N. N. FAHRNER
W. F. LEWIS

WASHTENAW ENGINEERING COMPANY

CIVIL ENGINEERS · PLANNERS · SURVEYORS

December 4, 1991

Mr. Kurt Zimmer
1306 East Stadium Boulevard
Ann Arbor, Michigan 48104-4620

Re: Ann Arbor Municipal Airport
Pavement Design

Dear Mr. Zimmer:

Pursuant to your request, we will attempt to provide an explanation regarding total bearing capacity of the existing pavement section at the Ann Arbor Municipal Airport as constructed in 1977 and completed in 1978. Reference is made to our report entitled "Ann Arbor Municipal Airport Preliminary Engineering Report - February, 1977".

As we discussed during our meeting, the design of the airport pavement section was done per the requirements of the Federal Aviation Administration and the Michigan Department of Transportation and involved the use of Advisory Circular No. 150/5320 Airport Pavement Design and Evaluation. Specifically, figure 5.2. Design Curves for Flexible Pavements - Light Aircraft was used to establish the total pavement thickness for the runway, taxiways and apron. The design aircraft was classified as a "Utility" with a gross weight of 12,500 pounds with single gear.

The design curves indicated that considering the classification of the subgrade soils as F-7 a total pavement thickness of approximately eleven (11) inches was required consisting of 2 inches of bituminous surface, 8 inches of aggregate base and 1 inch of sand subbase. However, since we are in an area which is susceptible to frost penetration to depths in excess of 42 inches, it was necessary to increase the pavement thickness to provide as much frost protection as possible. Therefore the decision was made to increase the total pavement thickness to 1/2 of the 42 inch frost penetration depth or 21 inches. The balance between 11 inches of total pavement thickness required to support a 12,500 pound aircraft and the 21 inches needed for frost protection was made up by increasing the subbase thickness from 1 inch to 11 inches which gave us a resulting pavement section of 2 inches of bituminous surface, 8 inches of aggregate base and 11 inches of sand subbase for a total pavement thickness of 21 inches.

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Referring again to figure 5.2 Design Curves for Flexible Pavements - Light Aircraft and utilizing soil classification F7 we find that for a gross aircraft weight of 30,000 pounds, the total pavement thickness is 16 inches with a section consisting of 2 inches of bituminous surface, 8 inches of aggregate base and 6 inches of sand subbase. Therefore, the pavement section which was constructed due to the depth of the frost penetration is in excess of that which is required to support a gross aircraft weight of 30,000 pounds.

The determination of bearing capacity of the existing pavement section after approximately 13 years of use cannot be made without considering the condition of the bituminous surface and aggregate base. If in fact, the surface is not deteriorated through the oxidation process to the point where it has lost a significant portion of its structural integrity, and if the base has been kept dry and has not been deformed, then the pavement may still have retained much of it's original load bearing capacity. This determination, however, can only be made by field investigation, performance of tests and evaluation by qualified persons.

We hope that this explanation of the increase in the design capacity of the pavement which services at the Ann Arbor Municipal Airport is satisfactory. Please be assured that the intent was to design the facility for use by utility aircraft with a gross weight of 12,500 pounds. However due to the need for additional pavement thickness for protection against frost penetration the actual pavement structure was significantly increased, therefore providing additional bearing capacity to support larger and heavier aircraft.

If you have any additional questions regarding this matter, please contact the undersigned.

Very truly yours,

W.F. Lewis, P.E.
Washtenaw Engineering Company

WFL/kea
cc: File (2)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT MASTER RECORD

PRINT DATE 09/12/89
FORM APPROVED OMB No. 04-R001

>1 ASSOC CITY: ANN ARBOR 4 STATE: MI FAA SITE NR: 09524.A
>2 AIRPORT NAME: ANN ARBOR MUNI 5 COUNTY: WASHTENAW MI
3 CBD TO AIRPORT(NM): 05 S 6 REG/ADO: ASL/DET 7 SECT AERO CHT: DETROIT

GENERAL

10 OWNERSHIP: PUBLIC
>11 OWNER: CITY OF ANN ARBOR
>12 ADDRESS: CITY HALL
ANN ARBOR, MI 48104
>13 PHONE NR:
>14 MANAGER: CHARLES FERGUSON
>15 ADDRESS: 801 AIRPORT DRIVE
ANN ARBOR, MI 48108
>16 PHONE NR: 313-994-2841
>17 ATTENDANCE SCHEDULE:

MONTHS	DAYS	HOURS
ALL	ALL	0800-1900

19 AIRPORT USE: PUBLIC
>18 ARPT LAT: 42-13-22N ESTIMATED
>20 ARPT LONG: 083-44-48W
21 ARPT ELEV: 839 ESTIMATED
22 ACREAGE: 937
>23 RIGHT TRAFFIC: NO
>24 NON-COMM LANDING FEE: NO
25 NASP/FEDERAL AGREEMENT: NGY
26 FAR 139 INDEX: N

SERVICES

>70 FUEL: 80 100L, A
>71 AIRFRAME RPRS: MAJOR
>72 PWR PLANT RPRS: MAJOR
>73 BOTTLE OXYGEN: HIGH/LOW
>74 BULK OXYGEN: HIGH/LOW
75 TSNT STORAGE: TIE MBR
76 OTHER SERVICES: AVNCS INSTR RNTL CHTR

BASED AIRCRAFT

90 SINGLE ENG: 188
91 MULTI ENG: 26
92 JET:
TOTAL 256
93 HELICOPTERS: 1
94 GLIDERS:
95 MILITARY:
96 ULTRA-LIGHT: 1

FACILITIES

>80 ARPT BCN: CG
>81 APT LGT SKED: SUNSET-SUNRISE
>82 UNICOM: 123.000
>83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: YES
86 FSS: LANSING
87 FSS ON ARPT: NO
88 FSS PHONE NR: 517-321-5957
89 TOLL FREE NR: 1-800-WX-BRIEF

OPERATIONS

100 AIR CARRIER:
101 COMMUTER:
102 AIR TAXI: 1589
103 G A LOCAL: 76188
104 G A ITNRNT: 40268
105 MILITARY: 267
TOTAL: 118867

OPERATIONS FOR 12 MOS ENDING 10AUG89

RUNWAY DATA

	06/24	12/30			
>30 RUNWAY IDENT					
>31 LENGTH:	3500	2998			
>32 WIDTH:	75	100			
>33 SURF TYPE-COND	ASPH-G	TURF-F			
>34 SURF TREATMENT					
35 GROSS WT: SW	28				
36 (IN THSDS) DW					
37 DTW					
38 DDTW					

LIGHTING/APCH AIDS

	06/24	12/30			
>40 EDGE INTENSITY	MED				
41 NOW ELEMENT 81					
>42 RWY MARK TYPE-COND	NPI-G /NPI-G	/	/	/	/
>43 VASI	*V2L /V2L	N /N	/	/	/
44 THR CROSSING HGT	20 /20	/	/	/	/
45 VISUAL GLIDE ANGLE	3.00 /3.00	/	/	/	/
>46 CNTRLN-TDZ	N-N /N-N	N-N /N-N	/	/	/
>47 RVR-RVV	N-N /N-N	N-N /N-N	/	/	/
>48 REIL	Y /	N /N	/	/	/
>49 APCH LIGHTS	/SOALS	/	/	/	/

OBSTRUCTION DATA

	06/24	12/30			
50 FAR 77 CATEGORY	A(NP) /A(NP)	A(V) /A(V)	/	/	/
>51 DISPLACED THR	/	/	/	/	/
>52 CTLG OBSTN	TREES /TREES	TREES /TREES	/	/	/
>53 OBSTN MARKED/LGTD	/	/	/	/	/
>54 HGT ABOVE RWY END	35 /62	44 /48	/	/	/
>55 DIST FROM RWY END	888 /1075	975 /1288	/	/	/
>56 CNTRLN OFFSET	252R /389R	/	/	/	/
57 OBSTN CLNC SLOPE	17:1 /14:1	22:1 /25:1	/	/	/
58 CLOSE-IN OBSTN	N /N	N /N	/	/	/

LANDING LENGTH

	06/24	12/30			
60 LANDING RWY-LENGTH	/	/	/	/	/
61 CTLG OBSTACLE	/	/	/	/	/
62 HGT-ABOVE THR	/	/	/	/	/
63 DIST FROM THR	/	/	/	/	/
64 CNTRLN OFFSET	/	/	/	/	/

(*) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

>210 REMARKS:
A842 RWY 12 MKD WITH 36 INCH YELLOW CONES & PARALLEL TURF TWY MKD WITH REFLECTIVE EDGE MKRS.
A843 RWY 24 VASI OTS INDEFLY.
AP91 WHEN ATCT CLSD ACTVT GOALS RY 24 - CTAF.
A118 -81 NE 200' PARALLEL TWY TO RWY 24, RUNUP PAD & TWY SHORT OF HOLD LINE NOT VSBL FM ATCT
A118 -83 WHEN ATCT CLSD CONFIRM SNOW REMOVAL & WINTER CONDS - CTAF.

111 INSPECTOR: (S) 112 LAST INSP: 18AUG89 113 LAST INFO REQ:

ANN ARBOR MUNICIPAL AIRPORT

PRELIMINARY ENGINEERING REPORT

FEBRUARY 1977

WASHTENAW ENGINEERING COMPANY, INC.

859 SOUTH WAGNER ROAD

ANN ARBOR, MICHIGAN

ANN ARBOR MUNICIPAL AIRPORT

PRELIMINARY ENGINEERING REPORT

INTRODUCTION

On February 28, 1975 an evaluation and inspection of the Ann Arbor Municipal Airport was made by Mr. Clifford Carstens, Regional Paving Engineer, Department of Transportation, Federal Aviation Administration. The report regarding this inspection indicated in detail the severely deteriorated condition of the pavement on Runway 6/24, the taxiways and apron areas. Based on this report, Dean C. Nitz, Chief Engineering Section, Federal Aviation Administration issued a directive requiring that corrective measures be initiated immediately in order to retain a safe operating facility. In the interim a Gross Weight Limitation was imposed on the existing facilities limiting the use to aircraft weighing 12,500 lbs. or less.

On May 27, 1976 Washtenaw Engineering Co. Inc., was retained by the City of Ann Arbor as the Consultant to provide professional Engineering Services required for the design of a comprehensive drainage system, rehabilitation of the existing pavement areas, installation of a visual approach slope indicator system, new taxiway lights and security fencing around the perimeter of the airport property.

AIRPORT PAVEMENT DESIGN

Airport pavements are constructed to provide adequate support for the loads imposed by aircraft using the airport and to produce a firm, stable, smooth all year, all weather surface. In order to satisfactorily fulfill these requirements, the pavement must be of such quality and thickness that it will not fail under the load imposed. In addition, it must possess sufficient inherent stability to withstand, without damage, the abrasive action of traffic, adverse weather conditions, the loads imposed by snow removal equipment and other deteriorating influences. To produce such pavement requires a coordination of many factors of design, construction and inspection to insure the best possible combination of available materials and high standard of workmanship.

Pavements are divided into two general types, as follows:

1. Flexible pavements which are those consisting of a bituminous asphalt surface course, a base course of high quality granular material, and in most cases a well drained granular subbase course constructed on a suitable subgrade soil.

2. Rigid pavements, which are those pavements constructed of portland cement concrete on a well drained subbase course built on a suitable subgrade soil.

In general, all pavements designed to serve aircraft of less than 30,000 lbs. gross weight may be flexible or rigid type pavement with the decision predicated upon whether or not locally available less expensive granular material can be utilized for the pavement construction. In the case of the Ann Arbor Municipal Airport onsite deposits of granular material appear to be available in sufficient quantity and of suitable quality to be utilized for the reconstruction.

Determination of pavement thickness requirements is a complex engineering problem. A large number of interacting variables are involved and pavements are subject to wide variations in climate and loading. Although a great deal of research work has been completed and more is under way it has been impossible to arrive at a direct mathematical solution of thickness requirements. For this reason the determination of pavement thickness must be based on a theoretical analysis of load distribution through pavements and soils, analysis of experimental pavement data and a study of the performance of pavements under actual service condition. Empirical pavement thickness curves have been prepared and pavements constructed in accordance with these standards have generally proven satisfactory. Airfield pavements designed by the F.A.A. method are intended to provide a pavement with a twenty year life that is free from major maintenance.

The structual design of airport pavements consist of determining both the overall pavement thickness and the thickness of the component parts of the pavement. This design is predicated on an analysis of the distribution of the load to be imposed, the condition of the underlying soils and their ability to support the imposed load, the elevation of water table or the presence of water bearing strata, the influence of frost, and basic geometric consideration, i.e., crown,

Soil conditions and the availability of suitable construction materials are the most important items affecting the cost of construction. Beneath the pavement the subgrade soil carries the loads imposed by aircraft utilizing the facility. Thus the pavement serves to distribute the imposed load to the subgrade over an area greater than that of the tire contact area. The greater the thickness of the pavement, the greater is the area over which the load is distributed. Therefore, the more unstable the subgrade soil, the greater is the required area of load distribution and consequently the greater is the required thickness of pavement.

To provide essential information on the various types of soils, a comprehensive and detailed soil survey must be made as the first step in any pavement design. In this regard a total of 42 borings were made on runway 6/24, the taxiways and the terminal apron. This work was done under the direct supervision of Mr. G.O. Kerkhoff, P.E., Soils Engineer. Samples of the material recovered were submitted to a commercial testing laboratory for a complete analysis and report. Information obtained, together with field observations made of the existing pavement conditions, was used to formulate a design section for the pavement reconstruction. This design section was submitted to the Michigan Aeronautics Commission for their review and approval.

The principal area of concern involves the discovery that previous construction activities were apparently not adequately supervised and consequently a considerable quantity of unstable organic peat material remains buried beneath the pavement areas at depth within frost penetration levels. It will be virtually impossible to expose and excavate all of the areas of unstable soils unless a complete excavation of the pavement areas is made to a depth of 48 inches, which of course would be prohibitive in cost. Therefore we recommend that an overall excavation of 12 inches be made, and that additional excavation to a maximum depth of 24 inches be made in those areas where unstable soils are uncovered or have been located by the soil survey. However, we recognize that some deposits of muck and peat will remain in place and therefore we have designed our pavement section with an adaquate thickness of selected granular material in order to provide a stable base for the pavement structure. Unless an adequate granular subbase and base are provided, the

deposits of organic material remaining in place will ultimately result in a recurrance of pavement failure and a subsequent waste of the Federal, State and Local funds allocated for this project.

The results of the comprehensive soil survey and laboratory analysis of the samples collected have been tabulated and recorded in chart form for use in determining the engineering classification of the soils. F.A.A. classifications ranging from E-1 which includes the well graded course granular soils to E-13 which encompasses organic swamp soils such as muck and peat where recorded on the Ann Arbor Municipal Airport site. On the basis of our analysis of the general conditions which will exist after excavation and subgrade undercutting, a soil group E-7 was selected for determining the subgrade classification. Reference was made to Table - 2 Airport Paving Subgrade Classification AC 150/5320-6B which establishes the designed subgrade classification for this project as F-7 poor drainage, with frost. This classification was then used in conjunction with figure 5-2 Design Curves for Flexible Pavement, Light Aircraft AC 150/5320-6B, to determine the total pavement thickness for a gross aircraft weight of 12,500 lbs. These design curves indicate the need for a total thickness of approximately 11 inches of pavement structure, consisting of 2 inches of bituminous concrete, 8 inches of processed gravel and 1 inch of granular subbase material.

Ann Arbor is in an area which is subjected to annual frost penetration. The detrimental effects of frost on pavement life are well known, and therefore frost protection must be provided in areas where conditions are conducive to deep frost penetration. Good engineering practice requires that subgrade protection must be provided to at least one-half of the frost penetration depth. In this area a penetration of 42 inches is generally accepted for design purposes, i.e., foundation walls and footing depths. Therefore an additional 10 inches of granular subbase material must be provided resulting in a total pavement thickness of 21 inches or 1/2 of the frost penetration depth.

Paramount to good pavement design and subsequent service life is the need for adequate surface and subsurface drainage. Of particular importance is the installation of underdrains to provide drainage for the granular subbase material which would otherwise act

as a reservoir for ground water and surface water percolation. herefore underdrains and edgedrains will be provided as an integral part of the pavement design and will be drained to the urface ditches which exist on the site.

Based upon the comprehensive soil survey made and our valuation of the existing poor soil conditions and pavement ailure, we have concluded that the recommended treatment will be an economically sound investment towards a 20 year pavement ife and provide an excellent facility for the citizens of Ann Arbor.

Respectfully submitted:

By: _____
W. F. Lewis, P.E.
Washtenaw Engineering Co., Inc.
February 16, 1977

for the others. This applies when the coarse fraction consists of -- reasonably sound material which is fairly well graded from the maximum size down to the No. 10 sieve size. Stones or rock fragments scattered through a soil should not be considered of sufficient benefit to warrant upgrading.

12. SUBGRADE CLASSIFICATION.

a. For each soil group, there are corresponding subgrade classes. These classes are based on the performance of the particular soil as a subgrade for rigid or flexible pavements under different conditions of drainage and frost. The subgrade class is determined from the results of soil tests and the information obtained by means of the soil survey and a study of climatological and topographical data. The subgrade classes and their relationship to the soil groups are shown in Table 2-2. The prefixes "R" and "F" indicate subgrade classes for rigid and flexible pavements, respectively. These subgrade classes determine the total pavement thickness for a given aircraft load. The requirements are fully discussed under rigid and flexible pavement design in following parts of this text; therefore, only a brief description of the classes will be presented here.

TABLE 2-2. AIRPORT PAVING SUBGRADE CLASSIFICATION

Soil Group	Subgrade Class		
	Good Drainage	Poor Drainage	
	No Frost or Frost	No Frost	Frost
E-1	Fa or Ra	Fa or Ra	F1 or Ra
E-2	Fa or Ra	F1 or Ra	F2 or Rb
E-3	F1 or Ra	F2 or Rb	F3 or Rb
E-4	F1 or Ra	F2 or Rb	F4 or Rb
E-5	----	F3 or Rb	F5 or Rb
E-6	----	F4 or Rc	F6 or Rc
E-7	----	F5 or Rc	F7 or Rc
E-8	----	F6 or Rc	F8 or Rd
E-9	----	F7 or Rd	F9 or Rd
E-10	----	F8 or Rd	F10 or Rd
E-11	----	F9 or Re	F10 or Re
E-12	----	F10 or Re	F10 or Re
E-13	Not suitable for subgrade		

NOTE:

THE F0 CURVE FIXES THE REQUIRED BASE PLUS SURFACE COURSE THICKNESS.

1" MINIMUM SURFACE THICKNESS ASSUMED FOR F0 CURVE.

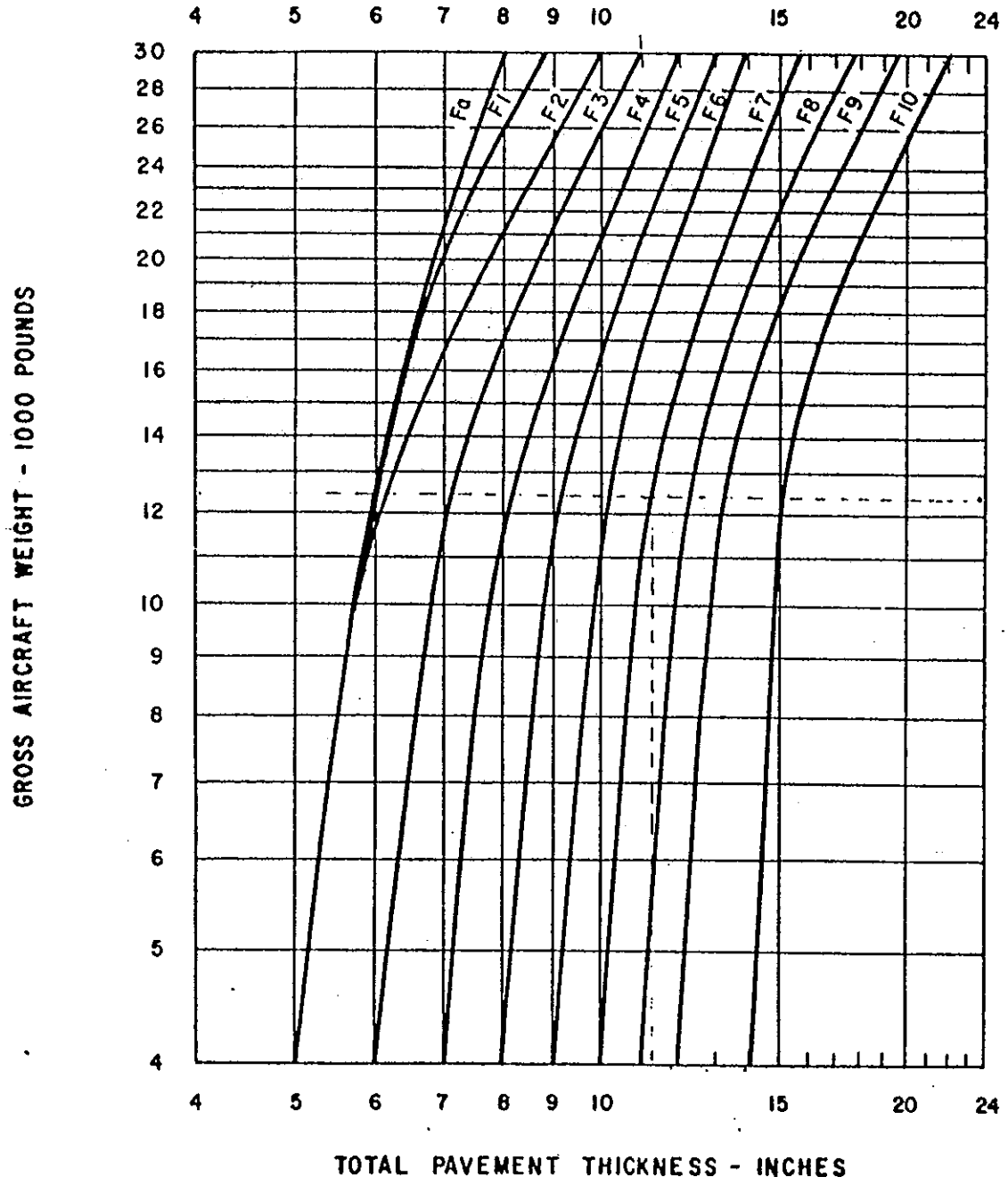


FIGURE 5-2. DESIGN CURVES FOR FLEXIBLE PAVEMENTS - LIGHT AIRCRAFT

AIRPORT PAVEMENT DESIGN

Form Approved Budget Bureau No. 04-R0168

STATE	CITY	AIRPORT
Michigan	Ann Arbor	Ann Arbor Municipal Airport

PROJECT NUMBER	SPONSOR
#5-26-0005-01	City of Ann Arbor

DESIGN ENGINEER: Washtenaw Engineering Co., Inc. - W. F. Lewis, P.E.

DESCRIPTION AND LOCATION OF WORK: Reconstruct existing runway 6/24 taxiway and apron. Install visual approach slope indicators, new taxiway lights and security fencing.

DESIGN STRENGTH
(Gross Aircraft Weight–1,000 Pounds)

UNDERCARRIAGE TYPE–FILL IN STRENGTH FOR ALL THREE TYPES

SINGLE WHEEL GEAR	DUAL WHEEL GEAR	DUAL-TANDEM GEAR
12.5K	NA	NA

DESIGN AIRCRAFT	GROSS WEIGHT	GEAR TYPE	DESIGN SUBGRADE CLASSIFICATION
Utility	12.5 K	Single	F7 w/frost

TYPICAL SECTIONS
(Show and number each course and show depth and degree of subgrade densification)

NONCRITICAL AREAS	CRITICAL AREAS
Note: Existing surface to be excavated to a depth of 12 inches, undercut as required and backfilled. Selected excavated material to be used for shoulder construction.	

DESIGN DETAILS

NO.	COURSE	THICKNESS OF PAVEMENT					FAA SPECIFICATION
		RUNWAY	R/W END	TAXIWAY	APRONS		
1	Surface	2"		2"	2"		P-412 (25A)
2	Prime						P-602
3	Base	8"		8"	8"		P-208 (22A) *
4	Subbase	11"-24"**		11"-24"**	11"-24"**		P-154 (CLII)

*Mod. to require 50% crushed.

**11" except for subgrade undercutting and corrective treatment.

FAA Form 5100-1 (10-67) SUPERSEDES FAA FORM 1773.

SOIL ANALYSIS AND CLASSIFICATION

TEST NO.	DEPTH OF SAMPLE	PERCENT RETAINED NO. 10	% MATERIAL PASSING NO. 10 (100%)			LIQUID LIMIT	PLASTICITY INDEX	FAA SOIL GROUP
			PASS. NO. 10 RETD. NO. 40	PASS. NO. 40 RETD. NO. 200	PASSING NO. 200			
			See Attached Chart					

NOTE: *1. Indicate (*) soil group on which pavement design is based.*
2. A map showing location of soil tests and pavement profile should be attached or included in the project plans.

MAXIMUM FROST PENETRATION	DESIGN BASED ON	
	FROST	DRAINAGE
30"-48" per fig. 2-3, page 20 AC 150/5320-6B	Yes	Poor

EVALUATION OF DRAINAGE CONDITIONS

Subsurface drainage is poor and soil subject to saturation during wet seasons. Edge drains are being provided adjacent to runway and taxiway.

NOTE: *Attach supporting data for subgrade densification depth. Include justification for non-standard density, if applicable.*

DATE	TITLE	
Feb. 14, 1977	Consulting Engineer	SUBMITTED BY *(Signature)* W. F. Lewis, P. E.
DATE	TITLE	RECOMMENDED BY AREA OFFICE *(Signature)*
DATE	TITLE	APPROVED BY REGIONAL OFFICE *(Signature)*

C FAA AC 73-2598

ANN ARBOR MUNICIPAL AIRPORT

PROPOSED PROJECT SCHEDULE

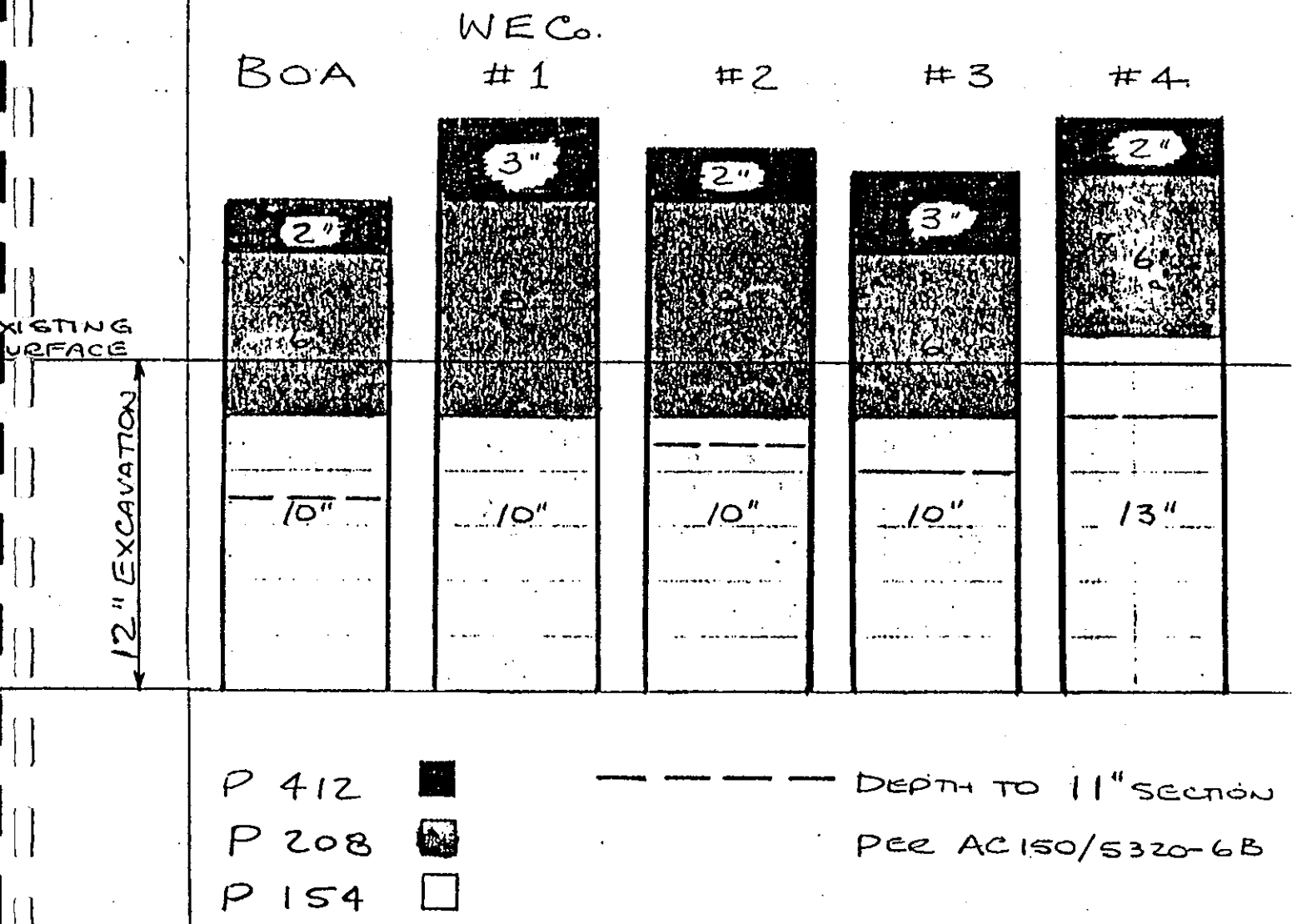
COMPLETION DATES

Approval of preliminary design	03/01/77
Preparation of final plans and specifications	04/15/77
Advertisement for bids	06/18/77
Bid Letting	07/18/77
Begin construction	08/15/77
Complete construction	11/15/77

ANN ARBOR MUNICIPAL AIRPORT
DESIGN NOTES

PAVEMENT SECTION ALTERNATES

2/7/7
WFC
G.O.C



P 412 ■
P 208 ▩
P 154 □

— — — — DEPTH TO 11" SECTION PER AC 150/5320-6B

INTER-OFFICE CORRESPONDENCE

TO John Rinehart, Airport Manager

DATE January 18, 1977

FROM S. Murray, City Administrator

REPLY

SUBJECT RUNWAY RECONSTRUCTION

COPIES TO W. Lewis

I have been informed that the reconstruction of the runway that Walt Lewis is engineering will be built with a base strength that will accommodate a 55,000 pound airplane. If so, this seems to conflict with Council's position of a 12,500 pound limit runway.

Please let me know what is happening.

SM/r

MASTER PLAN FOR ANN ARBOR AIRPORT

PHASE I

Prepared for the City of Ann Arbor, Michigan by
TransPlan Incorporated
230 Park Avenue, New York, New York 10017
and The Ralph M. Parsons Co.
1101 Fifteenth St. N.W., Washington, D.C. 20005

B. The Existing Airport Today

Location:

Ann Arbor is located 35 miles west ot Detroit, 65 miles south of Flint, about 100 miles northwest of Cleveland, and 240 miles east of Chicago.

Located in Pittsfield Township, 4 miles south of the central business district of Ann Arbor, the Ann Arbor Municipal Airport is at an elevation of 835 feet. Its reference point (at the intersection of the present runways) coordinates are 42° 13' 16" N latitude and 83° 45' 11" W longitude. It is situated at the hub of the intersections of Routes I-94, 23 and 12. It should be noted that the airport beacon is a reference point for the U.S. Department of the Interior Geological Survey and notification should be given prior to any disturbance of the marker.

A location map showing Ann Arbor Municipal Airport in relation to the above cities is shown as Figure I-B-1.

The Existing Airfield:

The existing airfield layout consists of two runways: 6-24 and 12-30.

Runway 6-24, the longer of the two runways, is 3,500 feet long and 75 feet wide. It is a hard surfaced runway consisting of bituminous pavement, with a 1.5% effective gradient. With a medium intensity runway lighting system, the single wheel weight bearing capacity is 20,000 pounds. Pattern altitude at the airport is 1,650 feet above Mean Sea Level or 800 above ground level. Traffic for Runway 24 is a standard left-hand pattern, while Runway 6 uses right-hand turns.

Joint Working Meeting
Council & Airport Advisory
Committee

Meeting Started @ 7:15 P.M.

Barbara Perkins
Milton Baker,
Winifred Wilmarth
Olivia Bottum
Frank Fike
Bernard De Witt
* William McNulty

Mr. Levin gave a talked on
a of agenda ref S-37
Washtenaw Eng. Co. Inc.

Bill [illegible] [illegible] mich
aeron. Comm.

Mr. Murray 3C I 14 City [illegible]

4 Mayor asked [illegible]
15-42

FILED
JUN 2 1977
[signature]
CITY CLERK

Nov 1975 Resolution

Land not needed by the airport can be sold

Land not needed would have no restriction the City may dispose of it. Per Mr Steinman

Public Comments #2147
William Pollard -
Ascot

Resolution for Council monday 6/6
A. We approved Plans for Work
b. We " Match

recess. 366

(4) Advisory Committee Rec. on I.L.S. & 12/30 Funding.

* Mr. McNulty gave his report

5. Mr. Overhiser

* Paving 12/30

6. ~~Service~~ Building Relocation
John Reinhardt

~~Mayor summary~~
Monday Council will be making a dec. on 1998 committed [illegible]
we will be [illegible] ? where local share come from.
7. raised about I.L.S.

Meeting adjourned 10:55 PM.