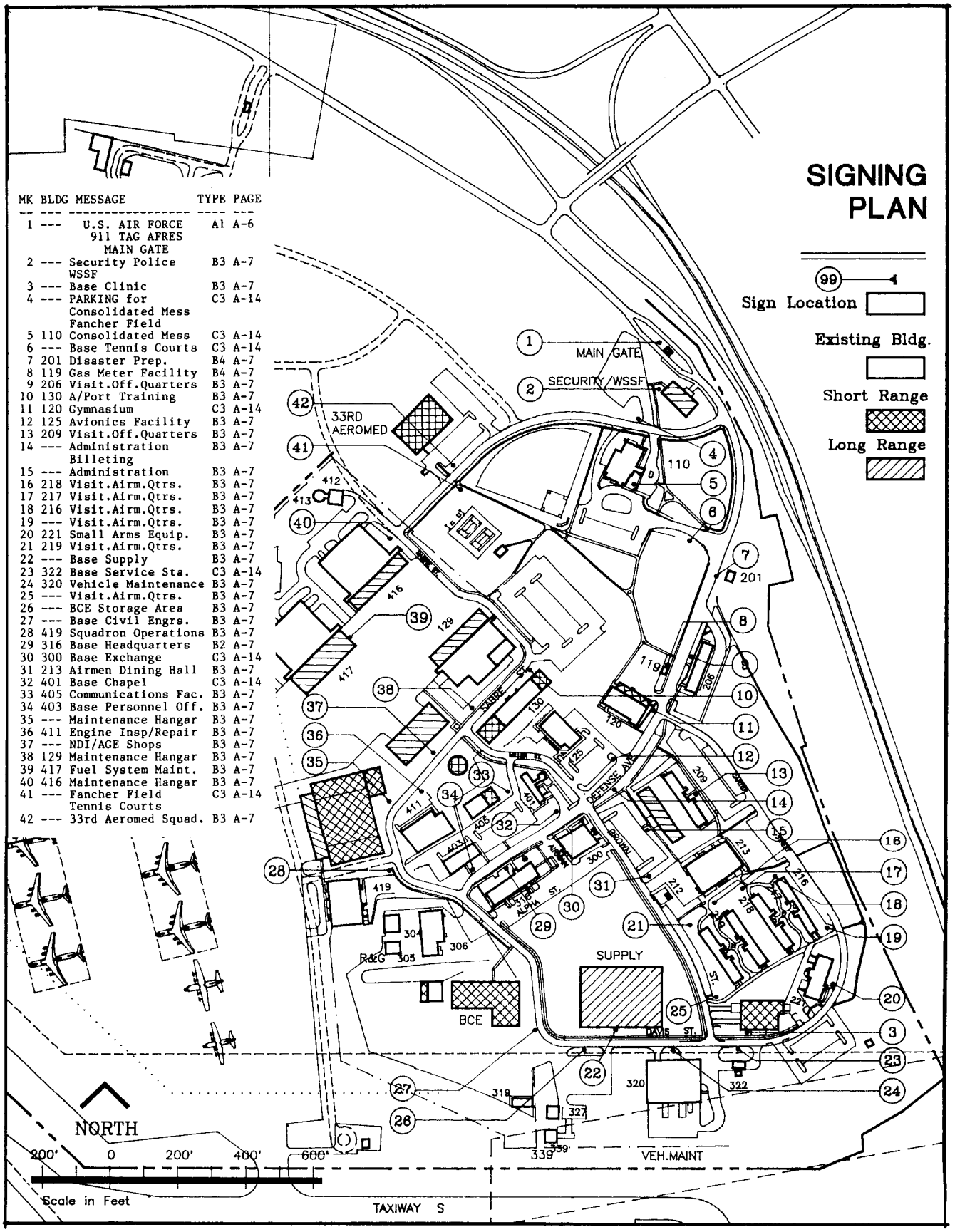


Exhibit 15.46m: Proposed Signing Plan - Pittsburgh AFRES Base at Greater Pittsburgh Airport



MK	BLDG	MESSAGE	TYPE	PAGE
1	---	U.S. AIR FORCE 911 TAG AFRES MAIN GATE	A1	A-6
2	---	Security Police WSSF	B3	A-7
3	---	Base Clinic	B3	A-7
4	---	PARKING for Consolidated Mess Fancher Field	C3	A-14
5	110	Consolidated Mess	C3	A-14
6	---	Base Tennis Courts	C3	A-14
7	201	Disaster Prep.	B4	A-7
8	119	Gas Meter Facility	B4	A-7
9	206	Visit.Off.Quarters	B3	A-7
10	130	A/Port Training	B3	A-7
11	120	Gymnasium	C3	A-14
12	125	Avionics Facility	B3	A-7
13	209	Visit.Off.Quarters	B3	A-7
14	---	Administration Billeting	B3	A-7
15	---	Administration	B3	A-7
16	218	Visit.Airm.Qtrs.	B3	A-7
17	217	Visit.Airm.Qtrs.	B3	A-7
18	216	Visit.Airm.Qtrs.	B3	A-7
19	---	Visit.Airm.Qtrs.	B3	A-7
20	221	Small Arms Equip.	B3	A-7
21	219	Visit.Airm.Qtrs.	B3	A-7
22	---	Base Supply	B3	A-7
23	322	Base Service Sta.	C3	A-14
24	320	Vehicle Maintenance	B3	A-7
25	---	Visit.Airm.Qtrs.	B3	A-7
26	---	BCE Storage Area	B3	A-7
27	---	Base Civil Engrs.	B3	A-7
28	419	Squadron Operations	B3	A-7
29	316	Base Headquarters	B2	A-7
30	300	Base Exchange	C3	A-14
31	213	Airmen Dining Hall	B3	A-7
32	401	Base Chapel	C3	A-14
33	405	Communications Fac.	B3	A-7
34	403	Base Personnel Off.	B3	A-7
35	---	Maintenance Hangar	B3	A-7
36	411	Engine Insp/Repair	B3	A-7
37	---	NDI/AGE Shops	B3	A-7
38	129	Maintenance Hangar	B3	A-7
39	417	Fuel System Maint.	B3	A-7
40	416	Maintenance Hangar	B3	A-7
41	---	Fancher Field Tennis Courts	C3	A-14
42	---	33rd Aeromed Squad.	B3	A-7

ARCHITECTURAL DESIGN PROPOSALS

The AFRES base at Greater Pittsburgh Airport is divided into two distinct areas for the purpose of establishing design concepts. The airfield related buildings adjacent to the runway and apron, and the support buildings at a lower elevation. These include base administration, engineering, supply and housing. The buildings of primary concern include:

..**Hangar 129:** One of the older hangars, proposed for expansion to accomodate larger aircraft. The extension in front is proposed to match the material pattern of new Hangars 417 and 416, with brick at the base and metal siding above. Colors for these material should be chosen from the color range recommended for the flight line buildings.

..**Building 221:** This building is proposed for conversion to Small Arms use and is located near a large group of dormitories and the wooded area adjacent to the Airport Parkway. The exterior treatment proposed includes a sloped roof, new entry, and additional landscaping. The color of the base material should be chosen from the warm range of colors chosen for the support buildings.

..**Vehicle Maintenance Building 306:** This building is now used as a vehicle maintenace facility. The proposed use is for use as a Pavement and Grounds facility, a similar type use. Present construction of the building is consistent with the proposed future use. As a minor support building, it is recommended the no major exterior material changes be made to this building, and that harmony with other buildings be achieved through the use of paint which matches that in the immediate area.

..**Supply - Building 312:** This building is proposed for demolition in the Long Range Plan, therefore no major "facelift" is proposed. Since some routine painting may be done proir to its demolition, it is recommended that a color be selected from the warm tones of the support building palette be chosen should painting be needed.

..**Chapel - Building 401:** The chapel is located between two permanent buildings which are unlikely to have major architectural changes in the future, Avionics, Building 125, of red brick and the Base Exchange, Building 300 remodeled with the "half-timber" theme. It is recommended that the Chapel be renovated to harmonize with the Base exchange motif, using some brick to harmonize with the Avionics building. Colors should be chosen from the warm tones of the support buildings.

Exhibit 15.47p: Hangar 129, Scheduled for Addition to Accommodate Larger Aircraft

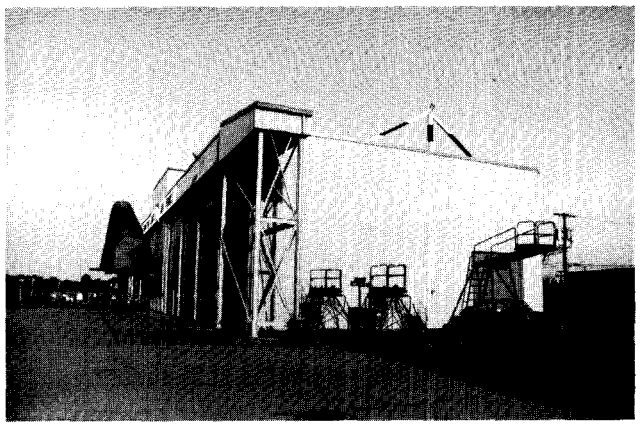


Exhibit 15.48m: Hangar 129, Addition of Metal Siding with Brick at Ground Level

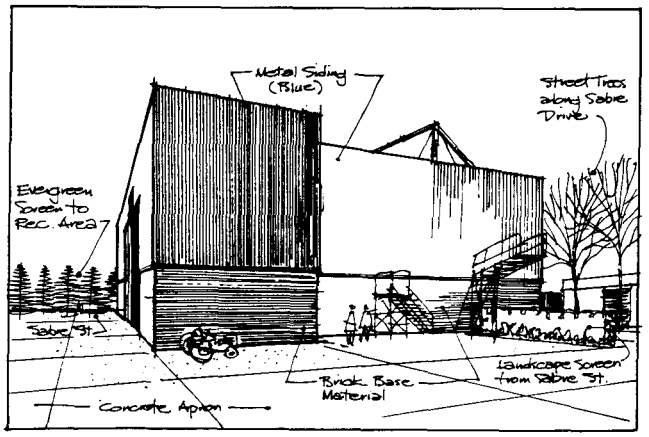


Exhibit 15.49p:: Building 221, Scheduled for Conversion to Small Arms Use

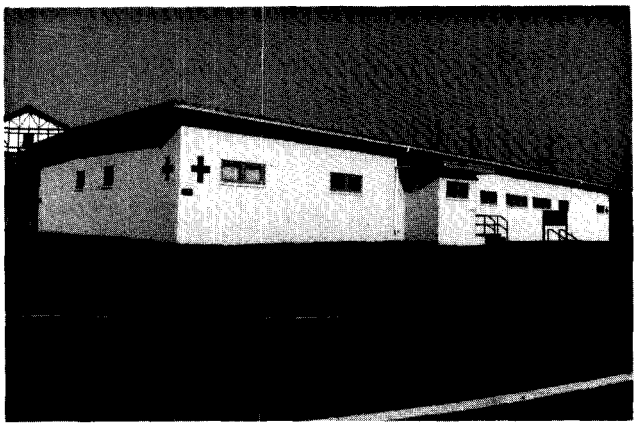
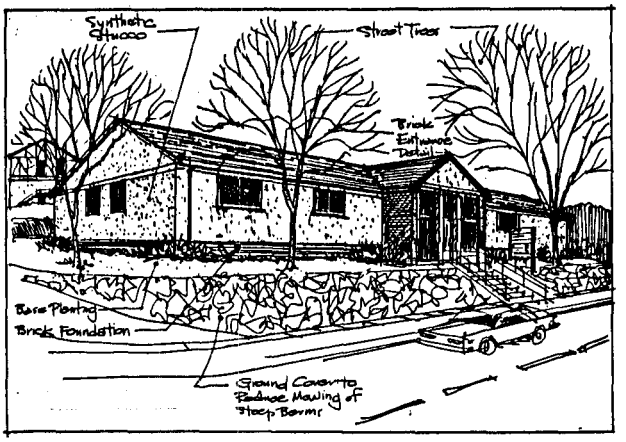


Exhibit 15.50m: Building 221, Possible Elevation After Renovation



..**Communications Facility - Building 405:** This 3000 SF, painted concrete block building was constructed in 1972 and is scheduled for a 1700 SF expansion in the short range program. The original block exterior is in good condition, and uses a "stacked" joint pattern. It is recommended that the addition use the same joint pattern and that the entrance be accented with warm colored brick. Color for the block should use the same color palette as the support buildings. To enhance the entrance area, additional planting should be included in the expansion project.

..**Survival Equipment - Building 408:** This building is scheduled for demolition in the Long Range Plan, and will replaced by a consolidated NDI/Survival Equipment building. In the interim period, the present color scheme, light blue tower and painted block in warm tones is in keeping with the color concept for the transition zone between the flight line and the support buildings.

..**Multi-Purpose Building - Hangar 418:** Originally designed as a hangar, this building has been modified to include maintenance offices and storage. The Short Range Plan proposes that this building be replaced by a new major maintenance hangar, therefore no major architectural changes are proposed. Until demolition, use the colors recommended by the Exterior Master Paint Plan.

Exhibit 15.51p: Base Chapel, Building 401, Painted Concrete Block, Constructed 1945

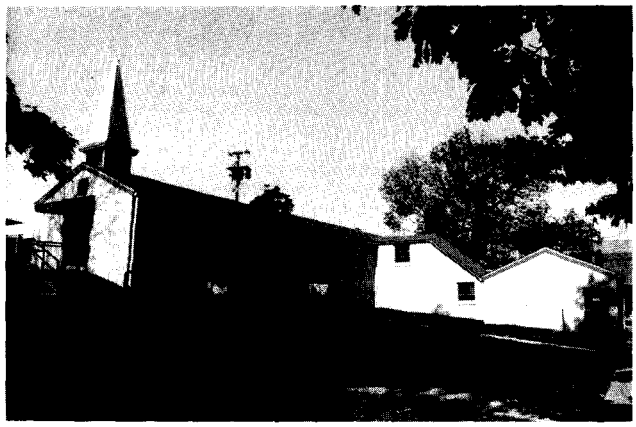
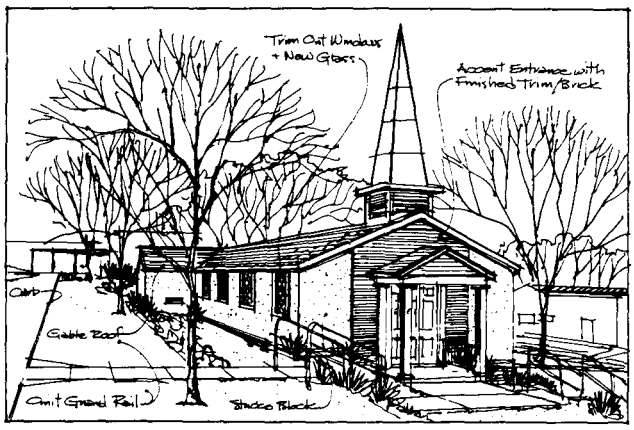


Exhibit 15.52m: Renovation of Chapel, using brick and Half-Timber Construction



Summary of Design Concepts

By its very nature, a military base contains a variety of land and space use and each function: industrial, office, residential or community facility, is expressed by a different character. The result of this functional diversity is a mixture of building types and character. The key to achieving harmony among the diverse functions located at the AFRES base at Greater Pittsburgh Airport is in establishing a limited "vocabulary" of materials and colors. It is recommended that the following steps be taken to acheive greater harmony at the base:

..**Designers:** Through the interview process, determine the "mind-set" of the architect or engineer regarding the overall base design. Choose designers who want their project to fit into the base.

..**Materials:** Limit materials to those already in use, or choose materials which can be colored to harmonize with an overall paint and color scheme.

..**Color:** Choose a limited number of colors from the common palette of the EMPP, Exterior Master Paint Plan developed for the Base Comprehensive Plan.

..**Landscaping:** Include trees, shrubs and ground cover in each project plan. The color green tends to "mask" individual building differences.

Exhibit 15.53p: Communications Facility, Building 405 Proposed for Expansion

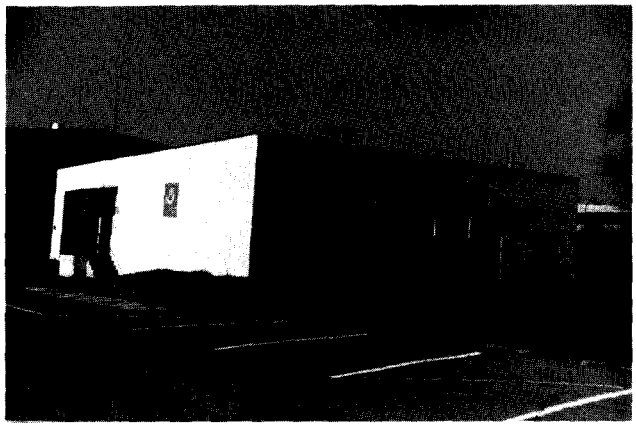
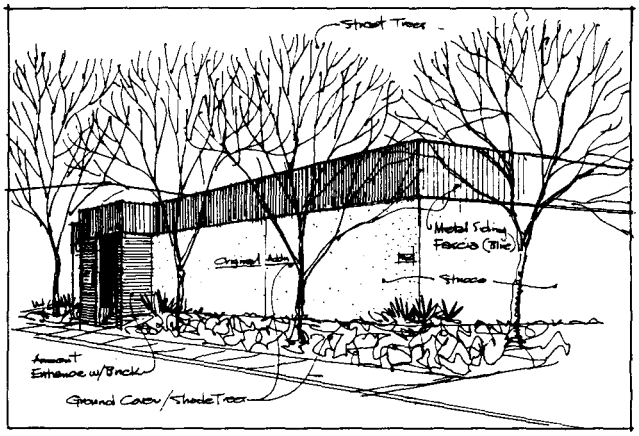


Exhibit 15.54m: Proposed Concept for Expansion of Building 405, with Entrance Enhancements



Chapter XVI

EXTERIOR MASTER PAINT PLAN

FOR THE

PITTSBURGH AFRES BASE

COMPREHENSIVE PLAN

Exhibit 16.1p: Aerial View of Base.

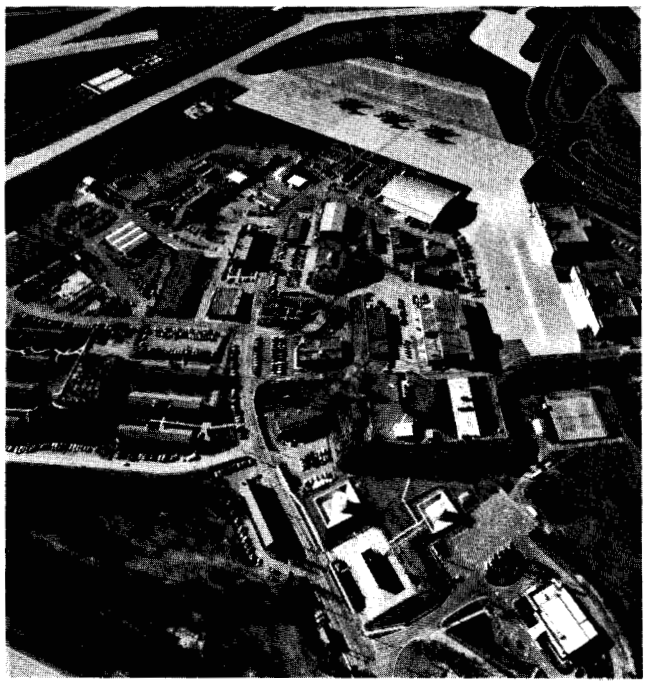


Exhibit 16.2p: New Hangar, natural brick and blue finished metal siding.

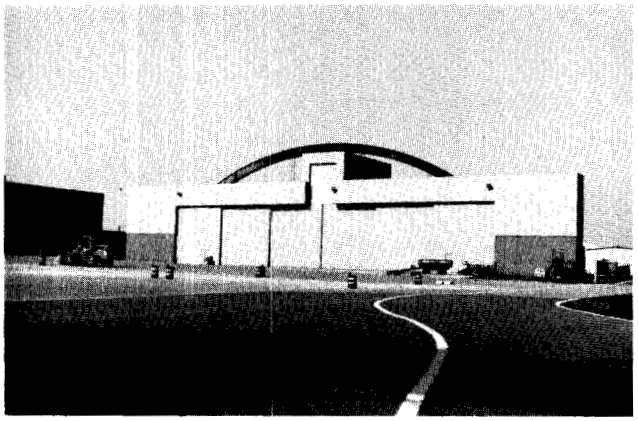


Exhibit 16.3p: Dormitories, aggregate finished siding with "Tudor" trim.

INTRODUCTION

The basic purpose of the Exterior Master Paint Plan (EMPP) is to enhance the appearance of the base environment in order to foster pride and commitment to the Air Force in support of its mission.

In addition, the EMPP will help to facilitate the qualitative planning, design, and development decisions critical to the base. The color schemes and material selections are intended to accomplish the following:

..Develop a coherent architectural character that promotes visual attraction by its continuity and consistency through the use of an harmonious color scheme.

..Improve the visual organization of the base through the use of color as a defining element for functional parts of the installation.

..Reduce the impact of the base's visual liabilities and unsightly problem areas through the use of material and paint colors.

Exhibit 16.4t: Survey of Existing Buildings and Other Major Visually Significant Facilities, December 1986

PMAT: Primary Material SMAT: Secondary Material TMAT: Trim Material ROOF: Roof Form RMAT: Roof Material
PCLR: Primary Color SCLR: Secondary Color TCLR: Trim Color RCLR: Roof Color

NUM	FACILITY	CTL	AREA	PMAT	PCLR	SMAT	SCLR	TMAT	TCLR	ROOF	RMAT	RCLR
00100	TRAFFIC CHK HSE	A	144	CONC BLK	CREAM	---	---	WOOD	MD BRN	FLAT	BUILT UP	BLACK
00110	OPEN MESS, CONSOL	A	9139	WOOD SDG	BRN	STUCCO	BEIGE	WOOD	MD BRN	FLAT	BUILT UP	WHITE
00113	PMP STN, LF	A	131	CONC BLK	WHITE	---	---	WOOD	BLACK	FLAT	BUILT UP	BLACK
00114	PMP STN, LF	A	1538	CONC BLK	BEIGE	---	---	WD/METAL	BEIGE/GR	FLAT	BUILT UP	BLACK
00115	ELEC PWR STN BLDG	A	240	CONC BLK	BEIGE	---	---	WOOD	DK BRN	MD GABLE	ASPH SH	DK BRN
00116	PMP STN, LF	A	280	CONC BLK	WHITE	---	---	WOOD	DK BRN	MD GABLE	ASPH SH	DK BRN
00117	STOR, JET FL	V		METAL	WHITE	---	---	---	---	---	---	---
00118	STOR, JET FL	V		METAL	WHITE	---	---	---	---	---	---	---
00119	GAS METER FACILITY	A	336	AGGR SDG	MD BRN	---	---	WOOD	DK BRN	FLAT	BUILT UP	BLACK
00120	GYMNASIUM	A	7070	CEM ASB	LT GRAY	---	---	WD/METAL	GRAY	FLAT	BUILT UP	GRAY
00121	BE MAINT SHP	A	380	CONC BLK	WHITE	---	---	WOOD	DK BRN	MD GABLE	ASPH SH	BRN/BLK
00125	SHP, AVIONICS	B	12146	BRICK	MD BRN	---	---	SH METAL	DK GRAY	FLAT	BUILT UP	GRAY
00126	SHED SUP&EQUIP BSE	A	240	MET SDG	DK BEIGE	---	---	SH METAL	WHITE	FLAT	SH METAL	GRAY
00127	PETROL OPS BLDG	A	1200	MET SDG	BEIGE	---	---	SH METAL	WHITE	LO GABLE	SH METAL	WHITE
00129	MAINT DOCK, L/A	B	20138	CORR MET	LT BLUE	METAL	RED/WHIT	SH METAL	GRAY	FLAT	BUILT UP	GRAY
00130	A/PORT TNG FCLTY	A	7500	BRICK	MED RED	MET SDG	MD GRAY	SH METAL	GRAY	FLAT	BUILT UP	BLACK
00201	SP OPERATIONS	A	511	HBD SDG	CREAM	---	---	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00206	VOQ (01-010)	A	12095	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00208	HQ GROUP	B	12967	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00209	DORM, VAQ	B	12967	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00210	DISASTER PREP	B	12967	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00212	ELEC SUBSTATION	V		METAL	LT GRAY	METAL	LT GREEN	---	---	---	---	---
00213	DH, AMN(DET)	B	21426	WD SHING	NATURAL	HBD SDG	CREAM	WOOD	DK BRN	FLAT	MANSARD	GRAY
00216	DORM, VAQ	B	12967	HBD SDG	CREAM	CONC BLK	DK BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00217	DORM, VAQ	A	12967	HBD SDG	CREAM	CONC BLK	DK BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00218	DORM, VAQ	B	12967	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00219	DORM, VAQ	B	12967	HBD SDG	CREAM	AGGR SDG	MD BRN	WOOD	DK BRN	MD GABLE	ASPH SH	MD BRN
00221	AF CLINIC	A	6173	CONC BLK	LT YELL	---	---	WD/METAL	GRAY GRN	FLAT	BUILT UP	GRAY
00300	EXCH, SALES STORE	B	8000	STUCCO	DK BEIGE	CEM ASB	DK BRN	WOOD	MD BRN	FLAT	MANSARD	GRAY
00304	VEH MAINT SHP	A	2000	MET SDG	LT BLUE	---	---	SH METAL	WHITE	LO GABLE	SH METAL	WHITE
00305	VEH MAINT SHP	A	1767	CONC BLK	WHITE	---	---	SH METAL	BLUE/WH	LO GABLE	SH METAL	GRAY
00306	VEH MAINT SHP	B	8440	CONC BLK	LT BLUE	---	---	SH METAL	ALUM	FLAT	BUILT UP	GRAY
00312	WHSE SUP&EQUIP BSE	B	19656	CEM ASB	WHITE	---	---	WD/METAL	GRAY	FLAT	BUILT UP	GRAY
00315	SQ OPS	A	1000	CEM ASB	WHITE	---	---	WD/METAL	DK BR/AL	FLAT	BUILT UP	BLACK
00316	RES FORCES OPL TNG	B	22131	MET SDG	LT BLUE	STUCCO	LT GRAY	SH METAL	LT BLUE	FLAT	BUILT UP	GRAY
00319	HAZARD STOR, BSE	A	1200	CONC BLK	CREAM	---	---	WD/METAL	DK BRN	FLAT	BUILT UP	GRAY
00320	WHSE SUP&EQUIP BSE	A	18544	BRICK	DK BEIGE	MET SDG	MD BRN	---	NATURAL	FLAT	BUILT UP	GRAY
00321	SHED SUP&EQUIP BSE	A	462	CORR MET	NATURAL	---	---	---	GALV	MD GABLE	SH METAL	GALV
00322	VEH FL STN	A	174	MET SDG	MD BLUE	---	---	SH METAL	DK BLUE	FLAT	SH METAL	WHITE
00325	BE PAV GRND FCLTY	B	12269	MET SDG	MD BRN	---	---	SH METAL	MD BRN	MD GABLE	SH METAL	ALUM
00327	CE STOR SAND	V	87	CONC BLK	CREAM	---	---	METAL	DK BRN	LO SHED	ASPH SH	BLACK
00328	BSE ENGR ADMIN	A	4800	WOOD SDG	MD BLUE	WOOD	CREAM	WOOD	CREAM	FLAT	BUILT UP	BLACK
00329	BE MAINT SHP	A	1221	CORR MET	MD BLUE	---	---	---	---	MD GABLE	SH METAL	GRAY
00330	BE STOR SHED	A	1822	MET SDG	MIXED	---	---	SH METAL	MIXED	LO SHED	SH METAL	BLACK
00331	BE MAINT SHP	A	5166	WOOD SDG	MD BLUE	---	---	METAL	GALV	FLAT	BUILT UP	GRAY
00332	BE STOR CV FCLTY	A	1200	CORR MET	LT GRAY	MET SDG	GREEN	SH METAL	LT GRAY	LO SHED	SH METAL	BLACK
00339	HAZARD STOR, BSE	V	1344	CONC BLK	NATURAL	---	---	WOOD	NATURAL	MD GABLE	ASPH SH	LT GRAY
00342	BE STOR CV FCLTY	A	2400	MET SDG	LT BLUE	---	---	SH METAL	WHITE	LO GABLE	SH METAL	WHITE
00401	CHAPEL, BASE	A	2626	CONC BLK	BEIGE	---	---	WD/METAL	DK GRAY	MD GABLE	ASPH SH	MD BRN
00403	BASE PERSONNEL OFC	A	4160	STUCCO	MD BRN	STUCCO	CREAM	METAL	DK BRN	FLAT	BUILT UP	BLACK
00405	COMM FCLTY	A	3072	CONC	WHITE	CONC BLK	WHITE	SH METAL	DK BRN	FLAT	BUILT UP	GRAY
00406	FLAG POLE, BSE	V		METAL	ALUM	---	---	---	---	---	---	---
00408	SHP SURV EQUIP	A	4400	CONC BLK	DK BEIGE	MET SDG	LT BLUE	SH METAL	LT BLUE	FLAT	BUILT UP	GRAY
00409	SHP NON-DESTR INSP	A	2699	CONC BLK	CREAM	---	---	SH METAL	---	FLAT	BUILT UP	GRAY
00411	SHP A/M ENG I&R	A	11805	EXP AGGR	LT BRN	MET SDG	DK BRN	SH METAL	DK BRN	LO GABLE	SH METAL	LT GRAY
00412	FOAM EQUIPMENT FAC	V	1820	MET SDG	CREAM	---	---	SH METAL	DK BRN	LO GABLE	BUILT UP	GRAY
00413	FR DELUGE MATL STO	V		CONCRETE	LT GRAY	---	---	---	---	DOME	CONCRETE	LT GRAY
00414	SHP A/M ORGL	A	1637	MET SDG	CREAM	---	---	SH METAL	CREAM	LO GABLE	SH METAL	BLACK
00416	MAINT DOCK, FL SYS	A	24314	MET SDG	LT BLUE	BRICK	LT RED	METAL	BLACK	FLAT	BUILT UP	BLACK
00417	HG MAINT	A	24314	MET SDG	LT BLUE	BRICK	LT RED	METAL	BLACK	FLAT	BUILT UP	GRAY
00417	HG MAINT	A	24314	MET SDG	LT BLUE	BRICK	LT RED	METAL	BLACK	FLAT	BUILT UP	GRAY
00418	SHP ACFT GEN PURP	B	48793	CORR MET	LT BLUE	MET SDG	DK BEIGE	SH METAL	LT BLUE	ARCH	CORR MET	WHITE
00419	SQ OPS	B	23889	STUCCO	LT GRAY	MET SDG	LT BLUE	SH METAL	WHITE	FLAT	BUILT UP	BLACK
00420	SHP A/SE STOR FCLT	A	4500	CONC BLK	DK BEIGE	MET SDG	LT BLUE	SH METAL	ALUM	FLAT	BUILT UP	BLACK
05842	O/D RECTN PAVILION	V	864	CONC BLK	NATURAL	WD SDG	WHITE	WOOD	WHITE	LO GABLE	ASPH SH	LT GRAY
06498	ATHLT FLD SOFTBALL	V	2	CONC BLK	CREAM	---	---	WOOD	CREAM		ASPH SH	LT GRAY

COLOR INVENTORY

The EMPP is intended to be used as a guideline when existing buildings need to be repainted or otherwise refurbished or when new buildings are constructed on the base.

The starting point for future color schemes must, by necessity, include a consideration of the existing color pattern. These existing colors were observed in the winter of 1986 and recorded in the database for all facilites. The color pattern is indicated on the following map, Building Color Distribution Map.

Color Summary

The base currently contains over sixty buildings with a wide range of sizes, materials, colors, styles, and functions. Functions include offices, living quarters, maintenance hangars and storage facilities. When the primary building colors are mapped, it shows that many buildings near the airfield are blue tones and most others on the base are earth tones such as brown, beige, and cream.

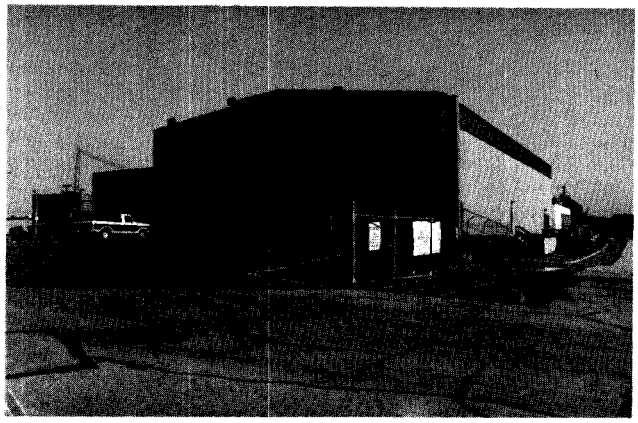
Exhibit 16.5t: Primary Building Colors

PRIMARY BUILDING COLORS			SF %
LT BLUE	152,530 SF	8	32.9%
CREAM	117,135 SF	16	25.2%
WHITE	38,555 SF	10	8.3%
DK BEIGE	35,684 SF	5	7.7%
LT GRAY	32,159 SF	5	6.9%
MD BRN	28,447 SF	4	6.1%
NATURAL	24,096 SF	4	5.2%
MD BLUE	11,361 SF	4	2.4%
DK BRN	9,139 SF	1	2.0%
MED RED	7,500 SF	1	1.6%
BEIGE	5,604 SF	4	1.2%
MIXED	1,822 SF	1	.4%
TOTAL	464,032 SF	64	100.0%

Exhibit 16.6t: Trim Colors.

TRIM COLORS			SF %
DK BRN	148,181 SF	20	31.9%
LT BLUE	75,324 SF	3	16.2%
GRAY	54,364 SF	4	11.7%
BLACK	48,759 SF	3	10.5%
WHITE	42,862 SF	9	9.2%
NATURAL	19,888 SF	2	4.3%
MD BRN	17,283 SF	3	3.7%
DK GRAY	14,772 SF	2	3.2%
ALUM	12,940 SF	2	2.8%
CREAM	6,437 SF	2	1.4%
GRAY/WH	6,173 SF	1	1.3%
GALV	5,628 SF	2	1.2%
N/A	3,920 SF	5	.8%
MIXED	1,822 SF	1	.4%
BLUE/WH	1,767 SF	1	.4%
BEIGE/GR	1,538 SF	1	.3%
LT GRAY	1,200 SF	1	.3%
DK BR/AL	1,000 SF	1	.2%
DK BLUE	174 SF	1	.0%
TOTAL	464,032 SF	64	100.0%

Exhibit 16.7p: Engine I/R Shop



Major Structures

The purpose of this analysis is to determine what the base possesses in terms of building materials, colors, roof types, etc. in order to decide if and how these should be changed. In addition to the individual buildings, the grouping of and relationships between buildings were also considered.

The two newer hangars have their mass reduced by the use of two major materials, brick and metal siding, each in a distinctive color. The metal siding, which covers slightly more than the upper half of the buildings, is a medium blue which at some times blends with the sky, and thus helps further diminish the mass of the hangars.

The Operations Building, which covers about 12,000 sq. ft., has its mass broken quite effectively by the use of varied heights and setbacks and a broad band of metal siding as a fascia. The blue of the fascia contrasts with the light gray of the stucco finish of the walls.

In contrast, the Avionics Building, using only one major material and color and covering about 6,000 sq. ft., uses the techniques of setbacks, stepping down the grade, varying the height of the parapet, and using recessed windows and bands of brick patterns to create an interesting building. Some of the techniques from both of these buildings could be used judiciously on new buildings on the base.

Exhibit 16.8p: Hangar 418, painted corruguted metal.

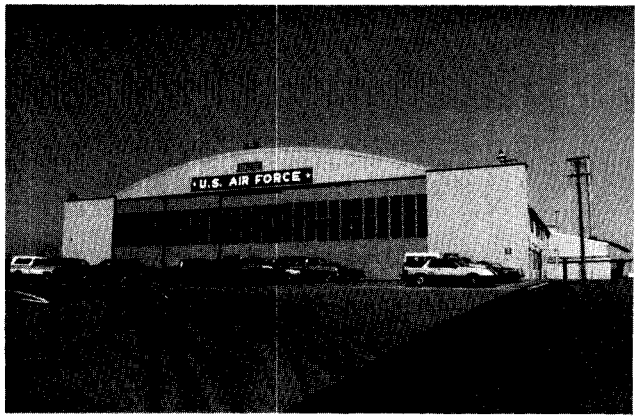
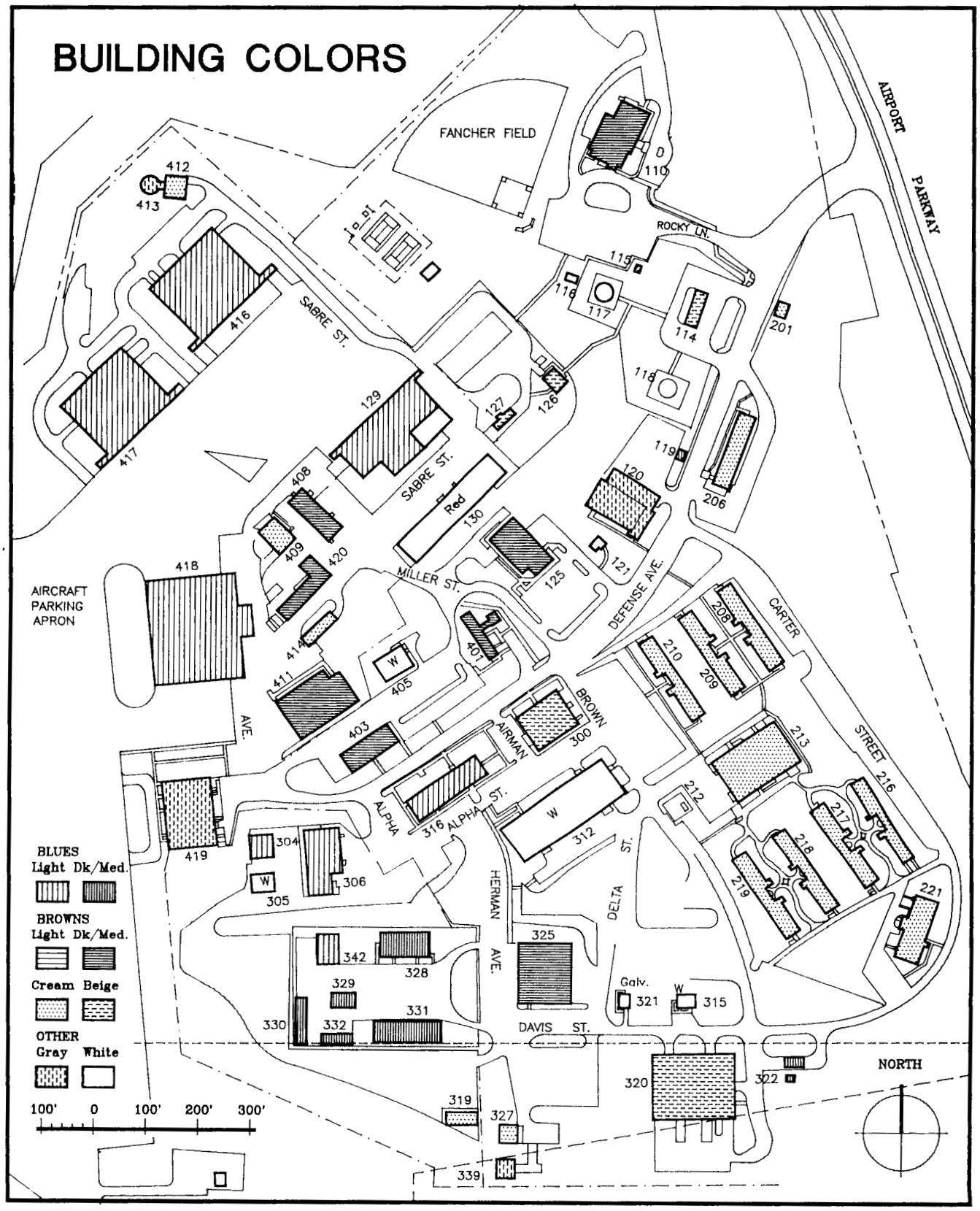


Exhibit 16.9m: Building Color Distribution



ANALYSIS

The pattern of exterior color at the base is indicated on the map below, Dominant Color Patterns. This indicates a strong pattern of blue colors near the apron, with a mixture of warm, earth-tone colors in the lower part of the base.

There is a sharp topographic division between the two concentrations of color in the form of a steep, berm. The difference in elevation ranges from 30-40 feet at the ballfield and BCE area to a gentle slope at the center of the base, near Headquarters and the Base Exchange.

This color pattern has the potential to become a more formal color theme for the base, using the prevailing existing pattern for future building colors and for repainting projects. Since there is a physical separation between the two color concentrations, it should be possible to implement an harmonious color theme for each part of the base, with the apron/flight line area being a blue theme, and the other areas using an earth-tone theme.

Exhibit 16.11p: Flight Line area at Pittsburgh AFRES

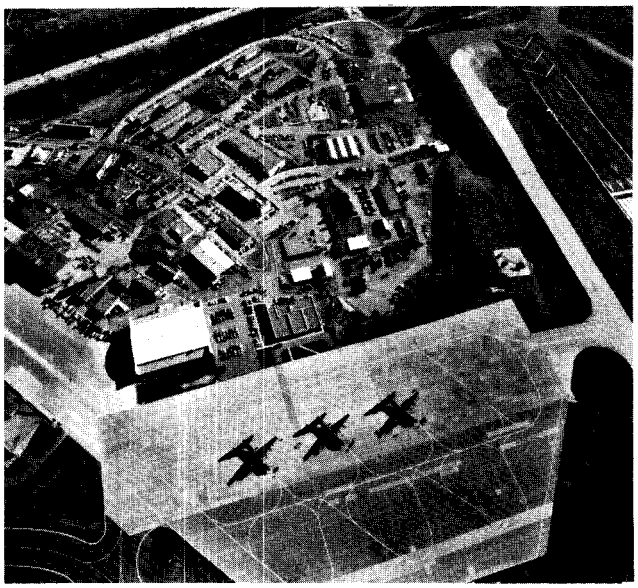
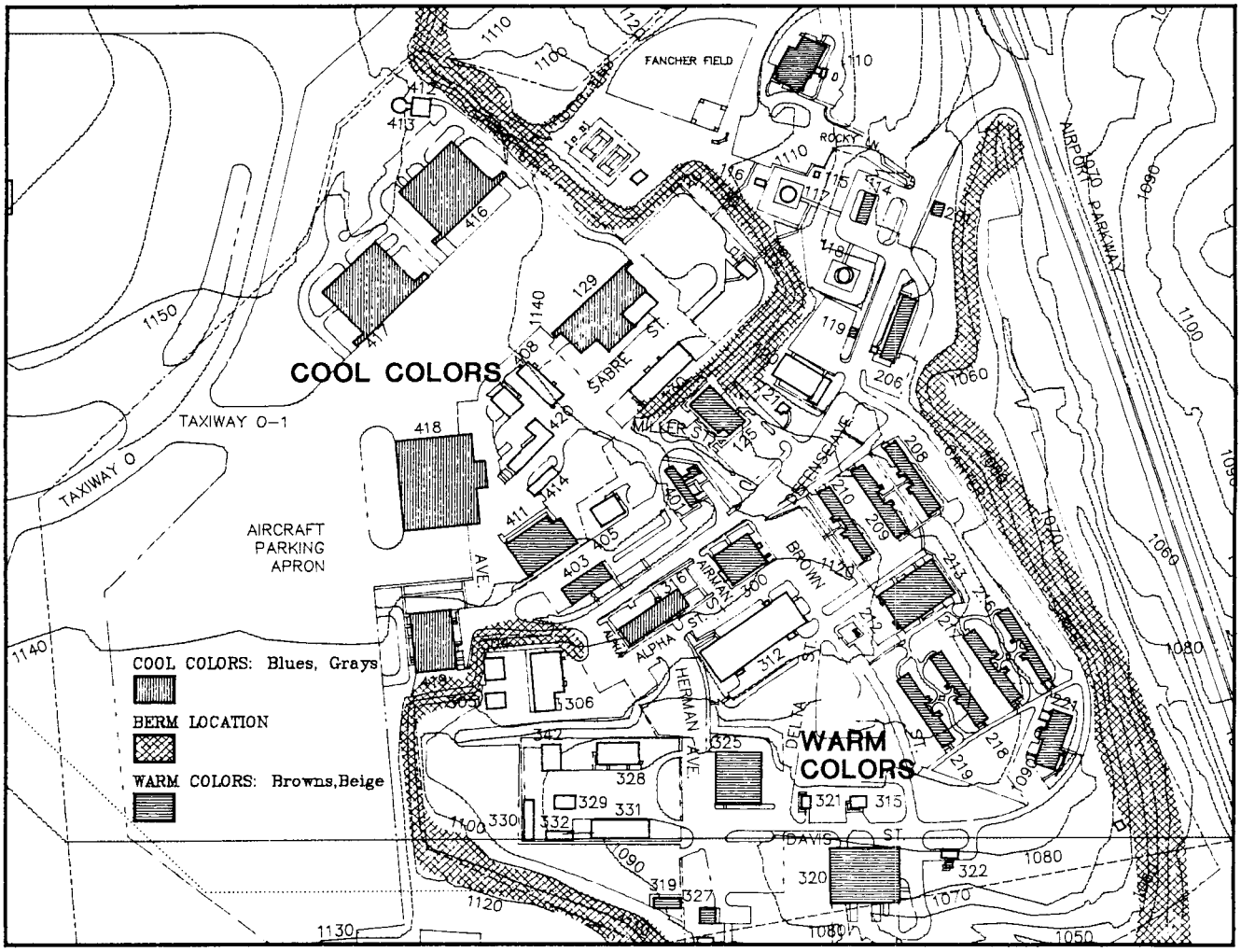


Exhibit 16.10m: Dominant Color Patterns: 911th Tactical Airlift Group (AFRES) - Greater Pittsburgh Airport



NEEDS

The Exterior Master Paint Plan (EMPP) is generated by the need for an harmonious color scheme for the base. It appears from the inventory and analysis that, in the past, the colors and materials for most buildings have been selected on an individual basis, with very little regard for overall, basewide color harmony. This is the natural result of a process where color selection occurs over an extended period of time, for varied space requirements, by different base engineers, base commanders and architects.

The painting theme is just one part of the overall color concept. Only part of the design elements of the base will be painted. In addition to the painted surfaces of buildings, there are many highly visible elements with natural color, including:

..Landscaping: perhaps the most colorful element of the base during the growing season.

..Paving: The base contains a system of paved surfaces for roadways, parking and walks.

..Site furnishings: street lighting, trash receptacles, signing and fencing.

..Vehicles: Aircraft, automobiles, trucks and other service vehicles.

In view of the conditions above, common to all bases, campuses or large scale development, there is a need for the following:

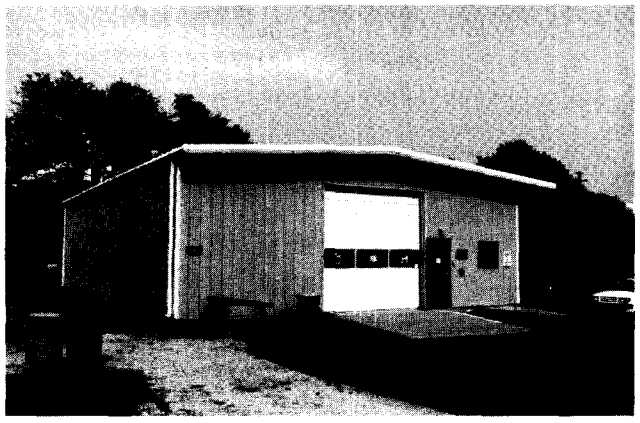
..An Awareness Program for both base personnel and design professionals.

..A Painting Plan based upon the unique factors which exist at the base.

..A Design Review Process whereby the color/material selection for each future project is considered in the context of an overall base color theme.

..An Implementation Process for insuring that the colors selected are incorporated into projects for normal maintenance, phased maintenance, new construction and major refurbishing.

Exhibit 16.12p: Prefinished Metal Siding with durable, long-term finish.



OBJECTIVES

The primary objective of the EMPP is to accomplish the mission of all units using the base, as outlined in "Installation Design", AFM 88-43. This manual suggests that colors should be:

.."integral rather than applied to exterior building materials..."

.."selected on the basis of...compatibility with adjacent building colors and the prevailing color scheme of...the installation".

.."limited in number and controlled by an established color palette for use throughout the installation. This palette should specify a limited number of coordinated and complementary colors".

.."Strong, loud colors should generally be avoided and used only for special identification purposes...where they should not dominate or overpower the visual character of the setting".

These objectives will be applied to the proposals in the "Exterior Master Paint Plan" to be developed as a separate document. This will give specific painting proposals for each existing building with photographs and paint chips from PPG.

CONSTRAINTS

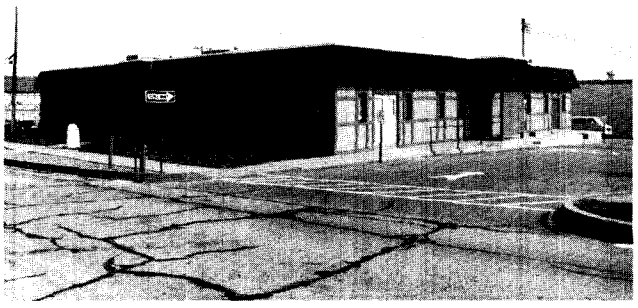
Ideally, the color theme would be in effect prior to any construction, but the full implementation of the EMPP will be limited by:

..Natural Materials: such as brick, galvanized or anodized metal or natural wood should not be painted at all to minimize future maintenance costs.

..Existing Building: will be limited to painting during the normal maintenance cycle.

..Funding: of painting projects for purely visual enhancement must be balanced with other requirements more critical to the mission of the base.

Exhibit 16.13p: Historical Architectural Details may limit color options.



MASTER PAINT PLAN PROPOSALS

The selection of colors has been based upon the dominant colors now found in the Support Area of the base. In this area, the colors are a mixture of earth tones in a wide range of values, or lightness or darkness, from light tan to deep, saturated browns in the natural brick and roof shingles. On the Flight Line the most common color is the light blue of the sheet metal siding of the new hangars. The base of these structures is a orangish brick.

The colors selected provide a monochromatic color scheme for the base which match those colors already existing in the Support Area. It is recognized that the blue prefinished siding of the new hangars will stay for the near future but, in time, the normal painting cycle will permit changing the color of these major facilities to harmonize with the monochromatic, warm colors of the other buildings.

Recommended Color Scheme

The Exterior Master Paint Plan is a separate document containing specific recommendations for each building to be retained for the Short Range Plan. It is assumed that those buildings scheduled for retention in the Long Range Plan be painted again before demolition. Each building plate contains:

..**Color Photographs:** of representative existing views of the facility.

..**Name of Installation:** for identification by reviewing authorities.

..**Facility Number:** assigned by the Real Property Inventory.

..**Facility Description:** and Air Force Category Code.

..**Color Chips:** using standard color numbers from Federal Standard 595a or Pittsburgh Paints.

Color Systems

The recommended paint colors have been identified by more than one system in order to complete the requirements of the Scope of Work in the time limitations of the contract.

..**Federal Standard 595a:** A standard system of color designation used for federal projects, with a complete selection of colors.

..**Pittsburgh Paints:** A commercial system of color numbers and names which is generally available to architects and contractors.

..**Ostwald System/Container Corporation of America:** This is a generic system for selection of paint color which is widely used for mixing of paints. The Container Corporation of America publishes a selection of paint chips using the Ostwald System.

..**Color Description:** a written common description of the hue and neutral components of each color.

Painting Definitions

..**Hue:** The "color", red, yellow, orange, of the paint in its highest intensity, or brightness.

..**Tints:** The basic color, or hue, mixed with white.

..**Shades:** The basic hue, mixed with black.

..**Grayed Colors:** A combination of the basic hue or color, mixed with black and white paint.

..**Primary Color:** The dominent color used for the walls of the building. Use less intense tints, grays and shades of colors in the warm hues.

..**Trim Color:** Common color used for painting mouldings, fascias and secondary building elements.

..**Accent Colors:** Should be used only to emphasize special features such as entrance doors.

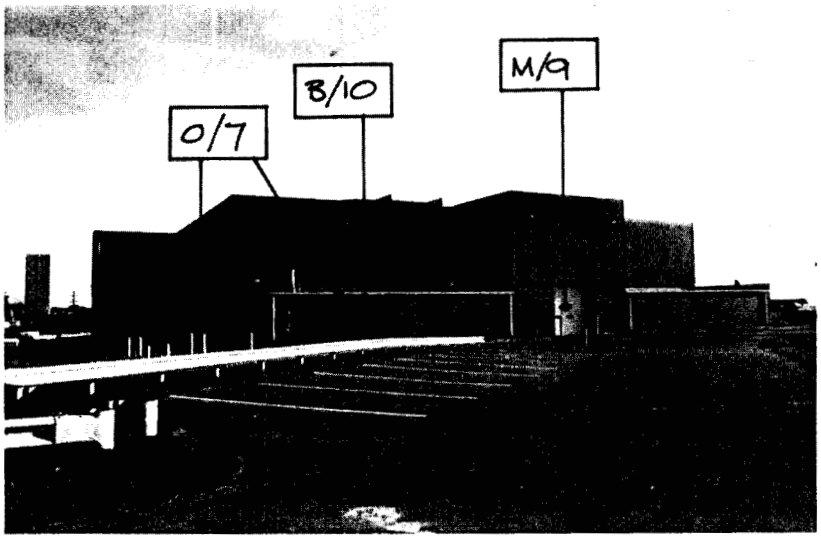
Exhibit 16.14t: Color Selection Standards - Federal/Commercial/Academic/Descriptive

EMPP No.	Color Location	Federal Std. 595	Pittsburgh Paints Number	Name	Ostwald CCA ID	Color Description/Purpose:
N	General	----	----	Natural Finish	----	The integral color of the building material
PM	General	----	----	Prefin. Metal	----	Applied, long life manufactured finish
AGS	Support	----	----	Aggregate Siding	----	Integral color of aggregate applied to siding
1	Pr/Trim	_____	2490	Antique Ivory	2ca	Light Pastel Tan
2	Primary	_____	3481	Dodge City Tan	2ie	Light Tan (Paint)
3	Primary	_____	7481	Cypress Earth	2ng	Medium Tan
4	Primary	_____	7608	Ginger Brown	2pl	Dark Warm Brown
5	Trim	_____	7632	Java	2pn	Dark Brown
6	Accent	_____	7273	Miser's Gold	2pe	Warm Yellow-gold
7	Primary	_____	SC-3	Basswood	2ie	Light Tan (Stain)
8	Primary	_____	SC-60	Rustic Bark	2pl	Dark Brown (Stain)
9	Accent	_____	4064	Cadet Blue	14ne	Medium Grayed Blue (Air Force Blue)
10	Brick	_____	4246	Windsor Tan	5ne	Warm Medium Orangish Brown (Hangar Brick Color)
11	General	_____	2760	Gypsum	a	White
12	General	_____	2761	Flintstone	c	Very Light Gray
13	General	_____	3751	Slate Mill	i	Medium Gray
14	General	_____	7751	Shark's Tooth	n	Dark Gray
15	General	_____	7754	Ebony Black	p	Black
16	Accent	_____	2758	Aluminum	c	Aluminum Paint

Exhibit 16.14t: Typical Painting Guideline Sheet from Exterior Master Paint Plan - EMPP*

MATERIAL CODES:

Stone.....A
Brick.....B
Concrete Block.....C
Stucco/Dryvit.....D
Concrete.....E
Exposed Aggregate....F
Glass.....G
Hardboard Siding.....H
Iron/Steel.....I
Cedar Shingles.....J
Asphalt Shingles.....K
Wood.....L
Metal.....M
Prefinished Metal....N
Corrugated Metal.....O
Cement Asbestos.....P
_____....Q



View from Runway: An Obvious "Back Door" to the Facility.

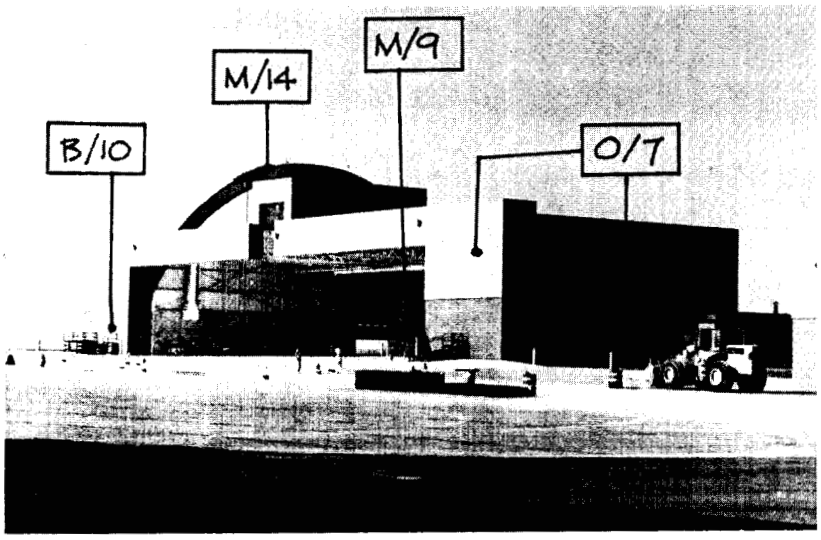
PAINT COLORS

7 - 2072

9 - 4064

10 - 4246

14 - 7751



View from Access Apron

Short Range: No Change

Long Range: Repaint Doors and Trim for Accent to increase the intensity of blue in the building.

911th Tactical Airlift Group (AFRES) Greater Pittsburgh International Airport	**HANGAR - MAINTENANCE** Primary Category Code: 211179	Fac. No. **416/417**

*The BCE's office has two notebook copies of the building photos and paint chips in color.

Chapter XVII

LANDSCAPE DEVELOPMENT PLAN

For

The

911th Tactical Airlift Group (AFRES)

at

Greater Pittsburgh International Airport

Pittsburgh, Pennsylvania

Exhibit 17.1p: Headquarters Building No. 316. Minimum Landscaping of slopes

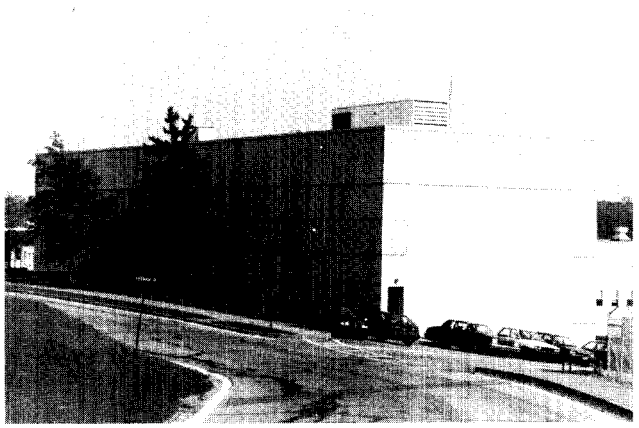


Exhibit 17.2p: Base looking southwest toward airport

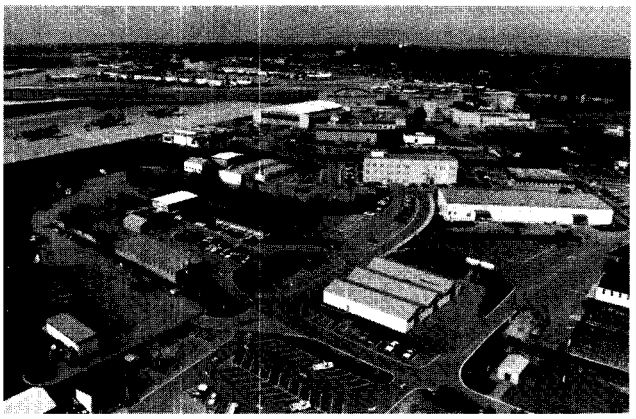


Exhibit 17.3p: Base looking northwest toward airfield

INTRODUCTION

The Landscape Development Plan is intended to serve as a guide for the selection and installation of planting materials on the base. It is an integral part of the Base Comprehensive Plan and has been coordinated with other proposals for demolition and construction in the future. The plan includes:

..Existing Conditions: Climate, Geology, Drainage.

..Inventory: of existing vegetations and an analysis of needs.

..Goals, Objectives: to be accomplished through the use of planting.

..Constraints and Opportunities: related to landscape design and installation.

..Alternatives and Proposals: for future development of an integrated landscaped base environment.

In this chapter, each of the above considerations will be addressed as it relates to the Pittsburgh AFRES base and its plans for the future, with the final goal a visually attractive base environment.

EXISTING CONDITIONS

The AFRES base at Pittsburgh is located in a temperate region of the nation, with indigenous plants which are common to a large region stretching from the Mississippi River to the Atlantic.

Natural Features

The land on which the base is located contains the following natural geological, and climatic characteristics:

..Geology - on base the primary strata of bedrock encountered is the Conemaugh series, a hard clay shale with little or no water present, overlying a sandstone strata. The bearing capacity of shale bedrock is generally 4000-7500 psi.

Where fill or poor soil exists, foundations for buildings require caissons to bedrock, 15 to 20 feet deep. Deep mine subsidence and strip mine spoil banks have not been a problem on the base.

..Topography - has been altered significantly over the year by construction and is characterized by a stepped pattern of graded flat areas with buildings separated by embankments.

..Hydrology - Except for a depression northeast of Hangar 416, created by fill for the aircraft parking apron and the sportsfields, the base has positive drainage to the unnamed tributary of McClarens Run along the Airport Parkway. A small area between the parkway and the housing area is subject to flooding during periods of intense local rainfall.

..Soils - Since the nearly the entire base has been subject to construction of some kind, there are few areas of untouched soil to consider. On exception is the is wooded area east of the housing area.

..Climate - Pittsburgh has a temperate climate, with sufficient rainfall to sustain a wide variety of plant material. The following data was extracted from the NOAA weather summary:

		Ave.High	Ave.Low
Temperature -	Month:		
	Hottest: July	82.7°	61.3°
	Coldest: January	34.1°	19.2°
	Annual Average	59.9°	40.7°

Precipitation -	Wettest Month:	July	3.83 inches
	Dryest Month:	November	2.34 inches

		1am	7am	1pm	7pm
Relative -	Month:				
Humidity	High: Sept.	81%	85%	56%	65%
	Low: April	66%	72%	50%	52%
	Yearly Ave.	75%	78%	57%	62%

Winds - Prevailing winds are west southwest but are dependent on local topographic conditions.

Exhibit 17.4t 1985 Climatological Data - Temperature and Rainfall, Greater Pittsburgh Airport, Pittsburgh, PA

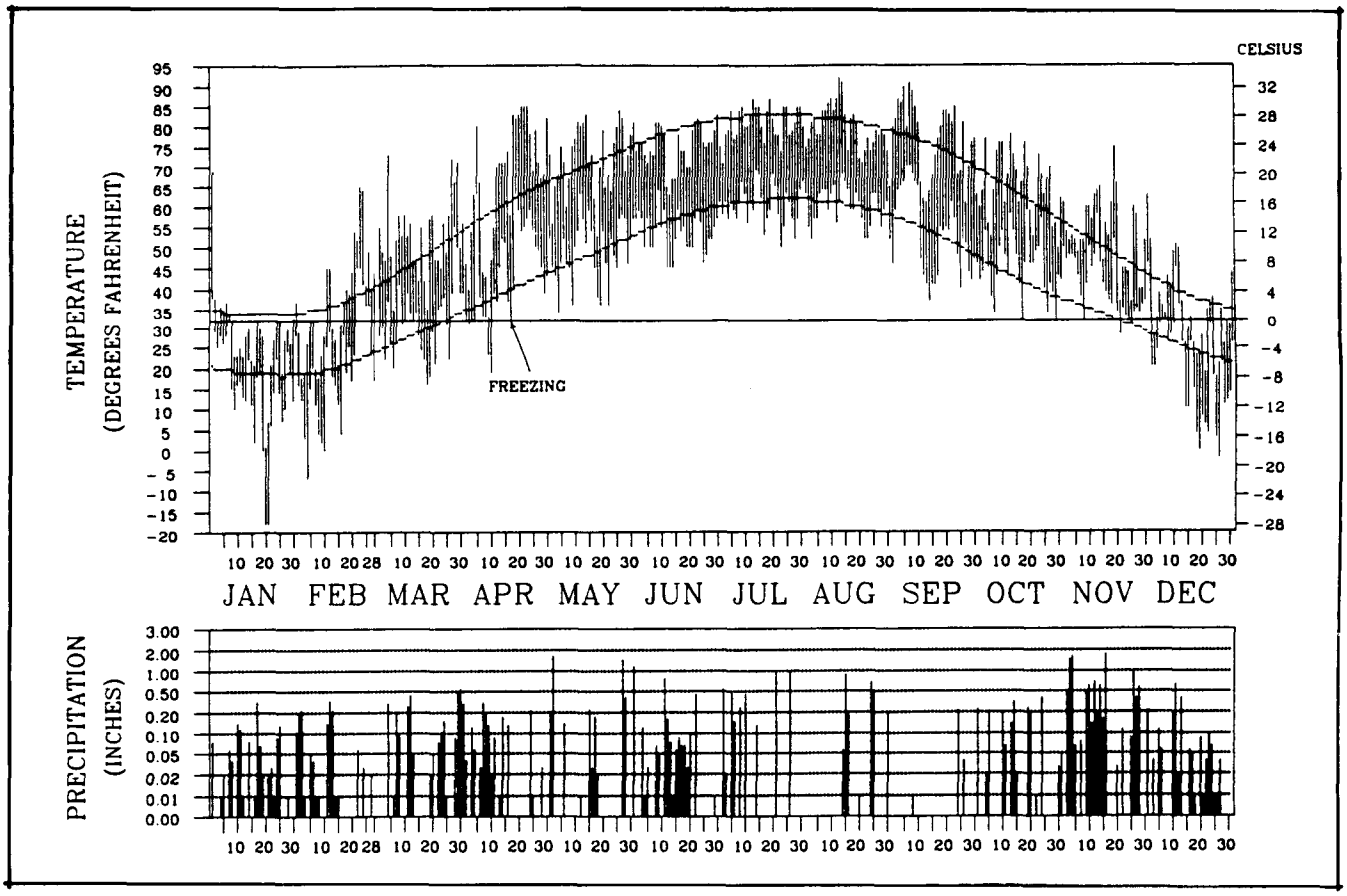


Exhibit 17.5p: Wooded buffer to housing from road

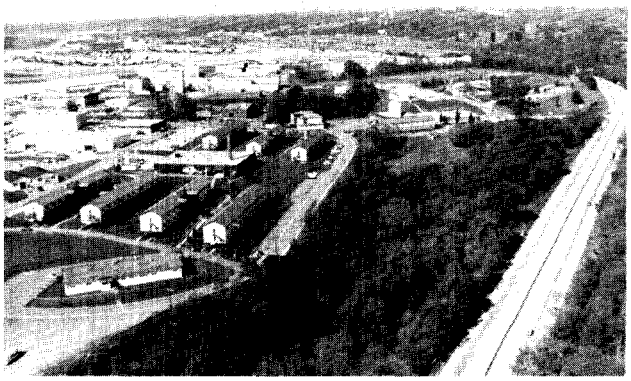
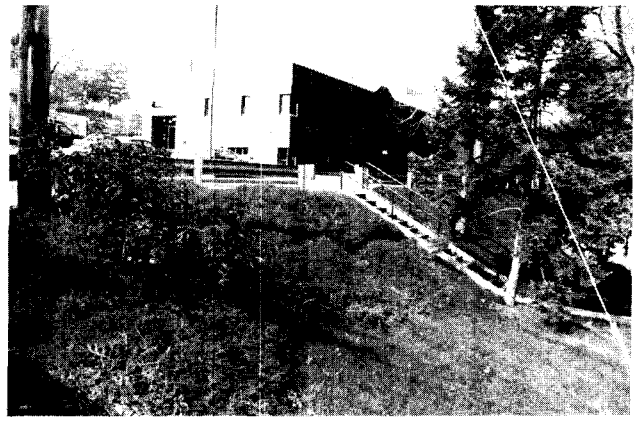


Exhibit 17.6p: Berm At Avionics Bldg., No. 125



Climate

The official summary of the U.S. Department of Commerce National Climatic Data Center describes the climate of Pittsburgh as as follows:

"Pittsburgh lies at the foothills of the Allegheny Mountains at the confluence of the Allegheny and Monongahela Rivers which form the Ohio. The city has is a little over 100 miles southeast of Lake Erie. It has a humid continental type of climate modified only slightly by its nearness to the Atlantic Seaboard and the Great Lakes.

The predominant winter air masses influencing the climate of Pittsburgh have a polar continental source in Canada and move in from the Hudson Bay region or the Canadian Rockies. During the summer, frequent invasions of air from the Gulf of Mexico bring warm humid weather. Occasionally, Gulf air reaches as far north as Pittsburgh during the winter and produces intermittent periods of thawing. The last spring temperature of 32 degrees occurs in late April and the first in late October. The average growing season is about 180 days. There is a wide variation in the time of the first and last frost over a radius of 25 miles from the center of Pittsburgh due to terrain differences.

Precipitation is distributed well throughout the year. During the winter month about a fourth of the precipitation occurs as snow and there is about a 50 percent chance of measurable precipitation on any day. Thunderstorms occur normally during all months, except midwinter, and have a maximum frequency in midsummer. The first appreciable snowfall generally occurs in late November and usually the last occurs early in April. snow lies on the Ground in the suburbs on an average of about 33 days during the year.

Seven months of the year, April through October, have sunshine more than 50 percent of the possible time. During the remaining five months cloudiness is heavier because the track of migratory storms from west to east is closer to the area and because of the frequent cloudy, showery weather associated with northeast winds from across the Great Lakes. Cold air drainage induced by the many hills leads to the frequent formation of early morning fog which may be quite persistent in the river valleys during the colder months."

Landscape Patterns

The landscape patterns of the Pittsburgh AFRES base are indicated on the map entitled "Existing Planting", which follows. No consistent theme is evident in the planting pattern. Most of the major areas of planting are out of the construction areas of the base or have grown "wild" on fill slopes, in particular the fill slopes east of Hangar 129 and Building 130. There has been a recent effort to beautify the housing area south of Building 213, the Dining Hall, with excellent results.

The mix of trees includes both evergreen and deciduous trees, planted in a random pattern related to a particular building or site condition, such as fill berms or unusable areas. Due to the intense development of the base and heavy grading, most planting is secondary to the site improvements.

Landscaping Analysis

Based on the existing vegetation on the base and in the surrounding area, conditions are very good for the installation of a long range planting plan. There is a wide variety of trees and shrubs which will grow well in the existing climate. There is adequate rainfall and drainage for plant material to grow without artificial watering systems. The existing climatic and environmental conditions at Pittsburgh are favorable to almost any reasonable landscaping treatment which might be selected.

Exhibit 17.7p: Defense Avenue At Headquarters, No. 316

Exhibit 17.8m: Existing Planting - Pittsburgh AFRES base at Greater Pittsburgh Airport

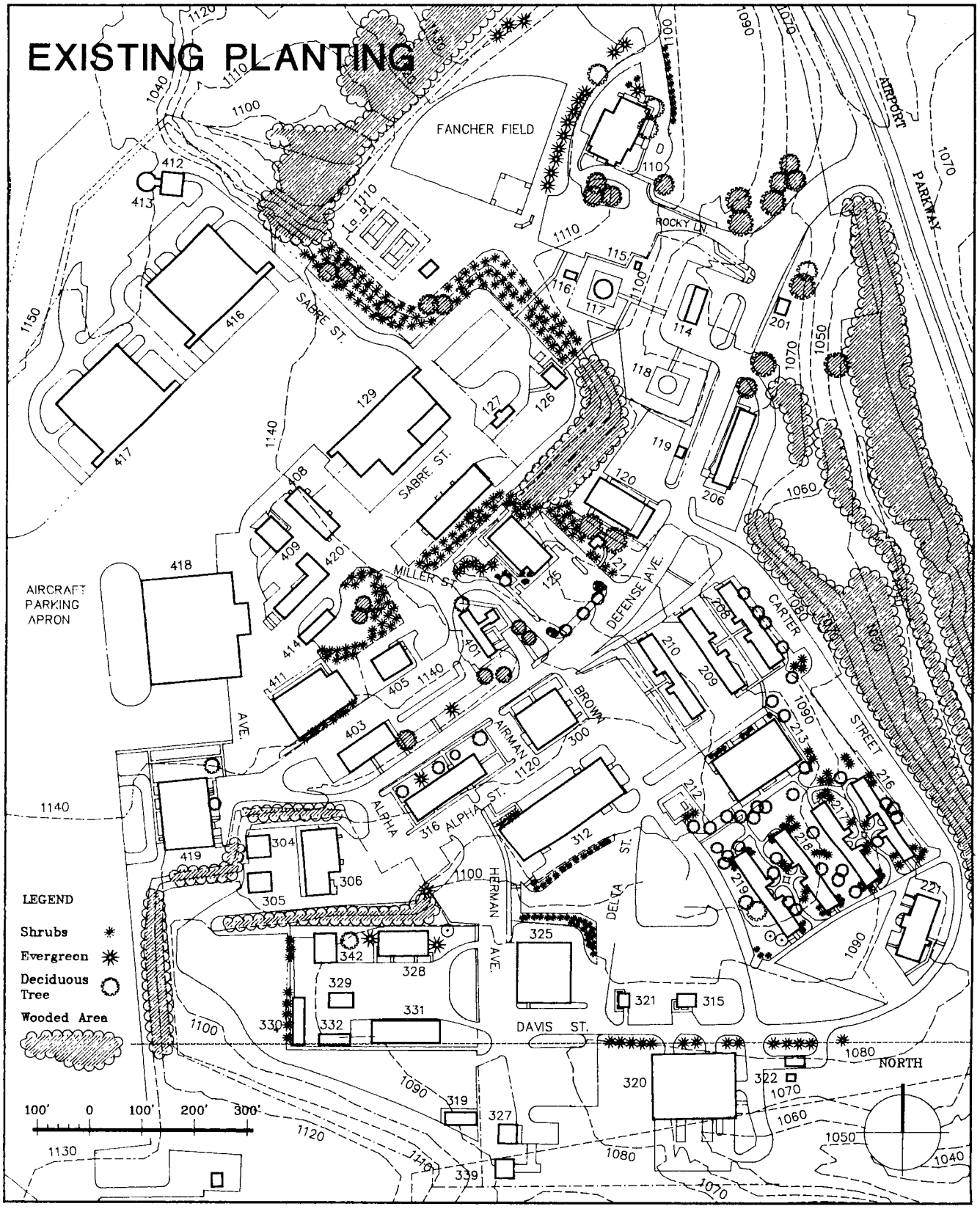
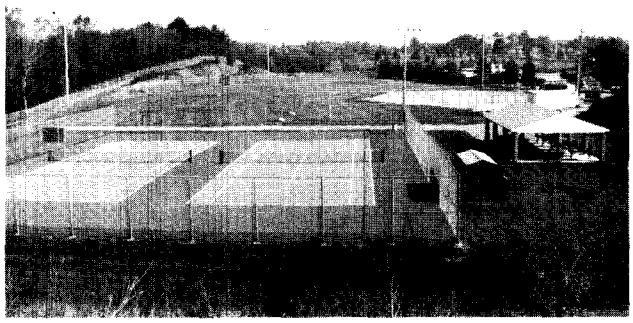


Exhibit 17.9p: Recreation area near base Club



Base Topography

The AFRES base at Greater Pittsburgh Airport has a variety of topographic problems. These are the result of the original land contour and major grading done over the last 30 years the base. The base is divided into three major areas:

..The Apron Area: with access to the runway/taxiway paths. This area is heavily filled and is about 50 above the primary support facilities.

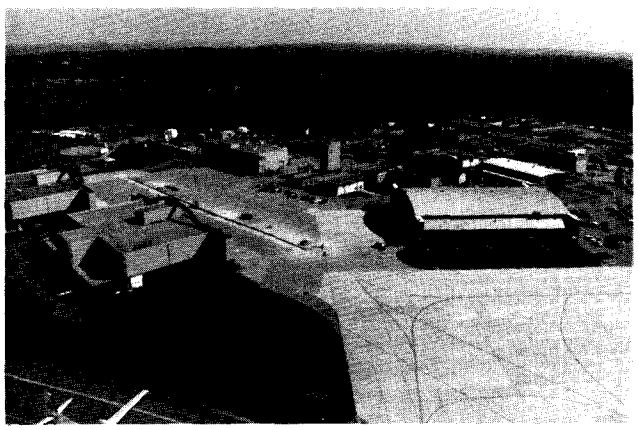
..The Support Area: contains base adminstration, supply, housing and recreation. The area is separated from the apron area by landscaped berms, 30 to 50 feet high except for the center area, near the Base Exchange, which has vehicular access to the apron.

..The Creek Area: provides a wooded buffer between the Airport Parkway and the housing area is generally unusable due to function as a major storm drainage channel and steep topography.

Topographic Analysis

The topography of the base is a significant factor in the design of the road system and the placement of structures. The berm which separates the apron area from the primary support area of the base can be used to advantage as a visual separator of these functions.

Exhibit 17.10p: Facilities needing access to apron



Site Survey and Analysis

The site has been surveyed using the criteria of the "Landscape and Design Bulletin" December 1983. this document was written primarily to act as a guide to architects and engineers in the preparation of site plans for individual facilities.

Most of the design constraints have been outlined in in depth in previous chapters of this report. The Composite Evaluation Map which follows indicates several additional considerations for the overall design of the base.

..Steep Berms: resulting from the fill required to build the apron area create a marked separation between the aircraft area and support facilities.

..Apron Access: is limited to only two vehicular points at Buildings 316 and 125. The grade of the access at building 125 is over 8% and at building 316 over 6%, creating problems during icing.

..Solar Orientation: is not considered to be a controlling factor in the design of site facilities, except for sun angles which may be utilized by architects in the design of individual buildings. The general southern exposure of the site promote the melting of snow during the winter.

..Prevailing Winds: are from the west southwest. This direction screens the building in the lower part of the base from extreme exposure to winds coming from the apron area.

..Sink Area: The "sink" between building 413 and Fancher Field is left over from many excavation projects from the base and airport. The acquisition of this area would permit its use for the future.

..Drainage: Between the base and Airport Parkway there is a low, wooded area with a drainage channel serving the north side of the airport. Due to its isolation and topographic problems, very few uses are appropriate for this area, except its present use as a sound buffer for housing.

In summary, the most significant characteristic of the base is its topography. The combination of existing permanemt facilities along with steep changes in elevation requires careful coordination between roads, structures and the existing site.

Exhibit 17.11p: Base housing, showing steep terrain

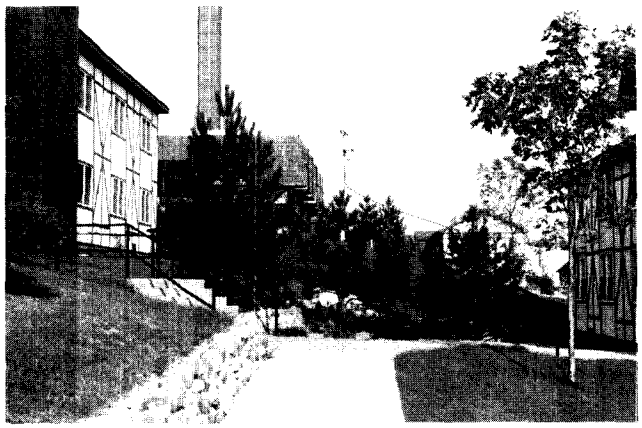


Exhibit 17.12m: Composite Evaluation - Pittsburgh AFRES base at Greater Pittsburgh Airport

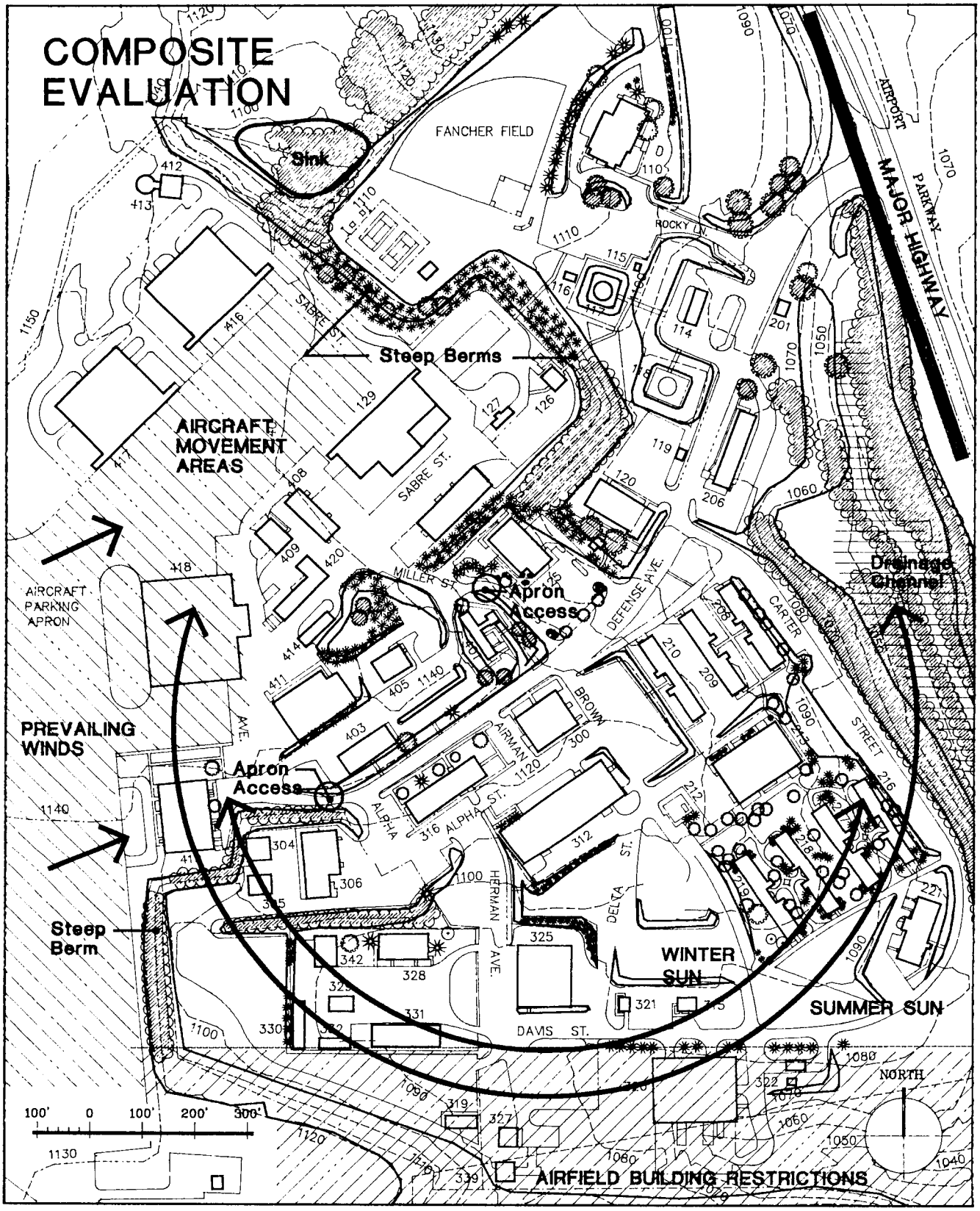
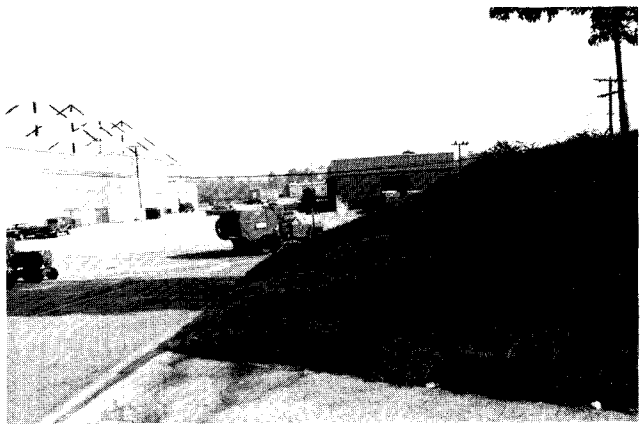


Exhibit 17.13p: Ground Cover on berm near Building No. 405. Site of proposed Water Tower.



LANDSCAPING OBJECTIVES

"The objective of landscape planning is to create an attractive environment that promotes the well-being of the people who live and work within it." This quote from the "Landscape Planning and Design Bulletin" summarizes the objectives of a good Landscape Plan.

Specific Objectives

It must be practical and consistent with the functions of the installation purposes while improving environmental quality. These overall objectives are broken down into more detailed objectives as follows:

..Separation of land uses: providing clear division between different functional areas on the base.

..Privacy: between conflicting uses, such as residential and industrial should be provided.

..Screening: of unsightly areas, such as parking lots, trash loading areas and open storage.

..Wind Protection: can be enhanced by the proper placement of landscape screens and barriers to break or filter air movement.

..Shade: during summer months can reduce the energy requirements for buildings.

..Glare: Landscaping can reduce reflections from horizontal surfaces.

..Erosion Control: for steep berms not easily mowed.

..Noise Abatement: dense foliage can reduce noise between main traffic arteries and living areas.

..Movement Patterns: can be directed by the use of landscaping elements.

As an aesthetic statement, the design must enhance the quality of base life and existing landscape resources, and include human scale, color, and texture.

Exhibit 17.14m: Buffering of Conflicting Land Uses

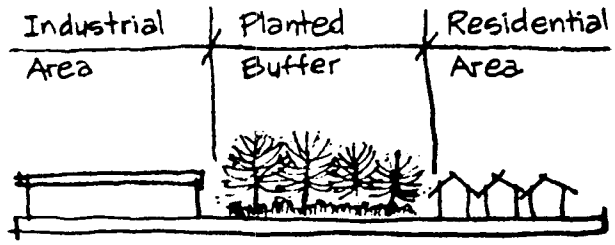


Exhibit 17.15m: Solar Radiation Control with Trees

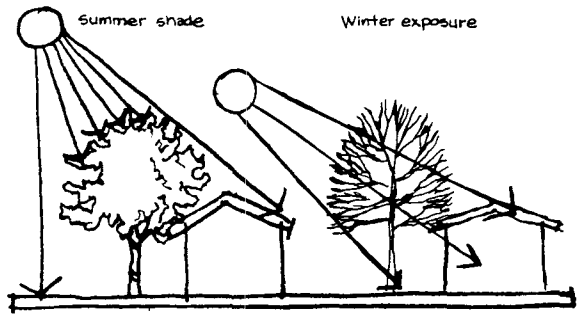


Exhibit 17.16m: Wind Protection Through Placement and Selection of Screen Planting

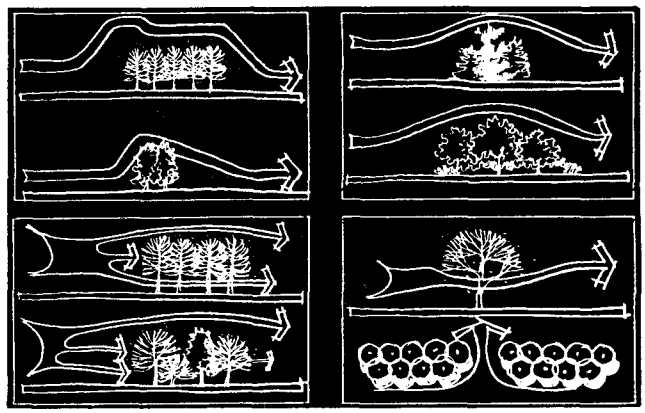


Exhibit 17.17m: Glare and Headlight Control

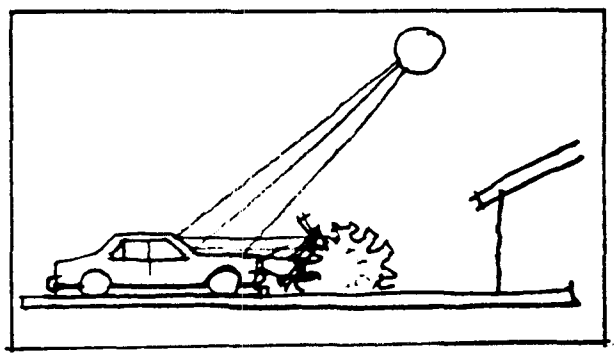
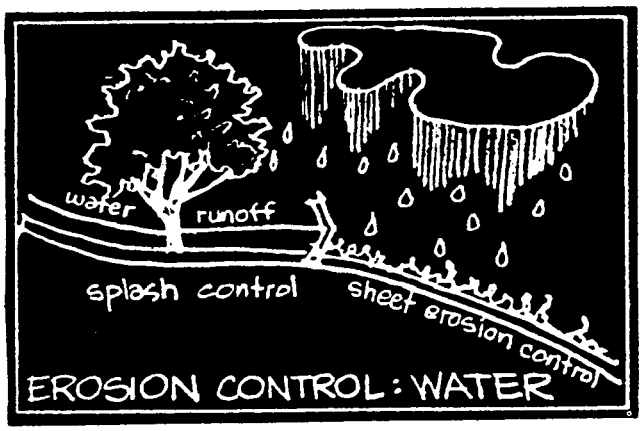


Exhibit 17.18m: Erosion Control - Water



Design Guidelines

A design process that includes conscientious site analysis, site design, plant selection and site detailing should be employed to achieve the desired objectives of a planting program. Those design principles to be considered include:

..**Unity:** In an area of facilities characterized by mundane or incompatible architecture, the introduction of mature trees and shrubs can visually mediate the total composition of the area. On a detail level of design, plants can also visually integrate a building with its site where the ground plane meets the building.

Exhibit 17.19m: Unifying buildings with Site, Through Landscaping

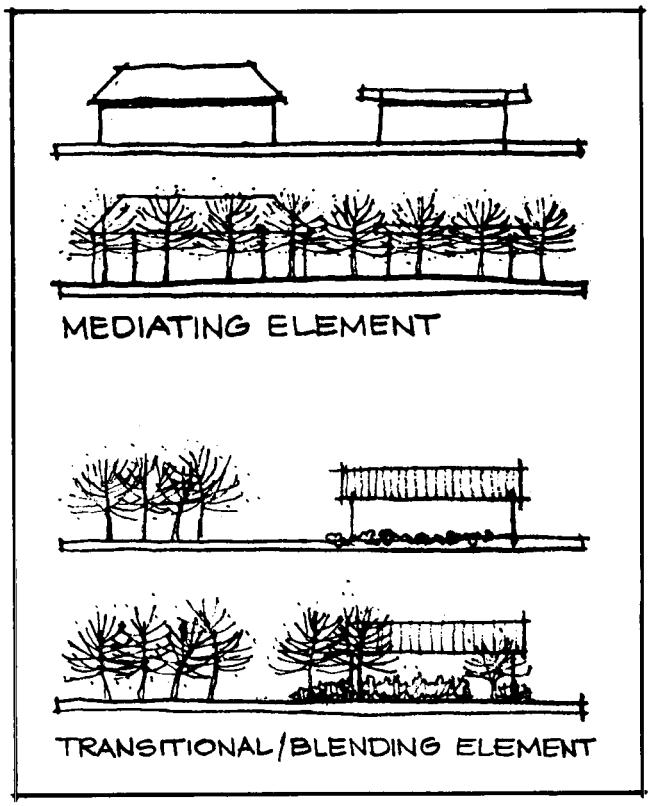


Exhibit 17.20p: Evergreen Screen near Building 320

..**Balance:** is the arrangement of masses of planting to achieve visual equilibrium by using either a symmetrical or asymmetrical pattern, thereby creating a formal or informal character to the site.

..**Contrast:** is achieved by the arrangement of plants to emphasize the size, shape, color and texture of other plants or of buildings.

..**Rhythm:** is achieved by using regular spacing, color, texture or size of plants to create a visual impression of unity along major circulation routes or around open spaces.

..**Color and Texture:** In landscaping, as in buildings, large masses of a single color or texture are generally more pleasing that a "one of each kind" design scheme. Special colors or bold textures should be reserved for accent plantings to contrast with the basic color or texture.

Exhibit 17.21m: Defining Character by Landscaping

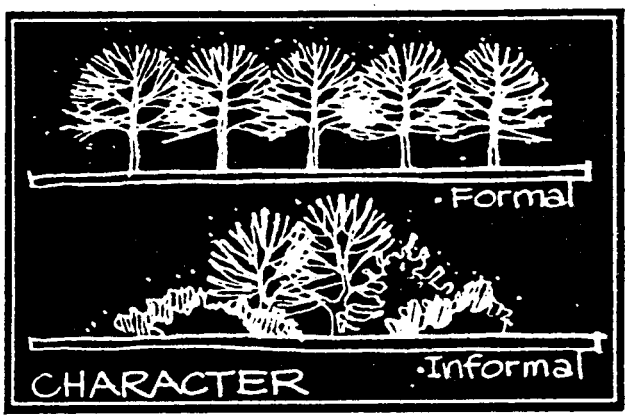


Exhibit 17.22m: Use of Contrast to Mark Entrance

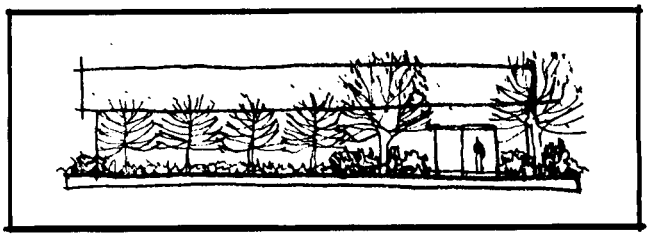
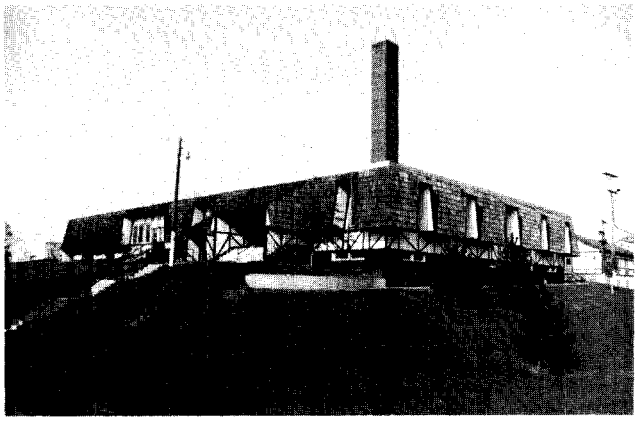


Exhibit 17.23p: Steep Slope behind Dining Hall



DESIGN PROPOSALS

As a part of the Base Comprehensive Plan, the consultant was asked to prepare specific proposals for the landscaping of certain problem areas. These include the disposition of the existing POL area after this function is moved to the POL area to the north now used by the airport. Other details include the treatment of berms now being mowed and the landscaping of Defense Ave.

Exhibit 17.24m: POL Recreation Area Plan

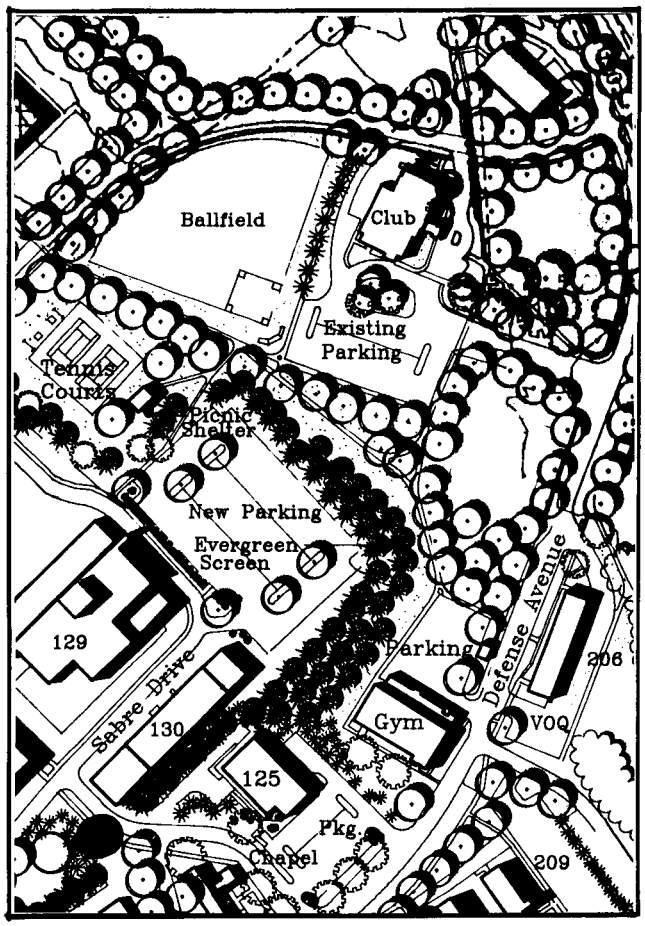
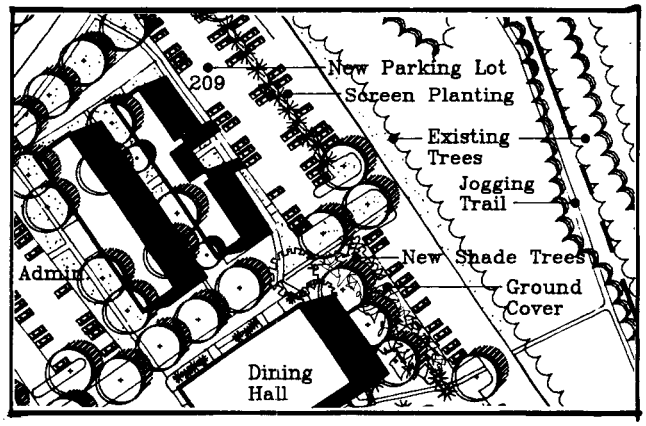


Exhibit 17.25m: Bank Behind Dining Hall, Parking



The Landscaping Plan, which follows, indicates the overall pattern of major landscape features on the base. This will serve as a guide for the installation of street trees and berm plantings over the entire base. As new facilities are built or remodeled, a detailed plan for each project should be prepared.

Selection of trees for each thoroughfare should have a high priority as a base maintenance project. A systematic program of tree planting, similar to that done at the dormitories is recommended.

Exhibit 17.26m: Landscaping Opposite Headquarters

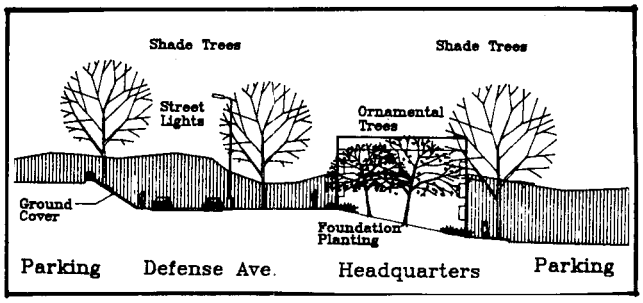


Exhibit 17.27m: Parking, Landscaping at Headquarters

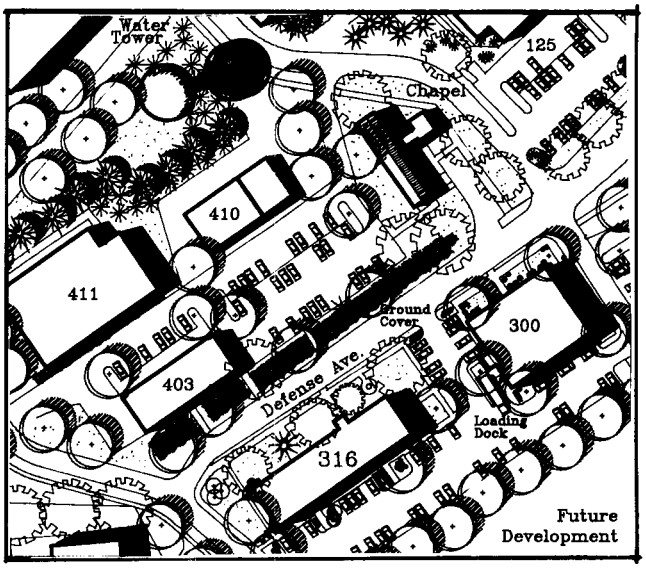


Exhibit 17.28m: Proposed Landscaping Plan - Pittsburgh AFRES Base at Greater Pittsburgh Airport

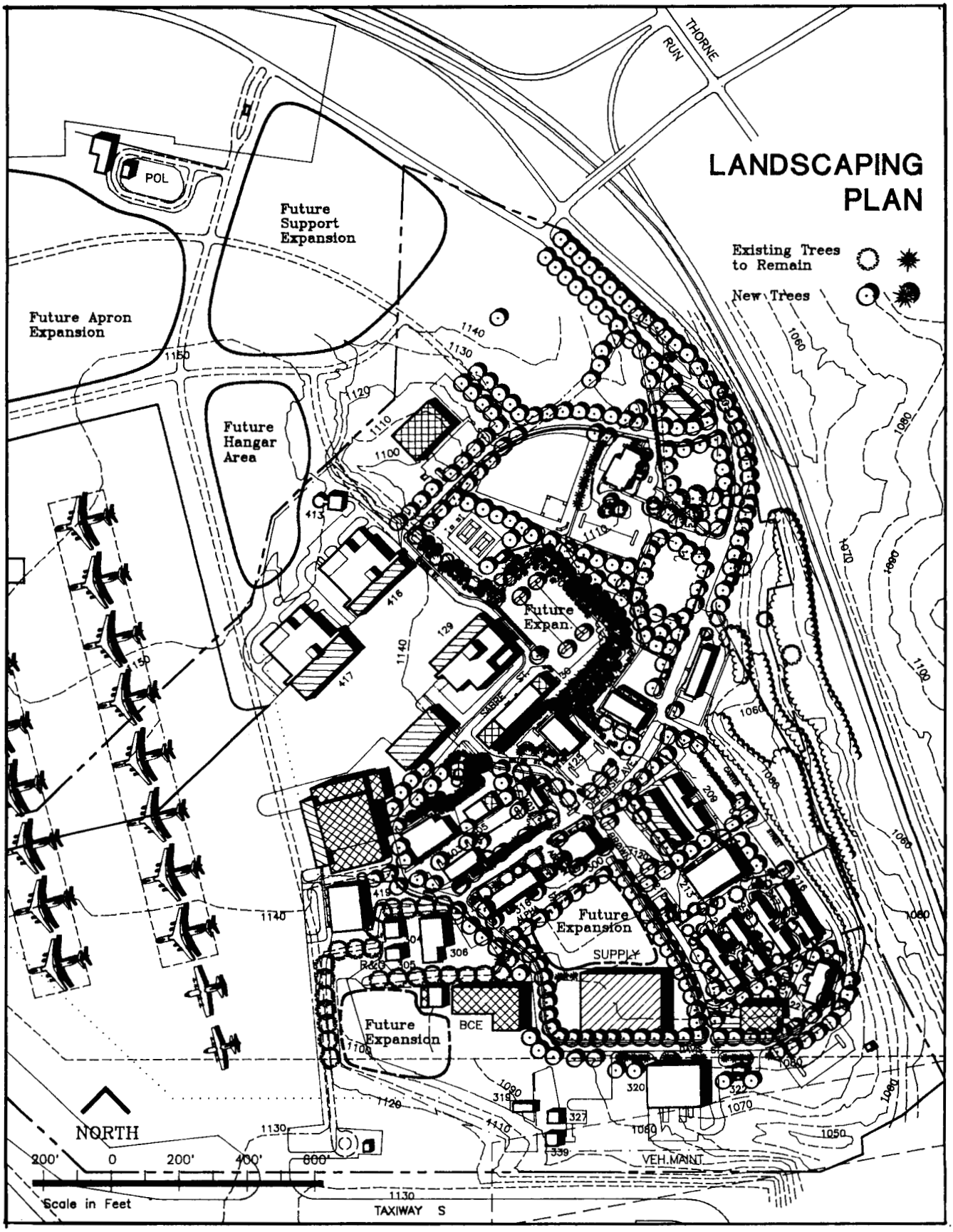


Exhibit 17.29p: Ground Cover at Open Mess

IMPLEMENTATION

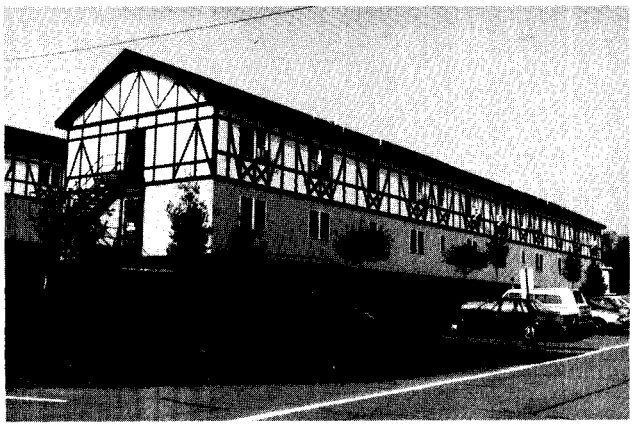
The implementation of the Landscaping Plan for the AFRES base at Greater Pittsburgh will be accomplished over a period of several years. Many of the proposals include facilities which are not programmed until the Long Range Plan. Others landscaping improvements do not fall into a specific project area or may not be included as a part of project construction for budget reasons. Therefore, the successful implementation of the plan cannot assume that an MCP project will include all of the planting improvements in the Landscaping Plan.

It is recommended that three implementation systems be considered to accomplish the plan; Project Construction, Reserve Weekend projects and the normal Grounds and Maintenance program be used.

MCP Project Construction

Nearly every facility construction project has some landscaping involved in it. It is essential that the overall plan for the base be reviewed for every project to determine what planting may done as a part of that project. This includes road construction as well as building construction.

Exhibit 17.30p: Planting done on Reserve Weekends



The process for determining the appropriate planting for each MCP project is described in the "Landscape Planning and Design Bulletin" as follows:

..**Site Survey and Analysis:** This should include a survey and inventory of the current planting, structures, paving, utitities, easements, rights-of-way, drainage and any other special features of the site. This survey would normally be a part of the Architect/Engineers services for site design.

..**Project Definition:** should determine the physical scope of the project, the area to be included and planting to be retained. This would be a joint decision by the base and the A/E firm.

..**Conceptual Design:** Alternative designs by the A/E should include both existing planting to be retained and new landscaping to be included in the project. The selection of planting material should be made at this time or during the Design Development phase of the project in order that it may be included in the project budget.

..**Construction Documents:** At this point, the working drawings for the project would include a complete planting list for the project area, to be installed as a part of the project.

..**Construction:** Installation of the plant material as delineated on the construction documents, to be followed by:

Maintenance

The grounds and maintenance program of the base should include a systematic replacement of dead, diseased or injured plants. It is recommended that this program also include the installation of new plantings in accordance with the Landscaping Plan in addition to its regular maintenance.

Reserve Weekend Planting

The base has a history of base enhancement by the reserves to build pride and morale for the base. The "beautification" program for the south half of the housing area appears to have been particularly successful. It is recommended that this program continue, delineating specific areas of the base to specific units as their "turf". Competition between areas might be encouraged.

Exhibit 17.31m: Plant Materials to be Selected

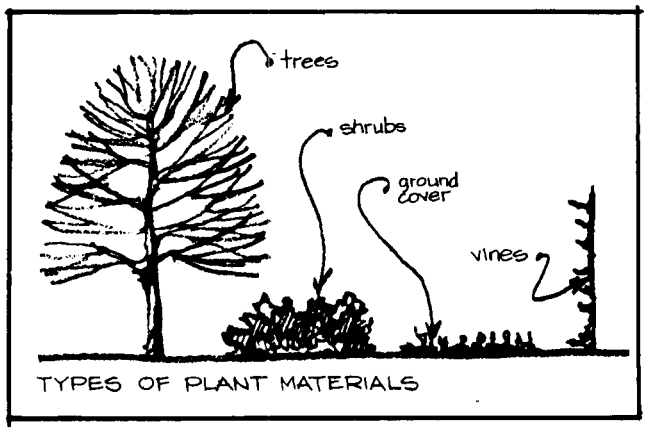
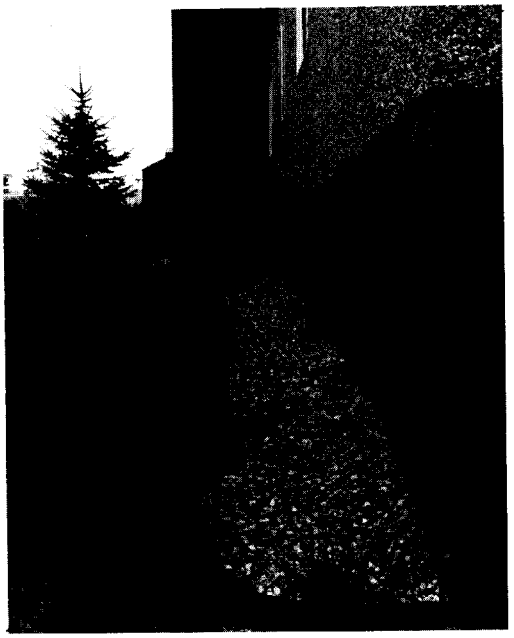


Exhibit 17.32p: Gravel Drip Area



PLANTING DETAILS

Future landscaping will involve a combination of trees, shrubs, groundcover and accent plantings. Details for each type planting is indicated below.

Trees and shrubs should be balled and burlapped and placed in a hole with sufficient depth and width to permit planting at original ground level. Addition of a plant hormone to the water will increase the chances for a successful transplant. Planting time should be in the dormant season, fall or early winter.

Exhibit 17.33m: Hillside Planting Detail

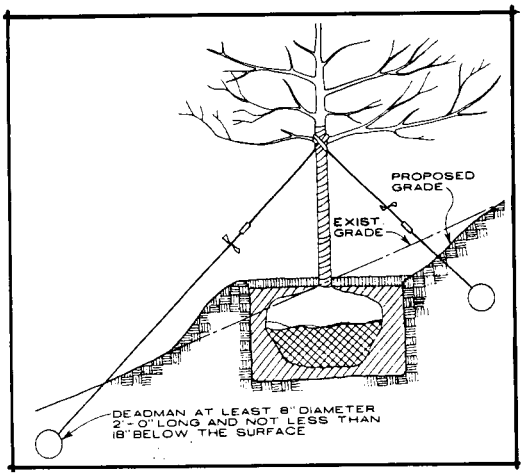
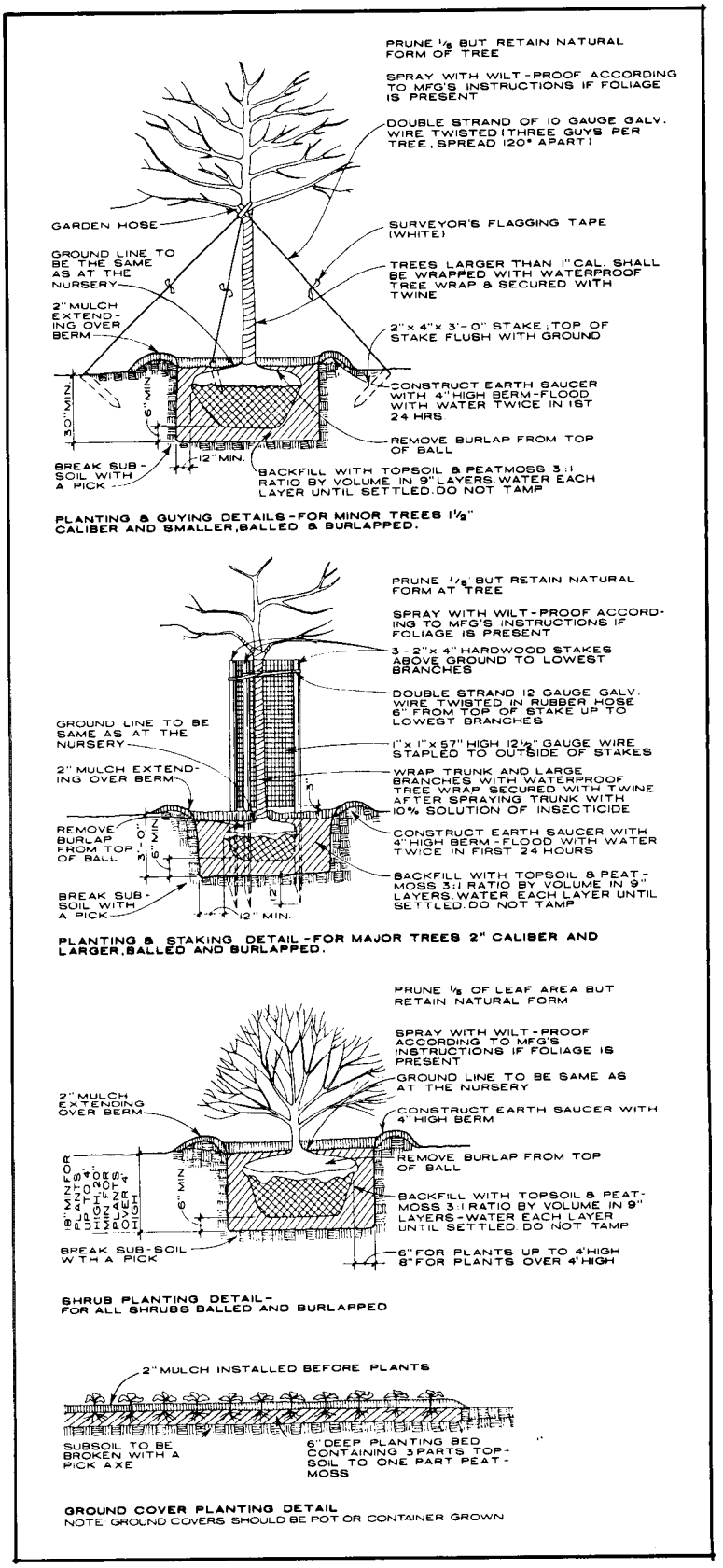


Exhibit 17.34m: Planting Details



Source: "Architectural Graphic Standards" - Ramsey and Sleeper

Exhibit 17.33t: Plant List

Latin Name	Common Name	Height	Spread	Flowers	Fruit	Canopy	Screen	Barrier	Sun	Sun/Sh	Shade	Maint.	Plazas	Parks	Roads	Paths	Parking	Entries	Corners	Foc.Pt.	Buffer	Backgr.	Hedges
DECIDUOUS SHRUBS																							
Aronia arbutifoliia	Brill.Red Chokeberry				●		●		●	●		●		●			●				●	●	
Azalea mollis	Chinese Azalea								●	●		●	●		●	●	●		●	●			
Azal mucronulatum	Korean Azalea								●	●		●	●	●	●	●	●	●	●	●			
Berberis thunbergii	Green Barberry							●	●	●		–	●			●					●		●
Berberis t.a.nana	Crimson Pygmy Barberry								●			–	●				●	●			●		●
Calycanthus floridus	Sweetshrub			●					●	●		●		●			●					●	
Chaenomeles japonica*	All Japonica Varieties			●	●		●	●	●	●		●	●	●	●	●	●						
Cornus servicea	Red Osier Dogwood				●		●		●	●		●		●								●	
Cornus s.'Kelseyi'	Kelsey's Dwarf Dogwood								●	●		●	●			●	●			●			●
Catoneaster divaricata	Spreading Catoneaster			●	●		●		●	●		–		●			●					●	
Duetzia gracilis	Slender Duetzia								●			●	●			●	●						●
Euonymus alata*	Winged Euonymus				●		●		●	●		–	●	●		●	●	●	●			●	
Forsythia intermedia	Forsythia				●		●		●	●		+		●		●	●					●	
Forsythia suspensa	Weeping Forsythia								●	●		●		●			●					●	
Hydrangea macrophylla*	Hydrangea			●					●			–	●	●		●	●					●	
Ligustrum amurense	Amur Privet						●		●	●		–		●			●				●	●	●
Lonicera maackii'Rem Red'	Amur Honeysuckle			●	●		●		●	●		●	●	●			●		●		●	●	
Myrica pensylvanica	Northern Bayberry				●				●			●	●	●	●		●				●	●	●
Prunus cistena	Purple Sandcherry			●					●			●	●	●		●	●		●	●		●	
Spirea bumalda coccinea	Imp.Dw. Red Spirea			●					●	●		●	●			●	●						●
Syringa vulgaris hybrids*	French Hybrid Lilac			●			●		●			●	●	●	●		●		●		●	●	
Persica	Persian Lilac						●		●	●	●	●	●	●	●	●	●		●		●	●	●
Viburnum carlecsphalum	Fragrant Viburnum			●					●	●		–	●	●	●		●	●		●		●	
Viburnum dilatatum*	Linden Viburnum			●	●				●	●		●	●	●			●		●		●	●	
Viburnum o.'Nanum'	Dwarf Eur. Viburnum			●					●			–	●	●		●	●						●
Viburnum setigerum	Tea Viburnum						●		●	●		●		●			●		●		●	●	
Weigela florida Pink Princess	Pink Princess Weigela								●	●		●	●	●			●					●	
EVERGREEN SHRUBS																							
Abelia grandiflora	Glossy Abelia								●			–	●	●		●	●						
Berberis mentorensis	Mentor Barberry						●	●	●	●		–									●		●
Chamaecyparis*	False Cypress						●		●	●		●		●	●		●			●		●	
Catoneaster dammeri 'Lowfast'	Lowfast Catoneaster				●				●	●		●	●			●	●	●					
Catoneaster d.'Skogsholmen'	Skogsholmen Catoneaster			●					●	●		●	●			●	●	●					●
Ilex cr.'hetzi'	Large Convex Leaf Holly				●				●	●		–	●			●	●	●		●			●
Ilex glabra 'Compacta'	Improved Inkberry								●	●		●	●	●		●	●	●					●
Juniperus chinensis'Aquarius'	Aquarius Juniper								●	●		●	●	●		●	●	●	●				
Juniperus ch.'Hetzii Glauca'	Hetz Blue Juniper								●	●		–	●	●	●		●	●			●	●	
Juniperus ch.'sargentii'	Sargent Juniper								●			●	●	●	●	●	●	●	●				
Kalmia latifolia	Mountain Laurel			●					●	●		●	●	●	●							●	
Lonicera fragrantissima	Winter Honeysuckle			●			●		●			●	●	●	●		●				●	●	
Pieris japonica	Japanese Andromeda			●						●		–	●	●	●		●	●		●		●	
Pyracantha coccinea lalandi	Laland Pyracantha			●	●		●	●	●	●		–	●	●	●		●				●	●	
Rhododendron catawbiense hyb.	Hybrid Rhododendrons			●						●	●	●	●	●	●	●	●	●		●		●	
Rhododendron maxium	Rosebay Rhododendron			●						●	●	●		●	●		●					●	
Rhododendron wilsoni	Wilson's Rhododendron			●						●	●	●	●			●	●	●		●			
Taxus baccata repandens	Spreading English Yew								●	●	●	–	●	●		●	●	●	●				
Taxus m.'Densiformis'	Dense Yew								●	●	●	–	●	●	●	●	●	●	●				●
Taxus m.'Wardii'	Ward's Yew								●	●	●	–	●	●	●	●	●	●	●				●
Thuja o.'Compact American'	Compact Amer.Arborvitae						●		●			–	●	●			●				●	●	●
Thuja o.'Nigra'	Dark Green Arborvitae						●		●			–	●	●			●	●	●	●	●	●	●
GROUNDCOVER AND VINES																							
Cotoneaster horizontalis*	Rock Cotoneaster								●	●		●	●			●	●	●					
Euonymus forunei 'Colaratus'	Purpleleaf Wintercreeper								●	●		●	●	●	●	●	●	●					
Forsythia viridissima'Bronx.'	Bronx Forsythia			●					●	●		●	●	●			●						
Hedera helix*	English Ivy								●	●		●	●	●				●					
Hydrangea petiolaris	Climbing Hydrangea			●						●	●	●	●	●			●						
Juniperus ch. sargentii*	Sargent Juniper								●	●		●	●	●			●	●		●			
Juniper s.'Broadmoor'	Broadmoor Juniper								●	●		●	●	●	●	●	●	●		●			
Lonicera japonica 'Halliana'	Hall's Honeysuckle			●					●	●		●		●	●	●	●						
Pachysandra terminalis	Pachysandra			●						●	●	●	●					●		●			
Stephenandra incisa crispa	Cutleaf Stephenandra								●			–	●				●			●			
Vinca Minor	Blue Myrtle			●					●	●		●	●	●		●		●		●			
Weigela f.Royal Purple	Royal Purp.TreeWisteria			●					●			–	●					●		●			

Exhibit 17.33t: Plant List, Cont.

Latin Name	Common Name	Height	Spread	Flowers	Fruit	Canopy	Screen	Barrier	Sun	Sun/Sh	Shade	Maint.	Plazas	Parks	Roads	Paths	Parking	Entries	Corners	Foc.Pt.	Buffer	Backgr.	Hedges
SMALL DECIDUOUS TREES																							
Acer palmatum	Japanese Maple					●			●	●		-	●	●		●				●			
Aesculus pavia	Red Buckeye			●		●			●	●		●	●	●						●			
Cercis canadensis	Eastern Redbud			●			●		●	●	●	-	●	●		●		●					
Cornus florida	Flowering Dogwood			●	●	●			●	●	●	-	●	●		●		●		●			
Cornus kousa chinensis	Chinese Kousa Dogwood			●	●	●			●	●	●	●	●	●		●		●		●			
Crataegus viridus'WinterKing'	Winter King Hawthorn			●	●		●	●	●	●		-	●	●			●		●		●		
Elaegnus angustifolia	Russian Olive					●	●		●			-	●	●						●			
Koelreuteria paniculata	Panicled Goldenraintree			●		●			●			-	●	●							●		
Magnolia liliflora'Nigra'	Purple Lily Magnolia			●		●			●			-	●	●						●			
Magnolia virginiana	Sweetbay Magnolia			●		●			●			-	●	●		●		●		●			
Malus species & cultivars	Flowering Crabapple			●	●	●	●		●	●		●	●	●	●	●	●		●		●	●	
Sorbus aucuparia	Eur.Mountain Ash			●	●				●	●		+	●	●			●			●			
Styrax japonicum	Japanese Snowball			●		●			●	●		-	●	●		●	●		●	●			
Syringa amurensis japonica	Japanese Tree Lilac			●		●	●		●			●	●	●		●			●	●			
Viburnum sieboldi	Seibold Viburnum			●	●	●	●		●	●	●	-		●							●		●
MEDIUM DECIDUOUS TREES																							
Acer p.columnare	Columnar Norway Maple						●		●			●	●	●			●	●	●	●	●		
Acer p.schedleri nigra	Crimson King Maple					●			●			●	●	●						●			
Acer Rubrum	Red Maple			●		●			●			●	●	●	●	●	●						●
Aesculus glabra	Ohio Buckeye			●	●	●			●			-		●						●			
Betula pendula	Eur.White Birch								●	●		-	●	●		●				●			
Corylus colurna	Turkish Hazel						●		●	●		●		●									●
Gleditsia t.i.'Imperial'	Imperial Honeylocust					●			●			●	●		●		●						
Prunus sargenti	Sargent Cherry			●	●	●			●	●		●		●						●			
Prunus yodoensis	Yoshino Cherry			●	●	●			●			-		●						●			
Pyrus calleryana'Bradford'	Bradford Callery Pear			●	●				●			●		●						●			
Quercus phellos	Willow Oak								●	●		●		●						●			
Tilia cordata	Littleleaf Linden			●	●				●			-		●									●
LARGE DECIDUOUS TREES																							
Acer saccharum	Sugar Maple					●			●			●	●	●	●	●	●						●
Aesculus hippocastanum	Common Horsechestnut			●	●	●			●			●		●						●			
Celtis occidentalis	Common Hackberry					●				●		-		●	●	●	●						●
Fagus sylvatica	European Beech					●			●	●		●		●			●			●			●
Fraximus americana	White Ash					●			●			-		●							●		●
Fraxinus excelsior'Hessei'	Hessei European Ash					●			●			-		●							●		●
Fraxinum penn.subintegerrima	Green Ash						●		●			-		●									●
Ginkgo biloba (Male)	Gingko								●			●		●	●	●	●	●		●			
Gleditsia t.i.'Shademaster'	Shademaster Locust					●			●			●	●	●	●	●	●	●					●
Gleditsia t.i.'Sunburst'	Sunburst Locust					●			●			●	●	●	●	●				●			
Liquidambar styraciflua*	American Sweetgum						●		●	●		●	●	●	●	●	●						●
Liriodendron tulipifera	Tuliptree				●	●			●			●		●							●		●
Platanu acerfolia'Bloodgood'	London Plane Tree					●			●	●		●		●									●
Quercus coccinea	Scarlet Oak						●		●	●		●	●	●	●	●	●						●
Quercus plaustris	Pin Oak						●		●	●		●	●	●	●		●	●	●		●		●
Quercus rubra	Red Oak					●			●	●		●	●	●	●	●	●						●
Salix elegantissima	Thurlow Weeping Willow					●			●			●		●						●			●
Sophora japonica	Japanese Pagodatree			●	●	●			●			●	●	●	●	●	●						
LARGE EVERGREEN TREES																							
Picea abies	Norway Spruce						●		●			●		●	●		●		●		●		●
Picea glauca	White Spruce						●		●			●		●	●		●	●	●		●		●
Picea pungens*	Colorado Spruce						●		●			●		●	●		●		●	●	●		●
Pinus densiflora	Japanese Red Pine					●	●		●			●		●			●				●		●
Pinus nigra	Austrian Pine						●		●			●	●	●	●		●		●		●		●
Pinus resinosa	Red Pine					●	●		●			+		●			●				●		●
Pinus strobus	Eastern White Pine					●	●		●			●		●	●		●				●		●
Pinus sylvestris	Scotch Pine					●	●		●			●	●	●	●		●		●		●		●
Tsuga canadensis	Canada Hemlock						●		●	●		●	●	●				●			●	●	●
MEDIUM/SMALL EVERGREEN TREES																							
Ilex opaca	American Holly				●				●	●		-	●	●				●		●		●	●
Pinus cembra	Swiss Stone Pine								●			●	●	●				●	●		●	●	
Juniperus chinensis*	Chinese Juniper				●		●		●			●	●	●			●	●		●		●	
Juniperus virginiana	Eastern Red Cedar				●		●		●			●	●	●			●	●		●		●	
Sciadopitys verticillata	Umbrella Pine								●			●	●					●		●			
Taxus media 'Hicksii'	Hick's Yew				●		●		●	●		-	●	●		●		●		●			●

Chapter XVIII

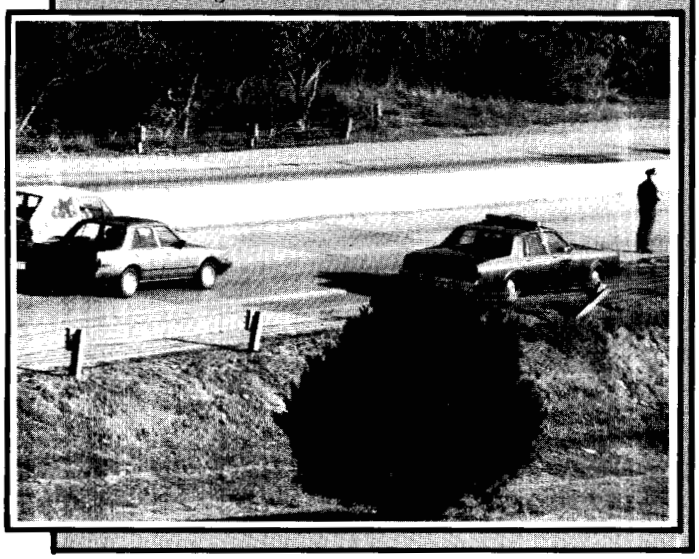
LONG RANGE FACILITIES PLAN

FOR THE

PITTSBURGH AFRES

BASE COMPREHENSIVE PLAN

Exhibit 18.1p: Police Officer Stopping Airport Parkway Traffic To Permit AFRES Base Personnel To Exit. New Interchange Will Eliminate This Problem.



INTRODUCTION

This chapter will present an inventory of existing base facilities....and their needs, objectives, and constraints. And, finally, based on the selected alternative, it will describe proposed future facilities.

EXISTING FACILITIES

Existing base facilities will be described in AF land use code order:

1..Airfield
2..Aircraft O&M
3..Industrial
4..Administrative
5..Community-Comm.
6..Community-Service
7..Medical
8..Housing-Accomp.
9..Housing-Unaccomp.
10..Outdoor Recreation
11..Open Space
12..Water

AIRFIELD EXISTING FACILITIES

The existing Airfield Facilities (runways, taxiways, aprons), as shown below, were fully described in Chapter XI and will not be repeated here.

Exhibit 18.2p: GPIA Airfield Facilities

AIRCRAFT O&M EXISTING FACILITIES

The aircraft Operations and Maintenance facilities include the aircraft hangars, maintenance shops, and other facilities related to operating and maintaining the aircraft of the 911th Tactical Airlift Group.

The existing aircraft O&M facilities are listed by the exhibit below located by maps and photos on the following pages, and described by the following text.

Exhibit 18.3t: Aircraft O&M Facilities List

Fac. No.	Facility Name
125	Avionics Shop
129	Maintenance Dock
408	Survival Equipment Shop
409	Non-Destructive Inspection Shop
411	Engine I&R Maintenance Shop
414	A/C Maint. Organization Shop
416	Fuel System Maintenance Dock
417	Maintenance Hangar
418	General Purpose A/C Maint. Shop
419	Squadron Operations
420	Aerospace Equipment Storage (AGE)
6469	Engine Test Stand

...Facility 125 - The Avionics Shop as shown by the map below is the second building southeast of the Nose Dock. It is approximately 12,000 square feet in size and was constructed in 1982. This facility is used primarily for servicing and training for servicing of communication, navigation, instrumentation and autopilot systems.

...Facility 129 - The "Nose Dock" Maintenance Dock as shown by the map below faces toward the northwest looking onto the north access apron. This building is approximately 20,000 square feet in size and was constructed in 1970.

All on-base maintenance requirements for the C-130's except fuel and tail maintenance can be performed in this building.

A picture of this building is shown below with the tail section of a C-130 protruding through the doors.

Exhibit 18.5p: "Nose Dock" Facility 129

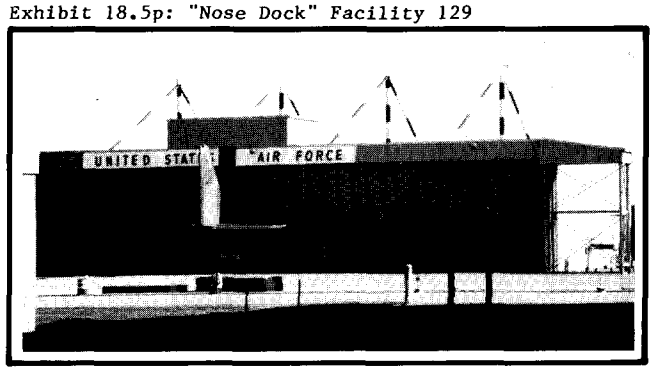
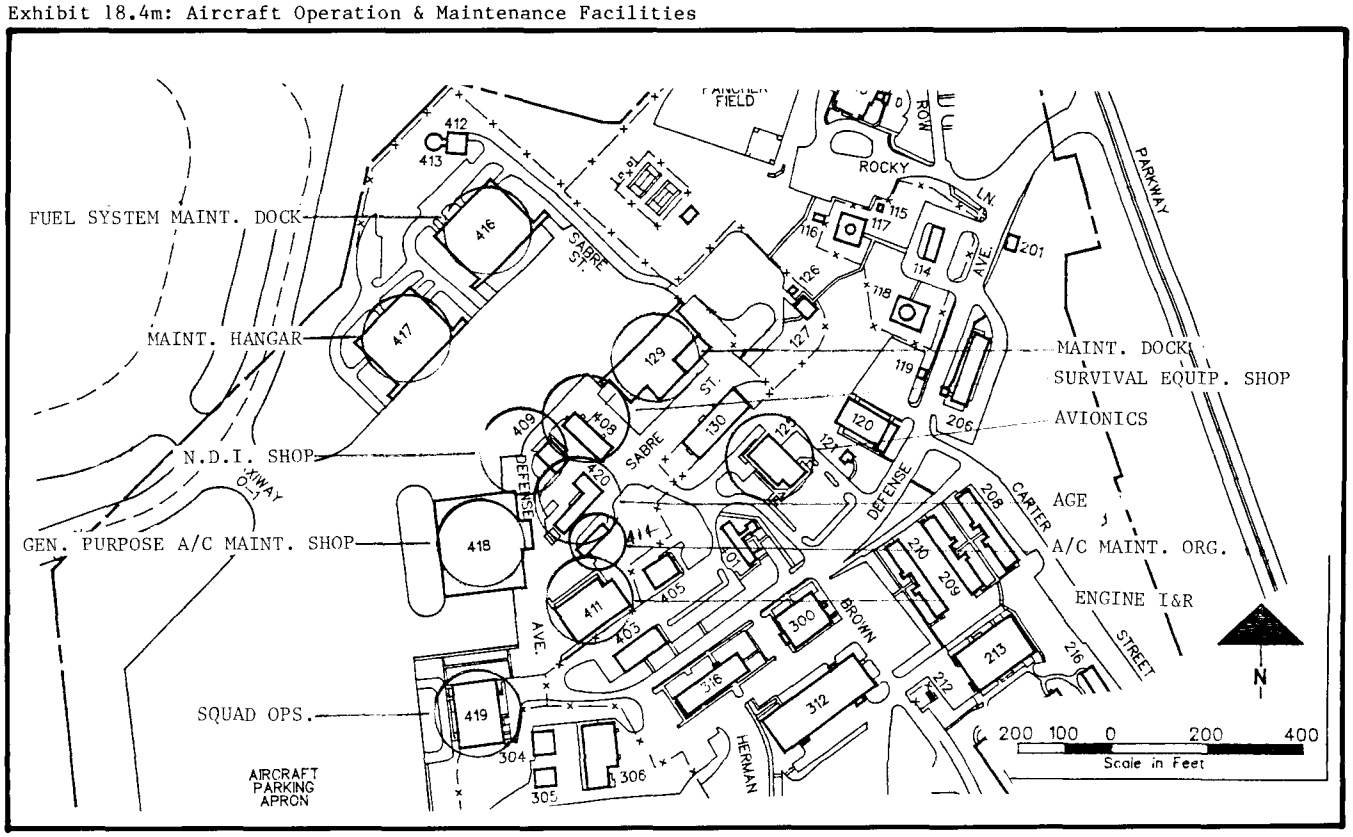


Exhibit 18.4m: Aircraft Operation & Maintenance Facilities



...Facility 408 - The Survival Equipment Shop is adjacent to the Nose Dock along the southeast side of the north apron. This building is approximately 4,400 square feet in size and was constructed in 1975.

Its primary function is for the storage and preparation for use of the survival equipment carried on the aircraft such as parachutes and dinghies (inflatable rafts). The photos below show the building and a dinghy.

...Facility 409 - The non-destructive Inspection Shop shown in the photo below, is adjacent to the Survival Equipment Shop along side the north apron. It was constructed in 1975 and is approximately 2,700 square feet in size.

The primary purpose of this facility is for training and accomplishing non-destructive inspection of equipment and parts.

...Facility 411 - The Engine I&R Maintenance Shop shown by the photo to the right is located just behind the General Purpose Aircraft Maintenance Shop. It is approximately 11,800 square feet in size and was built in 1982.

This facility is used for training personnel and for the inspection, routine maintenance, and repair of the aircraft engines and propellers for the C-130 aircraft.

Exhibit 18.6p: Survival Equipment Shop And Non-Destructive Inspection Shop

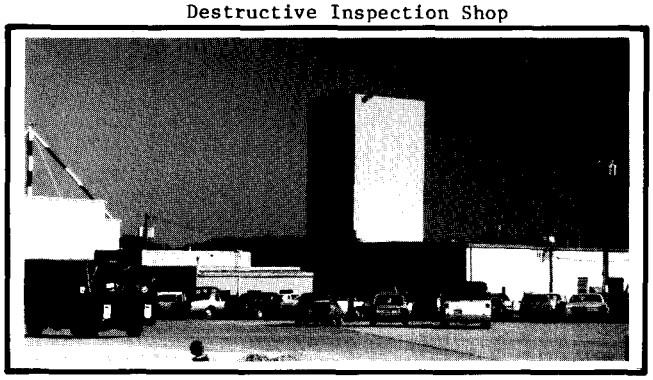


Exhibit 18.7p: Inflatable Dinghy

Exhibit 10.8p: Engine I&R Shop

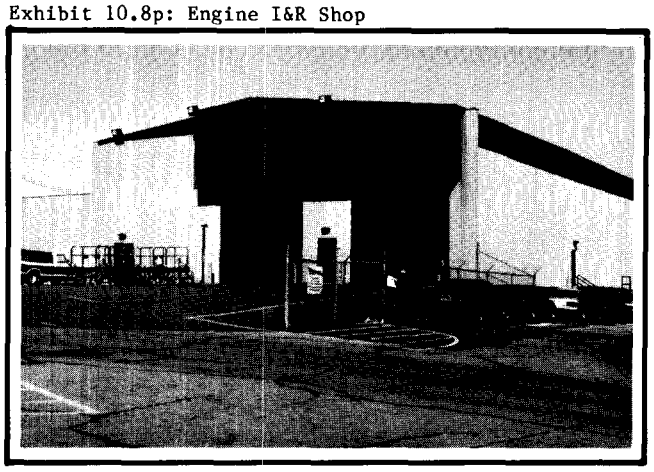
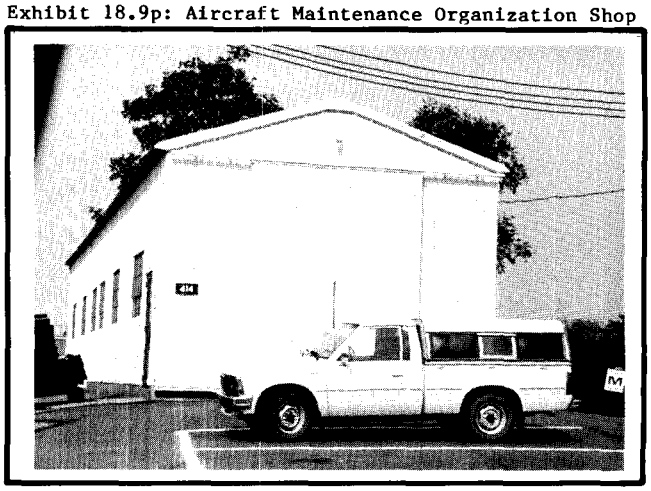


Exhibit 18.9p: Aircraft Maintenance Organization Shop



...Facility 414 - The Aircraft Maintenance Organization Shop shown by the photo above is located adjacent to the Engine I&R Shop. It is approximately 1,600 square fet in size and was built in 1957.

...Facility 416 - The Fuel System Maintenance Dock shown by the photo below is located at the northest corner and faces onto the north access apron. It is approximately 24,000 square feet in size and was built in 1984. This hangar is used primarily for maintenance of all aircraft fuel systems and for corrosion control.

Exhibit 18.10p: Fuel System Maintenance Dock

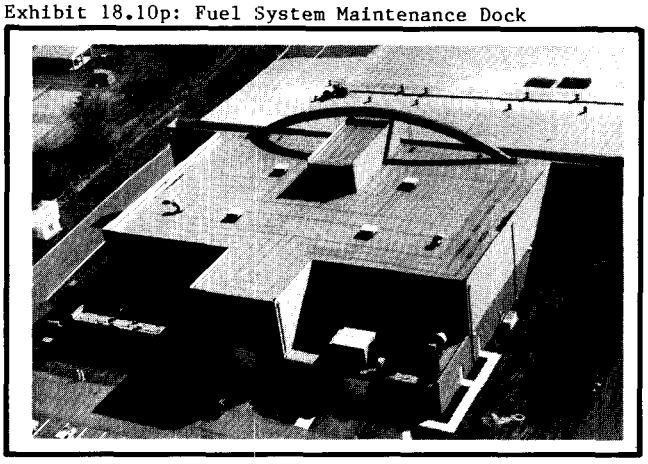
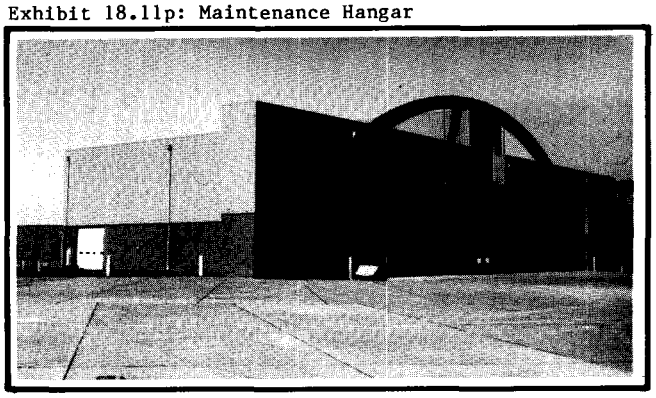


Exhibit 18.11p: Maintenance Hangar



...Facility 417 - The Maintenance Hangar shown by the photo above is adjacent to the Fuel System Maintenance Dock and faces the north access apron. All aircraft maintenance except for fuel systems and painting can be accomplished in this hangar. This hangar is approximately 24,000 square feet in size and was constructed in 1984.

...Facility 418 - The General Purpose Aircraft Maintenance Shop shown by the photo below faces the main parking apron at its northeast corner. This building contains approximately 47,000 square feet and was constructed in 1945. This facility was a maintenance hangar for C-123 aircraft but it cannot accommodate the C-130's. It currently houses mobility storage, maintenance crew shops, snow removal equipment and administrative offices for maintenance.

...Facility 419 - The Squadron Operations building shown in the photo to the right is located south of the General Purpose Shop and faces the main parking apron. It is approximately 24,000 square feet in size and was built in 1978. This facility serves primarily the pilots, their briefings, training, and administration. It also houses the aeromedical flight in the basement.

Exhibit 18.12p: General Purpose A/C Maintenance Shop

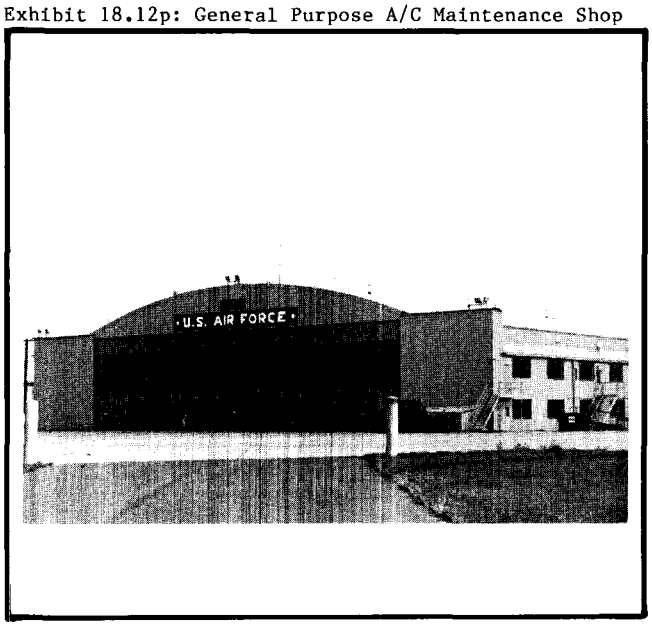
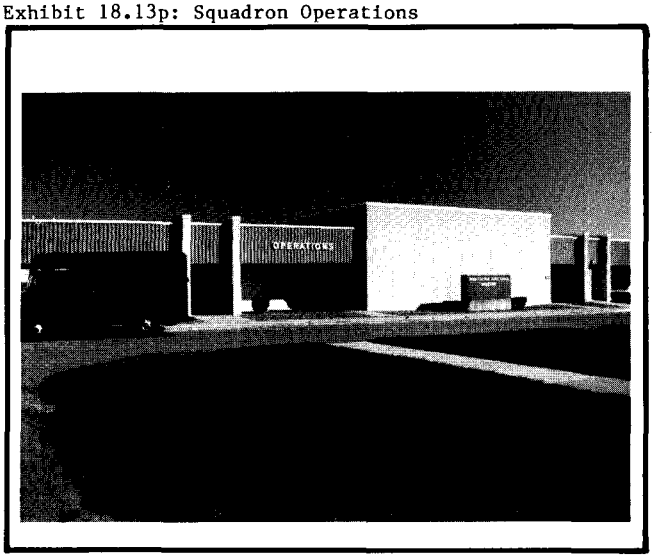


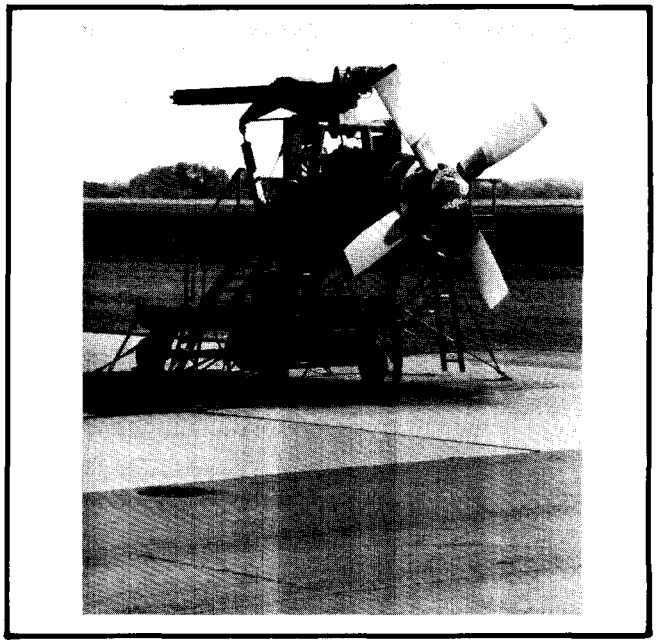
Exhibit 18.13p: Squadron Operations



...Facility 420 - The Aerospace Equipment Storage on "AGE" building is located just behind the General Purpose Shop. It is approximately 4,500 square feet in size and was built in 1975. It is used for the storage and maintenance of aircraft support equipment such as generators, floodlights, towing equipment, etc.

...Facility 6496 - The Engine Test Stand shown by the photo below was constructed in 1981. It is located near the southeast corner of the main parking apron. It is used after engineer maintenance for engine run-up and analysis prior to installation on the aircraft.

Exhibit 18.14p: Engine Test Stand



INDUSTRIAL EXISTING FACILITIES

Most of the industrial facilities (BCE, Supply, and Vehicle Maintenance) are located in the southwest quadrant of the base. The POL is adjacent to the Entry Gate.

...The BCE and Vehicle Maintenance facilities primarily are located between Davis Street and the Aircraft Parking Apron....with Vehicle Maintenance parking behind BCE buildings 330 and 342.

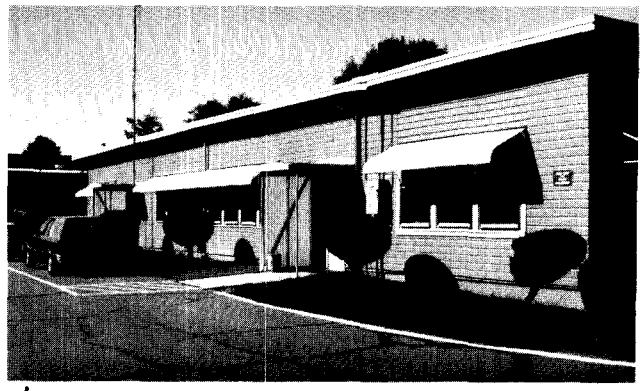
...The major supply facilities, buildings 312 and 320, are located on Davis Street.

...POL Storage is located near the Main Gate, while refueler parking and lab are on Sabre Street. Fuel is pumped to Sabre Street for loading into the refuelers.

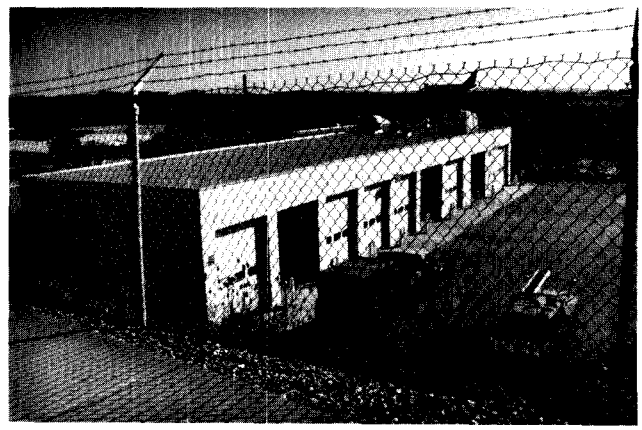
Exh. 18.15t: List Of Existing Industrial Facilities

NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00113	A	125977	3	PMP STN, LF	131 SF		58
00114	A	125977	3	PMP STN, LF	1538 SF		53
00115	A	811149	3	ELEC PWR STN BLDG	240 SF		71
00116	A	125977	3	PMP STN, LF	280 SF		58
00117	V	411135	3	STOR, JET FL		2914 BL	55
00118	V	411135	3	STOR, JET FL		4381 BL	54
00119	A	824462	3	GAS METER FACILITY	336 SF		
00121	A	219944	3	BE MAINT SHP	380 SF		45
00126	A	442628	3	SHED SUP&EQUIP BSE	240 SF		85
00127	A	121111	3	PETROL OPS BLDG	1200 SF		79
00212	V	813231	3	ELEC SUBSTATION		1000 KV	44
00304	A	214425	3	VEH MAINT SHP	2000 SF		85
00305	A	214425	3	VEH MAINT SHP	1767 SF		56
00306	B	214425	3	VEH MAINT SHP	8440 SF		77
00312	B	442758	3	WHSE SUP&EQUIP BSE	19656 SF		55
00319	A	442257	3	HAZARD STOR, BSE	1200 SF		83
00320	A	442758	3	WHSE SUP&EQUIP BSE	18544 SF		86
00321	A	442628	3	SHED SUP&EQUIP BSE	462 SF		54
00322	A	123335	3	VEH FL STN	174 SF	3 OL	86
00325	B	219943	3	BE PAV GRND FCLTY	12269 SF		54
00327	V	452255	3	CE STOR SAND	1200 SF		79
00328	A	610127	3	BSE ENGR ADMIN	4800 SF		53
00329	A	219944	3	BE MAINT SHP	1221 SF		49
00330	A	219947	3	BE STOR SHED	1822 SF		55
00331	A	219944	3	BE MAINT SHP	5166 SF		53
00332	A	219946	3	BE STOR CV FCLTY	1200 SF		64
00339	V	442257	3	HAZARD STOR, BSE	1344 SF		84
00342	A	219946	3	BE STOR CV FCLTY	2400 SF		83
00406	V	690432	3	FLAG POLE, BSE		1 EA	45
00412	V	843316	3	FOAM EQUIPMENT FAC	1820 SF	25 GM	84
00413	V	843319	3	FR DELUGE MATL STOR	1500 SF	165 KG	84
00419	V	813231	3	ELEC SUBSTATION		150 KV	78
06496	V	211193	3	TST STD		1 EA	81

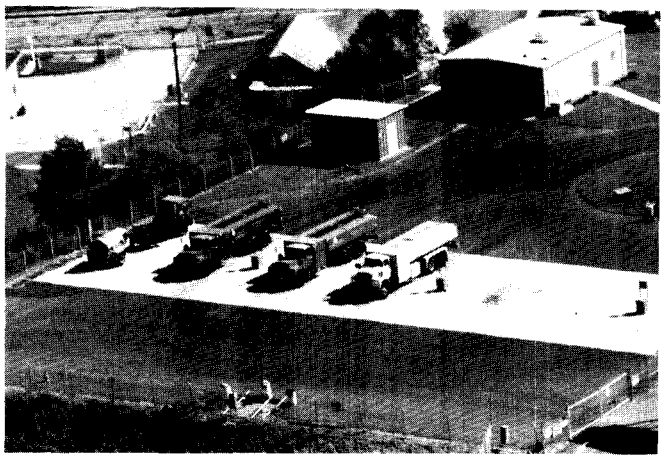
Exhibit 18.16p: Photos Of Industrial Facilities

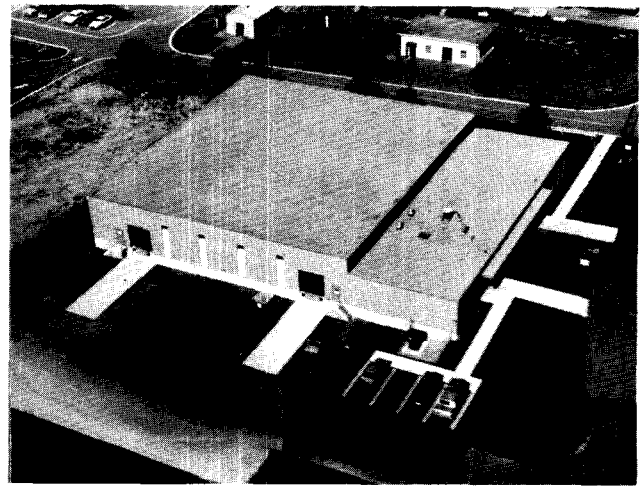


BCE Admin. Blg. Vehicle Maintenance Facility



Veh. Maint. in foreground; BCE bldgs. mid-ground
POL Refuelers and Lab on Sabre Street
Supply Warehouse on Davis Street





ADMINISTRATIVE EXISTING FACILITIES

Administrative facilities, as shown by the list below, includes the Main Gate (Traffic Check House), Base Personnel Office, and Headquarters.

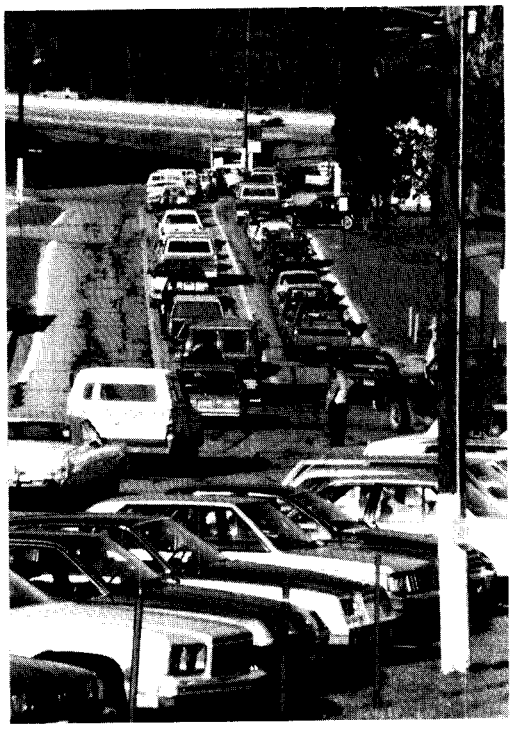
Personnel and Headquarters are located on Defense Avenue, near the center of the base. The Traffic Check House is at the Main Gate, and nearby building 201 also is used by Main Gate personnel: Disaster Preparedness is located in building 210, a dormitory that has been temporarily converted to office type uses.

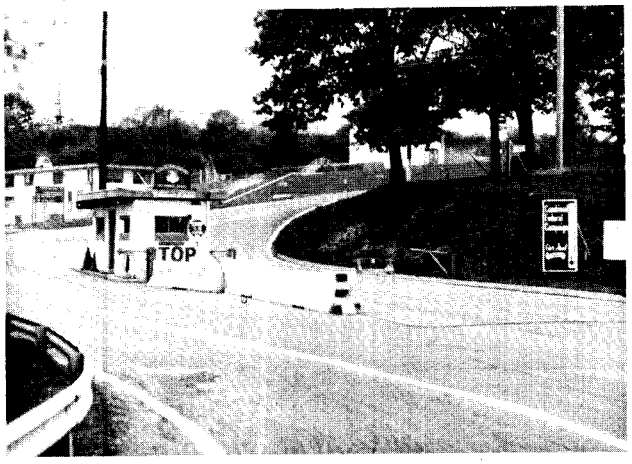
Exhibit 18.17t: List Of Administrative Facilities

NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00100	A	730839	4	TRAFFIC CHK HSE	144 SF		59
00201	A	730835	4	SP OPERATIONS	511 SF		56
00208	B	610243	4	HQ GROUP	12967 SF		52
00210	B	610913	4	DISASTER PREP	12967 SF		52
00403	A	610128	4	BASE PERSONNEL OFC	4160 SF		45

Exhibit 18.18p: Photos Of Administrative Facilities

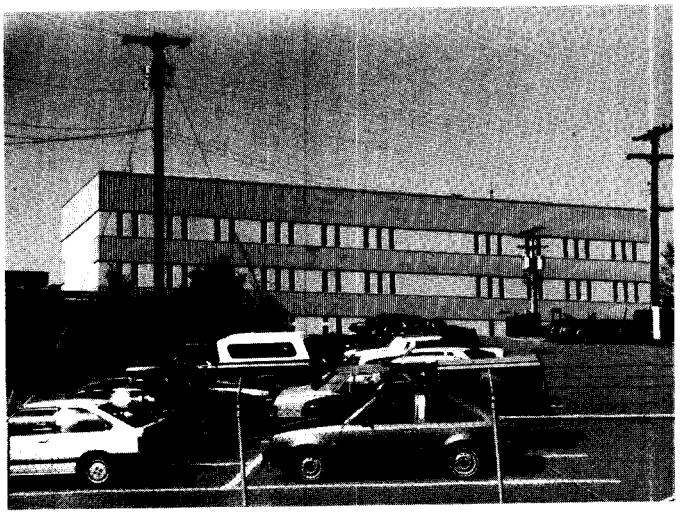
..Main Gate At Evening Rush Hour→ .... And At Non-Rush Hour

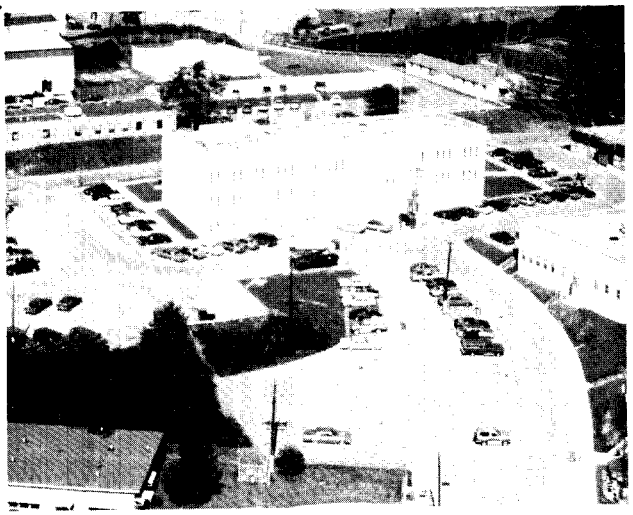




...Base Personnel Office

...Headquarters Bldg.





COMMUNITY (Commercial & Service) EXISTING FACILITIES

The community-commercial facilities are located near the center of the base, except for the Consolidated Open Mess near the Main Gate (as shown by the photos below).

In addition to the Open Mess, other commercial facilities include the:

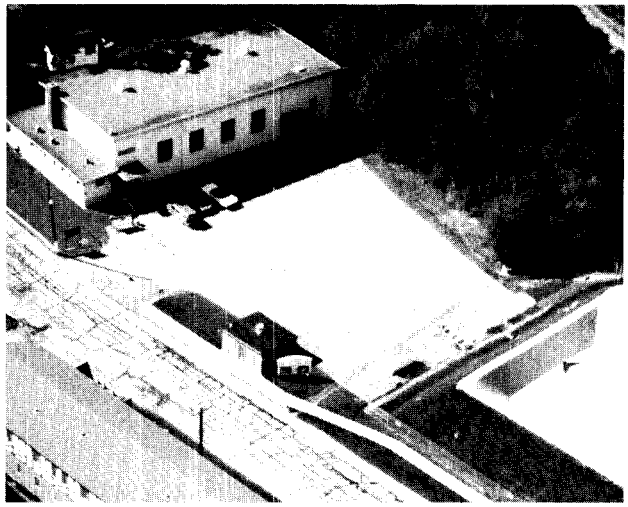
...Gymnasium, located on Defense Avenue, adjacent to the POL storage.
...Dining Hall, on Brown Street, situated between the original six dormitories.
...Exchange Sales Store at the corner of Defense Avenue and Brown Street. Also, it contains the Credit Union, Snack Bar, and Hobby Shop.

The Base Chapel is the only community-service facility. It is located across Defense Avenue from the Base Exchange.

Exhibit 18.19t: List Of Commercial Facilities

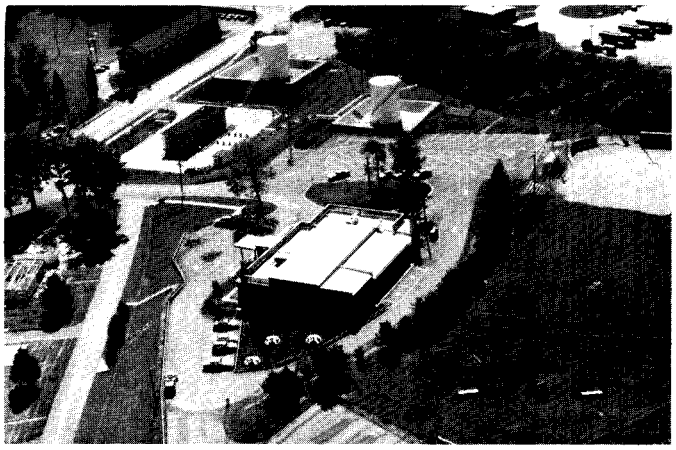
NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00110	A	740615	5	OPEN MESS, CONSOL	9139 SF		57
00120	A	740674	5	GYMNASIUM	7070 SF		55
00213	B	722351	5	DH, AMN(DET)	21426 SF	1110 PN	52
00300	B	740388	5	EXCH, SALES STORE	8000 SF		86
00401	A	730771	6	CHAPEL, BASE	2626 SF	100 SE	45

Exh. 18.20p: Photos Of Existing Commercial Facilities

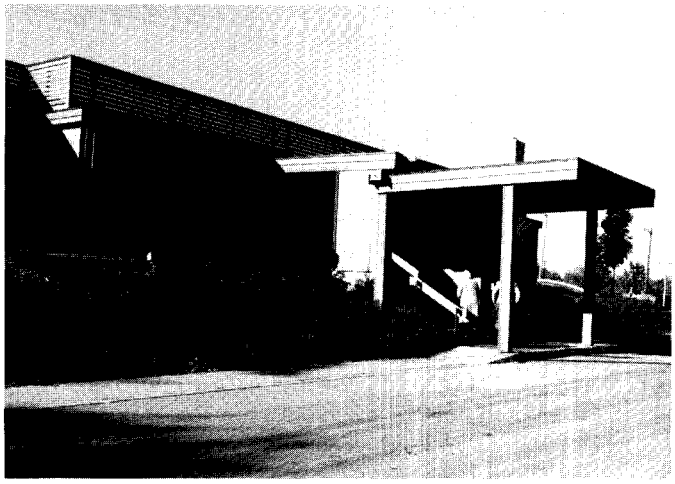


...Gymnasium, on Defense Avenue

...Dining Hall (DH) between 6 original dorms



...Consolidated Open Mess



...BX on Brown St.; Chapel across Defense Avenue

MEDICAL AND HOUSING FACILITIES

The Air Force Clinic is the only Medical facility on base. It is located on Carter Avenue, adjacent to the four dorms.

There is no Accompanied Housing on base. That which existed, see photos to the right, was demolished in late 1986.

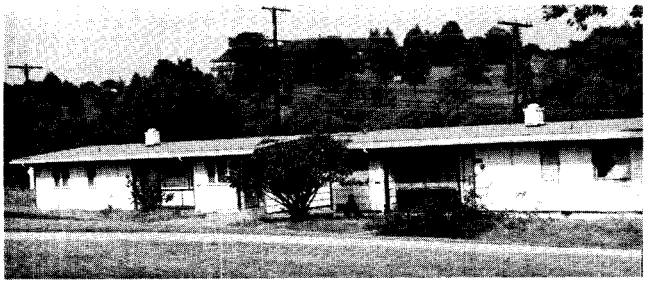
For Unaccompanied Housing, there are five active dormitories on base, on either side of the Dining Hall. Also, there is one VOQ, located at the intersection of Defense Avenue and Carter Street.

Exhibit 18.21t: List Of Medical & Housing Facilities

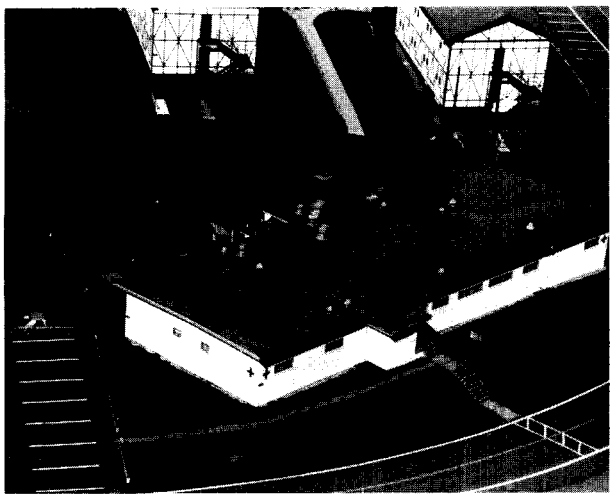
NUM	CTL	CATCODE	AFC	FACILITY	AREA	OTHER	YC
00221	A	510411	7	AF CLINIC	6173 SF	9 PS	57
00206	A	724417	9	VOQ (01-010)	12095 SF	50 PN	55
00209	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00216	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00217	A	721315	9	DORM, VAQ	12967 SF	56 PN	52
00218	B	721315	9	DORM, VAQ	12967 SF	56 PN	52
00219	B	721315	9	DORM, VAQ	12967 SF	56 PN	52

...Foundation slabs remain after housing demolition

...Single family homes prior to demolition



Exh. 18.22p: Photos Of Medical & Housing Facilities



...The Air Force Clinic

4 Dormitories

Center building is dormitory

PLAN PROPOSALS

In this section, the facility proposals will be grouped by land use category and then located by excerpts from the map TAB, and described by text.

APRON PROPOSALS

The exhibit to the right shows the possibility of expanding the aircraft parking apron in two time periods: short range and long range.

In the short range plan, additional land would be requested from the GPIA to permit expansion to accommodate up to 14 C-130 aircraft, which is six more than the present apron capacity.

With the possibility of acquiring more land from the GPIA in the long range future, the exhibit to the right shows that 16 C-141's, plus two transient aircraft, could be parked on the ramp. The C-130 requires about 1.6 acres per aircraft (W=132.6', L=97.7) including taxilane, while the C-141 requires about 2.5 acres (W=160', L=168'). Future apron expansion also is shown as a possibility to the north in order to accommodate more or larger aircraft.

AIRCRAFT O&M PROPOSALS

If the existing apron is expanded to accommodate up to 14 C-130's (with 16 being assigned), an additional hangar would be required. The exhibit below proposes a new 53,000 square foot maintenance hangar subdivided as follows:

...25,000 SF dock space @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF DCM admin. @ 50' x 160' on 2nd floor
... 4,000 SF mobility storage (as attachment)

To make way for the new hangar, an existing on-site building (#418) must be demolished and its occupants temporarily relocated: shops and mobility storage to building #129, and administration to nearby temporary structures. If #129 had to be used again as a hangar, a new NDI/AGE/Survival Equipment facility could be located as shown below (after demolition of buildings 408, 409 and 420).

If additional land were secured from the GPIA, and the apron further expanded to park up to 16 C-141's, four hangars would be required for maintenance. The exhibit below shows that "eyebrow" additions could be made to the four hangars to meet this need....or new hangars could be constructed to the north on land secured from the GPIA.

Exhibit 18.27m: Location Of Aircraft O&M Proposals

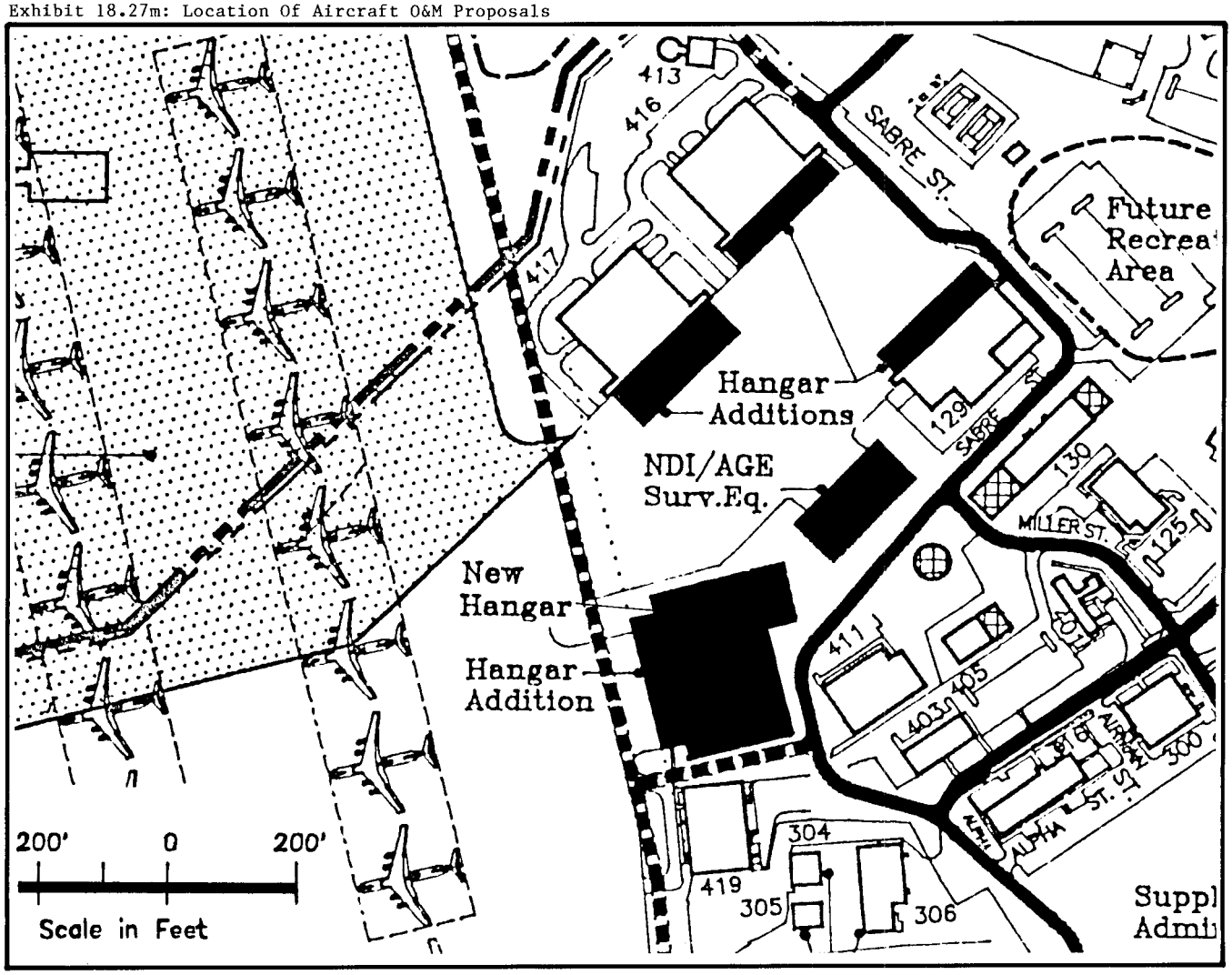
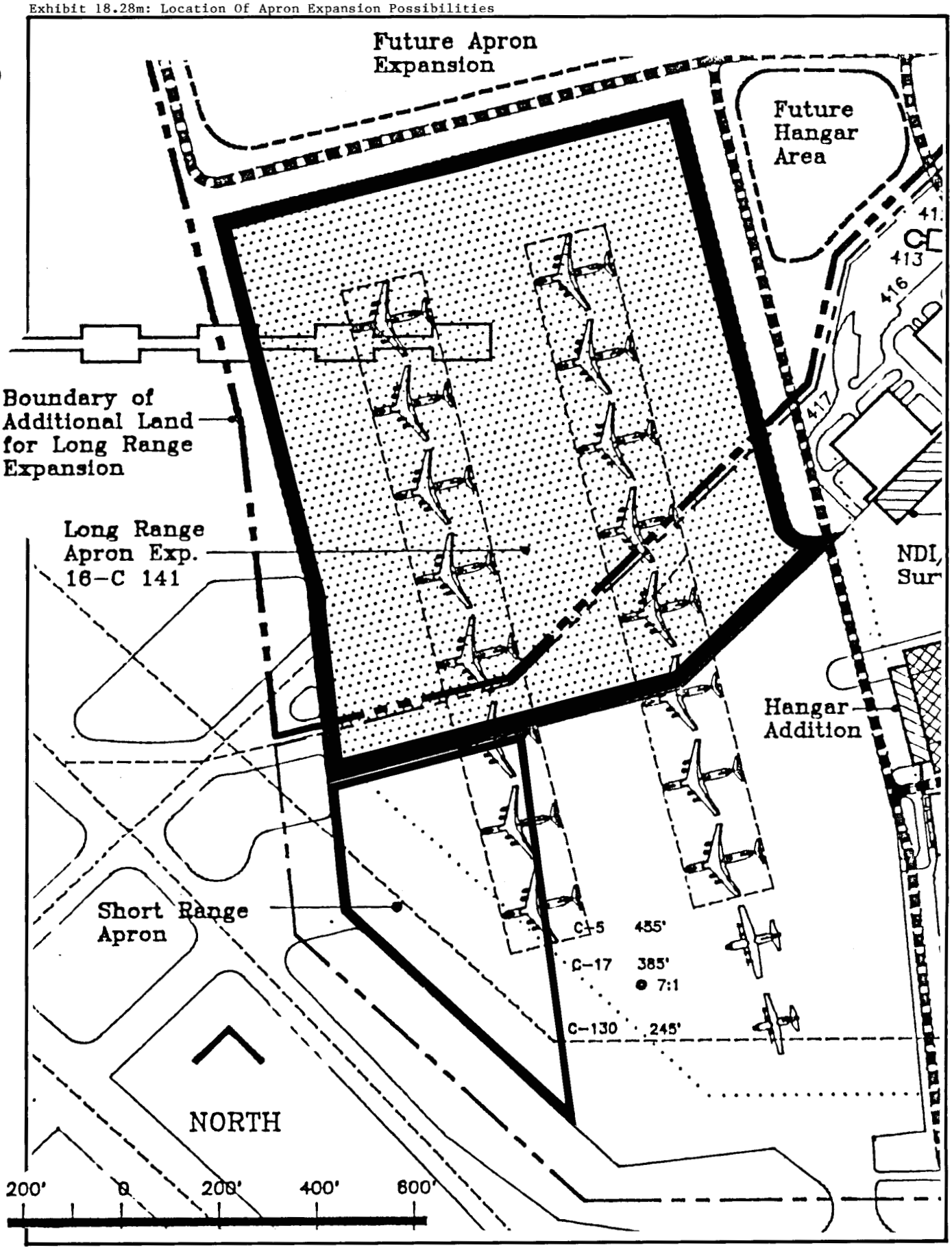


Exhibit 18.28m: Location Of Apron Expansion Possibilities



INDUSTRIAL PROPOSALS

The major industrial proposals, as shown below, would establish consolidated areas for supply, BCE, and Vehicle Maintenance.

...Area "A", for BCE activities, would include a new two-story BCE building of 27,600 square feet and conversion of buildings 304, 305, and 306 for BCE Roads and Grounds use. No buildings would be constructed south of the runway building restriction line (along Davis St.), but POV or government vehicle parking could be permitted.
...Area "B" would be reserved for Supply activities, including a new 38,635 square foot administration/warehouse building, as well as considerable outside space for storage.
...Area "C" would become the Vehicle Maintenance and storage area. Building #320 would be converted to this use, the gas station is adjacent, and vehicle parking would be permitted within the runway building setback line.

OTHER PROPOSALS

The remaining proposals, with locations as shown by exhibits on these facing pages, include:

...New Gates, with the Main Gate close to the new Airport Parkway interchange....and a secondary gate further north for use during rush hours and on UTA weekends.

...Administration - Existing building 210 would be demolished and, in its place, a new two story administration building constructed with 13,000 square feet. A new Security Police facility with 5,000 square feet, would be located adjacent to the new Main Gate.

...Medical - A new clinic of 11,250 square feet is located adjacent to the old Clinic, and a new 33rd Aeromed facility of 15,000 square feet would be constructed along the new road running from the new Main Gate to Sabre Street.

...POL - The new POL would make use of the existing GPIA facility to the north, and permit demolition of the present POL and converting its area to landscaping and recreation. If the GPIA facility were not used, the existing POL would have to be expanded and upgraded as a second choice.

...With the move of the POL, an excellent opportunity will exist to establish a CONSOLIDATED COMMUNITY/RECREATION AREA as shown by the exhibit to the right. It would include the gymnasium, tennis courts, ballfield, Open Mess, and new park/recreation facility on the POL site.

Exhibit 18.29m: Location Of Industrial And Clinic Facilities Proposals

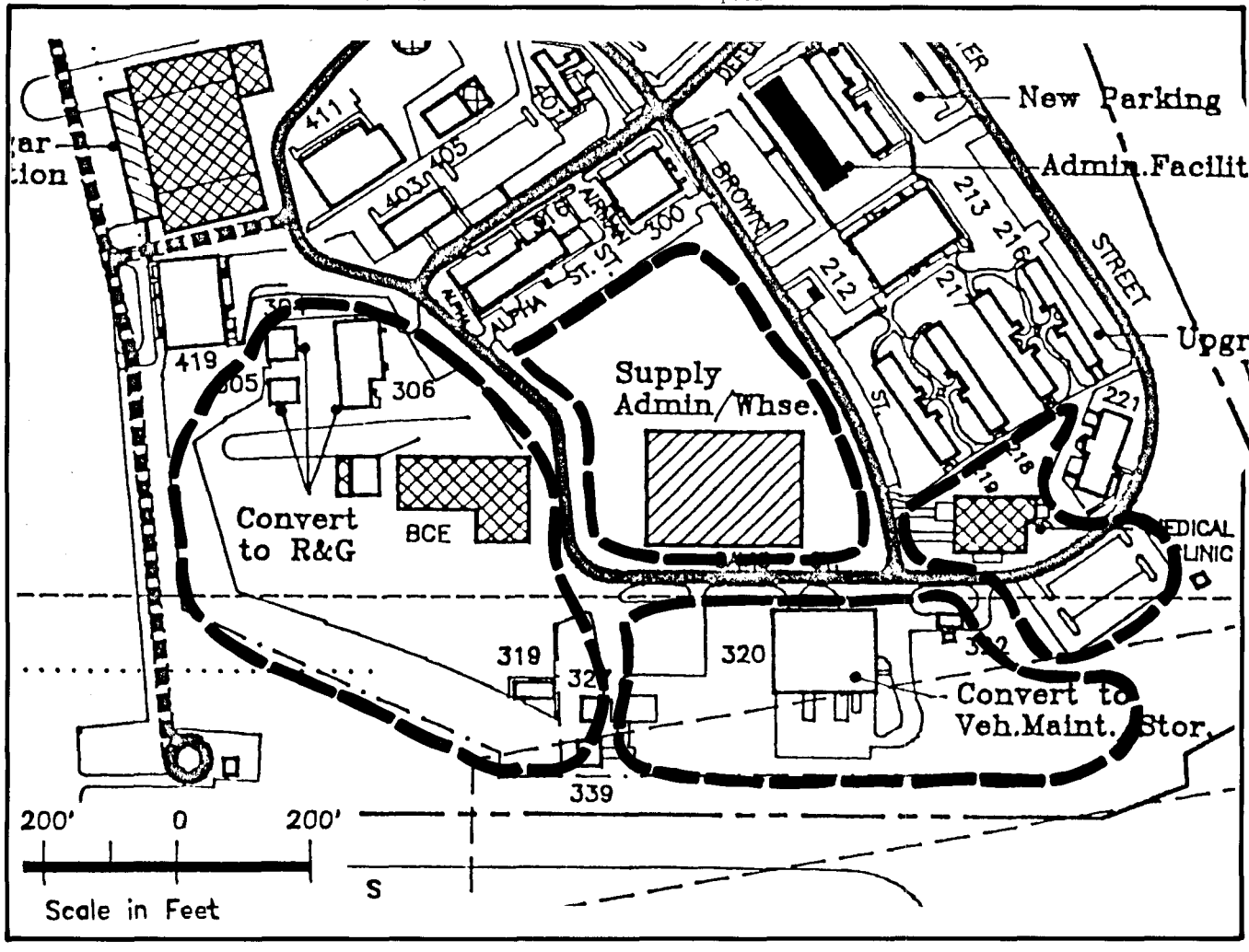
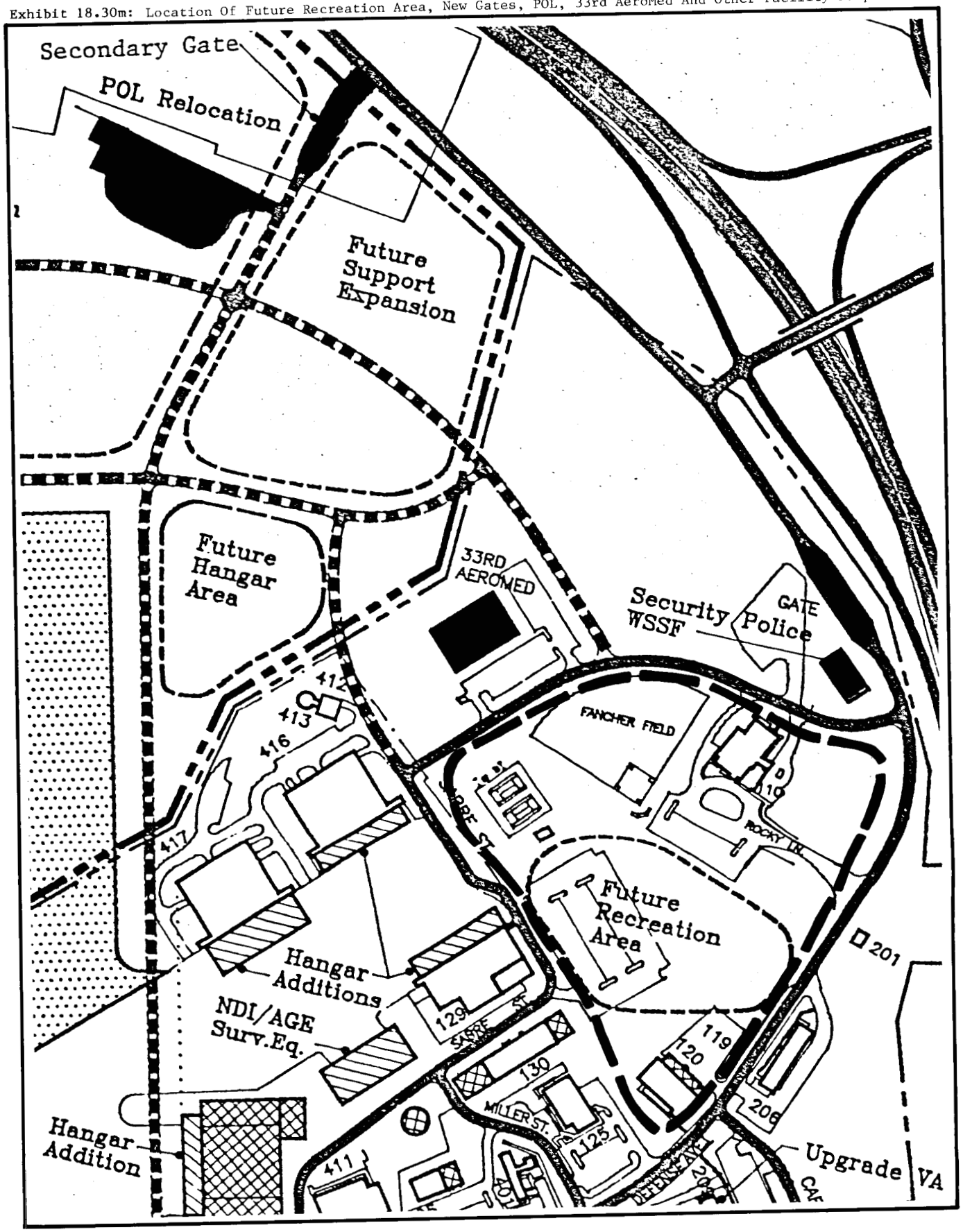


Exhibit 18.30m: Location Of Future Recreation Area, New Gates, POL, 33rd AeroMed And Other Facility Proposals



LONG RANGE FACILITY PLAN SUMMARY

The long range facility plan proposals are summarized by the exhibits on these two facing pages. Some of the major features are:

...Expansion Potential - With GPIA approval, the Pittsburgh AFRES Base can expand substantially to accommodate more and larger aircraft. The exhibit to the right shows 16 C-141's, but even more expansion potential is indicated by the areas marked as future expansion potential.

...New or Expanded Hangars could easily accompany an expanded aircraft assignment. "Eyebrow" additions could be made to existing hangars, or new ones built to the north.

...Street System Improvement - The long range plan shows an opportunity for improving the existing street system, as well as extending it in an efficient pattern to serve a much larger AFRES Base.

Exh. 18.32m: Location of Demolitions

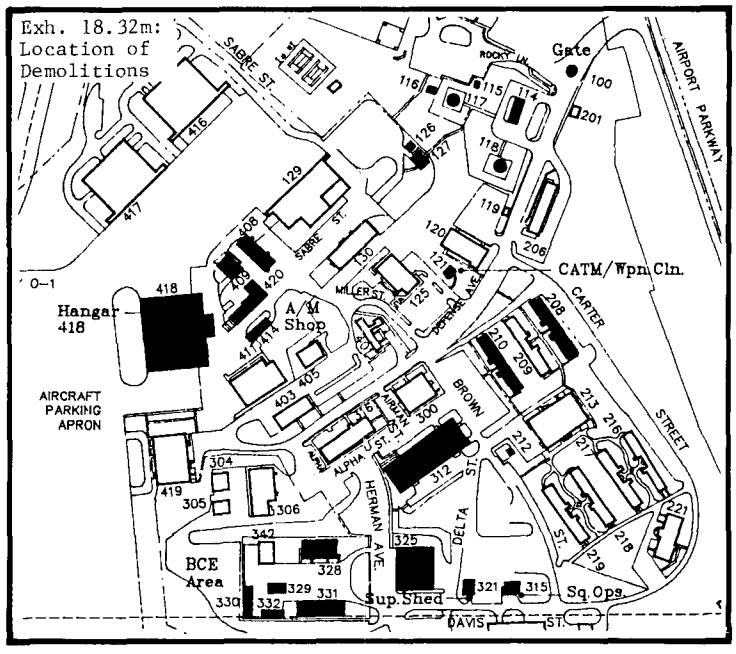


Exhibit 18.31t: Facility Needs Listing

Fac. No.	LU Code	Facility Name	Area
-	-	Land Acquisition	±94 ac.
-	1	Parking Apron Expan	40,100 SY
-	1	Parking Apron Expan	115,700 SY
00130	2	A/Port Tng Fac Addn	4,600 SF
00405	2	Comm Fclty W/Addn	1,692 SF
	2	Hangar/Shops/DCM	53,000 SF
	7	33rd Aeromed Evac Sq	15,000 SF
00129	2	Hangar Addition	8,200 SF
00416	2	Hangar Addition	8,200 SF
00417	2	Hangar Addition	14,350 SF
	2	SR Hangar Addition	8,200 SF
	2	NDI/AGE/Surv Equip	12,000 SF
00342	3	BE Storage Addn	1,200 SF
	3	Mask Confidence Bldg	600 SF
	3	ATV Storage/WSSF	462 SF
	3	IMPR Base Access	
	3	Water Storage Tank	300 MG
	3	BCE Complex	27,600 SF
	3	Firing Range: Offbase	21 FP
00304	3	Convert To BE PAV/GR	2,000 SF
00305	3	Convert To BE PAV/GR	1,767 SF
00306	3	Convert To BE PAV/GR	8,440 SF
00320	3	Conv Veh Maint/Stor	18,544 SF
	3	Supply Adm/Whse	38,635 SF
	4	Traffic Chk Hse	144 SF
00221	4	Convert:Sm Arms	6,173 SF
	4	Security Police/WSSF	5,000 SF
	4	Admin Facil	13,000 SF
	4	Emergency Gate	
00120	5	Gymnasium Addition	2,500 SF
	7	Med Training Clinic	11,250 SF
00219	9	Convert To VOQ	12,967 SF
00218	9	Convert To VOQ	12,967 SF
00217	9	Upgrade VAQ	12,967 SF
00209	9	Upgrade VAQ	12,967 SF
00216	9	Upgrade VAQ	12,967 SF

Exhibit 18.33t: Demolition Needs

Fac. No.	LU Code	Facility Name	Area
00414	2	Shp A/M Orgl	1,637 SF
00418	2	Acft Maint Shp	48,793 SF
00408	2	Shp Surv Equip	4,400 SF
00409	2	Shp Non-Destr Insp	2,699 SF
00420	2	Shp A/SE Stor Fclt	4,500 SF
00315	2	Sq Ops	1,000 SF
00121	3	CATM/Wpn Cln	218 SF
00321	3	Shed Sup & Equip Bse	462 SF
00328	3	BE Admin	4,800 SF
00329	3	BE Maint Shp	1,221 SF
00330	3	BE Stor Shed	1,822 SF
00331	3	BE Maint Shp	5,166 SF
00332	3	BE Stor CV Fclty	1,200 SF
00114	3	Pmp Stn, LF	1,538 SF
00115	3	Elec Pwr Stn Bldg	240 SF
00116	3	Pmp Stn, LF	280 SF
00117	3	Stor, Jet Fl	
00118	3	Stor, Jet Fl	
00126	3	Shed Sup & Equip Bse	240 SF
00127	3	Petrol Ops Bldg	1,200 SF
00312	3	Whse Sup & Equip Bse	19,656 SF
00325	3	BE Pav Grnd Fclty	12,269 SF
00100	4	Traffic Chk Hse	144 SF
00208	4	HQ Group (Recruit)	12,967 SF
00210	4	Contract & DP	12,967 SF

...Consolidation for greater efficiency and productivity is achieved in areas other than the apron and hangar areas. For instance:

- ...BCE activities are consolidated in the southwest next to the apron.
- ...Supply activities are grouped in the area north of Davis St. and south of HQs.
- ...Vehicle Maintenance activities are consolidated south of Davis Street.
- ...Community and Recreation activities will occupy the area immediately north of the housing facilities and dining hall.
- ...Headquarters, Housing and new Medical facilities also contribute to the locational efficiency of the remaining activities.

Exh. 18.35p: More & Larger Aircraft Could Be Accommodated

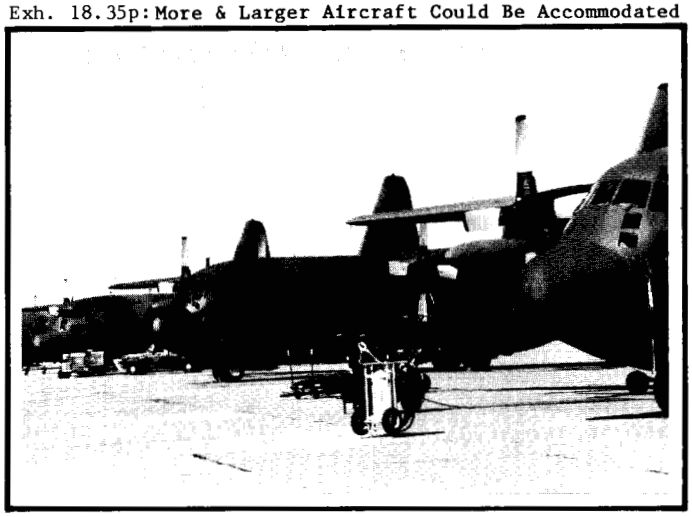
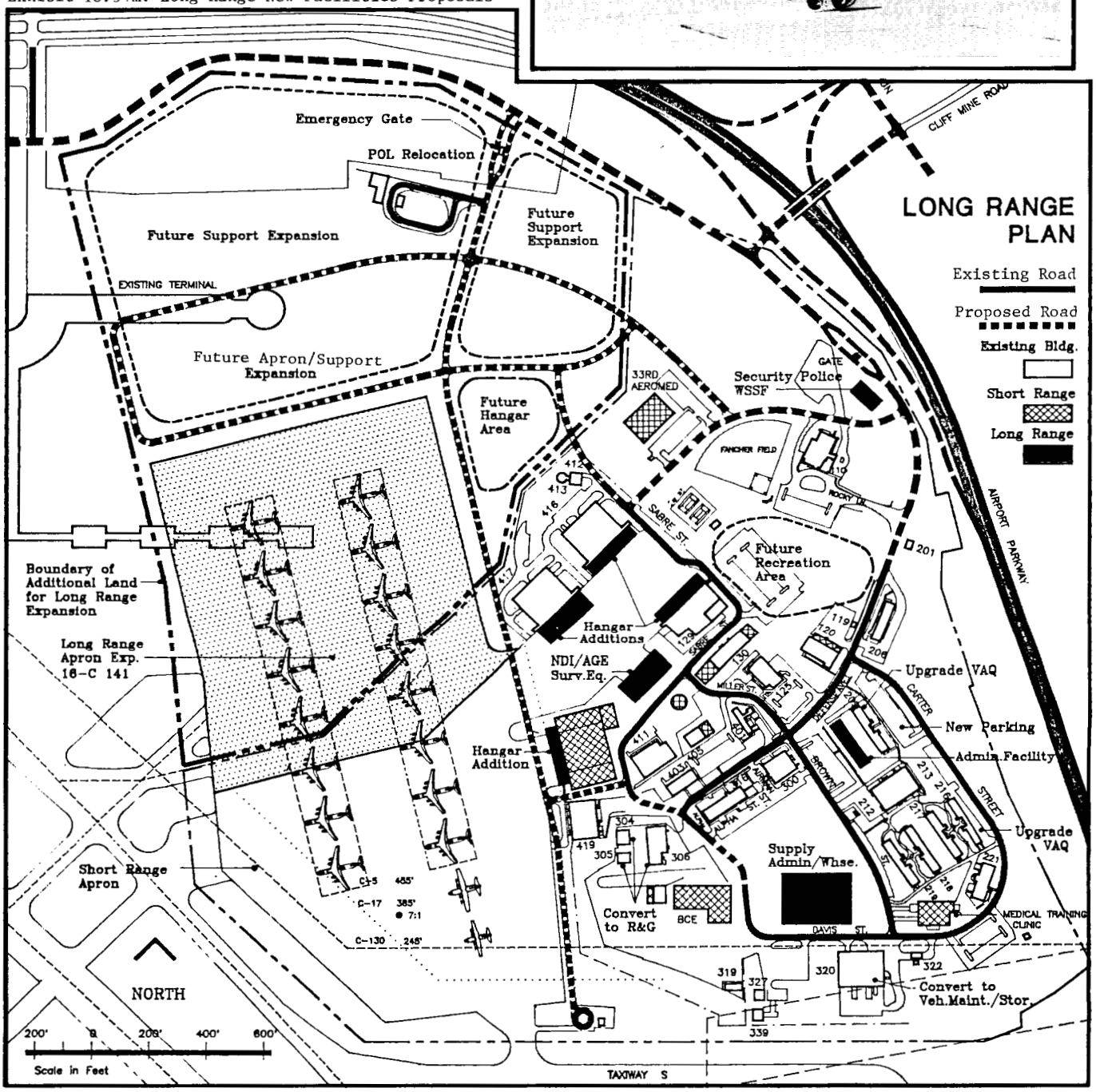


Exhibit 18.34m: Long Range New Facilities Proposals



Chapter XIX

CAPITAL IMPROVEMENT PROGRAM

Exh. 19.1t:List Of Short Range New Facility Proposals

NUM	AFC	FACILITY	AREA	OTHER	YC
	1	PARKING APRON EXPAN	40100 SY		XX
00130	2	A/PORT TNG FAC ADDN	4600 SF		87
00405	2	COMM FCLTY W/ADDN	1692 SF		90
	2	HANGAR/SHOPS/DCM*	53000 SF		XX
	7	33RD AEROMED EVAC SQ	15000 SF		XX
00342	3	BE STORAGE ADDN	1200 SF		88
	3	MASK CONFIDENCE BLDG	600 SF		89
	3	ATV STORAGE/WSSF	462 SF		89
	3	IMPR BASE ACCESS			89
	3	WATER STORAGE TANK		300 MG	89
	3	BCE COMPLEX	27600 SF		92
	3	FIRING RANGE:OFFBASE		21 FP	91
	4	TRAFFIC CHK HSE	144 SF		89
00221	4	CONVERT:SM ARMS	6173 SF	6173	92
00120	5	GYMNASIUM ADDITION	2500 SF		87
	7	MED TRAINING CLINIC	11250 SF		91
00219	9	CONVERT TO VOQ	12967 SF	56 PN	XX
00218	9	CONVERT TO VOQ	12967 SF	56 PN	XX
00217	9	UPGRADE VAQ	12967 SF	56 PN	XX

*New 53,000 SF hangar includes:
...25,000 SF hangar area @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF admin. @ 50' x 160' on 2nd floor
... 4,000 SF mobility storage

INTRODUCTION

The purpose of this chapter is to describe the long range facility proposals that are programmed for accomplishment during the next five years. This five year Capital Improvement Program (CIP) is summarized on these two facing pages as follows:

...Proposed demolitions are listed and located by exhibits at the bottom of this page.

...Proposals for new short range facilities are listed by the exhibit to the left, and located on the map to the right.

SELECTED SHORT RANGE PLAN/CIP

The short range plan or CIP proposals include:
...Demolition of existing buildings, as shown below, is proposed primarily in the BCE area and the General Purpose Shops (Building 418)* area in order to provide space for new buildings.

...Two additional land areas, with a total of ±17 acres, would be requested for leasing from the GPIA, as shown by the map on the next page.

...Apron expansion would occur on the added parcel to the west, permitting the 911 TAG to expand from the present eight C-130's to 16 C-130's, with four hangar positions (including a new hangar) and at least 12 apron positions. If the

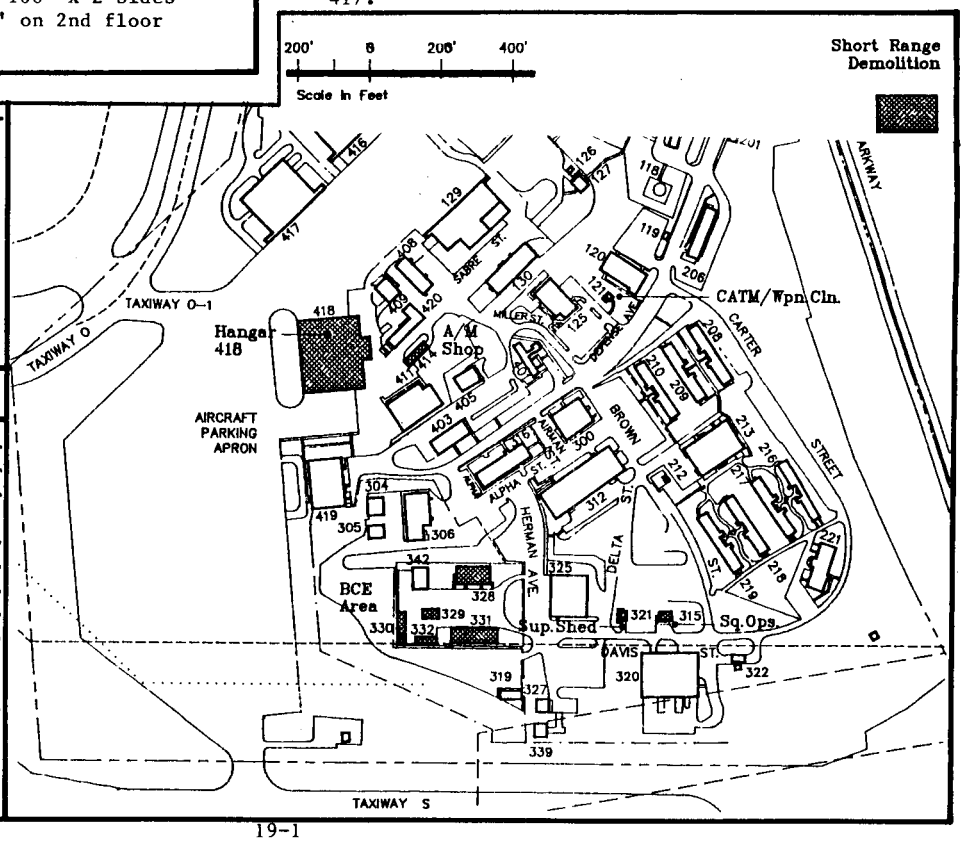
*Present occupants of 418 will be temporarily housed as follows while awaiting completion of new hangar:
..Shops and mobility storage to 129; admin. to trailers or temporary structures near hangars 129 or 417.

...Location of proposals →

Exhibit 19.2m: Short Range Demolition Proposals

...List of Demolitions

NUM	AFC	FACILITY	AREA
00100	4	TRAFFIC CHK HSE	144 SF
00121	3	CATM/WPN CLN	218 SF
00315	2	SQ OPS	1000 SF
00321	3	SHED SUP&EQUIP BSE	462 SF
00328	3	BE ADMIN	4800 SF
00329	3	BE MAINT SHP	1221 SF
00330	3	BE STOR SHED	1822 SF
00331	3	BE MAINT SHP	5166 SF
00332	3	BE STOR CV FCLTY	1200 SF
00414	2	SHP A/M ORGL	1637 SF
00418	2	ACFT MAINT SHP	48793 SF



new C-130's were assigned in units of four, less expansion area would be required initially from the GPIA.

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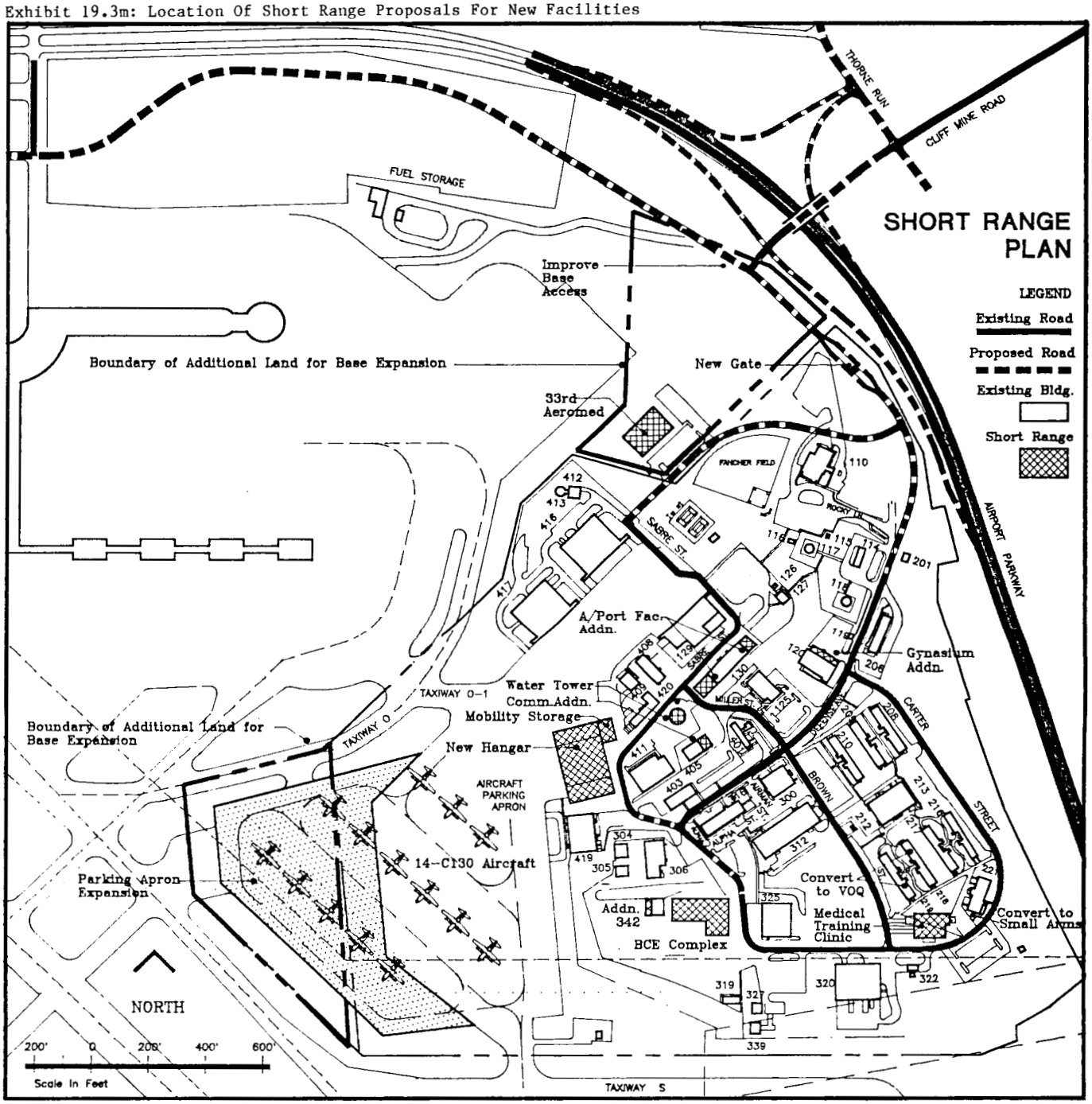
...Other proposals include altering buildings 218 and 219 for VOQ use, and upgrading 217 as a VAQ facility. Building 221 will be converted for Small Arms use.

Exhibit 19.3m: Location Of Short Range Proposals For New Facilities



Appendix "A"

REFERENCES

INTRODUCTION

References used during the preparation of the Pittsburgh AFRES Base Comprehensive Plan included the following:

..."AFR 86-4: Base Comprehensive Planning," Department of the Air Force, 26 December, 1985.

..."AFR 88-40: Sign Standards, Facility Design and Planning," Department of the Air Force, 1 April, 1982.

..."AFR 88-43: Installation Design, Improving the Visual Environment," Department of the Air Force, 1 March, 1981.

..."USAF Real Property Inventory Detail List," October, 1985.

..."Resurvey of Galvanic Protection Systems for the 911th TAG Greater Pittsburgh International Airport," Marco Corp., Corrosion Eng. Div., Pittsburgh, PA.

..."Sewer System Evaluation Survey," Betz, Converse, Murdoch, Inc., August 1982.

..."Installation Restoration Program, Phase 1: Records Search, Weston Consultants, Dec. 1984.

..."Allegheny County Government," League of Women Voters, 1971.

..."Schematic Design Report for the Greater Pittsburgh International Airport Expansion Project," Tasso Katselas Assoc., Sept. 1983.

..."Greater Pittsburgh International Airport Environmental Assessment," Aviation Planning Assoc., May 1986.

..."Allegheny County Aviation System 1985 Annual Report," Allegheny County Aviation System.

..."Allegheny County Aviation System Financial Statements," December 31, 1985 and 1984.

..."TAB A-1 Environmental Narrative," Pittsburgh AFRES Base Comprehensive Plan.

..."Annual Review Real Property Study," 911 Tactical Airlift Group, GPIA, 15 October 1986.

..."Greater Pittsburgh IAP, Base Planning Study Team," November 1985.

..."MTMC Report TE 82-6a-74, Traffic Engineering Study, Greater Pittsburgh International Airport," Military Traffic Management Command, Sept. 1984.

..."Airport Parkway/Cliff Mine Road Interchange Traffic and Preliminary Engineering Study," Gannett Fleming Transportation Eng., Feb. 1985.

..."Moon Township Planning Study," Redevelopment Authority of Allegheny County, March 1984.

Appendix "B"

END PRODUCTS

INTRODUCTION

The end products comprising the Pittsburgh AFRES Base Comprehensive Plan are listed and described by the exhibit below. The majority of the maps were computer generated.

BCP REPORT	BCP-1 REPORT MAPS
	BCP-2 WALL DISPLAY/ EXHIBITS
	BCP-3 ALTERNATIVE DEV. CONCEPTS
	BCP-4 COMP. PLAN DRAFTS
	BCP-5 COMP. PLAN FULL REPORT
	BCP-6 EXECUTIVE SUMMARY
	BCP-7 SINGLE SHEET SUMMARY
	BCP-8 BLDG PHOTOS/CHPS NOTEBKS
	BCP-9 35MM SLIDES , 2 @ 24+
AERIAL PHOTOGRAPHY	AP-1 CAMERA CALIBRATION REPORT
	AP-2 AERIAL PHOTOGRAPHY FLIGHT PLAN
	AP-3 COLOR NEGATIVES, 9"X9" VERTICAL , 1 SET
	(a) 400 scale negs vertical
	(b) 800 scale negs vertical
	(c) spot shot vertical cantonment area 1"=1000'
	(d) spot shot vertical 1"=700' scale
	(e) spot shot vertical airport area 1"=2700' scale
	AP-4 BLACK AND WHITE NEGATIVES ONE SET (a) 500 scale negatives vertical
	(b) spot shot vertical cantonment area 1"=1000'
	(c) spot shot vertical cantonment area 1"=700'
	(d) spot shot vertical airport area 1"=2700'
	AP-5 COLOR CONTACT PRINTS FROM AP-3,5 ALTITUDES VERTICAL , 2 SETS
	AP-6 BLACK AND WHITE CONTACT PRINTS FROM AP-4 2 SETS
	AP-7 AERIAL OBLIQUES OF RESERVE AREA AND RUNWAY, COLOR AND B&W NEGS, 8 EACH
	AP-8 COLOR AND B&W CONTACT PRINTS FROM AP-7, 9"X9" OBLIQUES, 2 SETS
	AP-9 COLOR PHOTO ENLARGEMENTS OF AP-3 (C), 1"=200', 3 TOTAL
	AP-10 COLOR PHOTO ENLARGEMENTS OF AP-3 (e), 1"=400', 3 TOTAL
	AP-11 BLACK AND WHITE PHOTO ENLARGEMENTS OF AP-4 (b) 1"=200', 3 TOTAL
	AP-12 BLACK AND WHITE PHOTO ENLARGEMENTS OF AP-4 (a) 1"=400', 3 total
	AP-13 BLACK AND WHITE PHOTO INDICES OF ALL VERTICAL PHOTOGRAPHY, 18"X24", 2 MYLAR, AND 2 PAPER PRINTS EACH
	AP-14 BLACK AND WHITE PHOTO ENL., 4 SHEETS 25"X25" IMAGE AT 1"=100', 2 MYLARS AND 2 PAPER PRINTS EACH

FIELD CONTROL	FC-1 PRE-FLIGHT CODING OF UTILITIES
	FC-2 PRE-FLIGHT PANELING FOR PHOTO CONTROL
	FC-3 HOR. & VERT. PHOTO CONTROL IN FIELD, OFFICE COMPS., & PLACE CONTROL COORDS ON COLOR PHOTOS
	FC-4 AERIAL TRIANGULATION HOR. & VERT. COMPUTER CONTROL SOLUTION, REPORT
	FC-4.2 VERTICAL CONTROL FOR UTILITIES
	FC-5 AERIAL FILM DIAPOSITIVES FOR MAPPING 10"X10" 1 SET
	FC-6 FIELD SURVEY REPORT TO INCLUDE IN BASE MAP COMPONENT OF COMP. PLAN
MAP TABS	COVER SHEET AND INDEX
	B-6 INSTALLATION RESTORATION PROGRAM, 1"=100' 1 SHEET
	C-1 BASE LAYOUT 1"=50' 2' CONTOUR INT., 9 SHTS.
	C-1.1 BASE LAYOUT 1"=100' 2' CONTOUR INTERVAL 4 SHEETS, PHOTO COMPILED
	C-1.2 BASE LAYOUT 1"=200' 5' CONTOUR INTERVAL
	C-1.3 BASE LAYOUT 1"=800' 10' CONT. INTERVAL
	C-3 REGIONAL MAP 1"=4 MILES
	C-4 VICINITY MAP 1"=1 MILE
	D-1 EXISTING LAND USE 1"=100' W/PATTERN B&W
	COLOR EXISTING LAND USE
	* D-1.1 FUTURE LAND USE 1"=100' W/PATTERN B&W
	COLOR FUTURE LAND USE
	D-5 REAL ESTATE 1"=100'
	D-6 CONSTRAINTS OPPORTUNITIES 1"=100'
	D-8 EXPLOSIVE SAFETY QUANITY DISTANCE, 1"=100'
	E-1 ON BASE OBSTRUCTIONS TO AIRFIELD CRITERIA 1"=400' PROVIDED
	E-2 APPROACH DEP. ZONE OBSTRUCTIONS TO 10,000' 1"=600', PROVIDED
	E-3 APPROACH DEP ZONE OBSTRUCTIONS BEYOND 10,000', 1"=5 MILES 5' C.I. PROVIDED
	E-4 AIRSPACE OBS. VIC. 1"=5 MILES, PROVIDED
	E-7 AIRFIELD PAVEMENT 1"=800'
	E-9 AIRCRAFT PARKING AND APRON LIGHTING 1"=100'

MAP TABS	* E-9.1 PROPOSED AIRCRAFT PARKING 1"=100'
	E-10 AIRFIELD LIGHTING 1"=400', PROVIDED
	G-1 WATER SUPPLY 1"=100'
	G-2 SANITARY SEWER SYSTEM 1"=100'
	G-3 STORM DRAINAGE 1"=100'
	G-4 ELECTRICAL SYS AND SCHEMATIC 1"=100'
	G-5 NAT'L GAS DIST. 1"=100'
	G-7 STREET LIGHTING 1"=100'
	G-8 LIQUID FUELS SYS., 1"=100'
	G-9 CATHODIC PROTECTION SYS. 1"=100'
	G-9.1 CATHODIC DETAILS
	G-11 COMPOSITE UTILITY 1"=50'
	H-1 COMMUNICATIONS 1"=100'
	H-3 NAVAIDS, 1"=800' PROVIDED
	I-2 ON BASE TRANS. 1"=100'
	* I-2.1 FUTURE TRANS. PLAN 1"=100'
	* L LANDSCAPE PLAN 1"=100'
	M-1 EXISTING FACILITIES 1"=100'
	* M-1.1 LONG RANGE FAC. DEV. PLAN, 1"=100'
	* M-3 FIVE YEAR CAPITAL IMPROVEMENT PLAN 1"=100'
	O-3 DISASTER PREP GRID MAP, 1"=100'
COMPUTER	DATABASE CONVERSION TO ISF
	COMPUTER TAPES (3)
	NON-GRAPHIC FILE PRINTOUTS
	COMPUTER DATA MANUALS 2 COPIES
	COMPUTER USERS MANUAL 2 COPIES
	ON SITE DEMO

* THESE ARE FUTURE DEVELOPMENT PLANS

Witt Kirkland, HQ/AFRES Engr.; Larry LeMar; Helm Roberts on tour →

← DCAA Auditor, Larry LeMar, Debi Howard-martinjak, Dan Lucci, & Dr. Bill Qualls review contract

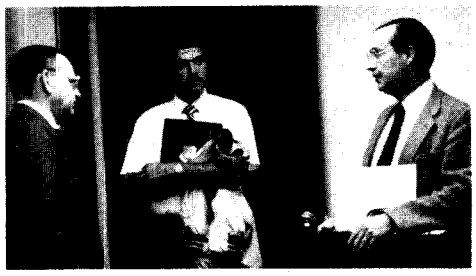
Col. Woodrow, Ben Fister & Bill Qualls ←

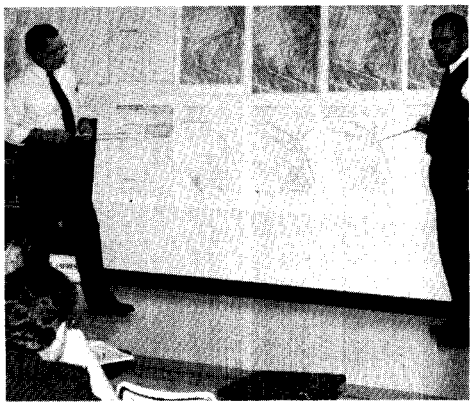
GRW Team's Rick Wolf, Ben Fister, & Dave Miller →

Helm Roberts at the computer ↓

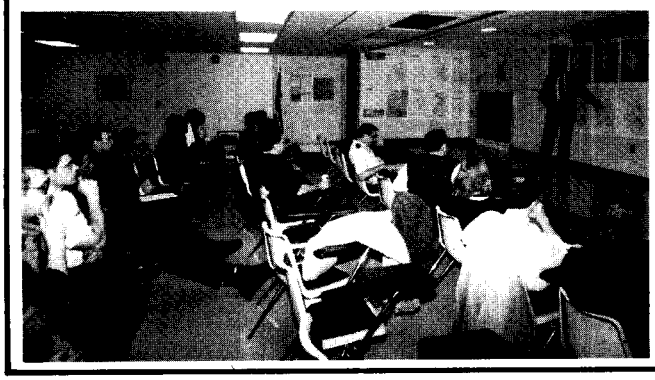
..GRW's Gingy Qualls, Rick Wolf, Dave Miller, Helm Roberts view Downtown Pittsburgh →

..Capt. Mal Gilbert leads a tour ↙





Alternatives Review Sessions



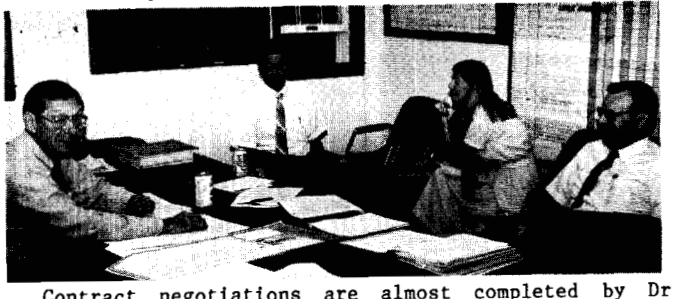
Larry LeMar & the GRW Team →

SEVERAL PLANNING REVIEW MEETINGS WERE HELD AT THE BASE

...Base Commander Colonel Sam Woodrow welcomes GRW's Dr. Bill Qualls to the 911 TAG.

...Future development alternatives are debated.

...Base and public officials brief GRW's Team.



...Contract negotiations are almost completed by Dr. Qualls, Base Contracting Officer Dan Lucci, HQs/AFRES Planner Debi Howard-martinjak, and Base Civil Engineer Larry LeMar.

...Computer map review by Debi Howard-martinjak, HQs/AFRES Engineer Ed Hilliard, and GRW Team Member Helm Roberts.

HEADQUARTERS - AIR FORCE RESERVE
Robins AFB, Georgia

..Major General Roger P. Scheer, Commander, AFRES

..Colonel Virgil Batten, Chief of Staff

..Colonel George Romero, Director of Civil Engineering

..Debi Howard-martinjak, Community Planner

FOURTEENTH AIR FORCE
HQs, Dobbins AFB, Georgia

..Major General James E. McAdoo, Commander

HQs, 911th TAG
GPIA, Pittsburgh, Pennsylvania

..Colonel Samuel G. Woodrow, USAFR Commander

..Larry D. LeMar, Base Civil Engineer

..Daniel C. Lucci, Base Contracting Officer

CONTRACT INFORMATION

..Contract No.: F36629-86-C-0016
..Con. App. Date: 11 September 1986
..Notice To Proceed: 25 September 1986
..Date To Use On Plan: May 1988
..Date Of Report Printing: August 1988

GRW MASTER PLANNING TEAM

..Wm. H. Qualls, Ph.D., AICP, Principal-In-Charge
..Ben D. Fister, PE, Project Engineer
..G. Michael Ritchie, PE, Photo./Mapping
..Harvey Helm, PE, Aviation Engineer
..Steve McKinley, PE, Hydrology/Sanitary
..V.L. "Gingy" Qualls, Planner
..Rick Wolf, EIT
..Forrest Godby, Computer Mapping
..Carla Leach, Secretary
..Helm Roberts, Architect/Landscape Architect
..Dove Temple, Electrical Engineer, CDT
..Dave Miller, Communications Engineer, CAE
..Harold Leggett, Transportation Engineer, AMS
..Tom Brence, Photo Lab
..Bill Mitchell, Photogrammetry
...Ed Rinehart, Field Surveys

GRW Engineers, Inc.
Lexington, KY 40503

801 Corporate Dr.
GRW #1538

FOURTEENTH AIR FORCE
HEADQUARTERS
DOBBINS AFB, GEORGIA

HEADQUARTERS
911th TACTICAL AIRLIFT GROUP (AFRES)
GREATER PITTSBURGH INTERNATIONAL AIRPORT
PITTSBURGH, PENNSYLVANIA

GRW ENGINEERS, INC
LEXINGTON, KENTUCKY

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT C.2

911TH AIRLIFT WING BASE COMPREHENSIVE PLAN
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

911TAG BASE COMPREHENSIVE PLAN

MAY, 988

PITTSBURGH, PENNSYLVANIA

911th TACTICAL AIRLIFT GROUP (AFRES)

GREATER PITTSBURGH INTERNATIONAL AIRPORT

PITTSBURGH, PA.

911 TAG BASE COMPREHENSIVE PLAN

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 911TH TACTICAL AIRLIFT GROUP (AFRES)
GREATER PITTSBURGH INTL AIRPORT, PITTSBURGH, PA 15231

It is my pleasure to present the Base Comprehensive Plan document to the 911th Tactical Airlift Group, Headquarters AFRES and Air Force Headquarters. The plan provides an organized and comprehensive approach to future base planning. It will eliminate inefficient land use and reduce future siting conflicts and unnecessary project expenditures.

The plan provides for the future siting of all known or anticipated military construction projects and provides the background information essential for knowledgeable land use decisions and facility sitings not specifically identified in the plan.

The Base Comprehensive Plan is intended to be the primary planning tool of the base to be used in all future land use actions and facility sitings. It is to be followed as much as possible, yet it is not an inflexible document. It can be modified when fully justified and in the best interest of the Air Force.

The need to use our land wisely, the current environmental constraints, and the probability of reduced government spending make it essential that we avoid incompatible future development and that we plan intelligently for our role in the future mission of national defense.

I endorse this Base Comprehensive Plan and trust that future planning and programming actions by base and headquarters personnel will be accomplished with primary emphasis on the long range plan.

SAMUEL G. WOODROW, Colonel, USAFR
Commander

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..Short Range Plan	1-1
..Long Range Plan	1-3
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..Introduction	2-1
..Greater Pittsburgh Area	2-2
..911 TAG Profile	2-2
..Needs And Objectives	2-2
..Constraints	2-2
III..FUTURE DEVELOPMENT ALTERNATIVES SUMMARY	3-1
..Introduction	3-1
..Alternative #1: The Existing CIP	3-1
..Other Alternatives	3-1

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IV...SUMMARY OF COMPONENT PLANS	4-1
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..Natural Resources Plan	4-2
..Environmental Quality Plan	4-2
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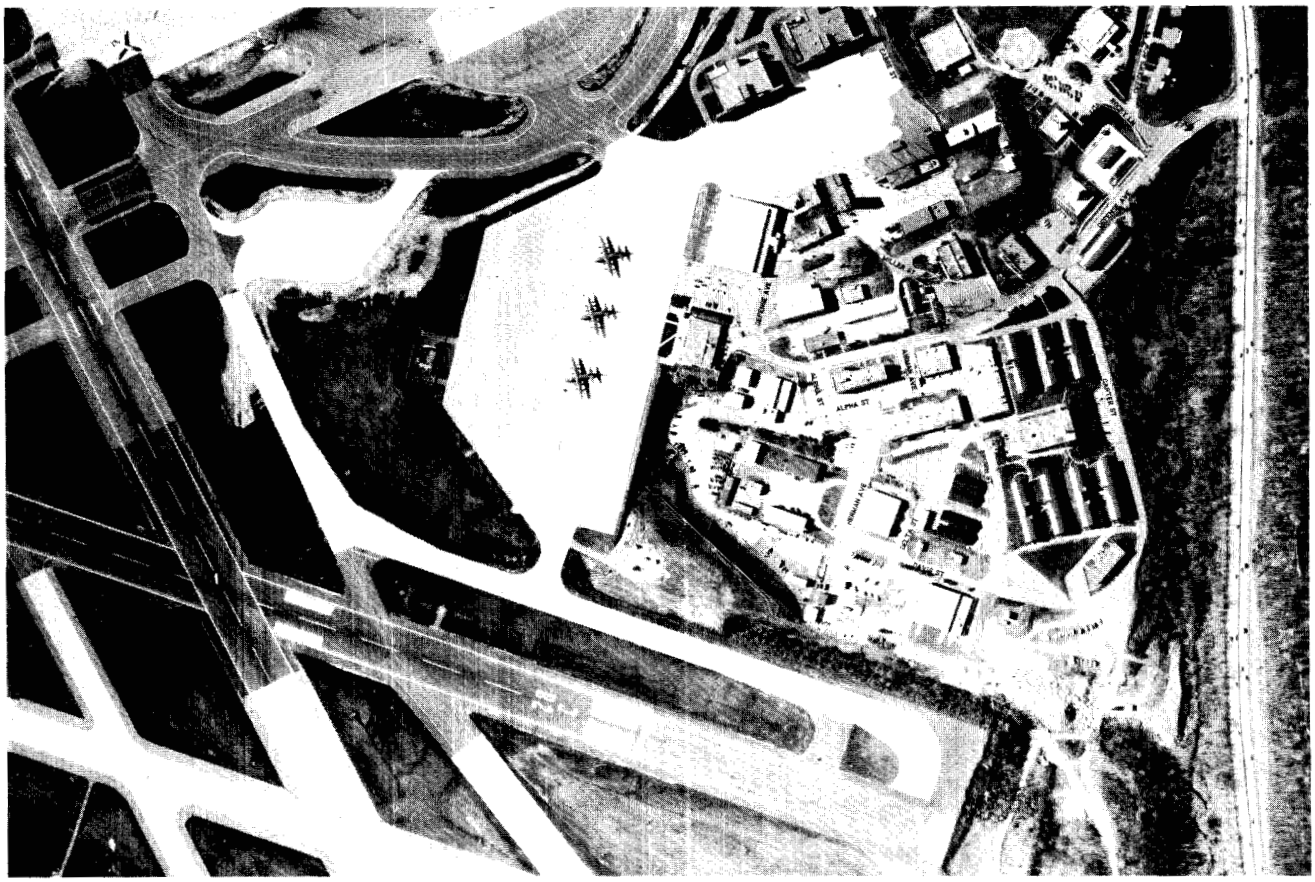
..Land Use Plan	4-3
..Airfield & Air Operations	4-5
..Architectural Design Guidelines	4-6
..Utilities Plan	4-7
..Communications Plan	4-9
..Transportation Plan	4-11
..Landscape Development Plan	4-13
..Exterior Master Paint Plan	4-13

...The 911th Tactical Airlift Group (AFRES) At The Greater Pittsburgh International Airport (10/86)



Chapter I

COMMANDER'S SUMMARY

Exhibit 1.1t: List Of Short Range New Facility Proposals

NUM	AFC	FACILITY	AREA	OTHER	YC
	1	PARKING APRON EXPAN	40,100 SY		XX
00130	2	A/PORT TNG FAC ADDN	4,600 SF		87
00405	2	COMM FCLTY W/ADDN	1,692 SF		90
	2	HANGAR/SHOPS/DCM*	49,000 SF		XX
	7	33RD AEROMED EVAC SQ	15,000 SF		XX
00342	3	BE STORAGE ADDN	1,200 SF		88
	3	MASK CONFIDENCE BLDG	600 SF		89
	3	ATV STORAGE/WSSF	462 SF		89
	3	IMPR BASE ACCESS			89
	3	WATER STORAGE TANK		300 MG	89
	3	BCE COMPLEX	27,600 SF		92
	3	FIRING RANGE: OFFBASE		21 FP	91
	4	TRAFFIC CHK HSE	144 SF		89
00221	4	CONVERT: SM ARMS/WSSF	6,173 SF	6173	92
00120	5	GYMNASIUM ADDITION	2,500 SF		87
	7	MED TRAINING CLINIC	11,250 SF		91
00219	9	CONVERT TO VOQ	12,967 SF	56 PN	XX
00218	9	CONVERT TO VOQ	12,967 SF	56 PN	XX
00217	9	UPGRADE VAQ	12,967 SF	56 PN	XX

*New 53,000 SF hangar includes:
...25,000 SF hangar area @ 160' x 160'
...16,000 SF shop space @ 50' x 160' x 2 sides
... 8,000 SF admin. @ 50' x 160' on 2nd floor
... 4,000 SF mobility storage

INTRODUCTION

The 911 TAG (AFRES) is *located* on the east side of the Greater Pittsburgh International Airport (GPIA). The 911th occupies *106 acres*, has a UTA weekend population of *1,372 persons*, and *eight C-130 aircraft* for use in its airlift mission.

The *purpose* of this plan is to inventory and analyze existing facilities, establish future needs, and prepare plans for the orderly and comprehensive future development of the base. The *plan preparation* and review process included the 911th staff, HQ/AFRES, and the consultant over a 20-month period.

SELECTED SHORT RANGE PLAN/CIP

The short range plan or CIP proposals include:
...*Demolition* of existing buildings, as shown below, is proposed primarily in the BCE area and the General Purpose Shops (Building 418)* area in order to provide space for new buildings.

...*Two additional land areas*, with a total of ± 17 acres, would be requested for leasing from the GPIA, as shown by the map on the next page.

...*Apron expansion* would occur on the added parcel to the west, permitting the 911 TAG to expand from the present *eight* C-130's to 16 C-130's, with four hangar positions (including a new hangar) and at least 12 apron positions. If the

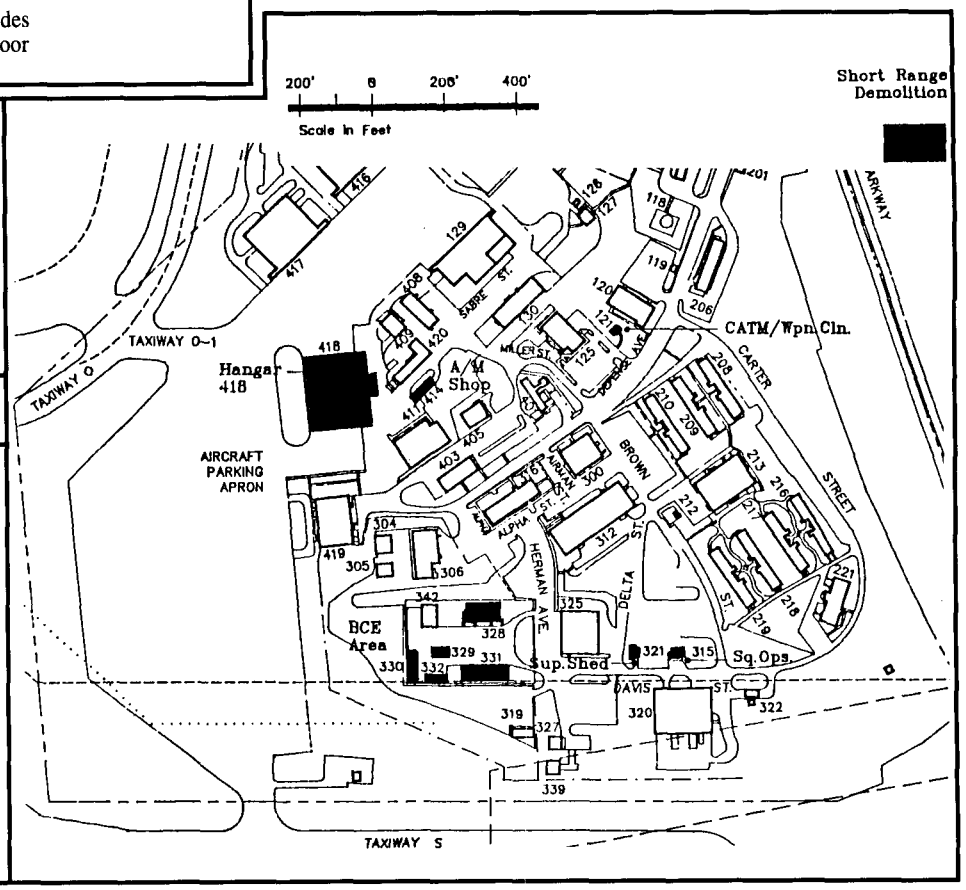
*Present occupants of 418 will be temporarily housed as follows while awaiting completion of new hangar: Shops and mobility storage to 129; administrative to trailers or temporary structures near hangars 129 or 417.

...Location of proposals

Exhibit 1.2m: Short Range Demolition Proposals

...List of Demolitions

NUM	AFC	FACILITY	AREA
00100	4	TRAFFIC CHK HSE	144 SF
00121	3	CATM/WPN CLN	218 SF
00315	2	SQ OPS	1,000 SF
00321	3	SHED SUP & EQUIP BSE	462 SF
00328	3	BE ADMIN	4,800 SF
00329	3	BE MAINT SHP	1,221 SF
00330	3	BE STOR SHED	1,822 SF
00331	3	BE MAINT SHP	5,166 SF
00332	3	BE STOR CV FCLTY	1,200 SF
00414	2	SHP A/M ORGL	1,637 SF
00418	2	ACFT MAINT SHP	48,793 SF



new C-130's were assigned in units of four, less expansion area would be required initially from the GPIA.

...*A new Entry Area* would be built on the second added tract, with access coming from the new Airport Parkway interchange at Thorn Run Road. The new Entry Road would connect with Defense Avenue near the POL. The existing entrance would then be closed since its land area would be required for one of the new interchange ramps.

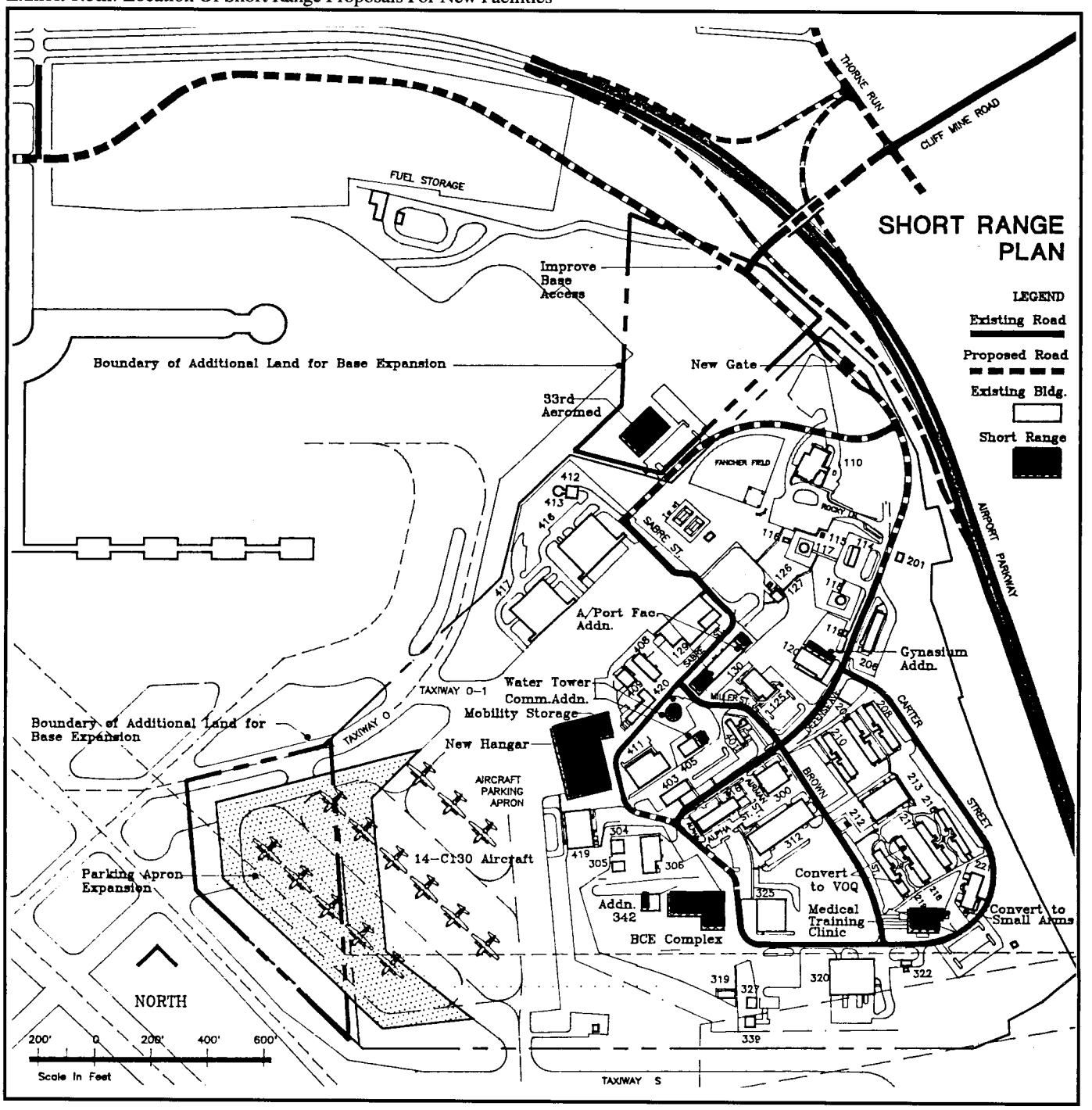
...*A new clinic would be built adjacent to the existing clinic, and a 33rd AES facility* would be built on the second tract, with access coming from a new road connecting the Entry Area with Sabre Street.

...*A new BCE facility*, with two stories, would be constructed in the existing BCE area. Only open storage for the BCE facility would be permitted south of the RW building restriction line.

...*A new Hangar* with shops, DCM and mobility storage would be built on the site of demolished building 418. The new hangar would be required to service the C-130 expansion to 16 aircraft.

...*Other proposals* include altering buildings 218 and 219 for VOQ use, and upgrading 217 as a VAQ facility. Building 221 will be converted for Small Arms use.

Exhibit 1.3m: Location Of Short Range Proposals For New Facilities



SELECTED LONG RANGE PLAN

The long range plan proposals for the Pittsburgh AFRES base are described by the text, tables, and maps on these facing pages.

...*GPIA New Terminal* - The major changes proposed for the AFRES base are dependent upon the GPIA construction of its new passenger terminal on airport land to the west....,thereby leaving its existing terminal and apron available for another use.

...*An Additional Land Lease* of ± 77 acres would be requested from the GPIA officials after their terminal activities are moved. Added to the previous ± 17 acres requested for short range needs, the total added lease area would be ± 94 acres....only slightly less than the existing AFRES area of 105.7 acres.

If less than the ± 77 acres were to be available, a second option, using only ± 50 additional acres, would exclude the land north of the AFRES future apron and north of fuel storage area (see Exhibit 1.5m).

...*New Aircraft* - The major purpose for leasing more land from the GPIA would be to permit the 911 TAG to accommodate new and larger aircraft, such as 16 C-141's or 12 C-17's.

...*Apron Expansion*, as shown by the map to the right, to accommodate 16 C-141's would require a 991' x 1,910' area (or 43.5 acres) plus space for two transient aircraft. An apron for 12 C-17's would require a 1,005' x 1,540' area (or 36 acres) plus space for two transient aircraft. The apron area could be reduced to the extent that hangar space is used for aircraft parking.

...*Maintenance Hangar Expansion* - To accommodate the larger aircraft, existing hangars (129, 416, 417, and the new hangar built as part of the short range plan) would have to be expanded and/or new hangars constructed. The required hangars would provide for scheduled maintenance, unscheduled maintenance, and a fuel cell dock. The hangars could fully enclose the aircraft or act as nose docks with the aircraft tail sticking out. The 16 C-141's would require four hangars, while the 12 C-17's would require only three.

...*New AGE, etc.* - To replace the demolished buildings 408, 409, and 420, a new facility would be built to house AGE, NDI, and the survival equipment shop for a total of approximately 12,000 square feet. As another alternative, existing hangar 129 might be used for these three functions if it's not required for continued use as a hangar.

...*POL* - The new POL would make use of the existing GPIA facility to the north, and permit demolition of the present POL and converting its area to landscaping and recreation. If the GPIA facility were not used for any reason, the existing POL would have to be expanded and upgraded as a second choice.

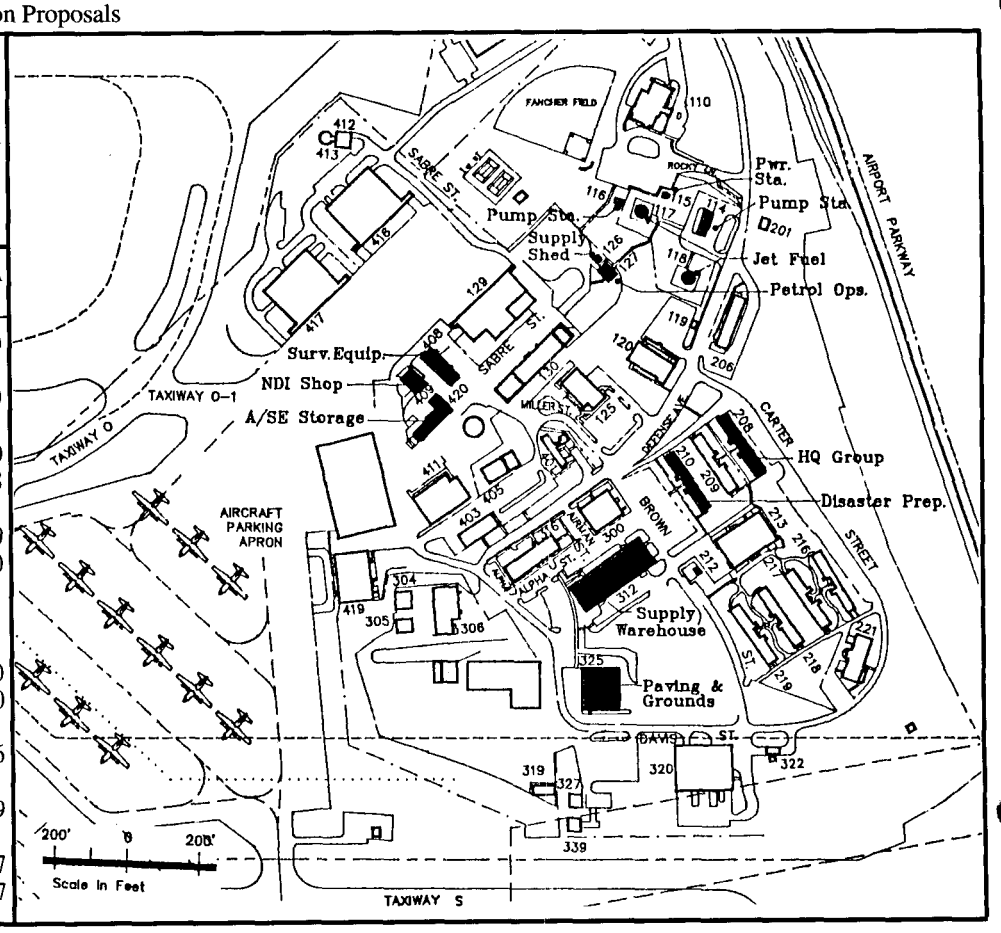
...*Supply, BCE, etc.* - In the southern part of the base, three activities would be allocated larger and more efficient work areas: (1) the existing Supply Building (320) would be converted to vehicle maintenance and vehicle covered storage with open storage yards adjacent; (2) the existing vehicle maintenance buildings (304, 305, 308) would be converted to use by BCE Roads and Grounds, adjacent to the other BCE facilities; and (3) a new Supply facility would be built opposite building 320, and

Exhibit 1.4m: Long Range Demolition Proposals

...Location of demolition proposals →

...Listing of demolition proposals

NUM	AFC	FACILITY	AREA SF
408	2	SHP SURV EQUIP	4,400
409	2	SHP NON-DESTR INSP	2,699
420	2	SHP A/SE STOR FCLT	4,500
114	3	PMP STN, LF	1,538
115	3	ELEC PWR STN BLDG	240
116	3	PMP STN, LF	280
117	3	STOR, JET FL	
118	3	STOR, JET FL	
126	3	SHED SUP & EQUIP BSE	240
127	3	PETROL OPS BLDG	1,200
312	3	WHSE SUP & EQUIP BSE	19,656
325	3	BE PAV GRND FCLTY	12,269
208	4	HQ GROUP (RECRUIT)	12,967
210	4	CONTRACT & DP	12,967



the area to the west and north (where buildings 312 and 325 have been demolished) will be used for open storage.

...Upgrade 208, 209, 210 area by (1) demolishing building 208 and developing a POV parking lot; (2) upgrading building 209, VAQ; and (3) demolish 210, and replace it on site with a new administration building.

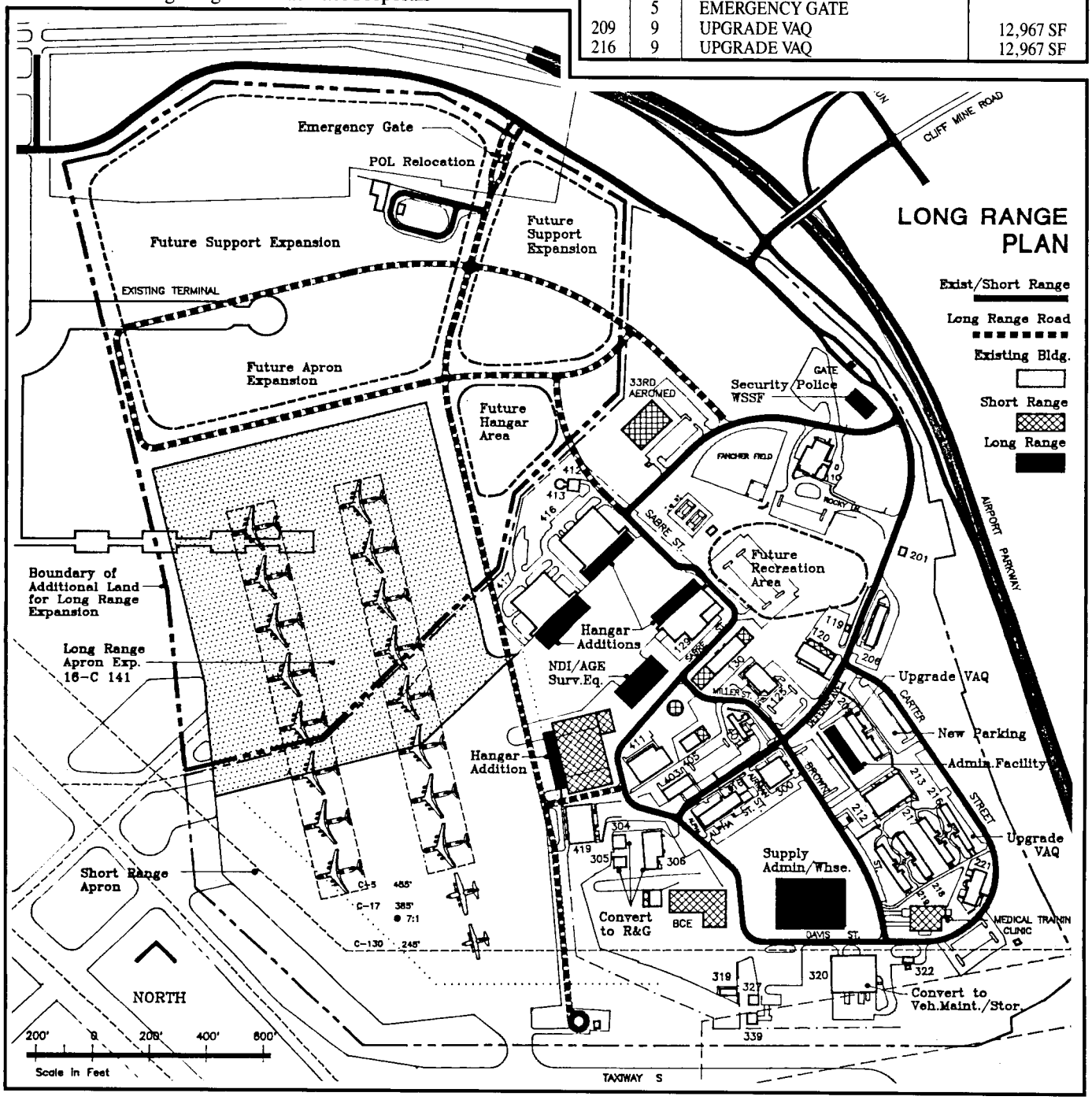
...*Access & Street improvements* would include a second gate, for emergency use, north of the new POL; new government vehicle only roads along the expanded apron, and new POV roads in the expansion area.

...*Demolitions* are listed and located to the left.
...*Future expansion* areas exist to the north.

Exhibit 1.6t: List Of Long Range Proposals

NUM	AFC	FACILITY	AREA
	1	PARKING APRON EXPAN	115,700 SY
129	2	HANGAR ADDITION	8,200 SF
416	2	HANGAR ADDITION	8,200 SF
417	2	HANGAR ADDITION	14,350 SF
	2	SR HANGAR ADDITION	8,200 SF
	2	NDI/AGE/SURV EQUIP	12,000 SF
304	3	CONVERT TO BE PAV/GR	2,000 SF
305	3	CONVERT TO BE PAV/GR	1,767 SF
306	3	CONVERT TO BE PAV/GR	8,440 SF
320	3	CONV VEH MAINT/STOR	18,544 SF
	3	SUPPLY ADM/WHSE	38,635 SF
	3	REPLACE POL	
	4	SECURITY POLICE/WSSF	5,000 SF
	4	ADMIN FACIL	13,000 SF
	5	EMERGENCY GATE	
209	9	UPGRADE VAQ	12,967 SF
216	9	UPGRADE VAQ	12,967 SF

Exhibit 1.5m: Long Range New Facilities Proposals



Chapter II

BASE AND COMMUNITY BACKGROUND

INTRODUCTION

The purpose of this chapter is to provide the reader with background information on Pittsburgh and the AFRES base.

GREATER PITTSBURGH AREA

The Greater Pittsburgh area, as shown below, includes five counties with a population of about 2.4 million people. The Greater Pittsburgh International Airport (GPIA) is located in the western part of Allegheny County, about 15 miles from Downtown Pittsburgh. Other area features include:

...*Allegheny County* contains 130 municipalities (townships, boroughs, and cities), of which Pittsburgh is the largest with eight percent of its land area (55.5 out of 730 square miles) and 28 percent of its population.

...*A population decrease* is estimated for Pittsburgh and Allegheny County between 1980 and 1990.

...*The GPIA* is located within Findlay and Moon Townships, with the Air Force Reserve Base situated entirely within Moon Township.

...*The GPIA region* is one of the *most rapidly expanding* areas in southwest Pennsylvania in terms of business, residential, and light industrial growth... and the generation of community-wide income. The GPIA is considered to be the major reason for this growth, as well as a major employer with over 10,000 jobs.

Exhibit 2.2t: Population Figures

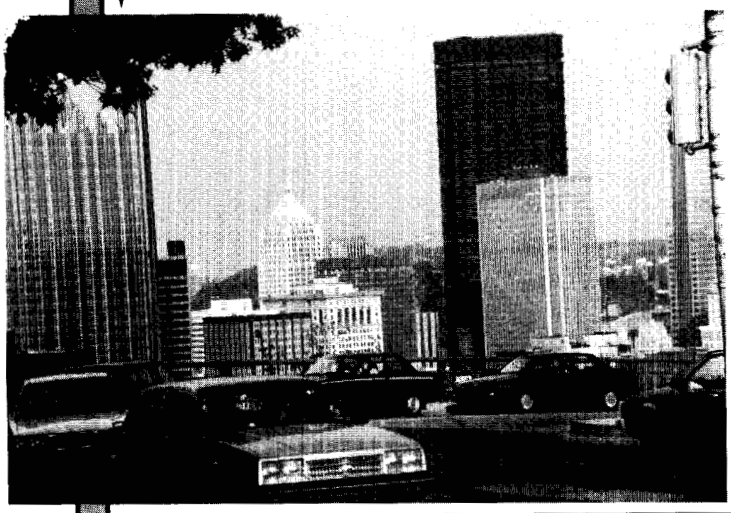
Place	1980 Pop.	1985 Est.	80-90 Change
..Pennsylvania	11,864,720	11,900,222	
..Pittsburgh CMSA*	2,263,894	2,390,100	
..Allegheny County	1,450,195	1,430,375	-4%
..Pittsburgh	423,960	396,625	-14%
..Moon Township	20,935	23,205	+19%
..Findlay Township	4,573	4,669	+2%

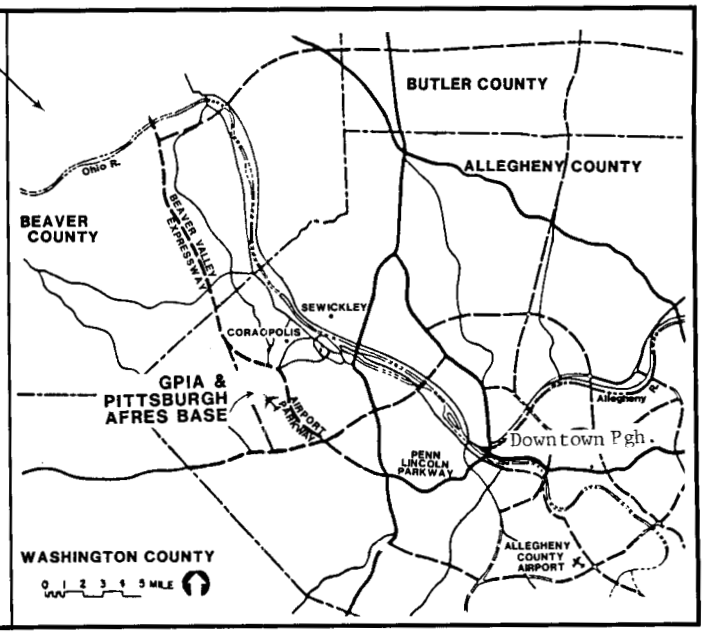
*CMSA-consolidated metro area; includes Allegheny, Beaver, Fayette, Washington, Westmoreland counties.

Exhibit 2.1p:

Airport Location Within Greater Pittsburgh Area

Downtown Pittsburgh View From Mt. Washington





911 TAG PROFILE

Some of the major physical features of the 911 TAG area include:

...105.7 acres of land area
...1,372 persons on base during a Unit Training Assembly (UTA) weekend
...1,000 ± POV vehicles on base during a UTA weekend
...60 ± buildings
...Eight C-130 (H Model) aircraft
...A few linear miles of streets and overhead and underground utilities

On a UTA weekend, the base activity equals that of a small city with its own police and traffic control, industries, restaurants, sports center, chapel, clinic and dormitories.

MISSION

The mission of the 911 TAG (AFRES) is to organize, recruit, and train Air Force Reservists to provide airlift of airborne forces, their equipment and supplies, and delivery of these forces and material by airdrop, airland, or cargo extraction systems.

HISTORY AND POPULATION

Air Force interests at the Greater Pittsburgh International Airport date to 1942 and 1944 when federal funds were approved for construction work, a lease was negotiated with Allegheny County for what is now the Air Force Reserve site, and some temporary WWII type buildings constructed. By 1945, the facility was in use by the Air Transport Command as a refueling stop for ferrying of aircraft.

From 1945 to 1972, the base served several types of aircraft for several different Air Force commands. Since 1972, the host unit has been the 911th TAG, with its gaining command being the Military Airlift Command.

Base population figures by employment category are shown by the table below. The population total represents all base personnel, military and civilian. During a UTA weekend, the maximum population present in an eight hour period is 1,372. The base has bedspace for 330 persons.

Exhibit 2.3t: Population Figures For 911 TAG

Category	UTA Weekend	Normal Weekday
..Non-ART (Air Reserve Technician)	59	233
..ARTs-Officer	13	
-Airmen	125	
..Non Appropriated Fund	31	31
..Tenants-Civilian	14	26
-Military	2	22
-Active Duty	3	3
..Reserves-Officer	187	0
-Airmen	938	0
TOTAL	1,372	453

NEEDS AND OBJECTIVES

Some of the major needs and objectives, developed during the inventory and analysis work, include the following:

...*Exterior Access* is very much in need of improvement since it now consists of only one entry/exit at grade onto the Airport Parkway which is a heavily travelled highway.

...*Flexibility and Expansion* - The tightly packed existing base needs breathing room for flexibility and mission expansion possibilities. Any additional land would have to come from the GPIA.

...*Additional Apron* is needed in order to accommodate an increased aircraft mission. Construction of new facilities generally is dependent upon demolition of existing buildings since there are few development sites remaining that are vacant.

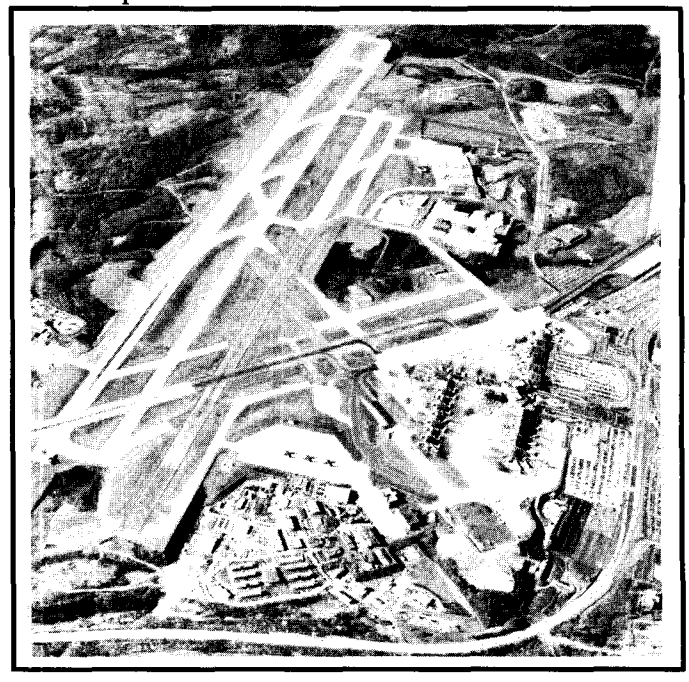
CONSTRAINTS

The combination of steep topography and tight boundaries present formidable obstacles to the future development of the 911 TAG. As shown by the aerial photo below, the adjacent and restrictive boundaries include:

...The Airport Parkway to the east.
...Two GPIA runways to the south and west, along with the building restriction lines 750' from each runway centerline and aircraft parking setbacks at 500'.
...The GPIA terminal area and commercial aircraft parking to the north and northwest.

The steep terrain (a 130'decline from the apron to the adjacent creek) not only restricts site development opportunities, but also makes movement of people and vehicles extremely difficult when it rains or snows.

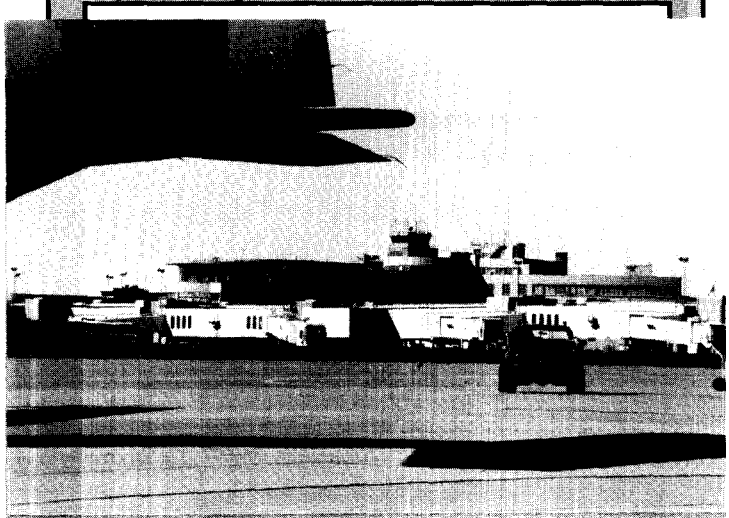
Exhibit 2.4p: 911 TAG Site Constrained From All Sides



Chapter III

FUTURE DEVELOPMENT ALTERNATIVES SUMMARY

Exhibit 3.1p: Construction Of New GPIA Terminal May Create Expansion Possibilities For The 911 TAG



INTRODUCTION

After completing an inventory and needs analysis of the base, the next step was to generate alternative concepts for its future physical development....with special attention to recognizing its optimum development opportunities.

ALTERNATIVE #1: THE EXISTING C.I.P.

The existing capital improvement program summarized the base development proposals at the beginning of the study, as shown by the exhibit below. Major proposals included:

...A new Main Gate and entrance.

...Apron expansion to accommodate 14 C-130's based on acquiring more land from the GPIA.

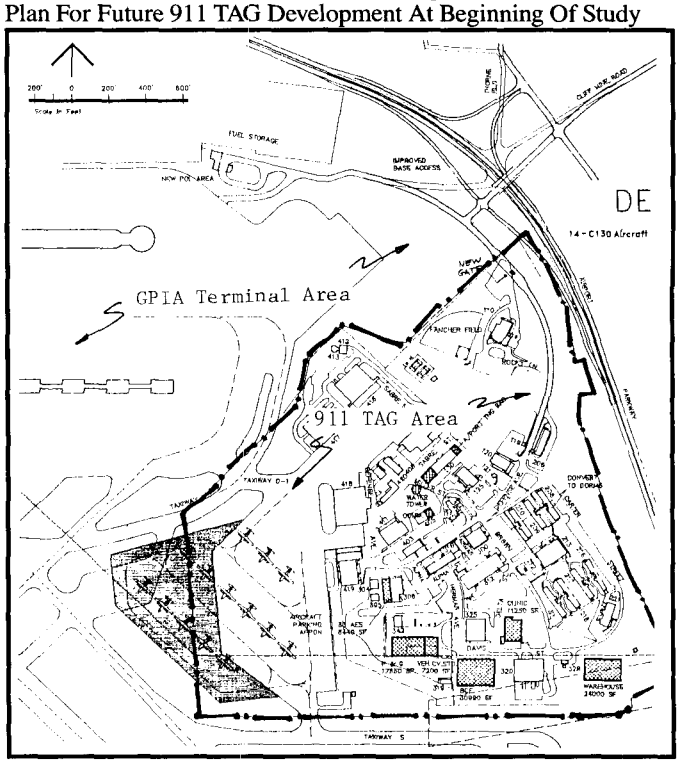
...Four new buildings (BCE, Clinic, Supply, and Veh. Maint.) and several building additions.

OTHER ALTERNATIVES

The four alternatives at right are representative of eleven alternatives (and several parking layouts) that were designed and evaluated before the *final plans were selected* as described in Chapter I.

When the new GPIA terminal facility is completed in the late 1980's, some of the existing terminal apron area may be available for expansion of the 911 TAG area to the north and northwest. This could provide an expanded apron for 12 or more C-17's (as opposed to the existing 8 C-130's, a smaller aircraft) *and* new and better sites for several buildings. Further, it could provide *replacement sites for the new BCE and Supply* buildings that are improperly located, as shown below, *within the runway building restriction line (BRL).*

Exhibit 3.2m: Alternative #1, The Existing Plan For Future 911 TAG Development At Beginning Of Study



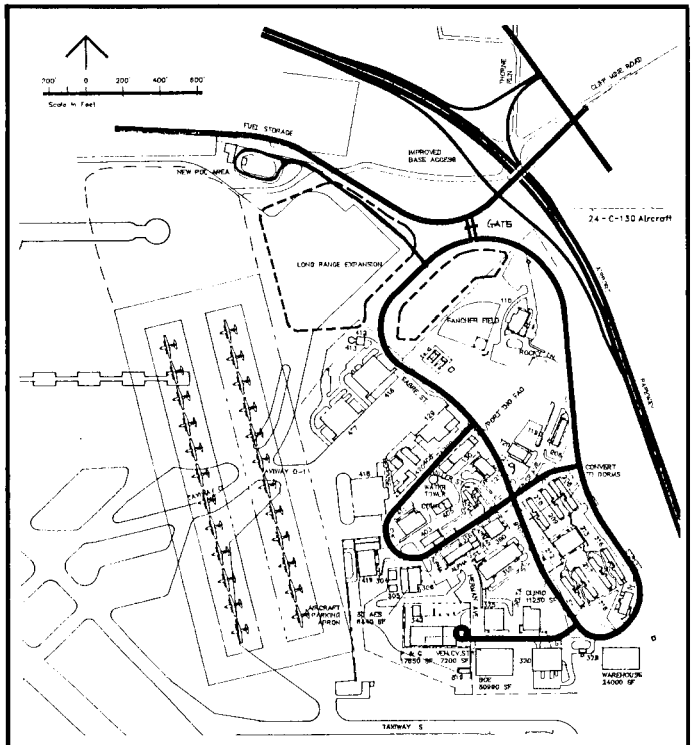


Exhibit 3.3m: Alternative #4 assumes acquisition of additional GPIA land to accommodate up to 24 C-130's. The interchange entry road is smoothed, and a loop road is extended through the base. The new buildings proposed within the BRL would have to be moved.

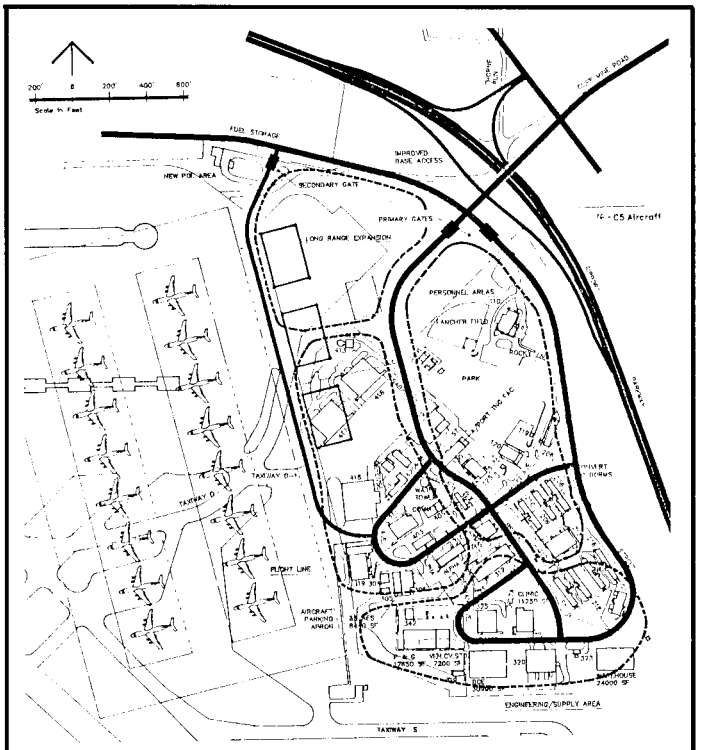


Exhibit 3.4m: Alternative #5 shows an expanded apron to hold 16 C-5's on a 79 acre apron with additional land reserved for new hangars and other facilities. Base entry would come straight off the new Airport Parkway interchange.

Exhibit 3.5m: Alternative #6 is very similar to #5 except that the buildings within the BRL have been moved....and the secondary entry gate has been eliminated.

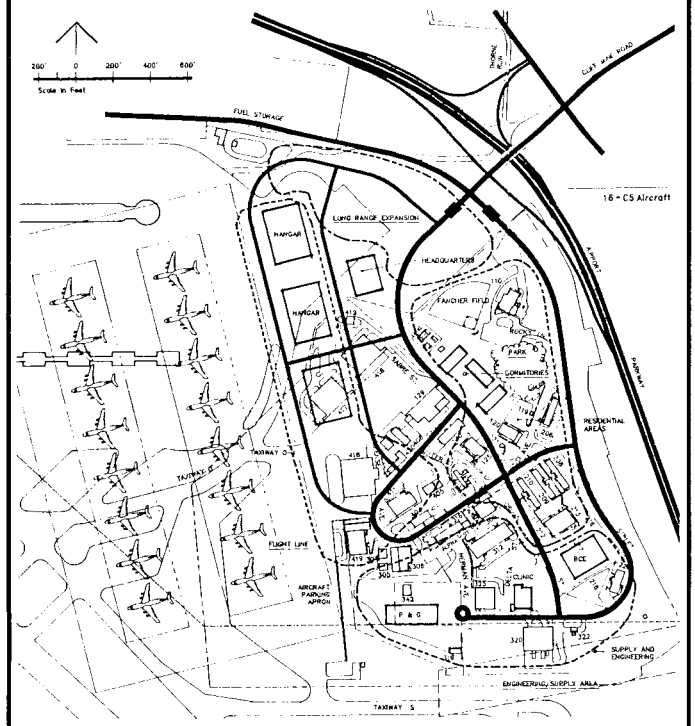
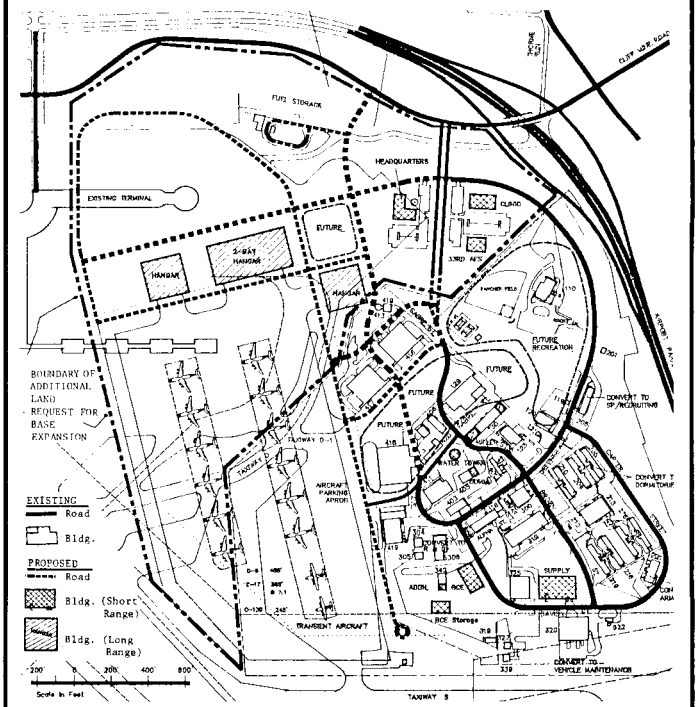


Exhibit 3.6m: Alternative #9 could expand the 911 TAG area of 105.7 acres by an additional 94 acres. Twelve C-17's would occupy the apron and a new entry boulevard would lead past a new HQs building into the center of the base.



Chapter IV

SUMMARY OF COMPONENT PLANS

FOR THE

911 TAG

COMPREHENSIVE PLAN

Exhibit 4.1p: C-130 On Apron

INTRODUCTION

The "component plans" are contained in Chapters 5 through 19, or Part Two, of the 911 TAG Base Comprehensive Plan and are listed below.

The purpose of this chapter is to provide a summary of each of the component plans. The summaries will vary in length from one paragraph to four pages. And, if a plan already has been summarized in one of the three previous chapters, the reader will be referred to that earlier chapter rather than summarizing it again.

Exhibit 4.2t: Location Of Component Plan Summaries

Listing of "Part Two: Component Plans" by Chapter Number & Title	Location of Chapter Summary In "Part One: Plan Overview"
5...Introduction	See Chapter II
6...Future Development Alternative Concepts	See Chapter III
7...Natural Resources Plan	See page 4-2
8...Environmental Quality Protection Plan	See page 4-2
9...Base Layout & Vicinity	See page 4-2
10..Land Use Plan	See page 4-3
11..Airfield & Airfield Operations	See page 4-7
12..Utilities Plan	See page 4-7
13..Communications Plan	See page 4-9
14..Transportation Plan	See page 4-11
15..Architectural Design Guidelines	See page 4-6
16..Exterior Master Paint Plan	See page 4-13
17..Landscape Development Plan	See page 4-13
18..Long Range Facilities Development	See Commander's Summary, Ch. 1
19..Five Year Capital Improvement Program	See Commander's Summary, Ch. I

NATURAL RESOURCES PLAN

The area surrounding the Pittsburgh AFRES contains several items of study with respect to natural resources. Other than the aprons, taxiways, athletic fields and work areas, the general topography of the base is moderately to steeply sloping. As a result of the slopes on the base, surface water drainage is essentially from the northwest to southeast.

WATER

A tributary of McClaren's Run (a small stream) runs parallel to Route 60, and in places, defines the eastern boundary of the base. This tributary receives most of the base storm water runoff and also a significant amount of runoff from the Greater Pittsburgh International Airport. The condition of the tributary appears to be sterile. No evidence of fish, amphibians, or macroinvertebrates were observed, nor were algae or complex aquatic plant life noted. The sterility of this stream is probably linked to the presence of petroleum distillates in the water originating at the Pittsburgh Airport.

LAND

The geology of this region has been extensively investigated mostly due to coal and oil exploration. In general, the area is underlain by horizontal beds of shale, siltstone, sandstone, limestone, and coal. These bedrock layers are essentially sedimentary in geologic origin and are generally slow percolating (with exception of the sandstone). The availability of bedrock water supplies is limited.

A preliminary review of the effects of limited expansion of facilities projects on peak rates of discharge from the base storm water drainage system was conducted. This review indicated that runoff increases from the base, although measurable, will be minimal and will not significantly increase peak rates of discharge to McClaren's Run.

WILDLIFE

Wildlife considerations in the base area are minimal. Small game such as rabbits, skunks, and raccoons have been noted within the base confines. There is an on-going effort to trap and relocate woodchucks which are creating problems. Various species of song birds feed on the good supply of food available in the shrubbery around the base. However, limited types of other birds inhabit the area.

HISTORICAL AND ARCHAEOLOGICAL

There are no limitations to building on the AFRES or on the entire Pittsburgh Airport properties because of historical or archaeological restrictions.

ENVIRONMENTAL QUALITY PLAN

Environmental quality affects all physical and operational aspects of the Pittsburgh AFRES base. The Environmental Quality Protection Plan summarizes those major programs designed to maintain and enhance the environmental quality of the base.

INSTALLATION RESTORATION PROGRAM

The Department of Defense (DOD) has developed a program to identify and evaluate past hazardous material disposal sites on DOD property, to control the migration of hazardous contaminants, and to control hazards to health or welfare that may result from these past disposal operations. This program is called the Installation Restoration program (IRP).

Five sites at the Pennsylvania Air Force Reserve Facility are identified as potentially containing hazardous contaminants resulting from past activities. Four of these sites have been assessed using a Hazard Assessment Rating Methodology (HARM) which takes into account factors such as site characteristics, waste characteristics, potential for contaminant migration, and waste management practices. These facilities are slated for improvements in light of the hazardous ratings assigned to them.

ENVIRONMENTAL COMPLIANCE REVIEW

In November of 1985, HQ AFRES assisted the 911th TAG/DE by conducting an evaluation of existing environmental programs at the installation.

During the Environmental Compliance Review (ECR), the air emission permits and associated files were reviewed and physical inspections were made of paint spray booths, degreasing and paint remover tanks, and fuel storage areas. The results of this review/evaluation included the location of several sources of air emissions including the following: cold tank degreasers, fuel storage tanks, paint spray booths, and paint remover tanks. There are no sources which emit pollutants in quantities greater than 100 tons per year. These problems are scheduled for correction in the near future.

OIL & HAZARDOUS SUBSTANCES CONTINGENCY PLAN

The possibility of accidental spills of oil or other substances into the watershed draining the base must be considered. Depending on the nature of the spill, McClaren's Run, Montour Run and eventually the Ohio River could become contaminated. 911th TAG base will be required to institute clean-up actions for any pollution spills that occur on or by facilities it controls or supervises. The 911th TAG base may be called upon to furnish resources (manpower, equipment, materials) for a coordinated Federal response to non-Air Force caused pollution spills.

BASE LAYOUT AND VICINITY SUMMARY

As part of the comprehensive plan project for the Pittsburgh AFRES Base, several aerial photos and map TABs were produced.

Most of the map TABs are similar to those found in a civilian community's public works and planning departments, primarily to indicate the existing conditions, although a few will describe future needs and proposals.

For the Pittsburgh AFRES, the map TABs included 40 different titles with a total of 61 final map sheets. They comprise almost all areas encompassed by the standard Air Force Statement of Work for Comprehensive plan mapping.

The process of producing the map TABs included aerial photography, field control, photogrammetric compilation, interactive graphic manipulation, and field research and verification.

LONG RANGE LAND USE PLAN

The long range land use change possibilities are tabulated below, located by the map to the right, and further described in the following text.

ACREAGE INCREASE

A potential overall land area increase of ± 94 acres is shown for the long range plan. Most of this increase would be north of the existing base, and would be used for apron expansion, several new facilities (POL, new entry road and 33rd AeroMed) and an open space reserve for future apron, hangar, or support needs. This additional land would have to be leased from the Greater Pittsburgh International Airport (GPIA).

0 and 1...AIRFIELD LAND USE

The *airfield clearance* pertains to the 125' building line setback from the apron. This area increases slightly to accommodate the apron expansion.

The *apron expansion* of ± 35 acres is the largest increase of any of the "active" land use categories. Sixteen C-141 aircraft, as well as two transient aircraft, could be housed on the apron. Reserve land to the north could be used to expand the apron further if more, or larger, aircraft were acquired.

2...AIRCRAFT O&M LAND USE

The small increase in *aircraft O&M* land use occurs with the construction of the hangar additions and new hangar. Reserve land to the north could be used by this activity if additional hangars, or related facilities, were needed. Generally, this activity remains concentrated in its present location.

3...INDUSTRIAL LAND USE

Industrial land use, with a three acre increase, remains primarily in the southwest portion of the base...except for the POL relocation to the north area. Within the southwest area, however, the following major moves are scheduled: *BCE* activities will concentrate around the existing BCE area; *Supply* will be concentrated within the Brown-Davis Streets loop; and *Vehicle Maintenance*/storage will be concentrated south of Davis Street.

4...ADMINISTRATIVE LAND USE

Administrative land use acreage remains the same, but there are two locational shifts: Building 208 is demolished and replaced by dormitory POV parking, and a new Security Police facility is added near the new Main Gate. Overall, however, the administrative land uses would remain concentrated along Defense Avenue in the vicinity of the HQs building.

An emergency/secondary gate also is shown in the new northern area for use during rush hours, UTA weekends, and for special delivery needs.

5 and 6...COMMUNITY LAND USE

The community-commercial and community-service land uses remain unchanged for the future, retaining their present locations and acreage figures. All are well located in relation to the people they serve: the consolidated open mess is near the entry gate, while the other uses (gym, chapel, BX, and dining hall) are in the base central area near dormitories and major work areas.

7...MEDICAL LAND USE

Medical land use increases by three acres when the clinic moves from building #221 to an adjacent new facility with a new parking lot across the street and a new 33rd AeroMed facility is built near the ballfield.

8 and 9...HOUSING LAND USE

The only base housing is the dormitories for unaccompanied personnel. No change is made in the location of these facilities, although an acre of POV parking is added for dormitory #209 when the administrative facility #208 is demolished.

10, 11, & 12...OUTDOOR RECREATION, OPEN SPACE & WATER

The *outdoor recreation* area is expanded by taking over the existing ± 4 acre POL site when the POL is moved to its new location. This will provide an excellent concentration of facilities (open mess, outdoor recreation, gym) to serve the nearby dorms. *Open space* increases by 46 acres. Most of this is in the area to be acquired from GPIA, and would not be permanent open space, but rather, a reserve for future facility needs. There is no *water* land use.

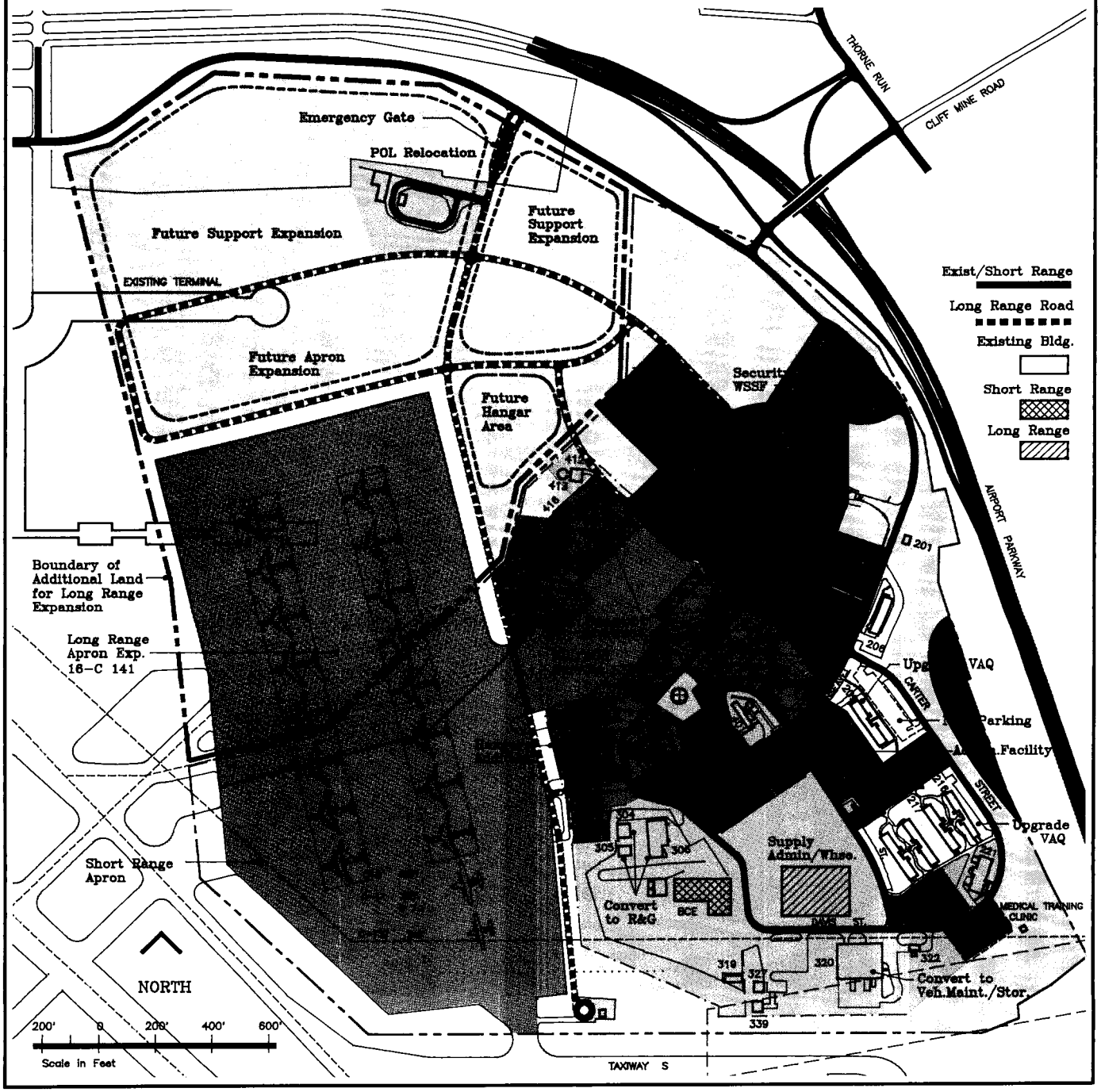
Exhibit 4.3t: Long Range Land Use Changes*

Air Force Land Use Category	Existing		Long Range		Change	
	Acres	%	Acres	%	Acres	%
0..Airfield, Clearance	11	10%	12	6%	1	9%
1..Airfield, paved	21	20	55	28	34	162
2..Aircraft O&M	11	11	12	6	1	9
3..Industrial	19	18	22	11	3	16
4..Administrative	6	5%	6	3%	0	0
5..Community, Commercial	5	5	5	3%	0	0
6..Community, Service	1	1	1	1	0	0
7..Medical	1	1%	4	2%	3	300%
8..Housing, Accompanied	0	0	0	0	0	0
9..Housing, Unaccompanied	5	5	6	3	1	20
10..Outdoor Recreation	8	8%	12	6%	4	50%
11..Open Space	18	17	64	32	46	256
12..Water	0	0	0	0	0	0
TOTAL	106	100	200	100	94	89%

*All figures rounded to nearest whole number.

Exhibit 4.4m: Long Range Land Use Plan

	LAND USE CATEGORIES
	0..AIRFIELD (Unpaved)
	1..AIRFIELD (Paved)
	2..AIRCRAFT O&M
	3..INDUSTRIAL
	4..ADMINISTRATIVE
	5..COMMUNITY (Commer.)
	6..COMMUNITY (Service)
	7..MEDICAL
N/A	8..HOUSING (Accomp.)
	9..HOUSING (Unacc.)
	10.OUTDOOR RECREATION
	11.OPEN SPACE
N/A	12.WATER



AIRFIELD & AIR OPERATIONS SUMMARY

The air operations at the 911th TAG focus on the eight H-model C-130's assigned. These aircraft replaced eight A-model C-130's in 1987.

The primary missions governing the 911th TAG operations is to provide command and staff supervision units engaged in providing tactical airlift support for airborne forces, other personnel, equipment, supplies, and aeromedical evacuation of patients within the theatre of operations.

The C-130's accomplish approximately 100 aircraft movements per month. This compares to about 1,200 daily operations for the entire airport.

AIRFIELD FACILITIES

The primary airfield facilities utilized by the 911th TAG and other tenants are the runway and taxiways operated and maintained by the Greater Pittsburgh International Airport. The facilities owned and maintained by the 911th TAG are their aprons and connecting taxiways located at the east end of the airport just northeast of the intersection of runways 14/32 and 10R/28L.

AIRCRAFT PARKING

The present aircraft parking apron at the 911th TAG allows space for seven C-130's. There are also two hangars and one nose-dock which provide cover for three more C-130's during maintenance.

The short range airfield plan anticipates that the existing mission could be expanded by adding up to 16 C-130 aircraft. This would require an additional aircraft parking apron and a new maintenance hangar.

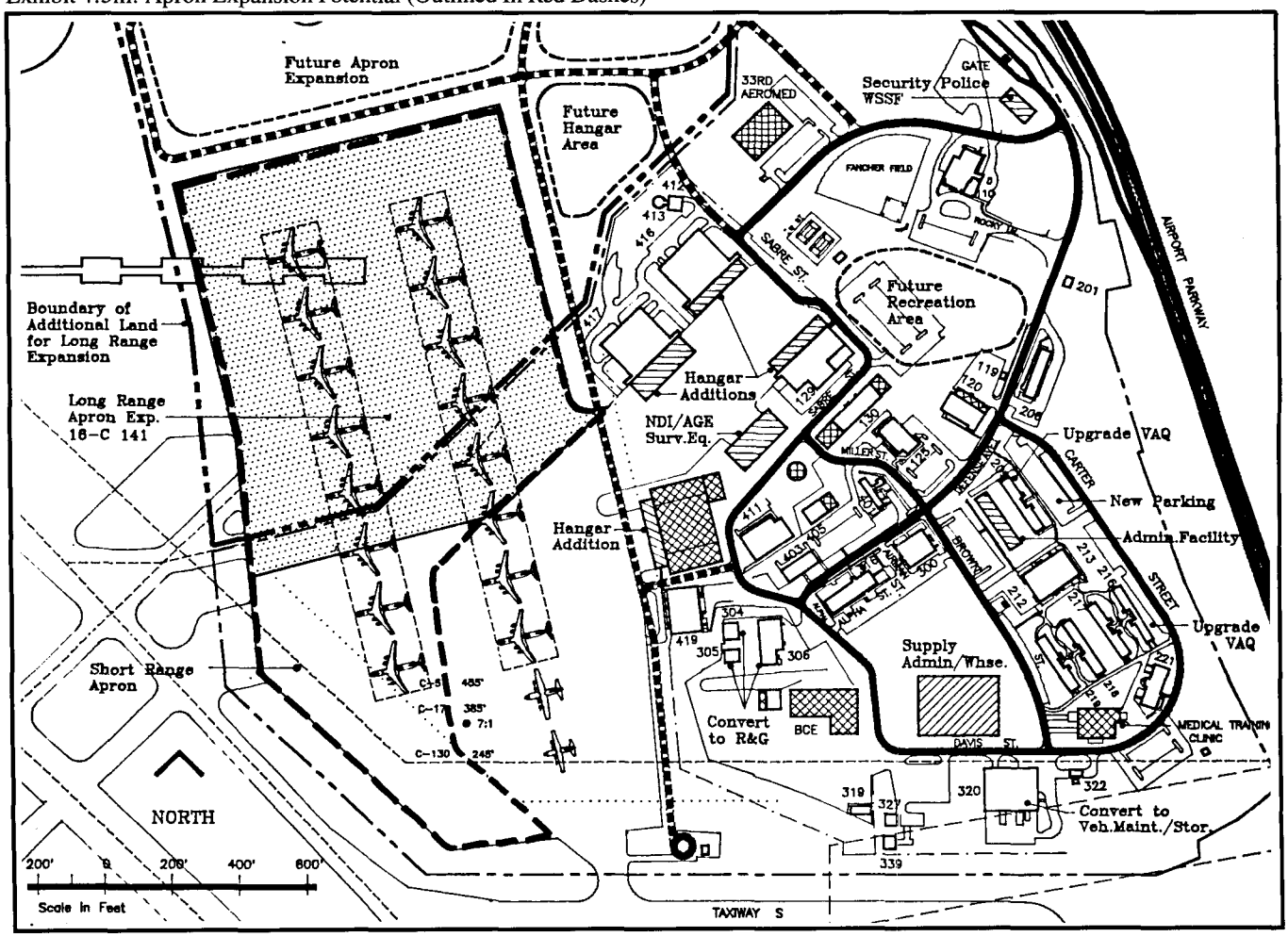
Apron expansion would depend on the acquisition of more land from the Greater Pittsburgh International Airport (GPIA).

The long range airfield plan anticipates that a mission change could assign larger aircraft.

Utilizing C-141 aircraft and assuming that 16 could be assigned, the required airfield facility additions would total those shown by the exhibit below.

Again, apron expansion and additional areas for future hangars or apron, as shown below, would be dependent upon gaining additional land from the GPIA.

Exhibit 4.5m: Apron Expansion Potential (Outlined In Red Dashes)



ARCHITECTURAL DESIGN GUIDELINES

The purpose of the architectural design guidelines is to help create a more visually satisfying and pleasing physical environment, and to help accomplish the following:

...Develop a coherent architectural character that promotes visual attraction by its continuity and consistency.
...Improve the visual organization of the installation, including buildings and the spaces between the buildings.
...Reduce the impact of the base's visual liabilities and unsightly problem areas.
...Help blend the natural environment with the built environment.

The guidelines and recommendations are oriented to four groupings of facilities, as follows:

...*Buildings* - The overall architectural treatment and appearance of buildings. Recommendations cover areas such as design consideration, construction materials, roof style, color, and the use of a Design Review Board.
...*Circulation and Parking* - Needs special design attention to insure proper curb and gutter (or snow removal design), pavement width, signs, lighting, and cross-section as shown below.
...*Street Furniture* - Selection of a coordinated group of accessories, including street lighting, fencing, trash receptacles, and any static aircraft or other displays.
...*Signs* - The selection of an integrated system of identification for buildings and facilities which meets the Air Force standard with recommendations made for location and types of exterior signs for all buildings. A typical entry sign is shown below.

Exh. 4.8p: Bldg. 221 For Conversion To Small Arms Use

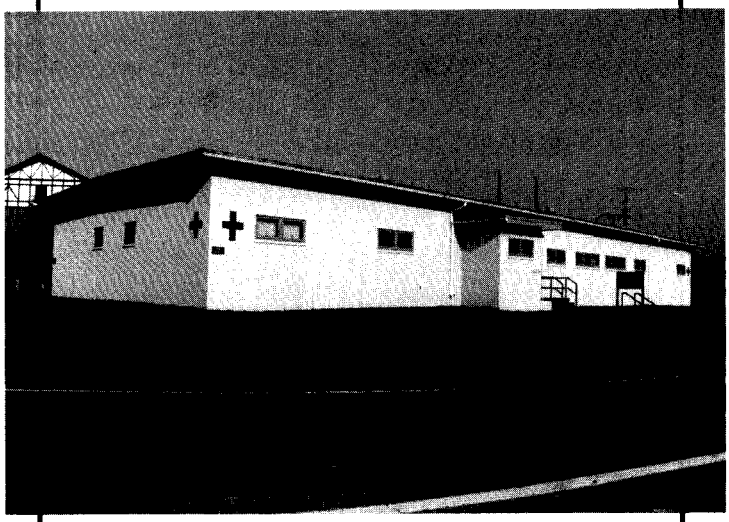


Exhibit 4.9m: Building 221 After Conversion To Small Arms Use

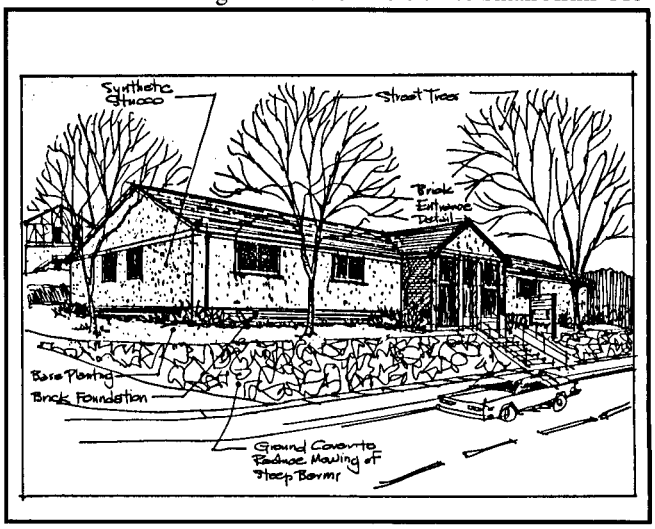


Exhibit 4.6m: Entrance Sign Layout

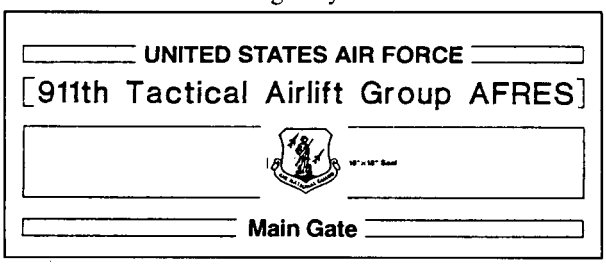
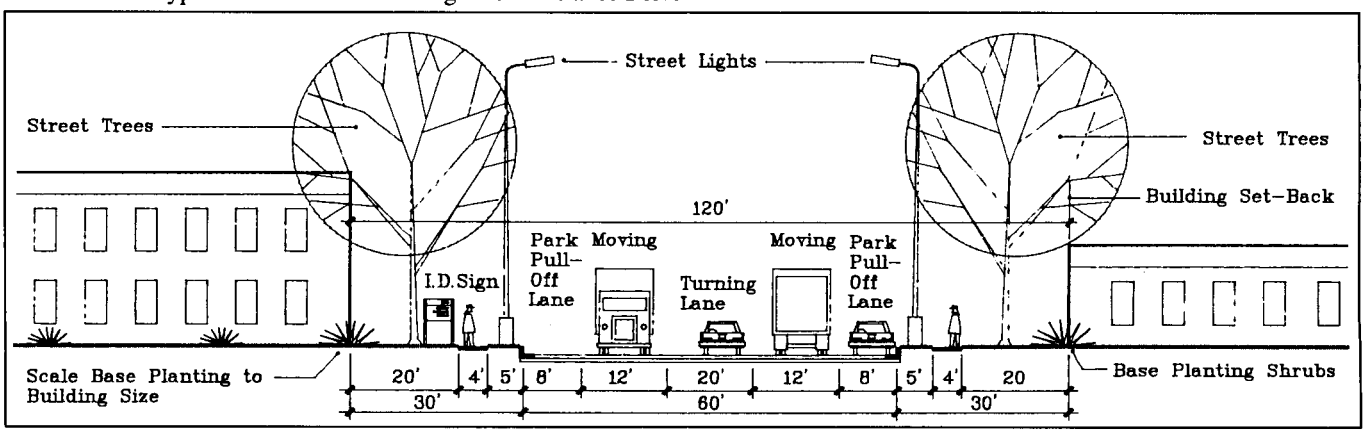


Exhibit 4.7m: Typical Cross Section Through New Entrance Drive



UTILITIES PLAN

In order to function properly, each building at the Pittsburgh AFRES generally must be connected to several utility systems that bring energy or information to them, and carry waste materials away (see the exhibit below). Without these underground pipes or overhead wires, operating in a relatively efficient fashion, few buildings are usable for human activities.

During the Master Plan preparation, each utility was inventoried and analyzed to determine existing needs. After development of the short range and long range building site plans (in Chapter VI), the utilities were studied again to determine what further proposals would be required to serve these new facilities.

...Existing utility improvements needed for present situation, with no regard for any future changes.

...Short range needs will reflect any additional utility improvements necessary to serve the short range development plan described in Chapter VI, page 6-51.

...Long range needs will reflect any additional utility improvements necessary to serve the long range development plan described in Chapter VI, pg. 6-53.

The exhibit to the right lists each utility and the estimated cost for improvements. The totals by time period are:

Existing Needs	$ 851,225
Short Range Needs	$ 767,825
Long Range Needs	$1,226,340
TOTAL	$2,845,390

No cost estimate was made in the Liquid Fuels section for relocating the POL. The Long Range Storm Drainage Plan is shown to the right as an example of one utility plan.

Exhibit 4.10m: Schematic Plan View Of Utilities

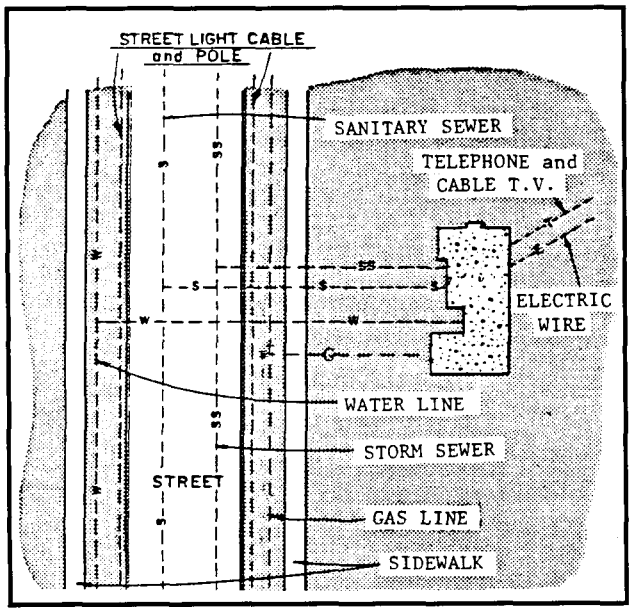
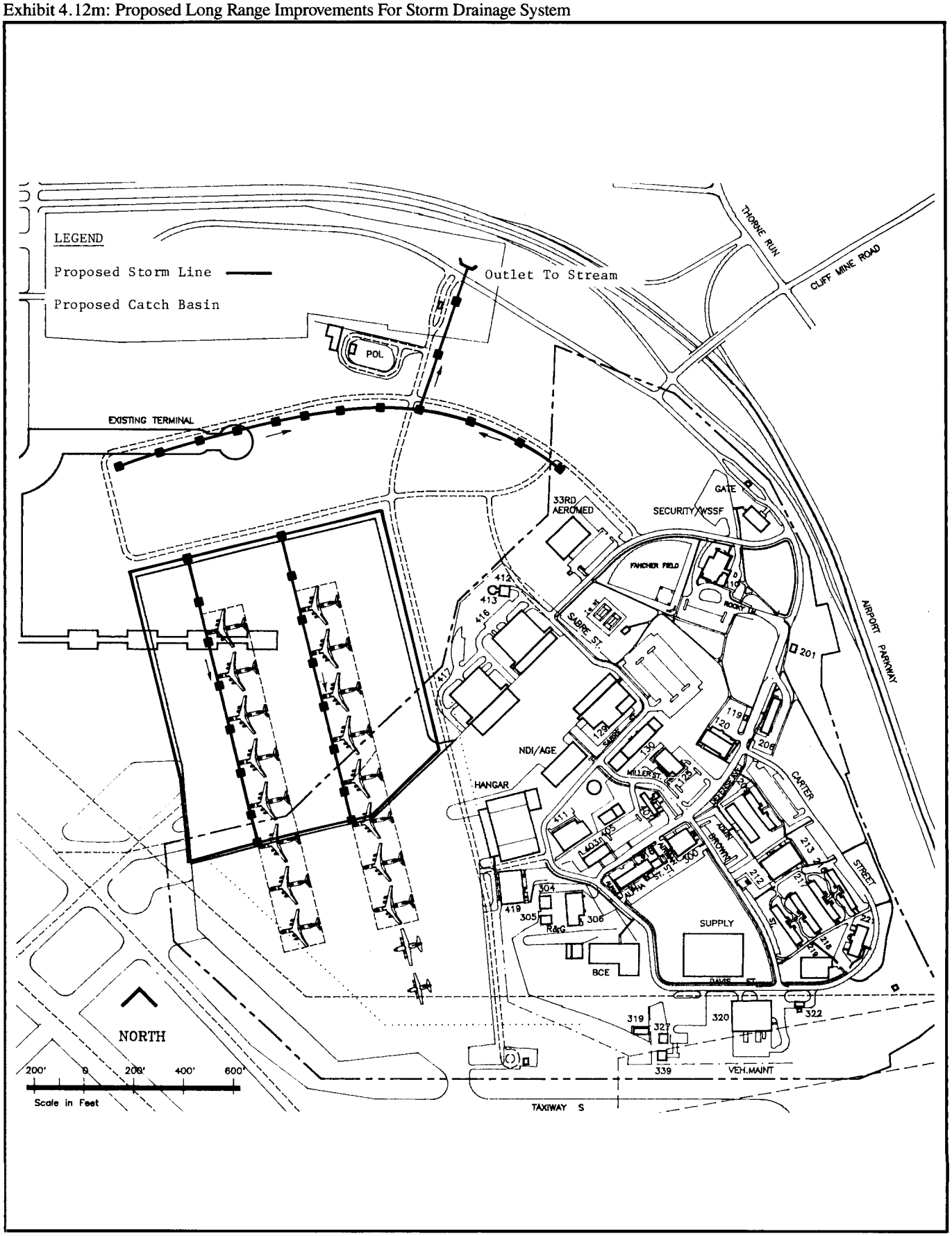


Exhibit 4.11t: Summary Of Utility Proposal Costs

Utility	Estimated Cost $
...*Solid Waste*	
Contract for rental/usage to be negotiated with private companies	N/A
...*Natural Gas*	
..Existing	N/A
..Short Range	161,000
..Long Range	46,500
TOTAL	207,500
...*Storm Drainage*	
..Existing	4,500
..Short Range	365,500
..Long Range	522,500
TOTAL	892,500
...*Sanitary Sewage*	
..Existing	N/A
..Short Range	34,000
..Long Range	117,000
TOTAL	151,000
...*Water Supply*	
..Existing	779,250
..Short Range	115,350
..Long Range	145,350
TOTAL	1,039,950
...*Liquid Fuels*	
Relocation of POL facility	N/A
...*Cathodic Protection*	
None proposed	N/A
...*Electric*	
..Existing	50,150
..Short Range	87,350
..Long Range	379,200
TOTAL	516,700
...*Street and Area Lighting*	
..Existing	17,325
..Short Range	4,625
..Long Range	15,790
TOTAL	37,740
GRAND TOTAL	2,845,390

Exhibit 4.12m: Proposed Long Range Improvements For Storm Drainage System



COMMUNICATIONS PROPOSAL SUMMARY

Existing needs for COMMUNICATIONS, NAVAIDS, METEOROLOGICAL FACILITIES, FIRE ALARMS and SECURITY ALARMS are discussed in the respective report sections. The effects of selected short and long range development proposals upon Pittsburgh AFRES base communications systems primarily involve additions and modifications to the communications cable plant or, Outside Plant (OSP) Cable Distribution System.

Pittsburgh AFRES base's existing communications cable plant is owned and maintained by Bell Telephone of Pennsylvania under contract. Much of Bell's on-base cable plant utilizes aerial cables of considerable age. Moisture-related cable problems are common. Although Bell of PA. provides good service response when problems occur, and their completion of service order related work is timely, the needed major upgrade of on-base cable facilities is unlikely. Despite these shortcomings, charges for the base's use of them continue to increase.

In view of the above considerations, migration to an entirely Government-owned communications cable plant is recommended. In accord with this recommendation, all base cable additions proposed herein are assumed to be Government-owned.

The Communications Proposals presented in this section include communications conduit, cables installed in conduit and direct-buried cables. Where cables are to be installed in conduit the use of expanded insulation, filled construction cables is recommended. All direct-buried cables, however, should utilize solid insulation and filled construction.

Short Range Communications Proposals

Short range base development proposals identify the area north and west of Fancher Field as a location for new and relocated facilities. In addition, modifications to present base traffic patterns are proposed that enhance Defense Avenue's use as the primary entry route to the Headquarters area of the base. To provide communications services to the main base development area, eliminate unsightly aerial telephone plant and minimize future disturbance of Defense Avenue a backbone communications conduit system is proposed (see exhibit, lower right).

The main run of the proposed conduit system will consist of four, four-inch Inner Diameter (4-4"I.D.), concrete-encased polyvinyl chloride (PVC) conduits. The four duct package begins at the Communications Center and extends to a new manhole on the northwest side of Defense Avenue. The four duct package continues along Defense Avenue passing through a second manhole at the intersection with Miller Street and ends in a manhole located between the Gymnasium (Building 120) and Avionics (Building 125).

Two (2) branch conduit runs will extend from the third manhole, both packages being 2-4"I.D. ducts. One conduit run, the main branch, will follow Defense Avenue while the other, the Sabre branch, will route to the northwest and follow along Sabre Avenue toward the new development area.

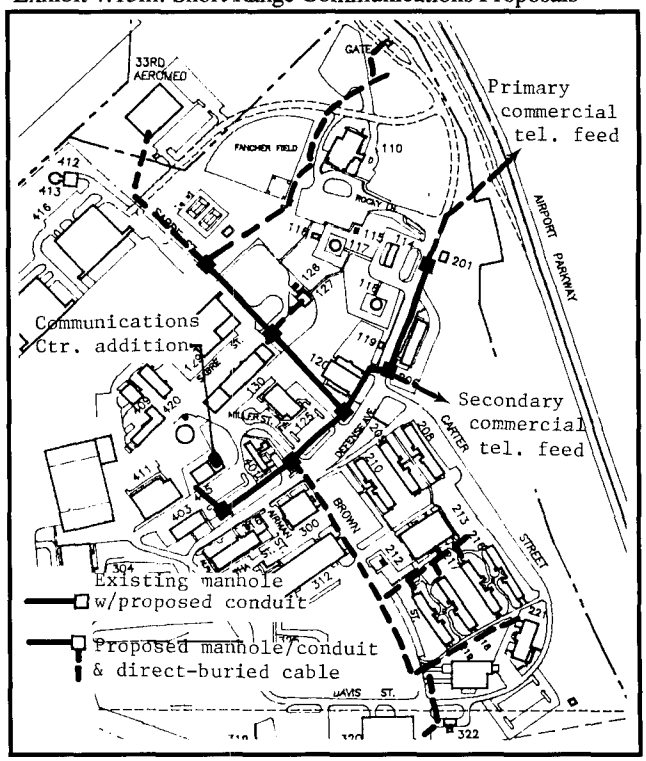
The main conduit branch will extend from the third manhole along Defense Avenue to the Carter Street intersection. The conduit will cross Defense to the north side of Carter where a fourth manhole will be placed. The branch will continue from the fourth manhole along the south and east side of Defense Avenue to a terminal manhole in the vicinity of the existing Main Gate. It is intended this manhole provide the point of interface with the commercial telephone system. The exact location of this manhole should be negotiated with Bell Telephone of Pennsylvania to assure minimum future charges to the Government.

The Sabre branch conduit run will extend from the third manhole towards the northwest passing between Avionics and the Gym and continuing along Sabre Avenue. A manhole will be located beside Sabre Avenue near the Aerial Port Training Facility (Building 130). The branch duct run extends from this manhole to the terminal manhole which will be located across from the Large Aircraft Maintenance Dock (Building 129) and the corner of the ramp.

Between the Communications Center and the first manhole at Defense Avenue, a 2400x24 cable is proposed. From the first manhole to the second manhole an 1800x24 cable is recommended. The 1800-pairs will feed a 1500x24 cable extending to the next manhole and a direct-buried four hundred pair cable proposed to feed along Brown Street.

The Brown Street feeder cable will be placed along the southwest side of Brown Street to just beyond the Dining Hall. From this point a 300x24 cable will be buried across Brown Street and extended between the Dining Hall (Building 213) and the VAQ Dormitories (Buildings 216, 217, 218 and 219). A 50x24 direct-buried cable each will serve Buildings 213, 216, 217, 218 and 219.

Exhibit 4.13m: Short Range Communications Proposals



A 200x24 direct-buried cable will extend along Brown Street from the end of the above 400 pair cable toward Davis Street. Near the Davis Street end of Building 219 the two hundred pair cable will cross Brown Street. Fifty pair direct-buried cables will serve Buildings 221, 320 and the proposed Medical Training Clinic.

A 400x24 cable is proposed between the third and fourth manholes to serve the Primary and Secondary Commercial Telephone Feeds, VOQ (Building 206) and the Infirmary (Building 221). A 300x24 cable is recommended for the last main run conduit section to the terminal manhole near the present Main Gate. Except for the 26-pair feed to Building 221, scheduled for elimination under *Long Range Communications Proposals,* the entire 300 pairs will be reserved for the Primary Commercial Telephone Feed.

A 600x24 is proposed for the beginning of the Sabre branch conduit run. The 600-pair cable is to extend from the manhole at Defense Avenue to the second manhole near Building 129. This cable will provide the pairs to feed Building 110, the new Gate House and the proposed Security Police/WSSF Facility. Buildings 127 and 130 will also feed from this cable with pairs remaining available for possible future service to Building 129.

A 300x24 cable will be direct-buried from this manhole to a location near the Combined Open Mess (Building 110). This cable will feed Building 110 and a 200x24, direct-buried cable extending toward the new Main Gate. A 100x24 cable will be buried to the new gate house with the remaining hundred pair reserved for the proposed Security Police/WSSF facility as shown under *Long Range Communications Proposals,* in this section.

A 50x24, direct-buried cable is recommended to be extended from the Sabre branch terminal manhole along Sabre Avenue to serve the proposed 33rd Aeromed building.

Pairs will remain available at the Sabre branch terminal manhole to serve future growth to the northwest and/or possible future feeds to Buildings 412, 413, 416 and 417.

A 100-pair direct-buried cable from existing Manhole #11 near Squadron Operations (Building 419) will serve the proposed hangar.

Long Range Communications Proposals

Direct-buried cables are proposed to serve the area south and east of Defense Avenue. Beginning at the manhole on the northwest side of Defense Avenue near the Communications Center that has been proposed under *Short Range Communications Proposals,* above, a 600x24 cable will be placed across Defense Avenue.

The 600-pair cable will extend along Defense Avenue toward the southwest to the intersection with Alpha Street near Reserve Forces Operational Training (Building 316). A 400x24 cable will be buried along the northeast side of Alpha Street to serve BCE and proposed Supply Admin/Warehouse. The 200 pairs remaining at the intersection of Defense and Alpha will remain available for extension toward Squadron Operations (Building 419).

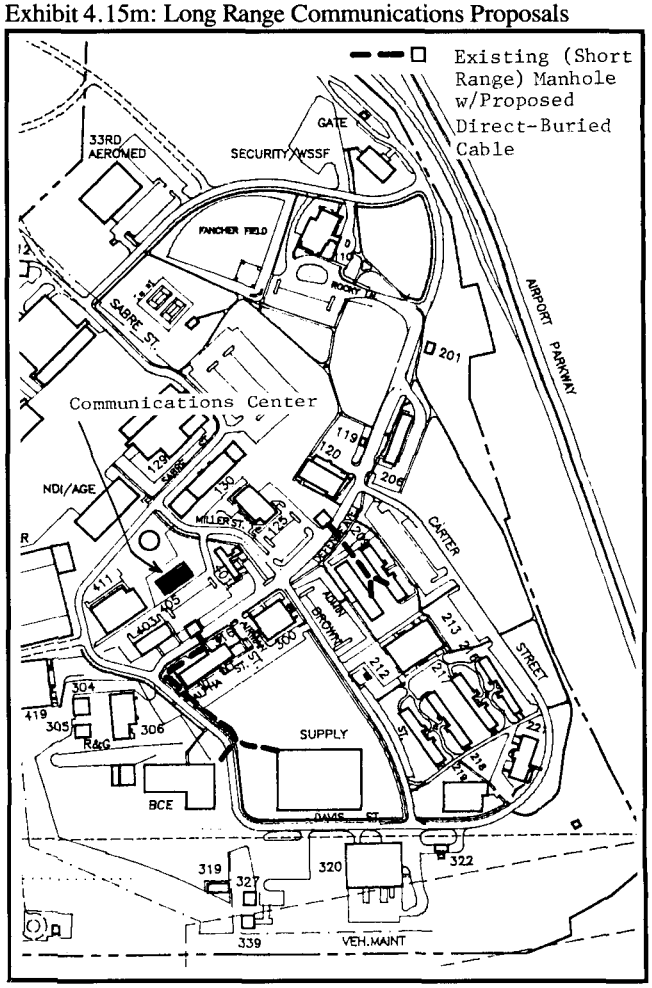
Beginning at the Defense Avenue manhole between Buildings 120 and 125 a 200x24 direct-buried cable will be placed across the street to serve Buildings 209 and 210.

Branching from the 200x24 cable recommended in *Short Range Communications Proposals* for placement along the proposed new street near the new Main Gate a 100x24 cable will be buried into the new Security Police/WSSF facility.

Exhibit 4.14t: Communications Proposal Cost Summary

Proposal	Cost (thousands)
Short-Range Proposals:	
Placement of Communications Conduit & Manholes	81.6
Placement of Communications Cables	61.0
Short-Range Proposals Total:	142.6
Long-Range Proposals:	
Placement of Buried Communications Cables	17.6
Long-Range Proposals Total:	17.6

Exhibit 4.15m: Long Range Communications Proposals



TRANSPORTATION PLAN SUMMARY

The existing roadway system at the Pittsburgh AFRES base, shown in the exhibit below, has several deficiencies that restrict the smooth flow of traffic.

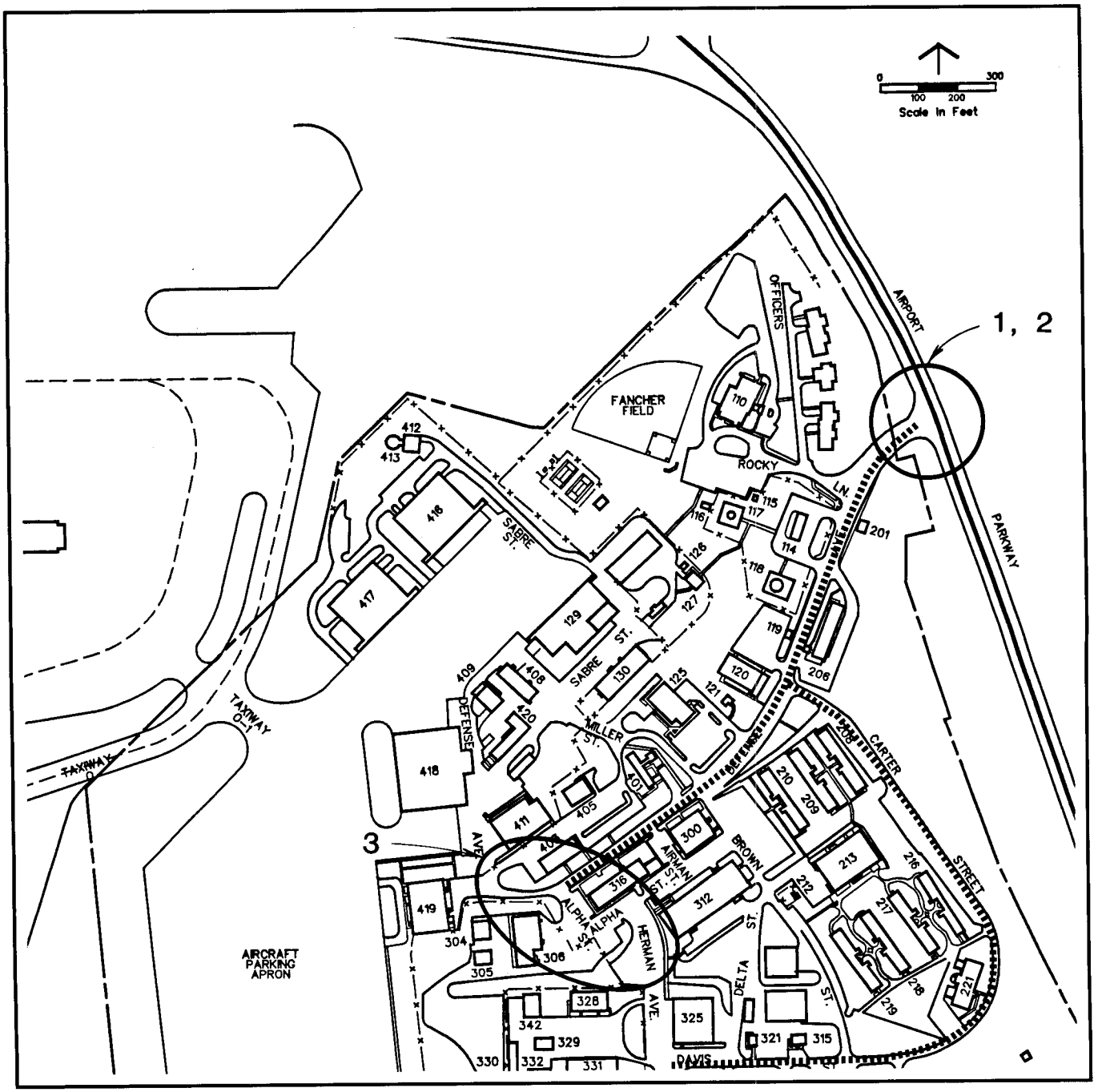
..1) The base's only gate is connected to the eastbound-lane of the Airport Parkway, a four-lane divided highway. Personnel leaving the base are exposed to hazardous conditions while merging with the high-speed traffic on the Parkway.

..2) No westbound access is available from the main gate to the Parkway. Traffic leaving the base for points west must use the Montour interchange, 2.3 miles to the east, to access the Airport Parkway.

..3) The on-base roadway system lacks continuity because of poor intersections, steep grades, and on-street parking.

..4) Additional parking areas are needed to accommodate the large number of vehicles on-base during Unit Training Assemblies (UTA).

Exhibit 4.16m: Existing Roadway System At The Pittsburgh AFRES Installation



Transportation Improvements

The Base Comprehensive Plan (BCP) for the Pittsburgh AFRES installation includes a series of transportation-related improvements, including:

..1) A new base access area and main gate that will be directly connected to the GPIA and the new Thorn Run Road interchange;

..2) A new roadway linking Defense Avenue with the new base access area;

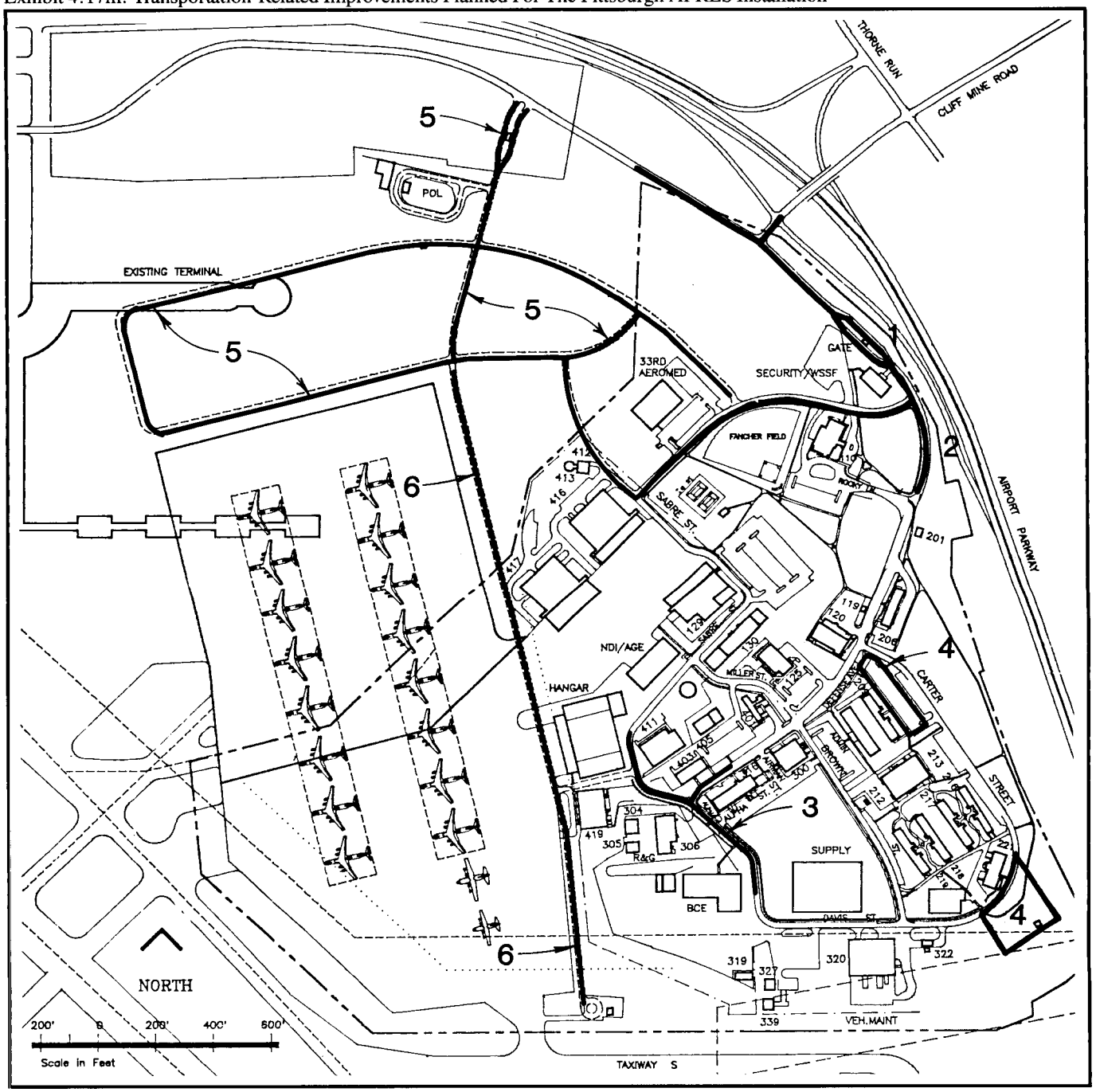
..3) Improvements to the on-base roadway system that will create an organized system of collector and local roadways;

..4) Construction of several new parking areas;

..5) A new POV roadway system and emergency-use only gate on lands leased from the GPIA for base expansion; and,

..6) A government vehicles-only roadway along the perimeter of the flight line.

Exhibit 4.17m: Transportation-Related Improvements Planned For The Pittsburgh AFRES Installation



LANDSCAPE DEVELOPMENT PLAN

The landscape development plan is intended to serve as a guide for the selection and installation of planting materials on base. The visual character of the physical base is coordinated by this landscape plan in concert with the exterior master paint plan and the architectural guidelines.

Although past plantings have followed no master plan, conditions are very good for the installation of a long range planting plan:

...a wide variety of trees and shrubs will grow in the Pittsburgh climate
...rainfall and drainage are adequate for plant material to grow without extensive artificial watering systems
...almost any reasonable landscaping treatment can be supported by the existing climatic and environmental conditions.

The overall general landscaping plan is shown by the map on the next page, while more detailed site plantings are shown by the sketches below.

EXTERIOR MASTER PAINT PLAN

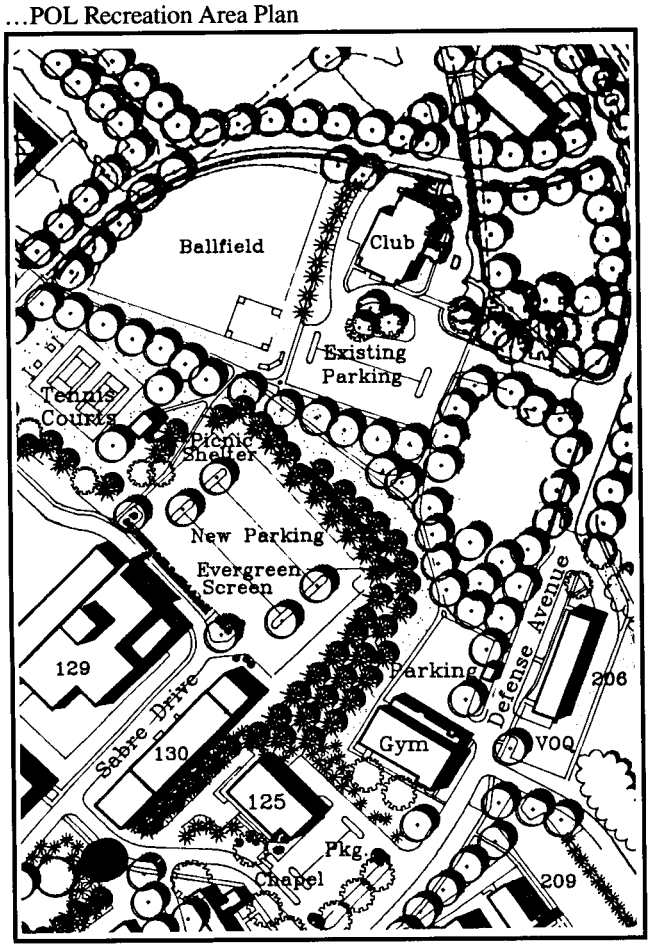
The purpose of the exterior master paint plan is to enhance the appearance of the base physical environment through the use of a harmonious color scheme, and to reduce the impact of visual liabilities and unsightly problem areas through the use of material and paint colors.

The base currently contains over 60 buildings with a wide range of sizes, materials, colors, styles, and functions. When the primary building colors are mapped, it shows that buildings near the airfield generally contain blue color tones while most others on base are earth tones, such as brown, beige, and cream. This color pattern has the potential to become a more formal color theme for the base.

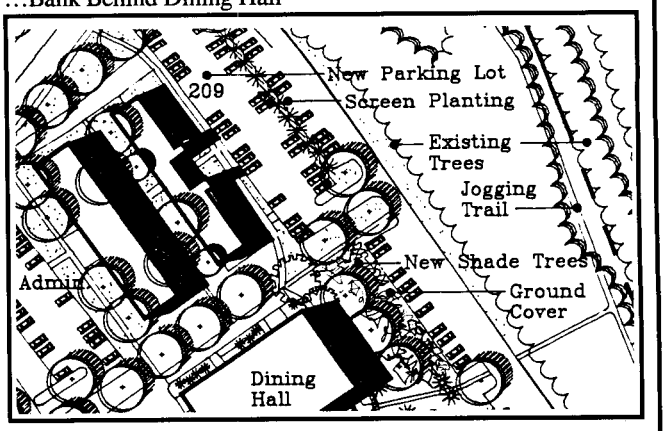
The master paint plan will be formalized in a separate notebook where paint chips will illustrate the proposed color scheme for each building, with color photographs of each building also attached.

Exhibit 4.18m: Landscaping Site Plans For Specific Areas

...POL Recreation Area Plan



...Bank Behind Dining Hall



...Headquarters Landscaping

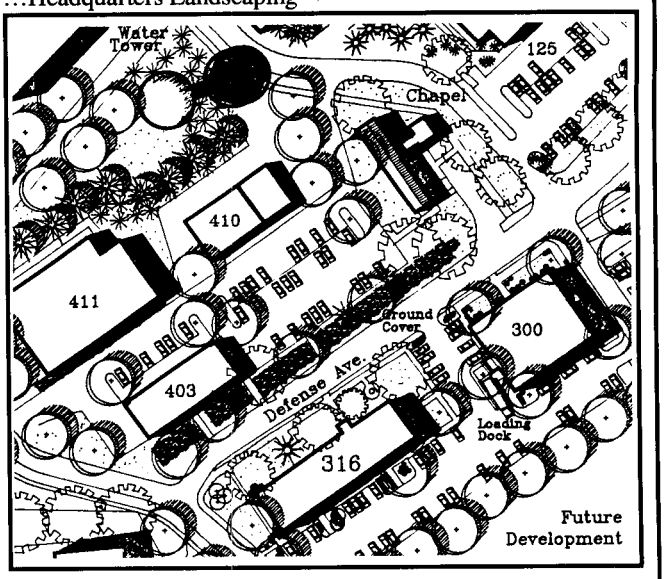
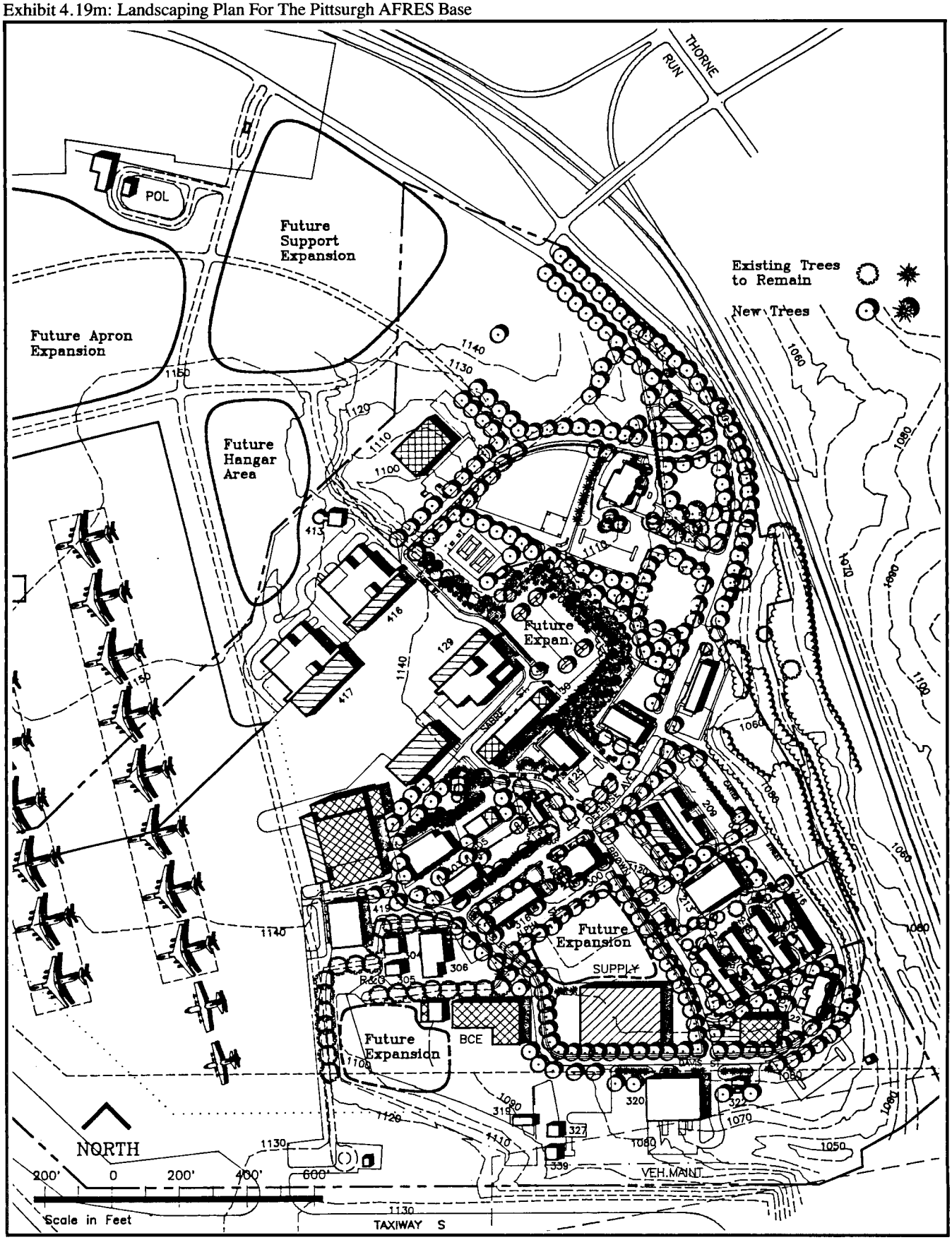
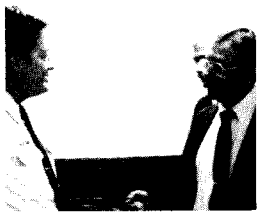


Exhibit 4.19m: Landscaping Plan For The Pittsburgh AFRES Base



Witt Kirkland, HQ/AFRES Engr.; Larry LeMar; Helm Roberts on tour →

← DCAA Auditor, Larry LeMar, Debi Howard-martinjak, Dan Lucci, & Dr. Bill Qualls review contract



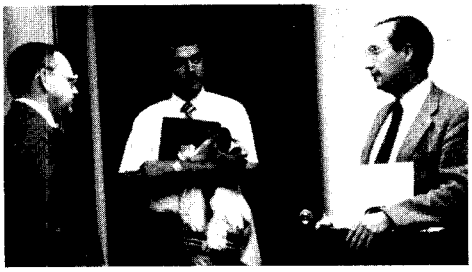
Col. Woodrow, Ben Fister & Bill Qualls ←

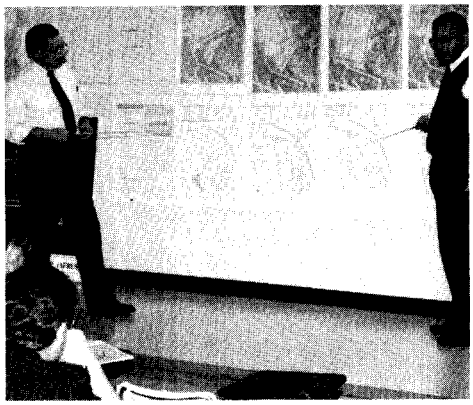
GRW Team's Rick Wolf, Ben Fister, & Dave Miller →

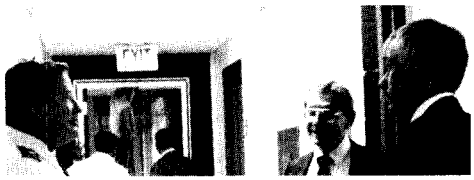
..GRW's Gingy Qualls, Rick Wolf, Dave Miller, Helm Roberts view Downtown Pittsburgh →

Helm Roberts at the computer

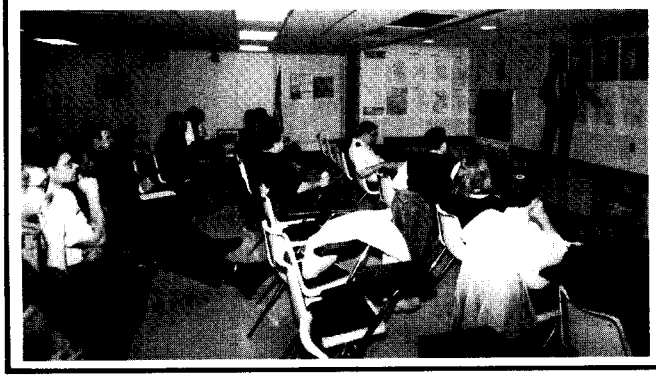
..Capt. Mal Gilbert leads a tour







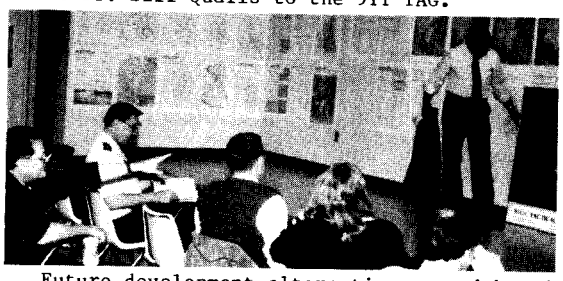
Alternatives Review Sessions



Larry LeMar & the GRW Team →

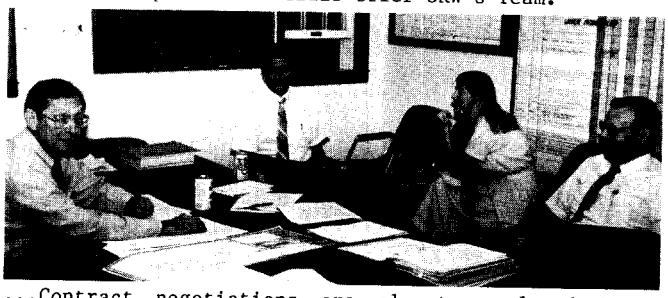
SEVERAL PLANNING REVIEW MEETINGS WERE HELD AT THE BASE

...Base Commander Colonel Sam Woodrow welcomes GRW's Dr. Bill Qualls to the 911 TAG.



...Future development alternatives are debated.

...Base and public officials brief GRW's Team.



...Contract negotiations are almost completed by Dr. Qualls, Base Contracting Officer Dan Lucci, HQs/AFRES Planner Debi Howard-martinjak, and Base Civil Engineer Larry LeMar.

...Computer map review by Debi Howard-martinjak, HQs/AFRES Engineer Ed Hilliard, and GRW Team Member Helm Roberts.

HEADQUARTERS - AIR FORCE RESERVE
Robins AFB, Georgia

..Major General Roger P. Scheer, Commander, AFRES

..Colonel Virgil Batten, Chief of Staff

..Colonel George Romero, Director of Civil Engineering

..Debi Howard-martinjak, Community Planner

FOURTEENTH AIR FORCE
HQs, Dobbins AFB, Georgia

..Major General James E. McAdoo, Commander

HQs, 911th TAG
GPIA, Pittsburgh, Pennsylvania

..Colonel Samuel G. Woodrow, USAFR Commander

..Larry D. LeMar, Base Civil Engineer

..Daniel C. Lucci, Base Contracting Officer

CONTRACT INFORMATION

..Contract No.: F36629-86-C-0016
..Con. App. Date: 11 September 1986
..Notice To Proceed: 25 September 1986
..Date To Use On Plan: May 1988
..Date Of Report Printing: August 1988

GRW MASTER PLANNING TEAM

..Wm. H. Qualls, Ph.D., AICP, Principal-In-Charge
..Ben D. Fister, PE, Project Engineer
..G. Michael Ritchie, PE, Photo./Mapping
..Harvey Helm, PE, Aviation Engineer
..Steve McKinley, PE, Hydrology/Sanitary
..V.L. "Gingy" Qualls, Planner
..Rick Wolf, EIT
..Forrest Godby, Computer Mapping
..Carla Leach, Secretary
..Helm Roberts, Architect/Landscape Architect
..Dove Temple, Electrical Engineer, CDT
..Dave Miller, Communications Engineer, CAE
..Harold Leggett, Transportation Engineer, AMS
..Tom Brence, Photo Lab
..Bill Mitchell, Photogrammetry
..Ed Rinehart, Field Surveys

GRW Engineers, Inc.
Lexington, KY 40503

801 Corporate Dr.
GRW #1538

FOURTEENTH AIR FORCE
HEADQUARTERS
DOBBINS AFB, GEORGIA

HEADQUARTERS
911th TACTICAL AIRLIFT GROUP (AFRES)
GREATER PITTSBURGH INTERNATIONAL AIRPORT
PITTSBURGH, PENNSYLVANIA

GRW ENGINEERS, INC
LEXINGTON, KENTUCKY

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

D

EXHIBIT D.

THE 911TH AIRLIFT WING: ORGANIZATION AND OPERATION

WESTERN PENNSYLVANIA COALITION

DEFENSE OF THE 911TH AIRLIFT WING
AND
PITTSBURGH IAP AIR RESERVE STATION

THE 911TH AIRLIFT WING: ORGANIZATION AND OPERATIONS

I. SCOPE. The following narrative provides a brief description of the 911th Airlift Wing, its major organizations and a description of operations.

II. THE AIR FORCE RESERVE.

II.A. AIR FORCE RESERVE MISSION. Reserve units continually prepare and train forces to fully mobilize within seventy-two hours. Modern Reserve training and preparation is conducted not only on training weekends, but on a daily basis. In addition to the Unit's constant ability to mobilize forces, a regular participation in peacetime and real-world contingency operations is sustained through the volunteer force. The deployment of many Air Force Reserve volunteer personnel during Operation Desert Shield is clear evidence of the ability of Air Force Reserve to respond to the needs of the Air Force, at any time, without the requirement to activate units or personnel.

II.B. THE AIR FORCE RESERVE ROLE IN TOTAL FORCE (AIRLIFT). The Air Reserve Component (ARC), including the Air Force Reserve and Air National Guard maintain 40% of the Air Force total airlift capacity and 25% of the Air Force tactical airlift strength (C-130s).

II.C. THE AIR FORCE RESERVIST. Air Force Reservists may be found world-wide, supporting active-duty forces on a daily basis. From strategic airlift to supporting United Nations Forces in Bosnia, the Air Force relies on the dedication and experience of their Reserve forces to sustain ongoing operations.

III. THE 911TH AIRLIFT WING AND THE PITTSBURGH IAP ARS INSTALLATION. The 911th Airlift Wing is an organization of citizen patriots comprised of 1300 Reservists and approximately 369 civilian employees. In a Reserve organization a portion of the civilian work force are Air Reserve Technicians (ARTs). These ART employees must maintain a Reserve billet as a condition of employment. These ARTs combined with the straight civilian work force form a full-time cadre, maintain the base, administration and operations. This is the core around which the Reserve mission thrives.

III.A. THE 911TH AIRLIFT WING MISSION. The mission of the 911th Airlift Wing is to train Reservists and provide airlift of airborne forces, their equipment/supplies, and deliver these forces and materials by airdrop or airland. The 911th also provides intra-theater aeromedical evacuation; participates in joint services exercises; supports active duty forces in training; operates facilities supporting the Pennsylvania Air National Guard; and, assists government, military and presidential air traffic to the region.

III.B. THE 911TH AIRLIFT WING VISION. The leadership of the 911th developed a mission statement that reflects the performance and capability of their people. Their vision: *"World's Most Respected Airlift Organization"*. The objective of this vision is to continually increase the military value of the organization. Subsequent examples will demonstrate that their vision is truly attainable.

III.C. THE 911TH AIRLIFT WING DEFINITION OF READINESS. Major Commands and Headquarters Air Force Reserve direct a minimum standard of objective readiness. This state of objective readiness is attained by completing training requirements, passing inspections, etc.

III.C.1. The 911th Command Steering Group has elevated their concept of readiness. The objective is to use the budgeted training dollars and Reservists' abundant availability to intensify and elevate the 911th concept of *Readiness.* Unit initiated joint training exercises are the centerpiece of this concept. The integration of 99th Army Reserve Command (ARCOM) forces and civilian agencies into these periodic exercises is mutually beneficial. It give both sides of the fence an opportunity to train under more realistic combat training conditions.

III.C.2. LIST OF RECENT 911TH UNIT INITIATED EXERCISES:

- PITT TRIBUTE: Conducted in June 1993 at Mingo Drop Zone. 17 aircraft from six participating units, saluting military veterans on the anniversary of D-Day, airdropping troops and supplies.

- PITT PROVIDE: Conducted in January 1993 at Franklin, PA. A humanitarian contingency exercise providing the airlift of troops and equipment; a joint exercise with the 99th ARCOM.

- PATRIOT LIFE: Conducted in October 1992 at 5 area locations. A mass casualty exercise involving 225 personnel and 6 different aircraft types from the Army National Guard, Reserve and Active Duty Air Force. A four echelon aeromedical evacuation exercise culminating with an interface with the local medical community.

- NATIONAL DISASTER MEDICAL SYSTEM (NDMS) EXERCISE: Conducted in July 1993 involving the Pittsburgh VA Hospital, ten ambulance services and five local hospitals.

- PATRIOT PITT: Conducted in October 1993. An Air Reserve exercise conducted at Pittsburgh IAP ARS involving 800 personnel, 8 C-130s and 5 C-141s. Seventeen squadrons participated in addition to a Combat Control Team and an Airlift Control Element.

- PATRIOT STEEL 94-01: Conducted at Alpena, MI; Fort Drum, NY; Camp McCoy, WI; Selfridge ARS, MI and Volk Field, WI. Numerous aircraft involved, deploying from Pittsburgh IAP ARS, including C-130s, C-141s, KC-135s and a C-5. Over 1200 personnel participated in this exercise. Joint training included Royal Canadian Air Force personnel, U. S. Coast Guard, Army Special Forces, 10th Mountain Division, aeromedical evacuation units from several locations, two combat control teams, Minneapolis fire fighters and a Security Police squadron from eastern Pennsylvania. This was an intense, large scale exercise designed to test the *Readiness* of the 911th. This exercise was a benchmark among unit initiated exercises.

- PITT LIFE 93: A medical exercise involving 300 personnel, 5 squadrons and other military units, operating jointly with Army Aviation.

- PITT PROVIDE II: Conducted in April 1995. An exercise involving 8 C-130 aircraft and approximately 250 personnel. A joint exercise between the 758th Airlift Squadron and the 99th ARCOM.

These exercises are not directed by the Command. They are planned using the considerable initiative and energy of the organization. More important, these exercises multiply the effectiveness of taxpayer dollars, leveraging realistic training and focusing on joint inter-service operability. The 911th has performed under this credo long before it became a popular term within the military.

III.C.3. The 32nd Aerial Port squadron of the 911th Airlift Wing has initiated a joint training effort called, "Mutual Endeavor". This training plan involves the 1004th Supply Company, the 463rd Engineering Battalion, Company B, and the 319th Engineering Battalion. The 911th is proud of this initiative which reflects the 911th AW leadership philosophy of inter-service cooperation. "Mutual Endeavor" is representative of the Wing's past performance and indicative of their future plans for quality training.

III.D. MISSION SUPPORT. Pursuit of the Wing vision would be pointless without the availability of experienced and dedicated personnel. The Western Pennsylvania area is a fertile recruiting ground, providing the key link in the Unit's chain of successes. Mission Support provides the full range of military personnel, information management, and family support services to members assigned to the 911th Airlift Wing.

- 50% of the 911th Reservists reside within 50 miles of the Base.

- The 911th has exceeded 100% total end-strength manning for FY 93 and FY 94, significantly greater than the AFRES average.

III.D.1. Military Personnel provides assistance from initial recruitment, record and benefit establishment through promotion, transfer, separation or retirement.

III.D.1.a. 911th Military Personnel won the prestigious Gerrit D. Foster, Jr. Outstanding Achievement Award in 1991 and 1992.

III.D.2. Information Management provides information management systems, services, training, and resources.

III.D.3. Family Support provides information and services to maintain a quality and flexible Air Force Reserve Family Readiness Program.

III.E. LOGISTICS. The Logistics Group has overall responsibility for the maintenance of aircraft, supplying the entire wing with the materials for daily operations, transportation of these materials, and contracting for services and goods.

III.E.1. All aircraft operations away from Pittsburgh IAP ARS are supported by the maintenance division of the 911th Logistics Group. The ability of the 911th maintenance personnel to sustain the repair and commissioning of aircraft is essential to the outstanding performance of the 911th Airlift Wing.

III.E.2. The 911th Logistics group maintains an enviably low abort rate of only 2.4% with a scheduling effectiveness rate of 94.5%.

III.E.3. The fact that they are currently maintaining 10 aircraft with a force designed for 8 aircraft is testament to their skill and capability.

III.F. BASE SUPPORT ORGANIZATIONS.

III.F.1. BASE CIVIL ENGINEERING. At the heart of every installation is the Base Civil Engineering organization. Work by the Civil Engineers affect not only the base, but the community at large.

III.F.1.a. The recent completion of an operational aircraft de-icing pad (which recycles contaminant fluids) is a project that directly impacts the community. The de-icing pad is one of only three in the entire Air Force, and the only one in the Air Force Reserve. Pittsburgh IAP ARS is proud to be a part of maintaining the environment.

III.F.1.b. The most recent construction project of the 911th is a joint military and community effort. The construction of a 1.5 million gallon water tank was approved prior to BRAC notification.

III.F.1.c. Projected Military Construction Projects (MCP/P341) for fiscal year 1995 and beyond total an estimated $4.414 million dollars.

III.F.1.d. Additional initiatives have been taken to assure the full capacity and capability of the installation is developed. The Pittsburgh IAP ARS is one of only two Air Reserve installations with the ramp capacity to support all category aircraft--from F-16s to the C-5 and C-17.

III.F.2 BASE CONSOLIDATED COMMUNICATIONS. Another support function, the Consolidated Communications Center, provides vital services that extend well beyond this installation. The Communications Center serves more than 50 federal and community facilities, including the Pennsylvania Air National Guard.

III.F.2.a. The Communications Center was a $15.1 million dollar investment. The system complies with the Information Highway 2000 initiative and comprises a Local Area Network consisting of state of the art computer and communications equipment. The Pittsburgh IAP ARS communications system is the only operational fiber optics network among Air Reserve installations.

III.F.2.b. The 911th Airlift Wing employs a T-Net system which affords teleconferencing and training with audio and video interaction with unlimited satellite time to/from any host site. The system greatly reduces the cost of personnel travel to other training locations.

III.F.3. BASE SERVICES. Pittsburgh IAP ARS supports the Pennsylvania Air National Guard and the Military Entrance Processing Service (MEPS), in addition to the 911th Airlift Wing. Pittsburgh provides billeting, a base gymnasium, base exchange and a consolidated open mess. Base Services hosts the Air National Guard for 2,366 lodging nights and MEPPS for 7,138 lodging nights. Pittsburgh is the only one in the Air Force Reserve to operate at a profit.

III.F.4. BASE SUPPLY. Base Supply has been recognized as the best in the Air Force. They were awarded the Air Force Supply Effectiveness Award in 1993 and have been nominated for this award for 3 of the past 4 years. The Fuel section won the Best Fuels Operation in 1994.

III.G. COMPTROLLER. As custodians of taxpayer dollars, the 911th Comptroller accurately manages and tracks all funds. The Pittsburgh IAP ARS Base Operating Support (BOS) for fiscal year 1993 was $10.16 million with an associated manpower figure of 121 personnel.

III.G.1. A portion of the operating budget is set aside to reimburse the County of Allegheny $20,000.00 dollars per year. The monies leverage complete Crash, Fire and Rescue services, structural fire protection and paramedic ambulance service. This arrangement with the County is part of the Base lease agreement with Allegheny County.

III.G.2. The Reserve Personnel Appropriations (RPA) funding for FY 93 and FY 94 respectively was $7.7 million and $8.7 million, indicative of a high level of Reserve participation.

III.H. BASE TRANSPORTATION. The Transportation section completes maintenance on all vehicles assigned to the 911th Airlift Wing. The vehicles in-commission rate is 96.4 %. Transportation is also responsible for materials that are shipped off base. In comparison to other installations, the 911th maintains a relative low number of vehicles. The 171st Air Refueling Wing and the 911th share equipment during surge periods, obviating the need to maintain large inventories.

III.I. OPERATIONS. The 911th Airlift Wing's Operations Group is composed of four units. The 758th Tactical Airlift Squadron, the 911th Aeromedical Evacuation Squadron, the 32nd Aerial Port Squadron and the 911th Operations Support Flight. All of these organizations are integrated to provide complete combat training and wartime readiness. The 758th Airlift Squadron has won the prestigious General Claire B. Chennault Trophy.

III.J. INSTALLATION CAPACITY. The capacity of this compact 115 acre installation has been proven time and again. Many exercises have graphically demonstrated this capacity, both in the ability to absorb personnel, but aircraft and equipment.

III.K. RECENT ACTIVITIES. In addition to the numerous unit initiated exercises, the 911th has participated in a wide variety of activities in support of the Air Force since their outstanding contribution to the Desert Shield/Desert Storm Campaign.

III.K.1. LIST OF RECENT MILITARY ACTIVITY:

- OPERATION SOUTHERN WATCH (SAUDI ARABIA AND KUWAIT) 1993: From an operating base in Dhahran, Saudi Arabia, 43 personnel involved in an airlift support rotation.

- PHOENIX OAK (PANAMA): 60 personnel and three aircraft in support of Southern Command at Howard AB, Panama.

- OPERATION RESTORE HOPE (SOMALIA): From the operating base in Rhein-Main, Germany, support airlift operations.

- PHOENIX JACKAL (SOUTHWEST ASIA): 911th Aeromedical Evacuation crews on volunteer standby in support of Central Command (CENTCOM).

- OPERATION UPHOLD DEMOCRACY (HAITI): Wing forces were mobilized on a volunteer basis in support of this operation. Security Police, Aircrews, Aerial Port teams and Aeromedical Evacuation crews were on standby and aircraft were deployed to Haiti.

- CORONET OAK (PANAMA): C-130 aircraft and more than 100 aircrew, maintenance and support personnel were deployed to Howard AB, Panama in support of Southern Command.

- OPERATION PROVIDE COMFORT (TURKEY): From August to October 1994, more than 50 personnel deployed to Incirlik AB, Turkey, airlifting supplies between sites in Turkey and Europe to aid Kurdish people in Northern Iraq.

- OPERATION PROVIDE PROMISE (BOSNIA): From February to July 1993 and November to January 1994, Wing forces forming an Air Reserve

Component (ARC) task force operating out of Rhein-Main AB, Germany, airdropping and airlanding food, medicine and supplies to Sarajevo and besieged villages. The 911th was the first Reserve unit to airdrop into Bosnia. The 911th was the first Reserve unit to airdrop food (MREs) using the innovative TRIAD airdrop procedure. This operation was supported by over 150 911th aircrew, maintenance and support personnel.

- EXERCISE THUNDER X (HAWAII): Two C-130s, aircrew and support personnel flying 33 missions in support of the U. S. Army.

- EXERCISE JOINT EFFORT: In March 1992 the 911th Airlift Wing hosted a mass casualty exercise involving 3 C-141 and C-130s and 300 personnel representing 10 units from the Air Force Reserve, U. S. Army and a Combat Control Team.

III.K.2. LIST OF RECENT HUMANITARIAN AND JOINT CIVILIAN ACTIVITY.

- VADEX 94: September 1994, a disaster exercise staged on the Pittsburgh IAP ARS installation. The Veterans Administration and 1st Army were supported by 911th Airlift Wing C-130 aircraft and aeromedical and support personnel.

- HURRICANE ANDREW RELIEF (HOMESTEAD, FLORIDA): During August and September 1992 the 911th Airlift Wing responded with 132 sorties, providing 30% of the total Air Force Reserve C-130 airlift, flying nearly twice that of any other unit. Maintenance and support personnel (including a team of Security Police deployed to Homestead) worked 18 hour days in support of this humanitarian effort.

- DANTE II (ANCHORAGE, ALASKA): In June, 1994 the 911th responded to a request from NASA to transport sophisticated robotics to a volcanic site in Alaska.

- UNIT-INITIATED EXERCISES (PITTSBURGH IAP ARS): Numerous exercises with the local medical community and disaster agencies as described in I.B.3.b.

- PRESIDENTIAL SUPPORT (PITTSBURGH IAP ARS): Frequent visits by the President and other dignitaries are expertly supported by the 911th Consolidated Communications, 911th Security Police and support personnel.

- USAIR FLIGHT 427 CRASH (PITTSBURGH, PA): In August 1994, the 911th responded immediately with 500 volunteers, equipment, supplies and facilities. This effort was sustained for nearly a month, 24 hours a day.

III.L. FUTURE EXERCISES. The 911th Airlift Wing is continuing to plan two additional joint forces exercises. This activity is in addition to a demanding training schedule and the support of peacetime and contingency missions whenever the call for volunteers is requested.

- PITT PROVIDE III: Scheduled for August 1995, this exercise expands the scope of activities associated with Patriot Pitt II. Again, the focus of this exercise will be inter-service operability with the 99th ARCOM. A variety of tactical scenarios are planned, including chemical warfare exercises.

- PATRIOT STEEL 95-01: Scheduled for October 1995, this exercise will be based at Pittsburgh IAP ARS for cost saving purposes. Nevertheless, the exercise will run for 7-10 days, with employment operations conducted among 7 forward locations within 150 miles of the Pittsburgh Airport. The focus again will be on intense, realistic training for 911th Reservists and personnel from all services and other Air Force units.

III.M. READINESS AT WORLD CLASS LEVELS. The 911th Airlift Wing strives to be the best. The reason for this extraordinary effort is not for reward or recognition. The 911th feels that intense, quality training is not only the best use of valuable resources, but assures the survivability, versatility and adaptability of their personnel should they be called to perform any contingency or combat mission in the world.

III.M.1. The 911th recognized the potential threat and difficulty of the operation in Bosnia. The Unit took the initiative to train their crews prior to deployment in the exact airfield approach procedure, by simulating Johnstown Airport as Sarajevo. This extra step assures the Unit Commanders

that they have used all available resources and time to properly prepare their crews.

III.M.2. On a continuing basis, the 758th Airlift Squadron, of the 911th Airlift Wing, optimizes the utilization of the plentiful and challenging airspace in their local flying area. Afforded the luxury of training in designated mountainous areas or over difficult, non-descript farmland, the best possible training opportunities are made available to their crews.

III.M.3. The development of a large scale drop zone (Mingo DZ), just 25 air miles from Pittsburgh, has given the 911th even greater versatility for airdrop training. Mingo DZ, in addition to Starveggi DZ, provide cost effective tactical training benefits for the Unit. In that driving time and flight time to the Drop Zones is minimal, the training can be supported quite cost effectively.

III.M.4. Although Pittsburgh IAP ARS is associated with an urban area, its location in Southwestern Allegheny County makes the airfield sufficiently remote for military training. Aircrews can begin their tactical low level training almost immediately after takeoff without encroaching on built-up urban populations. The 758th Airlift Squadron Tacticians take full advantage of this unique flying area to maximize aircrew training.

III.N. SUMMARY. The 911th Airlift Wing and Pittsburgh IAP ARS clearly demonstrate capability and capacity. The reliance on the personnel of the Wing is also clear. Dedication to mission and country are typical of military organizations. However, the spirit of the men and women of the 911th is special. They have proven their military value. Three examples tell about the Wing and the installation:

- The 911th had the first airlift crews in country during Operation Desert Storm. Furthermore, the list of volunteers filled the schedule for months. The 911th demonstrated it's ability to assume it's responsibility in the Total Force concept.

- Before Hurricane Andrew struck Southeast Florida, the 911th leadership, on it's own initiative, convened a crisis action team, prepared airplanes and solicited volunteer aircrew, maintenance, medical teams and supplies

and contacted relief agencies in the Pittsburgh area, anticipating the impending disaster. The 911th was prepared and ready to deploy as soon as the devastation to Homestead was evident. The Battle Staff was manned 24 hours a day as crews flew long missions, sustaining support of FEMA.

- Patriot Steel 94-01 was an exercise of remarkable intensity and scope. From the Coast Guard to Canadian Forces, interservice operability was the key theme. For a wing the size of the 911th, the scale and quality of the exercise was an outstanding achievement. Whether measured in terms of sorties, tonnage/personnel airdropped or quality of the scenario, the exercise is a true representation of the effort this Wing makes to fulfill it's vision, *"World's Most Respected Airlift Organization"*.

III.O. 911TH AIRLIFT WING MOTTO: "WHATEVER IT TAKES". The crash of USAIR 427 gave a poignant reminder of the quality of the 911th and the capacity of the installation. While supporting civil disaster agencies, the FAA and the NTSB at the crash site, the 911th was supporting morgue operations in three of it's hangars, while maintaining normal base operations and training. Additionally, the 911th was posturing to support Operation Uphold Democracy in Haiti. Exploiting the talent of it's people and the compact efficiency of it's infrastructure and facilities, the 911th performed in an outstanding manner, giving credence to it's motto, "Whatever It Takes".

As you heard Colonel Spencer so correctly state, the Air Force Reserve presently enjoys military benefits and special facilities at the Pittsburgh International Airport Air Reserve Station that do not now exist and cannot be duplicated elsewhere without enormous military construction cost. This duplication cost has not been considered during Air Force analysis.

Our research shows flaws as Charles Holsworth is now going to show you that the original analysis has resulted in serious, substantial deviations from the Department of Defense selection criteria and force structure plan. Our analysis further shows that the 911th Airlift Wing is the finest Air Reserve facility in the command today.

V. WESTERN PENNSYLVANIA COALITION PRESENTATION: MR. CHARLES L. HOLSWORTH, PRESIDENT HOLSWORTH AND ASSOCIATES; PRESIDENT, SOUTH PARK CHAMBER OF COMMERCE.

V.A. OVERVIEW. 24 years of experience in the Air Force from Vietnam to Haitian relief has enabled me to see many facilities, land on many runways, at a variety of airports, military and civilian. I have seen good facilities, bad facilities and we are going to tell you about a truly outstanding facility.

The Department of Defense recommends that the Pittsburgh International Airport Air Reserve Station should be closed. Congressman Mascara has summarized why it should not be.

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

E

EXHIBIT E.

911TH AIRLIFT WING PRELIMINARY AIRSPACE
ENVIRONMENTAL ANALYSIS REPORT

HQ AFRES/CEV/DOTSA

Preliminary

Airspace Environmental Analysis Report

for

911 AG

Greater Pittsburgh IAP (ARS), Pennsylvania

September 30, 1994

SPECTRUM
SCIENCES & SOFTWARE, INC.
242 Vicki Leigh Road
Fort Walton Beach, Florida
(904) 862-3031

Technical Support in Environmental Review, Analysis, and Documentation of AFRES Airspace Utilization
(F49650-90-D5001)
Delivery Order 5046.006

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON SR-815

1. Route Description

1.1 Area Location

The general location of SR-815 is shown in Figure 1.

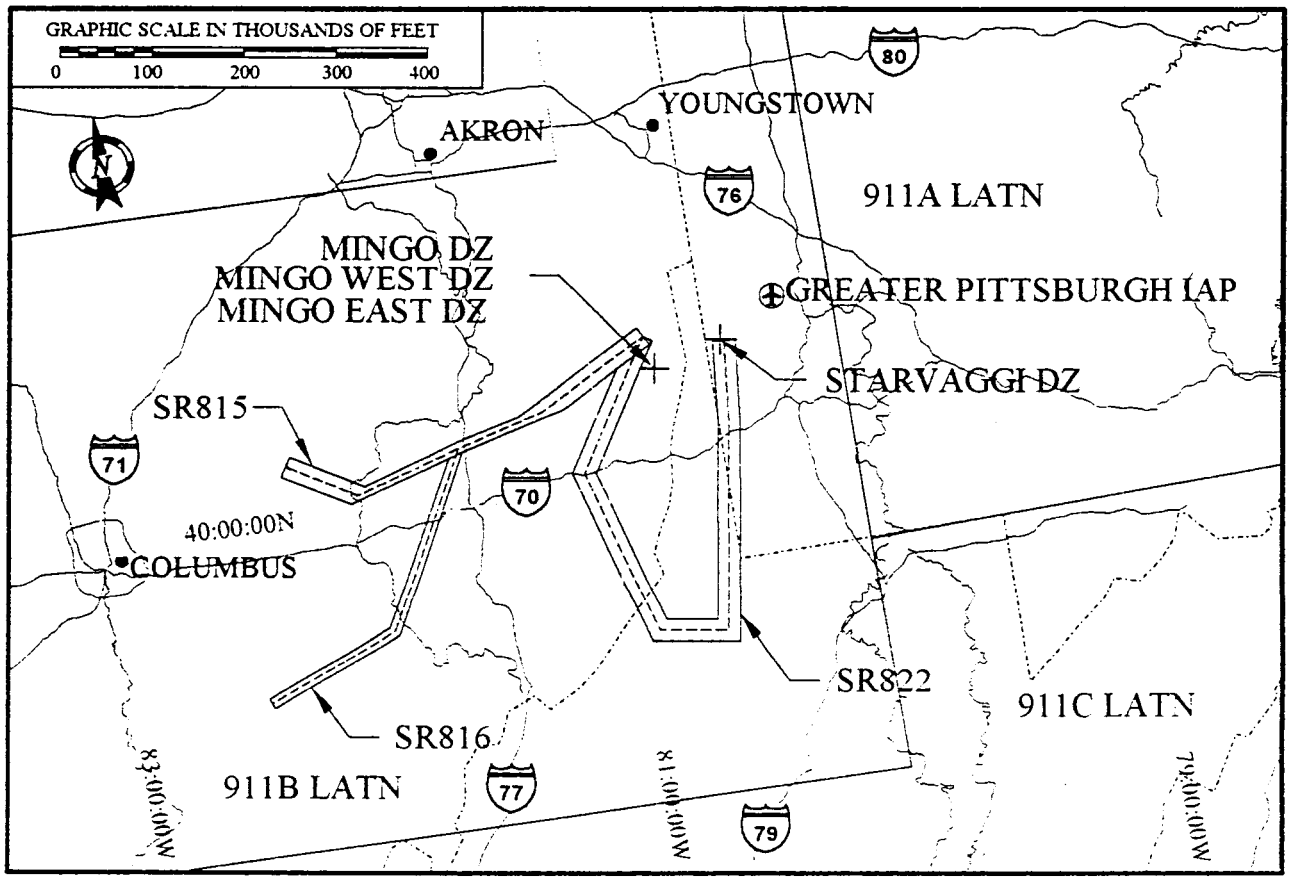


Figure 1 Location of SR 815

1.2 Detailed Description

The detailed description of SR-815 is summarized in Table 1.

Table 1. Description of Route SR-815

To Point	Function	Lat/Lon	Altitude	Width Left/Right (NM)
A	Primary Entry	40°26'N 80°46'W	N/A	N/A
B		40°15'N 81°13'W	500' AGL (min.)	2/2
C		40°11'N 81°34'W	500' AGL (min.)	1/1
D		40°05'N 81°59'W	500' AGL (min.)	1/1
E	Primary Exit	40°12'N 82°15'W	1000' AGL (min.)	2/2
Remarks:				
Hours of Operation: 2300-0300 Z Mon-Fri; 1300-2100 Z Sat-Sun.				

1.3 Relationship to Other Airspace

The relationship between SR-815 and other 911th AG scheduled airspace is shown in Figure 1.

2. Current Route Utilization

Operational data provided by the scheduling unit are summarized in Table 2. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 2. Utilization data for Route SR-815

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
No current utilization				
Other Aircraft				
No current utilization				

Information provided by the scheduling unit indicated that this route is no longer used and should be deleted.

3. Preliminary Environmental Analysis

3.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this route has been addressed in the following documents:

EA	Low Altitude Route Experimental Training Routes (LARXTR) LARXTR 815, 816, 817, 818	Jun 76

The original assessment was for operations by C-123 aircraft. The route has not been assessed for operations by the currently assigned C-130 aircraft.

3.2 Analysis of Current Operations

As indicated in Section 2, the scheduling unit indicated that this route is no longer used and should be deleted.

4. Recommendations

Based on the information provided by the scheduling unit, action should be initiated to delete this route from Flight Information Publication (FLIP) AP/1B.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON SR-816

5. Route Description

5.1 Area Location

The general location of SR-816 is shown in Figure 2.

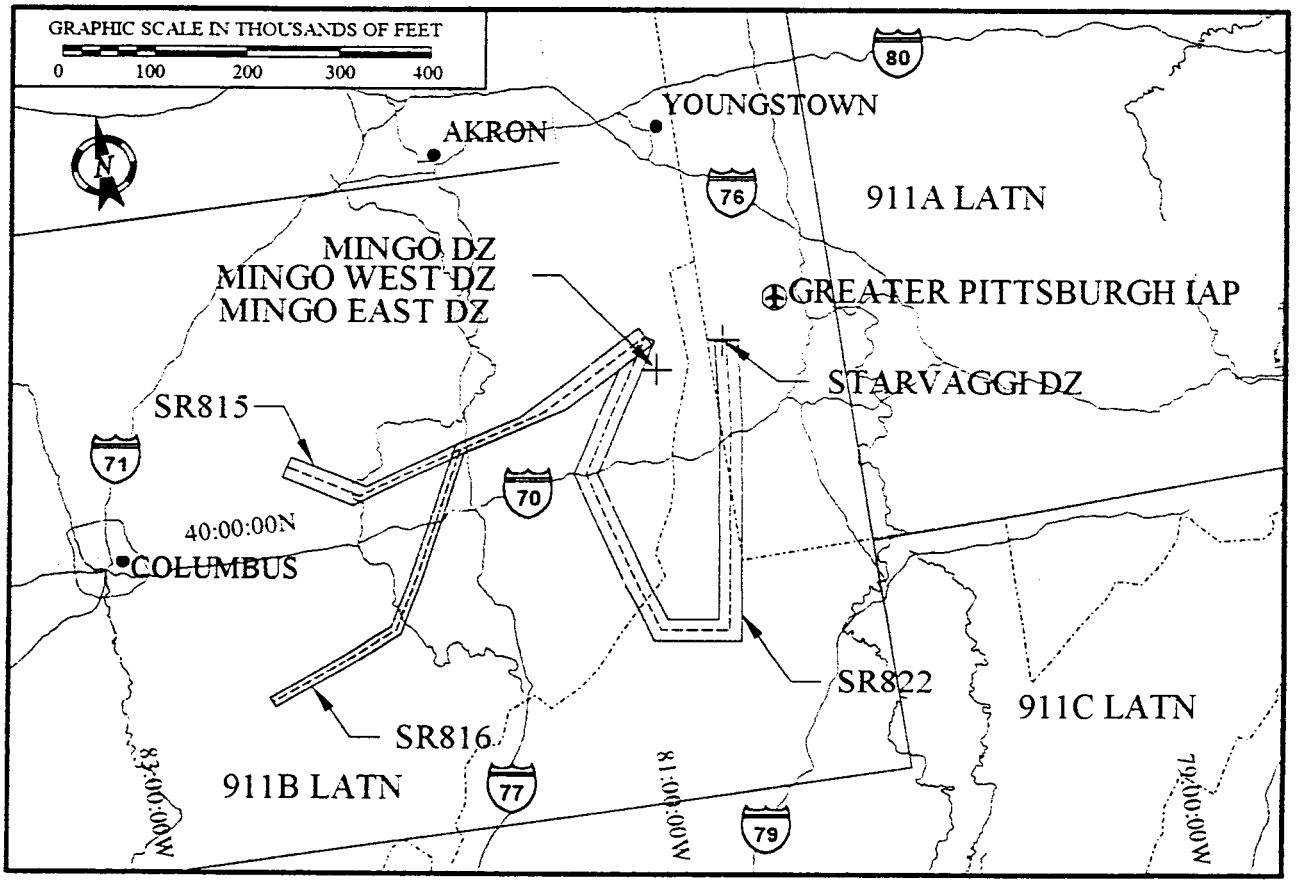


Figure 2 Location of SR 816

5.2 Detailed Description

The detailed description of SR-816 is summarized in Table 3.

Table 3. Description of Route SR-816

To Point	Function	Lat/Lon	Altitude	Width Left/Right (NM)
A	Primary Entry	40°26'N 80°46'W	N/A	N/A
B		40°15'N 81°13'W	500' AGL (min.)	2/2
C		40°11'N 81°34'W	500' AGL (min.)	1/1
D		39°39'N 81°55'W	500' AGL (min.)	1/1
E	Primary Exit	39°29'N 82°26'W	500' AGL (min.)	1/1
Remarks: Hours of Operation: 2300-0300 Z Mon-Fri; 1300-2100 Z Sat-Sun.				

5.3 Relationship to Other Airspace

The relationship between SR-816 and other 911th AG scheduled airspace is shown in Figure 2.

6. Current Route Utilization

Operational data provided by the scheduling unit are summarized in Table 4. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 4. Utilization data for Route SR-816

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
No current utilization				
Other Aircraft				
No current utilization				

Information provided by the scheduling unit indicates that this route is no longer used and should be deleted.

7. Preliminary Environmental Analysis

7.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this route has been addressed in the following documents:

EA	Low Altitude Route Experimental Training Routes (LARXTR) LARXTR 815, 816, 817, 818	Jun 76

The original assessment was for operations by C-123 aircraft. The route has not been assessed for operations by the currently assigned C-130 aircraft.

7.2 Analysis of Current Operations

As indicated in Section 2, the scheduling unit indicated that this route is no longer used and should be deleted.

8. Recommendations

Based on the information provided by the scheduling unit, action should be initiated to delete this route from Flight Information Publication (FLIP) AP/1B.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON SR-822

9. Route Description

9.1 Area Location

The general location of SR-822 is shown in Figure 3.

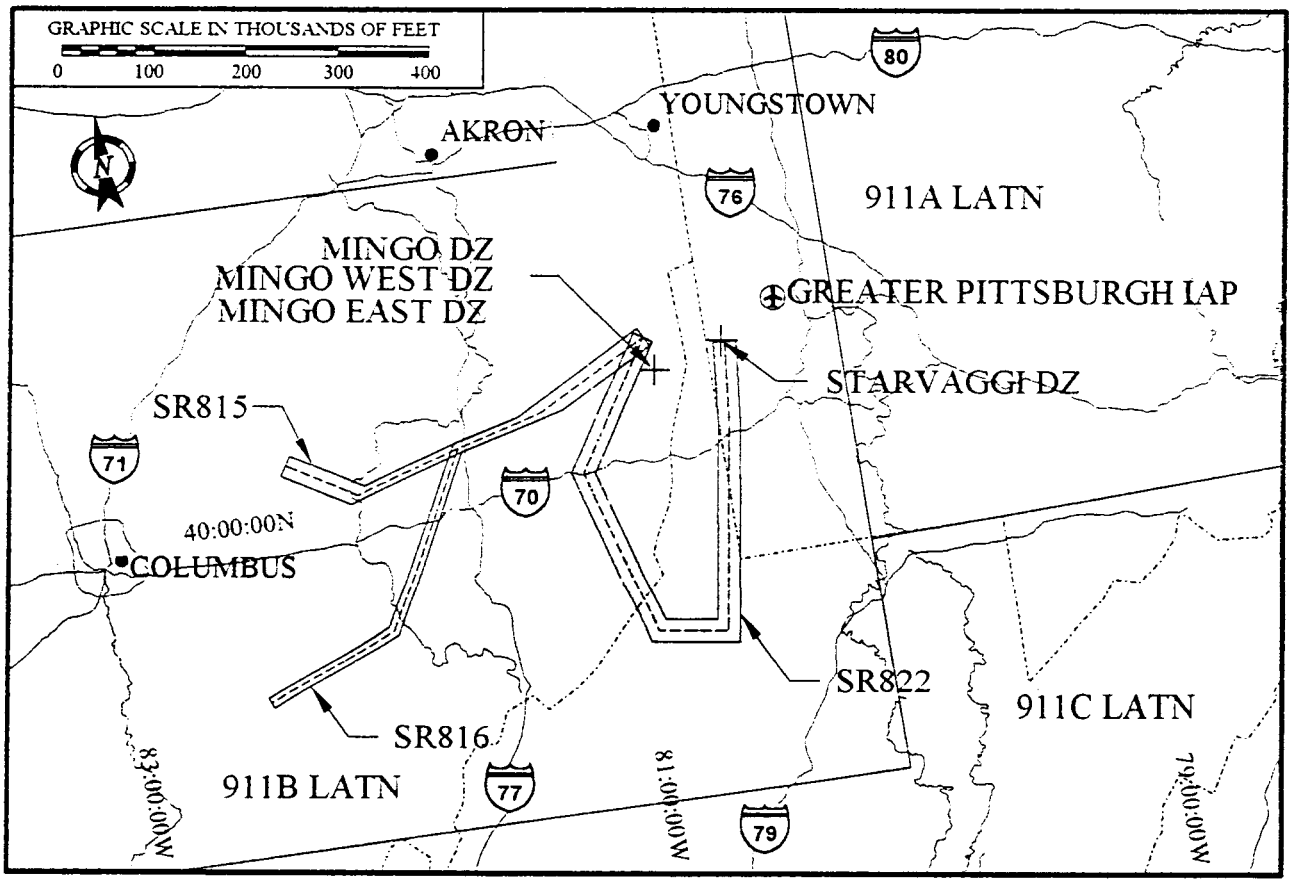


Figure 3 Location of SR 822

9.2 Detailed Description

The detailed description of SR-822 is summarized in Table 5.

Table 5. Description of Route SR-822

To Point	Function	Lat/Lon	Altitude	Width Left/Right (NM)
A	Primary Entry	40°26'N 80°46'W	N/A	N/A
B		40°03'N 81°05'W	300' AGL (min.)	2.2
C		39°32'N 80°53'W	300' AGL (min.)	2.2
D		39°30'N 80°37'W	300' AGL (min.) *	2.2
E		40°08'N 80°29'W	300' AGL (min.)	2.2
F	Primary Exit	40°23'N 80°27'W	300' AGL (min.)	2.2

Remarks: * Minimum altitude between C and D is 1000' AGL from 1 Apr thru 30 Jun inclusive (Wild Turkey breeding and nesting season).

Hours of Operation: 1000-0300 Z Mon-Sat.

9.3 Relationship to Other Airspace

The relationship between SR-822 and other 911th AG scheduled airspace is shown in Figure 3. As indicated in this figure, the STARVAGGI DZ is located at the termination of SR-822.

10. Current Route Utilization

Operational data provided by the scheduling unit are summarized in Table 6. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 6. Utilization data for Route SR-822

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130H	4	100% RPM	210 KIAS	300
Other Aircraft				
C-130 other models	1	100% RPM	210 KIAS	300

11. Preliminary Environmental Analysis

11.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this route has been addressed in the following documents:

EA	Low Altitude Route Experimental Training Routes (XSR) XSR 819, 822	16 Jan 79
AF Form 814	Low Altitude Route Training Route (SR) SR 822	24 Sep 80
AF Form 815	Low Altitude Route Training Route (SR) SR 822	29 Sep 80
FONSI	Training Route SR 822	14 Oct 80
EA	Low Altitude Route Training Route (SR) SR 822	21 Aug 80

The original EA was for operations by C-123 aircraft at minimum altitudes of 500 feet AGL and a projected utilization rate of approximately 15 sorties per month. Noise levels were not specifically estimated; the EA notes that it would take operations by more than the assigned number of C-123 aircraft to produce a day-night average sound level (DNL) greater than 65 dB. The August 1980 EA was for operations by C-130 aircraft and projected a utilization rate of approximately 20 sorties per month. A DNL of 52.9 dB was projected on the basis of an average of 12 to 15 sorties per week with an average of 8 to 9 takeoffs and landings per sortie. It appears that this calculation is for operations at the base rather than on the route.

11.2 Analysis of Current Operations

11.2.1 Methodology

To provide an estimate of the noise impacts associated with the current level of operations, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

To evaluate the potential for significant impacts associated with current operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the operations were conducted at low altitude and concentrated around the center of the route (standard deviation of 0.5 statute miles). With the exception of the A-10, all aircraft were assumed to operate at 300 feet AGL (or the minimum altitude specified, if higher than 300' AGL). A-10 aircraft were assumed to operate at 100 feet AGL (or the minimum altitude specified, if higher than 100' AGL) Because operations normally vary in altitude and are more widely distributed across the route width, this approach tends to overestimate the expected levels. If the highest predicted value (the value at the route centerline) exceeds 65 dB, more detailed investigation is considered warranted.

11.2.2 Potential Effects on Humans

11.2.2.1 Impacts of Route Operations

Using the methodology described above, preliminary analysis of the current operations on SR-822 indicated that the L_{dnmr} at the route centerline would be less than 40 dB. Evaluation of operations at the level projected in the 1980 EA (20 sorties per month) indicated that levels would remain below 40 dB even if the number of sorties increased to the level originally assessed.

It should be noted that individuals exposed to noise resulting from military aircraft operations on this route may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of

complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints. Known noise sensitive areas have been identified in the route charting and additional areas may be included on the basis of future complaints.

11.2.2.2 Potential Cumulative Impacts

As indicated in Section 9.3, the STARVAGGI DZ is located at the termination of SR-822. Analysis of operations on this drop zone indicates that the maximum L_{dnmr} at the center of the drop zone would be approximately 45 dB.

Because the assumptions used in predicting the impacts of operations in each airspace area tend to overpredict the noise levels, the actual levels are likely to be lower.

Because the predicted L_{dnmr} values are below 65 dB, no further analysis was considered necessary.

11.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources.

11.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

12. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Operations personnel should periodically monitor developments within the route boundaries to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON MINGO CIRCULAR DZ

13. Drop Zone Description

13.1 Area Location

The general location of MINGO CIRCULAR DZ is shown in Figure 4.

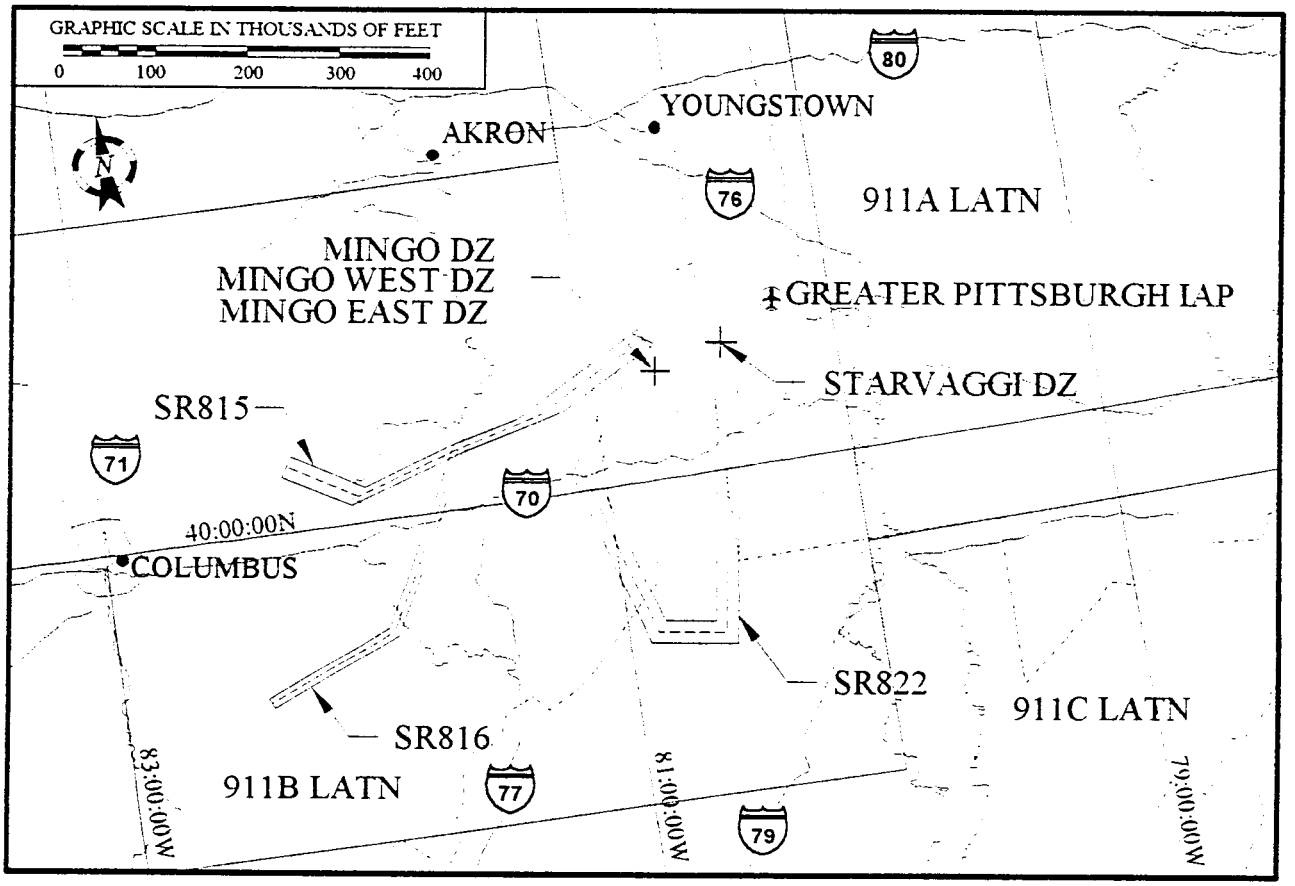


Figure 4 Location of Mingo Circular Drop Zone

13.2 Detailed Description

The detailed description of MINGO CIRCULAR DZ is summarized in Table 7.

Table 7. Description of MINGO CIRCULAR DZ

Type Airspace	Drop Zone (DZ)
Name	Mingo Circular Drop Zone
Description	Located near Bloomingdale, Ohio Circular drop zone: Center of mass: 40°19'48.4"N, 80°44'31.5"W UTM Coordinates: 21916422 Radius: 700 yd. Random approach
Altitudes	Minimum 400 feet AGL
Schedule/Using Agency	911th AG, Greater Pittsburgh IAP, PA
Times of Use	Not specified (AF Form 813 indicates night operations)
Weather Minimums	Not specified (Assumed VFR minimum)

13.3 Relationship to Other Airspace

The relationship between MINGO CIRCULAR DZ and other 911th AG scheduled airspace is shown in Figure 4. As shown in this figure, the MINGO EAST and MINGO WEST DROP ZONEs are collocated with the MINGO CIRCULAR DZ.

14. Current Drop Zone Utilization

Operational data provided by the scheduling unit are summarized in Table 8. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 8. Utilization data for MINGO CIRCULAR DZ

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130H	3	100%	130	Not reported (Assume 400' AGL)
Other Aircraft				
C-130 other models	1	100%	130	Not reported (Assume 400' AGL)

15. Preliminary Environmental Analysis

15.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this drop zone has been addressed in the following documents:

AF Form 813	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
AF Form 814	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
EA	C-130 Airdrop Training Mingo Drop Zone	22 Apr 92

The EA indicates that the drop zone would be used one day and night during the week and two weekend days per month by up to 6 aircraft in formation. This information also indicates that portable marking equipment and lighting as well as smoke grenades will be used and that all equipment, including spent smoke grenades and airdropped items will be recovered following each airdrop operation. A maximum day-night average sound level (DNL) of 56.1 dB was predicted based on operations by 6 aircraft on a single day. This analysis appears to have been based on operations on a single day and does not take non-flying days into account.

The same EA is included in the files for the MINGO EAST and MINGO WEST DROP ZONEs which are collocated with the MINGO CIRCULAR DROP ZONE. It appears that the projected utilization referenced in the EA is the combined total for all three drop zones.

15.2 Analysis of Current Operations

15.2.1 Methodology

In evaluating the impacts of drop zone operations, two types of operations were considered: travel to the drop zone area and operations at the drop zone.

15.2.1.1 Route Operations

To provide an estimate of the noise impacts associated with operations in route to the drop zone, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

To evaluate the potential for significant impacts associated with current drop zone operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the sorties to the drop zone utilized a single hypothetical approach route and were concentrated around the center of the route (standard deviation of 0.5 statute miles). All aircraft were assumed to operate at 300 feet AGL Because operations normally vary in altitude and are more widely distributed across the route width, this approach tends to overestimate the expected levels. If the highest predicted value (the value at the hypothetical route centerline) exceeds 65 dB, more detailed investigation would be considered warranted.

15.2.1.2 Drop Zone Operations

Because operations at the drop zone are concentrated over a single point, the "special operations" feature of the ROUTEMAP program was used to estimate the levels which would result if the operations were all conducted on a route with a very small deviation (0.01 statute mile or 53 feet) from the route centerline. Each aircraft was assumed to make two passes over the drop zone at an altitude of 400 feet AGL. Since many drop zone operations are conducted at higher altitudes (800 to 1200 feet AGL) and a variety of approach headings, this procedure tends to overestimate noise levels at points other than the center of the drop zone.

If the predicted L_{drmr} at the center of the drop zone exceeds 65 dB, additional investigation would be considered warranted.

15.2.2 Potential Effects on Humans

15.2.2.1 Impacts of Drop Zone Operations

Using the methodology described above, preliminary analysis of the current operations on the MINGO CIRCULAR DROP ZONE indicated that if all travel to the drop zone were conducted on a single route, the maximum L_{drmr} (the level at the route centerline) would be less than 40 dB. Assuming that each aircraft makes two passes over the drop zone at 400 feet AGL, the L_{drmr} at the center of the drop zone would be approximately 42 dB.

It should be noted that individuals exposed to noise resulting from military aircraft operations on this route may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints.

15.2.2.2 Potential Cumulative Impacts

As indicated in Section 13.3, the MINGO CIRCULAR DROP ZONE is collocated with the MINGO EAST and MINGO WEST DROP ZONEs. Therefore, the cumulative impacts of operations on these drop zones were also considered. Procedures similar to those described above were used to estimate the maximum L_{drmr} expected to result from the reported operations. This analysis indicates that the cumulative impacts of all operations would be expected to result in a maximum L_{drmr} of less than 40 dB on a single approach route and a maximum L_{drmr} of 49 dB at the center of the drop zones.

Because the assumptions used in predicting the impacts of operations on each drop zone tend to overpredict the noise levels, the actual levels are likely to be lower.

Because the predicted L_{drmr} values are below 65 dB, no further analysis was considered necessary.

15.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources.

15.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

16. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Operations personnel should periodically monitor developments in the drop zone area and within the boundaries of frequently used approach routes to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON MINGO EAST DZ

17. Drop Zone Description

17.1 Area Location

The general location of MINGO EAST DZ is shown in Figure 5.

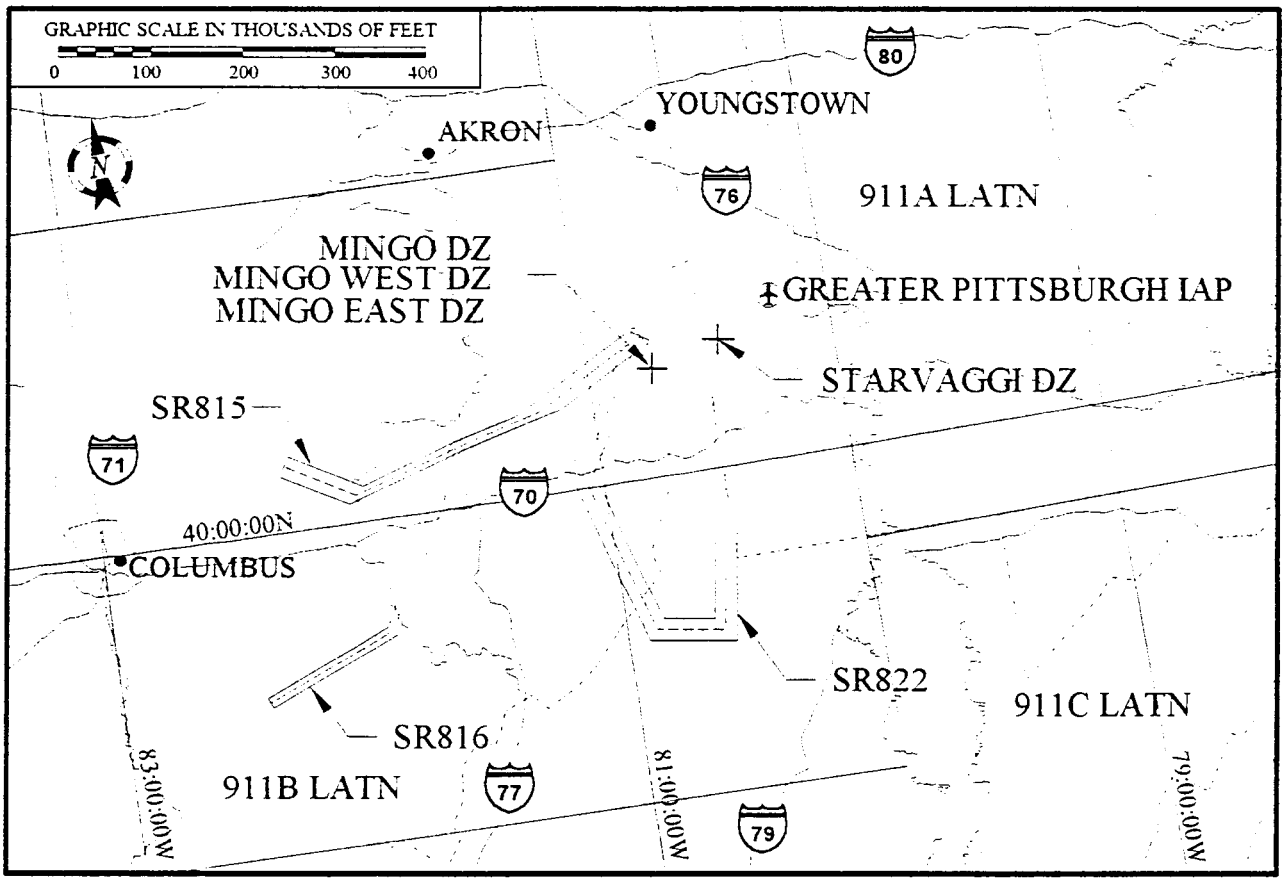


Figure 5 Location of Mingo East Drop Zone

17.2 Detailed Description

The detailed description of MINGO EAST DZ is summarized in Table 9.

Table 9. Description of MINGO EAST DZ

Type Airspace	Drop Zone (DZ)
Name	Mingo East Drop Zone
Description	Located near Bloomingdale, Ohio Rectangular drop zone Center of mass: 40°19'48"N, 80°44'30.6"W UTM Coordinates: 21936421 Length: 1150 yd; width: 800 yd Run-in heading: 116.2°true, 123°mag, 116°grid
Altitudes	400 feet AGL (minimum)
Schedule/Using Agency	911 AG, Greater Pittsburgh IAP, PA
Times of Use	0700 - 2200 Local
Weather Minimums	Not specified (Assumed VFR minimum)

17.3 Relationship to Other Airspace

The relationship between MINGO EAST DZ and other 911th AG scheduled airspace is shown in Figure 5.

18. Current Drop Zone Utilization

Operational data provided by the scheduling unit are summarized in Table 10. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 10. Utilization data for MINGO EAST DZ

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130H	3	100%	130	Not reported (Assume 400' AGL)
Other Aircraft				
C-130 other models	1	100%	130	Not reported (Assume 400' AGL)

19. Preliminary Environmental Analysis

19.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this drop zone has been addressed in the following documents:

AF Form 813	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
AF Form 814	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
EA	C-130 Airdrop Training Mingo Drop Zone	22 Apr 92

The EA indicates that the drop zone would be used one day and night during the week and two weekend days per month by up to 6 aircraft in formation. This information also indicates that portable marking equipment and lighting as well as smoke grenades will be used and that all equipment, including spent smoke grenades and airdropped items will be recovered following each airdrop operation. A maximum day-night average sound level (DNL) of 56.1 dB was predicted based on operations by 6 aircraft on a single day. This analysis appears to have been based on operations on a single day and does not take non-flying days into account.

The same EA is included in the files for the MINGO CIRCULAR and MINGO WEST DROP ZONEs which are collocated with the MINGO EAST DROP ZONE. It appears that the projected utilization referenced in the EA is the combined total for all three drop zones.

19.2 Analysis of Current Operations

19.2.1 Methodology

In evaluating the impacts of drop zone operations, two types of operations were considered: travel to the drop zone area and operations at the drop zone.

19.2.1.1 Route Operations

To provide an estimate of the noise impacts associated with operations in route to the drop zone, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

To evaluate the potential for significant impacts associated with current drop zone operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the sorties to the drop zone utilized a single hypothetical approach route and were concentrated around the center of the route (standard deviation of 0.5 statute miles). All aircraft were assumed to operate at 300 feet AGL Because operations normally vary in altitude and are more widely distributed across the route width, this approach tends to overestimate the expected levels. If the highest predicted value (the value at the hypothetical route centerline) exceeds 65 dB, more detailed investigation would be considered warranted.

19.2.1.2 Drop Zone Operations

Because operations at the drop zone are concentrated over a single point, the "special operations" feature of the ROUTEMAP program was used to estimate the levels which would result if the operations were all conducted on a route with a very small deviation (0.01 statute mile or 53 feet) from the route centerline. Each aircraft was assumed to make two passes over the drop zone at an altitude of 400 feet AGL. Since many drop zone operations are conducted at higher altitudes (800 to 1200 feet AGL) and a variety of approach headings, this procedure tends to overestimate noise levels at points other than the center of the drop zone.

If the predicted L_{dnmr} at the center of the drop zone exceeds 65 dB, additional investigation would be considered warranted.

19.2.2 Potential Effects on Humans

19.2.2.1 Impacts of Drop Zone Operations

Using the methodology described above, preliminary analysis of the current operations on the MINGO EAST DROP ZONE indicated that if all travel to the drop zone were conducted on a single route, the maximum L_{dnmr} (the level at the route centerline) would be less than 40 dB. Assuming that each aircraft makes two passes over the drop zone at 400 feet AGL, the L_{dnmr} at the center of the drop zone would be approximately 42 dB.

It should be noted that individuals exposed to noise resulting from military aircraft operations on this route may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints.

19.2.2.2 Potential Cumulative Impacts

As indicated in Section 17.3, the MINGO EAST DROP ZONE is collocated with the MINGO CIRCULAR and MINGO WEST DROP ZONEs. Therefore, the cumulative impacts of operations on these drop zones were also considered. Procedures similar to those described above were used to estimate the maximum L_{dnmr} expected to result from the reported operations. This analysis indicates that the cumulative impacts of all operations would be expected to result in a maximum L_{dnmr} of less than 40 dB on a single approach route and a maximum L_{dnmr} of 49 dB at the center of the drop zones.

Because the assumptions used in predicting the impacts of operations on each drop zone tend to overpredict the noise levels, the actual levels are likely to be lower.

Because the predicted L_{dnmr} values are below 65 dB, no further analysis was considered necessary.

19.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources.

19.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

20. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Operations personnel should periodically monitor developments in the drop zone area and within the boundaries of frequently used approach routes to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON MINGO WEST DZ

21. Drop Zone Description

21.1 Area Location

The general location of MINGO WEST DZ is shown in Figure 6.

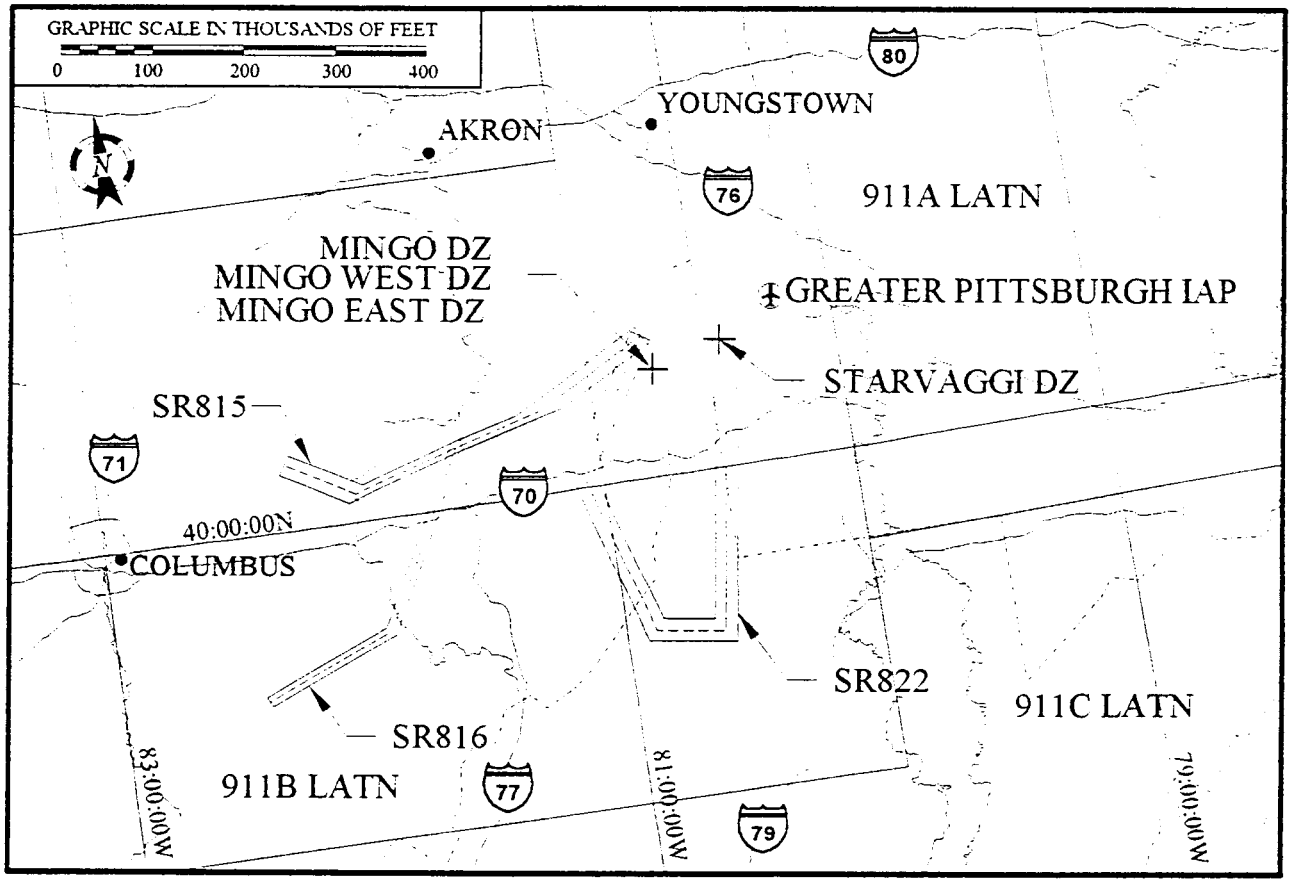


Figure 6 Location of Mingo West Drop Zone

21.2 Detailed Description

The detailed description of MINGO WEST DZ is summarized in Table 11.

Table 11. Description of MINGO WEST DZ

Type Airspace	Drop Zone (DZ)
Name	Mingo West Drop Zone
Description	Located near Bloomingdale, Ohio Rectangular drop zone: Center of mass: 40°19'44.9"N, 80°44'23.8"W UTM Coordinates: 22096411 Length: 1500 yd; width: 800 yd Run-in heading: 296.2° true, 303° mag, 296° grid
Altitudes	400 feet AGL minimum
Schedule/Using Agency	911 AG, Greater Pittsburgh IAP, PA
Times of Use	0700 - 2200 Local
Weather Minimums	Not specified (Assumed VFR minimum)

21.3 Relationship to Other Airspace

The relationship between MINGO WEST DZ and other 911th AG scheduled airspace is shown in Figure 6.

22. Current Drop Zone Utilization

Operational data provided by the scheduling unit are summarized in Table 12. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 12. Utilization data for MINGO WEST DZ

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130H	10	100%	130	Not reported (Assume 400' AGL)
Other Aircraft				
C-130 other models	1	100%	130	Not reported (Assume 400' AGL)

23. Preliminary Environmental Analysis

23.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this drop zone has been addressed in the following documents:

AF Form 813	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
AF Form 814	C-130 Airdrop Training Mingo Drop Zone	21 Feb 92
EA	C-130 Airdrop Training Mingo Drop Zone	22 Apr 92

The EA indicates that the drop zone would be used one day and night during the week and two weekend days per month by up to 6 aircraft in formation. This information also indicates that portable marking equipment and lighting as well as smoke grenades will be used and that all equipment, including spent smoke grenades and airdropped items will be recovered following each airdrop operation. A maximum day-night average sound level (DNL) of 56.1 dB was predicted based on operations by 6 aircraft on a single day. This analysis appears to have been based on operations on a single day and does not take non-flying days into account.

The same EA is included in the files for the MINGO CIRCULAR and MINGO EAST DROP ZONEs which are collocated with the MINGO WEST DROP ZONE. It appears that the projected utilization referenced in the EA is the combined total for all three drop zones.

23.2 Analysis of Current Operations

23.2.1 Methodology

In evaluating the impacts of drop zone operations, two types of operations were considered: travel to the drop zone area and operations at the drop zone.

23.2.1.1 Route Operations

To provide an estimate of the noise impacts associated with operations in route to the drop zone, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

To evaluate the potential for significant impacts associated with current drop zone operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the sorties to the drop zone utilized a single hypothetical approach route and were concentrated around the center of the route (standard deviation of 0.5 statute miles). All aircraft were assumed to operate at 300 feet AGL Because operations normally vary in altitude and are more widely distributed across the route width, this approach tends to overestimate the expected levels. If the highest predicted value (the value at the hypothetical route centerline) exceeds 65 dB, more detailed investigation would be considered warranted.

23.2.1.2 Drop Zone Operations

Because operations at the drop zone are concentrated over a single point, the "special operations" feature of the ROUTEMAP program was used to estimate the levels which would result if the operations were all conducted on a route with a very small deviation (0.01 statute mile or 53 feet) from the route centerline. Each aircraft was assumed to make two passes over the drop zone at an altitude of 400 feet AGL. Since many drop zone operations are conducted at higher altitudes (800 to 1200 feet AGL) and a variety of approach headings, this procedure tends to overestimate noise levels at points other than the center of the drop zone.

If the predicted L_{dnmr} at the center of the drop zone exceeds 65 dB, additional investigation would be considered warranted.

23.2.2 Potential Effects on Humans

23.2.2.1 Impacts of Drop Zone Operations

Using the methodology described above, preliminary analysis of the current operations on the MINGO WEST DROP ZONE indicated that if all travel to the drop zone were conducted on a single route, the maximum L_{drmr} (the level at the route centerline) would be less than 40 dB. Assuming that each aircraft makes two passes over the drop zone at 400 feet AGL, the L_{drmr} at the center of the drop zone would be approximately 46 dB.

It should be noted that individuals exposed to noise resulting from military aircraft operations on this route may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints.

23.2.2.2 Potential Cumulative Impacts

As indicated in Section 21.3, the MINGO WEST DROP ZONE is collocated with the MINGO CIRCULAR and MINGO EAST DROP ZONEs. Therefore, the cumulative impacts of operations on these drop zones were also considered. Procedures similar to those described above were used to estimate the maximum L_{drmr} expected to result from the reported operations. This analysis indicates that the cumulative impacts of all operations would be expected to result in a maximum L_{drmr} of less than 40 dB on a single approach route and a maximum L_{drmr} of 49 dB at the center of the drop zones.

Because the assumptions used in predicting the impacts of operations on each drop zone tend to overpredict the noise levels, the actual levels are likely to be lower.

Because the predicted L_{drmr} values are below 65 dB, no further analysis was considered necessary.

23.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources.

23.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

24. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Operations personnel should periodically monitor developments in the drop zone area and within the boundaries of frequently used approach routes to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS ON STARVAGGI DROP ZONE

25. Drop Zone Description

25.1 Area Location

The general location of STARVAGGI DROP ZONE is shown in Figure 7.

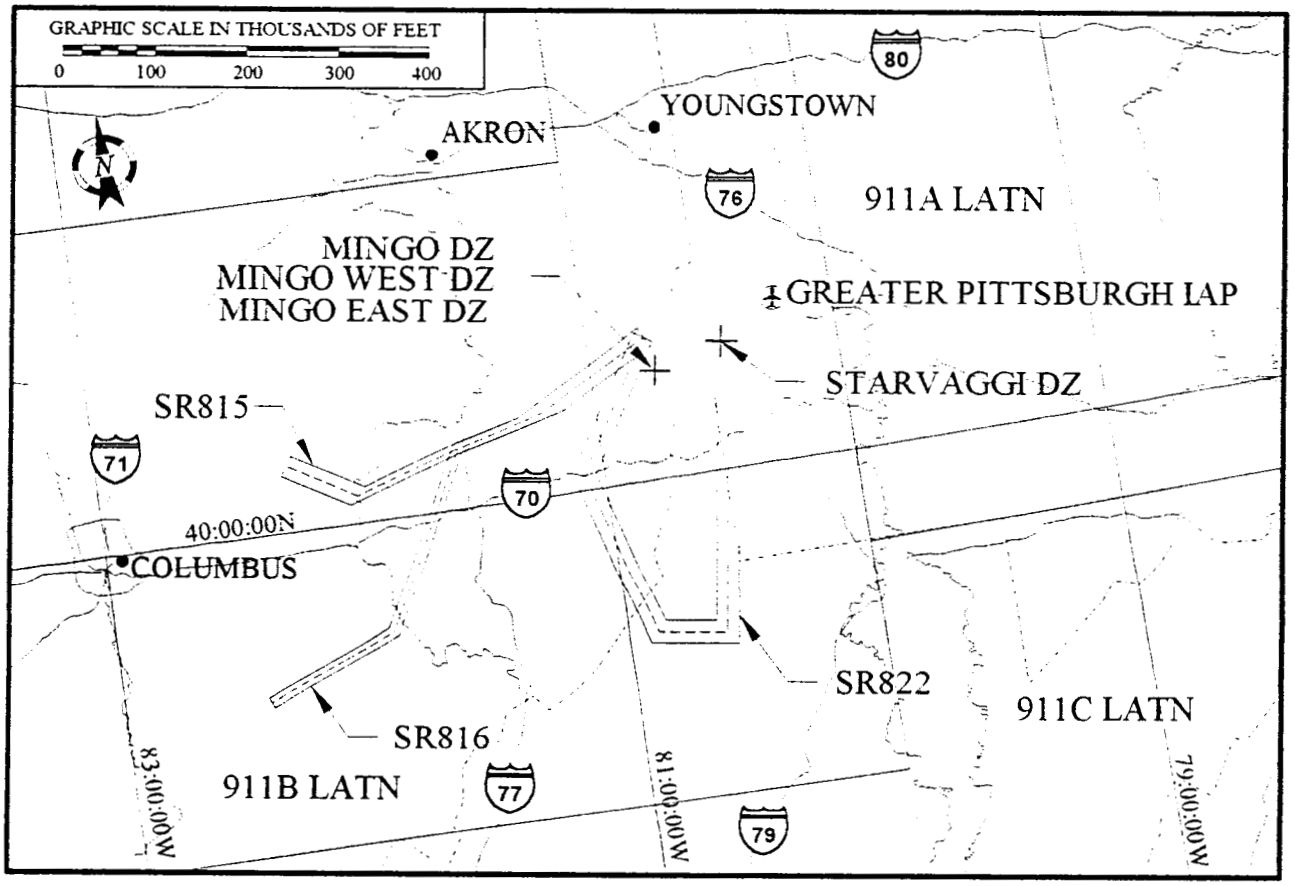


Figure 7 Location of Starvaggi Drop Zone

25.2 Detailed Description

The detailed description of STARVAGGI DROP ZONE is summarized in Table 13.

Table 13. Description of STARVAGGI DROP ZONE

Type Airspace	Drop Zone (DZ)
Name	Starvaggi Drop Zone
Description	Located in Hanover Township, Pennsylvania, on private property leased from Starvaggi Industries, Inc. Site has been strip mined. Rectangular drop zone: Center of mass: 40°23'09.9"N, 80°27'39.6"W UTM Coordinates: 45755 70545 Length: 1000 yd; width: 800 yd Run-in heading: 004°true, 010°mag, 004°grid
Altitudes	Not specified (Assumed 400 - 1200 feet AGL)
Schedule/Using Agency	911 AG, Greater Pittsburgh IAP, PA
Times of Use	Not specified (Assumed daylight hours)
Weather Minimums	Not specified (Assumed VFR minimum)

25.3 Relationship to Other Airspace

The relationship between STARVAGGI DROP ZONE and other 911th AG scheduled airspace is shown in Figure 7. As indicated in this figure, the STARVAGGI DROP ZONE is located at the termination of SR-822.

26. Current Drop Zone Utilization

Operational data provided by the scheduling unit are summarized in Table 14. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 14. Utilization data for STARVAGGI DROP ZONE

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130H	8	100%	130	Not reported (Assume 400' AGL)
Other Aircraft				
C-130H other models	1	100%	130	Not reported (Assume 400' AGL)

27. Preliminary Environmental Analysis

27.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this drop zone has been addressed in the following documents:

EA	Acquisition of Lease Land for Drop Zone Additional Minor Acquisitions	8 Jun 79
EA	Low Altitude Route Experimental Training Routes (xSR) XSR 819, 822	16 Jan 79
AF Form 814	Low Altitude Route Training Route (SR) SR 822	24 Sep 80
AF Form 815	Low Altitude Route Training Route (SR) SR 822	29 Sep 80
FONSI	Training Route SR 822	14 Oct 80
EA	Low Altitude Route Training Route (SR) SR 822	21 Aug 80
AF Form 813	Five Year Review of Permit for Drop Zone Greater Pittsburgh IAP PA (Starvaggi DZ)	25 Apr 89
CATEX	Five Year Review of Permit for Drop Zone Greater Pittsburgh IAP PA (Starvaggi DZ)	25 Apr 89

The 1979 EA was for operations by C-123 aircraft and projected an average of 15 sorties per month. Noise levels were not specifically evaluated, the EA notes that it would require operations by more than the assigned number of C-123 aircraft to produce a day-night average sound level (DNL) of 65 dB. The subsequent documents indicate operations by C-130 aircraft and note that the number of sorties has increased to 20 to 30 per month. Noise levels are not specifically evaluated, the CATEX determination notes that "noise impact will be minor and compatible to existing land uses."

27.2 Analysis of Current Operations

27.2.1 Methodology

In evaluating the impacts of drop zone operations, two types of operations were considered: travel to the drop zone area and operations at the drop zone.

27.2.1.1 Route Operations

To provide an estimate of the noise impacts associated with operations in route to the drop zone, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

To evaluate the potential for significant impacts associated with current drop zone operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the sorties to the drop zone utilized a single hypothetical approach route and were concentrated around the center of the route (standard deviation of 0.5 statute miles). All aircraft were assumed to operate at 300 feet AGL Because operations normally vary in altitude and are more widely distributed across the route width, this approach tends to overestimate the expected levels. If the highest predicted value (the value at the hypothetical route centerline) exceeds 65 dB, more detailed investigation would be considered warranted.

27.2.1.2 Drop Zone Operations

Because operations at the drop zone are concentrated over a single point, the "special operations" feature of the ROUTEMAP program was used to estimate the levels which would result if the operations were all conducted on a route with a very small deviation (0.01 statute mile or 53 feet) from the route centerline. Each aircraft was assumed to make two passes over the drop zone at an altitude of 400 feet AGL. Since many drop zone operations are conducted at higher altitudes (800 to 1200 feet AGL) and a variety of approach headings, this procedure tends to overestimate noise levels at points other than the center of the drop zone.

If the predicted L_{drmr} at the center of the drop zone exceeds 65 dB, additional investigation would be considered warranted.

27.2.2 Potential Effects on Humans

27.2.2.1 Impacts of Drop Zone Operations

Using the methodology described above, preliminary analysis of the current operations on the STARVAGGI DROP ZONE indicated that if all travel to the drop zone were conducted on a single route, the maximum L_{drmr} (the level at the route centerline) would be less than 40 dB. Assuming that each aircraft makes two passes over the drop zone at 400 feet AGL, the L_{drmr} at the center of the drop zone would be approximately 45 dB.

It should be noted that individuals exposed to noise resulting from military aircraft operations on this route may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints.

27.2.2.2 Potential Cumulative Impacts

As indicated in Section 25.3, the STARVAGGI DROP ZONE is located at the termination of SR-822. The operations on this route are included in the evaluation of the operations on that route which indicated that the maximum L_{drmr} would be less than 40 dB.

Because the assumptions used in predicting the impacts of operations on each drop zone tend to overpredict the noise levels, the actual levels are likely to be lower.

Because the predicted L_{drmr} values are below 65 dB, no further analysis was considered necessary.

27.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources.

27.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

28. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Operations personnel should periodically monitor developments in the drop zone area and within the boundaries of frequently used approach routes to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

PRELIMINARY ENVIRONMENTAL ANALYSIS OF OPERATIONS IN THE 911th AG LATN (A,B,C)

29. LATN Description

29.1 Area Location

The general location of 911 LATN (A,B,C) is shown in Figure 8.

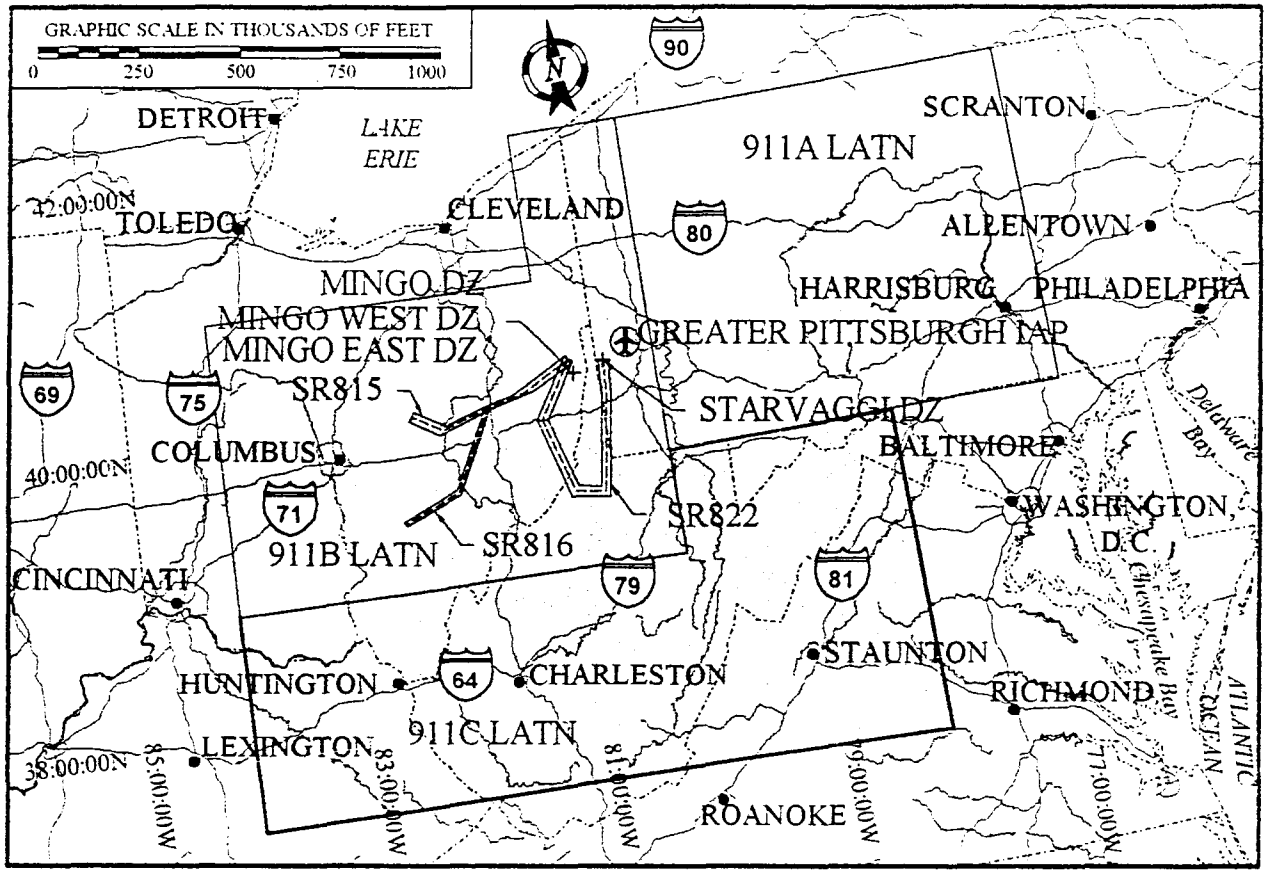


Figure 8 Location of 911AG LATN (A,B,C)

29.2 Detailed Description

The detailed description of 911 LATN (A,B,C) is summarized in Table 15. As noted in this table, the LATN is subdivided into three areas: A, B, and C.

Table 15. Description of Route 911 LATN (A.B.C)

Type Airspace	Low Altitude Tactical Navigation Area (LATN)
Name	911 LATN (SECTORS A. B. C)
Description	Section A: lat 42° 00' 00"N, long 80° 00' 00"W to lat 42° 00' 00"N, long 76° 30' 00"W to lat 39° 43' 00"N, long 76° 30' 00"W to lat 39° 43' 00"N, long 80° 00' 00"W Section B: lat 42° 00' 00"N, long 80° 00' 00"W to lat 39° 00' 00"N, long 80° 00' 00"W to lat 39° 00' 00"N, long 84° 00' 00"W to lat 41° 00' 00"N, long 84° 00' 00"W to lat 41° 00' 00"N, long 81° 00' 00"W to lat 42° 00' 00"N, long 81° 00' 00"W Section C: lat 39° 43' 00"N, long 78° 00' 00"W to lat 37° 30' 00"N, long 78° 00' 00"W to lat 37° 30' 00"N, long 84° 00' 00"W to lat 39° 00' 00"N, long 84° 00' 00"W to lat 39° 00' 00"N, long 80° 00' 00"W to lat 39° 43' 00"N, long 80° 00' 00"W
Altitudes	500' AGL to 1500' AGL
Schedule/Using Agency	911 AG
Times of Use	1000 hrs - 2200 hrs
Weather Minimums	1500' ceiling, 3 NM visibility

29.3 Relationship to Other Airspace

The relationship between 911 LATN (A.B.C) and other 911th AG scheduled airspace is shown in Figure 8.

30. Current Route Utilization

Operational data provided by the scheduling unit are summarized in Table 16. Values indicated in parenthesis are default values required by the ROUTEMAP program or are values assumed for data indicated as "Unknown."

Table 16. Utilization data for Route 911 LATN (A,B,C)

Aircraft	Sorties per Month	Power Setting	Airspeed (Knots)	Minimum Altitude (Feet AGL)
Scheduling Unit Aircraft				
C-130 H	24	100% RPM	210	500
Other Aircraft				
C-130 other models	1	100% RPM	210	500

31. Preliminary Environmental Analysis

31.1 Prior Environmental Analysis

A review of documentation available at the scheduling unit and at Headquarters AFRES indicates that this LATN has been addressed in the following documents:

AF Form 813	911 TAG Low Altitude Tactical Navigation (LATN) Area	21 Feb 92
CATEX	911 TAG Low Altitude Tactical Navigation (LATN) Area	21 Feb 92

The AF Form 813 indicated that establishment of the LATN qualified for categorical exclusion 2.h. [Flying activities complying with Federal Aviation Regulations that is dispersed over a wide area and does not frequently (greater than once per day) pass over the same ground points.] as specified in Attachment 7 to Air Force Regulation 19-2, Environmental Impact Analysis Process (EIAP), the regulation in effect at the time the LATN was created. There is no indication of the type of aircraft, projected number of operations, or anticipated noise impacts in the information provided on the AF Form 813. This information does indicate that "all wildlife and wilderness areas will be avoided by 3 NM," however, there is no indication of the location of such areas.

31.2 Analysis of Current Operations

31.2.1 Methodology

To provide an estimate of the noise impacts associated with the current level of operations, the ROUTEMAP program (Plotkin 1988) was used to estimate the Onset-adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). The L_{dnmr} is calculated in a manner similar to the Day-Night Average Sound Level (DNL or L_{dn}) by adding a penalty of 10 decibels (dB) to the levels of noise events which occur between the hours of 10 p.m. and 7 a.m. and calculating the energy average of all events during a period of 24 hours. The L_{dnmr} differs from the L_{dn} in that (1) it is calculated on the basis of the daily average operations during the month with the highest number of operations rather than on a yearly basis and (2) an additional penalty of up to 5 dB is added to account for the startle effect of operations in which the sound level increases rapidly (i.e., has a high "onset" rate). The onset rate penalty varies from 0 dB for events with onset rates below 15 decibels/second (dB/sec) to a maximum of 5 dB for events with onset rates of 30 dB/sec or higher. The L_{dnmr} metric is the recommended metric for assessing impacts to humans resulting from operations on military training routes.

The Air Force recommends that L_{dnmr} be used in a manner similar to L_{dn} in assessing the compatibility of aircraft noise along military training routes with various land uses. Environmental sound levels below 65 dB DNL are considered compatible with all land uses, including residential development and a level of 55 dB DNL has been identified by the Environmental Protection Agency (EPA) as protecting public health and welfare with an adequate margin of safety (EPA 1974).

Operations on military training routes are typically distributed across the width of the route with the highest concentration around the route center line. To permit the analysis of operations which are not uniformly distributed across the route, the ROUTEMAP program permits the analysis of groups of operations which are assumed to be equally distributed on each side of a subsidiary line parallel to the route centerline. The program assumes that the distribution of operations relative to the route (or subsidiary) centerline may be described by a single statistical value known as the "standard deviation." Operations which are grouped close to the centerline are characterized by small standard deviations while those which are widely distributed are characterized by large standard deviations. To simplify analysis, ROUTEMAP provides default values considered representative of operations on instrument (IR) and visual (VR) routes. Instrument (IR) routes are assumed to be characterized by a standard deviations of 0.5 statute miles. Two alternatives are provided for visual (VR) routes: concentrated and dispersed, characterized by standard deviations of 1.25 and 2.5 statute miles, respectively.

When operating on military training routes, aircraft are required to remain within the specified route boundaries and are subject to restrictions on the direction of travel. Low Altitude Tactical Navigation (LATN) areas are large geographic areas established to provide an opportunity for training in low altitude navigation under visual flight rules (VFR) conditions. To simulate tactical mission requirements, aircrews are tasked to fly randomly selected preplanned temporary routes. To maximize training in tactical navigation, routes are changed frequently to assure that aircrews do not become familiar with specific routes. Activities in LATN areas are conducted in accordance with applicable Federal Aviation Regulations which restrict airspeeds to 250 knots or less and restrict operations below 500 feet AGL to over open water or sparsely populated areas. Major Commands (MAJCOMs) determine the criteria for establishing LATN areas and coordination with the FAA is not required (although it may be accomplished). LATN areas are for use by the establishing unit only and are not published or shown on aeronautical charts.

Because aircraft operations in LATN areas are not well defined, prediction of noise levels produced by these operations requires detailed information on the types of operations and their distribution. Collection of the detailed information necessary to model operations within LATN areas was not within the scope of this effort.

To evaluate the potential for significant impacts associated with current LATN operations, the ROUTEMAP program was used to estimate the L_{dnmr} which would result if all of the operations were conducted on a hypothetical visual route with widely dispersed flight tracks (standard deviation of 2.50 statute miles). With the exception of the A-10, all aircraft were assumed to operate at 300 feet AGL (or the minimum altitude specified by establishing unit, if higher than 300' AGL). A-10 aircraft were assumed to operate at 100 feet AGL (or the minimum altitude specified by the establishing unit, if higher than

100' AGL). Because operations normally vary in altitude and are widely distributed throughout the large geographic area of the LATN, this approach tends to overestimate the expected levels. If the maximum predicted level (the level at the hypothetical route centerline) exceeds 65 dB, more detailed investigation would be considered warranted.

31.2.2 Potential Effects on Humans

31.2.2.1 Impacts of Route Operations

Using the methodology described above, preliminary analysis of the current operations in the 911th AG LATN indicated that the maximum L_{drnr} would be less than 40 dB. Because the assumptions used in predicting the impacts of operations in each airspace area tend to overpredict the noise levels, the actual levels are likely to be lower.

It should be noted that individuals exposed to noise resulting from military aircraft operations in this LATN may be annoyed by the noise. Some individuals may submit complaints concerning the noise; however, the absence of complaints should not be interpreted as an indication that there are no impacts since annoyance may exist without formal complaints. Because LATNs are designed to provide a variety of training activities, known sensitive areas can be avoided relatively easily.

Because the predicted L_{drnr} values are below 65 dB, no further analysis was considered necessary.

31.2.2.2 Potential Cumulative Impacts

Because of their large size, LATNs typically include other special use airspace features; however, LATN training activities are normally planned to avoid other special use airspace, thus minimizing the potential for cumulative impacts. Based on the low noise levels associated with LATN operations and the avoidance of other special use airspace in mission planning, the potential for cumulative impacts was considered to be negligible and no further analysis was considered necessary.

31.2.3 Potential Effects on Animals

Low level aircraft overflights present the potential for adverse impacts to animals, including both domestic stock and wildlife. Impacts would be considered to be significant if they would be expected to help cause or maintain *substantial* reductions or *large-scale* dislocations of local or regional wildlife populations. The potential for significant impacts to animals is considered negligible; however, operations may result in minor adverse impacts to localized wildlife resources. As in the case of humans, the nature of LATN activities facilitates avoidance of known sensitive areas.

31.2.4 Potential Effects on Structures

Because the aircraft operations do not involve supersonic flight, the potential for significant impacts to structures is considered to be negligible and no further investigation is considered appropriate.

32. Recommendations

Based on the preliminary analysis, no further analysis is recommended at this time. Because the available documentation does not specifically identify sensitive areas to be avoided, coordination with environmental and resource management agencies may be appropriate to assure that such areas are identified. Following such coordination, operations personnel should periodically monitor developments within the LATN boundaries to identify additional noise sensitive areas. Periodic coordination with federal and state wildlife management agencies is also recommended to assure identification of sensitive resources which should be avoided.

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

F

EXHIBIT F.

SELECTED AF/BCEG MINUTES

Minutes of the Air Force Base Closure Executive Group (BCEG) Meetings Summary

Note: No minutes available prior to 27 Oct 94

27 Oct 94:
Maj Richardson briefed AFRES assumptions for level playing field COBRA. The BCEG questioned the utility of level playing field COBRA for AFRES bases. (Postponed further considerations until the manner of analyzing ARC bases was fully considered.)

4 Nov 94:
What did Maj Richardson brief? On page 3 they brief Mitchell to New Orleans. Appears AFRES proceeded with level playing field COBRA stating it "clearly identifies most cost effective installations". "Answers question, 'why him and not me'".

15 Nov 94
Unit participation was removed because too many factors not related to effectiveness are involved.

30 Nov 94
Maj Richardson says Crit I, apron, was the most common limit for pavement sub-elements. Gen Bradley asks to leave one unit in each state. Gen Bradley additionally states that location and recruiting are the most important factors for considering these bases. Mr. Boatright noted: costs and savings issues are not as significant because of the low figures, and there is not much distinction among units. BCEG deferred tiering.

1 Dec 94
Gen Bradley asks to close no bases due to insufficient savings. BCEG recommended continuing the analysis of operational and cost factors to determine the advisability of closure of one or more of these [C-130] bases. Issue was left open until refined cost figures to support the options in today's briefing.

9 Dec 94
Maj Richardson briefed AFRES recommendations using slides in atch 3. He noted that cost estimates had been reviewed by AF/CE and the BCWG. Some corrections were made in that review and have been incorporated into the information briefed. Mr. Boatright stated that the two most important factors supporting the closure of Pittsburgh ARS are the high BOS cost and the potential to absorb existing AFRES personnel into other units in the area. Despite the high rating in criterion I, these factors are important to AFRES. Gen Bradley added that a less expensive option for this move may exist by moving 4 acft each to COS and MGE.

Note: This is the first view of the BOS figures showing PIT at $22.23M with associated manpower of 243.

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

15 NOV 1994

OFFICE OF THE ASSISTANT SECRETARY

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 27 October 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen Heflebower, AF/PE
Mr. Orr, AF/LGM
Mr. Kuhn, SAF/GCN
Mr. Blanchard, AF/DPP
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Col Kraus, SAF/AQX
Col Pease, AF/XOO
Mr. Myers, AF/CEP
Mr. Carillo, AF/CEVP
Mr. Baie, AF/CEV

The meeting was called to order by Mr. Boatright. Lt Col Plummer, AF/RTR, presented some administrative matters raised by the BCEG in previous meetings related to the ability to compare bomber and tanker bases. He recommended that, in order to compare bomber and tanker bases against the same subelements, the weighting be changed under the Operational Effectiveness subelement. Bases with a current tanker or bomber mission, would be assigned equal weights for the bomber and tanker screens, with a remaining 15 percent for the airlift screen. The BCEG approved this change since it was the least disruptive but nonetheless offered a direct comparison of bomber and tanker bases. Although Lt Col Plummer recommended airlift mission bases retain their 70 percent weighting on the airlift screen, with 15 percent on each of the bomber and tanker screens, the BCEG directed that the airlift screen be given 85 percent weighting with 7.5 percent for each of the bomber and tanker screens.

CLOSE HOLD -- BCEG ONLY

BASE CLOSURE EXECUTIVE GROUP

Admin Remarks

- BCEG QUESTIONS ON LARGE AIRCRAFT
- COBRA QUESTIONS

CLOSE HOLD -- BCEG ONLY

BASE CLOSURE EXECUTIVE GROUP

Current Situation

- Aircraft Screens
  - Fighter, Bomber, Tanker, Airlift
  - These Screens used for tiering of Joint Cross-service categories
- Concern
  - Bomber-Tanker conceptually becomes a new aircraft screen
    - Affect on already completed tiering
  - Options
    - Does not eliminate any criterion sub-elements only reweights existing screens
      - Benefit 1 Existing tiering will not have to be reaccomplished
        - 2 No alterations of sub-elements after analysis
    - Combing the sub-elements of Bomber and Tanker screens to create a composite Bomber-Tanker screen
      - Benefit Pure Bomber-Tanker evaluation (e g. Mobility)

ATCH 1

CLOSE HOLD -- BCEG ONLY

BASE CLOSURE EXECUTIVE GROUP

Recommendation

BCEG ACCEPT:

1. DELETE ASSOCIATED AIRSPACE

2. ACCEPT RECOMMENDED WEIGHTS

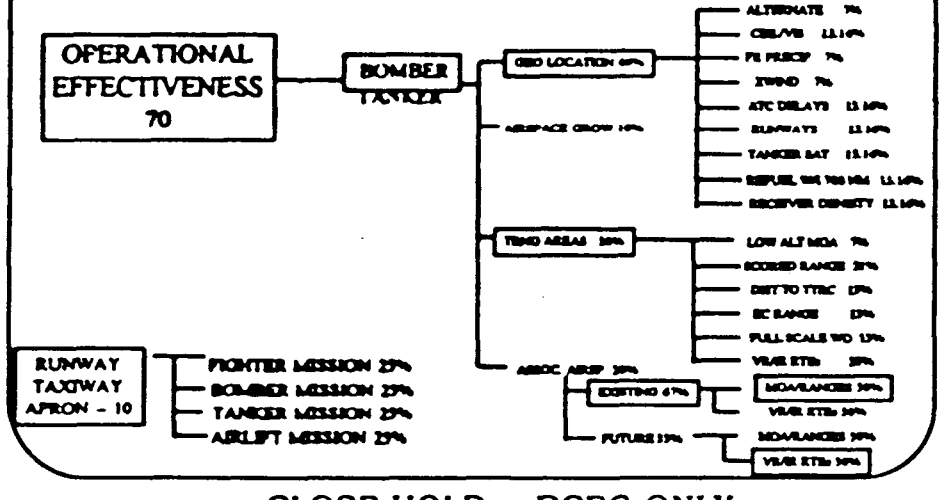
CLOSE HOLD -- BCEG ONLY

CLOSE HOLD -- BCEG ONLY

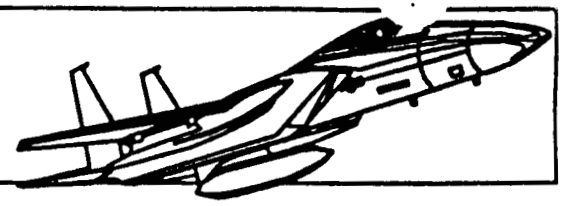
BASE CLOSURE EXECUTIVE GROUP

Element/Sub-Element Weighting

LARGE AIRCRAFT BASES -- TANKER/BOMBER MISSION



CLOSE HOLD -- BCEG ONLY



Apportion Peterson MFH Deficit Among Peterson & Falcon

	Chey Mt	Peterson	Falcon	Total
Mil Populaltion	1,015	3,156	2,299	6470
% of Tot Pop'n	15.69%	48.78%	35.53%	
% of Deficit (-2812)	-441	-1,372	-999	
PN @ USAFA	21	200	49	
Apportioned Deficit	-420	-1,172	-950	

AIR FORCE AFRES BRAC 95 ANALYSIS

BERGSTROM

- AFRES (15 PAA F-16 and HQ 10 AF)
  - Realign HQ 10 AF to Carswell
  - Cancel the Carswell F-16 to KC-135 Conversion
    - Program the Bergstrom unit for KC-135 Conversion
    - Realign the Bergstrom Unit to Seymour-Johnson

AIR FORCE AFRES BRAC 95 ANALYSIS

CARSWELL

- AFRES (9 PAA KC-135)
  - Realign to Seymour Johnson
- Navy Res (70+ Aircraft)
  - Navy Assumes complete control of Carswell
- Texas ANG (8 PAA C-130)
  - Remains in Planned Cantonment on NAS JRB Ft Worth (Carswell Airfield)

AIR FORCE AFRES BRAC 95 ANALYSIS

GRISSOM

- AFRES (16 PAA KC-135R)
  - Realign 8 PAA (1 Sq) to Seymour Johnson
  - Realign 8 PAA (1 Sq) to March

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

15 NOV 1994

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1045 hours on 4 November 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Mr. Orr, AF/LGM
Mr. Kuhn, SAF/GCN
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Maj Richardson, AF/RE

The meeting was called to order by Mr. Boatright. Maj Richardson pesented a proposal for analysis of the Reserve subcategory bases, using the slides at Atch 1. Mr. Boatright expressed a concern that the analysis be accomplished under the oversight of the Base Closure Working Group in an integrated process. After discussing the proposed method, the BCEG approved the process as briefed.

There being no further matters to discuss, the meeting was adjourned at 1100. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS:
ANG Move from Baltimore to Andrews
Move from Moffett to McClellan
COBRA for ANG Analysis
Analysis of ARC bases
Squadron size and number of units

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
AFRES Analysis

AIR FORCE BCEG AFRES ANALYSIS

AFRES SUB-CATEGORY PROPOSED METHODOLOGY

BCEG CLOSE HOLD

1

AIR FORCE BCEG AFRES ANALYSIS

OVERVIEW

- AFRES BRAC 95 Goals
- AFRES BRAC History
- Comparison Between BRAC 93 to BRAC 95
- Collocated AFRES UE Units
- AFRES Capacity Analysis
- Proposed Overall Analytical Process
- Justification
- Time Table Next Two Weeks

BCEG CLOSE HOLD

2

ATCH 1

AIR FORCE BCEG AFRES ANALYSIS

AFRES BRAC 95 GOALS

- Maintain Total Force Combat Capability
- Provide Cost Effective Blue Suit Presence
- Consolidate Where It Makes Sense
- Reduce BOS and Manpower Cost
- Optimize Unit Warfighting Size
- Good Locations for Training and Recruiting
- Solid Justification for AFRES BRAC Actions
  - Going Beyond the Onetime Cost Justification
  - Past Commission Decisions and Logic

BCEG CLOSE HOLD

3

AIR FORCE BCEG AFRES ANALYSIS

PAST BRAC HISTORY

- Active Duty Closures Has Led To AFRES Bases
- BRAC 88
  - Mather, Norton
- BRAC 91
  - Bergstrom, Carswell, Onesom, Mather, Rickenbacker, and Richards-Gebaur
- BRAC 93
  - Carswell, Homestead, March, and O'Hare
  - KC-10 Associate Realignments (Barksdale, March, and Seymour-Johnson)
  - McClellan Redirect

BCEG CLOSE HOLD

4

AIR FORCE BCEG AFRES ANALYSIS

AFRES SUB-CATEGORY INSTALLATIONS

LOCATION	AIRFIELD OPERATOR	COLLOCATED UNITS
BERGSTROM	AFR	CIV (?) / NG (?)
CARSWELL	NAVY	AFR / ANG
DOBBINS	AFR	AR / ANG
GEN MITCHELL	CIV	AFR / ANG / AR
GRISSOM	AFR	
HOMESTEAD	AFR	CIV (?)
MARCH	AFR	ANG
MINN-ST PAUL	CIV	NAVY / ANG / AFR
NIAGARA	CIV	AFR / ANG / NG
O'HARE	CIV	AFR / ANG
PITTSBURGH (AFR)	CIV	AFR
WESTOVER	AFR	NG
WILLOW GROVE	NAVY	AFR / ANG / AR
YOUNGSTOWN	CIV	AFR

- Only 14 of the 32 AFRES UE Locations are in this Subcategory

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

OTHER AFRES UE LOCATIONS

- SECAF Exclusions
  - Andrews, Keesler, and Maxwell
- ANG
  - Portland and Selfridge
- Industrial and Technical Support
  - Eglin, Peterson, and Wright Patterson
- Depots
  - Hill, Kelly, and Tinker
- Small Aircraft
  - Davis-Monthan, Luke, and Seymour-Johnson
- Large Aircraft
  - Barksdale, Beale, and Whiteman

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

AFRES – BRAC 93 TO BRAC 95 COMPARISON

	BRAC 93			BRAC 95			BRAC 93 TO 95
	93/1	99/4	DELTA	94/4	01/4	DELTA	97/4 DELTA
A/OA-10	69	51	-18	54	36	-18	-18
F-16	168	144	-6	114	60	-54	-84
B-52	0	8	8	8	8		
C-5	28	28		28	28		
C-130	108	83	-25	100	92	-8	9
KC-135	40	50	10	60	64		14
C-141	12	44	32	36	40	4	4
Specialty							
C-130s	28	28		29	29		1
HH-60	21	21		21	21		
		TOTAL	-1		TOTAL	-86	TOTAL -79

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

AFRES CAPACITY ANALYSIS

		INSTALLATIONS / FACILITIES			
	# of SQs	TOTAL #	AFRES ALONE	COLLOCATED WITH ARC	COLLOCATED WITH ACTIVE
A-10	2	3	1	-	2
F-16	4	7 (5/2*)	2	1/1*	2/1*
C-130	11	11	2	6	3
KC-135	8	7 (5/2*)	1	2/1*	2/1*
C-141	4	3	-	1	2

* F-16 Installations Scheduled to convert to KC-135s

Only 14 of the 32 AFRES UE Locations are in this Subcategory

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

OVERALL METHODOLOGY

- Group the Installations by Weapon System
  - Fighter (Carswell, Bergstrom, and Homestead)
  - Strategic Airlift (March and Westover)
  - Tanker (Grissom)
  - C-130 (Dobbins, Gen Mitchell, Minn-St Paul, Niagara, O'Hare, Greater Pittsburgh, Willow Grove, and Youngstown)
- Fighter, Strat Airlift, and Tanker Groups
  - Cost Effective Opportunities For Realistic Cost Savings
  - Evaluate Options Using the Eight DoD Criteria
- C-130 Group
  - Level Playing Field Analysis to Provide a Tiering
  - Analyze Potential Closures Using Realistic Options

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

JUSTIFICATION

- Grouping Insures Similar Installations are Compared
- For Fighter, Strat Airlift, and Tanker Groups
  - The Small Number Makes It Possible to Examine All the Cost Effective Options
  - Most Would Be BRAC Redirects
  - Easy to Defend
- For C-130 Group
  - Too Many to Realistically Examine All the Options
  - Level Playing Field Provides Defensible Position
    - Clearly Identifies the Most Cost Effective Installations
    - Answers the Question "Why Me and Not Him?"

BCEG CLOSE HOLD

AIR FORCE BCEG AFRES ANALYSIS

TIME TABLE NEXT TWO WEEKS

- Computer Analysis
  - Brief Proposed ARC Category Weights
  - Brief Proposed ARC Data Call #1 Goal Post
- AFRES Presents Options for Fighter, Strategic Airlift, and Tanker Groupings
- Level Playing Field Analysis of C-130 Group
  - COBRA Assumptions
  - Criteria I Through VIII Analysis
  - Tiering

BCEG CLOSE HOLD

11

AIR FORCE BCEG AFRES ANALYSIS

RECOMMENDATION

- BCEG Approve the Proposed Methodology for Analyzing the AFRES Sub-Category up through Tiering, as Amended by BCEG Comments.

BCEG CLOSE HOLD

12

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

23 JAN 1995

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 15 November 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen McGinty, AF/DPP
Dr. Wolff, AF/CE
Mr. Durante, SAF/AQX
Mr. Kuhn, SAF/GCN
Brig Gen McCarthy, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Mr. Mleziva, AF/BCWG
Col Mayfield, AF/RTR
Col Walters, AF/PE
Maj Richardson, AF/RE
Maj Linsenmeyer, AF/RE

The meeting was called to order by Mr. Boatright. He provided an overview of the meeting with the SECAF. On November 10, 1994, the SECAF received a briefing on the JCSG processes, and the tiering for Depots, Labs, T&E, UFT, Large Aircraft and Small Aircraft Subcategories. The SECAF approved the transmission of tiering of depots and labs by installation and functional capability, and UFT and T&E by installation merit only. The SECAF also approved a change to the Space categorization. Space was divided into two subcategories; Satellite Control, including Onizuka AFB and Falcon AFB, and Space Support, including Peterson AFB, Vandenberg AFB, and Patrick AFB. the SECAF also determined that the Space Support subcategory had no excess capacity, and excluded it from further analysis.

CLOSE HOLD - BCEG/BCEG STAFF ONLY

After reviewing the Large Aircraft grades and tiering, the SECAF directed that Beale AFB be considered for closure, individually and in combination, together with the three bases in the lowest tier. Although there were other bases in the second tier along with Beale AFB, those bases were not considered good candidates for further analysis. Malmstrom AFB and Minot AFB were also in the middle tier, and their missile fields required follow-on analysis for closure only in the event Grand Forks was retained. McGuire AFB was not analyzed for closure because it serves as the only east coast Air Mobility Wing, and thus is unique within the middle tier bases. Considerable operational and financial costs would be incurred by disrupting the location of this wing, and there was no more suitable location for the east coast mobility wing. Offutt AFB supports headquarters and communications for Strategic Command forces. Duplication of those resources would require considerable expense and potential interruption of those essential national capabilities.

The SECAF then reviewed the Small Aircraft bases. AF/RT first discussed the issue of supersonic overland training airspace, which was raised by AF/XO in the meeting of November 4, 1994. In his estimation, future force structure may require additional supersonic training areas. Although supersonic ranges exist over water, there is a significant difference in training over land versus water, involving electronic emissions, background noise, and terrain masking. The only reasonable prospects for gaining additional supersonic airspace over land, which would be difficult to achieve in any event, are in the sparsely populated areas of the western United States.

AF/RT reported that, after being briefed on this issue, the BCEG believed that the airspace requirements for small aircraft were adequately captured in the Criterion I analysis. It was noted, however, that closure of both Cannon and Holloman AFB, both lower tier bases, would eliminate access to common airspace, and that this factor should be considered. Because of the need for access to western airspace, closure of both Cannon and Holloman was deemed inadvisable. One solution was to examine a nominal middle tier base from the east coast. The SECAF directed that further detailed analysis be conducted for the following bases, individually or in combination:

Moody
Cannon
Holloman
Cannon - Moody
Cannon - Seymour Johnson
Holloman - Moody
Holloman - Seymour Johnson

Maj Linsenmeyer and Maj Richardson, AF/RE, presented a proposal for goalposts and weights for evaluation of the Reserve subcategory, using the slides at Atch 1. After discussion, the BCEG directed a number of modifications to the briefed subelements and measures of merit. Under Criterion I, the Unit Participation subelement was removed because too many factors unrelated to installation effectiveness affected the ability of unit personnel to serve extra days.

Under the proposed Criterion VII, Personnel Distribution was removed and placed under Criterion II at 10 percent weighting, replacing the active duty Military Family Housing subelement. In addition, Response Time was removed from the Personnel Distribution subelement, with 60 percent weighting for Billeting Requirements, and 40 percent weighting to Commercial Billeting. In addition, Unit Retention and Personnel Turnover were removed as a

ARC CATEGORY SUB-ELEMENT WEIGHTS

AIR NATIONAL GUARD

AIR FORCE RESERVE

subelement of Recruiting because factors other than community support affect this issue. The relative weighting will remain the same on the other subelements. With the noted changes, the BCEG approved the subelements, measures of merit, and weighting.

Mr. Mleziva briefed an overview of a proposed process for examining the Lab JCSG alternatives, with an example of the JCSG product, using the slides at Atch 2. The BCEG noted that the proposed process included a policy area, development of a common support function strategy, which is outside the responsibilities of the BCEG. The development of such a strategy is a functional management responsibility which needs to be addressed by Air Force leadership with the results being provided to the BCEG. The BCEG responsibility is to analyze alternatives submitted by the LJCSG which result from LJCSG analysis.

There being no further matters to discuss, the meeting was adjourned at 1310. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS:
- ANG Move from Baltimore to Andrews
- Move from Moffett to McClellan
- COBRA for ANG Analysis
- Analysis of ARC bases
- Squadron size and number of units

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. AFRES Subelements
2. Lab JCSG Process

AIR FORCE BCEG ARC ANALYSIS

CRITERION I PROPOSED WEIGHTS

- **OPERATIONAL EFFECTIVENESS 70%**
  - BOS INTEGRATION (20% / 14%)
  - ARC OPERATIONS (80% / 56%)
- **ASSOCIATED AIRSPACE 20%**
  - EXISTING (67% / 0.13%)
    - MOA/RANGES (67% / 0.09)
    - VR/IR Rtes (33% / 0.02)
  - FUTURE (33% / 0.07%)
    - MOA/RANGES (67% / 0.09)
    - VR/IR Rtes (33% / 0.02)
- **RUNWAY TAXIWAY APRON 10%**
  - FIGHTER MISSION (25% / 0.03%)
  - BOMBER MISSION (25% / 0.03%)
  - TANKER MISSION (25% / 0.03%)
  - AIRLIFT MISSION (25% / 0.03%)

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

BCEG CLOSE HOLD

ARC UNIQUE DATA AND GOAL POST

- Section IX Questions
  - Section IX Grouped ARC Unique Criteria I-VIII Questions for Base Questionnaire
  - Criteria Were Approved by BCEG With The Overall Questionnaire
- ARC Data Call #1
  - Goal Post Awaiting BCEG Approval

AIR FORCE BCEG ARC ANALYSIS

CRITERIA I SUB-ELEMENTS (CONT)

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

- ARC OPERATIONS (80% / 56%)
  - UNIT PARTICIPATION (25% / 14%)
  - GENERIC OP SPT (75% / 42%)
    - FIGHTER
    - TANKER
    - AIRLIFT
    - BOMBER (0%)

Primary Mission (70% / 29.4%)

Other Two (15% / 6.3%) Each

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

CRITERIA I SUB-ELEMENTS (CONT)

OPERATIONAL EFFECTIVENESS

- BOS INTEGRATION (20% /14%)
  - POL (20% / 2.8%)
  - SECURITY (20% / 2.8%)
  - BASE SUPPLY (20% / 2.8%)
  - TOWER/ATC (20% / 2.8%)
  - BASE CE (20% / 2.8%)
- ARC OPERATIONS (80% / 56%)
  - UNIT PARTICIPATION (25% / 14%)
  - GENERIC OP SPT (75% / 42%)
    - FIGHTER
    - TANKER
    - AIRLIFT
    - BOMBER (0%)

Primary Mission (70% / 29.4%)

Other Two (15% / 6.3%) Each

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

CRITERIA II PROPOSED WEIGHTS AF/CEP and AF/CEVP

- Same as the Operations Large and Small Sub-Categories
- Except, the Below Criteria II Sub-Elements will be N/A and treated as Null Values:
  - Facility Military Family Housing — N/A (Null)
    - » AFRES Installations do not have MFH
  - Encroachment, Existing Local Community — N/A (Null)
    - » Many AFRES Installations Lack AICUZ Data
  - Encroachment, Future Local Community — N/A (Null)
    - » Many AFRES Installations Lack AICUZ Data

AIR FORCE BCEG ARC ANALYSIS

CRITERIA I SUB-ELEMENTS (CONT)

GENERIC OP SPT (75% / 42%)

- **FIGHTER**
  - Supersonic ACBT MOAs (15%/ 4.4% / 1%)
  - Other ACBT MOA's & Areas (15%/ 4.4% / 1%)
  - Low Alt MOAs (15% / 4.4% / 1%)
  - Scorable Range Complexes (15% / 4.4% / 1%)
  - EC Range W/in 250 Mi (8%/ 2.4% / 0.5%)
  - GND Forcess/TAC Acft Employ (8% / 2.4% / 0.5%)
  - ACMI (8%/ 2.4% / 0.5%)
  - FSWD (8%/ 2.4% / 0.5%)
  - # of VR/IR Routes (8%/ 2.4% / 0.5%)
- **TANKER**
  - Refueling Events W/in 700 M (33%/ 9.7% / 2%)
  - Tanker Saturation (33%/ 9.7% / 2%)
  - Distance to Concentrated Rcvr (33%/ 9.7% / 2%)
- **AIRLIFT**
  - DZs (Form/day/heavy equpt) (25%/ 7.3% / 1.6%)
  - Airdrop Employment Requirements (25%/ 7.3% / 1.6%)
  - Full Scale Airdrop Availability (25%/ 7.3% / 1.6%)
  - # of VR/IR Routes (25%/ 7.3% / 1.6%)
  - Air refueling Routes (0%)
- **BOMBER (0%)**

LEGEND
(SUB ELEMENT WT %
/ OVERALL W[illegible] %
(As Primary Then Other)

CRITERIA IV/V PROPOSED WEIGHTS AF/RTR

- Same as the Operations Large and Small Sub-Categories
- Except:
  - BRACal Model Factors Adjusted for ARC Limitations
    - » Sq PAA Size (AFR 15 PAA and ANG 12 PAA)
    - » No Military Family Housing
    - » No Dormitory and Dining Facilities
  - COBRA Model Adjusted for ARC
    - » ARTs as DoD Civilians
    - » Drill Authorizations not Counted
    - » Recruiting & Retraining Added as Onetime Cost

AIR FORCE BCEG ARC ANALYSIS

CRITERIA III PROPOSED WEIGHTS AF/LGMM

- Same as the Operations Large and Small Sub-Categories
- BCEG Reviewed and Approved the Grades When Grading All the AF Installations in Aug and Sept

AIR FORCE BCEG ARC ANALYSIS

CRITERIA VII PROPOSED WEIGHTS AF/RTR

- Disregard the Other Category Criteria and Weights
- <u>Use</u>:

PERSONNEL DISTRIBUTION (50%)
- RESPONSE TIME (40% / 20%)
- BILLETING REQUIREMENTS (40% / 20%)
- COMMERCIAL BILLETING (20% / 10%)

RECRUITING (50%)
- % OF RECRUITABLE AGE (10% / 5%)
- RECRUITING AREA POPULATION (10% / 5%)
- PERSONNEL TURNOVER (10% / 5%)
- OTHER LOCAL ARC UNITS (10% / 5%)
- POP/# OF ARC UNITS (20% / 10%)
- UNIT RETENTION (40% /20%)

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

BCEG CLOSE HOLD

CRITERIA VI PROPOSED WEIGHTS AF/CEVP

- Same as the Other Categories Criteria and Weights
- Except the AF/CEVP Model Count
  - Drill Authorizations are not counted as per DoD direction
  - ARTs as DoD Civilians
  - ART Drill Positions are Not Counted

RECOMMENDATION

- BCEG Approved the Proposed Weighting For ARC Category as Amended by BCEG Comments.

CRITERIA VIII PROPOSED WEIGHTS AF/CEVP

- Same as the Other Base Categories
- BCEG Reviewed and Approved the Grades When Grading All the AF Installations in Aug and Sept

AIR FORCE BCEG ARC ANALYSIS

INSTALLATION BILLETING

Under DoD Criteria VII Community Support

IX.3.A. % of reservist/guardsmen requiring billeting during drill weekends?

AFRES: GREEN - < 27% YELLOW - 27 - 39% RED - > 39%

ANG: Not Applicable, Guardsmen not Authorized Billeting

IX.3.B. % of drill billeting requirements met by using commercial billeting establishments (contract billeting)?

AFRES: GREEN - < 33% YELLOW - 33 - 69% RED - > 69%

ANG: Not Applicable, Guardsmen not Authorized Billeting

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

PERSONNEL RETENTION

Under DoD Criteria VII Community Support

IX.14. Using data from the past two fiscal years, what is the average base AFRES/ANG retention rate? (Note any one time events, such as unit moves and/or weapon system conversions, that may have account for abnormalities).

Grading Filter/Goal Post

GREEN - ≥ 90%
YELLOW - < 90% to ≥ 87%
RED - < 87%

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

ARC DATA CALL GRADING FILTERS GOAL POSTS

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

ARC UNIQUE INSTALLATION DATA

- Original Section IX ARC Questions
  - Section IX Were the ARC Unique Base Questionnaire Questions From Criteria I-VIII
  - ARC Unique Question Grading Filters Were Approved By The BCEG With The Questionnaire
- ARC Data Call #1
  - Has Undergone Air Staff Review and Certification
  - AF/RTR is Inputting Into Data Base
  - No Change from BRAC 93
  - Goal Posts Await BCEG Approval

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

UNIT PARTICIPATION

Under DoD Criteria I. Impact on Operational Readiness

IX.15 (Added). What was the average number of Title 10 and/or Title 32 active duty days unit reservist/guardsmen participated beyond Annual Tours and Drills periods for FY92, FY93, and FY94 (est.)? (Do not include training periods)

Grading Filter/Goal Post

		AFRES	ANG
GREEN	-	>27 Days	>15 Days
YELLOW	-	17 To 27 Days	10 To 15 Days
RED	-	<17 Days	<10 Days

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

BOS BREAKOUT

Under DoD Criteria I. Impact on Operational Readiness

IX.16 (Added) Are there other Government aviation units collocated on the airfield? If yes; then who provides the following base operating support?

- A. POL - Host, Tenant, Separate, or Joint Facilities, or Civil/Contract
- B. Security - Host, Tenant, Separate, or Joint facilities
- C. Base Supply - Host, Tenant, Separate , or Joint facilities
- D. Tower/ATC - Host, Tenant, Separate, Joint facilities, or Civil/Contract
- E. Base CE - Host, Tenant, Separate, or Joint facilities.

Grading Filter/Goal Post

GREEN - Joint or Civil/Contract

YELLOW - Tenant or Host

RED - Separate

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

UNIT PARTICIPATION

Under DoD Criteria I. Impact on Operational Readiness

IX.15 (Added). What was the average number of Title 10 and/or Title 32 active duty days unit reservist/guardsmen participated beyond Annual Tours and Drills periods for FY92, FY93, and FY94 (est.)? (Do not include training periods)

Grading Filter/Goal Post

		AFRES	ANG
GREEN	-	>27 Days	>15 Days
YELLOW	-	17 To 27 Days	10 To 15 Days
RED	-	<17 Days	<10 Days

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

BOS BREAKOUT

Under DoD Criteria I. Impact on Operational Readiness

IX.16 (Added) Are there other Government aviation units collocated on the airfield? If yes; then who provides the following base operating support?

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- D. Tower/ATC - Host, Tenant, Separate, Joint facilities, or Civil/Contract
- E. Base CE - Host, Tenant, Separate, or Joint facilities.

Grading Filter/Goal Post

GREEN - Joint or Civil/Contract

YELLOW - Tenant or Host

RED - Separate

BCEG CLOSE HOLD

Air Force Review of LJCSG Alternatives

Presented on:
15 Nov 94

Outline

- Fundamentals
- Sample LJCSG Alternative
- Proposed Process
- Sample Strategy
- Summary

AT 42

Air Force Review of LJCSG Alternatives

Presented on:
15 Nov 94

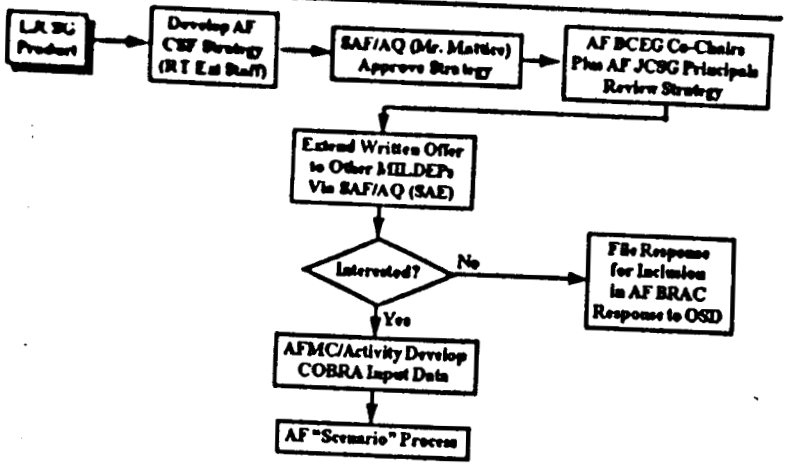
Outline

- Fundamentals
- Sample LJCSG Alternative
- Proposed Process
- Sample Strategy
- Summary

ATCH

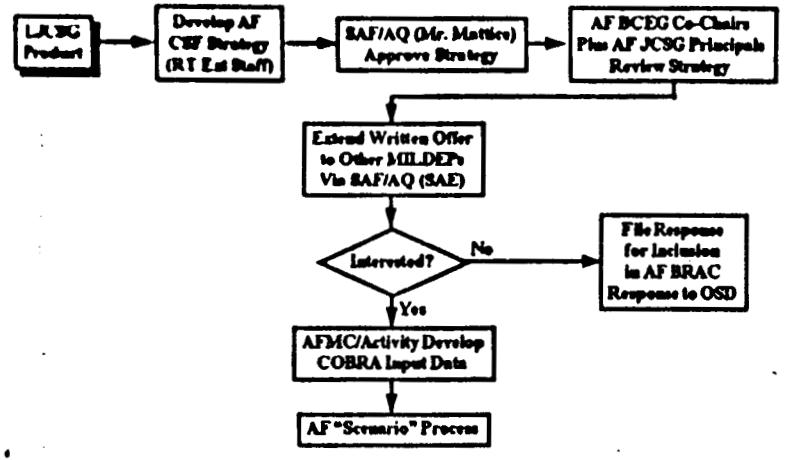
CSF Example

Proposed Process (LJCSG)



CSF Example

Proposed Process (LJCSG)



Fixed Wing Capacity/Requirements

	DoD		USAF	
	Requirement (STD BPOs)	Capacity	Requirement (STD BPOs)	Capacity
Structures	[illegible]	[illegible]	[illegible]	[illegible]
Propulsion	[illegible]	[illegible]	[illegible]	[illegible]
Avionics	[illegible]	[illegible]	[illegible]	[illegible]
Flight Determinant	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]

Total Req'd [illegible] Total Req'd Less 15% [illegible]
Total Capacity [illegible]

With 15% Savings Due to Consolidation, Wright Patterson Could Host All DoD Fixed Wing Work
Only DoD Site with this Capability

Summary

- LJCSG Product Released
- Alternatives Consolidate Work in Various MILDEPs
  - Within Model Limitations/Assumptions
- DoD Perspective may Differ from AF Perspective
- LJCSG Source Info Available
- AF Organizational Structure Very Efficient
- AF Outsources More - Reducing the Cost of Infrastructure
- LJCSG Only Identified Possibilities
  - MILDEPs Must Use Alternatives to Close/Realign and Reduce Infrastructure
- AF BRAC Recommendations Due to OSD - 08 Feb 95

Fixed Wing Capacity/Requirements

	DoD		USD	
	Requirement (FTE/AFTs)	USL WPAFB Capacity	Requirement (FTE/AFTs)	AFIT WPAFB Capacity
Structures	[illegible]	[illegible]	[illegible]	[illegible]
Propulsion	[illegible]	[illegible]	[illegible]	[illegible]
Avionics	[illegible]	[illegible]	[illegible]	[illegible]
Flight Determination	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]

Total Req'd [illegible] Total Req'd Less 15% [illegible]
Total Capacity [illegible]

With 15% Savings Due to Consolidation, Wright Patterson Could Host All DoD Fixed Wing Work
Only DoD Site with this Capability

Summary

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- AF BRAC Recommendations Due to OSD - 08 Feb 95

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

9 JAN 1995

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 30 November 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Maj Gen McGinty, AF/DPP
Dr. Wolff, AF/CE
Mr. Kuhn, SAF/GCN
Brig Gen McCarthy, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Lt Col Rodefer, AF/XOFC
Maj Richardson, AF/RE

The meeting was called to order by Mr. Boatright. Lt Col Rodefer, AF/XOFC, briefed Large Aircraft beddown excursions reflecting BCEG-directed changes, using the slides at Atch 1. He noted that the B-52 aircraft from Minot cannot be placed into Ellsworth because of pressure/altitude limitations, particularly in warm weather. He also noted that Beale AFB has air quality limitations for accepting KC-135E aircraft from the AFRES. The BCEG approved not moving Minot aircraft to Ellsworth and the other options as briefed.

Maj Richardson, AFRES, briefed the AFRES C-130 base analysis, using the slides at Atch 2. In Criterion I, Apron was the most common limit for pavement subelements. For Operations Effectiveness, MOA airspace was limited by the size requirement of MOAs. In some cases, existing MOAs were not viewed as available because they failed to meet the size requirements.

Brig Gen Bradley asked that other factors be considered in this category. One of these considerations is leaving one unit in each state, since an AFRES principle is to maximize

visibility in communities across America. In addition, he stated that Location and Recruiting are the most important factors for considering these bases. Mr. Boatright noted that cost and savings issues are not as significant because of the low figures, and there is not much distinction among units. After reviewing the criteria, the BCEG deferred tiering until later.

There being no further matters to discuss, the meeting was adjourned at 1240. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS: Selfridge Employment data
BCWG verification of ANG COBRA
Squadron size and number of units

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. Large Aircraft excursions
2. AFRES C-130 Analysis

BCEG CLOSE HOLD

CRITERIA I COBRA ASSUMPTIONS

LARGE AIRCRAFT BASES

COBRA EXCURSIONS

MAJOR RICHARD JOHNSTON
AF/XOFM
MOBILITY FORCES DIVISION

C:\COB_ABF7.PPT

BCEG CLOSE HOLD

1 12/5/94

BCEG CLOSE HOLD

LARGE AIRCRAFT -- ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

OPTION ONE

MINOT AFB -- SINGLE CLOSURE

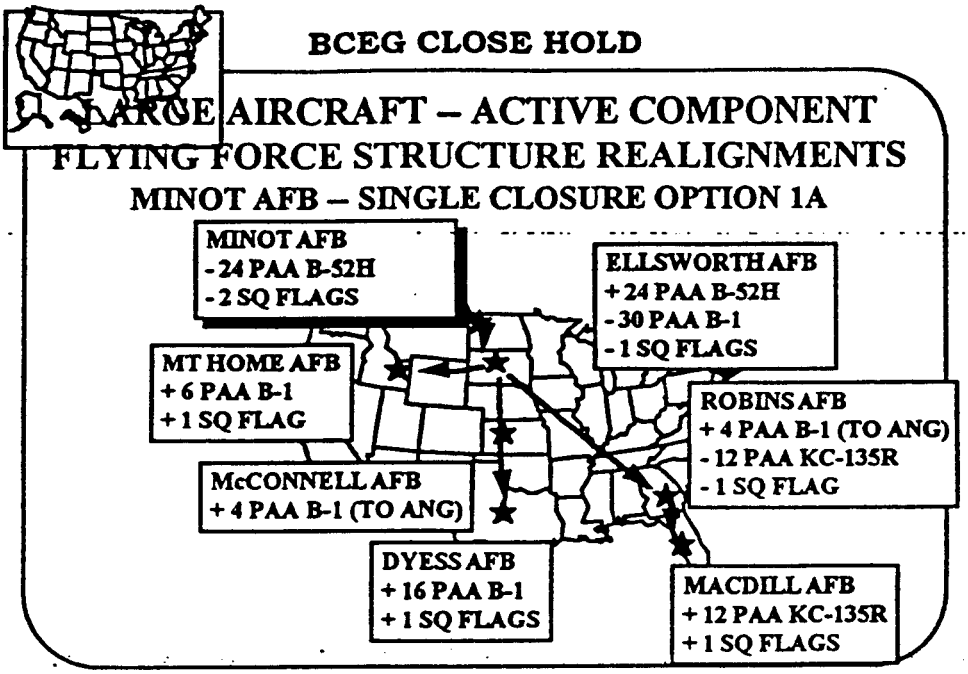
THREE SUB-OPTIONS REVIEWED:

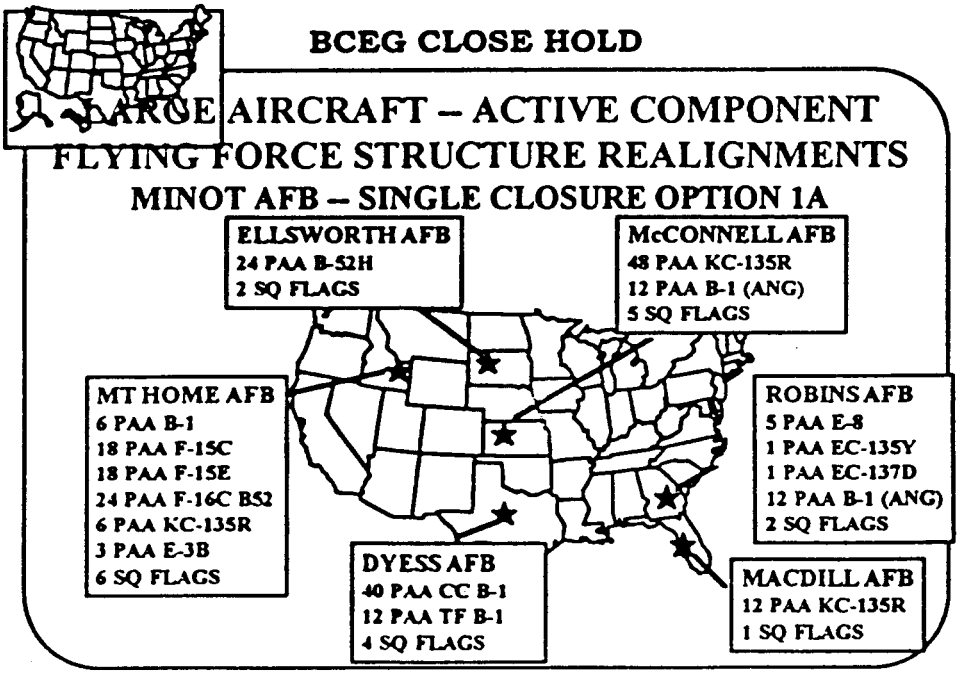
OPTION 1A: B-52s TO ELLSWORTH
OPTION 1B: B-52s TO FAIRCHILD
OPTION 1C: B-52s TO BEALE

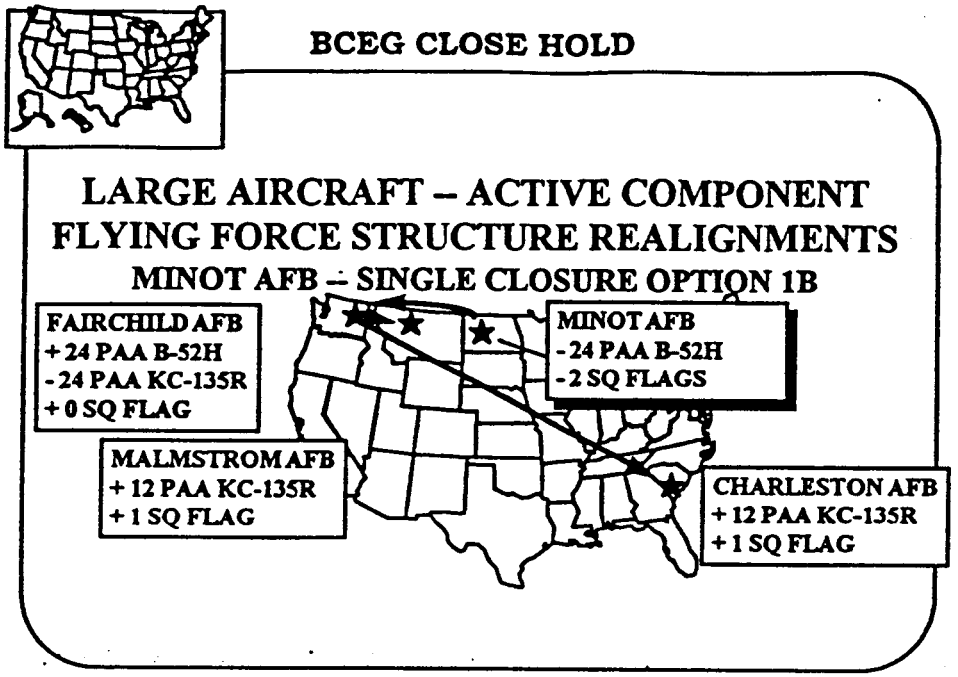
BCEG CLOSE HOLD

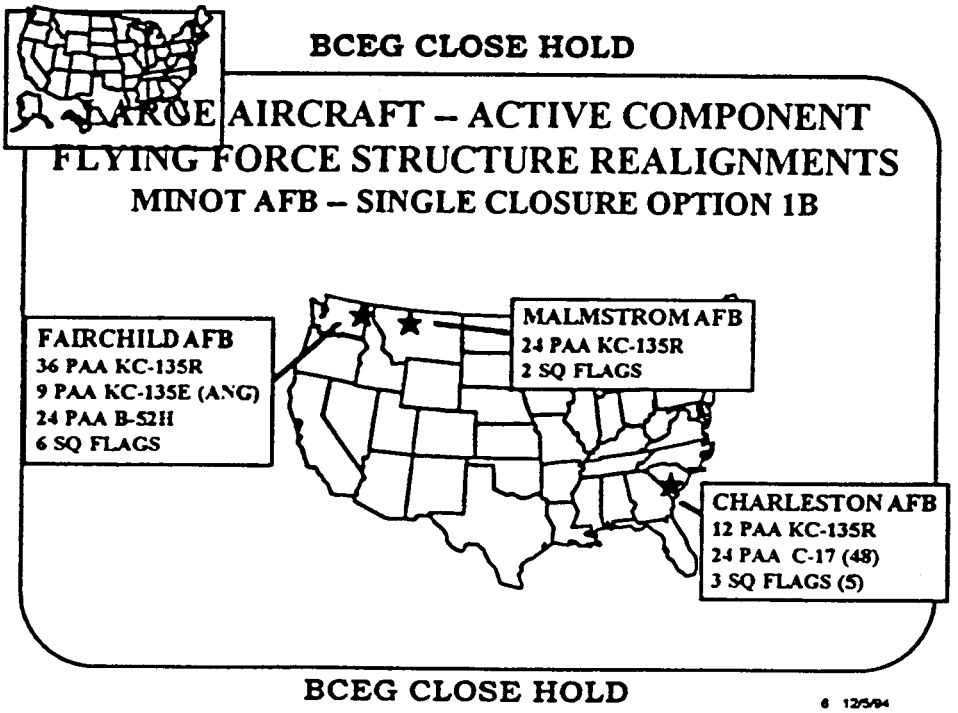
2 12/5/94

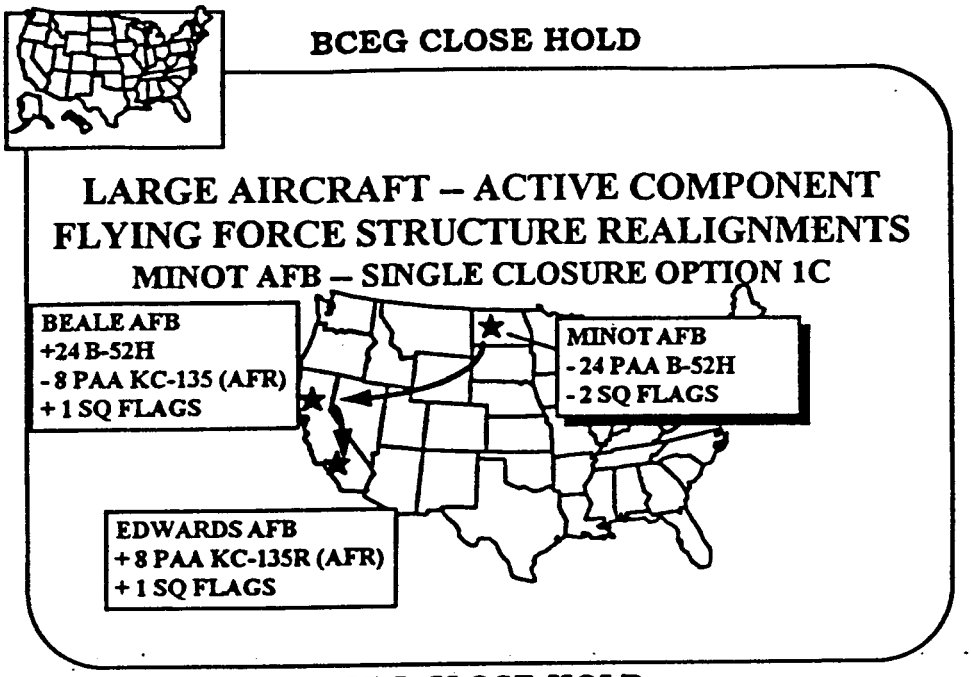
ATCH 1

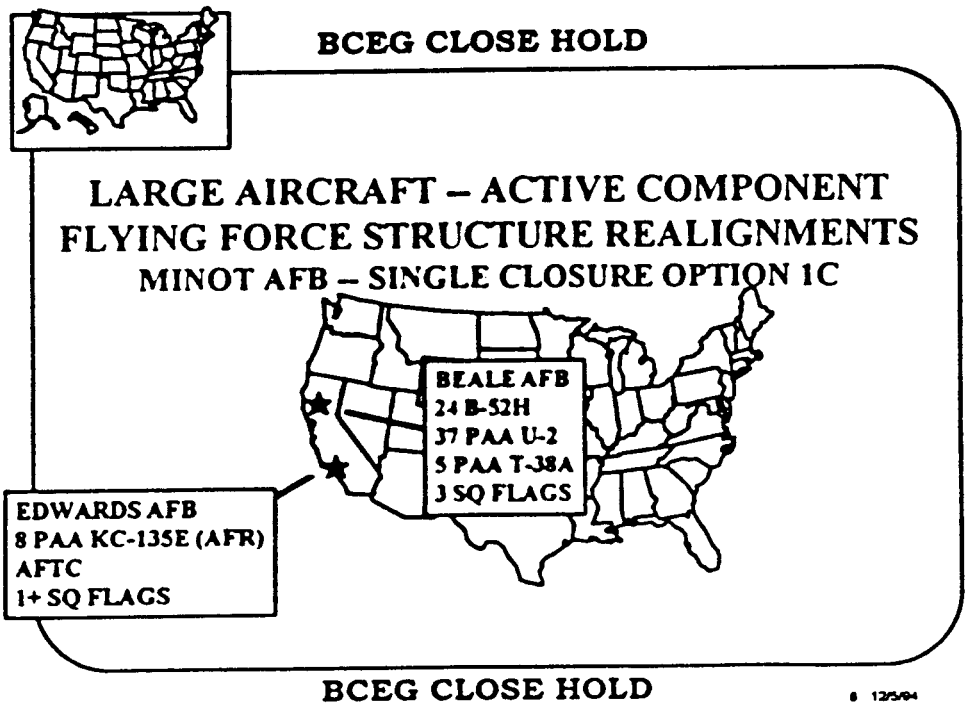

BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1A
MINOT AFB
- 24 PAA B-52H
- 2 SQ FLAGS
ELLSWORTH AFB
+ 24 PAA B-52H
- 30 PAA B-1
- 1 SQ FLAGS
MT HOME AFB
+ 6 PAA B-1
+ 1 SQ FLAG
ROBINS AFB
+ 4 PAA B-1 (TO ANG)
- 12 PAA KC-135R
- 1 SQ FLAG
McCONNELL AFB
+ 4 PAA B-1 (TO ANG)
DYESS AFB
+ 16 PAA B-1
+ 1 SQ FLAGS
MACDILL AFB
+ 12 PAA KC-135R
+ 1 SQ FLAGS
BCEG CLOSE HOLD
3 12/5/04


BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1A
ELLSWORTH AFB
24 PAA B-52H
2 SQ FLAGS
McCONNELL AFB
48 PAA KC-135R
12 PAA B-1 (ANG)
5 SQ FLAGS
MT HOME AFB
6 PAA B-1
18 PAA F-15C
18 PAA F-15E
24 PAA F-16C BS2
6 PAA KC-135R
3 PAA E-3B
6 SQ FLAGS
ROBINS AFB
5 PAA E-8
1 PAA EC-135Y
1 PAA EC-137D
12 PAA B-1 (ANG)
2 SQ FLAGS
DYESS AFB
40 PAA CC B-1
12 PAA TF B-1
4 SQ FLAGS
MACDILL AFB
12 PAA KC-135R
1 SQ FLAGS
BCEG CLOSE HOLD
4 12/5/04


BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1B
FAIRCHILD AFB
+ 24 PAA B-52H
- 24 PAA KC-135R
+ 0 SQ FLAG
MINOT AFB
- 24 PAA B-52H
- 2 SQ FLAGS
MALMSTROM AFB
+ 12 PAA KC-135R
+ 1 SQ FLAG
CHARLESTON AFB
+ 12 PAA KC-135R
+ 1 SQ FLAG
BCEG CLOSE HOLD
5 12/5/94


BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1B
FAIRCHILD AFB
36 PAA KC-135R
9 PAA KC-135E (ANG)
24 PAA B-52H
6 SQ FLAGS
MALMSTROM AFB
24 PAA KC-135R
2 SQ FLAGS
CHARLESTON AFB
12 PAA KC-135R
24 PAA C-17 (48)
3 SQ FLAGS (5)
BCEG CLOSE HOLD
6 12/5/94


BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1C
BEALE AFB
+24 B-52H
- 8 PAA KC-135 (AFR)
+ 1 SQ FLAGS
MINOT AFB
- 24 PAA B-52H
- 2 SQ FLAGS
EDWARDS AFB
+ 8 PAA KC-135R (AFR)
+ 1 SQ FLAGS
BCEG CLOSE HOLD
7 12/5/94


BCEG CLOSE HOLD
LARGE AIRCRAFT – ACTIVE COMPONENT
FLYING FORCE STRUCTURE REALIGNMENTS
MINOT AFB – SINGLE CLOSURE OPTION 1C
BEALE AFB
24 B-52H
37 PAA U-2
5 PAA T-38A
3 SQ FLAGS
EDWARDS AFB
8 PAA KC-135E (AFR)
AFTC
1+ SQ FLAGS
BCEG CLOSE HOLD
6 12/5/94

LARGE AIRCRAFT – ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

MINOT AFB – SINGLE CLOSURE

OPERATIONAL CONCERNS:

- PATTERN/RAMP SATURATION AT DYESS – 4 B-1 SQs + 2 C-130 SQs –OPTION A
- SIOP DEGREDATION AT ELLSWORTH – OPTION A
- TANKERS MOVED TO SE TANKER POOR AREA – 1 SQ – OPTION B
- PATTERN/RAMP SATURATION AT FAIRCHILD – 2 B-52 SQs + 4 KC-135 SQs – OPTION B
- MIXED MAJCOM's – OPTION B
- IF COUPLED W/BEALE AFB CLOSURE - PACAF SOF BEDDOWN? – OPTION B
- FIND NEW PACAF SOF BEDDOWN (FAIRCHILD?) – OPTION C
- AIR QUALITY AT EDWARDS – OPTION C

LARGE AIRCRAFT -- ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

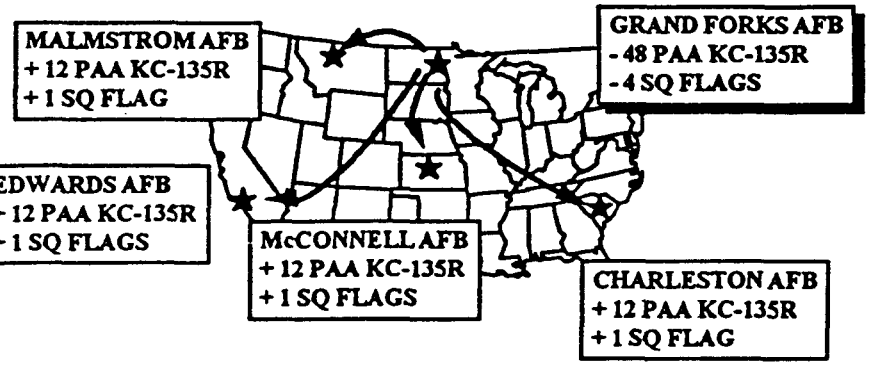
OPTION FOUR

GRAND FORKS AFB -- SINGLE CLOSURE

BCEG CLOSE HOLD

LARGE AIRCRAFT – ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

GRAND FORKS AFB - SINGLE CLOSURE



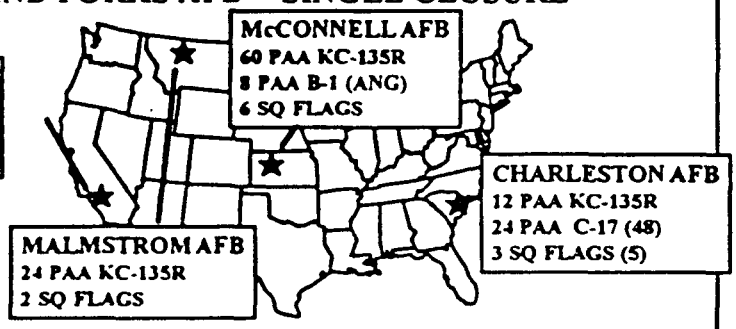
BCEG CLOSE HOLD

11 12/5/94

BCEG CLOSE HOLD

LARGE AIRCRAFT – ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

GRAND FORKS AFB – SINGLE CLOSURE



BCEG CLOSE HOLD

12 12/5/94

LARGE AIRCRAFT – ACTIVE COMPONENT FLYING FORCE STRUCTURE REALIGNMENTS

GRAND FORKS AFB - SINGLE CLOSURE

OPERATIONAL CONCERNS:

- TANKERS MOVED TO SE TANKER POOR AREA - ONE SQ
- TANKERS MOVED TO SW TANKER POOR AREA - ONE SQ

LARGE AIRCRAFT BASE COBRA EXCURSIONS

** RECOMMENDATION **

BCEG NARROW MINOT OPTIONS AND APPROVE BASING FOR COBRA EXCURSIONS

AIR FORCE BCEG ARC ANALYSIS

AFRES SUB-CATEGORY C-130 GROUP ANALYSIS

BCEG CLOSE HOLD

1

AIR FORCE BCEG ARC ANALYSIS

AGENDA

- Review
  - Criteria I, II, III, VI, VII, and VIII Grades
  - Level Playing Field COBRA Results
    - Assumption Used
- Overall Criteria Roll-Ups
- BCEG Discussion
- Tiering of AFRES C-130 Installations

BCEG CLOSE HOLD

2

ATCH 2

AIR FORCE BCEG ARC ANALYSIS

AFRES SUB-CATEGORY
C-130 GROUP

BASE	AIRFIELD OPERATOR	COLLOCATED UNITS
DOBBINS	AFR	NAVY / AR / ANG / AD
GEN MITCHELL	CIV	AFR / ANG / AR
MINN-ST PAUL	CIV	NAVY / ANG / AFR
NIAGARA	CIV	AFR / ANG / NG
O'HARE	CIV	AFR / ANG
PITTSBURGH (AFR)	CIV	AFR
WILLOW GROVE	NAVY	AFR / ANG / AR
YOUNGSTOWN	CIV	AFR

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3

AIR FORCE BCEG ARC ANALYSIS

CRITERION I WEIGHTS

OPERATIONAL EFFECTIVENESS 70%
- BOS INTEGRATION (20% / 14%)
- ARC OPERATIONS (80% / 56%)

RUNWAY TAXIWAY APRON 10%
- FIGHTER MISSION (25% / 0.03%)
- BOMBER MISSION (25% / 0.03%)
- TANKER MISSION (25% / 0.03%)
- AIRLIFT MISSION (25% / 0.03%)

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

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4

AIR FORCE BCEG ARC ANALYSIS

CRITERIA I SUB-ELEMENTS (CONT)

OPERATIONAL EFFECTIVENESS

- BOS INTEGRATION (20% /14%)
  - POL (20% / 2.8%)
  - SECURITY (20% / 2.8%)
  - BASE SUPPLY (20% / 2.8%)
  - TOWER/ATC (20% / 2.8%)
  - BASE CE (20% / 2.8%)
- ARC OPERATIONS (80% / 56%) — GENERIC OP SPT
  - FIGHTER
  - TANKER
  - AIRLIFT
  - BOMBER (0%)

Primary Mission (70% / 29.4%)
Other Two (15% / 6.3%) Each

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)

BCEG CLOSE HOLD

5

AIR FORCE BCEG ARC ANALYSIS

CRITERIA I SUB-ELEMENTS (CONT)

GENERIC OP SPT (80% / 56%)

- FIGHTER
  - Supersonic ACBT MOAs (15%/ 4.4% / 1%)
  - Other ACBT MOA's & Areas (15%/ 4.4% / 1%)
  - Low Alt MOAs (15% / 4.4% / 1%)
  - Scorable Range Complexes (15% / 4.4% / 1%)
  - EC Range W/in 250 MI (8%/ 2.4% / 0.5%)
  - GND Forces/TAC Acft Employ (8% / 2.4% / 0.5%)
  - ACMI (8%/ 2.4% / 0.5%)
  - FSWD (8%/ 2.4% / 0.5%)
  - # of VR/IR Routes (8%/ 2.4% / 0.5%)
- TANKER
  - Refueling Events W/in 700 M (33%/ 9.7% / 2%)
  - Tanker Saturation (33%/ 9.7% / 2%)
  - Distance to Concentrated Rcvr (33%/ 9.7% / 2%)
- AIRLIFT
  - DZs (Ferry/day/heavy equpt) (25%/ 7.3% / 1.8%)
  - Airdrop Employment Requirements (25%/ 7.3% / 1.8%)
  - Full Scale Airdrop Availability (25%/ 7.3% / 1.8%)
  - # of VR/IR Routes (25%/ 7.3% / 1.8%)
  - Air refueling Routes (0%)
- BOMBER (0%)

LEGEND
(SUB ELEMENT WT % / OVERALL WT %)
(As Primary Then Other)

BCEG CLOSE HOLD

6

AIR FORCE BCEG ARC ANALYSIS

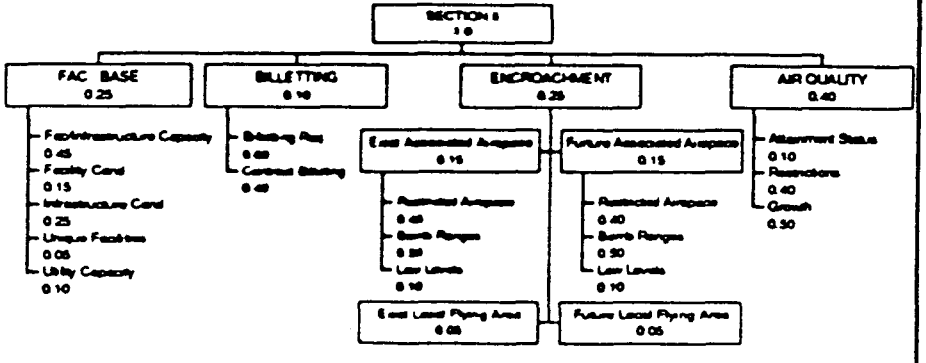
CRITERIA II WEIGHTS
AF/CEP and AF/CEVP

- Same as the Operations Large and Small Sub-Categories
- Except, the Below Criteria II Sub-Elements will be N/A and treated as Null Values:
  - Facility Military Family Housing — N/A (Null)
    - » AFRES Installations do not have MFH
  - Encroachment, Existing Local Community — N/A (Null)
    - » Many AFRES Installations Lack AICUZ Data
  - Encroachment, Future Local Community — N/A (Null)
    - » Many AFRES Installations Lack AICUZ Data

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

CRITERIA II WEIGHTS (CONT)
AF/CEP and AF/CEVP



BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

CRITERIA III WEIGHTS AF/LGMM

- Same as the Other Aircraft Categories
- BCEG Previously Reviewed and Approved the Grades.

BCEG CLOSE HOLD

AIR FORCE BCEG ARC ANALYSIS

CRITERIA VI WEIGHTS AF/CEVP

- Same as the Other Categories Criteria and Weights
- Except the AF/CEVP Model Count
  - Drill Authorizations are not counted as per DoD direction
  - ARTs as DoD Civilians
  - ART Drill Positions are Not Counted
- BCEG Previously Reviewed and Approved the Grades.

BCEG CLOSE HOLD

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

23 JAN 1995

OFFICE OF THE ASSISTANT SECRETARY

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 1030 hours on 1 December 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen McGinty, AF/DPP
Mr. Orr, AF/LGM
Dr. Wolff, AF/CE
Mr. Kuhn, SAF/GCN
Brig Gen McCarthy, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Col Walters, AF/PE
Lt Col Jarman, AF/XOOT
Maj Linsenmeyer, AF/REXP

The meeting was called to order by Maj Gen Blume. Maj Linsenmeyer, AF/REXP, briefed the AFRES Fighter/Tanker/Strategic Airlift Force Structure plan, using the slides at Atch 1. The briefed options are potential force structure and basing decisions that were examined from an operational and cost standpoint. For the move from Bergstrom to NAS Fort Worth, there would be a cost avoidance of conversion of the Bergstrom AFRES unit to KC-135 aircraft.

After the discussion on the various options presented, Brig Gen Bradley noted that, in regard to the C-130 bases presented previously, AFRES believes no closures are justified at this time due to insufficient savings. Other members of the BCEG questioned this conclusion and recommended that we continue the analysis of operational and cost factors to determine whether the closure of one or more of these bases is advisable. After discussion, the BCEG agreed to leave this issue open and get refined cost figures to support the options in today's briefing.

Lt Col Jarman, AF/XOOT, briefed the alternatives from the UPT JCSG, using the slides at Atch 2. He noted that, although JPATS was not in the force structure program, it should be considered as a capacity factor to accommodate the conversion. He also presented an Air Force-only capacity analysis from AETC in order to compare the JCSG approach with that of the Air Force. One major difference in analysis was the exclusion from JCSG consideration of the Introduction to Fighter Fundamentals syllabus requirements, which account for significant capacity use at three Air Force bases.

The BCEG then discussed the JCSG alternatives. They found the Alternative One scenario including gaining capacity from outlying fields at closing training activities consistent with the Air Force process. Alternatives Two and Three were considered high-risk because of the minimal excess capacity available in each. The BCEG approved the Air Force capacity analysis offered by AETC and the presentation of the briefing to the SECAF.

Mr. Orr briefed the alternatives for depot activities received from the Depot JCSG, using the slides at Atch 3. Mr. Orr noted an error on the charts related to the Strat Msl Cmpt commodity at Kelly AFB and the Software commodity at McClellan AFB. The charts have been annotated to reflect those corrections. He also presented some preliminary COBRA analysis of the depot closures, noting that these are incomplete and based on a cursory look at expected costs. The BCEG noted that the COBRA numbers for the dual closures were incorrect as briefed, and noted that only a detailed analysis of the combined closures could produce the required information.

In discussing the JCSG alternatives, Mr. Orr noted that the JCSG used the tiering by depot activity for its military value factor, rather than the tiering by installation, both of which were provided by the Air Force. At Atch 4 are JCSG slides that were presented by Mr. Orr on issues related to that process. At Atch 5 is a map of Kelly AFB that addressed some of the issues related to the retention of the AFRES, ANG, and Intelligence areas. After receiving the briefing, the BCEG recommended this briefing be given to SECAF as consistent with the Air Force analysis.

There being no further matters to discuss, the meeting was adjourned at 1325. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS: Selfridge Employment data
BCWG verification of ANG COBRA
Squadron size and number of units white paper

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC 20330-1000

OFFICE OF THE ASSISTANT SECRETARY

20 FEB 1995

MEMORANDUM FOR RECORD

FROM: SAF/MII

SUBJECT: Minutes of Air Force Base Closure Executive Group (AF/BCEG) Meeting

The AF/BCEG meeting was convened by Mr Boatright, SAF/MII, at 0830 hours on 19 December 1994, in Room 5D1027, the Pentagon. The following personnel were in attendance:

a. AF/BCEG members:

Mr. Boatright, SAF/MII, Co-Chairman
Maj Gen Blume, AF/RT, Co-Chairman
Mr. Beach, SAF/FM
Mr. McCall, SAF/MIQ
Maj Gen McGinty, AF/DPP
Maj Gen Heflebower, AF/PE
Mr. Orr, AF/LGM
Dr. Wolff, AF/CE
Mr. Durante, SAF/AQX
Mr. Kuhn, SAF/GCN
Brig Gen Newell, AF/XOO
Brig Gen Weaver, NGB/CF
Brig Gen Bradley, AF/RE

b. Other key attendees:

Col Mayfield, AF/RTR
Lt Col London, AF/TER
Maj Piper, AFMC/XP

The meeting was called to order by Maj Gen Blume. He described the work of a newly-appointed Tiger Team. This team will examine the cost and savings figures under COBRA for some of the previous analyses to refine the figures used in those analyses. The purpose of this review is to have as current and accurate a financial analysis as possible of unique BRAC actions (potential lab closures, only flying operations or missile operations terminated, etc.).

On December 16, 1994, the SECAF was briefed on the directed Large Aircraft studies. There was some question on the costs and savings for the Grand Forks and Malmstrom options. More study on these figures was directed. After this briefing, more study was directed on the

Ellsworth option (not including moving the Dyess C-130s), Grand Forks and Malmstrom realignments, and a potential Minot closure.

Satellite Control bases were also examined. The tiering was accepted, and analysis of an Onizuka closure was directed. There was concern over national assets at Onizuka and the costs associated with continued support for those missions. Two options were to be examined; one that would move all Air Force missions and all long-term national missions but continue those national missions that are scheduled to phase out, and one which moved all national missions.

After the review of the meeting with the SECAF, Mr. Mleziva, AF/BCWG, presented an overview of the Lab presentation to be given to the SECAF at her next meeting with the BCEG, including the revisions from the previous review by the BCEG, using the slides at Atch 1. The review included new figures for Rome Lab, New York, and the Armstrong Lab at Mesa, Arizona. The Rome Lab figures use the most current personnel and MILCON data available. Personnel savings include a four percent consolidation savings and other standard personnel COBRA assumptions. The Armstrong Lab analysis assumes that costs to operate at Orlando in a stand alone configuration are the same as currently incurred in a stand alone status at Mesa. The BCEG noted that no personnel savings should result from the move to Orlando.

Lt Col London, AF/TER, presented the Air Force T&E analysis, using the slides at Atch 2. The two-part briefing consisted of an intra-Air Force view of realignments and possible Air Force joint alternative proposals. The BCEG requested these be split into two separate briefings to emphasize the different processes involved in each. The consolidation efforts within the Air Force will attempt to further consolidate T&E activities. Although Air Vehicle and Armament and Weapons testing are largely consolidated already, Electronic Combat is capable of further consolidation; however, two sites will be required to support Electronic Combat testing even after the proposed consolidation.

The UTTR is proposed to be transferred to Air Combat Command as a training range. All T&E personnel and infrastructure will be removed and consolidated at Eglin AFB and Edwards AFB. The range is currently used predominantly for training, and removal of the permanent test control activities would result in manpower and cost savings. Testing requiring a large impact footprint will continue to be accomplished at UTTR using portable equipment on an as-needed basis. Both REDCAP and AFEWES can be consolidated due to low workloads. The BCEG requested that the three electronic combat activities be broken out into three separate COBRA analyses.

Lt Col London then addressed three possible alternatives which address activities viewed as core by the JCSG-TE. Mr. Boatright noted that these proposals need to be made by the functional manager to the SECAF, and that the BCEG could only address whether the alternatives were consistent with the BCEG analysis. The BCEG did note that these alternatives need to highlight budget, personnel, and air quality issues as concerns. The BCEG approved the intra-Air Force moves for consideration by the SECAF, and approved the other alternatives as consistent with the Air Force analysis.

Maj Richardson, AF/RTR, briefed AFRES recommendations, using the slides at Atch 3. He noted that the cost estimates had been reviewed by AF/CE and the BCWG. Some corrections were made in that review and have been incorporated into the information briefed. Mr. Boatright

stated that the two most important factors supporting the closure of Pittsburgh ARB are the high BOS cost and the potential to absorb existing AFRES personnel in other units in the area. Despite the high rating in Criterion I, these factors are important to AFRES. Brig Gen Bradley noted that a less expensive option may exist for this move by adding four aircraft at Peterson and Dobbins. AFRES will review this option.

Maj Piper, HQ AFMC/XP, briefed the background for a redirect of the 21st Space Systems Squadron from Lowry AFB to Peterson AFB, using the slides at Atch 4. Since the Commission's previous direction, establishment of the major space and warning systems software support activity at Peterson AFB has created an opportunity to consolidate software support at that base that would result in personnel and cost savings. The BCEG approved the proposal as consistent with the BCEG analysis, and recommended it be briefed to the SECAF with complete COBRA information.

There being no further matters to discuss, the meeting was adjourned at 1100. The next BCEG meeting will be at the call of the Co-Chairmen.

OPEN ITEMS: Squadron size and number of units White Paper

JAY D. BLUME, JR., Maj Gen, USAF
Co-Chairman

JAMES F. BOATRIGHT
Co-Chairman

Attachments
1. Lab Briefing
2. T&E Briefing
3. AFRES Briefing
4. 21st SSS Redirect

Lab & Product Center
DECISION BRIEFING
(BCEG)

Mleziva
19 Dec 94

Purpose

- LJCSG Analysis
  - Approve RL, Rome Decision Data
  - Approve AL, Mesa Decision Data
- AF Tier II/III Bases
  - Analysis In Progress

ATCH 1

Criteria IV & V

Rome Lab, NY

	1-Time Cost ($M)	20 YR NPV ($K)	Steady State	ROI	Pers Savings
to Hanscom AFB	79	(75)	12	5	64

Criteria IV & V

Armstrong Lab, Mesa, AZ

	1-Time Cost ($M)	20 YR NPV ($K)	Steady State	ROI	Pers Savings
To Orlando	29.2	24448	0*	Never	2
To Luke AFB	28.6	9730	1.4	29	2
To Brooks AFB	29.2	11970	1.3	35	2

Considerations:

- BRAC '91 Orlando Move Decision
- BRAC '93 NAWC Orlando Closure Decision
- Aircrew Research Subjects Availability
- AF OL at Orlando for Joint Matters

* Assumes Orlando Identical to Mesa

Air Force T&E Analysis
Decision Brief

19 Dec 94

Purpose

- Intra-AF Realignments
  - AFFTC/UTTR (Hill AFB UT)
  - REDCAP (Buffalo NY), AFEWES (Ft Worth TX) and AFDTC/EMTE (Eglin AFB FL)
- Additional Cross-Servicing Alternatives
  - AF Offers to Navy

ATCH 2

Capacity and Capability Analysis

Capability Assessment

T&E Function	AFFTC @ Edwards	AFFTC @ UTTR	AFDTC @ Eglin	AFDTC @ Holloman	475 WEG @ Tyndall	AEDC @ Arnold	REDCAP @ Buffalo	AFEWES @ Ft Worth
Air Vehicle	F		P	P	P	P		
Armaments/ Weapons		P	F	P	P	P		
Electronic Combat	P		P	P			P	P

F = Full Capability to Support All Six Test Facility Categories of the Acquisition/Test Process
P = Partial Capability
☐ = Intra-AF Realignment/Consolidation Opportunities

AF Realignments & Consolidations

Intra-AF Candidates

- Air Vehicle
  - None
- Armaments/Weapons
  - AFFTC (UTTR) Capabilities
- Electronic Combat
  - REDCAP (Buffalo) and AFEWES (Ft Worth) Hardware-in-the-Loop Facilities/Workload
  - AFDTC/EMTE (Eglin) Open-Air-Range Facilities/Workload
    - AFFTC (Edwards) Open-Air-Range Workload

Armament/Weapons Realignment

AFFTC (UTTR)

- Realign UTTR from AFMC T&E Range to ACC Training Range
  - Retain Minimum Capability to Support Training Requirements and Large Footprint Weapons T&E (e.g., Cruise Missile), Particularly
    - Critical Air/Land Space
    - Mobile T&E Instrumentation/Support
  - Transfer Workload to AFDTC (Eglin) and AFFTC (Edwards)
  - Downsize Personnel to Satisfy New Requirements
  - Dispose of Remaining Equipment/Instrumentation
- Rationale
  - 82% of Current Missions are Training (Only 18% T&E)
  - Most of Current T&E Can Be Accomplished With Existing Core T&E Capabilities (AFDTC and AFFTC)
  - Requirement to Retain Air/Land Space

AFFTC (UTTR) Realignment COBRA Analysis

Construction	
Mission	0
MFH	0
Moving	0.6
Personnel Costs	(26.4)
Overhead	(0.4)
Mission	(38.2)
Other	2.1
Total:	**(62.4)**

Criteria IV & V

AFFTC (UTTR) Realignment

1-Time Cost	20 YR NPV	Steady State	ROI	Pers Savings
$3.2M	($179.9M)	$12.4M	0 yrs	104

Electronic Combat (EC) Realignment

REDCAP/AFEWES/AFDTC (EMTE)

- Realign REDCAP & AFEWES Hardware-In-The-Loop (HITL) Facilities and AFDTC/EMTE Open-Air-Range (OAR)
  - Move Workload and Required Equipment from REDCAP and AFEWES to AFFTC/BAF (Edwards) and AFDTC/GWEF (Eglin) Facilities
  - Move Required Threat Systems from AFDTC/EMTE (Eglin) to Nellis Complex
  - Disestablish REDCAP, AFEWES, and Dispose of Remaining Equipment
  - Retain Emitter-only Threat Simulators at AFDTC (Eglin) to Support AFSOC, AWC, and AFMC Armaments/Weapons T&E and Training
- Rationale
  -

REDCAP/AFEWES/AFDTC (EMTE) Realignment COBRA Analysis

Construction	
Mission	0
MFH	0
Moving	9.6
Personnel Costs	.4
Overhead	.4
Mission	(13.2)
Other	0
Total:	**(2.8)**

Criteria IV & V

REDCAP/AFEWES/AFDTC (EMTE) Realignment

1-Time Cost	20 YR NPV	Steady State	ROI	Pers Savings
$9.8M	($45.0M)	$4.3M	3 yrs	0

( ) = Savings

Additional Cross-Servicing Alternatives

Other Candidates (Under Appropriate Conditions)

- Air Vehicles
  - Consolidate NAWC (Pax River) High Performance, Fixed-Wing Open-Air Range T&E with AFFTC (Edwards) Core T&E Capability
- Armaments/Weapons
  - Consolidate NAWC (Pt Mugu) and NAWC (China Lake) Air-to-Air /Air-to-Surface Open-Air Range T&E with AFDTC (Eglin) Core T&E Capability
- Electronic Combat
  - Consolidate NAWC (China Lake) Electronic Combat Open-Air Range T&E with AFDTC (Eglin) Core T&E Capability

Air Force Proposed Alternative (Air Vehicles)

- AFTE-1: Move Navy High Performance Fixed-Wing Open Air Range (OAR) Workload to AFFTC, Edwards AFB, CA
  - Increased Utilization of AF Core Air Vehicle T&E Capability
  - CONOPS Similar to Army's AQTD as a Tenant
  - Navy Retain Carrier Suitability and Maritime Peculiar Testing
- Rationale
  - AFFTC Scored Highest Functional Value of Air Vehicle T&E
  - Capability and Available Capacity to Absorb Workload
  - Ramp and Hanger Space Can Accomodate Navy Aircraft
  - Shared Range Assets and Test Support Aircraft

Activity	Functional Value	Capacity	Workload	Available Capacity
AFFTC - Edwards	85	11998	7583	4415
NAWC- Pax River	81	12246	7661*	4585

* Approximately 50% is High Performance Fixed-Wing (3830 Test Hours)

Air Force Proposed Alternative (Armament/Weapons)

- AFTE-2: Move NAWC China Lake and NAWC Pt Mugu Air-to-Air and Air-to-Surface Open Air Range (OAR) workload to AFDTC Eglin AFB FL
  - Increased Utilization of Air Force core Armament/Weapons T&E OAR capability
  - CONOPS Similar to Army's AQTD as a Tenant
- Rationale
  - AFDTC scored highest functional value for Armament/Weapons T&E
  - Available capability, capacity, and infrastructure to absorb workoad
  - Reduces number of DoD Armament/Weapons OAR's from 4 to 2
  - Provides one OAR for land and sea vice two separate OAR's
  - Preserves Topographical and Climatological Diversity

Activity	Functional Value	Capacity	Workload	Available Capacity
AFFTC Eglin	82	16,036	7,598	8,438
NAWC China Lake	57	3,986	2,169	1,817
NAWC Pt Mugu	77	11,609	4,068	7,541

Air Force Proposed Alternative (Electronic Combat)

- AFTE-3: Move NAWC China Lake, CA Electronic Combat (EC) Open Air Range (OAR) Workload and Threat Systems to AFDTC Eglin AFB, FL
  - Increased Utilization of AF Core Electronic Combat T&E OAR Capability
  - Move Eleven Sea Based Threats from China Lake to Eglin and Combine with Land-Based Threats
  - Maximum Utilization of Nellis Complex (1st Priority)
- Rationale
  - AFDTC Scored Highest Functional Value for EC T&E
  - Available Capacity and Basic Infrastructure to Absorb Workload
  - Provides realistic Littoral Environment (vs Desert)
  - Reduces Number of DoD OARs from 3 to 2

Activity	Functional Value	Capacity	Workload *	Available Capacity
AFDTC Eglin	65	1978	963	1079
NAWC-China Lake	47	1821	0	1076

* After Max Utilization of Nellis Complex

AIR FORCE AFRES BRAC 95 ANALYSIS

AFRES BRAC 95 RECOMMENDATIONS

Major Richardson, AF/RTR
Major Linsenmeyer, AF/REX

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AIR FORCE AFRES BRAC 95 ANALYSIS

COSTING REVIEW

- C-5 Estimates Into March, Dover, and Wright Patterson
- Add'l C-130 Estimates Into Maxwell and Dobbins
- Add'l KC-135 Estimate Into Seymour-Johnson

2

ATCH 3

Summary

- Approve Intra-AF Realignments
  - AFFTC (UTTR)
  - REDCAP/AFEWES/AFDTC (EMTE)
- Approve Release of AF Offers to Navy
  - Capability & Capacity Fit
  - Reduces DoD Excess Capacity
  - Leverages AF Core T&E Capabilities
  - Under Appropriate Conditions (i.e., TOA & End Strength Considerations)

AIR FORCE AFRES BRAC 95 ANALYSIS

AIR MOBILITY- WESTOVER ARB

- AFRES 14 C-5As and Misc NG and Army Res Units
- Option 1: March Option 2: Dover Option 3: Wright-Pat
- Considerations
  - 4th Largest AFRES Location
  - Lack of C-5 Excess Capacity

COBRA

ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
$149M	- 190	396	7 Yrs	23.5

Maj Rasmussen, AF/RTR, BARC130.PPT4, 12/22/94, 10:10 AM 9

AIR FORCE AFRES BRAC 95 ANALYSIS

AIR MOBILITY- MARCH ARB

- 16 AFR C-141s and 17 ANG/AFR KC-135s
  - Realign 12 C-141s to Dobbins
  - Realign 4 C-141s to Andrews
  - Realign Dobbins C-130 to Maxwell to Make Room for C-141s
  - Realign 8 AFR KC-135Es to Edwards
  - Realign 9 ANG KC-135Rs to Channel Island
- Considerations
  - Air Hub For USMC 1st MEF
  - Lack of C-141 Excess Capacity
  - 2nd Largest AFRES Installation
  - Air Quality Issue

COBRA

ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
$184M	- 212	297	7 Yrs	27.4

[1] Does Not Include Recruiting and Training Cost

Maj Rasmussen, AF/RTR, BARC130.PPT4, 12/22/94, 10:10 AM 10

AIR FORCE AFRES BRAC 95 ANALYSIS

AFRES BOS COST COMPARISON

LOCATION	AIRFIELD OPERATOR	COLLOCATED UNITS	BOS	COST
BERGSTROM	AFR	CIV (?)	286	$20.89M
CARSWELL	NAVY	AFR / ANG	260	17.1
DOBBINS	AFR	ANG / AD / NAVY	363	24.73
GEN MITCHELL	CIV	AFR / ANG / AR	278	18.32
GRISSOM	AFR	AFR	383	20.27
HOMESTEAD	AFR	CIV (?)	334	26.57
MARCH	AFR	ANG / AFR	383	30.1
MINN-ST PAUL	CIV	NAVY / ANG / AFR	216	13.96
NIAGARA	CIV	AFR / ANG / NG	256	20.04
O'HARE	CIV	AFR / ANG	259	16.52
PITTSBURGH	CIV	AFR	243	22.23
WESTOVER	AFR	NG	397	36.1
WILLOW GROVE	NAVY	AFR / ANG / AR	144	9.41
YOUNGSTOWN	CIV	AFR	175	10.43

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AIR FORCE AFRES BRAC 95 ANALYSIS

CONSIDERATIONS FOR AFRES RECOMMENDATION

- Pros
  - + Cost And Manpower Savings
  - + Reduces AFRES BOS Cost
- Cons
  - – Small Financial Pay Back for Non-Financial Impact
  - – Lowers AFRES Presence In Civilian Community
    - » Reduces Recruiting & Volunteer Pool
  - – All Bases Are In Good Recruiting and Training Locations
    - » Impact On Joint Training With Regional Guard and DOD Res Units
- Key Factors
  - – Force Structure Addressed Programatically
  - – Greatest Savings for Least Amount of Pain
  - – Reassignment of Displaced Reservists

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AFMC INITIATIVE

- AFMC WANTS TO CONSOLIDATE DEFENSE SUPPORT PROGRAM LIFE CYCLE SOFTWARE SUPPORT UNDER THE MANAGEMENT OF THE SSSG AT A CENTRALIZED INTEGRATED SUPPORT FACILITY AT PETERSON AFB
  - SAVE $2.3M/YEAR ON DUPLICATED COMPUTER SYSTEMS AND CONTRACTOR FACILITIES
  - SAVE $7M/YEAR IN REDUCED OVERHEAD AND MANPOWER COSTS
  - SAVE $1M/YEAR IN ANNUAL OPERATING COSTS
  - BENEFIT OF SYNERGISM
- UPON COMPLETION OF MOVES NET OCT 96, TOTAL MANPOWER SAVINGS WILL BE AT LEAST:
  - GOVERNMENT - 48
  - CONTRACTOR - 15

RECOMMENDATIONS

- AIR FORCE RECOMMENDS THAT THE BRAC '95 COMMISSION "REVISIT" THE BRAC '91 DECISION TO CANTON DET 1/SSSG (FORMERLY 21 SSYS AND DET 3/SMC) AT THE FORMER LOWRY AFB
- AIR FORCE SUPPORT THE AFMC POSITION THAT MOVEMENT OF DET 1/SSSG TO PETERSON AFB IS A MORE EFFECTIVE AND LESS COSTLY ALTERNATIVE

AIR FORCE BCEG ARC ANALYSIS

CRITERIA VII WEIGHTS AF/RTR

- Disregarded the Other Categories' Criteria and Weights
- Used:

RECRUITING
- % OF RECRUITABLE AGE (1X)
- RECRUITING AREA POPULATION (1X)
- OTHER LOCAL ARC UNITS (1X)
- POP/# OF ARC UNITS (2X)

BCEG CLOSE HOLD

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AIR FORCE BCEG ARC ANALYSIS

CRITERIA VIII WEIGHTS AF/CEVP

- Same as the Other Aircraft Categories
- BCEG Previously Reviewed and Approved the Grades.

BCEG CLOSE HOLD

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AIR FORCE BCEG ARC ANALYSIS

AFRES SUB-CATEGORY
C-130 GROUP LEVEL PLAYING FIELD
COBRA

BCEG CLOSE HOLD

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AIR FORCE BCEG ARC ANALYSIS

CRITERIA IV/V FACTORS
AF/RTR

- BRACal Model As Adjusted for ARC Limitations
  - Sq PAA Size (8 PAA C-130 Sq)
  - No Military Family Housing
  - No Dormitory and Dining Facilities
- COBRA Model Adjusted for ARC
  - ARTs as DoD Civilians
  - Drill Authorizations not Counted
  - Recruiting & Retraining Added as Onetime Cost

BCEG CLOSE HOLD

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AFRES BRAC 95 RECOMMENDATION

- Closure of Bergstrom, Redirect Conversion of Carswell, and Basing of AFRES KC-135s at MacDill
- Redirect Homestead 301st ARS to Remain at Patrick
- Closure of Pittsburgh ARB

AIR FORCE AFRES BRAC 95 ANALYSIS

AIR MOBILITY- GRISSOM ARB

- 16 AFR KC-135s
  - Realign 8 KC-135Rs to Edwards
  - Realign 8 KC-135Rs to Seymour-Johnson
- Considerations
  - Middle of the Road For AFRES BOS Operating Cost
  - Excellent Recruiting Demographics
  - Limited Options for AFRES KC-135 Bed Down

COBRA

	ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
Original	$39.7M	- 24	22	9 Yrs	3.7
Current	$80.6M	- 161	305	5 Yrs	16.9

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES PITTSBURGH ARB (AFRES)

- Realign 8 PAA to Dobbins
- Considerations
  - Loss of Great Recruiting Location (1 Major Airline Hub)
  - Rated As One of Top Two C-130 Installations in Crit I
  - + Highest BOS of the Civ Joint Use Afld C-130 Locations
  - + Clean Kill With No Impact on Pittsburgh ANGB
  - + Multiple AFRES/ANG C-130 Units W/in 3 Hr Drive

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$9.5M	- 224	242	1 Yr	16.7

[1] Does Not Include $9M Recruiting and Training Cost

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
DOBBINS ARB

- Realign 8 PAA to Maxwell and 22 AF to Westover
- Considerations
  - Best AFRES Recruiting Location
  - Limited Alternative Assignments For Impacted Drill Reservists
  - Major Impact On NAS Atlanta Units, Dobbins' GA NG, and AF Plant 6

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$23.2M	- 194	278	2 Yr	15.7

[1] Does Not Include $9M Recruiting and Training Cost

Maj Richardson, AF/RTR, BARC130.PPT4, 12/22/94, 10:10 AM 13

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
GEN MITCHELL ARB

- Realign 8 PAA to Dobbins
- Considerations
  - Limited Alternative Assignments For Impacted Drill Reservists
  - Loss of Presence in Wisconsin
  - \+ Minimum Impact On Remaining ANG Unit

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$8.6M	- 208	248	0 Yr	15.2

[1] Does Not Include $9M Recruiting and Training Cost

Maj Richardson, AF/RTR, BARC130.PPT4, 12/22/94, 10:10 AM 14

AIR FORCE AFRES BRAC 95 ANALYSIS

HOMESTEAD ARB

- 15 F-16s, 5 HC-130s, and 8 HH-60Gs
  - Redirect F-16 to New Orleans
  - Redirect 301st RQS 5 HC-130 & 8 HH-60 to Remain at Patrick

COBRA – Level Playing Field

ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
$7.8M	- 193.8	247	0 Yrs	12.5

- Considerations
  - Excellent Recruiting Demographics
  - Maintain Avon Park Ranges and ACMI Overwater Areas
  - Homestead's Contingency and Snow Bird Operations
- Recommendation
  - Leave F-16s at Homestead
  - Redirect 301st to Remain at Patrick

(Savings - Onetime $17.9M and Annually $1M)

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AIR FORCE AFRES BRAC 95 ANALYSIS

BERGSTROM-CARSWELL

- Bergstrom 15 F-16s
- Carswell Converting 15 F-16s to 8 KC-135s
- Considerations
  - BRAC 91 & 93 Comparison Found Carswell Superior Location
  - Carswell Superior Operationally and Demographically
- Recommendation:
  - Close Bergstrom ARB
  - Cancel Carswell KC-135 Conversion/ Remain in F-16s
  - Realign Bergstrom Unit to MacDill In KC-135Rs
  - Realign HQ 10th AF to Carswell

COBRA

	ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
MacDill Host	$40.2M	- 41	0	5 Yrs	4.3
MacDill Tenant	$38.2M	- 270	263	1 Yr	20.4

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AIR FORCE BCEG ARC ANALYSIS

COBRA ASSUMPTION USED

- Only the AFRES Unit(s) Moved; Any Collocated DoD Units Remained
  - Transferred BOS Cost Factored In the COBRA
- All the AFRES C-130 Units Realigned to NAS New Orleans
- Dobbins Assumption
  - HQ 22nd AF Realigned to Westover
  - Plant 6 Remained

BCEG CLOSE HOLD

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AIR FORCE BCEG ARC ANALYSIS

COBRA RESULTS

	ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE	REMARKS
Dobbins	$20.1M	(110)	145	3 Yr	9.5	Afld Plus Up
Gen Mitchell	13.0	(124)	143	1	9.8	
Pittsburgh	13.8	(137)	110	1	10.8	
Minn-St Paul	13.7	(119)	84	2	9.5	ANG Plus Up
Niagara	13.7	(115)	81	1	9.0	ANG Plus Up
O'Hare	14.2	(152)	142	1	12.0	ANG Plus Up
Willow Grove	12.3	(60)	56	3	5.2	ANG Plus Up
Youngstown	13.1	(107)	143	2	8.6	

BCEG CLOSE HOLD

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AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
CHICAGO O'HARE ARB

- Realign 8 PAA to Rockford MAP
- Considerations
  - Rated As One of Top Two C-130 Installations in Crit I
  - Impact on Remaining ANG KC-135 Unit
  - + City of Chicago Desire for Facilities
  - + Superior Recruiting Location (2 Major Airline Hubs)
  - + Rockford Over Other Local Saves $9M In Recruiting & Training
- Cost

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
WILLOW GROVE ARS (AFRES)

- Realign 8 PAA to Dobbins
- Considerations
  - Major Impact on Remaining ANG A-10 Unit
  - AFRES Building Willow Grove to 12 PAA
  - Loss of Great Recruiting Location (3-4 Major Airline Hub)
  - + Several AFRES/ANG Units W/in 3 Hr Drive

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$8.5M	– 184	242	1 Yr	13.8

[1] Does Not Include $9M Recruiting and Training Cost

AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
MINN-ST PAUL ARB

- Realign 8 PAA to Dobbins
- Considerations
  - Loss of Superior Recruiting Location (Two Major Airline Hubs)
  - Rated As One of Top Two C-130 Installations In Crit II
  - Impact on Remaining ANG Unit
  - Limited Alternative Assignments For Impacted Drill Reservists
  - Only AFRES Presence in Minnesota

COBRA

ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
$9.7M	– 235	242	1 Yr	17.6

[1] Does Not Include $9M Recruiting and Training Cost

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AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
NIAGARA ARB

- Realign 8 PAA to Dobbins
- Considerations
  - Integrated Operations with ANG
  - Impact on Remaining ANG Unit
  - Limited Alternative Assignments For Impacted Drill Reservists
  - Only AFRES Presence in New York

COBRA

ONETIME COST [1]	NPV	PERS SAVINGS	ROI	STEADY STATE
$9.7M	– 235	245	0 Yr	16.9

[1] Does Not Include $9M Recruiting and Training Cost

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AIR FORCE AFRES BRAC 95 ANALYSIS

VOLUNTEERISM AND TOTAL FORCE

- Key to AFRES and ANG Support of Peacetime Ops
  - DoD Initiative To Increase Peacetime Role
  - Airlift and Tanker Peacetime Mission Support Operations
    - » C-130 – Bosnia, Somalia, Rwanda, and SOUTHCOM Rotations
    - » Airlift/Tankers – Somalia, Recent Iraq Incident, Daily Airlift Ops
- Contingent on Level of Employer Support
  - Limits to The Amount of Employer Support
  - Impact on Retention and Volunteerism of Individual Reservist
    - » Family Vs. Civilian Career Vs. Military Career
- Bottom Line -- *Consolidation Onto a Few Large Locations May Lead to Reduced Employer Tolerance of Reserve Volunteerism; Thus AFRES Contribution to Peacetime Operations.*

Maj Richardson, AF/RTR, BARC130.PPT4, 12/22/94, 10:10 AM 21

AIR FORCE AFRES BRAC 95 ANALYSIS

REVIEW OF C-130 OPTIONS

	ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE	REMARKS
Dobbins	$23.2M	- 194	278	2 Yr	15.7	Collocated Ops
Gen Mitchell	8.6	- 208	248	0 Yr	15.2	
Pittsburgh	9.5	- 224	242	1 Yr	16.7	Highest Bos $
Minn-St Paul	9.8	- 235	242	1 Yr	17.6	ANG Plus Up
Niagara	9.7	- 235	245	0 Yr	16.9	ANG Plus Up
O'Hare	10	- 248	284	1 Yr	18.5	ANG Plus Up
Willow Grove	8.5	- 184	242	1 Yr	13.8	ANG Plus Up
Youngstown	8.7	- 188	275	1 Yr	14.1	Low BOS $

1 Does Not Include $9M In Recruiting and Training Cost

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AIR FORCE AFRES BRAC 95 ANALYSIS

C-130 BASES
YOUNGSTOWN ARB (AFRES)

- Realign 8 PAA to Dobbins
- Considerations
  - Cheapest BOS of the C-130 Installations
  - Congressional Plus Up To 16 PAA and C-130 Regional Maintenance
  - + No Other Collocated Guard or Reserve Units at Youngstown
  - + Multiple AFRES/ANG Units W/in 3 Hr Drive

COBRA

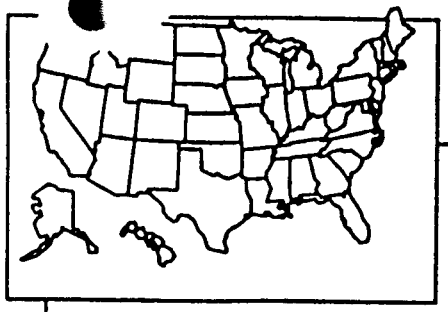
ONETIME COST	NPV	PERS SAVINGS	ROI	STEADY STATE
$8.7M	- 188	275	1 Yr	14.1

1 Does Not Include $9M Recruiting and Training Cost

AIR FORCE AFRES BRAC 95 ANALYSIS

MARCH ARB
AIR QUALITY ISSUE

- Reconsideration of No Additional Units Into March ARB
  - Precedent Against Non-BRAC Basing of Force Structure At March
  - Non-Level Treatment of Air Quality Issue
- Leading Edge of How AF Will Deal With Air Quality
  - Air Force Position in Air Staff Coordination (AF/XO Initiative)
  - Driven by Federal not State Law
  - Precedent For How the Air Force Deals With Air Quality Issue
- AFRES Taking the Lead At March
  - Forced to Work With Community to Realign March AFB to an ARB
  - Technology Solutions And/Or Regulatory Redefinition
- Air Credits Sufficient for Near Future
  - KC-10 Realignment Air Credits
  - Additional Commercial Air Credits Available



Base Closure Executive Group

PITTSBURGH ARB PENNSYLVANIA

- Force Structure -- 8 C-130Hs
- Considerations
  - + Most Expensive BOS of The C-130 Installations
  - + Total Closure With No Impact on Gtr Pittsburgh ANGB
  - + Multiple AFRES/ANG C-130 Units W/in 3 Hr Drive ?
  - – Rated As One of Top Two C-130 Installations in Crit I
  - – Loss of Great Recruiting Location (1 Major Airline Hub)
- Recommendation
  - Close Greater Pittsburgh ARB
  - Realign AFRES C-130Hs
    - Dobbins ARB, Georgia
    - Peterson AFB, Colorado

ONETIME COST [1]	NPV	STEADY STATE	ROI	PERSON SAVINGS
$7.3M	176	13.1	1 Yr	242

[1] Does Not Include $9M Recruiting and Training Cost

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

G

EXHIBIT G.

AIR QUALITY CERTIFICATION

INSTALLATION WORKSHEET

PURPOSE: To document answers to Questions

VIII.16.G.1.a	VIII.16.G.2.a	VIII.16.G.3.a
VIII.16.G.1.b	VIII.16.G.2.b	VIII.16.G.3.b
VIII.16.G.1.c	VIII.16.G.2.c	VIII.16.G.3.c
VIII.16.G.1.d	VIII.16.G.2.d	VIII.16.G.3.d
VIII.16.G.1.e	VIII.16.G.2.e	
VIII.16.G.1.f	VIII.16.G.2.f	
VIII.16.G.4.a	VIII.16.G.5.a	VIII.16.H
VIII.16.G.4.b	VIII.16.G.5.b	VIII.16.I
VIII.16.G.4.c	VIII.16.G.5.c	VIII.16.J
VIII.16.G.4.d	VIII.16.G.5.d	
	VIII.16.G.5.e	
	VIII.16.G.5.f	

SOURCE: The Allegheny County Health Department, Bureau of Air Pollution Control

METHOD: Answer extracted from the Allegheny County Health Department, Bureau of Air Pollution Control

CONCLUSION: The above questions are not applicable.
Per discussion with Mr. George Leney of the Allegheny County Health Department, Bureau of Air Pollution Control (ph. 412-578-8111) , the AQCA has been in attainment for ozone and CO since 1990 and the Pennsylvania Department of Environmental Resources in November 1993 proposed that the AQCA be reclassified as an attainment area. In addition, the 911 AW was not included in the Bureau's 1990 baseline emissions inventory, and therefore no data is available for calculations.

I certify that the above information is accurate and complete to the best of my knowledge and belief.

Preparer: _____ **Date** 28 April 1995
Richard Feid, 911 AW/CEV, DSN 277-8749

I certify that the above information is accurate and complete to the best of my knowledge and belief.

MAJCOM Reviewer _____ **Date** _____

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

H

EXHIBIT H.

CONTINGENCY/MOBILIZATION ISSUES

Western Pennsylvania Coalition
for the Defense of the 911th Airlift Wing and Pittsburgh IAP ARS

References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT H.1

CONTINGENCY HOT CARGO PAD

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References to the Executive Summary and the May 4, 1995 Regional Presentation

EXHIBIT H.1

CONTINGENCY HYDRANT FUELING OPTION