

SCOMM

111:13

ALASKA STATE LEGISLATURE

Rep. Eldon Mulder, Co-Chair
Rep. Kim Elton
Rep. Richard Foster
Rep. Jeannette James
Rep. Beverly Masek
Rep. Gail Phillips



Sen. Tim Kelly, Co-Chair
Sen. Loren Leman
Sen. Georgianna Lincoln
Sen. Robin Taylor
Sen. Gary Wilken
Sen. Mike Miller

DEFERRED MAINTENANCE TASK FORCE

Capitol Building, Room 501 • Juneau, Alaska 99801 • Phone (907) 465-2647 • FAX (907) 465-3518

Building an Alaska for the 21st Century

Public Hearing

October 14, 1997

Borough Assembly Chambers
Fairbanks North Star Borough
809 Pioneer Rd
Fairbanks, Alaska
2:00 PM to 4:00 PM

The Deferred Maintenance Task Force of the Alaska State Legislature is visiting many sites in Alaska to review the condition of schools, state roads, road side facilities, harbors, airports, buildings and other state assets. It will develop a list of needs and propose a means of paying for the repairs.

WE NEED TO HEAR FROM ALASKANS.

This is your opportunity to share your views of state assets, such as roads, harbors and schools, in your area that need repairs. We need your suggestions on how to fund the needed repairs.

You are welcome to attend in person or send your comments to the Deferred Maintenance Task Force
Room 501, State Capitol Building, Juneau, Alaska 99801

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Building an Alaska for the 21st Century

Task Force Announces Hearing in Fairbanks

For Immediate Release

Wednesday, October 8, 1997

Contact: Denny DeWitt
Legislative Assistant to Rep. Mulder
907 465-2647 or 258-8193

(Juneau, AK) -- Representative Eldon Mulder and Senator Tim Kelly, the Deferred Maintenance Task Force Co-Chairs, announced a Fairbanks public hearing to review problems associated with the lack of maintenance on state assets. The hearing is scheduled for Wednesday, October 14, 1997, from 2:00 PM to 4:00 PM in the North Star Borough Assembly Chambers, 809 Pioneer Road, Fairbanks. Alaskans are welcome to attend in person or send their written comments to the Deferred Maintenance Task Force, Room 501, State Capitol Building, Juneau, Alaska 99801.

"We will be making site visits in the Fairbanks area in the morning of October 14, to view the deferred maintenance needs and speak with folks in the Fairbanks area. We are looking forward to hearing what Alaskans in this region think we need to do to repair our state assets." stated Rep. Mulder. "We scheduled the afternoon hearing for members of the public to formally share their thoughts. I am eager to hear proposals of solutions to the question of how we should fund the identified needs. We need to solve maintenance problems with our existing facilities so we can focus on new infrastructure needs of growing communities like Fairbanks."

Deferred Maintenance Task Force
Fairbanks Meeting
10/8/97
Page 2

"We need to see all parts of Alaska," stated Senator Tim Kelly. "It is important to visit and talk with the people who live in the Fairbanks. The Task Force needs to understand the different needs and how they impact Fairbanks and the surrounding areas. I'm looking forward to hearing from Fairbanks area residents about the needs in this area, including problems with roads, road side facilities such as rest areas, schools and other state assets. "

The Deferred Maintenance Task Force scheduled 10 hearings to review the needed upgrades to roads, airports, harbors, public buildings, and schools in Alaska. The task force has listened as people throughout Alaska share their view of the need to repair and replace existing state owned facilities including proposals for how to finance the needed repairs. The Task Force has held hearings in Anchorage, Kenai, Ketchikan, Kotzebue, Kodiak and Nome.

"We've had lots of problems identified. That's been helpful," said Mulder. "The real challenge is coming up with a solution. In Fairbanks, I hope we will hear suggestions for funding. There are several options available. We need to hear what Alaskans consider acceptable."

The Legislature established the Deferred Maintenance Task Force to assess the condition of public facilities and solicit input on needs. Further, and equally necessary, the task force is to evaluate various funding proposals to pay for the needed repair and replacement to state facilities. The task force will report back to Legislature in January of 1998.

end # end # end

Task Force schedule is attached

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Rep. Eldon Mulder, Co-Chair
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Rep. Jeannette James
Rep. Beverly Masek
Rep. Gail Phillips



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Sen. Gary Wilken
Sen. Mike Miller

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Tentative

FAIRBANKS AGENDA

Site Visits and Public Hearing

October 14, 1997

- | | |
|-------------------|---|
| 7:50 AM (approx.) | Airport pick-up of legislators
Arrive Fairbanks from Anchorage AS 89 |
| 8:30 AM | Coffee and Poster Presentations |
| 8:50 AM | University of Alaska, Fairbanks, Wood Center
Welcoming Remarks
Chancellor Joan Wadlow |
| 9:00 AM | Setting the Stage
Presenter - |
| 9:30 AM | Invited presentations
City of Fairbanks
Fairbanks North Star Borough
FNSB School District
City of North Pole
DOT, Northern Region
University of Alaska, Fairbanks |
| 11:30 AM | Concluding Remarks |
| 11:45 AM | Walking tour of Fairbanks Campus
Wickersham Hall (maintenance completed)
Bunnell Building (maintenance in progress)
Brooks Building (maintenance due) |

Fairbanks Agenda
October 14, 1997
Page 2

12:30 PM	Bus tour and box lunch Driving tour of several sites in Fairbanks area referenced in earlier presentations
2:00 to 4:00 PM	Public Hearing Assembly Chambers Fairbanks North Star Borough 809 Pioneer Road Fairbanks
4:00 PM - 5:30 PM	Tour of area resumes
5:30 PM	Return to Airport
6:34 PM	Depart AS 196 Arrive Anchorage 7:28 PM



Deferred Maintenance Task Force

"Building an Alaska for the 21ST Century"

Fairbanks Visit

October 14, 1997 • University of Alaska Fairbanks, Wood Center

Schedule of Events

- 8:30 am Continental Breakfast and Poster Presentation Viewing
- 8:50 Welcome and Opening Remarks
- Chancellor Joan Wadlow
 - Senator Gary Wilken
- 9:00 Setting the Stage
- Brian Rogers, Principal, Brian Rogers and Associates
 - Bill Allen, Owner, Bill Allen Realty and former mayor, Fairbanks North Star Borough
- 9:20-11:30 Invited Presentations with Question and Answer
- DOT&PF, Northern Region
- Clark Milne, Dames and Moore, Member, Fairbanks Chamber of Commerce Transportation Committee
 - Tony Johansen, Regional Director, DOT&PF, Northern Region
- City of Fairbanks
- Mayor James Hayes
 - Jerry Cleworth, City Council Member
 - Rufus Bunch, City Engineer
- Fairbanks North Star Borough
- Mayor Jim Sampson
 - Scott Johnson, Architect, Public Works
- FNSB School District
- Cynthia Henry, President, FNSB School Board
 - Len Mackler, Physical Plant Director, FNSBSD
- University of Alaska Fairbanks
- Jeff Cook, UAF Board of Visitors, former Member, UA Board of Regents
 - Kathleen Schedler, Director, Planning and Project Services
- 11:30 Concluding Remarks
- Brian Rogers and Bill Allen
- 11:45 Walking Tour of Fairbanks Campus
(includes Wickersham Hall, Bunnell Building, and Brooks Building)
- 12:30 pm Driving Tour of Fairbanks sites
Board bus at MAC Bus Stop by Wood Center; box lunches provided
- 2:00-4:00 Public Hearing at FNSB Assembly Chambers
- 4:00-5:30 Prototypical School Tour
- 5:30 Return to Fairbanks International Airport

Deferred Maintenance Task Force Tour of Fairbanks Sites

12:30 PM – 2:00 PM

1st Segment of Bus Tour

Agency:	What/Where	Why
UAF	Natural Sciences Facility, International Arctic Research Center	Familiarization
DOT	Ester Chip Seal	Familiarization
DOT	Farmer's Loop	Frost Heaves
Borough	Fire Station #1	Frost Settling
City	South Cushman	Road Upgrades
School District	Hunter School	Familiarization
City	Police/Fire Station City Hall	New one needed Deferred maintenance

2:00 – 4:00 PM

Public Testimony, Borough Assembly Chambers

4:00 – 5:30 PM

Prototypical School Tour

FNSB School	Lathrop/Ryan complex	See example of use of school bond money
	Anne Wien Elem. University Park	Prototype school Prototype school

5:30 PM

Return to Fairbanks International Airport

GARY WILKEN

SENATOR
Districts 29 & 30
West Fairbanks

Senate Standing Committees

Chairman: Health, Education,
and Social Services (HESS)
Vice Chairman: Transportation
Vice Chairman: Community and
Regional Affairs

Special Committee

Member: Administrative Regulation Review



Senate

During Session:

State Capitol, Room 510
Juneau, Alaska 99801-1182
(907) 465-3709 (v)
(907) 465-4714 (f)

[www: akrepublicans.org/wilken.htm](http://www.akrepublicans.org/wilken.htm)
E-mail: Senator_Gary_Wilken@legis.state.ak.us

Interior:

119 N. Cushman St., Room 213
Fairbanks, Alaska 99701
(907) 452-3421
Fax (907) 452-3426

September 24, 1997

**The Honorable Eldon Mulder
Co-chair, Deferred Maintenance Task Force
Room 501, State Capitol Building
Juneau, Alaska 99801-1182**

Dear Eldon,

Our plans for the Deferred Maintenance Task Force's visit to Fairbanks on October 14 are finalized and we invite you to join us in learning about the deferred maintenance needs in this area of the state. We will be making site visits in Fairbanks and North Pole to view the deferred maintenance needs and speak with the people in the Fairbanks area. A hearing is scheduled in the afternoon to allow members of the public to formally share their thoughts.

We encourage you to accompany Chancellor Wadlow in a walking tour of the University of Alaska Fairbanks campus. We will have an opportunity to view the progress that the University has made in addressing some of the most pressing deferred maintenance needs as well as the buildings whose maintenance needs have not been met.

The scheduled events for October 14 will keep us very busy, but will provide the Task Force with first-hand information regarding some of the deferred maintenance needs of Interior Alaska. We look forward to your visit to Fairbanks and North Pole.

Sincerely,

Handwritten signature of Jeannette James in cursive.

**Rep. Jeannette James, Member
Deferred Maintenance Task Force**

Handwritten signature of Gary Wilken in cursive.

**Sen. Gary Wilken, Member
Deferred Maintenance Task Force**

Interested in Fort Knox Trip, so far:

Mulder Elton James Wilken DeWitt *PATRICK LOUNSBURY, JOSH BROSLEY,*

Please let me know ASAP if we have more interest in the Fort Knox trip so *GALE PHILLIPS*
Senator Wilken can finish putting it together.

cc:Mail for: Denny DeWitt

Subject: FBKS Ft Knox Mine visit
From: Denny DeWitt 10/3/97 10:49 AM
To: Annette Kreitzer
To: Annie Landrum
To: Barbara Cotting at LAA_TRANS
To: Billie Rae Gillas at LAA_HPHG
To: Caroline McRoberts at LAA_TRANS
To: Denny DeWitt
To: Dianne Lindback
To: Joe Ambrose at LAA_STAY
To: Katrina Matheny
To: Larry Labolle at LAA_TRANS
To: Mary Gore at LAA_SMIL
To: Matt Gill at LAA_TRANS
To: Myrna McGhie at LAA_TRANS
To: Peter Ecklund
To: Portia Parker at LAA_TRANS
To: Rachael Moreland at LAA_SLEM
To: Representative Beverly Masek at LAA_TRANS
To: Representative Gail Phillips
To: Representative Gene Kubina
To: Representative Jeannette James at LAA_TRANS
To: Representative Kim Elton
To: Representative Richard Foster at LAA_TRANS
To: Senator Gary Wilken
To: Senator Mike Miller at LAA_SMIL
To: Senator Robin Taylor at LAA_STAY
To: Senator Tim Kelly at LAA_SKEL
To: Sheila Peterson
To: Tim Benintendi at LAA_SKEL

NOTE: The over night in Juneau was supposed to be Mon and TUES, not Wed. Sorry

Senator Wilken is trying to set up a visit to the Fort Knox gold mine on Monday October 14. Interested Legislators will need to come to Fairbanks in on Monday for an afternoon visit prior to the Tuesday DMIF activities we have already scheduled.

My information shows the following attending the Fairbanks hearing:

Mulder Elton James Phillips Kelly Leman Lincoln Wilken Miller

Naws Miner ⁴⁵⁹⁻⁷⁵²⁴
~~456~~

LINDA Angel

FAX 451-8962

SUNDAY

3 cul by 7"

SUNDAY 337.05

OCT 12, 13, 14 3 DAY TOTAL \$808⁹¹

AD#

AD ORDER # 3180419

FAX

TO: Gary Wilken
FAX # 907-451-0438

FROM: Denny DeWitt, Legislative Assistant
Representative Eldon Mulder
Phone # 907-465-2647
FAX # 907-465-3518
E-mail: Dennis_DeWitt@legis.state.ak.us

DATE: September 22, 1997

PAGES: 5, including cover

SUBJECT: Fairbanks Schedule and Press Release

COMMENTS: I made the corrections you noted and added several specific Fairbanks references on page 2 of the release. If you want to be included in a quote or anything else, let me know, its not a problem to share the spot light.

Post-It™ brand fax transmittal memo 7671 # of pages 1

To <i>Dennis DeWitt</i>	From <i>Linda Angel</i>
Co.	Co. <i>News Miner</i>
Dept.	Phone # <i>459-7524</i>
Fax # <i>465-3518</i>	Fax # <i>451-8962</i>

465

14160955 3x7 St. Ak 101857 10-12,13,14-97 LA/ap
14160955 - Composite

ALASKA STATE LEGISLATURE

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Rep. Beverly Musck
Rep. Gail Phillips



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Sen. Loren Lemman
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Sen. Gary Wilken
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You are welcome to attend in person or send our comments to the Deferred Maintenance Task Force
Room 501, State Capitol Building, Juneau, Alaska 99801

AO 3180419

*To Linda Angel
From Dennis DeWitt
Looks OK to me
9/24/97
2:30 PM*

ALASKA STATE LEGISLATURE

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Rep. Richard Foster
Rep. Jeannette James
Rep. Beverly Masek
Rep. Gail Phillips



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Sen. Gary Wilken
Sen. Mike Miller

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Capitol Building, Room 501 • Juneau, Alaska 99801 • Phone (907) 465-2647 • FAX (907) 465-3518

FAX

TO: Linda Angel
News-Miner
FAX # 907-451-8962

FROM: Denny DeWitt, Legislative Assistant
Representative Eldon Mulder
Phone # 907-465-2647
FAX # 907-465-3518
E-mail: Dennis_DeWitt@legis.state.ak.us

DATE: September 23, 1997

PAGES: 2 including cover

SUBJECT: Ad for Deferred Maintenance Task Force

COMMENTS: I attached the ad copy. I need the stationary with the seal and names on the ad as well as the copy. I believe it reduces to 3 col by about 7" pretty well.

I want it to run October 12, 13, & 14. You quoted the cost at \$808.91. The advertising Order number is 3180419. Send the bill and proof of publication to this office. I will carry it to the Legislative Affairs office to get it paid.

I will be in and out of town starting next week, so the sooner we can finish the proofs the better.

FAIRBANKS

NORTH POLE INDEPENDENT

week

FAX 488-1313

488-0669 publish

news Mon 5 PM

~~deadline~~

~~news dead~~

~~Thurs~~

~~Mon~~

~~5 pm Fri~~

~~ALASKA NEWS~~

SUN STAR

FAX 474-5508

474-7540

news Deadline 5 pm Fri

~~ALASKA POST~~

News Miner

Fairbanks Media List

Radio:

KFAR/KUWL fax: 451-5999, phone: 451-5910

KAKQ/KIAK fax: 457-2128, phone: 457-1921

KCBF/KXLR fax: 452-5120, phone: 452-5120

KSUA fax: 474-6314, phone: 474-6314

KUAC fax: 474-5064, phone: 474-5064

Print:

Daily News-Miner fax: 452-7917, phone: 456-6661

North Pole Indep. fax: 488-1313, phone: 488-0669
Goldpanner

Sunstar fax: 474-5508, phone: 474-7540

TV:

KTVF fax: 452-5120, phone: 452-5121

KATN fax: 456-8225, phone: 452-2125

KFXF fax: 456-3428, phone: 452-3697

KUAC fax: 474-5064, phone: 474-7491

KXD fax: 456-3428, phone: 452-3697



LEGISLATIVE TELECONFERENCE NETWORK

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PAGE 4

SIGN-IN SHEET

Please Print!!

Sponsor: Deferred Maintenance Task Force

Subject: University

[illegible]



LEGISLATIVE TELECONFERENCE NETWORK

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Time Dialed In: _____
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Date: 10/14/97 page 3

SIGN-IN SHEET

Please Print!!

Sponsor: Deferred Maintenance Task Force

Subject: University

Name - Organization You Are Representing	Address	Zip	Phone #	Testify	Observe	Bill #
STEPHEN ARTHUR	1971 GILMORE TRAIL	99712		✓		
D. Fischer / News-Miner	P.O. Box 70710	99707			✓	
R. Lonn	4454 CHSR	99712			✓	
Bill Robertson	453 Foxboro Lane - Fbx	99712	488-2328	✓		
P. Lounsbury / Rep James	N. Pole AK	99705	488-1540			
Tony Johansen	1887 Arctic Loop Cir.	99709	479-4327		✓	
SANDRA M Hill	PO Box 1000, Delta Jet, AK	99737	895-4460	✓		
Hans Geier	Box 253 Delta Jet	99737	451-6277	✓		
MILO KOPENEN						

HANDOUT



LEGISLATIVE TELECONFERENCE NETWORK

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TC Line: Borough Assembly Chambers
Time Dialed In: _____
Time Dropped Off: _____
Date: 10/14/97 page 2

SIGN-IN SHEET

Please Print!!

Sponsor: Deferred Maintenance Task Force

Subject: University

Name - Organization You Are Representing	Address	Zip	Phone #	Testify	Observe	Bill #
<u>Karen Galy observer UAF</u>	<u>UAF</u>		<u>474-7587</u>		<u>✓</u>	
<u>Kathleen Schedler UAF</u>			<u>474-6265</u>		<u>✓</u>	
<u>NEIL KERSTEN - FNSB</u>	<u>FNSB</u>		<u>459-1345</u>		<u>✓</u>	
<u>LOW MAEKUOR Fbko School Dist</u>	<u>FNSB SID</u>		<u>452-4461</u>		<u>✓</u>	
<u>Linda Anderson</u>	<u>3165 Riverview Dr FB100, 99709</u>	<u>99709</u>	<u>474-9463</u>		<u>✓</u>	
<u>Sharon LHEUREUX FNA</u>	<u>201 First Ave FAIRBANKS</u>	<u>99701</u>	<u>452-1648</u>		<u>✓</u>	
<u>Lorna Ramert / Rep Kelly</u>	<u>119 N. Cushman Street</u>	<u>99701</u>	<u>456-8161</u>			
<u>Karisse Helms / Rep Davies</u>	<u>119 N. Cushman Street</u>	<u>99701</u>	<u>456-8172</u>			
<u>Tony Shumate - City of Fairbanks</u>	<u>800 Cushman Street</u>	<u>99701</u>	<u>459-6700</u>		<u>✓</u>	
<u>Karen Parr - FNSB Assembly</u>	<u>909 John Kalinas Rd.</u>	<u>99712</u>	<u>488-2555</u>	<u>✓</u>		



LEGISLATIVE TELECONFERENCE NETWORK

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TC Line: Borough Assem. Chambers
Time Dialed In: _____
Time Dropped Off: _____
Date: 10/14/97 page 1

SIGN-IN SHEET

Please Print!!

Sponsor: Deferred maintenance task force

Subject: university

Name - Organization You Are Representing	Address	Zip	Phone #	Testify	Observe	Bill #
<i>Hugh Tate - Public</i>	<i>750 Farmers loop</i>	<i>99712</i>	<i>457-6860</i>	<i>Yes</i>		
<i>Mary Lane Tate Public</i>	<i>" "</i>	<i>"</i>	<i>"</i>	<i>Yes</i>		
<i>Arthur S. Buswell</i>	<i>102 Maple Dr. Fairb., AK</i>	<i>99709</i>	<i>479-0637</i>	<i>yes</i>		
<i>Jean Richardson</i>	<i>2045 Jack St. Fairb. AK</i>	<i>99709</i>	<i>451-9598</i>	<i>yes</i>		
<i>Laura Burleson</i>	<i>1716 S. University Apt B</i>	<i>99709</i>	<i>479-5071</i>	<i>yes</i>		
<i>Dorothy Polzin</i>	<i>510 YAK Rd NPT 855D Fairbanks</i>	<i>99709</i>	<i>451-9511</i>	<i>yes</i>		
<i>Kathy Marquette</i>	<i>1620 Washington Dr Apt 55</i>	<i>99709</i>	<i>455-4535</i>	<i>yes</i>		
<i>DANIEL JACOBSON</i>	<i>4214 MATHEWSON CVT</i>	<i>99709</i>	<i>477-7409</i>	<i>yes</i>		
<i>DICK VAN HORN</i>	<i>213 SIATEK DR FAIRBANKS</i>	<i>99701</i>	<i>452-5369</i>	<i>No</i>		
<i>John Reg. Lavo</i>	<i>201, 1st Ave. Suite 200, Fairb. AK</i>	<i>99701</i>	<i>452-1648</i>	<i>X</i>		
<i>Donna J Garono - DELTA Community Ctr</i>	<i>P.O. Box 930 DELTA JCT AK</i>	<i>99737</i>	<i>895-4786</i>	<i>X</i>	<i>W</i>	

Hand out

COMMITTEE:

DMTF

DATE:

10/14/97

TIME:

2:00 PM

SUBJECT:

MEMBERS:

MASEK, JAMES, ^RPHILLIPS, Mulder, Kelly, Nilken, ELTON, Lincoln

SPEAKER	TAPE # 1	SIGNIFICANT INFORMATION
Rep Mulder	1 (1.27 -	2 OPENING + intro
Sen Nilken	1 (1.42	WELCOME
Mulder	3.27	
Hugh FATE	4.00	DEFER MENT AT UNIVERSITY
MARY JANE FATE	12.29	
Sen Lincoln	14.09	Q - RE: CLOSING of Rural Colleges
Rep Mulder	20.44	Has listing Sen. Lincoln asked for - is in packets
Rep James	21.01	Q - # for VAF value of bldg - include rural buildings?
Mulder	23.36 23.36	
Arthur BUSWELL	23.50	
Mulder	26.50	
JENN RICHARDS	30.16	UNIVERSITY STUDENT
Mulder	34.00	EXPLAIN Budget of university
JAMES	35.00	
LAURA BURELSON	36.48	UAF STUDENT - WORK ASUAF LEG AFFAIRS DIRECTOR
Nilken	40.56	
D. Polzin	41.28	UAF STUDENT.
Lincoln	45.30	Q -
	SIDE 2	
K. MARQUETTE	0.20	ACCESSIBILITY AT THE GENERALLY
D. JACOBSON	19.28	LEGALLY BLIND
J. REGITANO	28.02	FAIRBANKS NATIVE ASSOC
D. GARDINO	39.06	DELTA COMM CORP

Significant Information

Tape #

Speaker

4706

S. WILKEN

#2

TYPE

- working on specific part LEAS

TOP PHILLIPS

3.30

K. Parr

28.40

S. Mathews

47.12

S. Hill

THAT'S FLOOR PROBLEM

3.0

S. Lincoln

~~H. Hill~~

4.3

MURDER

5.0

J. GIER

Explains Thru's of T.F. Cummings Road Resident Delta Tower

10.02

B. Williams

16.45

Nilo Kopper

20.35

S. Skelton

26.00

D. Schallert

DMTF
10-14-97
p. 1

10-14-97 FAIRBANKS

Chancellor Wadlow

Brian Rogers -

- Bond issue for new school failed
- Bond issue to refurbish existing schools passed.

Bill Allen

- no one ^{CARES} ~~cares~~ and / Toilet ~~Doesn't~~ Flush
- Boring -

Growing, Broadening Base

Looking ~~at~~ AT 2500 New Jobs in next few years

DOT/PF

Clark Munk (ex-ec) Former DOT/PF Regional Guy under Hinkel.
North Region

43 Maint stations - 26 have only 2-3 people

Assigned - no back up folks

Solutions - Need is Real

Add Life cycle costs in new facilities

Target future revenue sources

Fuel taxes - Aviation, Marine, Hwy users

Tony JOHANSEN - DOT/PF NO Region Director

Paving gravel Reduces Maintenance

*

Snow + Ice removal consumes ^{45%} majority of MxO Budget

Need 128 m + 14 m operating increase

FELS 10/14

Ps 2

Jerry Cleworth - City of Fairbanks

Police Facility - was supposed to be temporary 30 yrs ago

City Hall - old school

- Require MATCH, Make specific amount available so they can plan. Limit to deferred maint.
- \$530,000 Annual Deferred Maint Budget. only a BONDING

Fairbanks North Star Borough / School Dist

Jim Simpson Mayor

Cynthia Henry School Bd Pres

Simpson -

Communities should share in oil wealth

Legis needs to find Rev Sharing + MNN. Act b/c 92 levels

Increase Capital funding commitment

Capital Matching Grant Program

Most need is in schools -

- Look at local ability to pay

70-30 split HAND for FELS to come up with its 30%.

Give flexibility on Debt ~~Reimbursement~~ Reimbursement Program.

Cynthia Henry - School Bd Pres

Reward those who have been committing to Deferred maint

- DOE Forces its priorities NOT looking at local need definition

School has ~~deducted~~¹³⁻ 14% to Maint for
Past They have records for

Prototype Design -

helps on BIDS

lowers heating & ELECT costs

equals 8 Teachers

NOT TRYING NEW STUFF ON KIDS + Teachers

Major Renovation is more cost effective for Borough
and flexibility in Debt Reimb

UAF -

JEFF COOK

KATHLEEN Schedler UAF Planning + Project Services

Solving Problem -

need multi-year commitment

K. Scholmer -

working through Def. Maint on scheduled Planned
basis w Reports to Bd of Regents

Doing system upgrades, elect, Plumbing ^{Heating} etc
60% is behind walls

*

James - What is \$ needed to keep up once
we get up to snuff
\$16 million ann used for UAF MAINT

DMTF
10-14-97
P.4

P94
FBKS 10/14
UNIVERSITY -

we are updating LIST + working with
IT. ~~will get~~ have good #s they get
better as we go

DEFINITION of Deferred Maint at University

Hearing -

Hugh FATE -

ENDOWED TRUST for University built over
years ~~for~~
Need to take uncertainty out -
CAN'T be CHRISTMAS TREE

MARY JANE FATE

JEAN RICHMONDSON -

Need to note program sacrifice for Maint needs

Louisa Burelson

Need to fund Maint. so it doesn't become deferred.

ADA - Problems in FBKS -

ARCTIC Conditions Change Parameters

Jacobson - Solutions

Concern Fed funds

What Const Limitation on Fed funds

FTA MATCHING Dollars

DONNA GARDINO

CAMMINES

ROAD WASH out + Dike needs Replacement
TRYING to put together SERVICE AREA

DMTF
10-14-97
P. 4

K. Parr -

Borough Assenb + AML

B. Williams Solution 3 PARTS

1. Resolution - Const Amend Dedicated funds
2. State Hous. + works
3. CDR FUNDS for START UP

1 FUND EDUCATION FUND

10070 of tobacco tax
- Scholdest

2 FUND - STATE Agency FUND

- MUNI
- STATE APPROP

↳ Fuel Tax; Alcohol tax
STATE APPROPRIATION

These are LOAN FUNDS

Def Maint is Priority

~~DEF~~ WITH DRAWD by LOCAL rate only

STATE Agencies Required to contribute by
AMT of bldg. They own -

Nii 20 Hopewell

START Segregated Appropriation FUND

Dennis Schlotfeldt



FAIRBANKS NORTH STAR BOROUGH

The Fairbanks North Star Borough is responsible for major maintenance rehabilitations, and new construction of the following facilities.

•School District Facilities

28 Buildings	2,000,000 S.F.
6 Buildings On-Base (Military)	360,000 S.F.
Subtotal	2,360,000 S.F.

•Fire Department Facilities

13 Buildings	Subtotal	69,000 S.F.
--------------	----------	-------------

•Parks & Recreation Facilities

18 Major Buildings	160,000 S.F.
79 Alaskaland Buildings	128,000 S.F.
Subtotal	288,000 S.F.

•General Borough Facilities

25 Buildings	Subtotal	328,000 S.F.
	Total Bldg.	3,045,000 S.F.

•Other Parks & Recreation Facilities

38 Neighborhood Parks	141 Acres
3 Large Parks	2,767 Acres
42 Baseball/Softball/Soccer Fields	104 Acres

•Road Service Areas

107 Service Areas	418 Miles of Roads
-------------------	--------------------



FAIRBANKS NORTH STAR BOROUGH

The Fairbanks North Star Borough is responsible for the daily maintenance and care of the following:

- The Fairbanks North Star Borough provides regularly scheduled preventative maintenance and general maintenance and repair for the fire department buildings, parks and recreation buildings, and general borough buildings.

\$2,750,000 Annually

- The Fairbanks North Star Borough provides park enhancement and beautification, and general maintenance and repair to parks, playgrounds, baseball/softball/soccer fields and Alaskaland.

\$1,440,000 Annually

- The Fairbanks North Star Borough provides maintenance, repairs, upgrades, and snow removal to Borough road service area roads.

\$2,000,000 Annually

WICKERSHAM HALL DEFERRED MAINTENANCE

BACKGROUND:

- ★ Wickersham Hall constructed in 1957
- ★ Utilized as a women's residence hall since construction
- ★ Houses approximately 95 students in approximately 23,000 square feet
- ★ Single and double occupancy rooms have in-room lavatories and sinks

DEFERRED MAINTENANCE PROJECT SCOPE:

- ★ Refinishing of walls and ceilings, carpet replacement, removal of built-in furniture and replacement with modular units
- ★ New sprinkler and fire alarm system, kitchen and laundry room improvements
- ★ Mechanical systems replacement, electrical systems upgrades and mechanical controls systems upgrades
- ★ Replacement of interior doors and frames
- ★ Repainting of the exterior and site access improvements
- ★ Exterior and interior ADA access modifications
- ★ Project completed - May 1997

DEFERRED MAINTENANCE FUNDING:

- ★ FY 96 Deferred Maintenance \$2,850,000

NON-DEFERRED MAINTENANCE FUNDING:

- ★ Non-DM Funding \$314,000
 - Furniture
 - Telephone/communications upgrades
 - Appliances (washers and dryers)
- ★ Total Project \$3,164,000

BUNNELL DEFERRED MAINTENANCE AND CODE CORRECTIONS PROJECT

- ★ **Bunnell Building was built in 1959 and is 82,400 square feet**
- ★ **Project Cost - \$9.45 Million (\$115 per square foot)**
- ★ **Deferred Maintenance Funding - \$6.35 Million**
- ★ **Scope of Work (Code Corrections and DM)**
 - New Fire Alarm System and Sprinkler System
 - Improved Emergency Egress
 - ADA Improvements
 - Exterior Painting and Curtain Wall Repairs
 - New Electrical Distribution
 - New Central HVAC system and other ventilation improvements
 - New Ceiling and lighting
 - New Floor Coverings
 - Convert Chemistry Labs to Biology Labs
 - Replace seating in Schaible Auditorium
- ★ **Scope of Work (Other)**
 - Upgrade Communications Wiring
 - Renovate space for new 100 station computer lab
 - New media equipment for enhancing teaching (includes projection of Web material)
- ★ **Phased Construction - April 1997 to December 1998**

FY- 99 CAPITAL BUDGET - SIX YEAR CAPITAL IMPROVEMENT PLAN

DISTRICT Fairbanks North Star Borough DATE August 31, 1997 Page 1 of 3 Pages

District Priority	Location and Description	Priority Type	Commu- nity Priority	FY in Which Funding is Requested						Cost Estimate
				99	20	01	02	03	04	
1 5	Denali Elementary School Design/Renovation and Addition	C		X						\$11,318,057
2 20	Nordale Elementary School Planning/Design, Renovation and Addition	C		X						\$11,808,387
3	Hutchinson Planning and Design	C		X						\$572,328
4 17	Barnette Elementary School Planning/Design, Renovation and Addition	C		X						\$4,783,018
5	Danby Middle School Phase II Addition (170-200 Student Addition)	B		X						\$5,720,915
6 62	District: Physical Plant Shipping/Receiving, Repair/Renovation and Add.	D		X						\$7,289,723
7 60	District Wide: ADA Compliance	D		X						\$6,458,400
8	Two Rivers Elementary Fire Protection System	C			X					\$301,000
9	Ryan Middle School Planning and Design	C			X					\$778,800
10	Tanana Middle School Planning and Design	C			X					\$603,600
11	Hutchinson Renovation and Addition	C			X					\$4,387,845
12	Districtwide Technology Upgrades (Completion of Computer wiring and electrical outlets)	F			X					\$4,000,000

Form Number 05-251-19 Rev 05/25/90 138 FAC-T

A = Life, Safety

B = unharmed students

C = Protection of Structure

D = Code

E = operations cost savings

F = Improve instructional programs

FY- 99 CAPITAL BUDGET - SIX YEAR CAPITAL IMPROVEMENT PLAN

DISTRICT Fairbanks North Star Borough DATE August 31, 1997 Page 2 of 3 Pages

District Priority	Location and Description	Priority Type	Commu- nity Priority	FY in Which Funding is Requested						Cost Estimate
				99	20	01	02	03	04	
13	Districtwide Lighting Upgrades of Older Schools	C			X					\$4,000,000
14	North Pole High School Voc-Ed Upgrade/Renovation (Convert to New Tech-Voc-Ed)	F			X					\$1,250,000
15	Lathrop Track and Field Complex (Equal to NPHS)	F			X					\$1,250,000
16	Tanana and Ryan, Physical Education Fields (Add Soccer, Softball, Icerink, track)	F			X					\$750,000
17	Physical Plant Warehouse Addition	D			X					\$1,545,000
18	Howard Luke Library/Classroom Addition	F			X					\$1,593,000
19	New Schools Planning, Design and Site Acquisition (Land banking, etc. for new elementary and Future HS)	B			X					\$3,000,000
20	District Wide: Repairs for Selected Schools	C			X					\$649,000
21	Ryan Middle School Renovation	C				X				\$10,000,000
22	Tanana Middle School Renovation	C				X				\$6,306,000
23	District Wide: Fire Protection Projects	C				X				\$210,000
24	New Northwest Fairbanks Elementary School Design and Construction	B				X				\$17,300,00

**State of Alaska
Department of Education
Capital Improvement Projects
Deferred Maintenance Needs**

Agency	Project Name	Amount Requested	Deferred Maint. Need	Project Notes/Comments	Cost Notes/Comments
Museums	State Museum: Upgrade HVAC & Boiler System	\$477,000	\$477,000		
	State Museum: Exterior Renovations & Maint.	\$145,000	\$145,000		
	State Museum: Annex Floor & Foundation Repairs	\$10,000	\$10,000		
	State Museum: Carpet Replacement	\$30,000	\$30,000		
	State Museum: Security, Fire System Upgrades	\$140,000	\$140,000		
	State Museum: Asbestos Abatement in Critical Areas	\$290,000	\$290,000		
	State Museum: Replace Halon System	\$130,000	\$130,000		
	Sheldon Jackson Museum: Interior Renovation (Carpet, painting, etc.)	\$55,000	\$55,000		
	Sheldon Jackson Museum: Exterior Renovation & Roof repair	\$40,000	\$40,000		
	Sheldon Jackson Museum: HVAC Repairs	\$20,000	\$20,000		
	Sheldon Jackson Museum: Replace Halon System	\$185,000	\$185,000		
	TOTALS	\$2,623,162	\$2,173,162		

TOTAL P.02

Date Issued: 8/20/97
Date Run: 8/21/97

2 of 2

Note: * These items have been identified but not estimated as of August 19, 1997.

P.02

SEP-26-1997 15:04

Deferred Maintenance

Legislative Transportation Committee

**October 14, 1997
Fairbanks**



Alaska Department of Transportation and Public Facilities, Northern Region

Deferred Maintenance

**Legislative Task Force Meeting
October 14, 1997**

Presented by

Tony Johansen, Regional Director



**State of Alaska
Department of Transportation and Public Facilities
Northern Region**

The Mission

of the Department of Transportation &
Public Facilities:

To improve the quality of life for Alaskans by
cost effectively providing, operating and *maintaining*
safe, environmentally sound and reliable
transportation systems and Public facilities.

Northern Region

Transportation Facts

Typical Communities

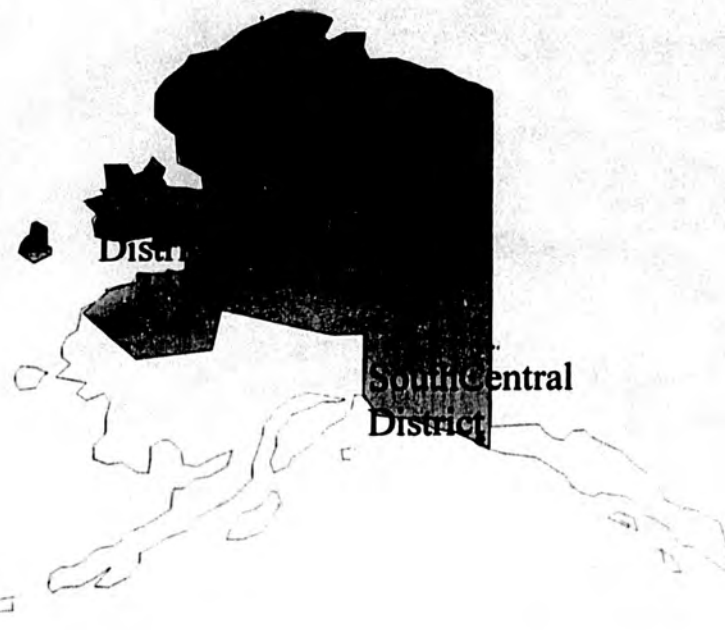
Anderson
Alakanuk
Barrow
Cantwell
Central

Ft. Yukon
Galena
Gambell
Glennallen
Kotzebue

Ruby
St. Mary's
St. Michael
Unalakleet
Valdez

Cordova
Delta Jct.
Eagle
Emmonak
Fairbanks

North Pole
Pitka's Point
Pilot Stn.
Point Hope
Manley



Northern Region Responsibilities

- 3,420 miles of highways
- 101 airports
- 411 bridges
- 365 buildings
- 65% of Alaska's land area
- 24% of Alaska's population
- 58% of State highways
- 40% of State airports

Maintenance and Operations

Typical Services

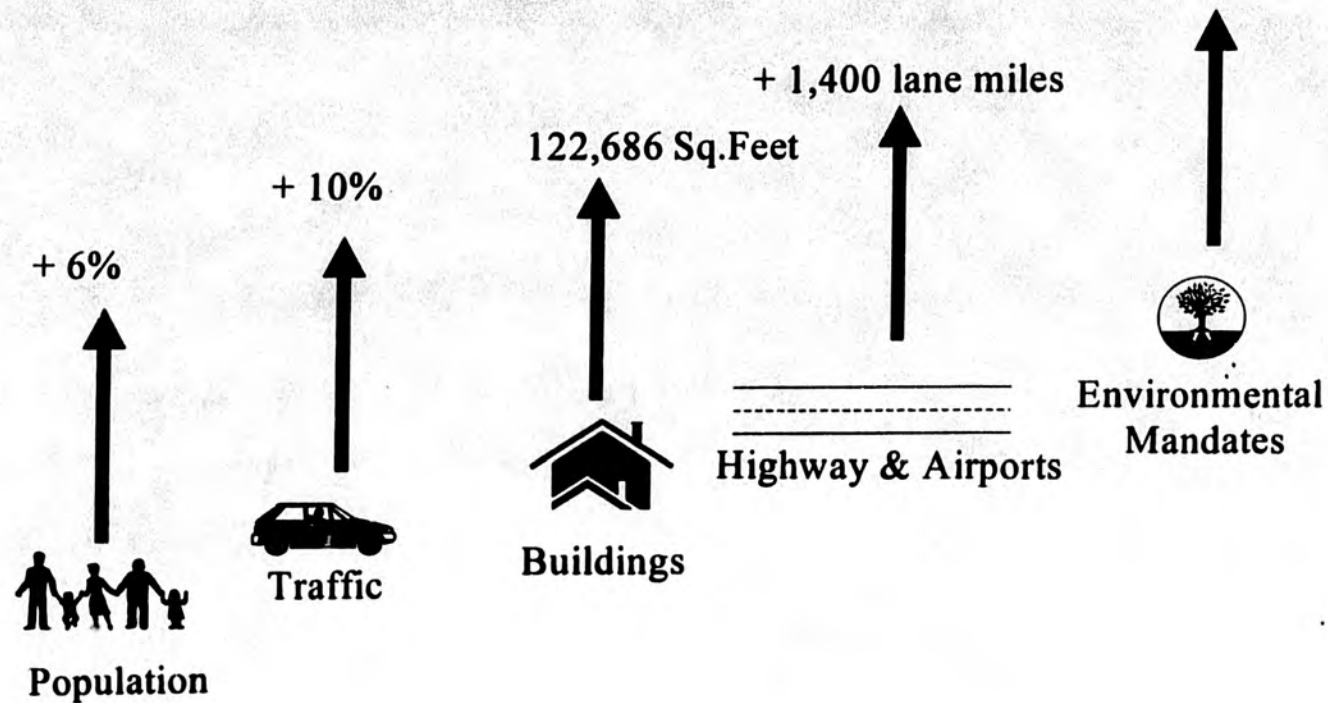
Highways and Aviation

- snow & ice control
- grading
- pavement crack sealing & pothole patching
- leveling of dips & heaves
- brush & litter control
- airport lights
- traffic signals
- highway illumination
- drainage systems
- bridges
- signs
- guardrails
- pavement striping

Buildings

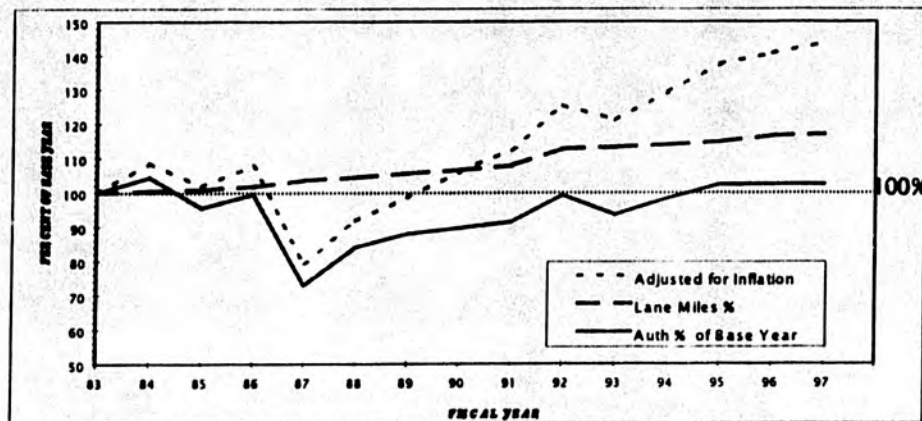
- Operating of heating, electrical and mechanical systems
- ADA compliance
- Snow & ice removal from roofs & walkways
- Grounds keeping
- Custodial activities
- Repairs, painting & remodeling
- Building Security

Growing Maintenance Responsibilities since 1990



Northern Region

Budget History

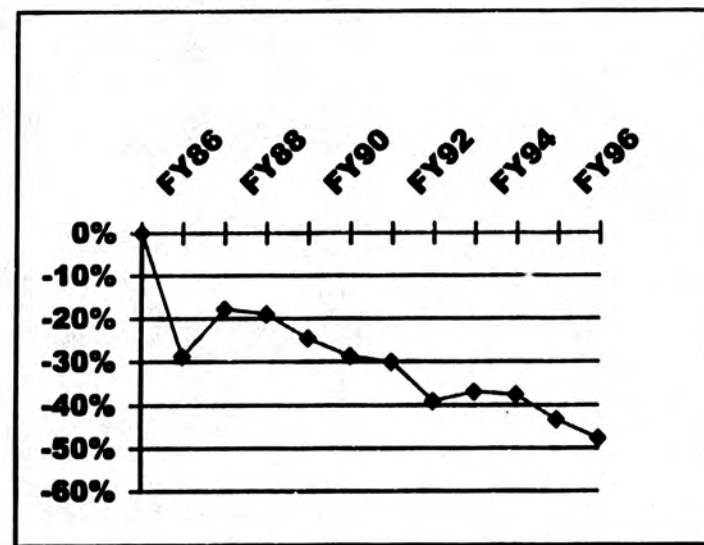


Decreases in 1987 due to fall in oil prices and corresponding administration cutbacks.

Inflation and added responsibilities have effectively reduced our ability to accomplish our maintenance mission by over 45%.

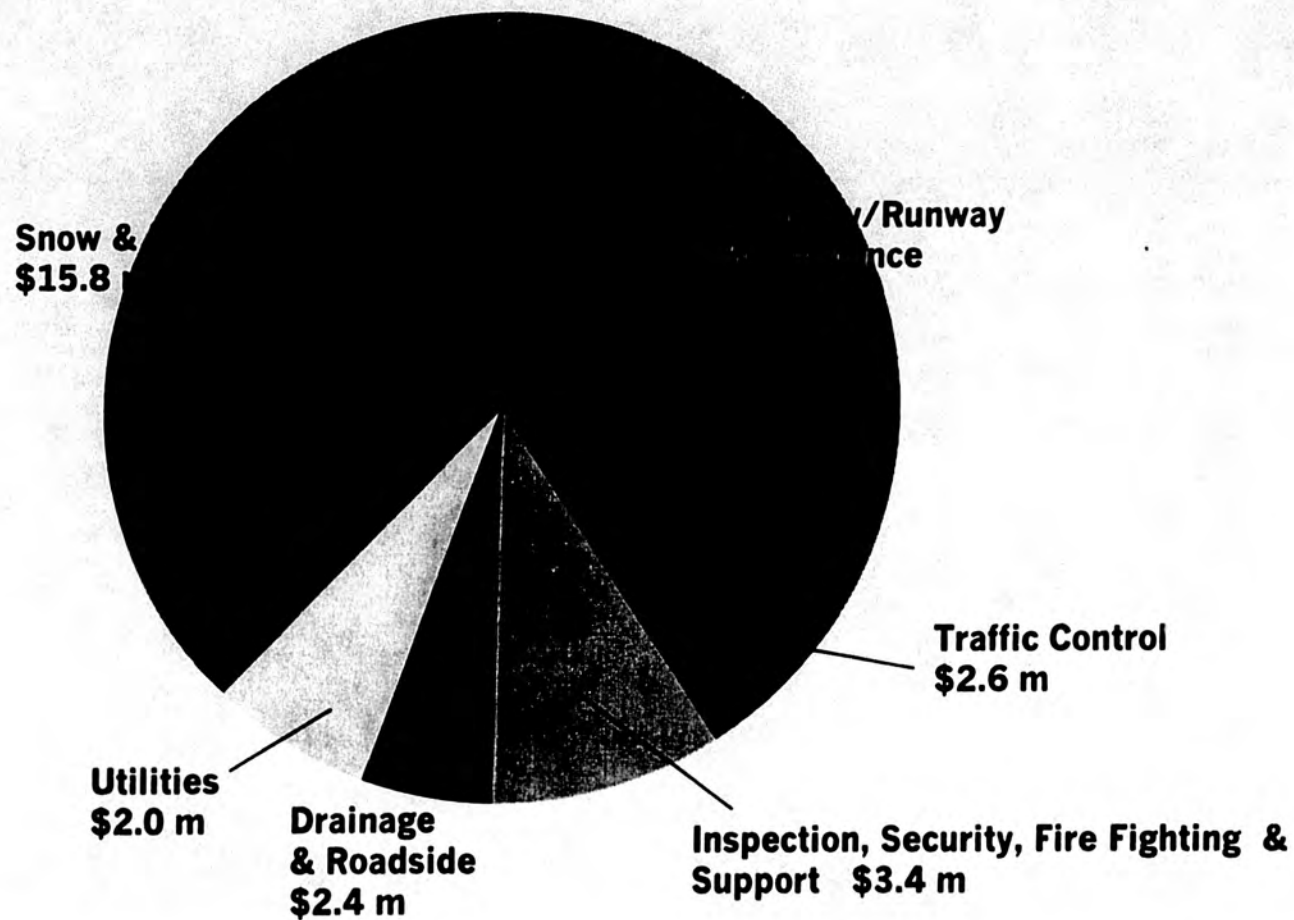
Northern Region

Maintenance Reductions



How We Spend

Highway and Aviation Maintenance Money



Average Annual Budget = \$36.5 m

What we have done

to Improve Efficiency

Typical Examples

- Increased Workloads
- Better Training
- More efficient equipment
- Equipment Pools and shared equipment
- Energy Saving measures
- Roving Crews
- New Technology & Methods
- Decertified Airports
- Used other Funding Sources
- Contracted out work
- Reduced Level of Service
- ***Deferred Maintenance***

Deferred Maintenance

What it IS and IS NOT

What Deferred Maintenance IS:

Typical Examples

- Major Pavement Repair
- Gravel Resurfacing
- Bridge Maintenance
- Drainage Repair
- Guardrails, Fences
- Signs
- Pavement Markings

What Deferred Maintenance IS NOT:

Typical Examples

Increases to:

- Inspection, Security
- Fire Fighting
- Administration & Support
- Snow Control
- Utilities
- Blading
- Dust Control, Pavement Sweeping

DOT&PF Northern Region

Deferred Maintenance Analysis

	Actual Operating Expenditures				One time Cost To make facilities whole	Yearly Cost to keep whole
	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need
Inspection, Security, Fire Fighting & Support Admin & Support Acty	251,946.58	128,397.84	164,797.94	181,714.12	0	0
Inspection	1,296,780.05	1,337,367.49	1,466,641.56	1,366,929.70	0	0
Security & Fire Fighting	1,138,264.40	1,040,192.91	893,012.39	1,023,823.23	0	0
All Training	538,477.31	748,019.43	582,997.09	623,164.61	0	0
Spec Event & Vip Req	222,148.56	229,071.03	279,842.65	243,687.41	0	0
TOTAL	3,447,616.90	3,483,048.70	3,387,291.62	3,439,319.07	0	0
Roadway/Runway						
Transportatn Activity	180,331.66	53,047.81	143,155.30	125,511.59	0	0
M&O Roadway/Runway	52,309.93	75,676.37	0	42,662.10	0	0
Haz Matls Clnup&Mgmt	140,639.84	85,943.02	27,456.36	84,679.74	10,456,800.00	170,500.00
Major Pvmnt Repair	2,621,437.08	2,848,606.10	2,821,476.29	2,763,839.82	29,232,100.00	3,306,500.00
Minor Pvmnt Repair	1,573,130.68	1,100,467.48	1,089,640.30	1,254,412.82	0	0
Embankment Repair	265,272.93	533,634.10	189,424.34	329,443.79	0	0
Blading	2,813,938.06	2,965,649.96	3,211,214.54	2,996,934.19	0	0
Dust Control	573,633.05	879,116.55	721,513.56	724,754.39	0	0
Gravel Resurfacing	1,348,975.15	1,376,768.82	1,078,320.53	1,268,021.50	49,505,400.00	4,483,900.00
Pavement Sweeping	318,063.91	171,903.77	263,080.53	251,016.07	0	0
Bridge Maintenance	862,868.12	483,132.44	111,599.75	485,866.77	2,053,870.00	511,400.00
Rock&Landslide Clnup	3,932.40	13,067.02	5,464.70	7,488.04	0	0
TOTAL	10,754,532.81	10,587,013.44	9,662,346.19	10,334,630.81	91,248,170.00	8,472,300.00

	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need
Drainage & Roadside						
Drnage & Rdside Mntc	43,803.20	29,105.37	1,191.38	24,699.98	0	0
Drain Strc/Not Snow	534,165.33	676,567.23	575,950.68	595,561.08	2,836,500.00	498,500.00
Shlder, Slope, Ditch	453,247.65	509,776.61	335,333.74	432,786.00	1,180,400.00	345,000.00
Gurdlr,Fence,Barrier	196,624.46	331,579.26	311,763.03	279,988.92	3,517,700.00	313,000.00
Roadside Vegetation	710,110.57	979,717.90	742,509.99	810,779.49	2,664,300.00	767,600.00
Parklots,Sdewlk&Turn	43,862.17	38,593.34	42,308.50	41,588.01	0	0
Litter & Trash Remov	163,782.89	190,943.32	207,663.32	187,463.17	766,000.00	323,500.00
Floats & Docks		1,979.41	154.61	711.34	0	0
Bike Path&Trail Mntc	1,796.54	9,184.27	2,069.72	4,350.17	487,500.00	70,000.00
Animal/Bird Control	9,080.18	3,615.47	6,057.98	6,251.21	0	0
TOTAL	2,156,473.00	2,771,062.18	2,225,002.94	2,384,179.37	11,452,400.00	2,317,600.00
Snow & Ice Control						
Snow & Ice Control	95,546.00	110,083.08	24,107.49	76,578.86	0	0
Snow Plow & Ice Cntl	13,660,707.78	12,736,241.67	14,211,897.18	13,536,282.21	0	0
Snow Removal & Displ	2,013,477.16	793,256.55	1,531,367.89	1,446,033.87	0	0
Avlnche Cntrl & Clnp	101,039.75	66,062.32	72,426.37	79,842.81	0	0
Drnge Struc Thaw/Clr	379,630.56	996,530.60	635,756.18	670,639.11	0	0
TOTAL	16,250,401.26	14,702,174.21	16,475,555.11	15,809,376.86	0	0
Traffic Control						
Traffic Control Serv	1,572.68	1,781.99	0	1,182.22		
Signs & Delineators	538,073.10	510,070.33	492,293.25	513,478.90	1,460,300.00	276,650.00
Pavement Marking	814,370.82	955,265.39	988,303.02	919,313.08	2,361,800.00	720,500.00
Signals,Lights,Rr-X	1,107,015.07	1,269,369.42	1,020,017.50	1,132,133.99	563,100.00	129,000.00
TOTAL	2,461,031.66	2,736,487.13	2,500,613.77	3,354,670.19	4,385,200.00	1,126,150.00
Utilities						
TOTAL	1,973,023.00	2,096,282.29	1,961,300.33	2,010,201.87	0	0
Buildings						
TOTAL	7,140,759.00	6,998,162.00	7,030,948.00	7,056,623.00	21,839,600.00	2,400,000.00

TOTAL	128,925,370.00	14,316,050.00
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Deferred

Maintenance

Legislative Task Force Meeting

October 14, 1997

**Alaska Department of Transportation and Public Facilities
Northern Region**



The Mission

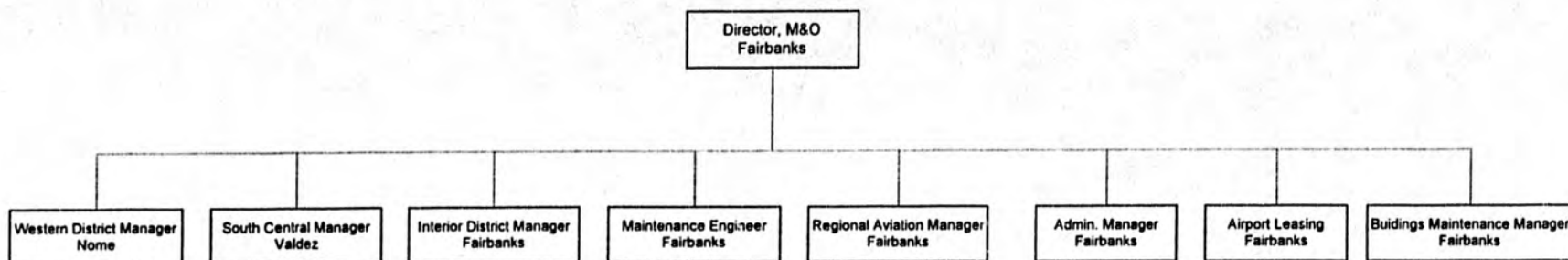
of the Department of Transportation &

Public Facilities:

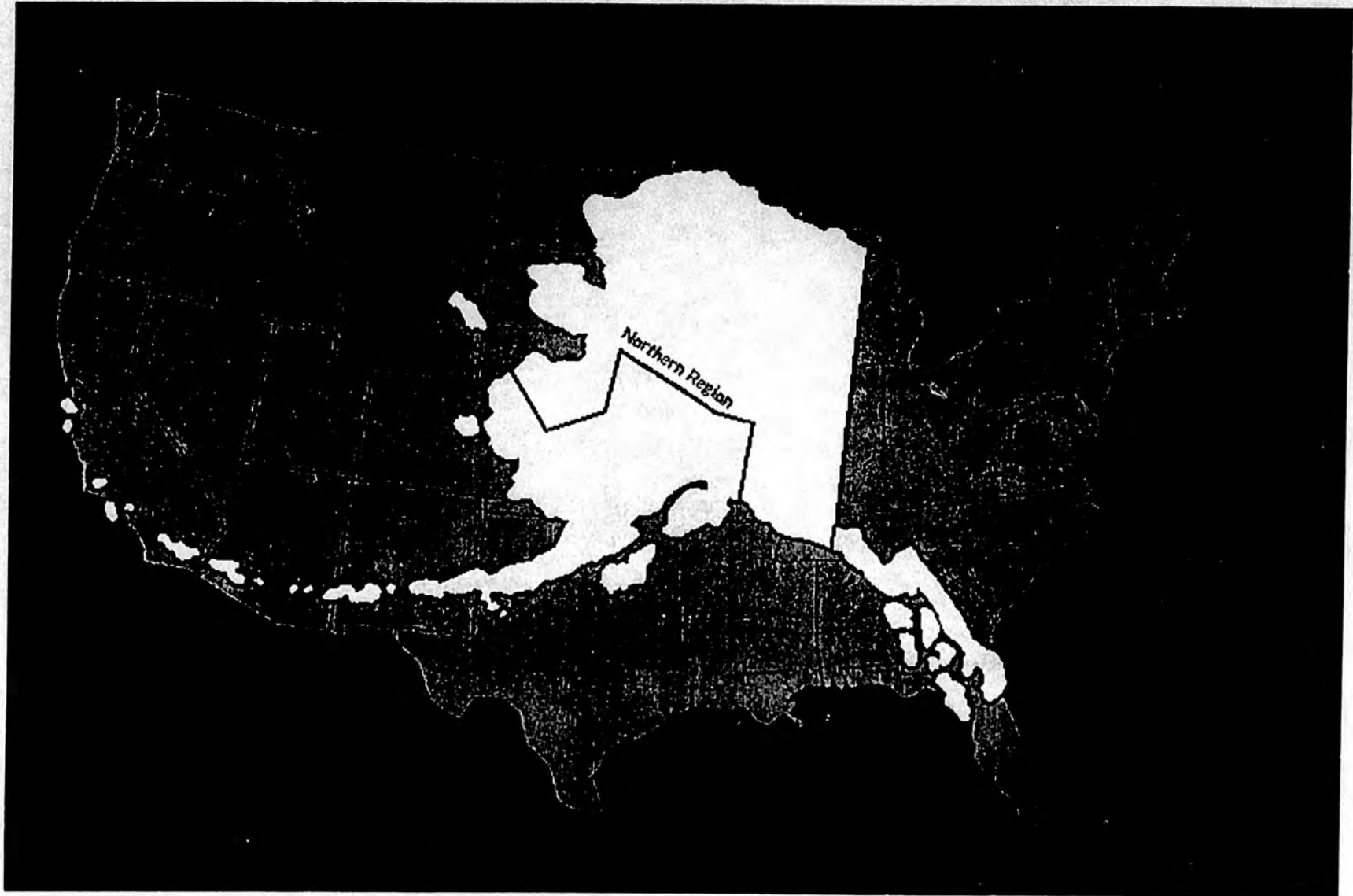
To improve the quality of life for Alaskans by cost effectively providing, operating and maintaining safe, environmentally sound and reliable transportation systems and public facilities.



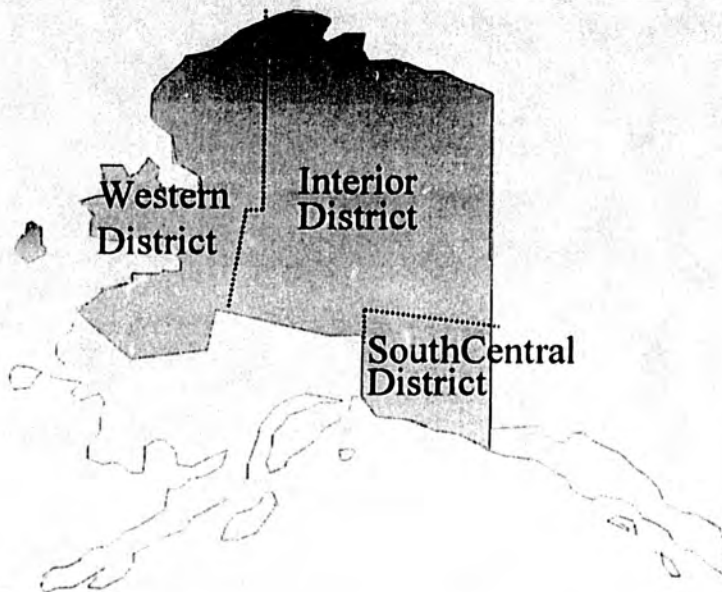
Maintenance Management Organization Chart



Size Comparison



Northern Region



Typical Communities:

Anderson
Alakanuk
Barrow
Cantwell
Central
Cordova

Deadhorse
Delta Jct.
Eagle
Emmonak
Fairbanks
Ft. Yukon

Galena
Gambell
Glennallen
Kotzebue
Manley
Nenana

Nome
North Pole
Pilot Stn.
Pt. Hope
Ruby
St. Mary's

Savoonga
Selawik
Stebbins
Tok
Unalakleet
Valdez

Northern Region

- 65% of Alaska's land area
- 24% of Alaska's population
- 58% of State highways
- 40% of State airports



DOT&PF Responsibilities

- 3,420 miles of highways (8,331 lane miles)
- 101 airports
- 411 bridges
- 365 buildings (1,060,000 square feet)



Maintenance & Operations

Typical Highway & Aviation Services

- snow & ice control
- grading
- pavement crack sealing & pothole patching
- leveling of dips & heaves
- brush & litter control
- airport lights
- traffic signals
- highway illumination
- drainage systems
- bridges
- signs
- guardrails
- pavement striping



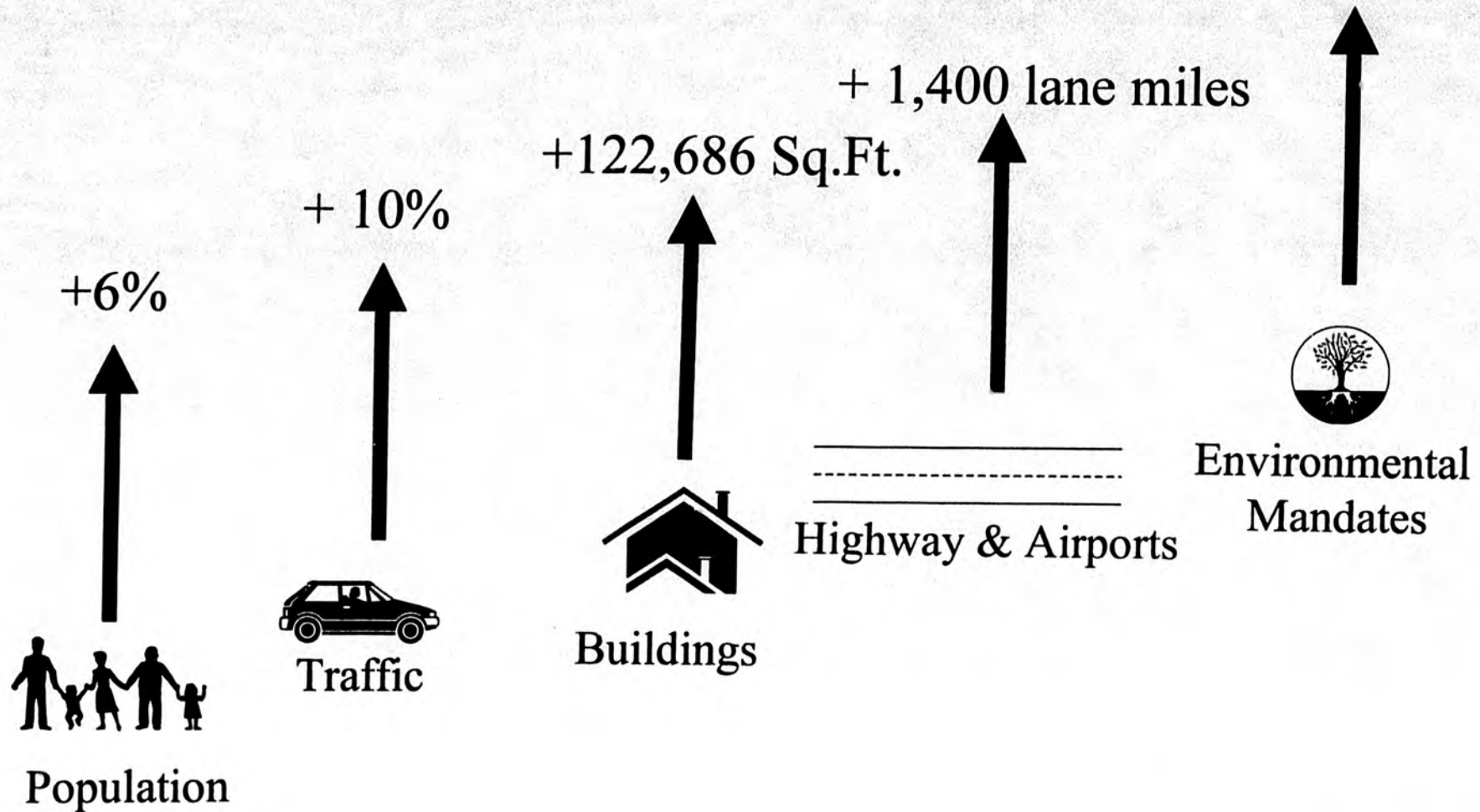
Maintenance & Operations

Typical Building Services

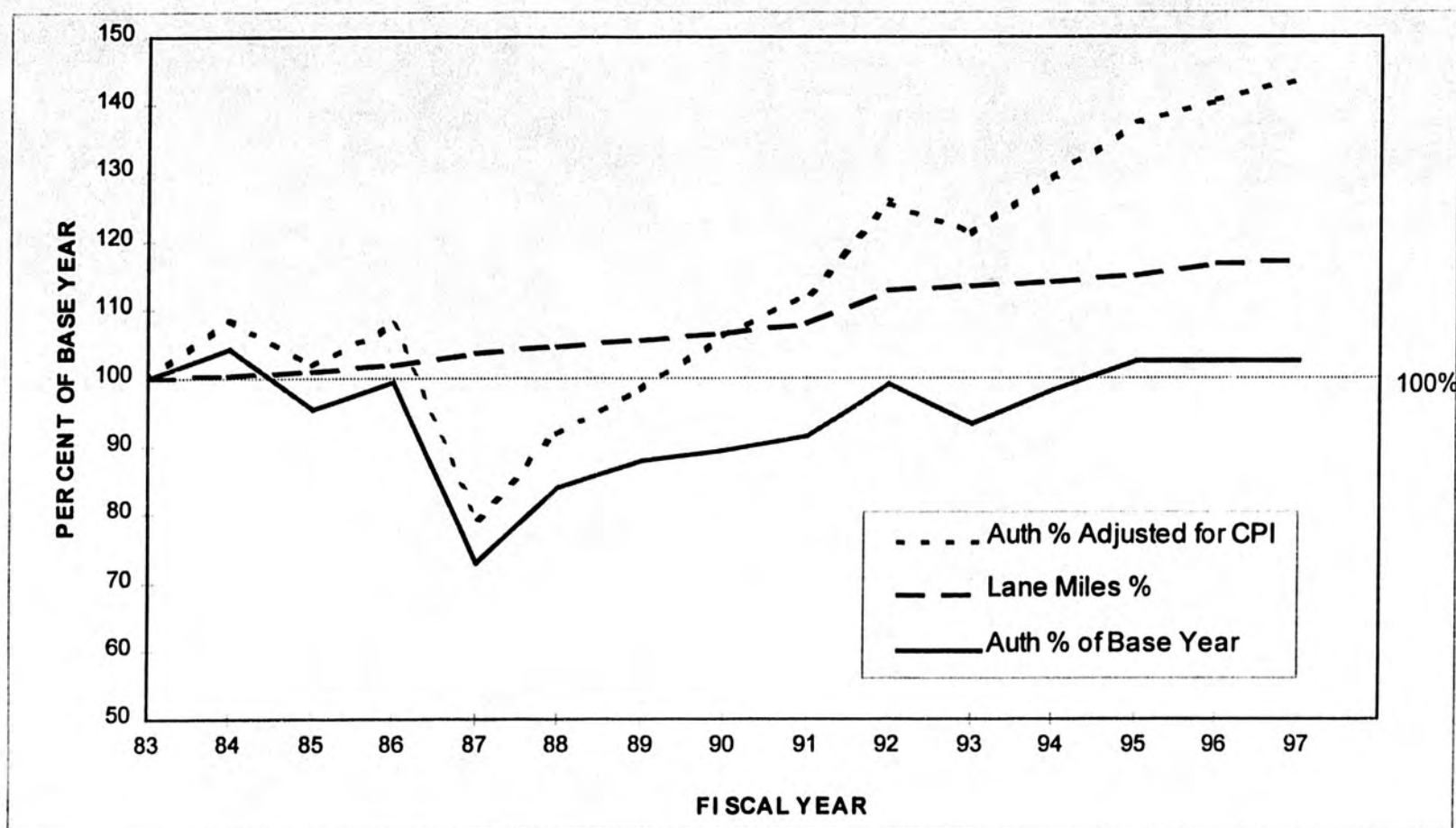
- Operating of heating, electrical and mechanical systems
- ADA compliance
- Snow & ice removal from roofs & walkways
- Grounds keeping
- Custodial activities
- Repairs, painting & remodeling
- Building security



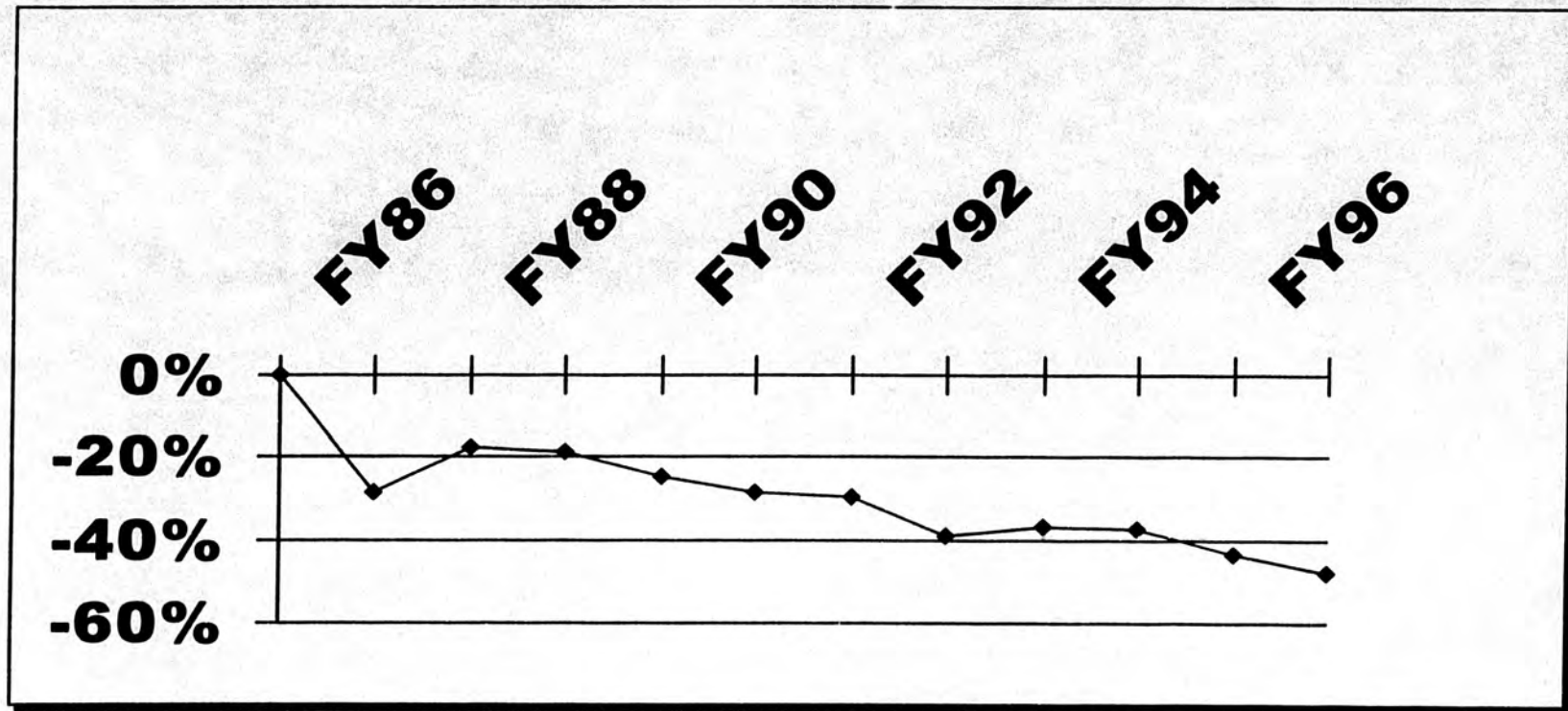
Growing Maintenance Responsibilities since 1990



Northern Region Maintenance & Operations Trends

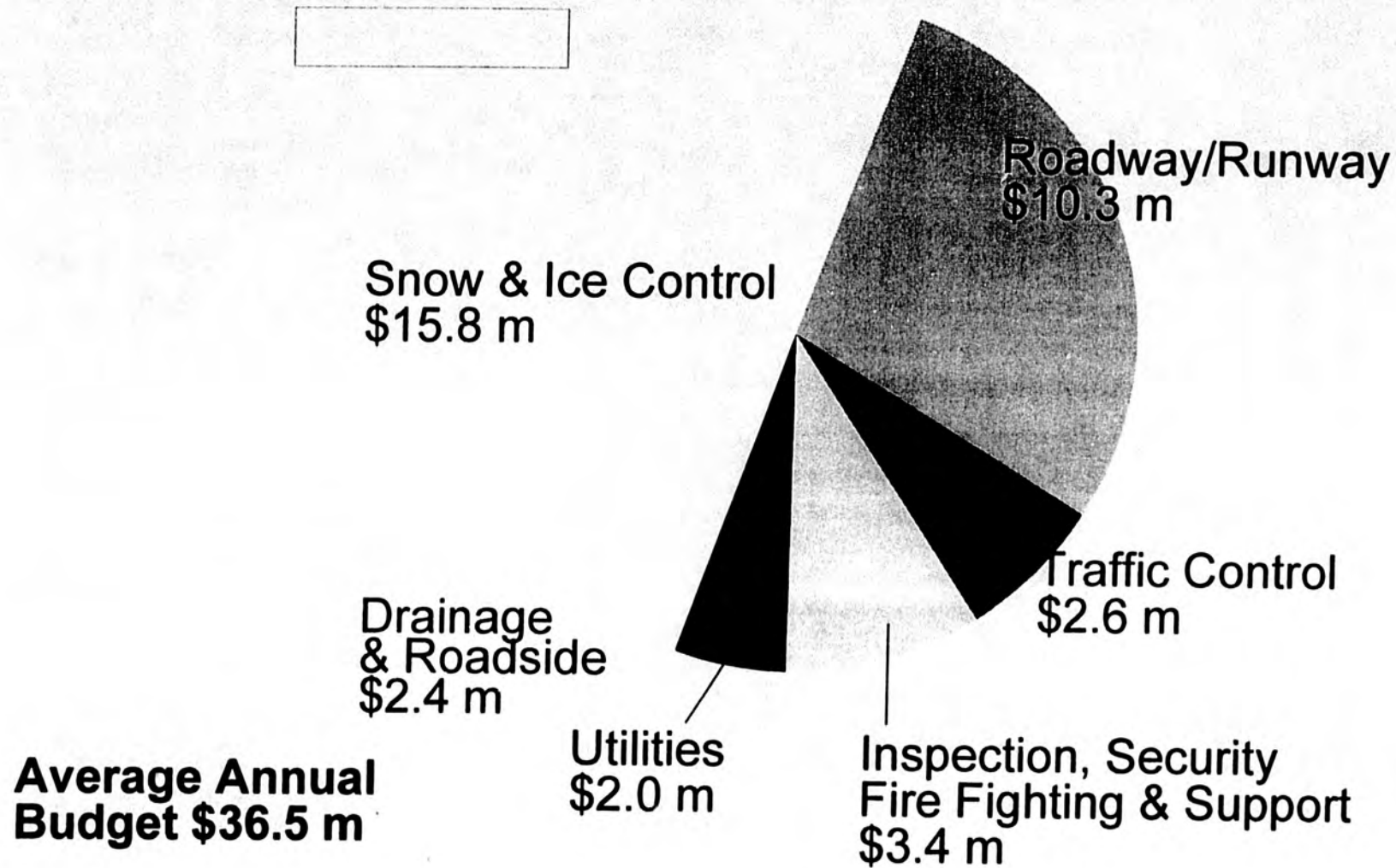


Maintenance Reductions



Inflation and added responsibilities have effectively reduced our ability to accomplish our maintenance mission by over **45%** in Northern Region.

How We Spend Maintenance Money



What We Have Done to Improve Efficiency

- Increased Workloads
- Better Training
- More efficient equipment
- Equipment Pools and shared equipment
- Energy Saving measures
- Roving Crews



What We Have Done (Continued)

- New Technology & Methods
- Decertified Airports
- Used other Funding Sources
- Contracted out work
- Reduced Level of Service
- *Deferred Maintenance*

Deferred Maintenance

What it *IS*:

Typical Examples

- Pavement Repair
- Gravel Surface Repairs
- Bridge Maintenance
- Drainage Repair
- Guardrail and Fence Repair
- Signs
- Pavement Markings



Deferred Maintenance

What it is *Not*:

Typical Examples

Increases to:

- Inspection, Security
- Fire Fighting
- Administration & Support
- Snow and Ice Control
- Utilities
- Grading
- Dust Control
- Pavement Sweeping



Deferred Maintenance Analysis

Actual Operating Expenditures						
One time Cost	Yearly Cost		To make facilities whole		to keep whole	
	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need
Inspection, Security , Fire Fighting & Support						
Admin & Support Acty	251,946.58	128,397.84	164,797.94	181,714.12	0	0
Inspection	1,296,780.05	1,337,367.49	1,466,641.56	1,366,929.70	0	0
Security & Fire Fighting	1,138,264.40	1,040,192.91	893,012.39	1,023,823.23	0	0
All Training	538,477.31	748,019.43	582,997.09	623,164.61	0	0
Spec Event & Vip Req	222,148.56	229,071.03	279,842.65	243,687.41	0	0
TOTAL	3,447,616.90	3,483,048.70	3,387,291.62	3,439,319.07	0	0
Roadway/Runway						
Transportatn Activity	180,331.66	53,047.81	143,155.30	125,511.59	0	0
M&O Roadway/Runway	52,309.93	75,676.37	0	42,662.10	0	0
Haz Matls Clnup&Mgmt	140,639.84	85,943.02	27,456.36	84,679.74	10,456,800.00	170,500.00
Major Pvmnt Repair	2,621,437.08	2,848,606.10	2,821,476.29	2,763,839.82	29,232,100.00	3,306,500.00
Minor Pvmnt Repair	1,573,130.68	1,100,467.48	1,089,640.30	1,254,412.82	0	0
Embankment Repair	265,272.93	533,634.10	189,424.34	329,443.79	0	0
Blading	2,813,938.06	2,965,649.96	3,211,214.54	2,996,934.19	0	0
Dust Control	573,633.05	879,116.55	721,513.56	724,754.39	0	0
Gravel Resurfacing	1,348,975.15	1,376,768.82	1,078,320.53	1,268,021.50	49,505,400.00	4,483,900.00
Pavement Sweeping	318,063.91	171,903.77	263,080.53	251,016.07	0	0
Bridge Maintenance	862,868.12	483,132.44	111,599.75	485,866.77	2,053,870.00	511,400.00
Rock&Landslide Clnup	3,932.40	13,067.02	5,464.70	7,488.04	0	0
TOTAL	10,754,532.81	10,587,013.44	9,662,346.19	10,334,630.81	91,248,170.00	8,472,300.00

Deferred Maintenance Analysis

(Continued)

	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need
Drainage & Roadside						
Drnage & Rdside Mntc	43,803.20	29,105.37	1,191.38	24,699.98		
Drain Strc/Not Snow	534,165.33	676,567.23	575,950.68	595,561.08	2,836,500.00	498,500.00
Shlder, Slope, Ditch	453,247.65	509,776.61	335,333.74	432,786.00	1,180,400.00	345,000.00
Gurdl,Fence,Barrier	196,624.46	331,579.26	311,763.03	279,988.92	3,517,700.00	313,000.00
Roadside Vegetation	710,110.57	979,717.90	742,509.99	810,779.49	2,664,300.00	767,600.00
Parklots,Sdewlk&Turn	43,862.17	38,593.34	42,308.50	41,588.01	0	0
Litter & Trash Remov	163,782.89	190,943.32	207,663.32	187,463.17	766,000.00	323,500.00
Floats & Docks		1,979.41	154.61	711.34	0	0
Bike Path&Trail Mntc	1,796.54	9,184.27	2,069.72	4,350.17	487,500.00	70,000.00
Animal/Bird Control	9,080.18	3,615.47	6,057.98	6,251.21	0	0
TOTAL	2,156,473.00	2,771,062.18	2,225,002.94	2,384,179.37	11,452,400.00	2,317,600.00
Snow & Ice Control						
Snow & Ice Control	95,546.00	110,083.08	24,107.49	76,578.86	0	0
Snow Plow & Ice Cntl	13,660,707.78	12,736,241.67	14,211,897.18	13,536,282.21	0	0
Snow Removal & Displ	2,013,477.16	793,256.55	1,531,367.89	1,446,033.87	0	0
Avlnche Cntrl & Clnp	101,039.75	66,062.32	72,426.37	79,842.81	0	0
Drnge Struc Thaw/Clr	379,630.56	996,530.60	635,756.18	670,639.11	0	0
TOTAL	16,250,401.26	14,702,174.21	16,475,555.11	15,809,376.86	0	0
Traffic Control						
Traffic Control Serv	1,572.68	1,781.99	0	1,182.22		
Signs & Delineators	538,073.10	510,070.33	492,293.25	513,478.90	1,460,300.00	276,650.00
Pavement Marking	814,370.82	955,265.39	988,303.02	919,313.08	2,361,800.00	720,500.00
Signals,Lights,Rr-X	1,107,015.07	1,269,369.42	1,020,017.50	1,132,133.99	563,100.00	129,000.00
TOTAL	2,461,031.66	2,736,487.13	2,500,613.77	3,354,670.19	4,385,200.00	1,126,150.00
Utilities	TOTAL	1,973,023.00	2,096,282.29	1,961,300.33	2,010,201.87	0
Buildings	TOTAL	7,140,759.00	6,998,162.00	7,030,948.00	7,056,623.00	21,839,600.00

TOTAL 128,925,370.00 14,316,050.00

Roadway/Runway

Deferred Maintenance Need

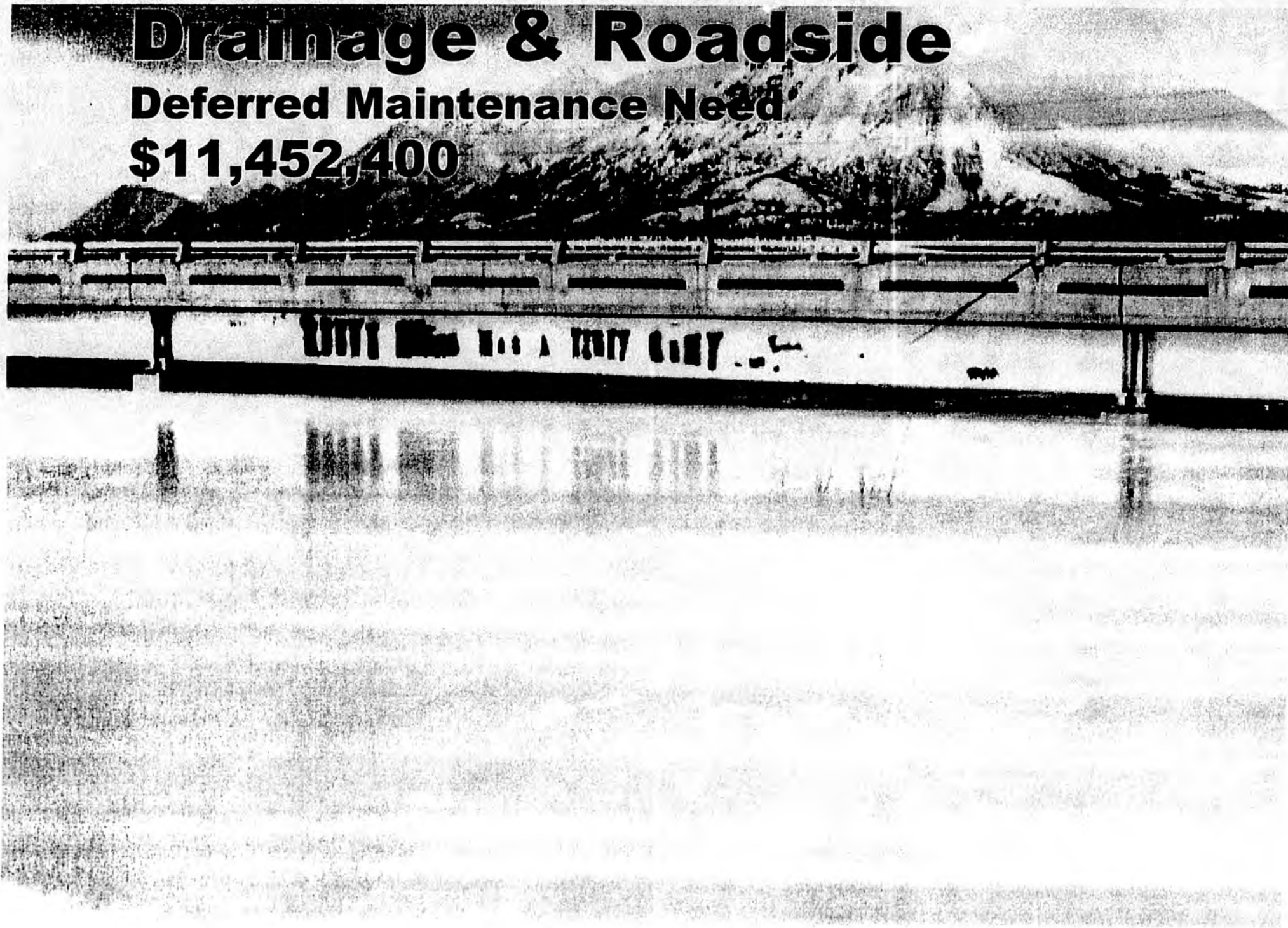
\$91,248,170



Drainage & Roadside

Deferred Maintenance Need

\$11,452,400



Traffic Control

Deferred Maintenance Need

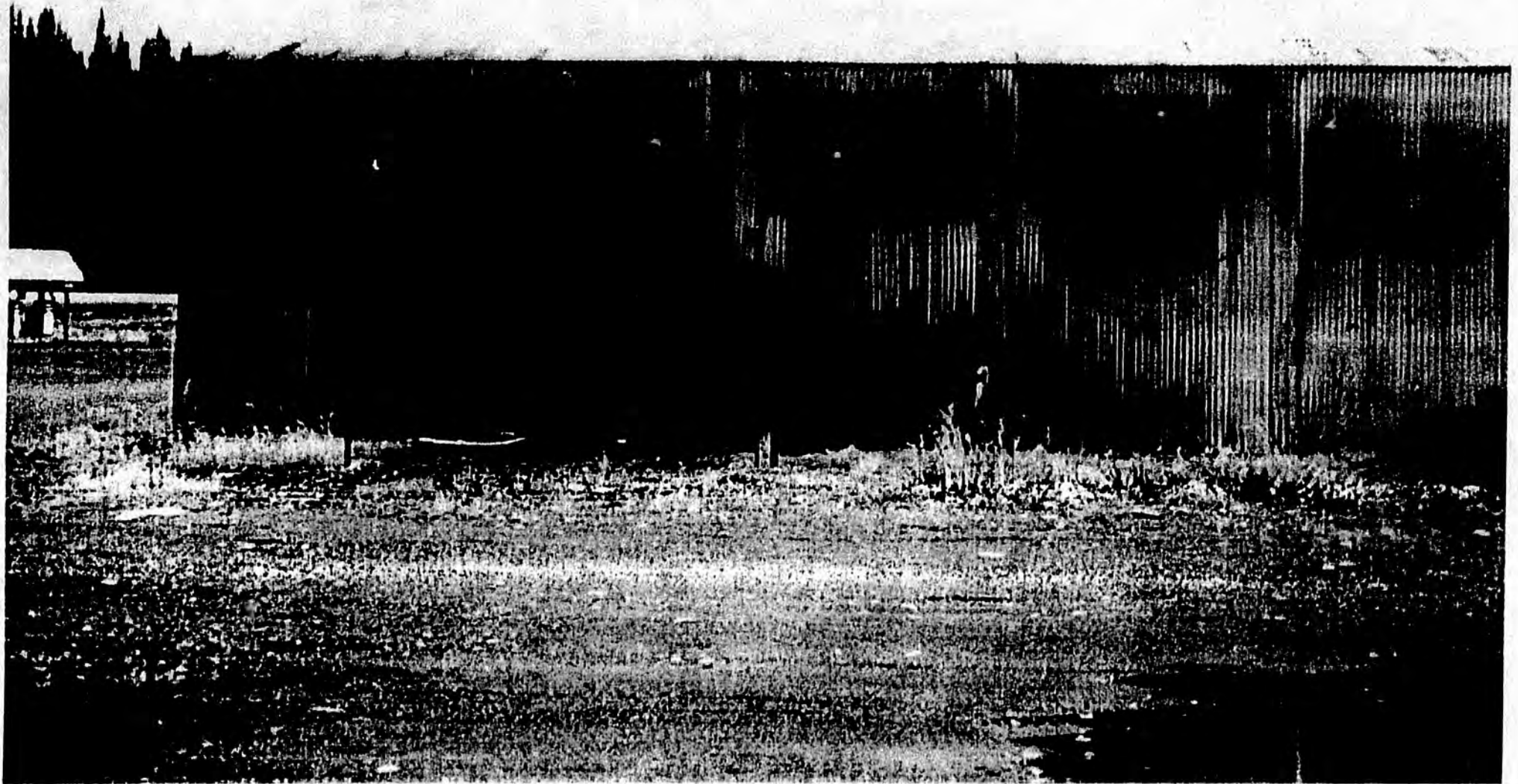
\$4,385,200



Buildings

Deferred Maintenance Need

\$21,839,600



Deferred Maintenance Money Needed Today

We need money to fix our current deferred maintenance.

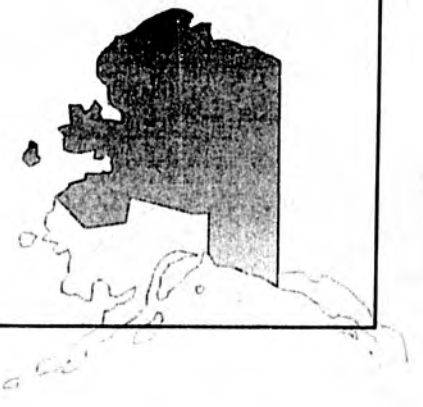
\$130 Million



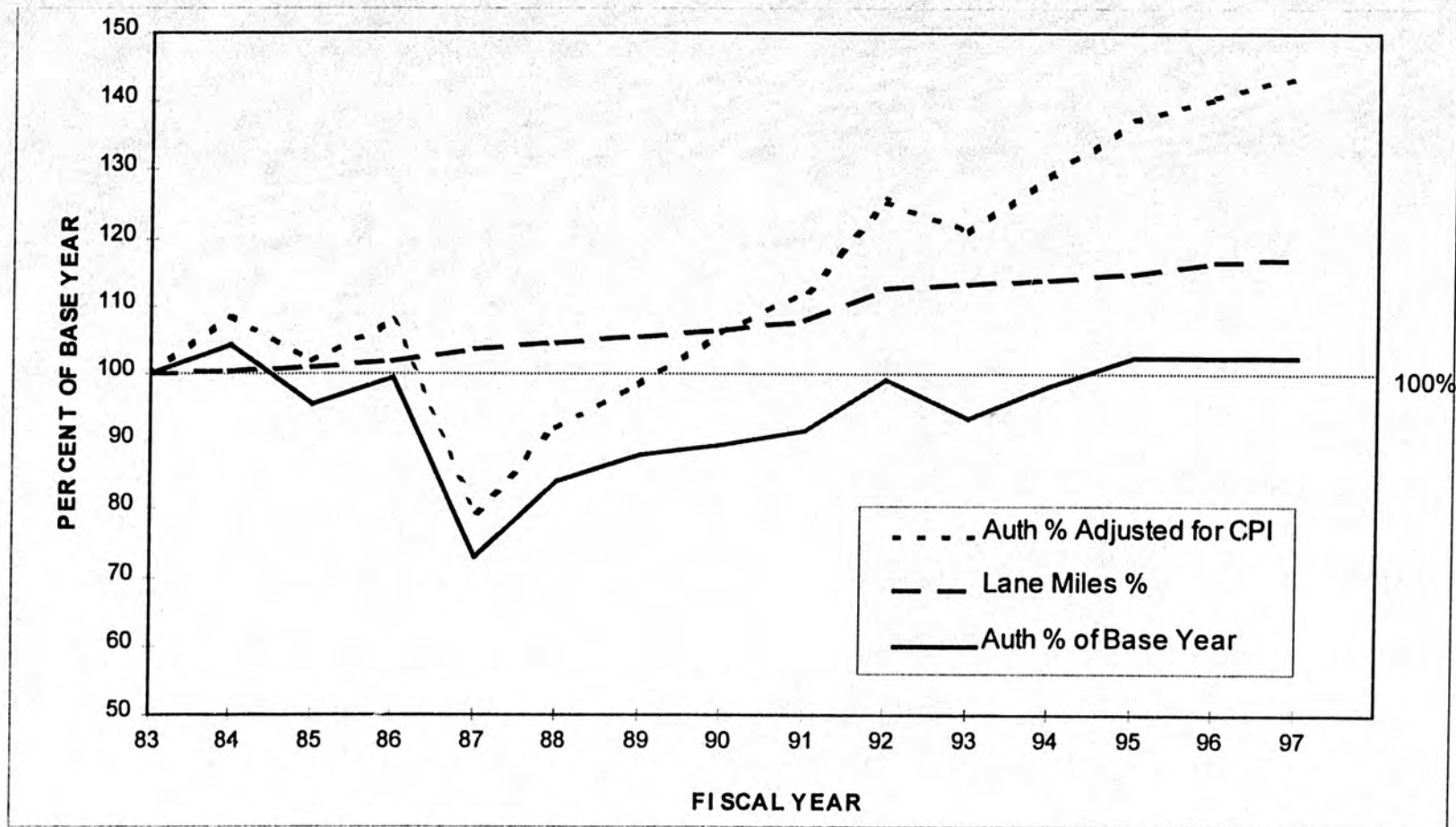
Annual Deferred Maintenance Need

After fixing our Deferred Maintenance problems,
we need an annual budget increase to avoid future
Deferred Maintenance.

\$14 Million



Northern Region Maintenance & Operations



JUSTIFICATION

**GYM FLOOR
&
BLEACHERS**

**DELTA JUNCTION HIGH SCHOOL
PO BOX 1000
DELTA JUNCTION, AK 99737
(907) 895-4460
FAX (907) 895-4049**

**SANDRA M. HILL
PRINCIPAL**

GEORGE R. VRABLIK, M.D., P.C.

1919 Lathrop St., Suite 125
Fairbanks, Alaska 99701-5936

Telephone: (907) 452-5771

APR 15 1997

April 11, 1997

Dan Beckman
Superintendent of Schools
Delta/Greely School District
Delta Junction, AK 99737

Dear Mr. Beckman:

As you may know, I am a parent of a Monroe High School student who has had the opportunity to play in your Delta High School gym facility. As an orthopedic surgeon, I noted that your gym floor is worn and is the type of floor which has been associated with increased injury in high school and college athletes.

On a wood-suspended floor, there is less stress transmitted to the lower extremity joints, especially the knees. In addition, there have been fewer injuries associated with wood floors as opposed to vinyl coating over cement.

I would strongly recommend from a medical standpoint, that safety of the athletes using your facility would be improved with a new gym floor and I would recommend a regular hardwood basketball floor, of the type seen in most schools and athletic facilities. I think this would reduce the number of injuries, especially to the knee joint (anterior cruciate ligament especially), provide less trauma to the lower extremities in general, and contribute to the overall enjoyment and safety of the students using your facility.

Thank you for considering my suggestion.

Sincerely,



George R. Vrablik, M.D.
Orthopedic Surgeon

grv/vkk



Delta Junction High School

Delta Junction High School

Pouch 1

Delta Junction, Alaska 99737

Ph: (907) 895-4460 • Fax: (907) 895-4049

March 10, 1997

To Whom It May Concern;

The purpose of this letter is to support the efforts of Delta/ Greely School District in securing funds to replace the 22 year old tartan gym floor at Delta High School. The floor has now deteriorated to a level that the safety and health of students and athletes are jeopardized.

I can assure you that this floor has gone years beyond its projected usability. Not unlike other rural communities where the school is the center of activity, the gym at Delta High is used 6-7 days a week, eleven months out of the year. Delta High has a very aggressive activities program that hosts many athletic events. Visiting coaches and parents have begun to notify the district of their concern for the safety of their child playing on Delta's floor. These concerns are very valid. Just by looking at the floor you can see that it has worn to base layer. The only thing between athletes and cement is a very thin layer of resin.

On March 27, 1996 the Delta/Greely School District had an inspection done on the gym floor. In the report Mr. James G. Bagles of Alaskan Industries stated, " that the floor was on the verge of breaking through the topcoat into the softer resin. At this point, wear is accelerated rather dramatically. Additionally, with the topcoat gone, maintenance goes up rather dramatically." Under these conditions young athletes do not have the benefits of shock absorption.

I am asking that you please give this matter your immediate attention and consider appropriating the funds necessary to replace the gym floor at Delta High. The safety of students, faculty, and community members is dependent on the funding needed for the replacement of the floor.

Sincerely,

Sandra M. Hill
Principal

04/10/97

To whom it may concern;

I write this letter in regards to the gym floor in Delta Junction High School. The gym floor is a tartan floor that was installed in 1976. The floor condition at this time is very poor and needs to be replaced.

This tartan floor has given Delta Junction High School and it's athletics 21 years of wear, but has now become a concern for the students and athletes that use it. The floor has been inspected and was considered wore out. It is a concern for Delta Junction High School, it's athletics and it's visitors that this floor be replaced. Please consider appropriating the funds necessary to make it possible for us to make our gym safe for our students and others that use our facility.

Sincerely,



Howard D. Beito
Athletic Director
Physical Education Teacher
Delta Junction High School

April 11, 1997

To whom it may concern:

I have been the boys basketball coach at Delta High School for the past six years. I am writing this letter in regards to the poor condition of our gymnasium floor and the need for a new one.

First of all the floor has become progressively worse throughout the years. It was very poor to begin with. It is an old tartan (not wood, rubber) floor, which has large cracks in it. The finish on the floor also has cracks in it. The floor is very slick even after being swept. I believe this is due to the finish. Every year the floor is refinished, but it only seems to take a few weeks for the finish to come off and the ice skating to begin again. The floor is also a dark color which doesn't reflect any light. So when you go into the Delta gym it's like walking into an unlit cave.

My concern for this floor goes beyond the inconvenience of slipping and sliding and the lack of proper lighting. My main concern goes to the injuries it causes to those who use it. Strained muscles and sprained & fractured ankles & knees are at the root of my concern. We have had an inordinate amount of injuries due, in my opinion, to the problems with our floor. To see a high school player go down in a game or practice when the injury could be preventable is a real shame. You only go around once in high school and we should make sure the kids get the best experience they can out of it. As the condition of the floor gets worse I can only imagine that the injuries will rise as well.

In comparison to other schools that we compete against I would say that our floor is by far the worst. No other floor that we play on has the obvious signs of wear and tear on it that ours has (the cracks and peeling finish).

Please consider funding a new gym floor for Delta. The declining condition of our floor and the mounting injuries due to it more than warrant it. Thank you.

Respectfully,

Bruce Noonan

04/11/97

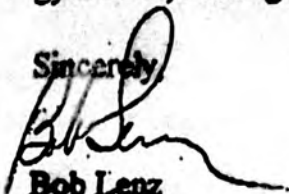
To whom it may concern;

I am writing this letter in regards to the gym floor at Delta High School. The current gym floor is in very poor condition and needs to be replaced.

In Alaska's smaller communities, the high school gym is usually one of the most used buildings in the community. Delta Junction host many athletic activities for schools statewide. It is important to have a safe facility for the youth of Alaska.

Please consider appropriating the necessary funds for upgrading the Delta High School gym floor, making it safe for the tremendous amount of use it receives.

Sincerely,



Bob Lenz
Athletic Director
Cordova High School

04/10/97

To whom it may concern;

We the following are concerned with the gym floor condition at Delta Junction High school. This is a tartan floor that is over 21 years old and is in desperate need of replacement.

Please consider appropriating funds to help Delta Junction High School in replacing their existing floor.

	Name	Title
1.	Steve	Teacher/coach - Cordova
2.	Undessa	teacher - Clw
3.	Cunningham	Teacher - Valdez
4.	Shirley LeJeune	Teacher/Coach Valdez
5.	Candy Shurnea	Coach Tok VB
6.	Linn H. Hand	Coach Kenna Lake
7.	Mitch Kutbe	Teacher/Coach Tri-Valley.
8.	Lee Brown	Coach Delta H.S.
9.		
10.		

Delta/Greely School District



REAA #15
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4657

Fl. Greely School
P.O. Box 647
Delta Junction, Alaska 99737
(907) 869-3105

Delta High School
Delta Elementary School
P.O. Box 1000
Delta Junction, Alaska 99737
(907) 895-4460 • (907) 895-4696

Delta/Greely Correspondence
Delta Alternative High School
Healy Lake School
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4655 • (907) 876-5020

April 11, 1997

Representative Gene Kubina
P.O. Box 2463
Valdez, AK 99686

Dear Representative Kubina,

Thank you for taking the time to see me earlier this week. I am compiling letters of support (actually letters of complaint) regarding our "new gym" floor. As I have previously pointed out, the gym is twenty-two years old and the term "new" is used only to differentiate it from the old gym which we use as a lunch room and for elementary physical education. This older gym was built approximately thirty-four years ago and is not regulation size.

I am sure you are aware of how extensively a rural gym is used for community and recreational purposes during the course of a year. Our gym is used up to sixteen hours, per day, during the school year and has considerable additional use over the summer months.

Because of the age, and the amount of usage, the condition of the floor in the new gym has deteriorated significantly over the past couple of years. The floor surface, Tartan, was poured over concrete and has worn thin after years and years of use. Tartan floors have been used in many gyms around the country. However, it is my contention that the Tartan floor provides an environment where injuries occur more often than on traditional wood floors. Due to the age of the floor and the fact that the subsurface is showing through, the floor surface "grabs" the foot, resulting in something having to give. Usually, an ankle or knee. This puts our students, and all others at a greater risk of injury.

The initial quotes we have received, suggest we can cover the existing floor with wood for approximately \$60,000. Any assistance you can offer in helping us secure funds for replacement this summer will be sincerely appreciated.

As we receive correspondence from schools within our region, and the mid Alaska Conference Schools, we will forward them to you. Thanks for your help.

Sincerely,

Dan Beck
Daniel L. Beck/*DLB*
Acting Superintendent

*Jo BOARD
6/31/97*

Alaska State Legislature

JUN 02 1997

Committees

Labor & Commerce
Legislative Council
World Trade
Trade & Tourism
Special Committee
on Fisheries



Representative Eugene Kubina
House Minority Leader

During Session:
Alaska State Capitol
Juneau, Alaska 99801-1182

During Interim:
P.O. Box 2463
Valdez, Alaska 99686

May 29, 1997

Dan Beck, Superintendent
Delta/Greely School District
P.O. Box 527
Delta Junction, AK 99737

Dear Mr. Beck:

At the end of session, I received your letter requesting funds to replace the "new gym" floor and you also inquired about the status of the Delta School Roof Repairs and Fire Alarm Replacement CIP request. Now that the dust has had a chance to settle, I wanted to give you a final update on those projects.

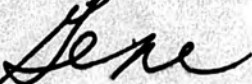
In regards to the gym floor, unfortunately, there were no funds available to fund that project. Since we no longer have discretionary funds to disburse throughout individual districts, it is very difficult to get projects such as these funded. Your best bet would be to get on the Department of Education's (DOE's) Major Maintenance Grant list.

As far as the Delta Roof Repair & Fire Alarm Replacement, that project is listed as the #9 priority on DOE's Major Maintenance Grant List. The capital budget that the Governor submitted to the Legislature funded the top six priorities and the Legislature ended up funding the top five. Therefore, even though it did not get funded this year, the chances are real good that it will be funded next year.

Dan, I realize how frustrating it is trying to get funding to maintain our existing schools. As you know, we have a tremendous backlog throughout the entire state, which is why the Legislature created a deferred maintenance task force to deal with this very problem. I was appointed as a member of this task force and will be working during the interim to find a solution to address this backlog.

I assure you that I will do everything I can to find a long-term funding source to address this deferred maintenance list. I also encourage you to follow the work of this task force and as we get into the meetings, I will be sure to keep you informed of our progress.

Sincerely

A handwritten signature in dark ink, appearing to read "Gene", written over the printed name.

Representative Gene Kubina
District 35

Delta/Greely School District



REAA #15
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4657

Ft. Greely School
P.O. Box 647
Delta Junction, Alaska 99737
(907) 869-3105

Delta High School
Delta Elementary School
P.O. Box 1000
Delta Junction, Alaska 99737
(907) 895-4460 • (907) 895-4696

Delta/Greely Correspondence
Delta Alternative High School
Healy Lake School
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4655 • (907) 876-5020

April 11, 1997

Senator Georgianna Lincoln
State Capitol
Juneau, AK 99801-1182

Dear Senator Lincoln,

Thank you for taking the time to see me earlier this week. I am compiling letters of support (actually letters of complaint) regarding our "new gym" floor. As I have previously pointed out, the gym is twenty-two years old and the term "new" is used only to differentiate it from the old gym which we use as a lunch room and for elementary physical education. This older gym was built approximately thirty-four years ago and is not regulation size.

I am sure you are aware of how extensively a rural gym is used for community and recreational purposes during the course of a year. Our gym is used up to sixteen hours, per day, during the school year and has considerable additional use over the summer months.

Because of the age, and the amount of usage, the condition of the floor in the new gym has deteriorated significantly over the past couple of years. The floor surface, Tartan, was poured over concrete and has worn thin after years and years of use. Tartan floors have been used in many gyms around the country. However, it is my contention that the Tartan floor provides an environment where injuries occur more often than on traditional wood floors. Due to the age of the floor and the fact that the subsurface is showing through, the floor surface "grabs" the foot, resulting in something having to give. Usually, an ankle or knee. This puts our students, and all others at a greater risk of injury.

The initial quotes we have received, suggest we can cover the existing floor with wood for approximately \$60,000. Any assistance you can offer in helping us secure funds for replacement this summer will be sincerely appreciated.

As we receive correspondence from schools within our region, and the mid Alaska Conference Schools, we will forward them to you. Thanks for your help.

Sincerely,

Dan Beck
Daniel L. Beck /LH
Acting Superintendent

Delta/Greely School District



REAA #15
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4657

Ft. Greely School
P.O. Box 647
Delta Junction, Alaska 99737
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Delta Elementary School
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Delta/Greely Correspondence
Delta Alternative High School
Healy Lake School
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4655 • (907) 876-5620

April 11, 1997

Senator Mike Miller
P.O. Box 55094
North Pole, AK 99705

Dear Senator Miller,

Thank you for taking the time to see me earlier this week. I am compiling letters of support (actually letters of complaint) regarding our "new gym" floor. As I have previously pointed out, the gym is twenty-two years old and the term "new" is used only to differentiate it from the old gym which we use as a lunch room and for elementary physical education. This older gym was built approximately thirty-four years ago and is not regulation size.

I am sure you are aware of how extensively a rural gym is used for community and recreational purposes during the course of a year. Our gym is used up to sixteen hours, per day, during the school year and has considerable additional use over the summer months.

Because of the age, and the amount of usage, the condition of the floor in the new gym has deteriorated significantly over the past couple of years. The floor surface, Tartan, was poured over concrete and has worn thin after years and years of use. Tartan floors have been used in many gyms around the country. However, it is my contention that the Tartan floor provides an environment where injuries occur more often than on traditional wood floors. Due to the age of the floor and the fact that the subsurface is showing through, the floor surface "grabs" the foot, resulting in something having to give. Usually, an ankle or knee. This puts our students, and all others at a greater risk of injury.

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Sincerely,

Dan Beck
Daniel L. Beck TDH
Acting Superintendent

Delta/Greely School District



REAA #15
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4657

Fl. Greely School
P.O. Box 647
Delta Junction, Alaska 99737
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Delta Alternative High School
Healy Lake School
P.O. Box 527
Delta Junction, Alaska 99737
(907) 895-4655 • (907) 876-5020

April 11, 1997

Senator Gary Wilken
State Capitol
Juneau, AK 99801

Dear Senator Wilken,

Thank you for taking the time to see me earlier this week. I am compiling letters of support (actually letters of complaint) regarding our "new gym" floor. As I have previously pointed out, the gym is twenty-two years old and the term "new" is used only to differentiate it from the old gym which we use as a lunch room and for elementary physical education. This older gym was built approximately thirty-four years ago and is not regulation size.

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Sincerely,

Dan Beck
Daniel L. Beck *DLB*
Acting Superintendent

U.S. Mail, Fax Note 7672

Ken Seifert
Delta Greely SO

895-4246

Telephone #

No. of Pages

From

Company

Location

Fax #

Original
Disposition

Today's Date

Time

6
Julie
Alaskan Industries
Dept. Charge
373-6986
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Alaskan Industries

(907) 376-2485
800 541-7623
FAX (907) 373-6986

Delta Greely School District
FAX (907) 895-4246

4/8/96

Attn: Ken Seifert

Re: High School Gym Floor

Gentlemen,

I apologize for taking so long in responding. It seems like every year at this time, my schedule becomes extremely hectic.

Based on my visual inspection of your floor on 3/27/96, you are on the verge of breaking through the topcoat into the softer resin. At this point, wear is accelerated rather dramatically. Additionally, with the topcoat gone, maintenance goes up rather dramatically. The floor then absorbs contaminants which must be removed prior to any overpouring. All of this adds to the cost of the overpour.

DOT&PF Northern Region

Deferred Maintenance Analysis

Actual Operating Expenditures					One-time Cost	Yearly Cost
	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need
Inspection, Security, Fire Fighting & Support						
Admin & Support Acty	251,946.58	128,397.84	164,797.94	181,714.12	0	0
Inspection	1,296,780.05	1,337,367.49	1,466,641.56	1,366,929.70	0	0
Security & Fire Fighting	1,138,264.40	1,040,192.91	893,012.39	1,023,823.23	0	0
All Training	538,477.31	748,019.43	582,997.09	623,164.61	0	0
Spec Event & Vip Req	222,148.56	229,071.03	279,842.65	243,687.41	0	0
TOTAL	3,447,616.90	3,483,048.70	3,387,291.62	3,439,319.07	0	0
Roadway/Runway						
Transportatn Activity	180,331.66	53,047.81	143,155.30	125,511.59	0	0
M&O Roadway/Runway	52,309.93	75,676.37	0	42,662.10	0	0
Haz Matls Clnup&Mgmt	140,639.84	85,943.02	27,456.36	84,679.74	10,456,800.00	170,500.00
Major Pvmnt Repair	2,621,437.08	2,848,606.10	2,821,476.29	2,763,839.82	29,232,100.00	3,306,500.00
Minor Pvmnt Repair	1,573,130.68	1,100,467.48	1,089,640.30	1,254,412.82	0	0
Embankment Repair	265,272.93	533,634.10	189,424.34	329,443.79	0	0
Blading	2,813,938.06	2,965,649.96	3,211,214.54	2,996,934.19	0	0
Dust Control	573,633.05	879,116.55	721,513.56	724,754.39	0	0
Gravel Resurfacing	1,348,975.15	1,376,768.82	1,078,320.53	1,268,021.50	49,505,400.00	4,483,900.00
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Bridge Maintenance	862,868.12	483,132.44	111,599.75	485,866.77	2,053,870.00	511,400.00
Rock&Landslide Clnup	3,932.40	13,067.02	5,464.70	7,488.04	0	0
TOTAL	10,754,532.81	10,587,013.44	9,662,346.19	10,334,630.81	91,248,170.00	8,472,300.00

	FY95	FY96	FY97	Ave3yr	Capital Need	Operating Need	
Drainage & Roadside							
Drnage & Rdside Mntc	43,803.20	29,105.37	1,191.38	24,699.98	0	0	
Drain Strc/Not Snow	534,165.33	676,567.23	575,950.68	595,561.08	2,836,500.00	498,500.00	
Shlder, Slope, Ditch	453,247.65	509,776.61	335,333.74	432,786.00	1,180,400.00	345,000.00	
Gurdlr,Fence,Barrier	196,624.46	331,579.26	311,763.03	279,988.92	3,517,700.00	313,000.00	
Roadside Vegetation	710,110.57	979,717.90	742,509.99	810,779.49	2,664,300.00	767,600.00	
Parklots,Sdewlk&Turn	43,862.17	38,593.34	42,308.50	41,588.01	0	0	
Litter & Trash Remov	163,782.89	190,943.32	207,663.32	187,463.17	766,000.00	323,500.00	
Floats & Docks		1,979.41	154.61	711.34	0	0	
Bike Path&Trail Mntc	1,796.54	9,184.27	2,069.72	4,350.17	487,500.00	70,000.00	
Animal/Bird Control	9,080.18	3,615.47	6,057.98	6,251.21	0	0	
TOTAL	2,156,473.00	2,771,062.18	2,225,002.94	2,384,179.37	11,452,400.00	2,317,600.00	
Snow & Ice Control							
Snow & Ice Control	95,546.00	110,083.08	24,107.49	76,578.86	0	0	
Snow Plow & Ice Cntl	13,660,707.78	12,736,241.67	14,211,897.18	13,536,282.21	0	0	
Snow Removal & Displ	2,013,477.16	793,256.55	1,531,367.89	1,446,033.87	0	0	
Avlnche Cntrl & Clnp	101,039.75	66,062.32	72,426.37	79,842.81	0	0	
Drnge Struc Thaw/Clr	379,630.56	996,530.60	635,756.18	670,639.11	0	0	
TOTAL	16,250,401.26	14,702,174.21	16,475,555.11	15,809,376.86	0	0	
Traffic Control							
Traffic Control Serv	1,572.68	1,781.99	0	1,182.22			
Signs & Delineators	538,073.10	510,070.33	492,293.25	513,478.90	1,460,300.00	276,650.00	
Pavement Marking	814,370.82	955,265.39	988,303.02	919,313.08	2,361,800.00	720,500.00	
Signals,Lights,Rr-X	1,107,015.07	1,269,369.42	1,020,017.50	1,132,133.99	563,100.00	129,000.00	
TOTAL	2,461,031.66	2,736,487.13	2,500,613.77	3,354,670.19	4,385,200.00	1,126,150.00	
Utilities	TOTAL	1,973,023.00	2,096,282.29	1,961,300.33	2,010,201.87	0	0
Buildings	TOTAL	7,140,759.00	6,998,162.00	7,030,948.00	7,056,623.00	21,839,600.00	2,400,000.00

TOTAL	128,925,370.00	14,316,050.00
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BACKLOG OF DEFERRED MAINTENANCE PROJECTS FOR ALASKA'S STATE OWNED BUILDINGS						
DEPT	DIV	BUILDING NAME	LOCATION	ELEC DIST	WORK DESCRIPTION	ESTIMATED COST
CONTACT: Jim Little (Phone: 451-2203) (Fax: 451-5263) (E-Mail: JAMES_LITTLE@dot.state.ak.us)						
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES						
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	REPLACE O/H DOORS & OPERATORS	\$13,305
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	REMOVE 2 DRS & CLOSE IN WALL	\$16,076
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	RECOAT ROOF	\$16,000
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	UPGRADE VEHICLE EXHAUST	\$11,087
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	CODE COMPL-NEW SEPARATOR/TANK	\$41,000
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	NEW LEACH FIELD & TANK	\$12,196
DOT&PF	NORTHERN	BIRCH LAKE SHOP	BIRCH LAKE	36	RESIDE OLD SHOP TO MATCH	\$49,892
DOT&PF	NORTHERN	CANTWELL SHOP	CANTWELL	34	CODE COMPL- NEW OIL SEPARATOR	\$45,000
DOT&PF	NORTHERN	CANTWELL SHOP	CANTWELL	34	PAINT INTERIOR	\$35,000
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	FUR OUT, SHEETROCK, & PAINT	\$19,957
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	RECOAT ROOF	\$28,000
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	UPGRADE ELECTRICAL SERVICE	\$20,000
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	UPGRADE VEHICLE EXHAUST	\$16,631
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	RESURFACE CONCRETE FLOOR	\$30,000
DOT&PF	NORTHERN	CANTWELL STATION	CANTWELL	34	REPLACE AIR COMPRESSOR	\$6,652

DOT&PF	NORTHERN	MAINTENANCE SHOP	CANTWELL	34	REPLACE OVERHEAD DOORS	\$10,000
DOT&PF	NORTHERN	CENTRAL SHOP	CENTRAL	36	CODE COMPL-NEW SEPARATOR/TANK	\$40,000
DOT&PF	NORTHERN	CENTRAL STATION	CENTRAL	36	UPGRADE SHOP EXHAUST	\$8,315
DOT&PF	NORTHERN	CENTRAL STATION	CENTRAL	36	PAINT INTERIOR	\$19,957
DOT&PF	NORTHERN	CENTRAL STATION	CENTRAL	36	REMODEL BATHROOM	\$4,989
DOT&PF	NORTHERN	CHANDALAR CAMP	CHANDALAR	36	FUEL STORE & DISPENSE SYSTEM	\$255,005
DOT&PF	NORTHERN	CHANDALAR CAMP	CHANDALAR	36	REPAIR INCINERATOR BUILDING	\$116,415
DOT&PF	NORTHERN	CHANDALAR SHOP	CHANDALAR	36	REPAIR YARD LIGHTING	\$49,892
DOT&PF	NORTHERN	CHANDALAR SHOP	CHANDALAR	36	REPLACE SHOP	\$3,900,000
DOT&PF	NORTHERN	CHANDALAR STATION	CHANDALAR	36	UPGRADE PROPANE FILL FACILITY	\$16,000
DOT&PF	NORTHERN	CHANDALAR STATION	CHANDALAR	36	FENCING REPAIR/REPLACEMENT	\$15,000
DOT&PF	NORTHERN	CHANDALAR STATION	CHANDALAR	36	SHOP ROOF REPAIRS	\$60,000
DOT&PF	NORTHERN	CHITINA MAINTENANCE STATION	CHITINA	36	CHITINA INTERIOR PAINT	\$10,000
DOT&PF	NORTHERN	CHITINA STATION	CHITINA	36	REPLACE HEATING AND GENERATOR FUEL SYSTEMS	\$30,000
DOT&PF	NORTHERN	CHITINA STATION	CHITINA	36	UPGRADE EXHAUST SYSTEM TO CODE	\$75,000
DOT&PF	NORTHERN	COLDFOOT CAMP	COLDFOOT	36	REBUILT GENERATORS	\$120,000
DOT&PF	NORTHERN	COLDFOOT CAMP	COLDFOOT	36	SOLID WASTE INCINERATOR	\$116,415
DOT&PF	NORTHERN	COLDFOOT SHOP	COLDFOOT	36	O/H CRANE/HOIST TROLLY UNIT	\$88,697
DOT&PF	NORTHERN	COLDFOOT STATION	COLDFOOT	36	INSTALL WASHDOWN CURTAIN	\$15,000

DOT&PF	NORTHERN	CORDOVA (MUDHOLE SMITH) AIRPORT	CORDOVA	35	REPAIRS TO ARFF BUILDING	\$75,000
DOT&PF	NORTHERN	CORDOVA AIRPORT FIREFIGHTING BLDG	CORDOVA	35	REPAIR METAL ROOF ON CRASH STATION	\$75,000
DOT&PF	NORTHERN	CORDOVA MAINTENANCE STATION	CORDOVA	35	OVERHEAD DOORS AT DOT MAINTENANCE	\$24,000
DOT&PF	NORTHERN	CORDOVA MAINTENANCE STATION	CORDOVA	35	VEHICLE PLUG-IN UPGRADE	\$9,000
DOT&PF	NORTHERN	CORDOVA MAINTENANCE STATION	CORDOVA	35	CORDOVA	\$10,000
DOT&PF	NORTHERN	CORDOVA MAINTENANCE STATION	CORDOVA	35	ROOF REPAIRS/REPLACEMENT	\$75,000
DOT&PF	NORTHERN	CORDOVA STATION	CORDOVA	35	EXTERIOR REPAIRS	\$44,000
DOT&PF	NORTHERN	EQUIPMENT SHOP	CORDOVA	35	RENOVATE FLOOR DRAIN SYSTEM TO CODE	\$35,000
DOT&PF	NORTHERN	EQUIPMENT SHOP	CORDOVA	35	ROOF REPAIRS	\$75,000
DOT&PF	NORTHERN	DEADHORSE CAMP	DEADHORSE	37	EMPLOYEE HOUSING REPLACEMENT	\$1,330,461
DOT&PF	NORTHERN	DEADHORSE SHOP	DEADHORSE	37	REPLACE MAINTENANCE SHOP	\$3,880,513
DOT&PF	NORTHERN	DEADHORSE SHOP/WARM STOR	DEADHORSE	37	REMEDiate CONTAMINATED GRAVEL	\$1,108,718
DOT&PF	NORTHERN	DEADHORSE STATION	DEADHORSE	37	FIRE ALARM SYSTEM	\$33,262
DOT&PF	NORTHERN	DEERING AIRPORT	DEERING	22	OLD EQUIPMENT BLDG CLEANUP	\$15,000
DOT&PF	NORTHERN	DELTA MAINTENANCE STATION	DELTA	35	REPLACE WATER STORAGE TANK	\$8,000
DOT&PF	NORTHERN	DELTA SHOP	DELTA	35-36	O/H CRANE/HOIST TROLLEY UNIT	\$88,697
DOT&PF	NORTHERN	DELTA STATION	DELTA	35-36	OIL/WATER SEPARATOR SYSTEM	\$5,000
DOT&PF	NORTHERN	DELTA STATION	DELTA	35-36	FUEL TANK LEAK-ASSESSMENT AND CLEANUP	\$10,000

DOT&PF	NORTHERN	FAIRBANKS/DEADHORSE SHOPS	DISTRICTWIDE	29-36	INSTL WASHRACKS/BAYS/ADDI TIONS	\$221,744
DOT&PF	NORTHERN	EAGLE STATION	EAGLE	36	OIL/WATER SEPARATOR SYSTEM - INSTALL	\$5,000
DOT&PF	NORTHERN	EAST FORK	EAST FORK	36	CONSTRUCT MAINT SHOP BLDG	\$2,500,000
DOT&PF	NORTHERN	EAST FORK CAMP	EAST FORK	36	INSULATE & INSTL CONCRETE FLR	\$94,241
DOT&PF	NORTHERN	EAST FORK SHOP	EAST FORK	36	CODE COMPL-NEW SEPARATOR/TANK	\$38,805
DOT&PF	NORTHERN	EAST FORK SHOP	EAST FORK	36	REPLACE FLR & BUILD GEN HOUSE	\$130,000
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	UPGRADE ELECTRICAL	\$66,523
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	REPLACE FOOTINGS/LIFT BLDG 4'	\$35,479
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	UPGRADE VEHICLE EXHAUST SYSTEM	\$21,066
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	REPLACE O/H DOORS & OPERATORS	\$21,066
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	ADD TANK/SEPARATOR/LEACH FIELD	\$42,131
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	FUR OUT, INSULATE & SHEETROCK	\$38,805
DOT&PF	NORTHERN	EAST FORK STATION	EAST FORK	36	FOOTINGS/FLOOR/DRAIN S	\$94,241
DOT&PF	NORTHERN	ERNESTINE STATION	ERNESTINE	36	EXTERIOR REMODEL	\$15,500
DOT&PF	NORTHERN	ERNESTINE STATION	ERNESTINE	36	REPLACE HEATING FUEL TANK	\$35,000
DOT&PF	NORTHERN	ERNESTINE STATION	ERNESTINE	36	EXTERIOR PAINTING	\$10,000
DOT&PF	NORTHERN	ERNESTINE STATION	ERNESTINE	36	WATER SYSTEM RENOVATION	\$25,000

DOT&PF	NORTHERN	ADMIN BUILDING	FAIRBANKS	29-34	REPLACE CEILING TILE MATERIALS	\$8,000
DOT&PF	NORTHERN	ADMIN BUILDING	FAIRBANKS	29-34	UPGRADE ADMIN BUILDING HVAC	\$75,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	STATE COURT AND OFFICE BUILDING LIGHTING	\$120,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	CEILING TILE REPLACEMENT	\$360,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	UPGRADE ELECTRICAL DISTRIBUTION SYSTEM	\$1,251,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	REMOVAL OF HAZARDOUS MATERIALS	\$510,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	HEATING, VENTILATION, AND AIR CONDITIONING	\$1,200,000
DOT&PF	NORTHERN	FAIRBANKS COURT OFFICE BLDG	FAIRBANKS	29-34	ASBESTOS MANAGEMENT PLAN	\$25,000
DOT&PF	NORTHERN	FAIRBANKS EQ SHOP	FAIRBANKS	29-34	CLEAN/REPAINT & REPAIR WALLS	\$66,523
DOT&PF	NORTHERN	FAIRBANKS EQ SHOP	FAIRBANKS	29-34	REPAIR FLOOR	\$65,000
DOT&PF	NORTHERN	FAIRBANKS EQ SHOP	FAIRBANKS	29-34	CLEAN WALLS, CEILINGS, AND REPAINT	\$40,000
DOT&PF	NORTHERN	FAIRBANKS PARKING STRUCTURE	FAIRBANKS	29-34	REPAIR CO REMOVAL SYSTEM	\$38,805
DOT&PF	NORTHERN	FAIRBANKS PARKING STRUCTURE	FAIRBANKS	29-34	HVAC CONTROL REPAIR	\$44,349
DOT&PF	NORTHERN	FAIRBANKS PARKING STRUCTURE	FAIRBANKS	29-34	ASBESTOS MANAGEMENT PLAN	\$13,305
DOT&PF	NORTHERN	FAIRBANKS PARKING STRUCTURE	FAIRBANKS	29-34	HVAC CONTROL REPAIR	\$44,349
DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	REPLACE FLOOR TILE AND STAIR TREAD	\$70,000
DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	ASBESTOS MANAGEMENT PLAN	\$25,000

DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	REGLAZE WINDOW	\$80,000
DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	CARPET REPLACEMENT	\$300,000
DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	ASBESTOS MANAGEMENT PLAN	\$27,718
DOT&PF	NORTHERN	FAIRBANKS REG OFF BLDG	FAIRBANKS	29-34	NOISE ATTENUATION	\$110,000
DOT&PF	NORTHERN	LARGE WARM STORAGE	FAIRBANKS	29-34	REPAINT EXTERIOR/LARGE WARM STORAGE	\$15,000
DOT&PF	NORTHERN	LARGE WARM STORAGE	FAIRBANKS	29-34	HYDRONIC HEAT CONVERSION/ LARGE	\$270,000
DOT&PF	NORTHERN	MAINTENANCE BUILDING	FAIRBANKS	29-34	HYDRONIC HEAT CONVERSION AND AIR HANDLING	\$325,000
DOT&PF	NORTHERN	PEGER COMPLEX	FAIRBANKS	29-34	REMOVE OLD ASPHALT PLANT & CONT	\$50,000
DOT&PF	NORTHERN	PEGER COMPLEX	FAIRBANKS	29-34	HAZ MAT CLEANUP	\$277,179
DOT&PF	NORTHERN	PEGER COMPLEX	FAIRBANKS	29-34	ASBESTOS MANAGEMENT PLAN	\$27,718
DOT&PF	NORTHERN	PEGER COMPLEX/ADMIN BLDG	FAIRBANKS	29-34	REPLACE CARPET & WALL COVERING	\$75,000
DOT&PF	NORTHERN	PEGER COMPLEX/ADMIN BLDG	FAIRBANKS	29-34	REPLACE 2 FANS/COPY & RESTRMS	\$1,774
DOT&PF	NORTHERN	PEGER COMPLEX/ADMIN BLDG	FAIRBANKS	29-34	REPLACE PARTITIONS/4 BATHROOMS	\$6,652
DOT&PF	NORTHERN	PEGER COMPLEX/LG WARM STOR	FAIRBANKS	29-34	NEW OIL SEPARATOR/TANK	\$11,087
DOT&PF	NORTHERN	PEGER COMPLEX/LG WARM STOR	FAIRBANKS	29-34	REPAIR EXTERIOR	\$11,087
DOT&PF	NORTHERN	PEGER COMPLEX/LG WARM STOR	FAIRBANKS	29-34	UPGRADE VEHICLE EXHAUST	\$16,631

DOT&PF	NORTHERN	PEGER COMPLEX/MAINT BLDG	FAIRBANKS	29-34	REPLACE AIR COMPRESSOR	\$4,989
DOT&PF	NORTHERN	PEGER COMPLEX/MAINT BLDG	FAIRBANKS	29-34	HVAC & UPGRADE TO MEET CODE	\$240,000
DOT&PF	NORTHERN	PEGER COMPLEX/MATERIALS	FAIRBANKS	29-34	UPGRADE VENTILATION	\$725,000
DOT&PF	NORTHERN	PEGER COMPLEX/MATERIALS	FAIRBANKS	29-34	REPLACE AIR COMPRESSOR	\$4,989
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	REBUILD BATTERY ROOM TO CODE	\$15,000
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	REPAINT INT@LT/HVY DUTY SHOPS	\$28,827
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	REINSULATE HEAVY DUTY SHOP	\$8,315
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	REMODEL ACID TANK ROOM	\$12,000
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	NEW EXHAUST IN LT DUTY SHOP	\$12,196
DOT&PF	NORTHERN	PEGER COMPLEX/SEF	FAIRBANKS	29-34	PLUG-IN HOTLINE	\$85,000
DOT&PF	NORTHERN	COMPLEX/SUPPLY	FAIRBANKS	29-34	HVAC SYSTEM	\$300,000
DOT&PF	NORTHERN	PUMP HOUSE	FAIRBANKS	29-34	RECOAT PUMP HOUSE ROOF	\$5,000
DOT&PF	NORTHERN	SEF REPAIR SHOP	FAIRBANKS	29-34	TANK LEAK ASSESSMENT & CLEANUP	\$80,000
DOT&PF	NORTHERN	SEF SHOP	FAIRBANKS	29-34	NEW ROOF FOR SEF SHOP/OFFICES	\$230,000
DOT&PF	NORTHERN	FT. YUKON COMBINED FACILITY	FT. YUKON	24	ROOF REPLACEMENT/ENERGY SAVINGS	\$130,000
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	UPGRADE VEHICLE & SHOP EXHAUST	\$18,848
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	UPGRADE ELECTRICAL	\$18,848
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	REBUILD SAND CONTAINMENT AREA	\$44,349

DOT&PF	NORTHERN	GALENA STATION	GALENA	36	REINSULATE SHOP	\$82,045
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	LIFT/REROOF OLD WARM STORAGE	\$94,241
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	REPAINT EXTERIOR BUTLER BLDG	\$32,153
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	REPAINT INTERIOR MAINT. BLDG	\$37,696
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	UPGRADE INTERIOR LIGHTS	\$8,870
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	CONVERT STEAM TO HWBB	\$120,000
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	INSTALL AIR COMPRESSOR	\$5,544
DOT&PF	NORTHERN	GALENA STATION	GALENA	36	REPLACE 2 MAN DOORS	\$3,881
DOT&PF	NORTHERN	GAMBELL AIRPORT	GAMBELL	23	OLD EQUIPMENT BLDG CLEANUP	\$40,000
DOT&PF	NORTHERN	HEALY CAMP	HEALY	34	PAINT EXTERIOR OF BLDG	\$27,718
DOT&PF	NORTHERN	HEALY SHOP	HEALY	34	CODE COMPL-NEW SEPARATOR/TANK	\$22,174
DOT&PF	NORTHERN	HEALY STATION	HEALY	34	RECOAT ROOF	\$24,000
DOT&PF	NORTHERN	HEALY STATION	HEALY	34	REMODEL BATHROOM	\$7,207
DOT&PF	NORTHERN	HEALY STATION	HEALY	34	REPAINT INTERIOR	\$24,392
DOT&PF	NORTHERN	HEALY STATION	HEALY	34	UPGRADE SHOP EXHAUST	\$8,870
DOT&PF	NORTHERN	JIM RIVER CAMP	JIM RIVER	36	REPAIR INCINERATOR BUILDING	\$33,262
DOT&PF	NORTHERN	JIM RIVER CAMP	JIM RIVER	36	FENCING	\$105,328
DOT&PF	NORTHERN	JIM RIVER CAMP	JIM RIVER	36	FIRE/EQUIP FAILURE ALARM SYS	\$44,349
DOT&PF	NORTHERN	JIM RIVER CAMP	JIM RIVER	36	O/H CRANE/HOIST TROLLEY UNIT	\$88,697
DOT&PF	NORTHERN	KOBUK AIRPORT	KOBUK	22	OLD EQUIPMENT BLDG CLEANUP	\$15,000

DOT&PF	CENT	EQUIPMENT STORAGE	KOTLIK	38	REFURBISH	\$110,872
DOT&PF	NORTHERN	AIRPORT SHOP	KOTZEBUE	(22)	LEAKING UNDERGROUND STORAGE TANK	\$60,000
DOT&PF	NORTHERN	KOTZEBUE	KOTZEBUE	(22)	DIKE FUEL TANKS	\$360,000
DOT&PF	NORTHERN	KOTZEBUE COURT ROOF	KOTZEBUE	(22)	REPLACE EXISTING ROOF SYSTEM	\$271,500
DOT&PF	NORTHERN	SHUNGNAK AIRPORT	KOTZEBUE	(22)	OLD EQUIPMENT BLDG CLEANUP	\$20,000
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	UPGRADE WATER SUPPLY LINES	\$18,000
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	REMOVE OLD AND INSTALL TWO NEW DOORS	\$22,000
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	FUR OUT AND FINISH INSULATING OLD SHOP	\$60,000
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	RESPRING FOUR OVERHEAD DOORS	\$6,652
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	UPGRADE WATER LINE & UTILIDOR	\$8,870
DOT&PF	NORTHERN	LIVENGOOD STATION	LIVENGOOD	36	UPGRADE SHOP EXHAUST SYSTEM	\$8,315
DOT&PF	NORTHERN	MANLEY SHOP	MANLEY	36	CODE COMPL-NEW SEPARATOR/TANK	\$44,000
DOT&PF	NORTHERN	MANLEY SHOP	MANLEY	36	PRIME & PAINT EXTERIOR	\$19,403
DOT&PF	NORTHERN	MANLEY SHOP	MANLEY	36	ROOF	\$27,718
DOT&PF	NORTHERN	MANLEY SHOP	MANLEY	36	UPGRADE VEHICLE EXHAUST	\$6,652
DOT&PF	NORTHERN	MONTANA CREEK SHOP	MONTANA CRK	28	MAINTENANCE BUILDING REPAIRS	\$38,805
DOT&PF	NORTHERN	MONTANA CREEK SHOP	MONTANA CRK	28	CODE COMPL-NEW SEPARATOR/TANK	\$56,000
DOT&PF	NORTHERN	NELCHINA	NELCHINA	27	OVERHEAD DOORS	\$24,000
DOT&PF	NORTHERN	NELCHINA STATION	NELCHINA	27	REPLACE FURNACE	\$15,000

DOT&PF	NORTHERN	NELCHINA STATION	NELCHINA	27	UPGRADE VEHICLE EXHAUST SYSTEM	\$75,000
DOT&PF	NORTHERN	NELCHINA STATION	NELCHINA	27	REPLACE DETERIORATED ROOF	\$50,000
DOT&PF	NORTHERN	NELCHINA STATION	NELCHINA	27	FLOOR DRAIN RENOVATION	\$35,000
DOT&PF	NORTHERN	NENANA STATION	NENANA	34	RECOAT ROOF	\$4,989
DOT&PF	NORTHERN	NENANA STATION	NENANA	34	PAINT INTERIOR	\$22,174
DOT&PF	NORTHERN	AIRPORT SHOP	NOME	23	ASPHALT CLEAN-UP	\$30,000
DOT&PF	NORTHERN	DOT&PF QUONSET HUTS	NOME	23	ROOF REPAIR QUONSET HUT ROOFS IN DEPOT AREA, AND URETHANE SEAL WITH POLYSHIELD	\$30,000
DOT&PF	NORTHERN	DOT&PF QUONSET HUTS	NOME	23	HOOK UP SEF SHOP, MATERIALS LAB, BUILDING MAINTENANCE SHOP TO CITY WATER LINE	\$85,000
DOT&PF	NORTHERN	NOME AIRPORT OFFICE BLDG	NOME	23	REPAIRS TO AIRPORT OFFICE BLDG	\$80,000
DOT&PF	NORTHERN	NOME AIRPORT SHOP	NOME	23	REPLACE EQUIPMENT WARM STORAGE	\$2,000,000
DOT&PF	NORTHERN	NOME BUILDINGS	NOME	23	PAINT NOME BUILDINGS	\$15,000
DOT&PF	NORTHERN	NOME HWY AIRPORT SHOP	NOME	23	SHOP BUILDINGS UPGRADE	\$250,000
DOT&PF	NORTHERN	NOME SEF SHOP	NOME	23	REPLACE EQUIPMENT FLEET SHOP	\$2,000,000
DOT&PF	NORTHERN	SEF ATCO BUILDING	NOME	23	REPLACE OVERHEAD DOOR	\$6,000
DOT&PF	NORTHERN	SEF BLDG/OLD BLACKSMITH SHOP	NOME	23	RENOVATE OLD BLACKSMITH SHOP INTO HYDRAULIC ROOM	\$38,000

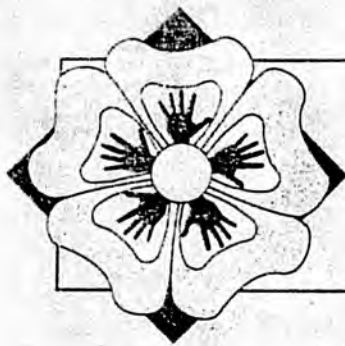
DOT&PF	NORTHERN	SEF BUILDING	NOME	23	REPLACE EXISTING WINDOWS WITH THERMOPANE PVC WINDOWS	\$60,000
DOT&PF	NORTHERN	SEF SHOP	NOME	23	ASPHALT CLEAN-UP	\$50,000
DOT&PF	NORTHERN	STATE OFFICE BUILDING	NOME	23	COVER EXTERIOR WALL SURFACES & INSULATE	\$600,000
DOT&PF	NORTHERN	STATE OFFICE BUILDING	NOME	23	INSTALL (2) NEW HOT WATER BOILERS	\$50,000
DOT&PF	NORTHERN	STATE OFFICE BUILDING	NOME	23	INSTALL NEW INSULATED ENTRY WAY DOORS, HARDWARE, CLOSERS, WEATHERSTRIPPING	\$5,000
DOT&PF	NORTHERN	STATE OFFICE BUILDING	NOME	23	REPLACE COMMERCIAL GRADE CARPETING	\$60,000
DOT&PF	NORTHERN	NORTHWAY MAINTENANCE STATION	NORTHWAY	23	REPLACE OVERHEAD DOORS	\$15,000
DOT&PF	NORTHERN	NORTHWAY STATION	NORTHWAY	23	ENERGY RETROFIT	\$100,000
DOT&PF	NORTHERN	O'BRIEN CREEK BUNKHOUSE	O'BRIEN CRK	36	RENOVATE BUNKHOUSE	\$138,590
DOT&PF	NORTHERN	O'BRIEN CRK MAINTENANCE STATION	O'BRIEN CRK	36	INSULATE AND RECOVER THE WARM STORAGE	\$50,000
DOT&PF	NORTHERN	O'BRIEN CRK MAINTENANCE STATION	O'BRIEN CRK	36	PURCHASE AND INSTALL NEW GENERATOR	\$40,000
DOT&PF	NORTHERN	HOUSING UNIT	PAXSON	35	REPLACE HEATING FUEL TANK	\$30,000
DOT&PF	NORTHERN	PAXSON MAINTENANCE STATION	PAXSON	35	PAXSON	\$10,000
DOT&PF	NORTHERN	PAXSON MAINTENANCE STATION	PAXSON	35	OVERHEAD DOORS AT DOT MAINTENANCE	\$24,000
DOT&PF	NORTHERN	PAXSON STATION	PAXSON	35	FLOOR DRAIN RENOVATION	\$35,000

DOT&PF	NORTHERN	PAXSON STATION	PAXSON	35	REWORK EXHAUST SYSTEM TO CODE	\$75,000
DOT&PF	NORTHERN	WASHHOUSE/UTILIDOR	PAXSON	35	REMODEL THE INSIDE OF WASHHOUSE	\$35,000
DOT&PF	NORTHERN	BUNKHOUSE	SAG RIVER	37	REPLACE ROOF	\$150,000
DOT&PF	NORTHERN	SAG RIVER LIFE SUPPORT BLDG	SAG RIVER	37	REPAIR SEWER/WATER TRTMNT SYS	\$99,785
DOT&PF	NORTHERN	SAG RIVER STATION LIFE SUPP BLDG	SAG RIVER	37	SEWER & WATER TREATMENT PLANTS REPAIRS	\$100,000
DOT&PF	NORTHERN	SAVOONGA AIRPORT	SAVOONGA	(23)	OLD EQUIPMENT BLDG CLEANUP	\$30,000
DOT&PF	NORTHERN	EMERGENCY LIGHT REPLACEMENT	SC DISTRICT	37	REPLACE EMERGENCY LIGHTS AT ALL BLDGS.	\$40,000
DOT&PF	NORTHERN	SELAWIK AIRPORT	SELAWIK	22	OLD EQUIPMENT BLDG CLEANUP	\$15,000
DOT&PF	NORTHERN	7-MILE STATION	SEVEN MILE	35-36	UPGRADE PROPANE FILL FACILITY	\$12,000
DOT&PF	NORTHERN	SEVEN MILE MAINT CAMP	SEVEN MILE	35-36	INCINERATOR ENCLOSURE	\$33,262
DOT&PF	NORTHERN	SHAKTOOLIK AIRPORT	SHAKTOOLIK	(23)	OLD EQUIPMENT BLDG CLEANUP	\$15,000
DOT&PF	NORTHERN	SLANA STATION	SLANA	35	REPLACE ROOF	\$50,000
DOT&PF	NORTHERN	SLANA STATION	SLANA	36	UPGRADE EXHAUST SYSTEM	\$75,000
DOT&PF	NORTHERN	SLANA STATION	SLANA	36	REPLACE HEATING FUEL TANK	\$30,000
DOT&PF	NORTHERN	SLANA STATION	SLANA	36	FLOOR DRAIN RENOVATION	\$35,000
DOT&PF	NORTHERN	SLANA STATION	SLANA	36	REPLACE GENERATOR FUEL TANK	\$30,000
DOT&PF	NORTHERN	SOUTH FORK BUNKHOUSE	SOUTH FORK	36	RENOVATE BUNKHOUSE	\$138,590

DOT&PF	NORTHERN	SOUTH FORK MAINTENANCE STATION	SOUTH FORK	36	PURCHASE NEW GENERATORS	\$40,000
DOT&PF	NORTHERN	SOUTH FORK MAINTENANCE STATION	SOUTH FORK	36	REPLACE OVERHEAD DOORS	\$10,000
DOT&PF	NORTHERN	SOUTH FORK STATION	SOUTH FORK	36	GENERATOR BUILDING REMODEL	\$14,000
DOT&PF	NORTHERN	SOUTH FORK STATION	SOUTH FORK	36	REPLACE OVERHEAD DOORS	\$10,000
DOT&PF	NORTHERN	SOUTH FORK STATION	SOUTH FORK	36	OIL/WATER SEPARATOR SYSTEM	\$5,000
DOT&PF	NORTHERN	RUSSIAN MISSION AIRPORT	ST. MARYS	38	OLD EQUIPMENT BLDG CLEANUP	\$15,000
DOT&PF	NORTHERN	SHAGELUK AIRPORT	ST. MARYS	38	OLD EQUIPMENT BLDG CLEANUP	\$10,000
DOT&PF	NORTHERN	TAZLINA STATION	TAZLINA	35	CARPET REPLACEMENT	\$15,000
DOT&PF	NORTHERN	TAZLINA STATION	TAZLINA	35	REPLACE THE HEATING FUEL TANK	\$45,000
DOT&PF	NORTHERN	TAZLINA STATION	TAZLINA	35	EXTERIOR REPAIRS	\$49,500
DOT&PF	NORTHERN	TAZLINA STATION	TAZLINA	35	FLOOR DRAIN RENOVATION	\$35,000
DOT&PF	NORTHERN	TAZLINA STATION	TAZLINA	35	REPLACE SEPTIC SYSTEM TO CODE	\$20,000
DOT&PF	NORTHERN	THOMPSON PASS MAINTENANCE STATION	THOMPSON PASS	35	ROOF REPAIRS/ REPLACEMENT	\$75,000
DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	REPLACE DAMAGED SIDING ON SHOP	\$35,000
DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	REPLACE SKIRTING ON BUNKHOUSE BUILDING	\$25,000
DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	REPLACE BADLY SPALLED CONCRETE FLOOR	\$60,000
DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	EXHAUST SYSTEM REPLACEMENT TO CODE	\$75,000

DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	RENOVATE FLOOR DRAIN SYSTEM TO CODE	\$35,000
DOT&PF	NORTHERN	THOMPSON PASS STATION	THOMPSON PASS	35	REPLACE METAL ROOFING ON SHOP	\$75,000
DOT&PF	NORTHERN	TOK MAINTENANCE STATION	TOK	35-36	REPLACE OVERHEAD DOORS	\$20,000
DOT&PF	NORTHERN	TOK MAINTENANCE STATION	TOK	35-36	PAINT EXTERIOR AND INTERIOR OF TOK STATION	\$25,000
DOT&PF	NORTHERN	TOK OFFICE BUILDING	TOK	35-36	TANK LEAK ASSESSMENT & CLEANUP	\$10,000
DOT&PF	NORTHERN	TOK STATION	TOK	35-36	ENERGY RETROFIT	\$200,000
DOT&PF	NORTHERN	TOK STATION	TOK	35-36	EXTERIOR PAINT AND REPAIR	\$8,000
DOT&PF	NORTHERN	TOK STATION EQUIPMENT SHOP	TOK	35-36	OIL/WATER SEPARATOR SYSTEM	\$5,000
DOT&PF	NORTHERN	TOK STATION EQUIPMENT SHOP	TOK	35-36	INTERIOR PAINT AND REPAIR	\$9,000
DOT&PF	NORTHERN	TRIMS GENERATOR BUILDING	TRIMS	35	REPLACE TRIMS GENERATOR	\$55,436
DOT&PF	NORTHERN	TRIMS MAINTENANCE STATION	TRIMS	35	REPLACE OVERHEAD DOORS	\$20,000
DOT&PF	NORTHERN	ADMIN BLDG	VALDEZ	35	PAINT INSIDE AND REPLACE CARPET	\$35,000
DOT&PF	NORTHERN	COURTHOUSE	VALDEZ	35	PAINT INSIDE AND REPLACE CARPET	\$35,000
DOT&PF	NORTHERN	EQUIPMENT SHOP	VALDEZ	35	EXHAUST SYSTEM REPLACEMENT TO CODE	\$75,000
DOT&PF	NORTHERN	EQUIPMENT SHOP	VALDEZ	35	REPLACE FLOOR DRAIN SYSTEM TO CODE	\$35,000
DOT&PF	NORTHERN	SOILS LAB	VALDEZ	35	REPLACE ROOF ON SOILS LAB BUILDING	\$35,000
DOT&PF	NORTHERN	VALDEZ AIRPORT SHOP ROOF	VALDEZ	35	REPLACE ROOFING	\$25,000

DOT&PF	NORTHERN	VALDEZ AND DOT COMBINED FACILITIES	VALDEZ	35	COMPLETE WASTE WATER SYSTEM REPAIRS	\$15,000
DOT&PF	NORTHERN	VALDEZ COMBINED FACILITIES	VALDEZ	35	EXTERIOR PAINTING	\$10,000
DOT&PF	NORTHERN	VALDEZ COMBINED FACILITIES	VALDEZ	35	CARPET REPLACEMENT	\$15,000
DOT&PF	NORTHERN	VALDEZ COMBINED FACILITIES	VALDEZ	35	NEW ROOF	\$250,000
DOT&PF	NORTHERN	VALDEZ COMBINED FACILITIES	VALDEZ	35	HEATING OIL TANK REPLACEMENT	\$50,000
DOT&PF	NORTHERN	VALDEZ MAINTENANCE STATION	VALDEZ	35	VEHICLE PLUG-IN UPGRADE	\$9,000
DOT&PF	NORTHERN	VALDEZ STATION	VALDEZ	35	ROOF REPAIRS/ REPLACEMENT	\$75,000
DOT&PF	NORTHERN	VALDEZ STATION	VALDEZ	35	REPLACE FLOOR DRAIN SYSTEM TO CODE	\$35,000
DOT&PF	NORTHERN	VALDEZ STATION	VALDEZ	35	EXHAUST SYSTEM REPLACEMENT TO CODE	\$75,000
DOT&PF	NORTHERN	VALDEZ STATION	VALDEZ	35	ROOF RENOVATION	\$60,000
DOT&PF	NORTHERN	WHITE MOUNTAIN AIRPORT	WHITE MOUNTAIN	23	OLD EQUIPMENT BLDG CLEANUP	\$15,000
		DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES TOTALS:				\$33,937,811



F • N • A

Fairbanks Native Association

Deferred Maintenance Proposal October 14, 1997

Introduction:

Fairbanks Native Association is requesting \$197,087 to re-design and construct a new roof drainage system for its Regional Center for Alcohol and Other Addictions facility located at 3100 S. Cushman Street in Fairbanks. The requested repairs will allow FNA's drug and alcohol programs to continue to operate from this site safely and at minimal cost.

Fairbanks Native Association (FNA) has been providing drug and alcohol services through its Alcohol and Drug Abuse Services (ADAS) Department since 1970, and is currently the largest chemical dependency program in the State of Alaska. The Department offers comprehensive residential and outpatient alcohol and drug abuse prevention, intervention, and treatment services to individuals, 10 and over, of all ethnicities living within the Interior and Northern Region of Alaska. All programs and services are approved by the State of Alaska Division of Alcoholism and Drug Abuse and certified by the Commission on Accreditation of Rehabilitation, Facilities (CARF). The majority of the Department's programs operate out of the Regional Center for Alcohol and Other Addictions (RCAOA). These programs include Adult Residential, Adult and Youth Outpatient/Continuing Care, Community Service Patrol, and Detoxification Services.

FNA's RCAOA facility was purchased on May 22, 1987 with monies appropriated by the state legislature. The building is located at 3100 S. Cushman Street, approximately 2 miles from downtown Fairbanks. The building itself is 25 years old and was fully renovated to meet FNA program needs in 1988 - the approximate value of the facility is \$5.9 million. The facility has approximately 26,000 square feet of usable space, including a 10-bed detoxification unit, a kitchen and dining area, staff offices, two conference rooms, a utility area, a vestibule on the first floor, and a residential unit that accommodates 14 long-term and 15 short-term clients, and separate rest rooms and showers for male and female clients on the second floor.

Need for the project:

In June 1997, the Department of Health and Social Services, Division of Administration conducted a survey of all the facilities owned and operated by organizations with DHSS-funded programs to determine their structural condition and deferred maintenance needs. The survey revealed that overall, RCAOA's roof was in poor condition and that the potential for long-term problems was a major concern. The written report following the Division's survey recommended that a complete investigation and analysis of the existing roof system be

In response to the Division's recommendation, FNA contracted with USKH, an architectural and engineering firm, to conduct a detailed roof inspection to determine the extent of the damage, the need for and cost of on-going maintenance, and the cost of re-designing and replacing the existing roofs. Following a visual examination of the roof's surface, surface cuts in the main roof single-ply membrane, and an in-depth conversation with RCAOA's Building Support Services Coordinator, USKH concluded that 1) the roof leaks extensively in two locations during spring break-up, 2) the front entry is structurally inadequate to resist the snow drift load from the upper main roof, 3) water is glaciating down the building walls and at building entries in the winter months, and 4) the single-ply roof system is progressively becoming detached from the underlying structure which can result in catastrophic roof blow-off. The USKH report further stated,

" The existing roof system will continue to require substantial maintenance to stay leak free as the system ages and fasteners progressively back out. In addition, the existing design for roof drainage will cause hazardous glaciation on and around the building. The long term low maintenance solution for this building is to re-design the roof drainage system by installing a new interior draining roof system. The new roof system should direct all the roof drainage to interior drains hooked into a storm or dry well system. Moving the drainage off the exterior of the building will reduce exterior building maintenance and eliminate the hazardous ice build up around the building. A yearly system of routine inspection and low-cost maintenance on a new 20-year roof system will reduce the overall cost for this building."

FNA hopes to provide drug and alcohol services out of this building for many years. Replacing the roof will reduce overall maintenance and repair cost related to structural inadequacies and seasonable damage. The damaged and deteriorating roof also impedes FNA's ability to provide a safe and healthy environment for staff, clients, and visitors. Time is a factor and the longer we wait the more it continues to cost the program to do repairs that, no matter how high the quality, can never be more than temporary. We are requesting \$197,087 to permanently repair the roof so that funds currently needed for program operation and direct client services will not be wasted on temporary repairs.

Attached: DHSS Survey, June 1997
 USKH Report, October 1997
 Cost Estimate

In general, the facilities at 3100 S. Cushman Street are in good condition, having been extensively remodeled in 1988. However, there are several critical repairs and areas of deferred maintenance that will require attention, as well as several functional deficiencies.

Critical Repairs:

1. X Structural repairs/upgrade at the front stairwell roof are required to prevent excessive deflection under snow load, which in the past has required shoring. A structural analysis is required to determine the current roof capacity and degree of upgrade required, however, it is obvious that the roof does not support the current 45 PSF snow load requirement of the City of Fairbanks. The excessive deflection has led to deterioration of the roofing system, which should also be repaired as part of the structural upgrade. Projected costs: \$5,000 - \$10,000.
2. Roof repairs at the main roof and elevator addition will be required. There are a number of stains on ceiling tiles and other water damage, which may be occurring due to multiple causes, including condensation in exhaust fan ductwork, and blowing snow being taken in through roof hoods. In addition, the roof was recently resurfaced (1990) with a single-ply "DuroLast" PVC membrane, and according to the handwritten "Roof Condition Disclosure" provided by the roofing contractor, the new roof was placed on top of moisture laden urethane foam insulation which was frozen at the time of installation. The contractor installed 2 way vents to permit the wet urethane to dry out, however, it is our experience that roof vents are not effective in Alaska. Therefore, it is suspected that the moisture remains trapped in the insulation, and may be an additional cause of water damage. If the existing vapor retarder is not sufficient to withstand vapor pressures from the building interior, then moisture could actually be building up in the roof insulation, as it would be trapped under the new roof membrane. Furthermore, the roof is virtually flat and has no positive drainage, and there are no roof drains or scuppers as run off simply goes over the edge. Good roofing practice, as well as the Uniform Building Code, requires a slope of 1/4 inch per foot minimum.

Although there remains an additional 8 years on the DuroLast Roofing 15 year warranty, it is suspected that additional problems will become apparent prior to its expiration. It should be noted that the warranty only covers the membrane, and requires notification within 30 days by the Owner of any leaks. Retrofit of existing exhaust fans to prevent condensation and infiltration, and replacement of damaged ceiling tiles could be an interim project, but it is difficult to determine the exact sources and necessary repairs without more extensive investigation beyond the scope of this survey.

In light of the above, it is recommended that a complete investigation and analysis of the existing roof system be undertaken by a qualified roofing consultant (not a roofing contractor) including test cores to determine moisture content in the roof assembly. This investigation should also identify the sources of leakage and/or condensation which is creating the water damage. This will require getting access to above ceiling spaces and roof penetrations. Long term solutions

X should be identified that will provide positive drainage, increased energy efficiency, and long term performance. Projected costs for investigative services would be in the range of \$2,500 to \$5,000.

3. Replace damage wood window on second floor of elevator addition. The window will not shut, and the wood is deteriorating. Projected costs: \$1,000.
4. X Replace burned out 20 ton air conditioning condensor. The entire cooling load is handled now by a single 35 ton condensor, and there are no back-up provisions. Project costs: \$7,500.

Deferred Maintenance:

1. Replace lower units on the sanitary sewer lift station. These units have functioned well for 25 years, but should be rebuilt or replaced as they are near the end of their useful service lives. Projected costs: \$2,500 to \$5,000.
2. Repack insulation in Boilers 1 and 2. Projected costs: \$2,500.
3. Purchase a spare circulation pump for back-up purposes. Projected costs: \$1,000.

Functional Deficiencies Upgrades:

1. Secure file storage area is at and beyond capacity. Additional storage is badly needed to maintain records as required by law. A minor remodel project could provide slightly more than double the existing space by adding a new 1 hour rated wall and new fire-rated door. Project costs: \$5,000 - \$7,500.
2. The kitchen lacks sufficient freezer/cooler and dry storage area. The kitchen currently serves 45 to 50 patients 3 meals a day. The installation of a new walk-in freezer/cooler outside the elevator addition would provide needed food storage area, and free up space where the existing upright freezer and refrigerator are located to be used for new dry storage. The freezer/cooler would require a concrete foundation and exterior seal to the building. Although these units can be fabricated for outdoor installation, exterior cladding over the units would also be strongly recommended. Projected costs:

Design Costs	\$5,000
Foundation	\$10,000
New walk-in refrigerator/freezer	\$15,000
Exterior shell	\$7,500
Mechanical and electrical	\$7,500
Interior construction	\$7,500

Department of Health and Social Services

Facility Condition Report - Supplement

June 16, 1997

Fairbanks Native Association Regional Center for Alcohol and Other Addictions 3100 S. Cushman St.

Subtotal	\$52,500
Contingency @ 10%	\$5,250
Total	\$57,750

3. The facility currently has two vans, and no covered storage/parking. A covered parking area or garage to house the two vans would provide better assurance that they would be able to respond to calls during winter months. Projected costs for an unheated garage to house two vans: 500 SF @ \$70/SF = \$35,000.



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October 10, 1997

Mr. Larry Cagnina
FNA for Alcohol & Other Addictions
3100 Cushman Street
Fairbanks, AK 99707-7516

Subject: Roof Inspection

Dear Mr. Cagnina:

Per your request I have investigated the building roofs at the Fairbanks Native Association (FNA) Regional Center for Alcohol & Other Addictions located at 3100 Cushman Street, Fairbanks, Alaska. The existing roof condition has been determined from a visual examination of the roof surface, three surface cuts in the main roof single-ply membrane, and an in-depth conversation with Mr. George Moffit (Building Support Services Coordinator).

The building roof problems can be broken into four primary areas of concern:

- Roof Leaks: No baffles designed into existing roof vent hoods.
- Structural Inadequacy: Front entry roof structure is not sufficient to resist the snow drift loading from the upper main roof.
- Main Building Roof Water Drainage: Water is glaciating down the building walls and at building entries in the winter months.
- Main Building Roof System Failure: Mechanical failure of the main roof single-ply system attachment.

Roof Leaks:

The building experiences leaks at two locations "only" during spring break-up. It is the conclusion of the Building Support Services Coordinator that water is coming from melting snow which was blown into roof mounted air-intake hoods during previous winter months. See figures 1 and 2.

As suggested by Mr. Moffit; extending the hoods and installing an air-intake baffle system could resolve this issue. An engineering analysis of the hood should be done before any modifications are attempted to insure proper air-flow is maintained

Structural Inadequacy:

Wind-blown snow drifts onto the main entry vestibule and overloads the structural roof framing. The Building Support Services Coordinator indicated during a recent event (Winter, '96) the roof structure had deflected to a point where he felt it necessary to install shoring at the underside of the roof framing to prevent collapse. In addition, the roof had started to leak when the roof was deflected. Manual removal of the snow drift allowed the roof structure to return to it's original position and since that time no additional water infiltration has occurred. See figures 3, 4 and 5.

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Mr. Larry Cagina
October 10, 1997
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The entry vestibule roof is to the north and approximately eight feet below the main building roof. As currently designed, drifting will continue to be a problem. Uniform Building Code (UBC) design criteria in place when this building was constructed did not address drifting snow. As such, the entry vestibule roof structure was probably not originally designed with sufficient strength to support an eight foot deep snow drift. Further investigation of the entry vestibule roof is needed to determine how the current structure might be reinforced to resist the drift loads or if the roof profile can be changed to eliminate the formation of the snow drift.

Main Building Roof System Failure:

The original roof system on the main building was overlaid with a new single-ply roof system in 1990. The seven year old single-ply roof system is progressively becoming detached from the underlying structure. Mechanical fasteners (screws) holding the membrane to the underlying structure are backing out. Although the roof appears to be water-tight, wind induced movement of the membrane and pressure from overlaying snow will eventually punch the backed-out fasteners through the membrane and allow water to infiltrate the system. In addition, further loss of mechanical attachment of the membrane to the structure will allow a catastrophic roof blow-off. See figures 6 and 7.

It appears the mechanical fasteners used on this roof do not penetrate the substrate sufficiently to resist withdrawal. As a temporary measure the backed out fasteners need to be re-driven and the roof monitored and repaired on a regular basis.

Main Building Roof Water Drainage:

Water drainage off the main building roof flows down the fascia through breaks in the roofing edge metal and down the building exterior walls from an old interior roof gutter system incorporated in the new single-ply roof system. Each case creates a severe ice glaciation problem in the winter. Ice build-up around building entries, exterior walkways, and in driveways has been reported to be extremely hazardous. A substantial amount of effort is required to keep glaciated areas safe for building users. See figures 8, 9 and 10.

The original design of the building roof did not address roof water flow in an arctic environment. The subsequent roof overlay did not alleviate the problem and in some areas it may have compounded the problem by allowing water to flow off the roof where the original design did not. Further design analysis is required to determine the best solution for the current roof water glaciation problem. A new roof design which manages the roof water drainage by diverting it to a storm water or dry well system appears to be the most logical approach.

Conclusions, Recommendation, and Budget:

The main building roof system, main entry vestibule roof system, and roof vent hoods required immediate attention for short term reliable performance and to prevent further interior damage. Screws which have backed out on the main building roof need to be re-driven to insure the roof stays in place and does not start to leak. The main entry roof should be monitored and any snow drift loads removed on a regular basis so that the structure is not overloaded. New roof vent hoods should be designed with baffles to prevent blowing snow from entering and melting in the spring time.

Mr. Larry Cagina
October 10, 1997
Page 3

The existing roof system will continue to require substantial maintenance to stay leak free as the system ages and fasteners progressively back out. In addition, the existing design for roof drainage will cause hazardous glaciation on and around the building. The long term low maintenance solution for this building is to re-design the roof drainage system by installing a new interior draining roof system. The new roof system should direct all the roof drainage to interior drains hooked into a storm or dry well system. The approximate cost of the new roof system, including design, is \$197,000. See attached cost estimate.

Moving the drainage off the exterior of the building will reduce exterior building maintenance and eliminate the hazardous ice build up around the building. A yearly system of routine inspection and low-cost maintenance on a new 20 year roof system will reduce the overall cost for this building.

Sincerely,



Bob Jones, EIT, CDT
Roof Designer/Inspector

Attachments

RDJ/trf\ I:\546400\CAGNINA0.LTR

USKH Work Order# 546400

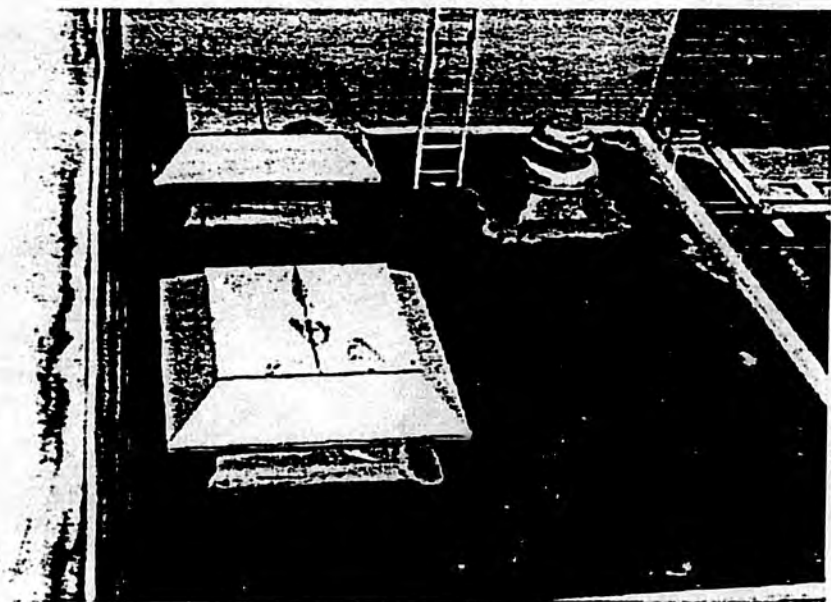


Figure 1
Overview: Two Roof mounted air-intake hoods

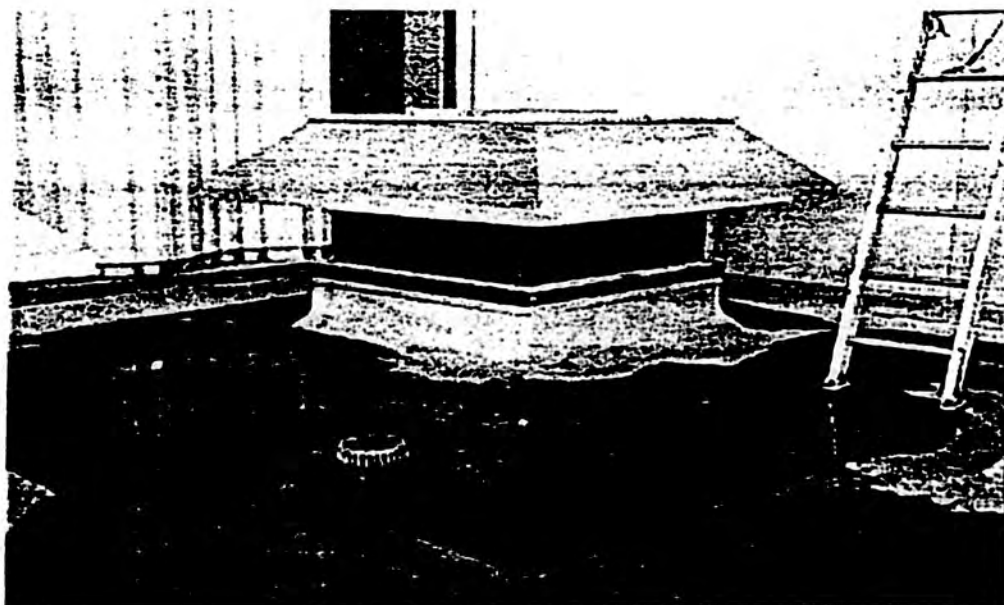


Figure 2
Air-intake hood: Snow blows up under cap

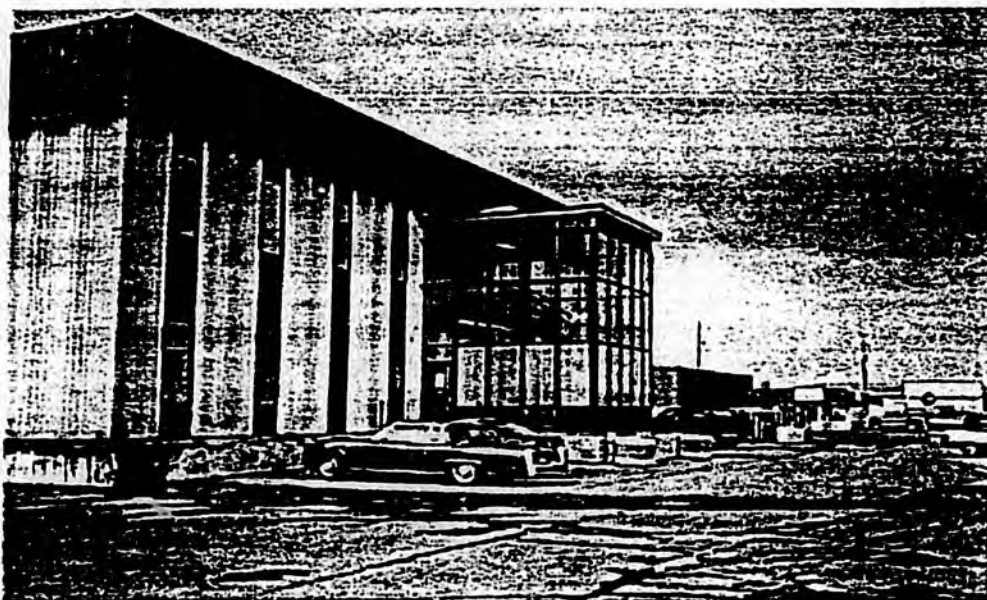


Figure 3
Main entry vestibule

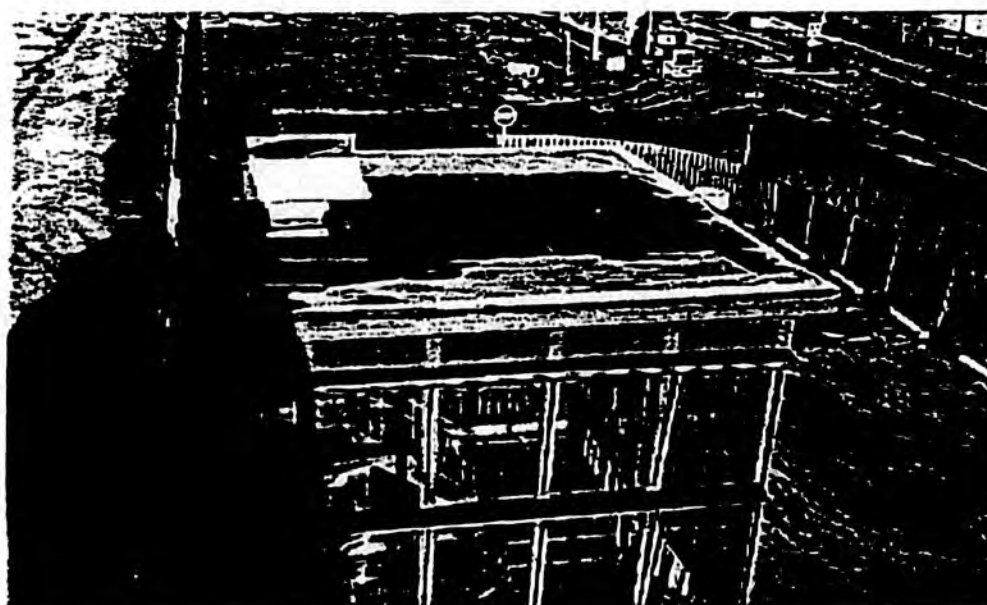


Figure 4
Roof of main entry vestibule

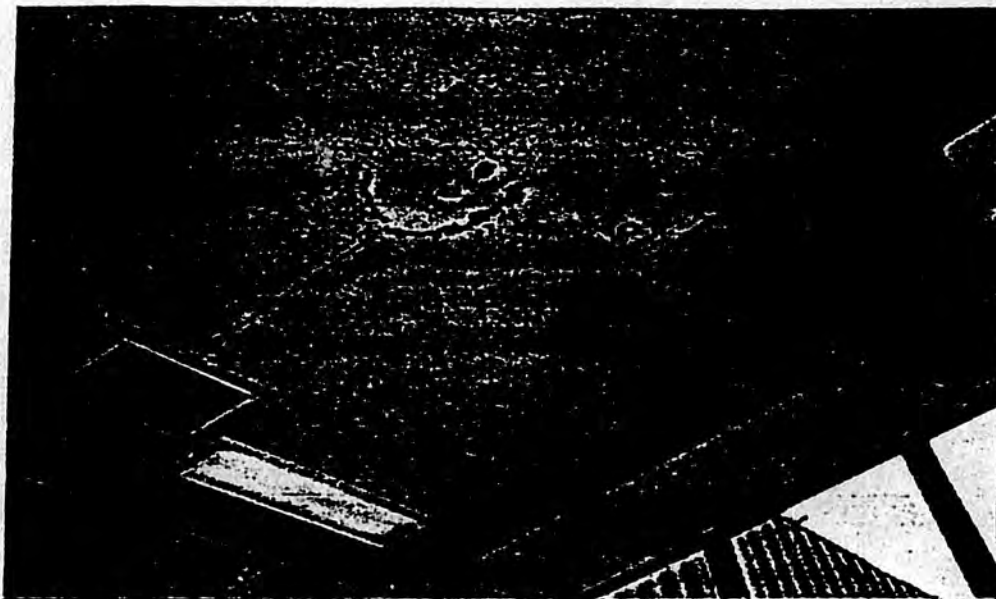


Figure 5
Water stains under main entry vestibule roof



Figure 6
Main building roof: Line of fasteners backing out

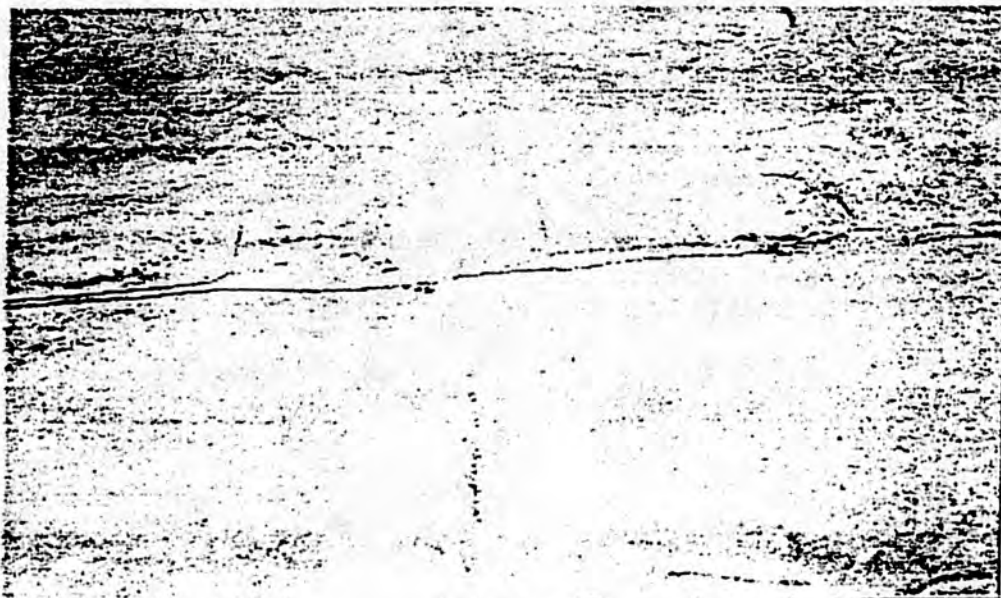


Figure 7

Main building roof: Previous patch over fastener which is, again, backing out



Figure 8

West side of building: Note water stain at center of wall from interior gutter drainage



Figure 9
Main building roof drain ties into old roof interior gutter



Figure 10
Note water running through gap in edge
metal down fascia

Cost Estimate

<i>Item</i>	<i>Quantity</i>	<i>Units</i>	<i>Cost per Unit</i>	<i>Sub-total</i>
<i>Remove existing single-ply roofing</i>	11,059	SF	\$ 0.75	\$ 8,294
<i>Remove existing built-up roofing (ACM):</i>	1,442	SF	\$ 1.50	\$ 2,163
<i>Install new parapets w/ EIFS Fascia</i>	762	LF	\$ 28.00	\$ 21,336
<i>Install new tapered system MC-BUR</i>	12,501	SF	\$ 8.00	\$ 100,007
<i>Install new roof drains & leaders</i>	4	EA	\$ 1,000	\$ 4,000
<i>Install new dry wells</i>	2	EA	\$10,000	\$ 20,000
<i>Design Fee (10%)</i>	1	Lump	\$15,580	\$ 15,580
<i>C/A Fee (5%)</i>	1	Lump	\$ 7,790	\$ 7,790

Total : \$ 179,170

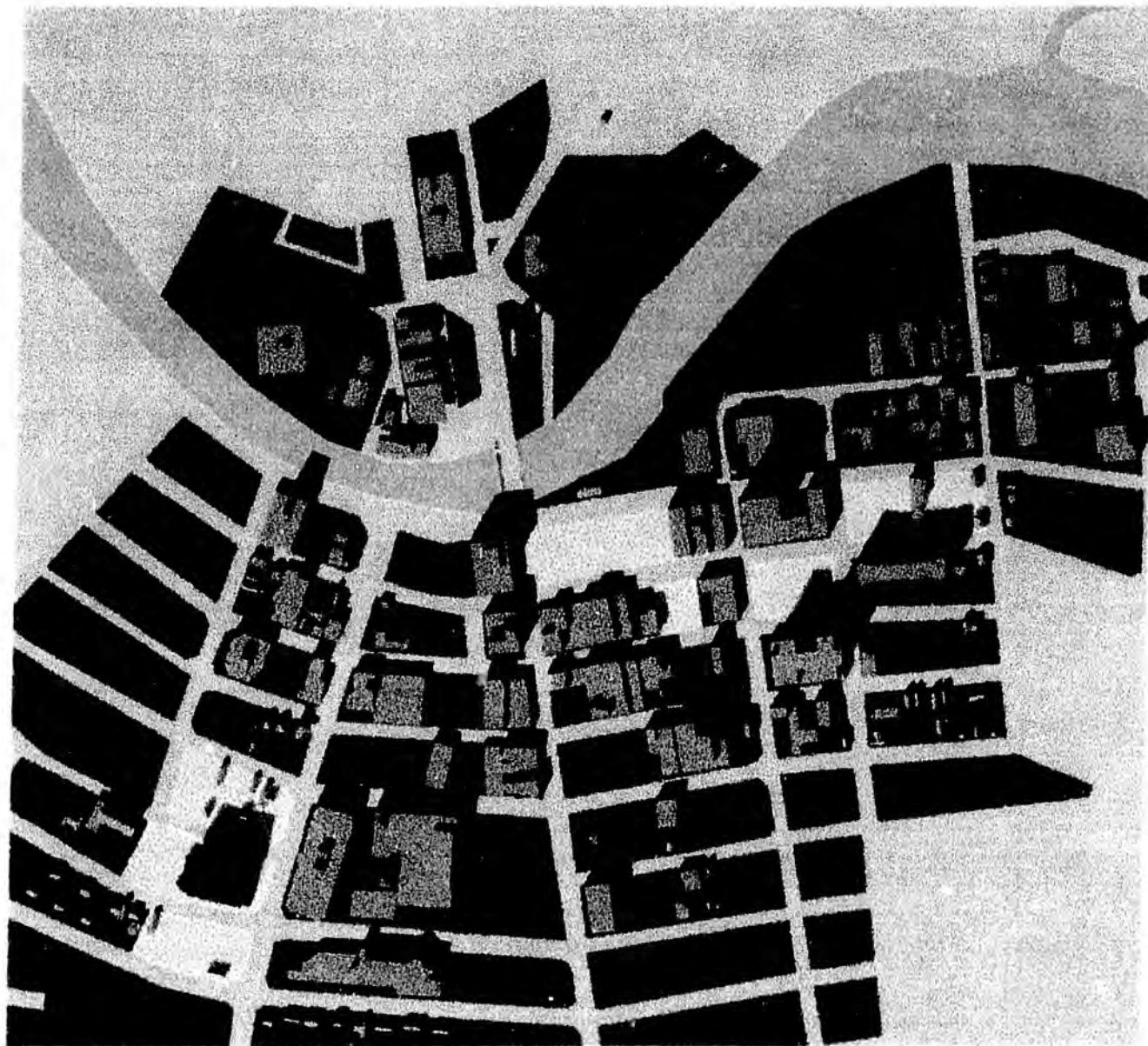
Contingency : 10% \$ 17,917

Total w/ Contingency : \$ 197,087

price per SF : \$ 15.77

Notes:

- Construction costs are "Ball-Park" estimates based on historical data
- Design and CA fees are based on % of construction cost before contingency
- Prices reflect budget numbers only and do not reflect fully detail engineers estimate



FAIRBANKS COURTHOUSE FEASIBILITY STUDY

Volume II

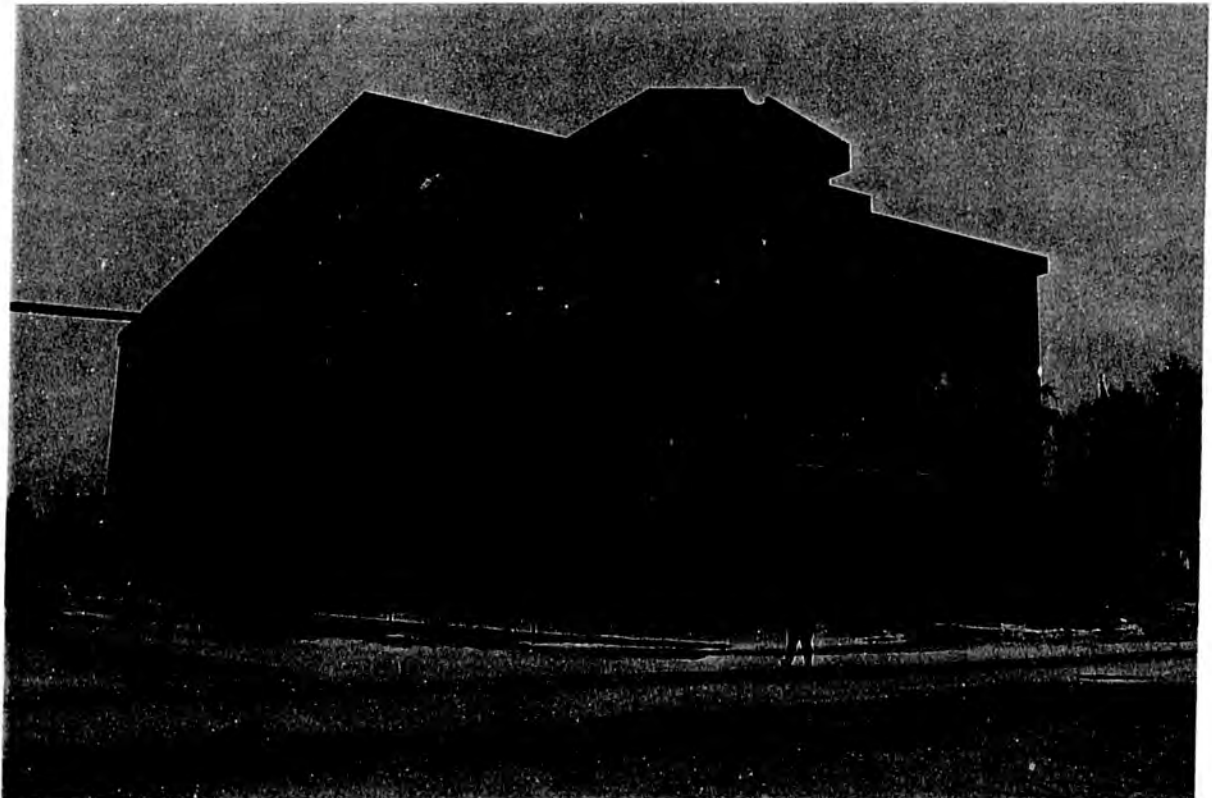
**Alaska Court System
Anchorage, Alaska**

March 29, 1996

Charles Bettisworth & Company, Inc
Fairbanks, Alaska

FAIRBANKS COURTHOUSE
FEASIBILITY STUDY
Charles Bettisworth & Company
March 1996

View of Existing Facility from the East
October 1995



ACKNOWLEDGMENTS

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Office of Administrative Director
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A. INTRODUCTION

The Facility Condition Report is a compilation of field observations and analysis of the existing condition of the Fairbanks Court and Office Building, located at 604 Barnette Street, and owned by the Alaska Court System. All building systems were reviewed and analyzed based on field assessments, code and accessibility requirements, site development and space utilization. Updated as-built drawings were created in order to record and display the facility's condition prior to any planned renovations, additions to, or relocations of Courthouse functions.

The report's conclusions are presented by discipline. Illustrations for each section are included. Additional information on code references and occupant load/exiting calculations are included in an Appendix. The following individual sections describe the existing condition of the facility:

◆ History	Charles Bettisworth & Company
◆ Site Analysis	Charles Bettisworth & Company
◆ Civil/Geotechnical	R & M Engineering Consultants with Brian Rogers & Associates
◆ Architectural	Charles Bettisworth & Company
◆ Structural	Loftus Engineering Associates
◆ Mechanical	MBA Consulting Engineers
◆ Electrical/Communications . .	Lake & Boswell Consulting Electrical Engineers
◆ Environmental/Hazardous . . .	Nortech Environmental & Materials Abatement Engineering Consultants

Code deficiencies are outlined in the following two sections:

◆ Code Compliance Review . . .	Ref: 1994 Uniform Building Codes
◆ ADAAG Upgrades Review . .	Ref: 1991 Americans with Disabilities Act & 1992 Accessibility Audit

Facility Program and Space Utilization Analyses are presented graphically in a table of existing program areas followed by space utilization drawings for each floor.

B. HISTORY

The Fairbanks Court and Office Building was designed in 1962 by B.C. Hamilton Architect, of Anchorage, Alaska. Its exterior has remained unchanged, with the original aluminum curtain wall and window system, changed only by a new penthouse and main roofs, decorative east parapet, and new soffits installed in 1992.

The building served a variety of functions in the 1960s, housing other state agencies as well as the Department of Law. The Departments of Commerce, Fish & Game, Health & Welfare, Labor, Natural Resources, Safety, Revenue, and even the University of Alaska shared space with Courthouse staff. Today, only the Alaska Court System and District Attorneys Office occupy the building.

Major portions of the building have undergone changes over the years. The present Law Library served as the State Employment office. The Public Health Lab occupied the center of the second floor, now remodeled as Superior Courtrooms and Grand Jury. The three District Courtrooms on the perimeter of the third floor remain in their original location, with their original layouts, but the original Law Library is now the Clerk of Courts Office, and the center of the floor is a Superior Courtroom. On the fourth floor, the original Superior Courtrooms have remained as originally designed, with periodic changes to their furnishings.

The original building design featured a double-loaded corridor with perimeter offices (except at the first floor Law Library, which has its own entrance, and the fourth floor Superior Court Judges' Chambers). Front-and-back access was provided for public and judges to the original six courtrooms, and access to public offices on the perimeter was ensured.

Renovations over the last 30 years have included renovations to the second floor when the Public Health Lab moved up to the University of Alaska in the late 1960s; modifications to courtrooms such as the addition of the first floor Arraignment Court in 1976-77; the reroofing project in 1992; and an ADAAG upgrade in 1994. Service system improvements have included modifications to the storm drain system (1974), a steam system upgrade (1986), installation of a fire alarm system (1986), installation of a building-wide sprinkler system (1987); installation of a new security system (1995); and numerous retrofits and adjustments to the HVAC system. Replacement of finishes and furnishings in the courtrooms continue on a regular basis.

C. SITE ANALYSIS

General

The Fairbanks Courthouse is located in the downtown area on Barnette Street between 6th Avenue and 7th Avenue. Its physical address is 604 Barnette Street. The overall site encompasses 59,214 sf while the building footprint is 18,440 sf. Parking areas cover 29,910 sf, with site circulation and landscaping utilizing the remaining 10,864 sf.

On-site parking for the facility is located on the north and west sides of the building. Employee parking is also available in the enclosed parking garage across the street. On street parking along both sides of 6th and 7th Avenues is within reasonable walking distance.

The main public entrance to the building is from Barnette Street. Employee access is provided at various locations on the north, east, and west sides of the building. Buildings surrounding the Courthouse facility are generally of residential type construction.

Zoning

The building site is zoned GC (General Commercial). The FNSB Title 18 zoning ordinance permits this type of building usage.

The areas directly adjacent to the site are zoned either GC, MFO (Multi-Family/Office) or CBD (Central Business District). There are no minimum lot areas. The building as sited meets front yard (20 feet) and side/rear yard (none) requirements.

Site Access

The Courthouse building is situated on the southeast portion of the site. A covered walkway is provided on the north side of the building. An entrance canopy is located on the east side of the building (i.e. Barnette Street). A continuous sidewalk along 6th Avenue, Barnette Street and 7th Avenue surrounds the site and provides pedestrian access into the building.

Mass transit transportation is available to the area within reasonable walking distance. Buses run on a regular schedule during business hours.

Public access into the building is at the entry located at the northeast corner of the building on Barnette Street. Public parking is on the west end of the site and along 6th and 7th Avenues. People visiting the building must walk across the parking lot and along a sidewalk on 7th Avenue or under the covered walkway on the north side of the building to reach the public entry.

Public access into the facility is very inconvenient in terms of distance from the parking areas to the only public entrance. Circulation paths are not well defined or marked.

C. SITE ANALYSIS

Vehicular access to on-site parking areas is from four access driveways; two driveways along 6th Avenue and two driveways along 7th Avenue. Another access driveway is on Barnette Street on the northeast corner of the site. All access driveways are intended to be used in one direction only. However, these access points are not well-marked and are difficult to maneuver.

Site Parking

Existing off-street parking areas for this facility are of two types: 1) outdoor parking located on the west and north portions of the site and 2) reserved parking located in the State parking garage across from the Courthouse on Barnette Street.

FNSB Title 18 zoning ordinance 18.50.060 requires off-street parking for this facility at a minimum of one parking space per 200 sf of office space plus one parking space per four seats of assembly area.

The total building area is 78,504 gsf. Calculations for each type of area requiring off-street parking spaces are as follows:

Office areas: 38931 sf / 200	194.66 spaces
Assembly areas: 819.4 seats / 4	204.85 spaces
Total required off-street parking	400 spaces
Existing on-site parking	83 spaces (48 with HBHO's)
Existing reserved garage parking	147 spaces
Existing on-site handicapped parking	2 spaces
Total existing off-street parking	232 spaces

The current off-street parking arrangement does not meet FNSB off-street parking requirements by 168 spaces. In addition, the Borough zoning ordinance requires off-street parking spaces be at least 9 ft. wide x 18 ft. long. The current parking layout typically has spaces that average 7.5 ft. in width.

Modifying the existing exterior parking layout to conform to Borough size requirements results in a loss of eight spaces to the existing parking space configuration.

C. SITE ANALYSIS

The Americans with Disabilities Act of 1991 requires two percent of the total number of parking spaces or ten spaces, whichever is less, be accessible to the disabled. Eight spaces are therefore required ($389 \times .02 = (7.78)$ per ADAAG). FNSB requirements are one per 50 parking spaces or $389/50 = 8$. Only two spaces are currently provided on site but seven more are available in the State parking garage, which is shared with the City of Fairbanks and State office building agencies.

Alaska DOT/PF driveway standards require a minimum 40 ft. separation between the edge of travelled way of a driveway and the curb line of the nearest intersecting street. The clearance between 6th Avenue and the driveway that exits from the courthouse parking lot onto Barnette Street is less than 25 feet.

The existing parking lot requires reconfiguration and restriping to conform to current standards.

D: CIVIL/GEOTECHNICAL

Geotechnical Conditions/Foundations

The foundations soils beneath the existing building consist of alluvial sand and gravel. Test hole logs included in the building plans indicate that the original ground included a layer of silt, about five to eight feet in thickness, overlying the granular soils. These logs also indicate that the soils below about 35 feet were frozen at the time of the original building construction. Groundwater is indicated in these logs below depths of about 10 to 14 feet. These soils conditions are typical of much of the Chena River floodplain.

The existing building is supported by column footings of up to 9 ft.-9" in size. The bearing surface of the footings is typically about 4.5 feet below the top of slab of the ground floor. Maximum column loads are about 500 kips, indicating a maximum soil bearing pressure of more than 5,000 psf. These soil pressures are near the upper limit of permissible values that are usually considered prudent for foundations placed on compacted granular fill materials.

An inspection of the existing building revealed a few locations that have experienced minor cracking of plasterboard walls or other evidence of possible building movement. From this inspection it is concluded that there are no foundation problems with the building that will require correction.

General Site Conditions

The existing parking area has a concrete pavement surface, except for localized areas that have been patched with asphalt pavement. Although some pavement cracking has occurred throughout the parking area, the overall condition of the pavement surface varies significantly. Although some areas are in relatively good condition, other localized areas have experienced severe cracking of the pavement surface. It appears likely that the cause of this observed distress is an inadequate thickness of non-frost susceptible base materials under the pavement. Except for a storm drain inlet near the northeast corner of the parking area on the north side of the building, all drainage of the site is by surface runoff to the adjoining City street system.

Site Utilities

The approximate location and sizes of existing water, sanitary sewer, steam and storm drainage utility lines near the site are shown on the accompanying sketch. This sketch does not show buried electrical lines and numerous water, steam, and sewer lines near the site that have been abandoned in place.

The water main on Barnette Street is relatively new, being constructed in 1986. New water mains on 6th and 7th Avenues were constructed in 1984.

Four existing fire hydrants are located within 150 feet of the building, as shown on the sketch. Flow tests indicate fire flows in excess of 2,000 gpm can be expected from these hydrants.

D. CIVIL/GEOTECHNICAL

The existing sewer service lines from the building connect to an 8 inch diameter sewer line on 6th Avenue is routed beneath the State parking garage, east of Barnette and under the J.C. Penney department store.

Recommendations

1. *Geotechnical Conditions/Foundations*

It is expected that spread footing foundations will be suitable for an addition to the existing building, similar to the existing foundation system. Detailed testing of the foundation soils under the area of a proposed new addition will be required, however, before foundation design criteria can be developed.

Caution should be taken before increasing the soil bearing pressures of the footings of the existing building in order to assure that excessive building movement will not occur as a result. It is recommended that testing of the foundation soils under the existing building be performed if it is desired to add more floors to the existing building.

It is likely that differential foundation movement of a building addition, with respect to the existing building, can be limited to an acceptable amount by removing the existing silt overburden soils and densifying the underlying gravels to the depth that might be influenced by the new footings. This depth is equal to about twice the footing width. The cost of such densification would likely be significantly affected if footing loads require that the soils at or below the groundwater table be compacted. The extent of the required foundation preparation work is dependent on the character of the existing soils, the footing sizes and loads, and the amount of differential movement that can be tolerated.

2. *General Site Improvements*

It is recommended that the existing concrete pavement in the parking areas be replaced with a new asphalt pavement. The pavement subgrade should include a minimum four-inch thickness of crushed base material overlying at least an 18-inch thickness of non-frost susceptible granular fill. Pavement improvements should include the construction of a storm drainage system for the site, connecting to the 42-inch diameter City Storm drain that outfalls to the Chena River.

D. CIVIL/GEOTECHNICAL

3. *Site Utilities*

The capacity of the existing water, sanitary sewer, steam, and storm drainage systems is considered to be sufficient to accommodate possible increases in the size of the courthouse facility. Construction of an addition to the building could, however, require the relocation of nearby utility lines. A 42-inch diameter storm drainage line, located immediately west of the courthouse would have to be moved if an addition is to be constructed in this area. An addition to the north side of the building could require the relocation of the steam and condensate return lines that serve the building. The sewer service lines to the building may also have to be relocated. It is preferable to connect new sewer service lines to the existing sewer line on 7th Avenue, rather than to the existing 6th Avenue sewer to avoid possible service disruption resulting from the difficulties in repairing the existing sewer where it is located beneath the State parking garage and J.C. Penney department store.

E. ARCHITECTURAL

This portion of the report examines the existing condition of the Fairbanks Courthouse. Deficiencies in the major architectural components of the building are discussed in general terms.

An on-site inspection determined the current physical condition of the building. Based on this inspection and discussions with maintenance personnel, a list of recommended upgrades has been developed. The proposed upgrades are described by written narrative and supported with photos and drawings.

Recommended architectural upgrades are provided in sufficient detail to develop anticipated costs associated with each upgrade.

General

The Fairbanks Courthouse building was constructed in 1962. The four-story building consists of 78,504 sf. A mechanical penthouse is located on the roof. The general layout of interior spaces consists of centrally located courtrooms surrounded by perimeter office space. A continuous double loaded corridor on each floor connects the public and private spaces. Vertical circulation is provided by one bank of two elevators and two stairwells. Mechanical and electrical support spaces are provided on each floor.

Exterior doors at the public entry are aluminum frame with glass. Interior doors are primarily solid-core wood doors with steel frames with hollow metal doors and frames at mechanical and utility rooms. Ratings of door and frame assemblies vary.

Conditions of Specific Exterior Building Components

Walls: The exterior composite wall panel consists of porcelain enamel steel (both sides), 1½ inches rigid insulation (white board), and hardboard (cement asbestos board). The total panel thickness is 1¾ inches. The porcelain steel exposed to the exterior is directly adhered to the insulation. The panels are fastened to an aluminum framework which is attached to the structural system. There is no vapor barrier and the system is completely dependent on sealants to prevent air infiltration/exfiltration and water leakage.

Exterior building panels are old, worn, and stained. The porcelain enamel steel has delaminated from the insulation on approximately 25% to 35% of the panels (primarily south and west elevations) and is visually noticeable. The sealant is in good condition. Portions of the exterior walls on the first floor are constructed of concrete masonry units (CMU). The exterior CMU wall is in good condition; grout joints are solid and the surface is freshly painted. Exposed stucco, wood and steel materials on the exterior of the building have also been painted recently and are in very good condition.

E. ARCHITECTURAL

Soffits: The underside of the first floor covered walkway soffit on the north and south is constructed of exposed rigid insulation (T&G white board) adhered to stucco material. The rigid insulation is severely water stained and discolored and is in very poor condition. Several panels have cracked and broken off, leaving exposed areas.

Entry: The entry at the east side of the building is covered with 2" x 2" ceramic tile. The tile is in relatively good condition, considering the Fairbanks climate. However, at several roof/wall intersections where the tile has gotten wet, tiles are damaged and have been repaired and/or replaced. A few ceramic tiles have cracked on the east facade.

Doors: Exterior doors at the public entry are typical glass/aluminum store front sections and are in good condition.

Windows: Exterior windows are in good condition. The windows located on the first floor are typical fixed sections. The operable windows on the upper floors are functional but inconvenient to operate.

Roof: The entire roof system for the building was replaced in 1992 and appears to be functioning properly. Maintenance personnel did note some water leakage during heavy rainfall. The leakage is concentrated on the east side of the building at the roof/wall intersection. The new IRMA roof system consists of the following: 2 inch LG board insulation with cement topping, over single-ply membrane over ½ inch fiberboard, over 4 - 8 inches rigid insulation, over existing concrete roof deck. A new roof slope of ¼ inch per foot is maintained. As part of the new roof work, parapets were extended out to cover the tops of exterior structural columns and aluminum mullion sections. Metal siding on the new parapets and new soffits is in very good condition.

Conditions of Specific Interior Building Components

Walls: Interior wall construction is primarily of 2x4 or 2x6 wood framing @ 16 inches o.c. with ⅝ inch painted gypsum board on both sides. Concrete and CMU interior walls are located in several areas and act as fire and/or shear walls. Interior wood framed walls are non-load bearing and are of three types:

1. Walls that extend to underside of suspended ceiling;
2. Walls that extend a few inches above the ceiling;
3. Walls that extend to underside of steel joists (i.e. corridor walls).

In some areas, fiberglass insulation has been placed above ceiling stud spaces and acts as soundproofing material.

E. ARCHITECTURAL

In a majority of instances, the gypsum board finish on corridor walls extends just beyond the ceiling height. Combustible wood framing above the ceiling is exposed. No seismic bracing was found on interior partitions.

Several interior walls have wood paneling or wood wainscots as accent walls. In general, interior wall materials and finishes are in good condition.

Ceilings: The suspended acoustic tile ceiling currently in place in the majority of the building is the original ceiling system (Armstrong Fiberguard). Generally, the 2 ft. x 4 ft. ceiling tile is in fair to poor condition. Ceiling tiles are very dirty and water stained. Approximately 10-15% are cracked or broken. The ceiling grid is in relatively good condition except at exterior edges where it is loose or has fallen off. There is no seismic bracing in the ceiling system. Damaged tile or substitute materials have compromised the original fire rating of the ceiling system.

In areas that have been remodeled, new ceiling tiles have been installed and are in good condition. Suspended gypsum board ceilings are located in a few rooms in the building and are in good condition.

Insulation ceiling panels in building services (mechanical) rooms are missing, damaged, or dirty and are in unrated assemblies.

Floors: The finish floor material for a majority of the facility is carpet. Over the years, a majority of the carpet has been replaced. The quality of carpet throughout the facility varies considerably and is directly related to age and use. The average age of a majority of the carpet is three to five years. Generally the carpet is in good condition, but is dirty and shows signs of wear in major circulation pathways. Several rooms have carpet which is more than 10 years old that is in fair to poor condition. Selected areas have new carpet in excellent condition.

Vinyl tile flooring where it has been left exposed is in good condition. Painted concrete floors are in fair to good condition with respect to the paint. Ceramic tile on the public restroom floors is in good condition.

Doors: Interior doors are primarily solid-core wood doors. Acoustic wood doors are installed in the courtrooms. Wood doors are generally in good condition. Door frames are painted metal; many lack fire rating labels. Several metal doors are located throughout the facility (i.e. mechanical rooms) and are rated as required.

E. ARCHITECTURAL

Restrooms: Public restrooms in the facility are in good condition and have recently been renovated to comply with ADA requirements. Private restrooms located throughout the building are usable but very narrow and difficult to use.

Furnishings: Furnishings in the building are old and dated, but in relatively good condition. Most furnishings are freestanding except in the courtrooms and corridors which have fixed seating for judges, clerks, witnesses, jurors, and visitors.

Vertical Circulation: Vertical circulation in the facility is provided by two elevators and two stairs. The elevators and main stairwell are arranged back to back and located in a continuous rated vertical shaft constructed with concrete walls.

The main public stair is constructed with a variety of materials. The first to second floor stairs are concrete with rubber treads and are worn, but in good condition. The other stairs and landings are constructed of diamond plate steel bolted to steel channel stair stringers. No risers were provided. Handrails are 1½ inches diameter painted pipe. Stair materials are in good condition.

The elevators are original, but have been refurbished over the years with new carpet, accessible controls and wood paneling. A separate elevator machine room has not been provided in the mechanical penthouse.

Functional Use

The design of courthouse facilities has evolved significantly since the Fairbanks Courthouse was constructed. Although numerous renovations have taken place in the building over the last 33 years, there are fundamental features in the original design which affect how the building performs functionally.

The most serious functional deficiency is that the facility does not adequately address public access versus judicial and prisoner safety and security. Existing circulation systems make it impossible to separate these three distinct user groups. Prisoners are directed through public spaces and judges use the same corridors as the people who have just been sentenced. Juror/judge privacy is compromised by the location of jury rooms and judges chambers.

New security systems were recently installed to reduce the potential threat of violent activity, but are remedial measures and do not solve the real problem of a lack of separate and distinct circulation systems for each user group.

E. ARCHITECTURAL

Current courtrooms and judicial chambers are inadequate with respect to room layout and function. The courtrooms are not flexible and judges have to switch rooms depending on the type of case (i.e. 6 jurors versus 12 jurors) creating scheduling conflicts. Access to several courtrooms is through public use corridors. The judges benches and jury boxes are not handicapped accessible. Generally, the facility has reached maximum space utilization. All available space is utilized, offices are typically overcrowded, and there is no room for expansion.

Acoustics could be improved in the courtrooms. The jury rooms are small and have inadequate restroom facilities.

Sound control between rooms is severely inadequate. There are no sound walls or other provisions between rooms to reduce sound transmission. A majority of interior partitions do not extend beyond the ceiling height and sound travels unimpeded through the ceiling plenum space. This inhibits privacy and compromises professional work conditions for everyone involved in the judicial process.

E. ARCHITECTURAL

Recommended Upgrades and Improvements

In general, the building has been well maintained over the past 33 years. However, there are serious architectural building deficiencies which profoundly affect how the facility performs. These deficiencies can be divided into three basic categories:

1. Energy deficiencies;
2. Fire/Life safety deficiencies;
3. Architectural finish deficiencies.

For purposes of this report, the recommended upgrades to correct these deficiencies are intended to renovate the existing facility into a modern building which will effectively serve its projected uses.

Energy Upgrades

1. **Upgrade exterior wall system of the building.** The performance of the existing exterior composite wall panel system is severely limited. The panels insulative values are grossly inadequate (R-5), they allow excessive air infiltration, contain asbestos, conduct cold, and are delaminating.

Option A. A new exterior insulated finish system (EIFS) could be attached to the existing exterior curtain wall framing. The existing panel system could be left in place and insulation added on the outside so the building could remain functional during exterior renovation. Furthermore, the demolition costs associated with removing and disposing of the existing asbestos panels would be eliminated. A new EIFS system is relatively lightweight, durable, and low maintenance. The insulative value of the exterior wall could be increased as high as $\pm R-35$ (assumes 5 inches rigid insulation). Current air infiltration would be decreased significantly. The EIFS system can also be installed over existing CMU wall construction and the ceramic tiles on the east elevation.

Option B. An insulated metal panel system could provide an exterior finish system to be retrofitted over the existing exterior panels. The system would reduce labor costs as both insulation and finish are provided at the same time. The existing panel system could remain in place. The building could remain functional during exterior renovation. Metal panels come in a variety of standard insulative values, textures, and finishes which can dramatically alter the appearance of the existing facility.

E. ARCHITECTURAL

Option C. The existing exterior panel system could be completely removed and replaced with a new energy efficient window and wall system. Wall construction technology has advanced considerably in the last 35 years. Systems are available which provide higher insulative values, are thermally broken, have insulated glazing panels, and come in a wide variety of materials, finishes, and textures. The existing panel system could be removed on a floor by floor basis to minimize the impact on portions of the building still in operation during construction.

Any retrofitted wall system which is placed over the existing wall system, either EIFS or insulated metal panels, must consider the fact that there is no vapor barrier in the existing exterior walls. Therefore, insulated furring with a new vapor barrier and new interior finish must be included in any retrofit of the existing wall system.

2. **Provide new energy efficient windows.** The existing window system is thermally and functionally inadequate. The window glazing is double paned $\frac{3}{4}$ inch thick insulating glass installed in an aluminum frame. The frame conducts cold air to the inside of the building where it condenses and forms moisture. The operable windows are functional but inconvenient; three lock locations must be manipulated in order to open or close the window.

New energy efficient operable windows will improve thermal efficiency, decrease air infiltration, and eliminate current condensation problems. Window areas could be increased to allow more natural light into the building without compromising energy efficiency. A variety of window types and systems are available and will depend on the selected exterior finish system. Metal clad windows, plastic windows, and aluminum frame windows (thermal break) are reasonable options. Each are energy efficient, durable, and low maintenance.

3. **Remove existing insulation and stucco finish from underside of covered walkway and replace with new exterior system and spray foam insulation.** The existing insulation provides inadequate insulative values, is water stained, and is in very poor condition. Offices located above this area are noticeably colder than interior offices. The steel decking, steel floor framing and concrete slab construction which cantilevers the first floor to form a covered walkway around the perimeter of the building contribute to cold transmission thru the floor to the offices above. The resulting plenum space is heated with return air.

E. ARCHITECTURAL

A new soffit or EIFS system on the underside of the walkway ceiling will add insulation and provide a durable, low maintenance finish. If an EIFS finish is selected, spray foam insulation (4 inches thick minimum) could be applied directly to the underside of the steel decking to form an efficient insulative thermal break to reduce cold transmission to the office floor above.

Fire/Life Safety Upgrades

1. **Relocate/renovate/remove A3 occupancies on the third and fourth floors to meet code requirements for the existing building construction type (per 1994 UBC Table 5-B).** The building was originally constructed as a Type II steel frame and concrete structure with fire-resistive components. However, A3 occupancies (assembly rooms with under 300 persons) which include the Superior and District courtrooms on the upper floors, are not allowed above the second floor in Type II construction, unless it is Type II, F.R. (Fire-Resistive).
 - a. Allowing the courtrooms to remain on the third or fourth floor would require **reconstruction** of the building to conform with Type II, F.R. standards, which require:
 - * 4-hour Exterior Bearing Walls
 - * 2-hour Interior Bearing Walls
 - * 4-hour Exterior Nonbearing Walls
 - * 2-hour Structural Frame
 - * 1-hour Permanent Partitions
 - * 2-hour Shaft Enclosures
 - * 2-hour Floors and Floor/Ceilings
 - * 1-hour Roofs and Roof/Ceilings
 - * Noncombustible Exterior Doors, Windows, and Stairways
 - b. **Relocation** of the Superior and District Courtrooms on the third and fourth floors to the first and second floors would require a renovated area equivalent to the present first floor, which would then displace existing first floor programmatic functions: Traffic Court/Accounting, Coroner, Vital Statistics, Transcripts, Jury Assembly Area (also an A3 assembly), Law Library, and Judicial Services (an I3 occupancy requiring first or second floor locations). A complete renovation of the building would be required.
 - c. A third alternative would be **removal** of the upper story Courtrooms to the first or second floor of another facility of suitable construction type.

E. ARCHITECTURAL

2. **Provide 1-hour fire resistive exit corridor system (per 1994 UBC 1005.7).** Current corridor construction does not extend to the underside of the floor deck above without openings, has exposed wood framing above the ceiling and the corridor ceiling does not meet 1-hour requirements.

Combustible materials are not permitted in Type II construction. The existing wood framing is fire retardant treated wood. However, all combustible wood framing must be protected. To achieve this, a layer of $\frac{5}{8}$ inch gypsum board must be applied to both sides of the wall and fire-taped.

At best, this is a difficult task given the lack of unobstructed space above the suspended ceilings. If mechanical and electrical systems were completely removed as part of the renovation, this task could be accomplished.

- a. **Install fire-rated lid at underside of structure, with non-rated ceiling below.** Any new ceiling in the corridors shall not be less than that required for 1-hour fire resistive floor or roof system. The current ceiling system does not meet this code requirement. The upper ceiling will consist of $\frac{5}{8}$ inch gypsum board attached to non combustible framing fastened to the steel floor or roof joists. The lower ceiling can be a suspended acoustic tile ceiling system.
3. **Provide spray fireproofing to all interior beams and columns above the suspended ceiling (per 1994 UBC Table 6A.)** The existing structural system for the building is unprotected. New fireproofing on main structural frame elements will provide required 1-hour fire resistive protection.
4. **Provide seismic bracing for suspended ceiling systems and non-bearing interior partitions (per UBC 1994, Chapter 16).** The existing suspended ceiling system and interior partitions are not seismically braced. As part of the renovation, the existing suspended ceiling system should be completely removed and replaced. Installation of seismic bracing can be accomplished when installing the new suspended ceiling system.
5. **Provide rated doors and frames for all doors opening onto rated corridors (per UBC 1005).** Existing wood doors and frames do not have rated labels. New doors and frames shall be minimum 20-minute rated, self closing and smoke gasketed.

E. ARCHITECTURAL

6. **Remove wood wainscot from rated corridor walls (per UBC Table 8A & 8B).** Several exit corridors have wood paneling which may not meet flame spread requirements. Samples should be examined for compliance with the required ratings. If removed, patch and paint walls as required to match existing wall finish.
7. **Renovate existing stairways to meet current code requirements (per UBC Section 1006 and ADAAG Section 4.9).** The existing stairways have open risers, handrails that do not project beyond the top and bottom risers and doors may restrict landing widths.

In lieu of completely demolishing the existing stair construction, new risers could be fastened to existing steel stair treads and stringers. The existing handrails will need to be removed and replaced with new metal pipe rails which meet code. Door openings onto the stairwell should be relocated to meet landing width and exit width requirements.
8. **Remove and replace non-rated glazing in doors and transoms (per UBC Chapter 24).** A number of corridor doors have plain glass vision panels. New glazing should be ¼ inch thick wire glass or rated glazing system.
9. **Modify existing exit doors from assembly rooms where the occupancy exceeds 50 (per UBC Section 1004).** Vestibule construction and reversed door swing will be required at Jury Assembly (3 doors), Superior Courtroom D (3 doors), Clerk of Court (2 lobby doors), District Courtrooms 1 and 2 (1 door each) and Superior Courtrooms A, B, and C (1 door each).
10. **Remove protrusions from corridors (per UBC Section 1005.4).** Drinking fountains, bench seating, and fixed chairs have been installed in corridors and require recessed installation or complete removal so they do not reduce the required corridor widths.
11. **Provide elevator lobbies or equivalent elevator door protection on Floors 2, 3, and 4 (per UBC Section 1005.10).** No elevator lobbies currently exist. Mechanical ventilation and lighting modifications will be required if lobbies are constructed.
12. **Spiral Stair (per UBC Section 1006.6):** Remove the existing spiral stair from Superior Court Chambers down to the Clerk of Court's office. Provide an alternative means of access if specifically required for judicial privacy.

E. ARCHITECTURAL

Architectural finish upgrades

1. **Remove and replace entire suspended acoustic tile ceiling system.** The existing suspended ceiling system is old, water-stained, and deteriorated. The system does not provide its original fire-rating. Gypsum board panels on top of the Armstrong Fiberguard ceiling tiles have in most instances been removed. Required tenting over recessed light fixtures does not meet code. The ceiling grid is not seismically braced as required.

Although well-maintained, the original ceiling system has reached the end of its useful life. Renovation of the building will involve extensive work above the existing ceiling. This work can be performed more efficiently if the entire ceiling system is removed. A new 2 ft. x 4 ft. ceiling grid and acoustic tiles are recommended in all areas. The ceiling system in areas which have been recently renovated can be removed and salvaged for reuse.

2. **Remove and replace deteriorated carpet floor covering.** The quality of carpet varies considerably throughout the facility. A general estimate indicates that during a major renovation, approximately 50% of the existing carpet would need to be replaced; 25% would need to be cleaned, and 25% would be salvaged for reuse.
3. **Replace existing furnishings in public areas.** Existing furnishings in the facility, although in relatively good condition, are old and dated and not professional looking by today's standards.

Modern furnishings should be provided as part of the building renovation, particularly in those areas where the public is involved, such as courtrooms, jury rooms, and jury assembly area.

PHOTOGRAPHS

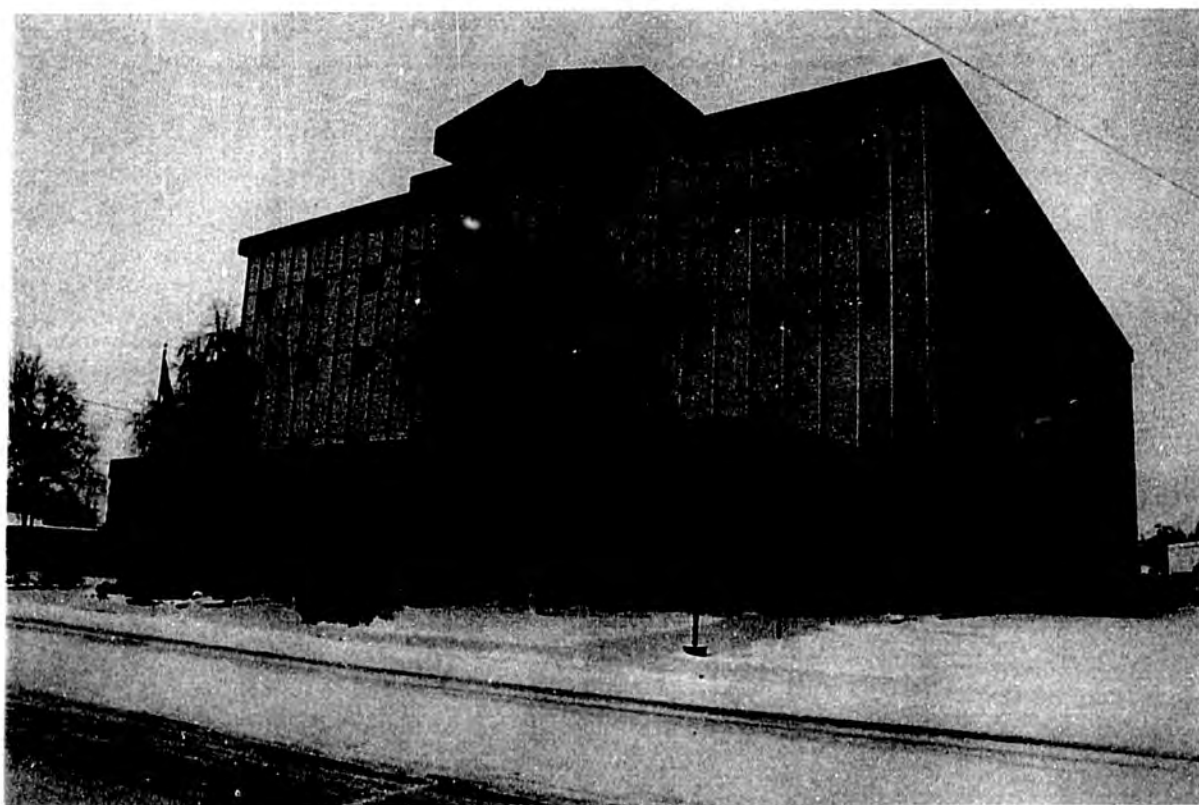


Photo #1

Courthouse from northeast

PHOTOGRAPHS

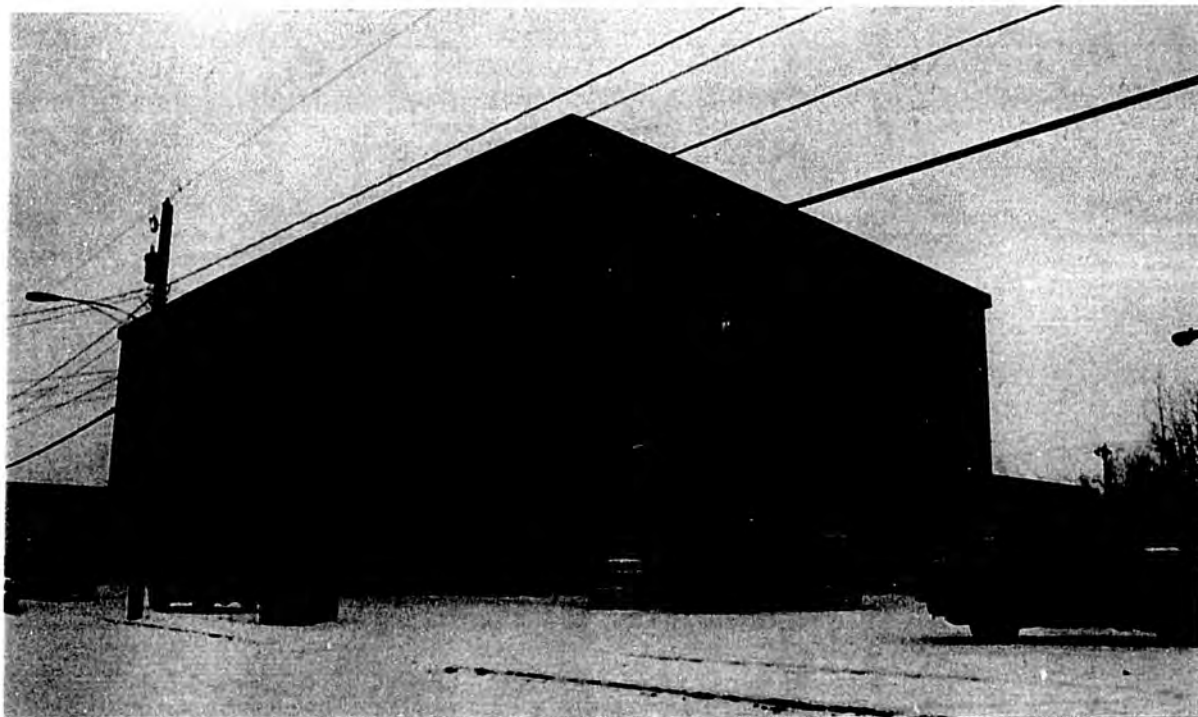


Photo #2

Courthouse from northwest

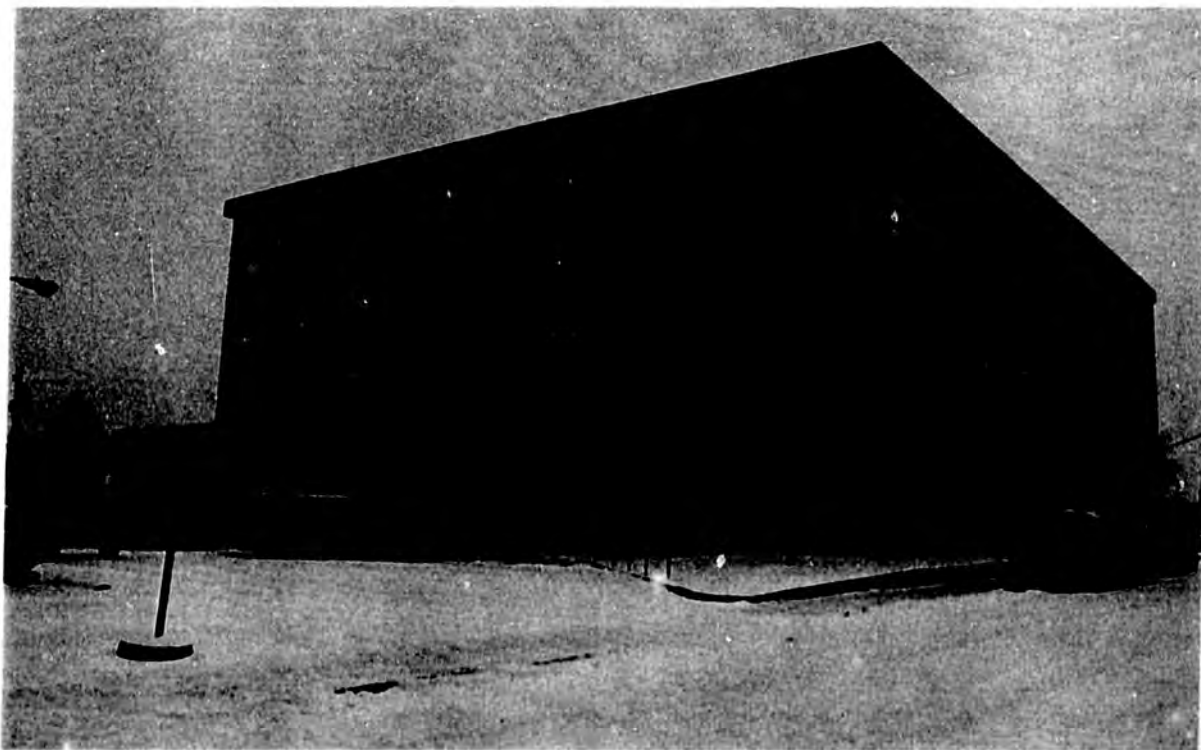


Photo #3

Courthouse from southwest

PHOTOGRAPHS

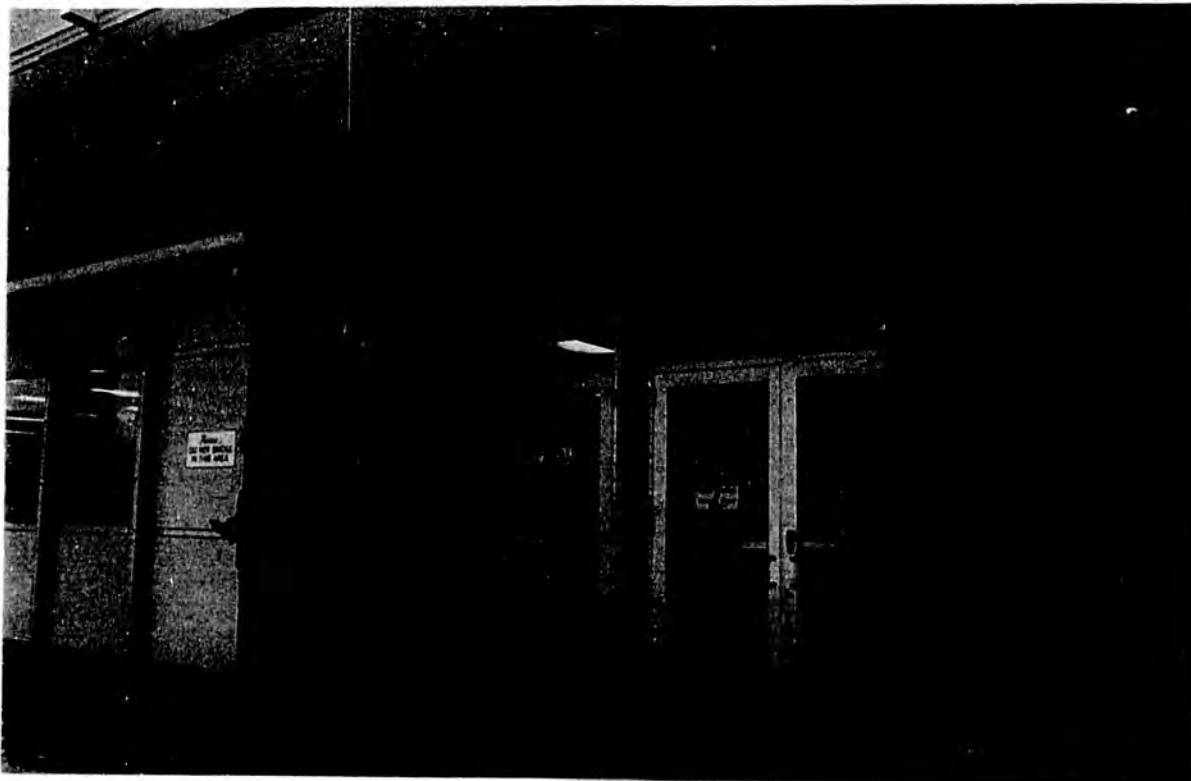


Photo #4

Law Library Entrance

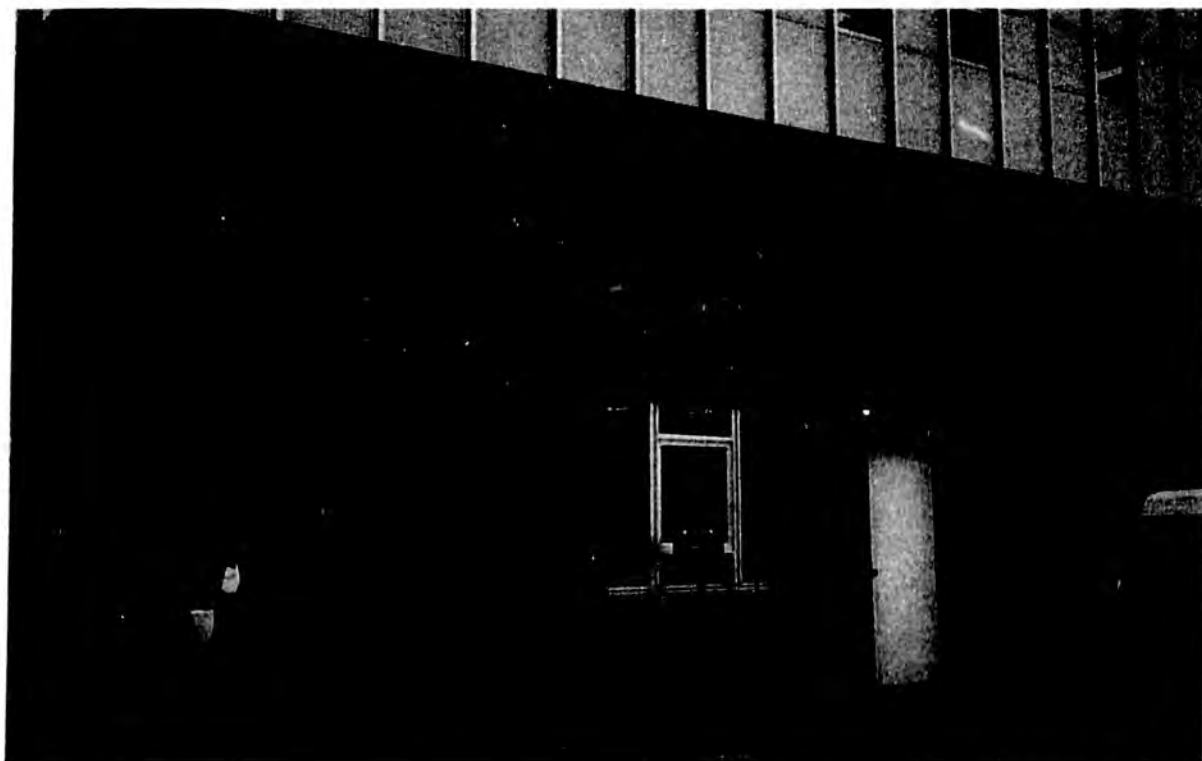


Photo #5

Maintenance Entrance

PHOTOGRAPHS



Photo #6

Delaminating Exterior Panels



Photo #7

Failing South Soffit

PHOTOGRAPHS

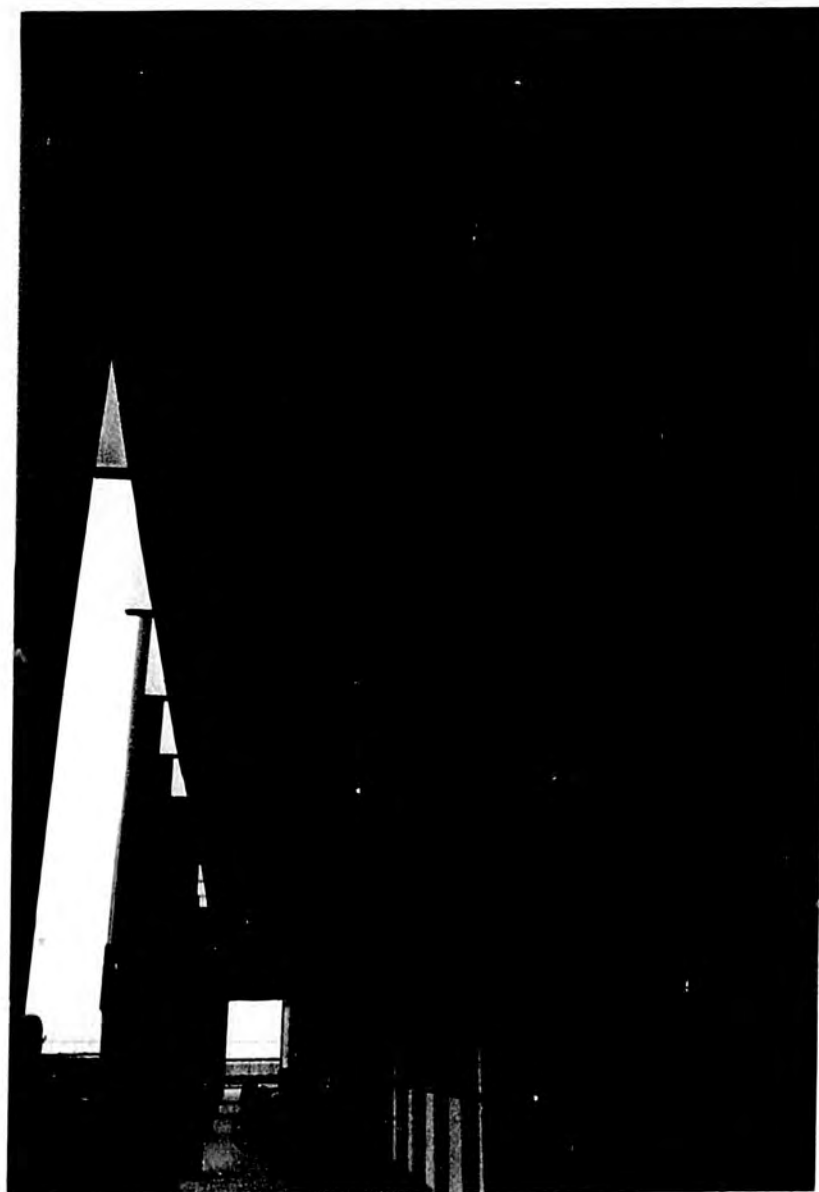


Photo #8

Damaged North Soffit

PHOTOGRAPHS



Photo #9

Detail of Soffit

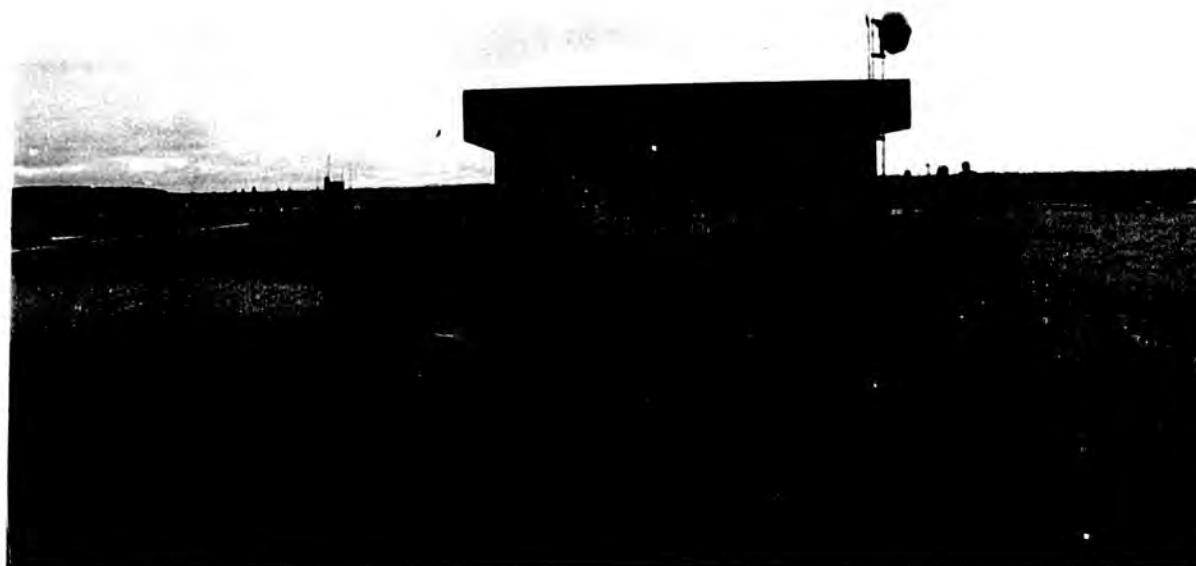


Photo #10

New IRMA Roof

PHOTOGRAPHS



Photo #11

Main First Floor Lobby



Photo #12

Fourth Floor Lobby (Elevators at left)

PHOTOGRAPHS

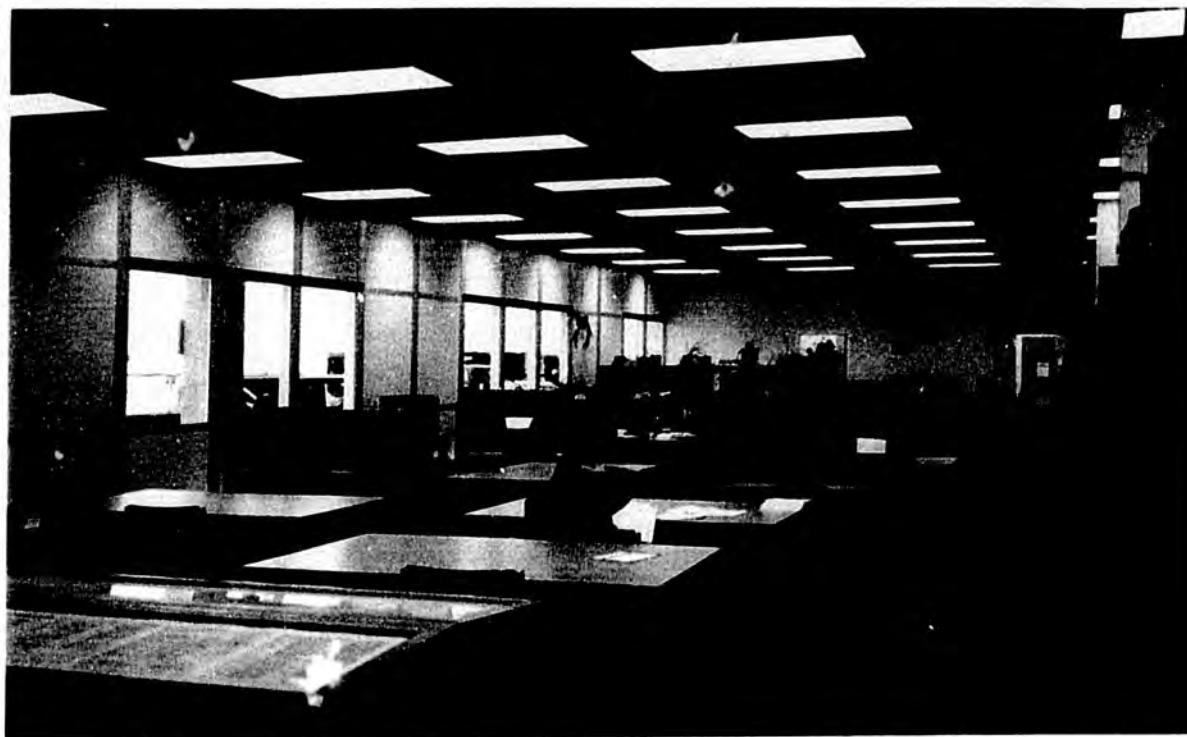


Photo #13

Law Library (A3)



Photo #14

Jury Assembly (A3)

PHOTOGRAPHS



Photo #15

Accounting/Traffic



Photo #16

Clerk of the Courts (A3)

PHOTOGRAPHS

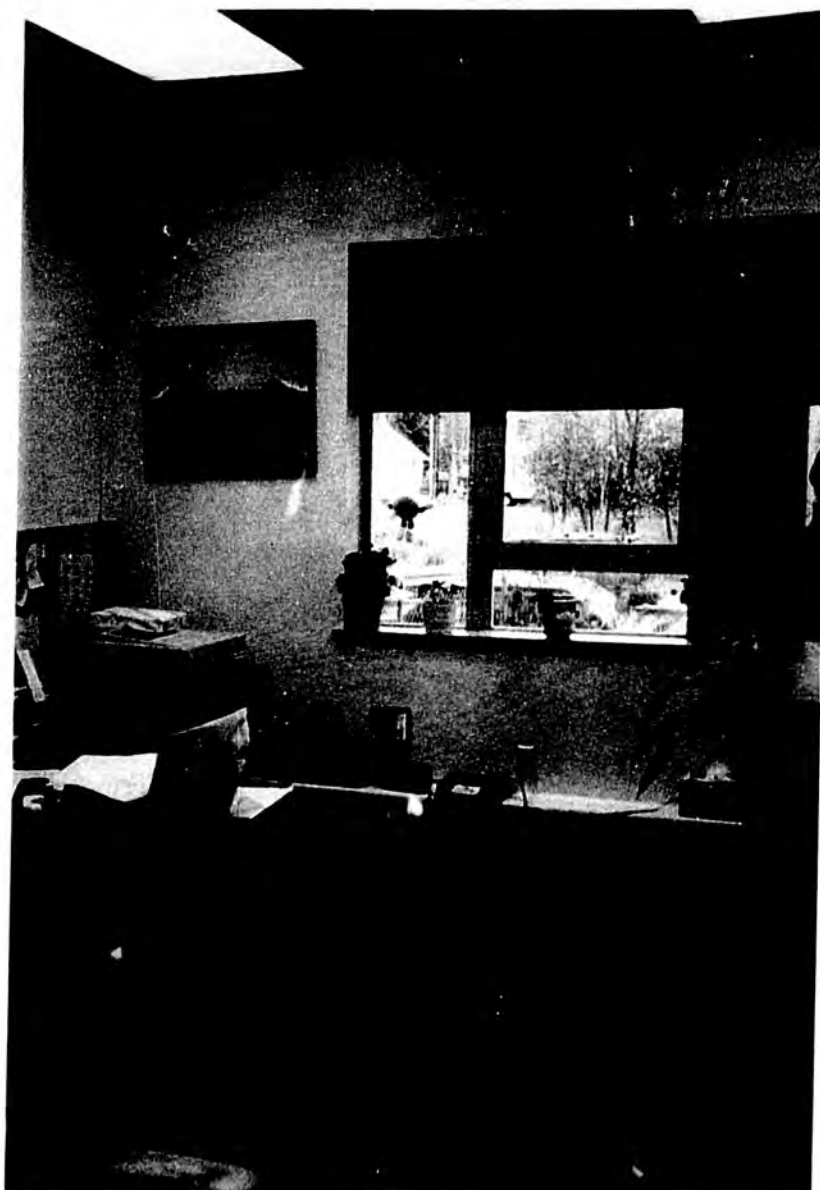


Photo #17

Typical Office

PHOTOGRAPHS



Photo #18

Traffic/Arraignment Courtroom



Photo #19

Traffic/Arraignment Courtroom

PHOTOGRAPHS

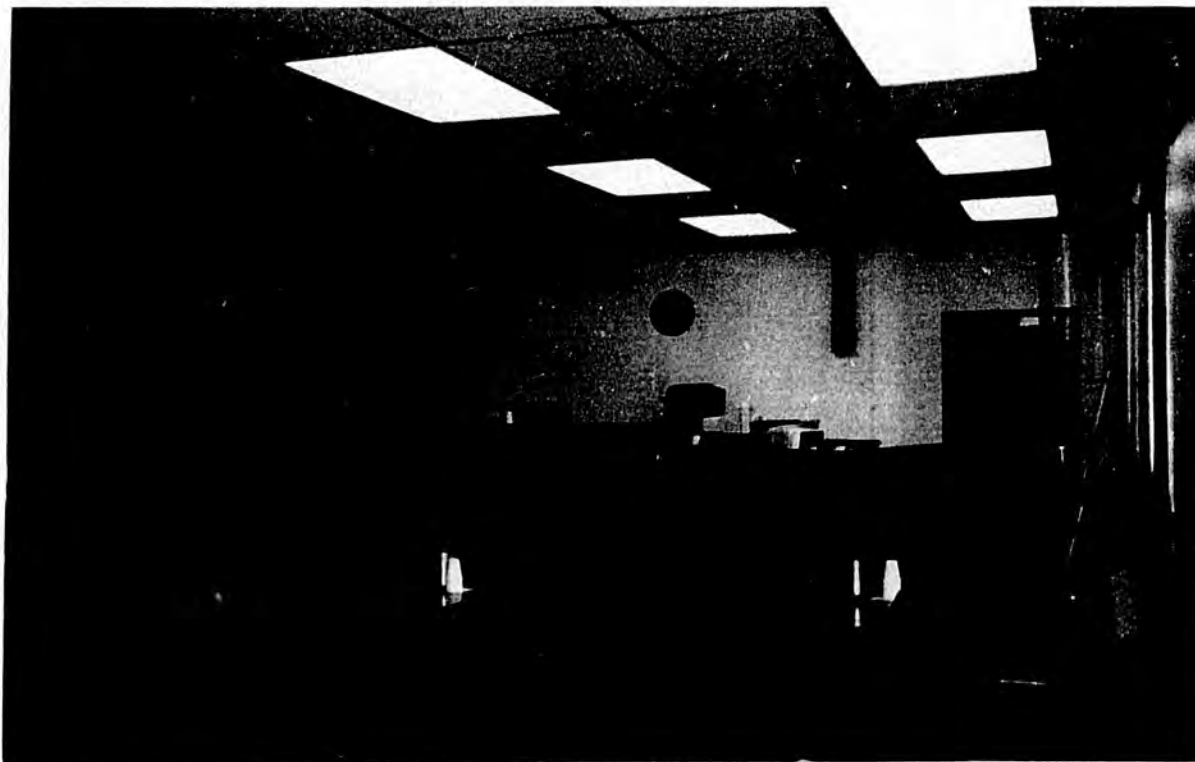


Photo #20

District Courtroom #3



Photo #21

District Courtroom #3

PHOTOGRAPHS

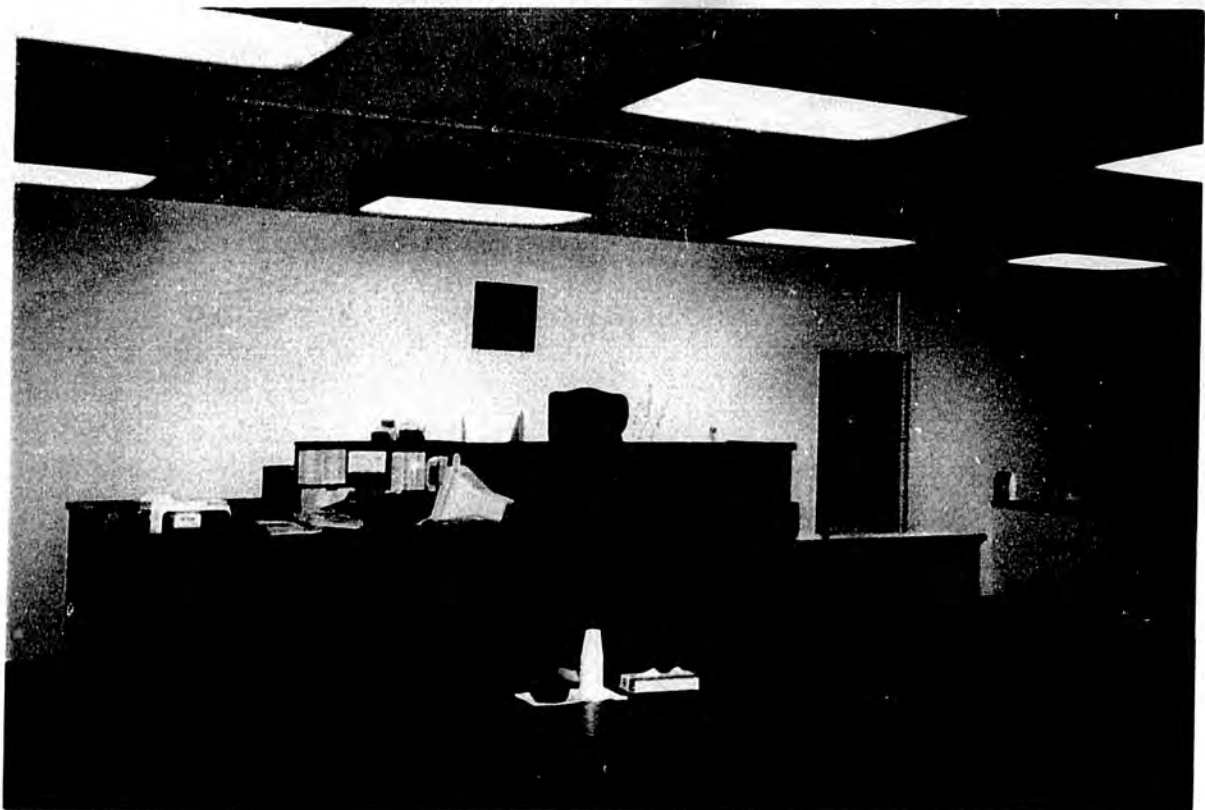


Photo #22

Superior Courtroom #4



Photo #23

Superior Courtroom #4

PHOTOGRAPHS

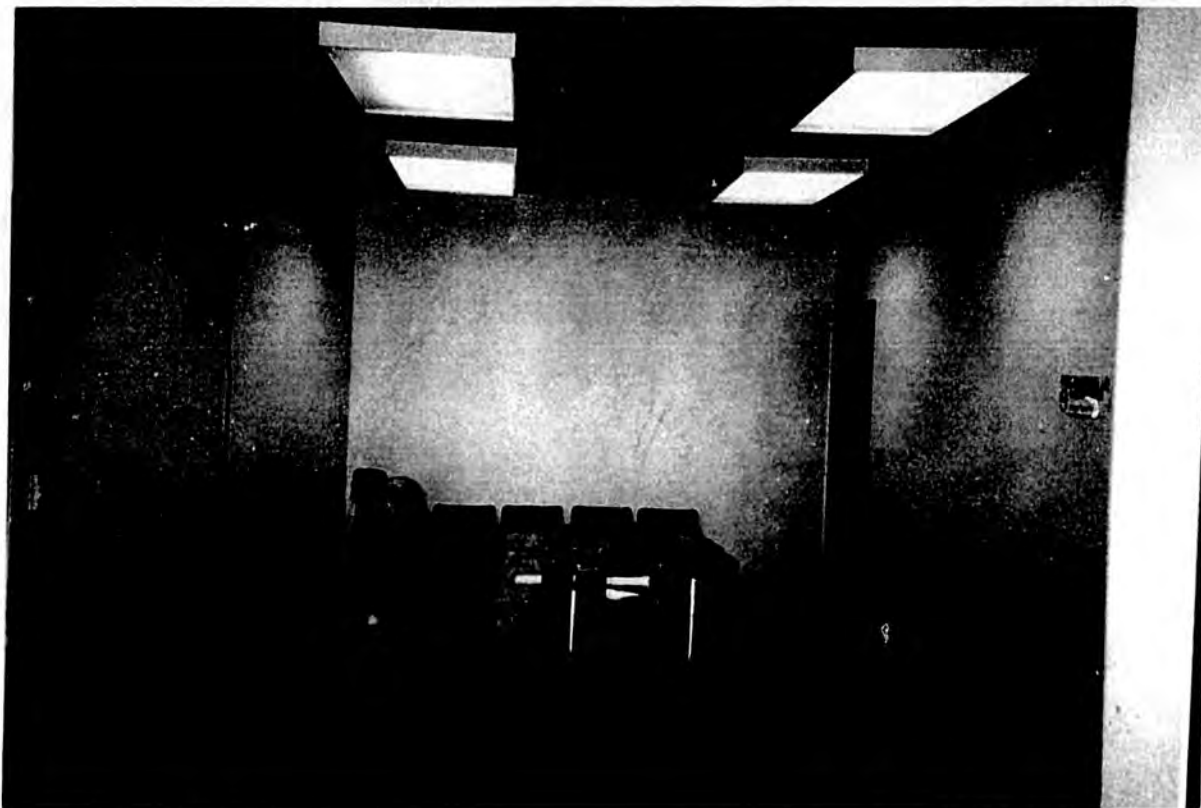


Photo #24

Typical Jury Room



Photo #25

Corridor with Wood Wainscot

PHOTOGRAPHS



Photo #26

Bench in Corridor

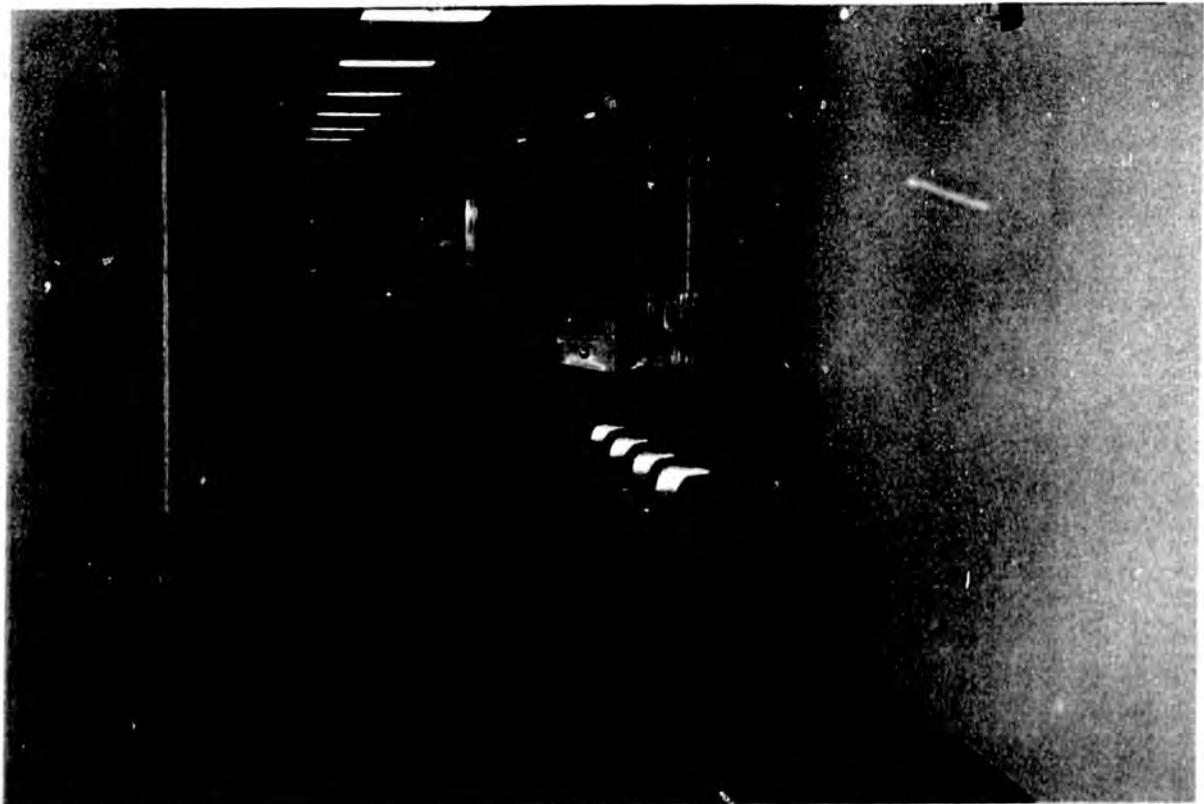


Photo #27

Fixed Seating in Corridor

PHOTOGRAPHS

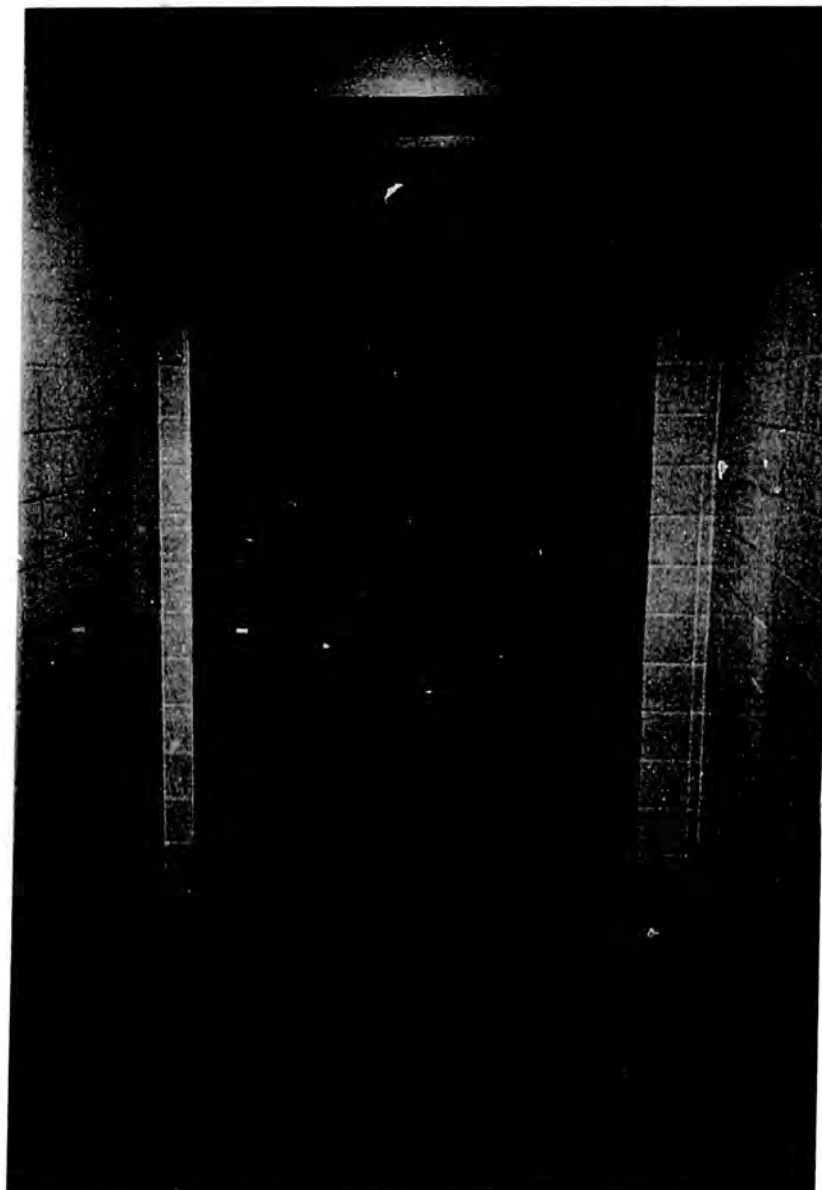


Photo #28

Louvered Toilet Room Door

PHOTOGRAPHS



Photo #29

Typical ADA Toilet Room



Photo #30

Typical Non-ADA Toilet Room

PHOTOGRAPHS

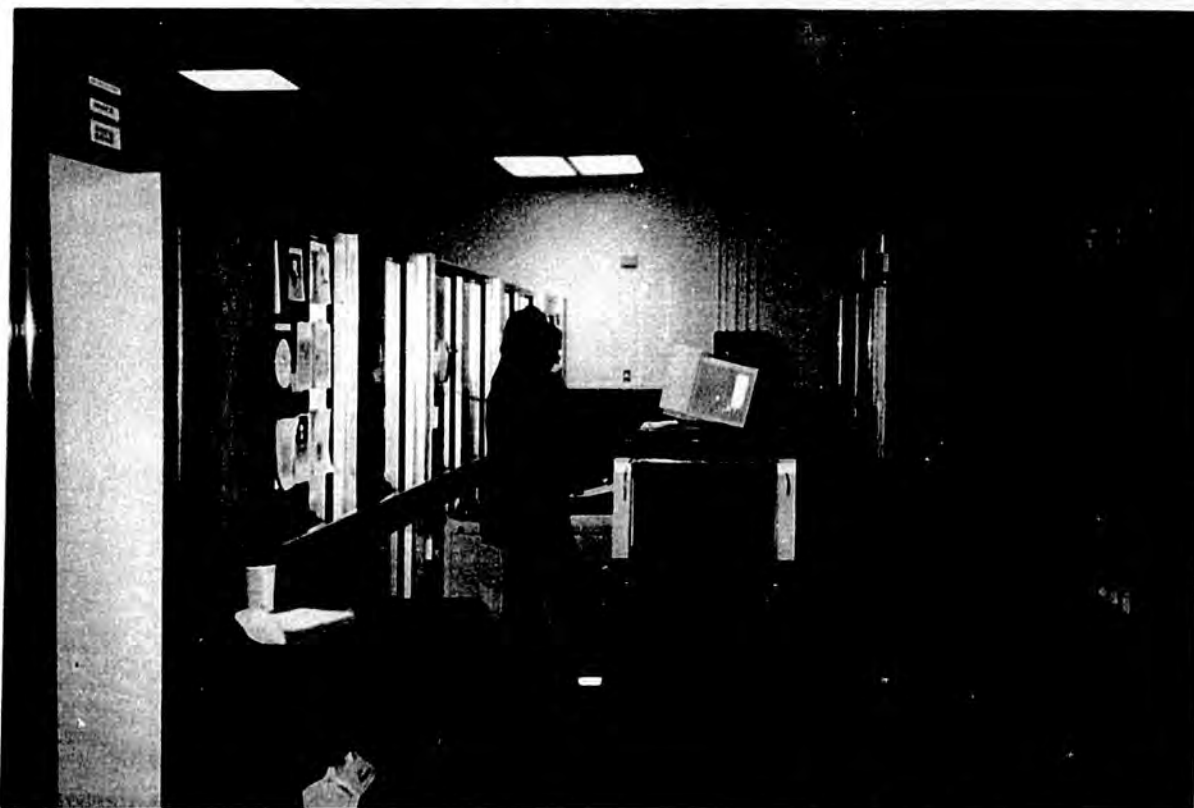


Photo #31

Security at Public Entry

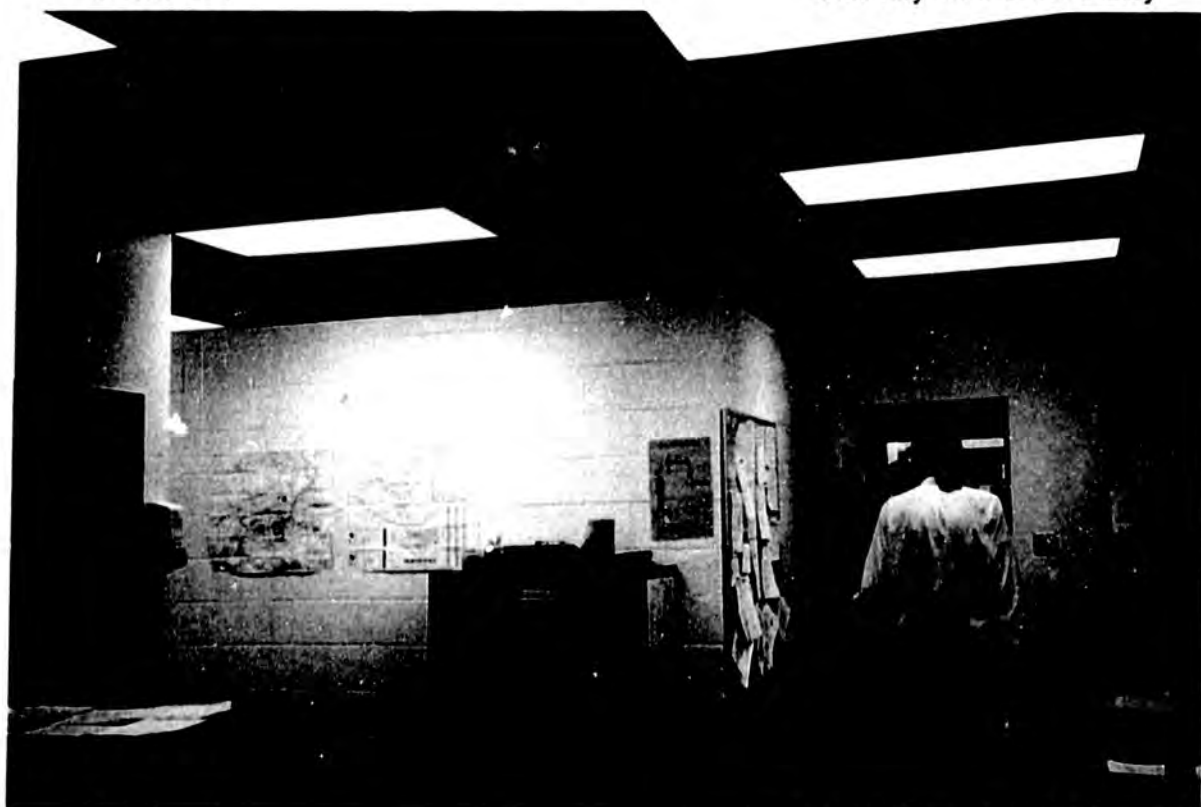


Photo #32

Cells (I3) in AST Offices

PHOTOGRAPHS

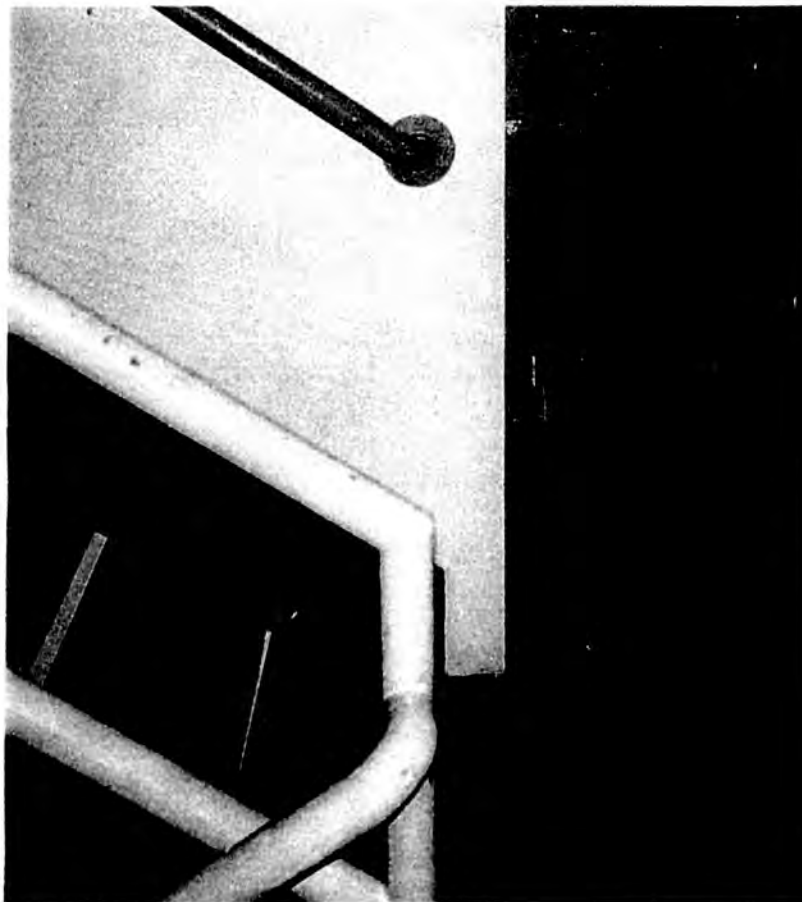


Photo #33
Non-compliant
Handrails
at Exit Stairs

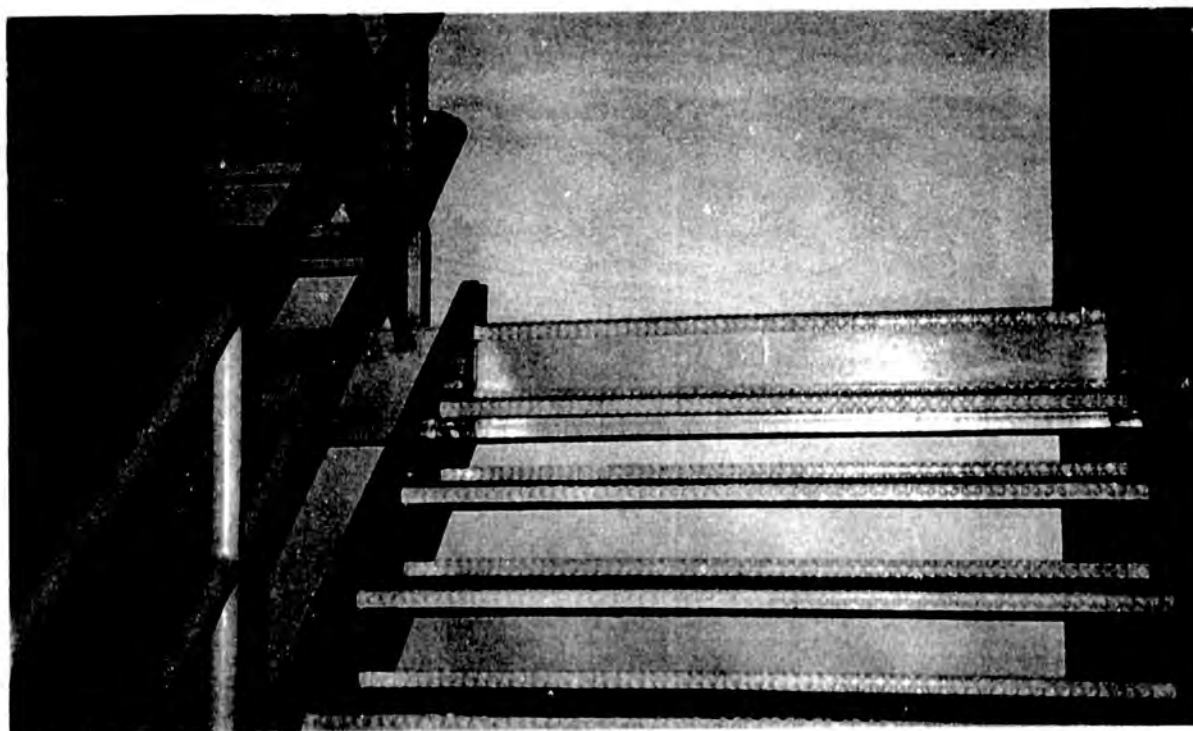


Photo #34

Open Risers at Exit Stairs

PHOTOGRAPHS

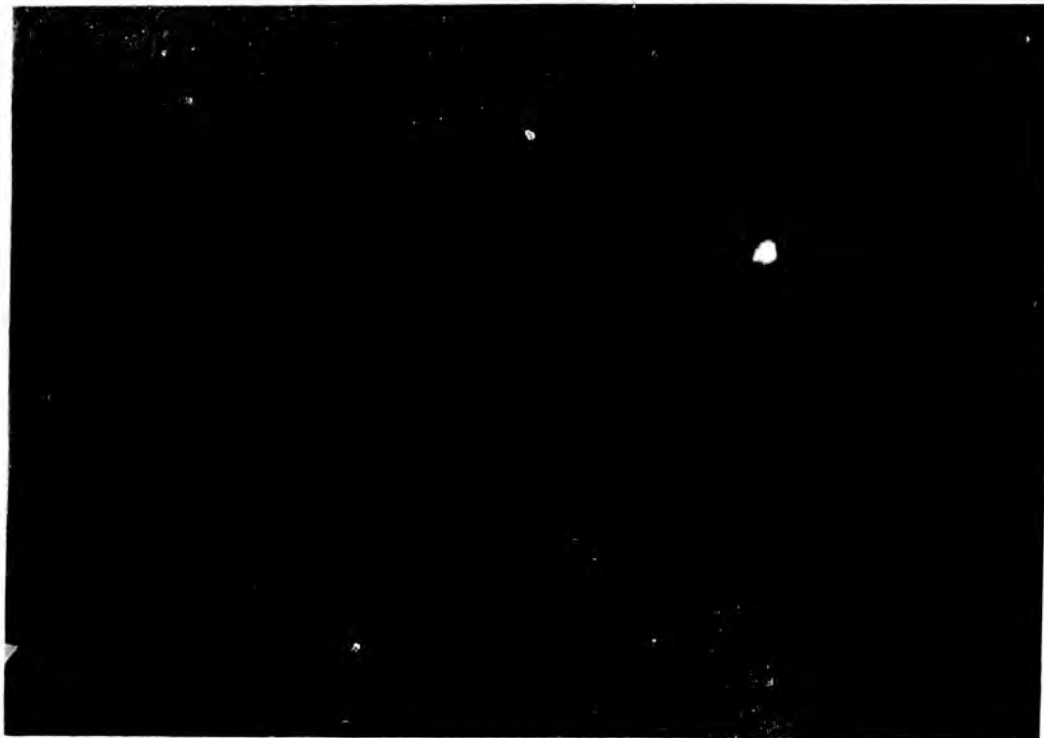


Photo #35

Damaged Ceiling Tile



Photo #36

Damaged Floor Tile and Mastic

PHOTOGRAPHS

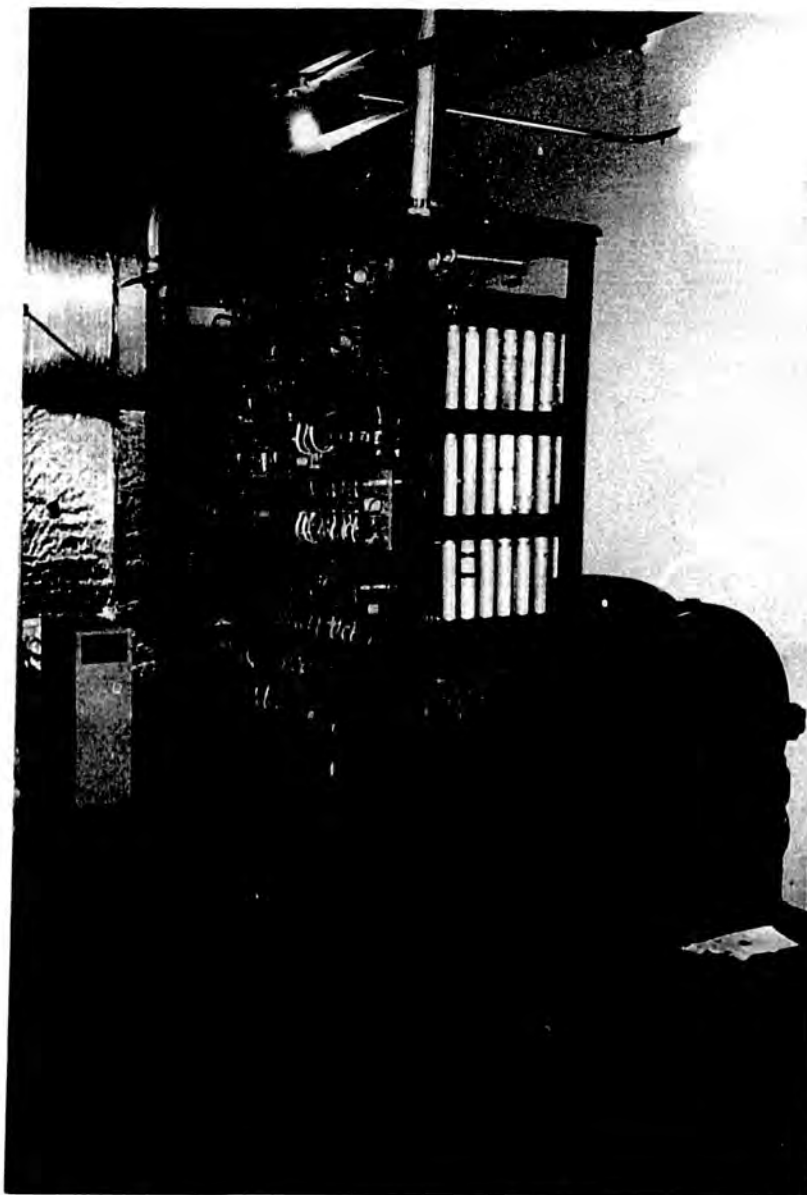


Photo #37

Original (Unenclosed)
Elevator Machinery

PHOTOGRAPHS

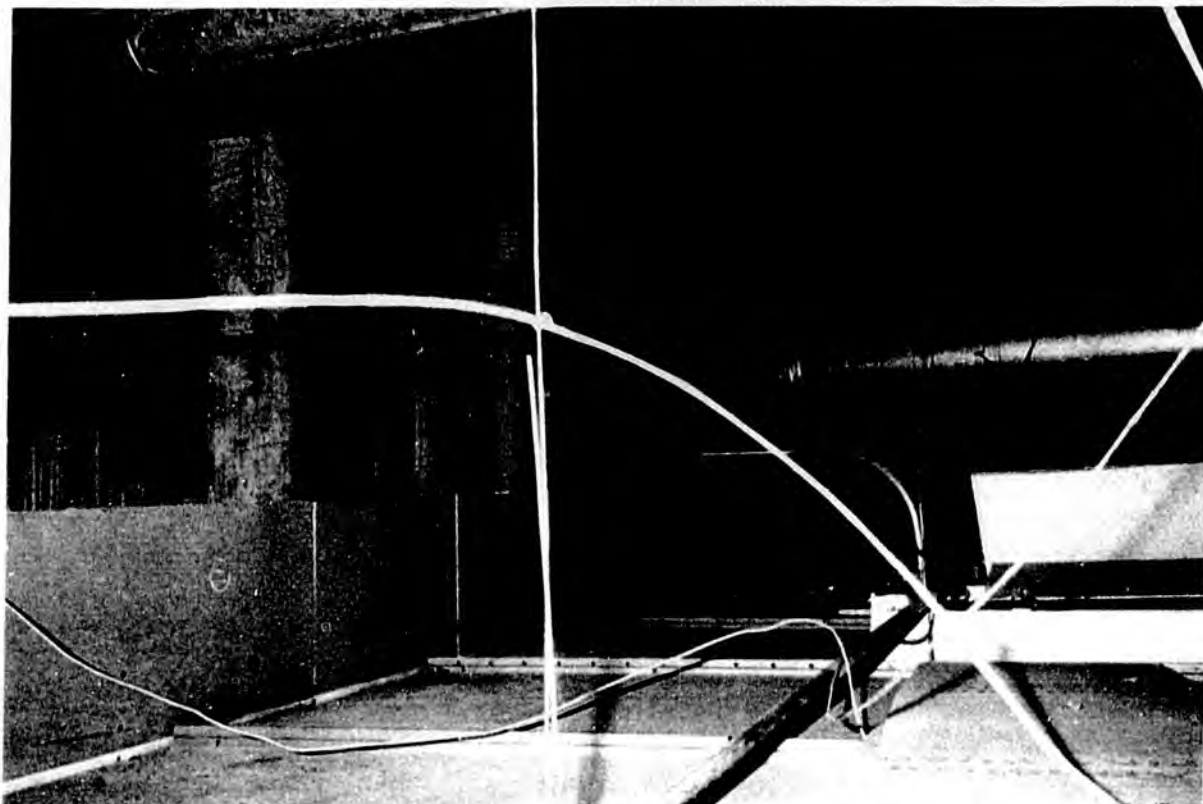


Photo #38

Exposed Wood Stud Walls Above Ceiling

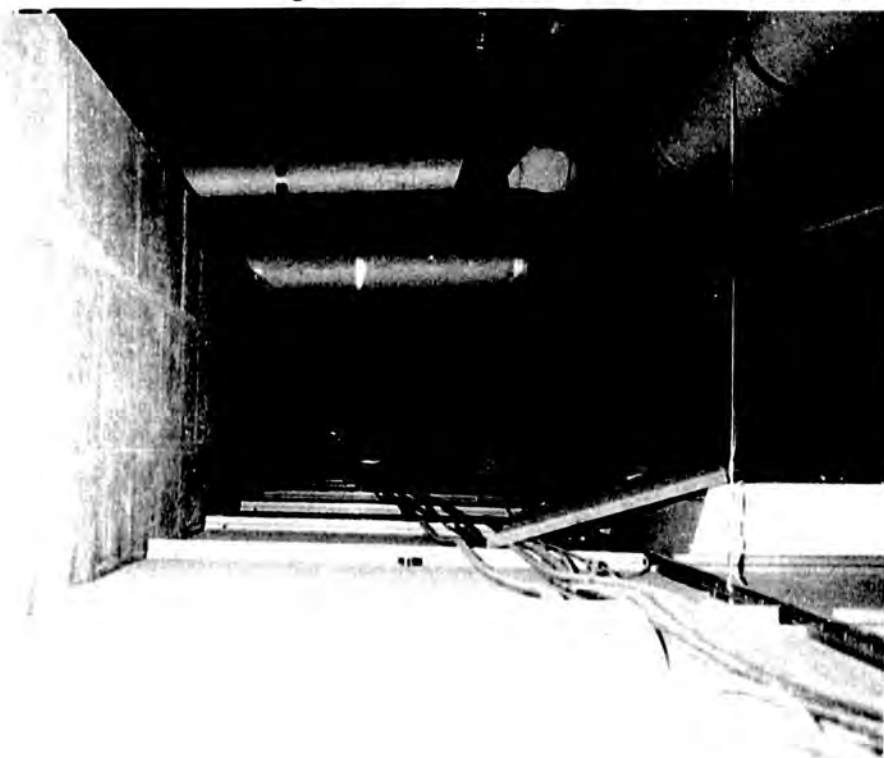


Photo #39

Masonry Wall Above Ceiling

PHOTOGRAPHS



Photo #40

Typical Plumbing Lines in Ceiling Plenum

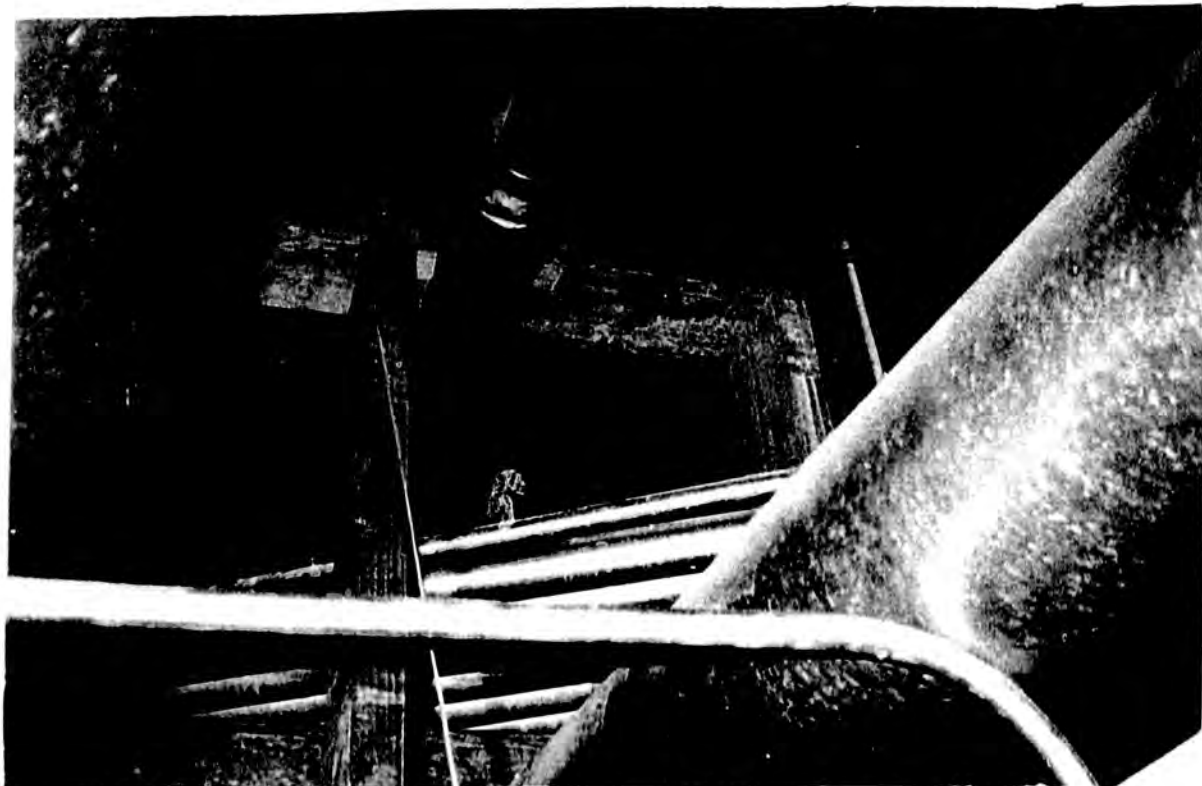


Photo #41

Utility Crossings in Ceiling Plenum

PHOTOGRAPHS

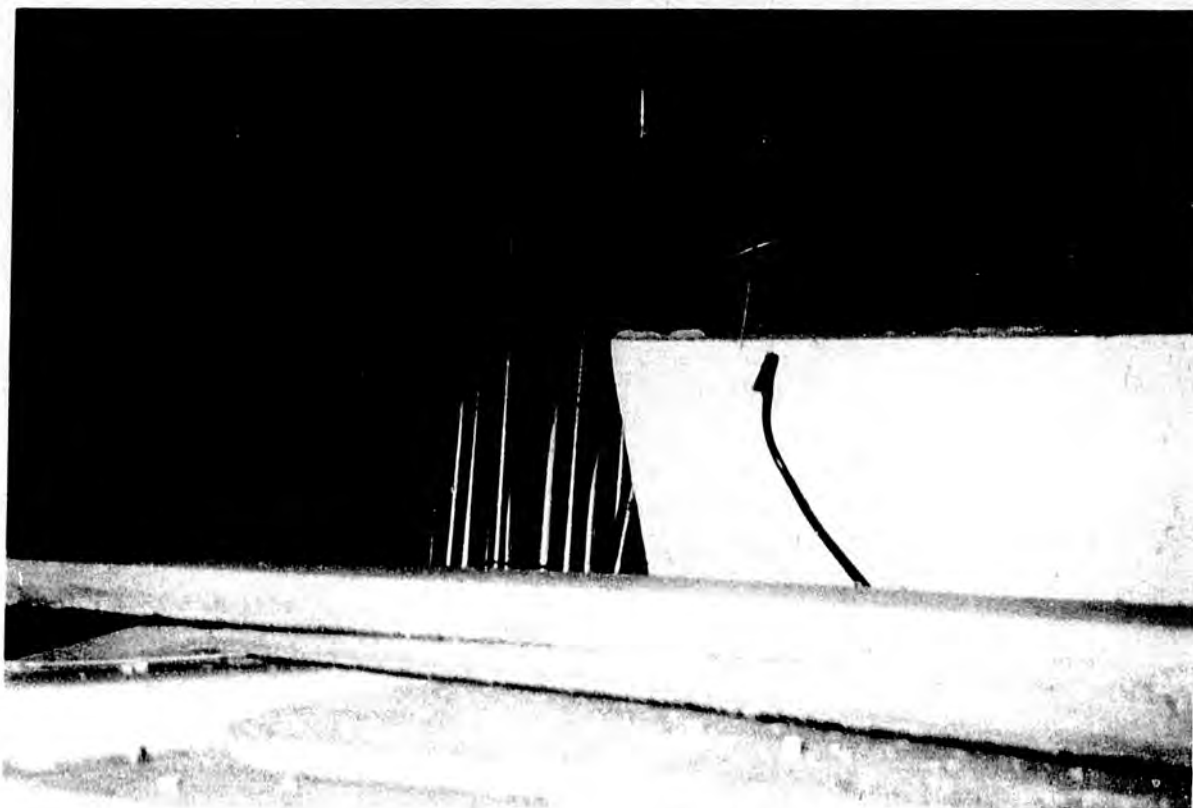


Photo #42

Conduit Risers in Ceiling Plenum

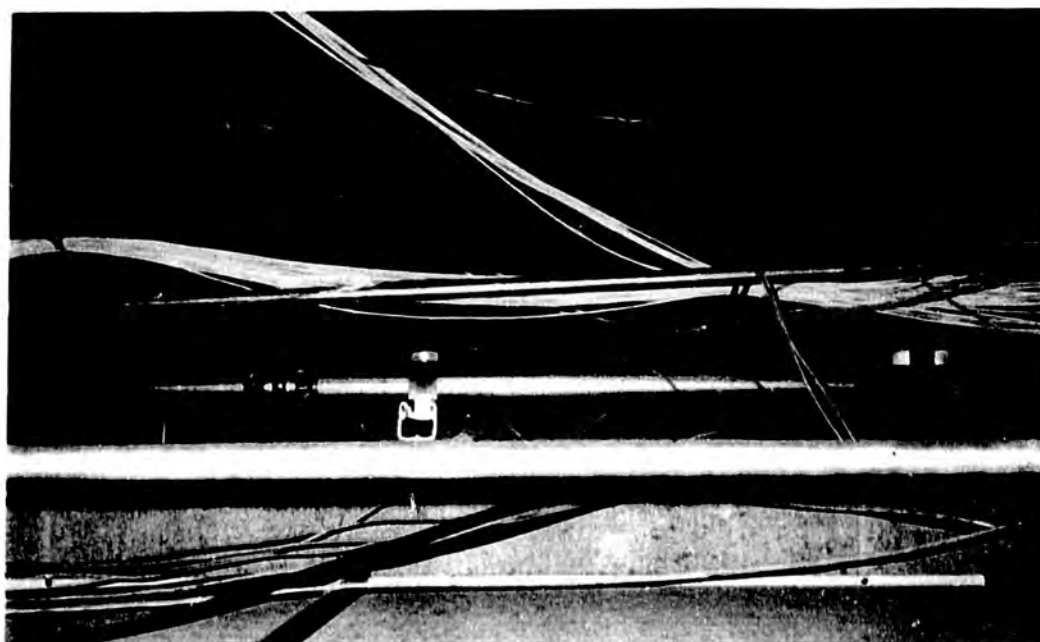


Photo #43

Wiring (non-rated) in Ceiling Plenum

F. STRUCTURAL

LOFTUS ENGINEERING ASSOCIATES INC.

Building Description

The Fairbanks Courthouse is a four-story structure 150 feet by 120 feet in plan with a sizable mechanical penthouse on the roof. At the ground/first floor, there are single story extensions at the front and rear of the building. These extensions are approximately 25 feet and extend across the full width of the building. At the first floor there is an 8½ foot setback from the column line to the building line creating a second floor soffit along the north and south side of the building. The remainder of the building, second floor to roof, has a regular rectangular layout without re-entrant corners or vertical irregularities.

Most of the courthouse structure is a steel frame with wide flange columns and girders. The floor beams are open web steel joists spanning between the girders. The floors and roof are reinforced concrete slabs poured on corrugated metal form deck. There are two stairway or stairway/elevator cores, one at the west and one at the east end of the building, which are constructed of cast-in-place concrete walls, beams, and floors. The penthouse is framed with wide flange steel columns and beams with a steel roof deck. The first floor extensions have concrete masonry walls supporting open web steel joists and a concrete roof deck.

The foundation for this building is cast-in-place concrete. Large spread footings support the steel columns and strip footings support CMU walls and concrete walls. The first floor is a 4 inch concrete slab on grade.

The lateral load resisting system for this building relies on the steel moment resisting frames in both the E-W and N-S directions. In the north-south direction, all eight frame lines act to resist lateral loads. In the east-west direction, only the center two of four frame lines are effective in resisting lateral loads. The moment connections between girders and columns are constructed using cover plates with full penetration welds to the columns and fillet welds to the girder flanges. The girder flanges are not directly connected to the columns. The concrete walls at stairwells and the elevator shaft, as well as the CMU walls at the first floor, have some capacity to resist lateral loads. However, these elements were not designed as shear walls to resist horizontal loads, nor were they detailed to provide the levels of ductility required by current building codes. While the walls provide some redundancy, they cannot be relied on to resist lateral loads due to wind or earthquakes, and should be ignored in evaluating this element of building performance.

F. STRUCTURAL

Existing Conditions

The main steel beams, columns, and connections in the courthouse building were examined in a few locations above the architectural ceiling. These buildings components are all in fair to good condition. The moment connections were not cleaned and painted after field welding, as would be the case under current standard practice. As a consequence, the welds and adjacent heat-affected steel all have surface corrosion. No welds were found in the brief field examination which showed any deep rust.

The structural concrete at the stairwells is in good condition. No large cracks or spalling concrete were found. There are some tight, irregular cracks in the concrete walls which are the expected result of concrete shrinkage as it dries. One concrete construction (cold) joint in the northwest stairwell shows evidence of slight movement. This may have been a result of the recent (October 5, 1995) earthquake, but is not a serious problem. The concrete masonry walls at the front and rear of the building are in good condition and do not show signs of movement or deterioration.

There are two areas where structural related building deficiencies were observed. One is in the first floor mechanical room on the west end of the building. In this room are two large air handling units which are suspended from the structural roof above. These units are simply hung and do not have the required angle bracing to keep them from swinging and perhaps falling during an earthquake. The second deficiency is in the area of the northwest stairway at the second, third, and fourth floors and on the west side of the law library at the first floor. In these areas, there are CMU partition walls which do not tie to the structure above. In at least one area, these walls have no vertical reinforcement or grout. Walls such as this are extremely vulnerable to falling during an earthquake. In fact, one of these walls moved enough in the recent quake to cause large cracks in the architectural covering.

Structural Analysis

A preliminary analysis of the courthouse structure was made in order to determine if it meets the requirements of the current building codes. This analysis was based on original as-built drawings dated May 15, 1962, prepared by B.C. Hamilton. Due primarily to the penthouse, the structure has different size beams and columns in adjacent frames. In order to simplify this analysis, only one typical frame in each direction was modeled. Dead loads and floor live loads were based on the original design drawings. A snow load of only 30 psf was used in the gravity analysis. The reason for using this non-code value was that it was the original design load. In addition, there is documentation from the 1992 Re-roof project indicating that the building is close to its design limit at the reduced snow load. As specified in the current

F. STRUCTURAL

Fairbanks code, one-half of the design snow load of 50 psf was included in the building weight for seismic calculations. Based on the 1994 UBC, the seismic base shear and the vertical distribution of shear through the building were determined. These lateral loads were combined with gravity loads and applied to the typical frames. The frames were also analyzed under gravity loads alone.

Output from the frame analyses gives design Moments, Shears, and Axial loads in all of the beams and columns. A selected number of the critical members were checked to compare the design loads against beam or column capacity. The results of this check indicate that for both gravity and lateral loads, the courthouse structure is close to its design capacity. In fact, at the fourth floor and roof there are some members where loads exceed the capacity. This situation would be worse if a design snow load of 50 psf were used. The results of these analyses do not necessarily indicate that the building is unsafe. First, the analyses was only preliminary in nature and refinements would be made in a detailed design check. Second, design live loads are essentially a worst case condition and are rarely reached. The code, in fact, allows live load reductions based on the tributary area affecting a particular member and this refinement was not included in the preliminary design deck. Further, an analysis of all building frames would result in a better understanding of the lateral load distribution and its effect on the structure. This might result in either increasing or decreasing the design loads to particular members.

Recommendations for Renovation

The Fairbanks Courthouse, in general, is in good structural condition and meets most of the code requirements for strength and stiffness. There are no serious problems, from a structural standpoint, which would preclude the renovations required. However, if it is decided to renovate the Courthouse building, several structural related work items should be anticipated.

1. **A detailed inspection of all CMU partition walls will be required.** It can be anticipated that most will require additional reinforcement and grouting. They also should be extended up to or structurally tied to the slabs above.
2. **All major mechanical equipment which is to remain in service should be inspected for stability during a large earthquake.** At least two air handlers will require lateral support.
3. **A detailed structural analysis of the entire building should be made.** In order to meet the current code requirements for snow and earthquake loads, it will probably be necessary to strengthen some of the roof beams and their connections to the columns. In a worst case, this could be as many as 38 beams and 76 connections.

G. MECHANICAL

MBA CONSULTING ENGINEERS INC.

The following paragraphs will address the mechanical systems for the Fairbanks Courthouse, as related to the deficiencies and requested improvements described in the proposed statement of services prepared by the Alaska Court System.

This report will summarize the reported deficiencies and requested improvements. It will provide a description of existing mechanical systems and their operation, provide an analysis of problems associated with the current systems, and make recommendations for system upgrades. Apparent code deficiencies are also included for consideration by the authority having jurisdiction.

Summary of Deficiencies and Requested Improvements

Complaints include inadequate heating and cooling of the building, problems with air circulation, and too few control zones. Requested improvements include a new energy efficient control system and a flexible ventilation system sized for increased electrical cooling loads.

Existing System Description

Ventilation System: Each floor is provided with a two-deck multi-zone air handling system. The fan units are located between the east stairwell and men's restroom on floors two through four and serve the floor below. The unit for the fourth floor is located in the Penthouse. The first floor has an additional unit located in the mechanical room at the northwest corner of the building.

Each unit is provided with a heating coil and up to five face and bypass dampers at the unit discharge. The principal of operation is that each face and bypass damper regulates a constant supply airstream thru or around the heating coil or a mixture of both to satisfy the setpoint of a thermostat located in the space.

Typical zones include four perimeter zones by exposure and a single interior zone that is not affected by solar or heat loss influences. This type of system relies on zones controlled by one thermostat having similar load characteristics. There is a single duct off the unit discharge for each control zone and air diffusers for each ventilated space.

The air supply to each multizone unit is preconditioned by heating and chilled water coils located in the penthouse. The return air path is via the ceiling plenum of each floor to an individual duct shaft connected to a return

G. MECHANICAL

fan plenum on the fourth floor near the (northwest) stairwell. The return fan is a 49 inches DWDI centrifugal unit. The unit discharge is ducted to a relief opening thru the roof and also back to the penthouse. The heating coil at the penthouse is on the return air- stream only. Outside air and return air is mixed thru panel fans and then cooled if required with chilled water coils. A vane axial fan is used to pressurize the multizone fan room plenums.

Heating System: The building heat source is district steam. The steam is reduced to 15 psi in a below grade vault outside the northwest corner of the building. A heat exchanger in the mechanical room generates heating water for circulation throughout the building. A three inch primary heating main, with two base mounted heating pumps, circulates to secondary pumps feeding the third and fourth floor radiation loops and multizone and penthouse heating coils. Each floor is provided with perimeter baseboard heat with two position thermostat controls. Entries are provided with fan coil heating units. The maintenance office and garage have unit heaters.

All terminal heating devices are of original building vintage. However, the steam convertor and all heating pumps are new from approximately 1988.

Cooling System: The courthouse uses ground water for cooling. A deepwell pump is located on the north side of the building. Groundwater is pumped through a 3 inch copper main to the penthouse chilled water coils. The water is chemically treated in the mechanical room to prevent sediment scaling of the chilled water coils. The water is then wasted to the storm drain system.

Exhaust Ventilation System: All toilet rooms are provided with exhaust ventilation. Six fan are indicated on the original drawings, however, EF-1, 2, and 3 were the only units actually confirmed during the fixed investigation. Make-up air for toilets is through door louvers communicating with the corridor. A number of door louvers were blanked off.

Temperature Controls System: The temperature controls system is pneumatic. A new dual air compressor unit is located in the electrical vault. The system has been upgraded over the years, including some European manufactured control components. The maintenance staff has built a main panel indicating system status for fan units, outside air, and penthouse equipment.

Fire Protection System: The building is fully sprinklered including upright heads provided in the ceiling plenums. A flow alarm valve is provided for each floor. The sprinkler service is located in a closet on the southeast corner of the building. The system was installed in 1987.

G. MECHANICAL

Domestic Water System: Piping and fixtures are of original building vintage. Domestic piping is copper, however, some galvanized piping is used for stops and at drain connections. There appeared to be good water flow to fixtures at faucets and flush valves. Faucet aerators have been removed. A new steam to domestic hot water generator has been installed.

Analysis of Operational Problems

An analysis of the existing ventilation, heating, and cooling systems indicates that much of the equipment and duct distribution system is incompatible with desired requirements and performance characteristics for an upgraded facility. Consideration must be given to system type, system capacity, ability to upgrade system control, and with respect to current age of equipment compared to accepted useful life. The following paragraphs address these issues relative to the existing systems.

Air distribution for each floor is supplied by a constant volume multizone air handling unit. The limited number of control zones available is inherent to this type of system. Ducting for each zone originates at the air handling unit and the quantity of zones is dependent upon the coil face area and the number of face and bypass dampers to tap into.

An earlier upgrade attempted to provide additional zones by installing control dampers at some of the outlets to emulate operation of a variable air volume system. The upgrade did not address the affect of these dampers with regard to varying duct static pressure and the potential to relieve excess air to portions of the system without damper control. A 1983 report, prepared by Stephen Kailing, indicates the results of the system retrofit were not satisfactory.

There are approximately 14 heating zones per floor that are located around the perimeter of the building. These zones are controlled independent of the ventilation zones with separate thermostats. The separate control will allow the baseboard to act as "re-heat" for room ventilation air. In rooms that do have air system control, the thermostats will want to fight each other resulting in inefficient operation.

With regard to ventilation system capacity, the total original design air flow for the facility is 51,540 cfm; which is .78 cfm/ft² based on 69,495 ft² of conditioned space.

G. MECHANICAL

A block heating and cooling load for the facility was performed using thermal performance and area data from the Energy Management Report for Fairbanks Court and Office Building, prepared by North American Energy Services. Results indicate a peak cooling cfm for a constant volume system to be 85,134 cfm, or 1.23 cfm/ft². This value assumes one person per 100 ft², 3 watt/ft² of lighting, and 1 watt/ft² miscellaneous power. This corroborates the results of Stephen Kailing's report that current airflow is 40 percent low based on a constant volume system.

A variable air volume system would require 74,000 cfm allowing for a diversity of zone peaks. This is still 30% higher than the capacity of the installed equipment.

The original equipment for this facility has been in place since 1962. Although maintenance service appears to have been excellent over the years, the equipment is showing its age. The multizone units interior insulation has begun to erode away. The duct system interior is probably dirty based on dust and dirt build-up on equipment and grille faces.

In addition to age and condition, it will become increasingly difficult to obtain spare parts for equipment repair and service.

Code Deficiencies

Code deficiencies relative to 1994 Uniform Codes are as follows:

1. Fire/Smoke dampers are required in accordance with UBC 713.10.
2. Door louvers for exhaust air make-up at toilets are not in accordance with 1-hour corridor requirements.
3. Ceiling plenums contain combustibles, UMC 601.3.
4. Elevator shafts are not vented per UBC 3004.

Corrections of these items are at the discretion and direction of the authority having jurisdiction.

G. MECHANICAL

Recommendations

Observations made during the two days on site and subsequent analysis point to ventilation system replacement, rather than any form of upgrade. Insufficient control zones is inherent to a multizone system. The existing system capacity is sufficiently low relative to air volume required and the age of equipment all point to an upgrade being impractical.

A properly designed mechanical system for this facility would include the following changes:

1. **Remove all existing multizone air handling units and convert these spaces into a supply air shaft.**
2. **Reuse return air shaft including return fan. Upgrades would include addition of fire/smoke dampers at shaft penetrations, duct modifications as required to accommodate shaft construction, and addition of variable speed drive to the return fan.**
3. **Return duct and relief may be reused, but may create velocity noise at peak building operating hour and maximum return air capacity.**
4. **Remove mechanical equipment in Penthouse. Provide new built-up 74,000 cfm system to include:**
 1. 85 ft² of O/A louver.
 2. 100 ft² of preheat coil, 1,851 MBH, 124 GPM.
 3. 148 ft² of chilled water coil, 140 tons of cooling capacity.
 4. 185 ft² of filter area including 30% efficient pre-filters and 85% efficient bag filters.
 5. Two new 37,000 cfm plug fans in parallel with variable speed drives, 40 hp each.
 6. Discharge silencers and duct to supply air shaft.
5. **Remove existing supply air duct and diffusers. Provide new medium velocity spiral duct distribution system from shaft and provide variable air volume boxes for each control zone; tie-in baseboard control to associated VAV box.**
6. **Provide new direct digital control system. Pneumatic hybrid system can be considered for control of large actuators.**
7. **Replace existing exhaust fans and clean or replace exhaust duct work.**
8. **Heating system will remain in place with modifications as required to accommodate ventilation system changes.**

G. MECHANICAL

These system changes, along with upgrades to the building envelope, will provide desired results with regard to heating, cooling, air circulation rate, and control zones. The system will be capable of responding to varying electrical loads, and additional duct taps with new boxes will provide additional zone flexibility. The system also takes advantage of load diversity, recognizing that solar influences do not occur on all exposures at the same time, and that loads change relative to occupancy schedules.

II. ELECTRICAL/COMMUNICATIONS

LAKE & BOSWELL CONSULTING ELECTRICAL ENGINEERS

Electrical Systems

On October 10, 1995, Michael Goulding of Lake & Boswell Consulting Electrical Engineers Inc., performed a cursory electrical inspection of the Alaska Court System Fairbanks Courthouse. The purpose of the inspection was to examine the condition of the existing power distribution, lighting, and communication systems in the building. A brief interview was held with Mr. Larry Kraus, chief technical and maintenance person at the Fairbanks Courthouse, discussing the existing electrical power distribution, telephone, intercom, duress signaling, fire alarm, and computer networking systems. During this visit, several rooms on each floor, the stairways, mechanical and electrical rooms, and the elevator equipment room were observed.

Electric Power Distribution

The power system is approaching 35 years of age, which is near the end of its useful life. The incoming service is 208Y/120 volt three phase, 1600 amps, which feeds a main distribution panel in Room 163. There are significant safety and code violations in the main distribution panel. Cables exiting the main distribution panel pass through sharp-edged holes in the rear of the panel, and conduits exiting the panel are terminated in a sheet of metal which is not an original part of the panel. There is also evidence that the main cross bus in the main distribution panel has been immersed in flood water at some time in the past. The main distribution panel needs to be replaced with a larger unit, but the room is too small. All of the outlying panelboards are fully loaded (no spare circuits left). There is a clear need for more circuits which can only be addressed by adding more panelboards. Adding more panelboards would require more feeders, but the main distribution panel is also fully loaded. Finally, the main distribution panel and downstream panelboards are by a manufacturer who is no longer in business.

Lighting System

The existing lighting system is at the end of its useful life and needs to be replaced. The system is primarily made up of lay-in 24 by 48 inch fluorescent fixtures mounted in a suspended ceiling. The majority of the ceiling tiles are in poor condition and will need to be replaced. It is understood from Mr. Kraus that many of the electrical branch circuits (receptacles, etc.) utilize the lighting fixtures as raceways, which is not a recommended practice. As a part of any future remodel work, some space above the new ceiling would be a return air plenum for the building heating and ventilation system. It is common practice to have return air pass through the lighting fixtures, but the current fixtures do not allow this.

II. ELECTRICAL/COMMUNICATIONS

Telephone System

The existing telephone wiring system is obsolete and needs to be replaced. Many of the cross connect cabinets contain wooden terminal blocks with soldered connections which are difficult to maintain. It is understood that the District Attorney and Judicial Services offices are served by the "Statewide" telephone system. Telephone service to the rest of the Fairbanks Courthouse is through a PBX system provided by Winter Telecom of Anchorage. The PBX is maintained by Fairbanks Courthouse staff, and is approximately four years old.

Miscellaneous Communication Systems

The existing duress signaling system was built up by a subcontractor at the University some years ago; the system works, but is not easy to reconfigure or maintain.

The courtrooms and jury rooms have special voice recording needs for record keeping. There is currently no existing raceway or wiring system which addresses this well. There is much exposed wiring which is subject to damage due to personnel activities. Research will be required to determine what products are available to update these systems.

Fire Alarm System

The existing fire alarm system appears to be functional and well maintained overall; Mr. Kraus had no complaints with the system.

Computer Networking

The Fairbanks Courthouse does not appear to have an extensive computer network system at this time. There were no crossconnect cabinets or telecom closets established to allow effective installation or maintenance of a computer network.

Access Control System

The Fairbanks Courthouse currently has a card access system by Software House. This system was installed approximately a year ago and appears to be in working order.

II. ELECTRICAL/COMMUNICATIONS

Conclusion and Recommendations

1. **Installation of a new 480V service and main distribution panel in the northeast corner of the building is recommended.** Assuming one floor is remodeled at a time, a new electrical room would be provided on each floor. Smaller distribution panels in each electrical room would be supplied by a 480V feeder from the main distribution panel. New outlying panelboards would then be served from the electrical rooms on their respective floors. A battery backed emergency lighting power inverter on each floor would also be provided. To prevent an electrical distribution failure event from affecting the emergency power inverters, it is preferred not to locate the inverters in the electrical rooms. The new electrical distribution system would not occupy the mechanical rooms due to required mechanical system expansion.
2. Lighting technology is moving to energy efficient T-8 bulbs with electronic ballasts. It appears that a good portion of the buildings' electrical load is consumed by the lighting system. The Courthouse would benefit from reduced electrical consumption and reduced cooling costs if the lighting system were updated. **Due to the return air issue and energy efficiency of modern lighting systems, it is recommended that the courthouse install a new lighting system.** A portion of the new lighting fixtures and all exit signs will be fed from the battery-backed emergency power inverters as required. Courtroom lighting would require special attention to address security issues and appearance. Exterior lighting would also be upgraded as desired by the owner.
3. **The entire telephone wiring system needs to be replaced, and new telecom closets should be provided in the revised floor plan.** If there is any problem with the existing PBX, it is recommended that the courthouse have their vendor determine a solution so it can be addressed during the remodel project. The revised telephone system could also address courthouse intercom needs.
4. **The existing duress signaling system should be replaced with a new system.** There are commercial products available which can serve the purpose; however, some research would be required to see what is available. This is an issue which the Courthouse should consider before design work for new systems is begun. There is a tendency for manufacturers to roll duress signaling, access control, and even fire alarm functions into one system. It is desirable to keep these systems separate as much as possible to maximize reliability and minimize response time. If a new access control system is carefully selected and laid out, duress signaling and access control could be combined with good results. Combining these systems with the fire alarm system in any event is not recommended..

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

NORTECH ENVIRONMENTAL AND ENGINEERING CONSULTANTS

Nortech completed the preliminary environmental assessment segment of the Fairbanks Courthouse Inventory and Condition Survey. The effort was specifically focused on hazardous materials that would significantly impact the cost of a major building renovation. The work scope included: a review of historical hazardous materials records and building documents provided to the survey team; interviews with building personnel; a limited visual walkthrough inspection of the facility; random sampling to characterize unknown suspect materials which could not be identified visually; and preparation of this condition survey report. The Courthouse Inventory and Condition Survey environmental scope of work did not include a detailed inspection and quantification of hazardous materials present or assessment of the site and adjacent property conditions.

The environmental assessment identified potential concerns regarding Asbestos, Lead Based Paint (LBP), Underground Storage Tanks (UST), site conditions and Polychlorinated Biphenyls (PCBs). Following the Summary Of Findings section, each of the identified concerns is addressed in detail separately including a brief background description, analysis of results, and a discussion of recommendations.

Summary of Findings

The preliminary environmental assessment determined the following conclusions and recommendations regarding the environmental concerns identified during the Courthouse Inventory and Condition Survey:

- ◆ **PCBs** Polychlorinated Biphenyls (PCBs) were identified as a concern in a electrical transformer as well as in the fluorescent light fixtures ballasts located on-site. Available information from the building maintenance files and personnel interviews reported that no remaining PCB concerns are present on-site.
- ◆ **LEAD** Lead based paint (LBP) is present in the building. However, sample results indicated that only the base layer of paint exceeds the Federal action level for public housing. While LBP is present the significance of this concern is limited to project design and management. A properly developed and managed technical specification for LBP and demolition which accurately informs the contractor, and requires the development of work plans involving LBP engineering controls and verifiable work practices should eliminate any incremental cost to required project demolition.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

- ◆ **ASBESTOS** Asbestos Containing Materials (ACM) are present on the interior and exterior of the Courthouse building envelope. Of greatest significance is the damaged friable asbestos material in the interior portions of the building. Beyond the scope of the renovation effort building services needs to provide for regular inspections and repair of friable ACM. Federal and state regulatory requirements specify a detailed AHERA asbestos inspection and quantification of ACM for project design efforts. During renovation it is recommended that all friable material be abated. In order to minimize ACM renovation project cost it is recommended that non friable ACM be Managed In Place (MIP) under the development of an AHERA certified management plan. To eliminate life cycle asbestos costs, abatement of floor tile with asbestos or contaminated adhesive should be seriously considered and developed as a project Additive Alternative. Exterior ACM building panels will involve no asbestos life cycle or renovation cost.
- ◆ **UNDERGROUND STORAGE TANK (UST)** An abandoned incinerator Underground Storage Tank (UST) is present on-site in noncompliance with current Federal and State regulations. UST closure and assessment in accordance with current ADEC regulations is recommended.
- ◆ **SITE CONDITIONS** Further assessment and investigation of site conditions is warranted during design. In association with the UST closure sampling, a routine Environmental Assessment (EA) of the parcel and adjacent properties including interviews and researching historical records is recommended.

The following survey sections discuss each of the identified concerns separately in detail including a brief background description, analysis of results, and a discussion of recommendations.

PCB Background

Polychlorinated Biphenyls, commonly known as PCBs, belong to a family of organic compounds known as chlorinated hydrocarbons. PCBs were produced in the United States between 1929 and 1977, when the primary U.S. manufacturer voluntarily stopped production due to mounting public concern over their harmful environmental effects. Once released into the environment, PCBs tend not to break down into less toxic substances, but persist and take several decades to slowly decompose. By remaining in the environment, PCBs can be taken up and stored in the fatty tissues of all organisms from which they are slowly released into the bloodstream. Through bioaccumulation and biomagnification, the cumulative quantity of PCBs consumed by humans can

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

be quite significant. Chronic effects include reproductive system effects, gastric disorders, skin lesions (chloracne), and possible tetragenic, liver and nervous system damage. They are presumed carcinogens in humans based on studies which have shown them to cause cancerous tumors in animals. Acute effects in high doses can damage the liver, and exposure to the vapor can irritate the eyes, nose and throat.

Courthouse PCB Concerns and Recommendations

The PCB area of concern identified in the Courthouse relates to the transformers on site and ballasts in the fluorescent lighting fixtures. Building maintenance reported that all light fixture ballasts in the building have been removed (1989). The single electrical transformer observed on-site is located on the north side of the building. The unit is owned by MUS and was reported by Larry Colp, MUS electrical engineer, to have been sampled on January 5, 1987, and analysis results reported a less than 1% PCB content. *Based on available information PCBs will not have any impact on renovation design or project costs.*

Lead Based Paint (LBP) Background

Elemental lead (Pb) is a heavy metal at room temperature and pressure that can combine with various other substances to form numerous lead compounds. Lead is toxic when absorbed into the body at significant doses by either inhalation or ingestion. Lead adversely affects numerous body systems and causes health impairment and disease that arise after periods of exposure as short as days (acute exposure) or as long as several years (chronic exposure). Acute exposure can lead to acute encephalopathy, a condition affecting the brain that develops quickly into seizures, coma, and death from cardiorespiratory arrest. Chronic exposure may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

Typically, lead concerns are divided into three categories: residential housing, worker safety during handling and removal/demolition efforts, and final disposal of lead-containing materials. Currently, there is no requirement for lead containing materials to be removed except in residential public housing. The U.S. Department of Housing and Urban Development (HUD) guidelines for public housing consider $> 1.0 \text{ mg/cm}^2$ by X-ray Fluorescence (XRF), or $> 0.5\%$ by weight (quantitative measures) as abatement action levels. However, the presence of lead based paint, while not always a significant inhabitant concern, raises a renovation worker safety and final waste disposal concern regarding LBP material removed during demolition. LBP demolition debris must be properly disposed of in accordance with applicable regulations. A Toxicity Characteristic Leaching Procedure (TCLP) test is required for the lead-containing debris to determine if it is hazardous or non-hazardous.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

Courthouse LBP Inspection and Sampling Results

A limited grab sampling effort of selected locations throughout the Courthouse was conducted. Complete layer samples were obtained from random locations on various floors and building spaces throughout the facility to obtain a representative characterization of the paint surfaces within the building. The results are listed below.

LEAD CONTAINING PAINTS, SUBSTRATE		LEAD CONTENT	
		(PPM)	% by weight
Sample #1012-01P	Stair A - East, Fourth Floor First tread below north landing	25,900	2.59
Sample #1012-02P	Stair A - East, Fourth Floor West Wall at center landing	985	0.0985
Sample #1012-03P	Corridor 327 South wall outside Room 340	24.4	0.0024
Sample #1012-04P	Lobby 257 East wall outside Room 256	183	0.018
Sample #1012-05P	Storage Room 130 East wall, south end	510	0.0510
Sample #1012-06P	Security 141 North wall outside Room 137	3550	0.3550

The sample results of this lead paint survey at the Courthouse ranged from 0.0024% to 2.59% by weight. Only one composite paint sample taken from the metal stairwell on the east end of the building reported lead levels in excess of HUD's action level of 0.5% (5000 ppm).

Sample #1012-06P was examined further by electron microscopy to determine if a particular layer of paint contained a majority of the lead. Analysis revealed a layer of primer was painted on the gypsum board, followed by a layer of paint containing the majority of the lead, and several subsequent layers of non-lead based paint. See Appendix A. Based on the available laboratory results it appears that a LBP layer is present throughout the building. However, due to the additional non-lead layers in the areas other than the stairwell only the stairwell sample exceeded the action level which is based on the percentage of lead content.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

Courthouse LBP Concerns and Recommendations

Therefore, based on federal standards, generally considered conservative, and the limited sample results reviewed, there is not a significant wide-spread lead concern in the Courthouse. However due to its presence *it is recommended that design include a LBP and modified demolition technical specification that informs the contractor and requires him to develop work plans and engineering controls that properly address these concerns in his base bid.* This will address worker safety and waste disposal concerns and avoid changed conditions during renovation, project delays and cost overruns. The following briefly summarizes the issues and contractor requirements necessary to address the LBP concerns during demolition at no significant incremental cost.

First and foremost, the LBP contract documents will inform the contractor of the anticipated presence, location and significance of the identified lead based paints. Where renovation will require encountering and/or removal of LBP materials during demolition it will be necessary for the contractor to develop a work plan that will identify the work practices, engineering controls, personal protective equipment and monitoring that will be undertaken in order to adequately protect the workers as well as comply with applicable state and federal regulatory requirements. However, no special containment or abatement efforts are anticipated. In brief, removal of lead containing building materials intact, as a whole unit, using demolition techniques that do not concentrate (removing only the paint layer) or allow the contaminant to become airborne (flames, torches, heat guns, etc) will effectively eliminate any extensive lead abatement effort and/or contractor cost. Following development of an approved work plan actual LBP demolition efforts should be limited to a brief pilot effort to prove up the work plan's proposed techniques.

If properly developed, this approach to LBP hazards in the contract documents and during project management will eliminate any significant project LBP cost.

For lead based paint (LBP) abatement waste materials a limit of 5 ppm in the TCLP extract is allowed. If the LBP demolition waste is non-hazardous (i.e., the TCLP is less than 5 ppm) the debris may be disposed of as general construction debris at the FNSB landfill. Again through the development of appropriate contract documents and an approved work plan utilizing appropriate work practices and engineering controls, the demolition effort can avoid concentrating LBP materials into hazardous wastes requiring additional cost for disposal. This can be accomplished by avoiding concentrating LBP and removing the entire LBP covered building material (e.g. the entire metal stairs). The TCLP procedure involves representative sampling of the entire LBP waste and typically does not exceed the allowable regulatory limit when the entire building component is removed.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

Asbestos Containing Material (ACM) Background

The term asbestos is used for a group of fibrous, naturally occurring silicate minerals which exhibit properties rendering them useful in commerce. During the past century, asbestos has been mined, processed, and used in thousands of products. Because of the exceptionally effective insulating, fire-resistant, and reinforcing properties of asbestos-containing materials (ACM), they have been utilized widely as surface-applied finishes (for acoustical, decorative, and fire-retardant purposes), and as thermal system insulation (TSI) in the construction of buildings, as well as in equipment used in buildings. Under certain conditions, ACM can release asbestos fibers into the air of buildings, which can be inhaled by and reach the lungs or occupants. At the relatively low concentrations of airborne asbestos fibers encountered by general building occupants, lung cancer and mesothelioma are the diseases of concern. Although public concern over asbestos in buildings has focused primarily on potential risks to general building occupants, there does not appear to be sufficient justification on grounds of risk to the health of general occupants for arbitrarily removing intact ACM from well-maintained buildings. Measures to control the release of asbestos fibers (from the disturbances of ACM, dust, or debris) should be employed routinely where needed during the operation and maintenance of buildings. Uncontrolled disturbance of ACM should be avoided whenever possible.

Courthouse ACM Inspection and Sampling Results

Asbestos is a known hazardous material in the Courthouse building. The identification of ACM was based on a building walkthrough plus document review from random sampling efforts performed by the maintenance department during small scale renovation efforts, State of Alaska Department of Transportation and Public Works reports, an Asbestos Survey Report prepared by Environmental Health Sciences - Alaska, and additional documents provided by the courthouse. The documents reviewed confirmed ACM, however locations and quantities were not reported. During the inspection no destructive testing or inspection of unaccessible spaces were included. For this report no additional sampling was performed as all suspect materials had been previously sampled or were identified visually. Utilizing as-built information and the above named documents, quantities of the types of ACM in the building have been roughly estimated and are included in the order of magnitude quantities provided below:

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

1. ACM Floor Tile Mastic and Cove Base Mastic, approximately 80,000 square feet. The 1964 as-built plans reported that vinyl asbestos tile (VAT) was installed throughout approximately 50% of the building. However, sample analysis of a limited number of samples taken by the maintenance staff have reported no VAT. While the extent of VAT is in question analysis of the tile mastic in locations sampled confirmed that the mastic contains asbestos. Therefore, it was assumed for this survey that all of the floor tile and adhesive is ACM. Based on as-built drawings there is approximately 80,000 square feet of the material.
2. Asbestos Containing Ceiling Tile (CT). The maintenance staff at the Courthouse reported that the CT had been sampled on numerous occasions and no ACM had been reported. The EHS Asbestos Survey Report confirmed this.
3. ACM Panel, approximately 25,000 square feet located in the curtain wall siding on the exterior of the building.
4. Thermal System Insulation (TSI), in linear feet. The EHS Asbestos Survey Report stated that the distribution piping was insulated with fiberglass on the straight runs. This was verified visually during the walkthrough inspection. For the purpose of this report, no linear feet of TSI on distribution piping have been included.
5. Thermal System Insulation (TSI), a minimum of 700 fittings (see Appendix B, site photos). The quantities of fittings were estimated from a review of the as-built drawings provided. The TSI on the roof drains measured approximately 500 linear feet. Roof drain bowls and fittings were previously confirmed as TSI during the EHS 1991 report. However building maintenance reported that all the roof drain ACM has since been abated during the recent reroofing project.
6. Wall material, roughly estimated to be approximately 200,000 square feet. The interior walls of the office suites were painted gypsum wall board. Previous sample results have reported the wall board to be free of ACM, however the joint compound was reported to contain 5-6% asbestos.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

Courthouse ACM Concerns and Recommendations

Asbestos containing materials are present on the interior and exterior of the Courthouse building envelope. Of greatest significance is the damaged friable asbestos material in the interior portions of the building. Beyond the scope of the renovation effort building services needs to provide for regular inspections and repair of friable ACM.

The proposed work is the selective renovation and new construction of the Courthouse. Ideally, if funding is available, a complete removal of all ACM within the building should be undertaken. This recommendation does not include the exterior ACM building panels. Concurrent abatement of the interior asbestos hazards will be more cost effective than future abatement efforts, avoid any future annual maintenance and regulatory expense, and avoid the higher abatement cost during the ultimate demolition of the building. *Therefore, it is recommended that project alternates be developed that would identify the cost to fully abate the asbestos hazard during the current renovation.*

Floor Tile: As stated previously, contrary to the as-built plans, sampling results have indicated that the floor tile may or may not be ACM, however the tile mastic contains asbestos. The same mastic is also used on the cove base. The intent of the renovation design would be to cover/encapsulate the majority of the floor tile with carpet and manage in place. In locations where the renovation design would require the contractor to remove floor tile to complete the design the mastic would be abated in accordance with applicable regulations. An additive alternate to abate the ACM floor tile and mastic is recommended.

ACM Panel: This non-friable ACM material is located throughout the exterior of the building. The exterior siding is composed of a layer of porcelain coated metal, one and one-half inch of yellow non-extruded foam, ACM panel, and a final layer of porcelain coated metal. In areas where it would be encountered/disturbed during renovation the intent of the renovation design would be to remove/abate the material in accordance with applicable regulations. If removal is required and the material is handled without causing the material to become friable (i.e. grinding, sawing, abrading) no additional costs should be assumed. The exterior ACM panel is not located inside the building envelope therefore it may remain in place and would not be a ongoing management concern. The ACM building panels will involve no significant asbestos life cycle or renovation cost.

I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

Thermal System Insulation (TSI): This friable ACM material is located throughout the building in ceilings and pipe chases and represents the ACM of greatest significance. It is recommended that all TSI be removed during the renovation project. In the event that all piping is to be replaced, removal of the ACM coated pipe is less expensive than removal of the insulation alone. Renovation cost estimates should include abatement of friable TSI.

Wall Material. As previously mentioned the majority of all interior walls are of non-ACM gypsum board with ACM joint compound. As a homogenous surface however the composite wall system contains less than 1% asbestos by weight and therefore is not considered to be ACM by EPA for disposal purposes. While there is no added ACM disposal cost there is a worker safety concern during demolition. As demonstrated during the recent ADA bathroom renovation the demolition concern can be managed through the development of properly developed technical specifications that accurately inform the contractor and require a work plan that employs engineering controls and work practices that adequately address these concerns. It is *NORTECH's* opinion, based on previous renovation efforts performed within the Courthouse, that properly designed contract specifications directing the contractor to use proper engineering controls and work practices will enable the interior renovation to be performed as a standard demolition project. The engineering controls and work practices should not constitute a significant increase in cost of the project.

Underground Storage Tank (UST) and Site Conditions

UST Background

In the past 20 years, an unprecedented amount of environmental legislation has been enacted at both the federal and state level. These new regulations and requirements involve the use of Underground Storage Tanks (UST) as well as site conditions on-property and off. Prior to renovation or construction it has been routinely and standard practice to complete environmental site assessments to further investigate the presence of on and off property concerns that may impact the proposed project. Recently promulgated UST regulations require secondary containment, registration of non-heating oil USTs, leak detection, spill and overfill protection and no longer permit abandonment in place. Typically the least cost approach to UST closure is removal. As part of the closure the tank excavation must be assessed and sampled for site contamination.

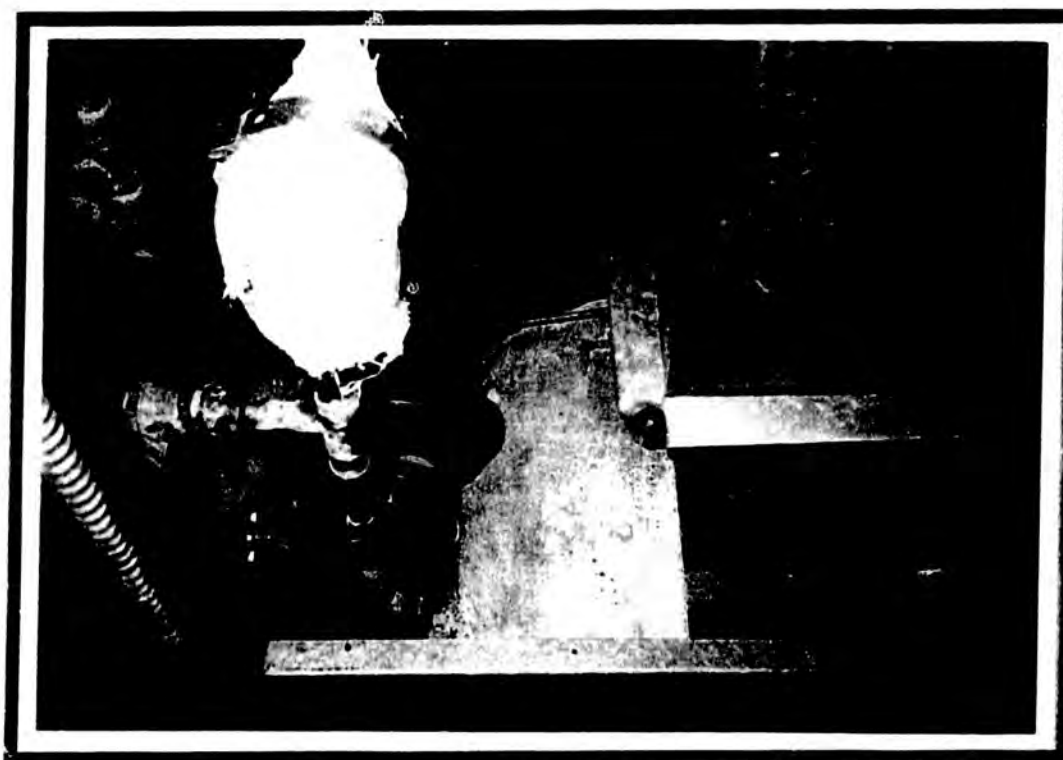
I. ENVIRONMENTAL/HAZARDOUS MATERIALS ABATEMENT

UST Concerns and Recommendations

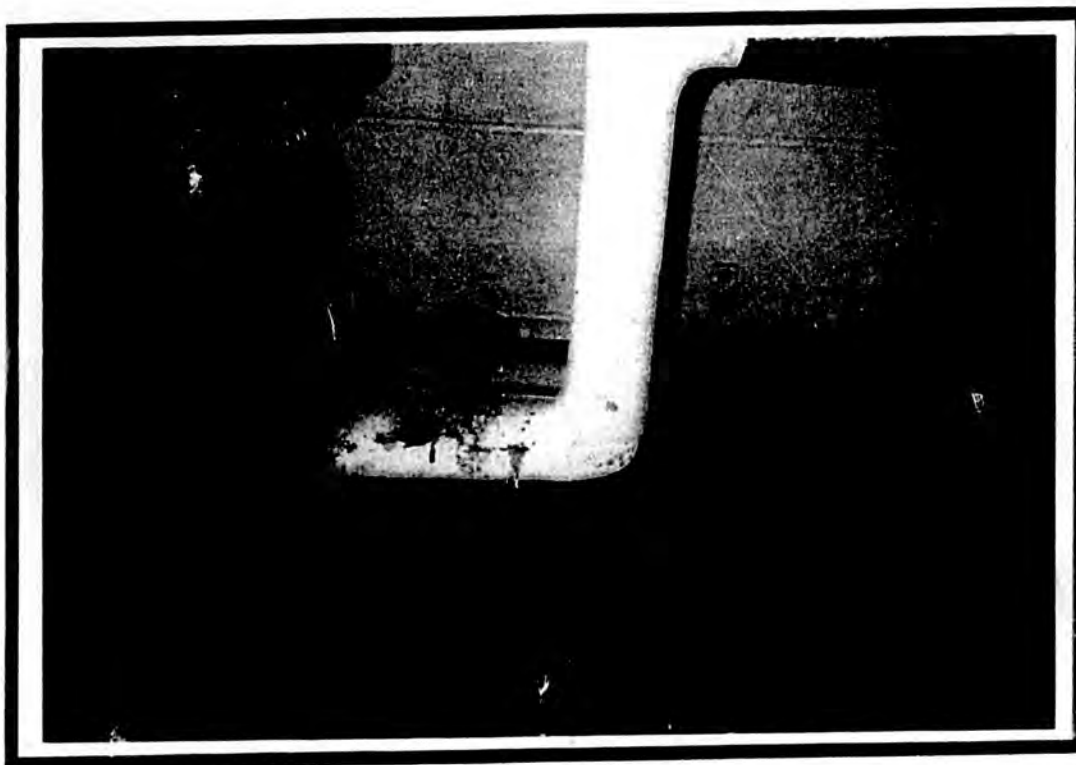
The Fairbanks Courthouse Inventory and Condition Survey work scope did not include a environmental site assessment or UST component. During the site visit, an abandoned 500 gallon UST previously used to supply fuel to an incinerator which has since been removed, was identified from as-built plans beneath a concrete pad at the west end of the building. Maintenance personnel confirmed the UST was abandoned in place. As a non-heating oil UST the tank is in non-compliance with current regulatory requirements for registration and closure. The condition of the tank and the impact it may have on adjacent soils, is unknown. UST closure and assessment in accordance with current regulations is recommended. Further environmental review of the Courthouse site is warranted during the design phase to evaluate the potential for contamination of the environment by hazardous materials or petroleum products that may be present within, adjacent to, or beneath the site. The evaluation would take into consideration both historical site uses and current operating practices as determined by a review of available environmental records, historical photographs and maps, and personal interviews. Any recommended site sampling could be completed in conjunction with the UST closure effort.



Description of Photo: Friable asbestos, north hallway ceiling, 3rd floor.



Description of Photo: Friable asbestos, north hall ceiling, 3rd floor.



Description of Photo: Friable asbestos fitting, 1st floor, mechanical room.



Description of Photo: Friable asbestos, 1st floor, mechanical room.

J. LIFE/SAFETY CODE REVIEW

1. Code Compliance Review

October 1995

Code References 1994 Uniform Building Codes
 1993 National Electrical Code
 1994 ANSI/NFPA 101 Life Safety Code
 1991 Americans with Disabilities Act

General Code Information (Ref. UBC Tables 3-A & 3-B)

Area	78,504 sf
Occupancy	Mixed: B - Offices A3 - Courtrooms and Jury Assembly I3 - Judicial Services Area
Required Occupancy Separations	B/I3 - 2 hour Boiler Room: (Mech 122) 1 hour
Construction Type	Type II - 1 hour (if modified)
Sprinklers	Provided
Yards	All four sides

J. LIFE/SAFETY CODE REVIEW

Notes: The existing building has the following Courtroom distribution:

First Floor	Courtroom #5 - Traffic/Arraignments	58 occupants
Second Floor	Superior Courtroom D	94 occupants
	Superior Courtroom E	33 occupants
Third Floor	District Courtroom #1	67 occupants
	District Courtroom #2	57 occupants
	District Courtroom #3	54 occupants
	Superior Courtroom #4	78 occupants
Fourth Floor	Superior Courtroom A	82 occupants
	Superior Courtroom B	82 occupants
	Superior Courtroom C	95 occupants

These occupant loads are based on existing fixed seating. The 3rd and 4th floor courtrooms' classification as A3 occupancies is in direct conflict with UBC Table 5-B, which limits the height of A3 occupancies in Type II 1-Hour buildings to 2 stories. The 3rd & 4th floor courtrooms must be relocated to lower floors, or reconstructed with Type II F.R. construction, or located in new facilities provided elsewhere with the appropriate construction type and building height.

(See Fire-Resistive Construction Requirements, following.)

J. LIFE/SAFETY CODE REVIEW

Existing Areas

Floor	Area (SF)	Floor-to-Floor Height	Height. Above Street
First Floor	15,173	14'6"	14'6"
+ E. Canopy	140	-	-
Second Floor	18,440	13'0"	27'6"
Third Floor	18,440	13'0"	40'6"
Fourth Floor	18,440	16'6"	56'6"
Roof Penthouse	1,948	9'0"	65'6"
TOTAL	78,504		(non high rise)

J. LIFE/SAFETY CODE REVIEW

Allowable Areas (Ref. UBC Tables 5A & 5B)

	Type II-1 hr B Occupancy (4 stories)	Type II-F.R. B Occupancy (12 stories)
Basic allowable area	18,000	39,000
Additional area if multistory building	+18,000	+39,900
Subtotal: allowable area	36,000	79,800
Additional area if separate 4 sides	+36,000	+79,800
Subtotal: allowable area	72,000	159,600
Add allowable area if sprinklered	+72,000	+159,600
TOTAL ALLOWABLE AREA	144,000 sf	319,200

Notes: The original building was constructed as a **Type II** building under the 1955 Uniform Building Code. Its construction type has since been tentatively identified as Type III-1 Hour, if modified (Linck, 1972); Type IV-1 Hour & Type IV-N as existing (McKenzie, 1976); Type II - 1 hour (CBCo, 1980); non-compliant Type II-FR, actually Type V-N (Morris, 1984); and Type III with sprinkler exception (GDM, Inc., 1994).

We recommend Classification as a **Type II, 1-Hour** building with B occupancy which would allow construction of 4 stories, but will require a 1-hr. upgrade of corridor and ceiling plenum construction, and 1-hr. fireproofing of the existing structural frame.

J. LIFE/SAFETY CODE REVIEW

Fire-Resistive Construction Requirements (Ref. UBC Table 6-A)

Type II - 1 Hour

1. Bearing Walls - exterior	1 Hr.
2. Bearing Walls - interior	1 Hr.
3. Nonbearing Walls - exterior	1 Hr.
4. Structural Frame	1 Hr.
5. Partitions - permanent*	1 Hr.
6. Shaft Enclosures	1 Hr.
7. Floors & Floor-Ceilings	1 Hr.
8. Roofs & Roofs-Ceilings	1 Hr.
9. Exterior Doors & Windows	N/A due to Yards 4 Sides
10 Stairways	Noncombustible (Complies)

Notes: Type II 1 Hour construction requires non-combustible structural frame and floor systems. Other construction is to be noncombustible and 1-hr. construction throughout.

Fire retardant treated wood may be used in permanent partitions. The existing building has original wood stud framing of fire retardant-treated wood.

Flamespread Requirements (Ref. UBC Table 8-A & 8-B)

A,B Occupancies	Class I (Enclosed Vertical Exits) Class II (Other Exits) Class III (Rooms/Areas)
I Occupancy	Class I (Enclosed Vertical Exits) Class I (Cells) Class II (All Other Areas, Sprinklered)

J. LIFE/SAFETY CODE REVIEW

Occupant Load (Ref. UBC Sect. 1003)

(See Appendix for Courtroom Occupant Loads & Floor Occupant Loads/Exiting Calculations)

Floor	Occupant Load	No. of exits	Required exit widths	Existing exit widths
First Floor	337.13	8	67.43"	432"
Second Floor	239.19	3	47.84"	108"
Third Floor	336.96	3	67.39"	108"
Fourth Floor	366.15	3	73.23"	108"
Mechanical Penthouse	-	1	36"	36"
TOTAL	1,279.43			

Existing exit width and numbers comply with code requirements.

Exit Doors (Ref. UBC Sect. 1004)

Exit Doors must swing in the direction of travel where the occupant load exceeds 50. In the existing building, the following exit doors do not comply and must be modified:

Jury Assembly:	Three doors onto Corridor 124
Superior Courtroom D:	Three doors: Two onto Corridor 215 One into Anteroom 263A
Clerk of Court:	Two doors onto Lobby 321
District Courtrooms 1 & 2:	One door ea. onto Corridor 327

Corridors (Ref. UBC Sect. 1005)

Obstructions: (Ref. 1005.4)

Required minimum corridor width varies in the existing building, depending on the occupant load exiting through each corridor. There are existing obstructions in the corridors: drinking fountains, bench seating, and fixed chair seating, as well as outswinging exit doors. *These obstructions must be removed so that the required exit width of each corridor is not obstructed.*

Corridor Construction: (Ref. 1005.7)

Corridor walls and ceilings are required to be 1-hr. fire-resistive construction. *Completion of this rating is required for all components not in compliance.*

J. LIFE/SAFETY CODE REVIEW

Openings (Ref. UBC Sect. 1005.8)

Corridor doors where walls are required to be 1-hr. fire-resistive construction must have a 20-minute rating, contain no louvers, bear a fire rating label, be self/automatic closing, and be smoke gasketed. *The majority of existing corridor door and frame assemblies do not comply and must be replaced.* Door glazing must also comply with UBC Chapter 24.

Elevator lobbies or equivalent protection for the elevator doors must be provided on the upper floors of the building. The first floor lobby may claim an exception as the building is a B occupancy with the first floor protected by an automatic sprinkler system.

Stairways (Ref. UBC Sect. 1006)

Spiral Stair: The metal spiral stair connecting the 4th floor Superior Court Judges' Chambers to the 3rd floor Clerk of the Court offices is not permitted. This type of stair is only permitted in R (Residential) occupancies. *It must be replaced by an acceptable conventional stair or omitted entirely.*

Handrails: Although the basic structure of the metal exit stairs complies with Code requirements for dimensions and materials, *risers must be added where they do not exist, and the handrail system must be replaced with an ADA and UBC compliant system.*

Accessibility (Ref. UBC Sect. 11)

See separate report section on ADAAG Compliance Review.

Plumbing Fixtures (Ref. UBC Chapter 29)

The numbers of water closets, urinals and lavatories comply with and exceed the requirements of Table A-29-A. However, only 8 drinking fountains have been provided, and 10 are required ($1452.24/150=9.68$). *Two drinking fountains should be added, on floors with the highest occupant loads.*

Elevators (Ref. UBC Chapter 30 & ASME A17.1)

Standby power provided by a separate generator is required to one elevator; it is not provided on site. The elevator hoistway is not vented to the outside, as required. A separate elevator machine room has not been provided; the original elevator machinery is located in the penthouse mechanical room, along with air handling and radio/communications equipment panels. (No radio equipment should be located in the same room as the elevator machinery, if solid state devices are included in its control system.)

Standby power would be provided with the installation of an emergency power source for the building. Venting of the hoistway should be completed. ASME A17.7 also requires the installation of a 6' high grille enclosure with gate separating the elevator machinery from other equipment in the room.

J. LIFE/SAFETY CODE REVIEW

2. ADA Upgrades Review

An accessibility audit was conducted June 1992 to determine existing deficiencies and associated costs to make the building compliant with ADA regulations.

The following list summarizes the deficiencies noted in the audit and determines which items have been corrected at the time of this inventory and condition survey. It is assumed those items not yet completed will be corrected as part of the building renovation.

Item	Complete	Partially complete or to be completed	In design phase	Not done
Parking spaces	X			
Exterior accessible route	X			
Ramps				X
Exterior signage	X			
Interior signage	X			
Interior accessible route	X			
Stairways				X
Toilet Rooms	X			
Interior Doors		X		
Drinking fountains	X			
Public Telephones				X
Elevator Entrances/Cabs	X			
Assembly Areas				X
Alarms	X verify			
Counters				X

J. LIFE/SAFETY CODE REVIEW

Parking Spaces: Complete.

Two (2) handicapped parking spaces with an access aisle have been provided at the northeast corner of the building's parking lot, close to the public entry. These comply with the requirement for 2% handicapped spaces computed using the on-site parking space total of 83. There are 7 handicapped parking spaces in the State parking garage, complying with the 2% requirement for the 147 ACS parking spaces in that location.

Exterior Accessible Route: Complete.

Provided from the handicapped parking spaces to the public entry. Signage and handrails are present.

Ramps: Not Done.

Two exterior ramped sidewalks exist, from the east sidewalk up to the public entry. Handrails should be provided.

Exterior Signage: Complete.

Directs visitors and staff to the handicapped parking and entry.

Interior Signage: Complete.

Provided at each office or suite door.

Interior Accessible Route: Complete.

(See section on Interior Doors below for existing impediments.)

Stairways: Not Done.

Open risers and handrails are non-compliant.

Toilet Rooms: Complete.

The main set of toilet rooms on the first floor have compliant doors, automatic door openers and fixtures, installed in a recent 1994 renovation. One single sex ADA-compliant toilet room has been supplied for the law library, and jury rooms on the 2nd, 3rd and 4th floors.

Note: These toilet rooms located off jury rooms are not accessible to the public or staff while juries are in session. Modification of entrances and fixtures in the southeast bank of toilet rooms on these floors should be considered.

Interior Doors: Partially complete/To be completed.

A number of entrance doors to suites and offices do not meet clear access or clear opening requirements and should have hinge modifications. Lever handles have been installed. Many doors also require adjustment of existing closures to required pressures.

J. LIFE/SAFETY CODE REVIEW

Drinking Fountains: Complete.

ADA-compliant drinking fountains have been installed:

- * In the corridor next to the Law Library.
- * In the 1st floor Main Lobby.
- * In the 2nd floor north corridor.

Existing drinking fountains have been lowered to ADA-compliant heights on the 3rd and 4th floors.

Public Telephones: Not done.

An ADA-compliant public telephone should be installed in the 1st floor Main Lobby.

Elevator Entrances/Cabs: Complete.

ADA-compliant elevator signage and controls have been installed.

Assembly Areas: Not Done.

- Space for (2) wheelchairs needs to be reserved and signage installed in each assembly area in the building, particularly Courtrooms.
- Areas and signage for assistive listening devices should be designated at each assembly area.
- Public visitors/jurors are requested to identify special needs/disabilities with the Clerk of Courts office.
- Judge/clerk/witness benches and jury boxes are presently inaccessible in many locations, due to the existence of one or more risers. Temporary ramps should be located in each assembly area for the use of handicapped persons requiring access to these areas. In the case of jury boxes, an area should be set aside for wheelchair jurors at each box.

Fire Alarms: Complete.

The system was installed in 1986. It should be tested to verify compliance with ADA for the audible annunciators.

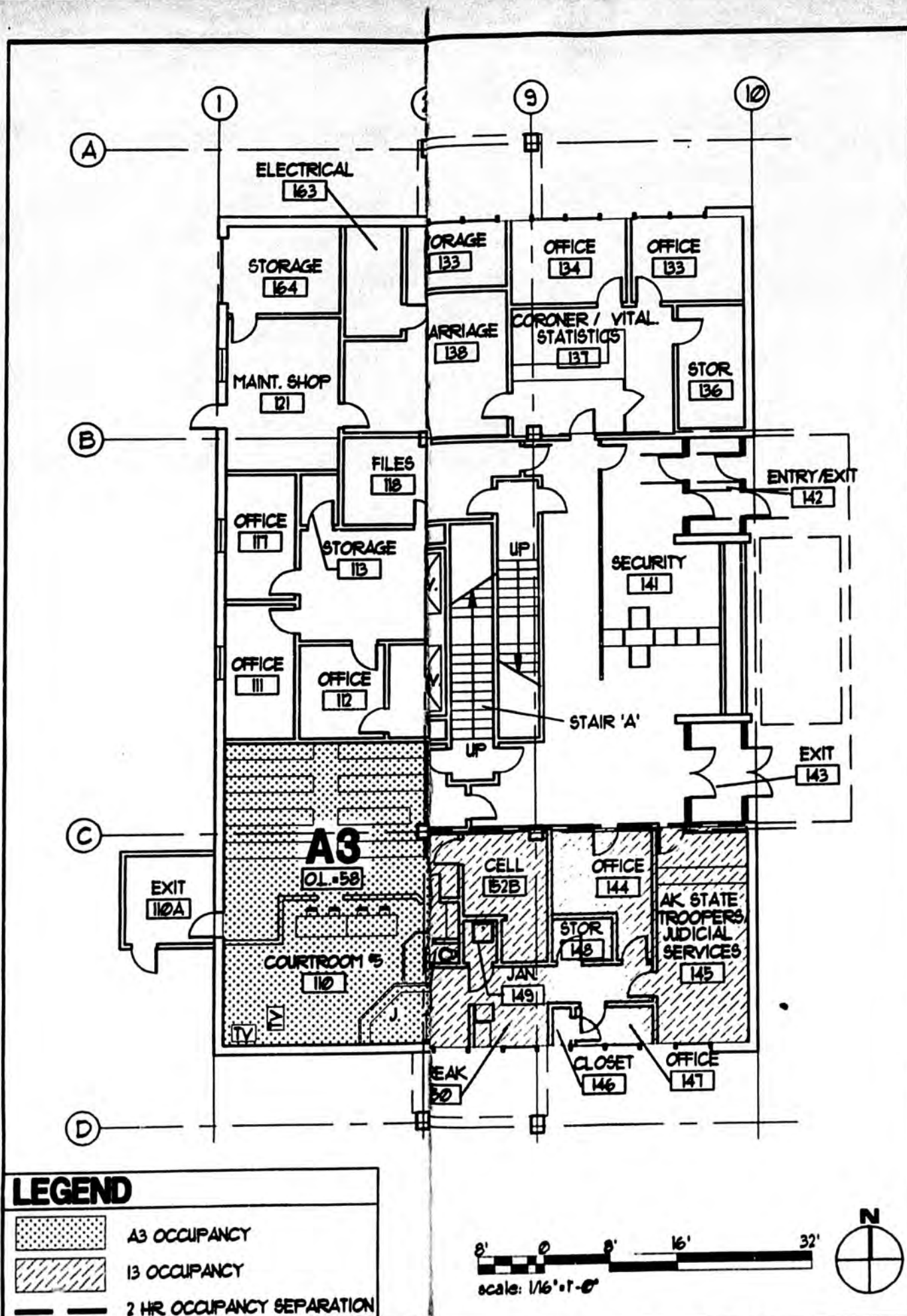
Counters: Partially Complete/To be Completed.

Lower counter sections for the use of handicapped persons should be provided at the following offices which provide public services and have fixed/built-in counters:

- | | |
|---|--------------|
| * Alaska State Troopers/Judicial Services | First Floor |
| * Jury Assembly | First Floor |
| * Accounting/Traffic | First Floor |
| * District Attorney | Second Floor |
| * Clerk of Courts Office | Third Floor |

These corrections can be accommodated in planned renovations on a partial or building-wide basis.

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BEEN FILMED BUT IS AVAILABLE IN THE
ORIGINAL FILE.**



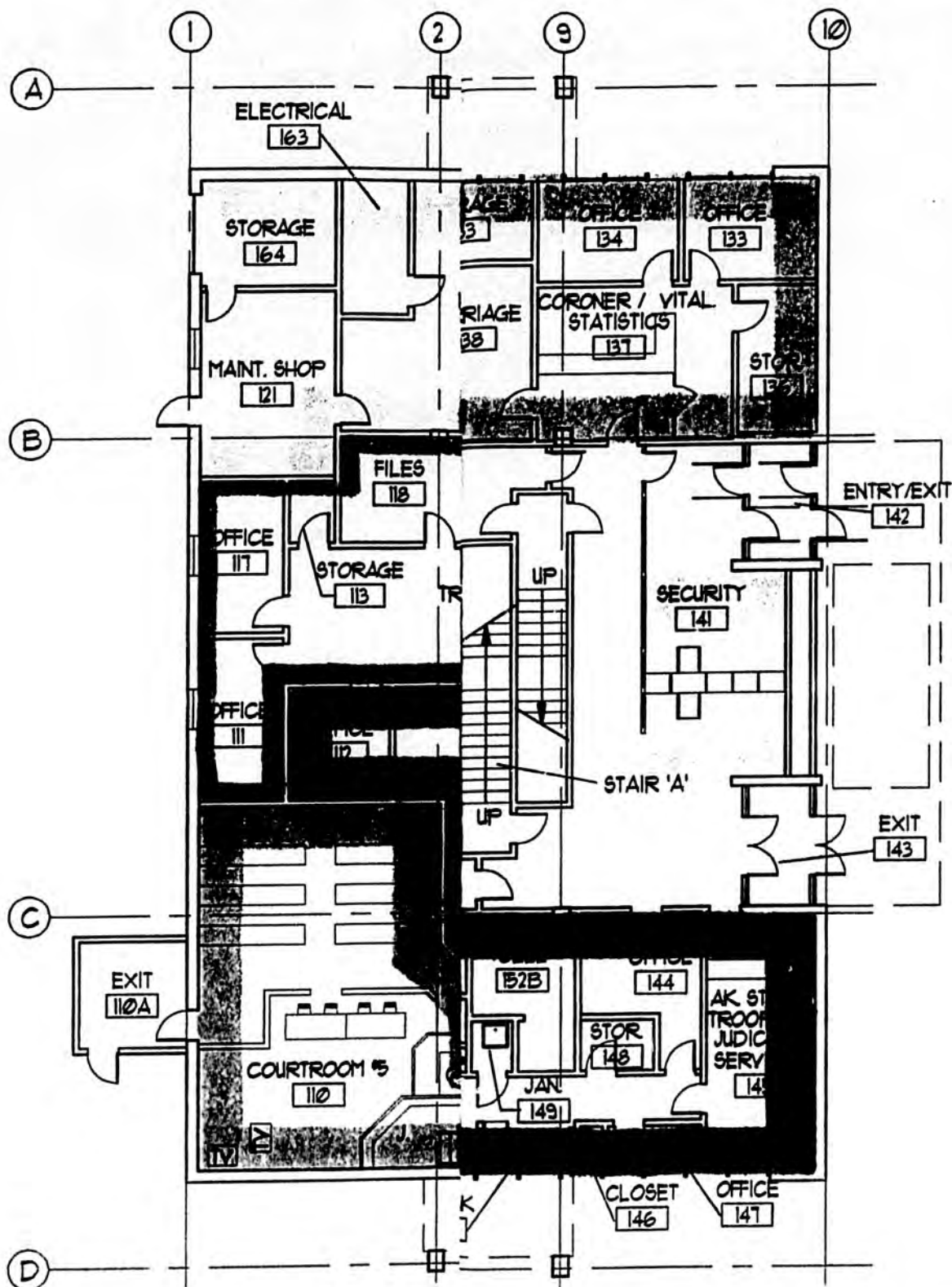
K. FACILITY PROGRAM/SPACE UTILIZATION ANALYSIS

Space Title	Location	Current NASF*
Supreme Court	Floor 4	1669.75
Superior Court	Floors 2,3,4	15902.50
District Court	Floor 3	6054.50
Grand Jury	Floor 2	893.25
Area Court Administrator	Floor 2	1072.50
Law Library	Floor 1	5311.00
Clerk of the Courts	Floor 3	5841.00
Transcripts	Floor 1	1251.50
In-Courts	Floors 2,4	1188.50
Magistrates and Masters	Floors 1,2	3934.50
Accounting/Traffic	Floor 1	1023.50
Court Services	Floor 1	2032.00
Custody Investigation	Floor 2	611.00
Judicial Services	Floors 1,4	1384.75
Building Services	All floors	6965.50
District Attorney	Floor 2	**4,614.75
TOTAL NASF		59750.50
TOTAL GROSS SF		78504.00
BUILDING EFFICIENCY		0.76

* Net assignable square feet, calculated without circulation or structure

** Leasing Agency

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FILE: FY-A1

FAIRBANKS COURTHOUSE
charles bettsworth and company

**EXISTING SPACE UTILIZATION
FIRST FLOOR PLAN**

APPENDIX

A

TABLE 3-A—DESCRIPTION OF OCCUPANCIES BY GROUP AND DIVISION

GROUP AND DIVISION	SECTION	DESCRIPTION OF OCCUPANCY
A-1	303.1.1	A building or portion of a building having an assembly room with an occupant load of 1,000 or more and a legitimate stage.
A-2		A building or portion of a building having an assembly room with an occupant load of less than 1,000 and a legitimate stage.
A-2.1		A building or portion of a building having an assembly room with an occupant load of 300 or more without a legitimate stage, including such buildings used for educational purposes and not classed as a Group E or Group B Occupancy.
A-3		Any building or portion of a building having an assembly room with an occupant load of less than 300 without a legitimate stage, including such buildings used for educational purposes and not classed as a Group E or Group B Occupancy.
A-4		Stadiums, reviewing stands and amusement park structures not included within other Group A Occupancies.
B	304.1	A building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts, and eating and drinking establishments with an occupant load of less than 50.
E-1	305.1	Any building used for educational purposes through the 12th grade by 50 or more persons for more than 12 hours per week or four hours in any one day.
E-2		Any building used for educational purposes through the 12th grade by less than 50 persons for more than 12 hours per week or four hours in any one day.
E-3		Any building or portion thereof used for day-care purposes for more than six persons.
F-1	306.1	Moderate-hazard factory and industrial occupancies include factory and industrial uses not classified as Group F, Division 2 Occupancies.
F-2		Low-hazard factory and industrial occupancies include facilities producing noncombustible or nonexplosive materials which during finishing, packing or processing do not involve a significant fire hazard.
H-1	307.1	Occupancies with a quantity of material in the building in excess of those listed in Table 3-D which present a high explosion hazard as listed in Section 307.1.1.
H-2		Occupancies with a quantity of material in the building in excess of those listed in Table 3-D which present a moderate explosion hazard or a hazard from accelerated burning as listed in Section 307.1.1.
H-3		Occupancies with a quantity of material in the building in excess of those listed in Table 3-D which present a high fire or physical hazard as listed in Section 307.1.1.
H-4		Repair garages not classified as Group S, Division 3 Occupancies.
H-5		Aircraft repair hangars not classified as Group S, Division 5 Occupancies and heliports.
H-6	307.1 and 307.1.1	Semiconductor fabrication facilities and comparable research and development areas when the facilities in which hazardous production materials are used, and the aggregate quantity of material is in excess of those listed in Table 3-D or 3-E.
H-7	307.1	Occupancies having quantities of materials in excess of those listed in Table 3-E that are health hazards as listed in Section 307.1.1.

TABLE 3-A—DESCRIPTION OF OCCUPANCIES BY GROUP AND DIVISION—(Continued)

GROUP AND DIVISION	SECTION	DESCRIPTION OF OCCUPANCY
I-1.1	308.1	Nurseries for the full-time care of children under the age of six (each accommodating more than five children), hospitals, sanitariums, nursing homes with nonambulatory patients and similar buildings (each accommodating more than five patients).
I-1.2		Health-care centers for ambulatory patients receiving outpatient medical care which may render the patient incapable of unassisted self-preservation (each tenant space accommodating more than five such patients).
I-2		Nursing homes for ambulatory patients, homes for children six years of age or over (each accommodating more than five persons).
I-3		Mental hospitals, mental sanitariums, jails, prisons, reformatories and buildings where personal liberties of inmates are similarly restrained.
M	309.1	A building or structure, or a portion thereof, for the display and sale of merchandise, and involving stocks of goods, wares or merchandise, incidental to such purposes and accessible to the public.
R-1	310.1	Hotels and apartment houses, congregate residences (each accommodating more than 10 persons).
R-3		Dwellings, lodging houses, congregate residences (each accommodating 10 or fewer persons).
S-1	311.1	Moderate hazard storage occupancies include buildings or portions of buildings used for storage of combustible materials not classified as Group S, Division 2 or Group H Occupancies.
S-2		Low-hazard storage occupancies include buildings or portions of buildings used for storage of noncombustible materials.
S-3		Repair garages and parking garages not classified as Group S, Division 4 Occupancies.
S-4		Open parking garages.
S-5		Aircraft hangars and helistops.
U-1	312.1	Private garages, carports, sheds and agricultural buildings.
U-2		Fences over 6 feet (182.9 mm) high, tanks and towers.

TABLE 3-B—REQUIRED SEPARATION IN BUILDINGS OF MIXED OCCUPANCY¹ (HOURS)

	A-1	A-2	A-2.1	A-3	A-4	B	E	F-1	F-2	H-2	H-3	H-4,5	H-6,7 ²	I	M	R-1	R-3	S-1	S-2	S-3	S-5	U-1 ³
A-1		N	N	N	N	3	N	3	3	4	4	4	4	3	3	I	I	3	3	4 ⁵	3	I
A-2			N	N	N	I	N	I	I	4	4	4	4	3	I	I	I	I	I	3 ⁵	I	I
A-2.1				N	N	I	N	I	I	4	4	4	4	3	I	I	I	I	I	3 ⁵	I	I
A-3					N	N	N	N	N	4	4	4	3	2	N	I	I	N	I	3 ⁵	I	I
A-4						I	N	I	I	4	4	4	4	3	I	I	I	I	I	3 ⁵	I	I
B							I	N ⁶	N	2	I	I	I	2	N	I	I	N	I	I	I	I
E								I	I	4	4	4	3	I	I	I	I	I	I	3 ⁵	I	I
F-1									I	2	I	I	I	3	N ⁶	I	I	N	I	I	I	I
F-2										2	I	I	I	2	I	I	I	N	I	I	I	I
H-1	NOT PERMITTED IN MIXED OCCUPANCIES. SEE CHAPTER 10.																					
H-2											I	I	2	4	2	4	4	2	2	2	2	I
H-3												I	I	4	I	3	3	I	I	I	I	I
H-4,5													I	4	I	3	3	I	I	I	I	I
H-6,7 ²														4	I	4	4	I	I	I	I	3
I															2	I	I	2	4	4 ⁵	3	I
M																I	I	I ⁴	I ⁴	I	I	I
R-1																	N	3	I	3 ⁵	I	I
R-3																		I	I	I	I	I
S-1																			I	I	I	I
S-2																				I	I	N
S-3																				I	I	I
S-4	OPEN PARKING GARAGES ARE EXCLUDED EXCEPT AS PROVIDED IN SECTION 311.2.																					
S-5																						N

N—No requirements for fire resistance.

¹For detailed requirements and exceptions, see Section 302.4.²For special provisions on highly toxic materials, see the Fire Code.³For agricultural buildings, see also Appendix Chapter 3.⁴See Section 310.2.1 for exception.⁵Group S, Division 3 Occupancies used exclusively for parking or storage of pleasure-type motor vehicles and provided no repair or refueling is done may have the occupancy separation reduced one hour.⁶For Group F, Division 1 woodworking establishments with more than 2,500 square feet, the occupancy separation shall be one hour.

TABLE 5-B—BASIC ALLOWABLE BUILDING HEIGHTS AND BASIC ALLOWABLE FLOOR AREA FOR BUILDINGS ONE STORY IN HEIGHT¹

TYPE OF CONSTRUCTION		TYPES OF CONSTRUCTION								
		I	II			III		IV	V	
		F.R.	F.R.	One-hour	N	One-hour	N	H.T.	One-hour	N
		UL	100 (48 768 mm)	65 (19 812 mm)	55 (16 764 mm)	65 (19 812 mm)	55 (16 764 mm)	65 (19 812 mm)	55 (16 240 mm)	40 (12 192 mm)
Use Group	Height	x 0.0029 for m ²								
A-1	H	UL	4	Not Permitted						
	A	UL	29,900							
A-2, 2.1 ²	H	UL	4	2	NP	2	NP	2	2	NP
	A	UL	29,900	13,500	NP	13,500	NP	13,500	10,500	NP
A-3, 4 ²	H	UL	12	2	1	2	1	2	2	1
	A	UL	29,900	13,500	9,100	13,500	9,100	13,500	10,500	6,100
B, F-1, M, S-1, S-3, S-5	H	UL	12	4	2	4	2	4	3	2
	A	UL	39,900	18,000	12,000	18,000	12,000	18,000	14,000	8,000
E-1, 2, 3 ⁴	H	UL	4	2	1	2	1	2	2	1
	A	UL	45,200	20,200	13,500	20,200	13,500	20,200	15,700	9,100
F-2, S-2 ³	H	UL	12	4	2	4	2	4	3	2
	A	UL	59,900	27,000	18,000	27,000	18,000	27,000	21,000	12,000
H-1 ⁵	H	I	1	1	1	Not Permitted				
	A	15,000	12,400	5,600	3,700					
H-2 ⁵	H	UL	2	1	1	1	1	1	1	1
	A	15,000	12,400	5,600	3,700	5,600	3,700	5,600	4,400	2,500
H-3, 4, 5 ⁵	H	UL	5	2	1	2	1	2	2	1
	A	UL	24,800	11,200	7,500	11,200	7,500	11,200	8,800	5,100
H-6, 7	H	3	3	3	2	3	2	3	3	1
	A	UL	39,900	18,000	12,000	18,000	12,000	18,000	14,000	8,000
I-1.1 ⁶ , 1.2	H	UL	3	1	NP	1	NP	1	1	NP
	A	UL	15,100	6,800	NP	6,800	NP	6,800	5,200	NP
I-2	H	UL	3	2	NP	2	NP	2	2	NP
	A	UL	15,100	6,800	NP	6,800	NP	6,800	5,200	NP
I-3	H	UL	2	Not Permitted ⁷						
	A	UL	15,100							
R-1	H	UL	12	4	2 ⁹	4	2 ⁹	5	3	2 ⁹
	A	UL	29,900	13,500	9,100 ⁹	13,500	9,100 ⁹	13,500	10,500	6,000 ⁹

R-3	H	UL	3	3	3	3	3	3	3	3
	A	Unlimited								
S-4	See Table 3-H									
U ⁸	H A	See Chapter 3								

A—Building area in square feet.
H—Building height in number of stories.
H.T.—Heavy timber.
NP—Not permitted.

N—No requirements for fire resistance.
F.R.—Fire resistive.
UL⁴—Unlimited.

¹For multistory buildings, see Section 504.2.

²For limitations and exceptions, see Section 303.2.

³For open parking garages, see Section 311.9.

⁴See Section 306.3.

⁵See Sections 307 and 412.

⁶See Section 308.2.1 for exception to the allowable area and number of stories in hospitals and nursing homes.

⁷See Section 312.2. *See 22*

⁸For agricultural buildings, see also Appendix Chapter 3.

⁹For limitations and exceptions, see Section 310.2.

TABLE 6-A—TYPES OF CONSTRUCTION—FIRE-RESISTIVE REQUIREMENTS (In Hours)
 For details, see occupancy section in Chapter 3, type of construction sections in this chapter and sections referenced in this table.

BUILDING ELEMENT	TYPE I	TYPE II			TYPE III		TYPE IV	TYPE V	
	Fire-resistive	Noncombustible			Combustible		H.T.	1-Hr.	N
		Fire-resistive	1-Hr.	N	1-Hr.	N			
1. Bearing walls—exterior	4 Sec. 602.3.1	4 Sec. 603.3.1	I	N	4 Sec. 604.3.1	4 Sec. 604.3.1	4 Sec. 605.3.1	I	N
2. Bearing walls—interior	3	2	I	N	I	N	I	I	N
3. Nonbearing walls—exterior	4 Sec. 602.3.1	4 Sec. 603.3.1	I Sec. 603.3.1	N	4 Sec. 604.3.1	4 Sec. 604.3.1	4 Sec. 605.3.1	I	N
4. Structural frame ¹	3	2	I	N	I	N	I or H.T.	I	N
5. Partitions—permanent	I ²	I ²	I ²	N	I	N	I or H.T.	I	N
6. Shaft enclosures ³	2	2	I	I	I	I	I	I	I
7. Floors and floor-ceilings	2	2	I	N	I	N	H.T.	I	N
8. Roofs and roof-ceilings	2 Sec. 602.5	I Sec. 603.5	I Sec. 603.5	N	I	N	H.T.	I	N
9. Exterior doors and windows	Sec. 602.3.2	Sec. 603.3.2	Sec. 603.3.2	Sec. 603.3.2	Sec. 604.3.2	Sec. 604.3.2	Sec. 605.3.2	Sec. 606.3	Sec. 606.3
10. Stairway construction	Sec. 602.4	Sec. 603.4	Sec. 603.4	Sec. 603.4	Sec. 604.4	Sec. 604.4	Sec. 605.4	Sec. 606.4	Sec. 606.4

N—No general requirements for fire resistance.

H.T.—Heavy timber.

¹Structural frame elements in an exterior wall that is located where openings are not permitted or where protection of openings is required, shall be protected against external fire exposure as required for exterior bearing walls or the structural frame, whichever is greater.

→ ²Fire-retardant-treated wood (see Section 207) may be used in the assembly, provided fire-resistance requirements are maintained. See Sections 602 and 603.

³For special provisions, see Sections 304.6, 306.6 and 711.

807.1.1 Floors. In other than dwelling units, toilet room floors shall have a smooth, hard nonabsorbent surface such as portland cement, concrete, ceramic tile or other approved material which extends upward onto the walls at least 5 inches (127 mm).

807.1.2 Walls. Walls within 2 feet (610 mm) of the front and sides of urinals and water closets shall have a smooth, hard nonabsorbent surface of portland cement, concrete, ceramic tile or other smooth, hard nonabsorbent surface to a height of 4 feet (1219 mm), and except for structural elements, the materials used in such walls shall be of a type which is not adversely affected by moisture. See Section 2512 for other limitations.

EXCEPTIONS: 1. Dwelling units and guest rooms.

2. Toilet rooms which are not accessible to the public and which have not more than one water closet.

In all occupancies, accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls shall be installed and sealed to protect structural elements from moisture.

807.1.3 Showers. Showers in all occupancies shall be finished as specified in Sections 807.1.1 and 807.1.2 to a height of not less than 70 inches (1778 mm) above the drain inlet. Materials other than structural elements used in such walls shall be of a type which is not adversely affected by moisture. See Section 2512 for other limitations.

807.1.4 Shower doors. For shower doors, see Sections 2406.4 and 2407.

807.2 Water Closet Room Separation. See Section 302.6 for requirements to separate water closet rooms.

TABLE 8-A—FLAME-SPREAD CLASSIFICATION

MATERIAL QUALIFIED BY:	
Class	Flame-spread Index
I	0-25
II	26-75
III	76-200

TABLE 8-B—MAXIMUM FLAME-SPREAD CLASS¹

OCCUPANCY GROUP	ENCLOSED VERTICAL EXITWAYS	OTHER EXITWAYS ²	ROOMS OR AREAS
A	I	II	II ³
E	I	II	III
I	I	I ⁴	II ⁵
H	I	II	III ⁶
B, F, M and S	I	II	III
R-1	I	II	III
R-3	III	III	III ⁷
U	NO RESTRICTIONS		

¹Foam plastics shall comply with the requirements specified in Section 1001.5. Carpeting on ceilings and textile wall coverings shall comply with the requirements specified in Sections 804.2 and 805, respectively.

²Finish classification is not applicable to interior walls and ceilings of exterior exit balconies.

³In Group A, Divisions 3 and 4 Occupancies, Class III may be used.

⁴In Group I, Divisions 2 and 3 Occupancies, Class II may be used or Class III when the Division 2 or 3 is sprinklered.

⁵In rooms in which personal liberties of inmates are forcibly restrained, Class I material only shall be used.

⁶Over two stories shall be of Class II.

⁷Flame-spread provisions are not applicable to kitchens and bathrooms of Group R, Division 3 Occupancies.

The occupant load for buildings or areas containing two or more occupancies shall be determined by adding the occupant loads of the various use areas as computed in accordance with the applicable provisions of this section.

1002.1.3 Fixed seating. For areas having fixed seats and aisles, the occupant load shall be determined by the number of fixed seats installed therein. The required width of aisles serving fixed seats shall not be used for any other purpose.

For areas having fixed benches or pews, the occupant load shall not be less than the number of seats based on one person for each 18 inches (457 mm) of length of pew or bench.

Where booths are used in dining areas, the occupant load shall be based on one person for each 24 inches (610 mm) of booth length or major portion thereof.

1002.1.4 Reviewing stands, grandstands and bleachers. The occupant load for reviewing stands, grandstands and bleachers shall be calculated in accordance with this section and the specific requirements contained in Section 1021.

1002.2 Maximum Occupant Load.

1002.2.1 Assembly occupancies. The maximum occupant load for assembly occupancies shall not exceed the occupant load determined in accordance with Section 1002.1.

EXCEPTION: When approved by the building official, the occupant load for an assembly occupancy may be increased provided the maximum occupant load served does not exceed the capacity of the exit system for such increased number of persons. The building official may require an aisle, seating or fixed equipment diagram to substantiate such an increase, and may require that such diagram be posted.

1002.2.2 Other occupancies. For other than assembly occupancies, an occupant load greater than that determined in accordance with Section 1002.1 is permitted; however, the exit system shall comply with the provisions of this chapter for such increased number of persons.

1002.3 Posting of Room Capacity. Any room having an occupant load of 50 or more where fixed seats are not installed, and which is used for assembly purpose, shall have the capacity of the room posted in a conspicuous place on an approved sign near the main exit from the room. Such signs shall be maintained legible by the owner or the owner's authorized agent and shall indicate the number of occupants permitted for each room use.

1002.4 Revised Occupant Load. After a building is occupied, any change in use or increase in occupant load shall comply with this chapter. See Section 3405.

SECTION 1003 — EXITS REQUIRED

1003.1 Number of Exits. Every building or usable portion thereof shall have at least one exit, no less than two exits where required by Table 10-A and additional exits as required by this section.

For purposes of this section, basements and occupied roofs shall be provided with exits as required for stories.

EXCEPTION: Occupied roofs on Group R, Division 3 Occupancies may have one exit if such occupier areas are less than 500 square feet (46.45 m²) and are located no higher than immediately above the second story.

Floors complying with the provisions for mezzanines as specified in Section 506, Exception 3 shall be provided with exits as specified therein.

Occupants on stories above the first and in basements shall have access to not less than two separate exits from the story or basement.

EXCEPTIONS: 1. Second stories having an occupant load less than 10 may be provided with only one exit.

2. Two or more dwelling units on the second story or in a basement may have access to only one common exit when the total occupant load served by that exit does not exceed 10.

3. Except as provided in Table 10-A, only one exit need be provided from the second floor or a basement within an individual dwelling unit or a Group R, Division 3 congregate residence.

4. When the third floor within an individual dwelling unit or a Group R, Division 3 congregate residence does not exceed 500 square feet (46.45 m²), only one exit need be provided from that floor.

5. Floors and basements used exclusively for service of the building may have one exit. For the purposes of this exception, storage rooms, laundry rooms, maintenance offices and similar uses shall not be considered as providing service to the building.

6. Storage rooms, laundry rooms and maintenance offices not exceeding 300 square feet (27.87 m²) in floor area may be provided with only one exit.

7. Elevator lobbies may have one exit provided the use of such exit does not require keys, tools, special knowledge or effort.

For special requirements see the following sections: Group A, Section 1016; Group E, Section 1017; Group H, Section 1018; Group I, Section 1019; Rooms Containing Fuel-fired Equipment and Cellulose Nitrate Handling Rooms, Section 1020; Reviewing Stands, Grandstands and Bleachers, Section 1021; Laboratories, Sections 304.2.2 and 305.2.4; and Open Parking Garages, Section 311.9. For stage exits, see Section 405.3.6.

Every story or portion thereof having an occupant load of 501 to 1,000 shall not have less than three exits.

Every story or portion thereof having an occupant load of 1,001 or more shall not have less than four exits.

The number of exits required from any story of a building shall be determined by using the occupant load of that story.

The maximum number of exits required for any story shall be maintained until egress is provided from the structure. (See Section 1010.)

1003.2 Width. The total width of exits in inches (mm) shall not be less than the total occupant load served by an exit multiplied by 0.3 (7.62) for stairways and 0.2 (5.08) for other exits nor less than specified elsewhere in this code. Such widths of exits shall be divided approximately equally among the separate exits.

The maximum exit width required from any story of a building shall be maintained.

1003.3 Arrangement of Exits. If only two exits are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exits.

EXCEPTION: The separation between exit doors in the exit enclosures which are interconnected by a one-hour fire-resistive corridor conforming to the requirements of Section 1005 may be measured along a direct line of travel within the exit corridor. Enclosure walls shall not be less than 30 feet (9144 mm) apart at any point in a direct line of measurement.

Where three or more exits are required, at least two exits shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between the exits, and the additional exits shall be arranged a reasonable distance apart so that if one becomes blocked the others will be available.

1003.4 Travel Distance. The maximum travel distance shall not exceed 150 feet (45 720 mm), unless otherwise allowed by this section. The maximum travel distance may be increased in accordance with the following:

1. In a building equipped with an automatic sprinkler system throughout, the maximum travel distance may be 200 feet (60 960 mm).

2. The maximum travel distance of 150 feet (45 720 mm) and the maximum travel distance of 200 feet (60 960 mm) allowed by Item 1 may be increased up to an additional 100 feet (30 480 mm) when this increase in travel distance occurs in the last portion of the travel distance and is entirely within a one-hour fire-resistive corridor complying with Section 1005.

3. In one-story buildings classified as Group F, Division 2 or Group S, Division 2 Occupancies, and in one-story Group S, Division 5 Occupancy airplane hangars, the travel distance may be 400 feet (121.9 m) if the building is equipped with an automatic sprinkler system throughout and provided with smoke and heat ventilation as specified in Section 906.

4. In an open parking garage as defined in Section 311.9, the exit travel distance may be 300 feet (91 440 mm) in a building not equipped with an automatic sprinkler system throughout and may be increased to 400 feet (121.9 m) in a building equipped with an automatic sprinkler system throughout. Travel distances may be measured to open stairways which are permitted in accordance with Section 1009.1.

Special travel distance provisions are contained in other sections of this code as follows:

1. For atria, see Section 402.4.
2. For Group B office and Group R, Division 1 Occupancies, see Section 403.
3. For Group E Occupancies, see Section 1017.
4. For Group H Occupancies, see Section 1018.
5. For malls, see Section 404.4.3 and 404.4.5.

1003.5 Exits through Adjoining Rooms. Rooms may have one required exit that passes through an adjoining or intervening room which provides a direct, obvious and unobstructed means of travel to an exit corridor, exterior exit door, horizontal exit, exit passageway or enclosed stairway, provided the total travel distance does not exceed that permitted by other provisions of this code.

EXCEPTIONS: 1. Rooms within dwelling units may exit through more than one intervening room.

2. Rooms with a cumulative occupant load of 10 or less may exit through more than one intervening room.

In other than dwelling units, exits shall not pass through kitchens, store rooms, restrooms, closets or spaces used for similar purposes.

Foyers, lobbies and reception rooms constructed as required for corridors shall not be constructed as intervening rooms.

SECTION 1004 — DOORS

1004.1 General. This section shall apply to every exit door serving an area having an occupant load of 10 or more, or serving hazardous rooms or areas, except that Sections 1004.3, 1004.9, 1004.10 and 1004.11 shall apply to all exit doors regardless of occupant load. Buildings or structures used for human occupancy shall have at least one exterior exit door that meets the requirements of Section 1004.6. Doors and landings at doors which are located within an accessible route of travel shall also comply with Chapter 11.

1004.2 Swing and Opening Force. Exit doors shall be of the pivoted or side-hinged swinging type. Exit doors shall swing in the direction of exit travel when serving any hazardous area or when the area served has an occupant load of 50 or more. The door shall swing to full-open position when an opening force not to exceed 30 pounds (133.45 N) is applied to the latch side. For other door opening forces, see Chapter 11 and Section 905.3. See Section 3207 for doors swinging over public property.

EXCEPTIONS: 1. Group I, Division 3 Occupancy used as a place of detention.

2. Doors within or serving an individual dwelling unit.

3. Special door conforming with Section 1004.8.

Double-acting doors shall not be used as exits when any of the following conditions exist:

1. The occupant load served by the door is 100 or more.
2. The door is part of a fire assembly.

1005.3 Height. Corridors and exterior exit balconies shall have a clear height of not less than 7 feet (2134 mm) measured to the lowest projection from the ceiling.

1005.4 Projections. The required width of corridors shall be unobstructed.

EXCEPTION: Handrails and doors, when fully opened, shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one half. Other nonstructural projections such as trim and similar decorative features may project into the required width 1 1/2 inches (38 mm) on each side.

1005.5 Access to Exits. When more than one exit is required, they shall be so arranged that it is possible to go in either direction from any point in a corridor to a separate exit, except for dead ends not exceeding 20 feet (6096 mm) in length.

1005.6 Changes in Elevation. When a corridor or exterior exit balcony is accessible to the handicapped, changes in elevation of the floor shall be made by means of a ramp, except as provided for doors by Section 1004.9.

1005.7 Construction. Walls of corridors serving a Group R, Division 1 or Group I Occupancy having an occupant load of 10 or more and walls of corridors serving other occupancies having an occupant load of 30 or more shall be of not less than one-hour fire-resistive construction and the ceilings shall not be less than that required for a one-hour fire-resistive floor or roof system.

EXCEPTIONS: 1. One-story buildings housing Group S, Division 2 Occupancies.

2. Corridors more than 30 feet (9144 mm) in width where occupancies served by such corridors have at least one exit independent from the corridor. (See Chapter 4 for covered malls.)

3. Exterior sides of exterior exit balconies.

4. In Group I, Division 3 Occupancies such as jails, prisons, reformatories and similar buildings with open-barred cells forming corridor walls, the corridors and cell doors need not be fire resistive.

5. Corridor walls and ceilings need not be of fire-resistive construction within office spaces having an occupant load of 100 or less when the entire story in which the space is located is equipped with an automatic sprinkler system throughout and an automatic smoke-detection system installed within the corridor. The actuation of any detector shall activate alarms audible in all areas served by the corridor.

6. In other than Type I or II construction, exterior exit balcony roof assemblies may be of heavy-timber construction without concealed spaces.

7. Within office spaces occupied by a single tenant, partial height partitions which form corridors and which do not exceed 6 feet (1829 mm) in height need not be fire resistive, provided they are constructed in accordance with Section 601.5 and are not more than three fourths of the floor-to-ceiling height.

8. Corridor walls and ceilings need not be of fire-resistive construction within office spaces having an occupant load of 100 or less when the building in which the space is located is equipped with an automatic sprinkler system throughout.

When the ceiling of the entire story is an element of a one-hour fire-resistive floor or roof system, the corridor walls may terminate at the ceiling. When the room-side fire-resistive membrane of the corridor wall is carried through to the underside of a fire-resistive floor or roof above, the corridor side of the ceiling may be protected by the use of ceiling materials as required for one-hour floor or roof system construction or the corridor ceiling may be of the same construction as the corridor walls.

Ceilings of noncombustible construction may be suspended below the fire-resistive ceiling.

For wall and ceiling finish requirements, see Table 8-B.

For restrictions on the use of corridors to convey air, see Chapter 10 of the Mechanical Code.

1005.8 Openings.

1005.8.1 Doors. When corridor walls are required to be of one-hour fire-resistive construction by Section 1005.7, every interior door opening shall be protected by a tight-fitting smoke- and draft-control assembly having a fire-protection rating of not less than 20 minutes when tested in accordance with U.B.C. Standard 7-2. Said doors shall not have louvers. The door and frame shall

bear an approved label or other identification showing the rating thereof, the name of the manufacturer and the identification of the service conducting the inspection of materials and workmanship at the factory during fabrication and assembly. Doors shall be maintained self-closing or shall be automatic closing by actuation of a smoke detector in accordance with Section 713.2. Smoke- and draft-control door assemblies shall be provided with a gasket so installed as to provide a seal where the door meets the stop on both sides and across the top.

EXCEPTIONS: 1. Viewports may be installed if they require a hole not larger than 1 inch in diameter through the door, have at least a 1/4-inch-thick (6.4 mm) glass disc and the holder is of metal which will not melt out when subject to temperatures of 1,700°F. (927°C.).

2. Protection of openings in the interior walls of exterior exit balconies is not required when it is possible to exit in two directions.

1005.8.2 Openings other than doors. Where corridor walls are required to be of one-hour fire-resistive construction by Section 1005.7, interior openings for other than doors or ducts shall be protected by fixed glazing listed and labeled for a fire-protection rating of at least three-fourths hour in accordance with Section 713.9. The total area of all openings, other than doors, in any portion of an interior corridor shall not exceed 25 percent of the area of the corridor wall of the room which it is separating from the corridor. For duct openings, see Sections 713.10 and 713.11.

EXCEPTION: Protection of openings in the interior walls of exterior exit balconies is not required when it is possible to exit in two directions.

1005.9 Location on Property. Exterior exit balconies shall not be located in areas where openings are not permitted or where openings are required to be protected due to location on the property.

1005.10 Elevators. Elevators opening into a corridor serving a Group R, Division 1 or Group I Occupancy having an occupant load of 10 or more, or a corridor serving other occupancies having an occupant load of 30 or more shall be provided with an elevator lobby at each floor containing such a corridor. The lobby shall completely separate the elevators from the corridor by construction conforming to Section 1005.7 and all openings into the lobby wall contiguous with the corridor shall be protected as required by Section 1005.8.

- **EXCEPTIONS:** 1. In office buildings classed as Group B Occupancies, separations need not be provided from a street floor lobby, provided the entire street floor is protected with an automatic sprinkler system.
2. Elevators not required to meet the shaft enclosure requirements of Section 711.
3. When additional doors are provided in accordance with Section 3007.

Elevator lobbies shall comply with Section 3002.

In fully sprinklered office buildings, corridors may lead through enclosed elevator lobbies if all areas of the building have access to at least one required exit without passing through the elevator lobby.

SECTION 1006 — STAIRWAYS

1006.1 General. Every stairway having two or more risers serving any building or portion thereof shall conform to the requirements of this section. When aisles in assembly rooms have steps, they shall conform with the provisions in Section 1014.

EXCEPTION: Stairs or ladders used only to attend equipment or window wells are exempt from the requirements of this section.

1006.2 Width. The minimum stairway width shall be determined as specified in Section 1003.2 but shall not be less than 44 inches (1118 mm) except as specified herein and in Chapter 11. Stairways serving an occupant load of 49 or less shall not be less than 36 inches (914 mm) in width.

Handrails may project into the required width a distance of 3 1/2 inches (89 mm) from each side of a stairway. Stringers and other projections such as trim and similar decorative features may project into the required width 1 1/2 inches (38 mm) on each side.

1006.3 Rise and Run. The rise of steps shall not be less than 4 inches (102 mm) or greater than 7 inches (178 mm). Except as permitted in Sections 1006.4 and 1006.6, the run shall not be less than 11 inches (279 mm) as measured horizontally between the vertical planes of the furthestmost projection of adjacent treads. Except as permitted in Sections 1006.4, 1006.5 and 1006.6, the largest tread run within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm). The greatest riser height within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm).

EXCEPTIONS: 1. Private steps and stairways serving an occupant load of less than 10 and stairways to unoccupied roofs may be constructed with an 8-inch-maximum (203 mm) rise and a 9-inch-minimum (229 mm) run.

2. Where the bottom or top riser adjoins a sloping public way, walk or driveway having an established grade and serving as a landing, the bottom or top riser may be reduced along the slope to less than 4 inches (102 mm) in height with the variation in height of the bottom or top riser not to exceed 3 inches (76 mm) in every 3 feet (914 mm) of stairway width.

1006.4 Winding Stairways. In Group R, Division 3 Occupancies and in private stairways in Group R, Division 1 Occupancies, winders may be used if the required width of run is provided at a point not more than 12 inches (305 mm) from the side of the stairway where the treads are narrower, but in no case shall any width of run be less than 6 inches (152 mm) at any point.

1006.5 Circular Stairways. Circular stairways may be used as an exit, provided the minimum width of run is not less than 10 inches (254 mm) and the smaller radius is not less than twice the width of the stairway. The largest tread width or riser height within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (9.5 mm).

1006.6 Spiral Stairways. In Group R, Division 3 Occupancies and in private stairways within individual units of Group R, Division 1 Occupancies, spiral stairways may be installed. Such stairways may be used for required exits when the area served is limited to 400 square feet (37.16 m²).

The tread must provide a clear walking area measuring at least 26 inches (660 mm) from the outer edge of the supporting column to the inner edge of the handrail. A run of at least $7\frac{1}{2}$ inches (191 mm) is to be provided at a point 12 inches (305 mm) from where the tread is the narrowest. The rise must be sufficient to provide 6-foot 6-inch (1981 mm) headroom. The rise shall not exceed $9\frac{1}{2}$ inches (241 mm).

1006.7 Landings. Every landing shall have a dimension measured in the direction of travel not less than the width of the stairway. Such dimension need not exceed 44 inches (1118 mm) when the stair has a straight run. There shall not be more than 12 feet (3658 mm) vertically between landings. For landings with adjoining doors, see Section 1004.10.

EXCEPTION: Stairs serving an unoccupied roof are exempt from these provisions.

1006.8 Basement Stairways. When a basement stairway and a stairway to an upper story terminate in the same exit enclosure, an approved barrier shall be provided to prevent persons from continuing on into the basement. Directional exit signs shall be provided as specified in Section 1013.

1006.9 Handrails. Stairways shall have handrails on each side, and every stairway required to be more than 88 inches (2235 mm) in width shall be provided with not less than one intermediate handrail for each 88 inches (2235 mm) of required width. Intermediate handrails shall be spaced approximately equally across with the entire width of the stairway.

EXCEPTIONS: 1. Stairways less than 44 inches (1118 mm) in width or stairways serving one individual dwelling unit in Group R, Division 1 or 3 Occupancies or a Group R, Division 3 congregate residence may have one handrail.

2. Private stairways 30 inches (762 mm) or less in height may have handrails on one side only.

3. Stairways having less than four risers and serving one individual dwelling unit in Group R, Division 1 or 3, or a Group R, Division 3 congregate residence or serving Group U Occupancies need not have handrails.

The top of handrails and handrail extensions shall be placed not less than 34 inches (864 mm) or more than 38 inches (965 mm) above the nosing of treads and landings. Handrails shall be continu-

ous the full length of the stairs and, except for private stairways, at least one handrail shall extend in the direction of the stair run not less than 12 inches (305 mm) beyond the top riser nor less than 12 inches (305 mm) beyond the bottom riser. Ends shall be returned or shall terminate in newel posts or safety terminals.

The handgrip portion of handrails shall not be less than $1\frac{1}{4}$ (32 mm) inches nor more than 2 inches (51 mm) in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners.

Handrails projecting from a wall shall have a space of not less than $1\frac{1}{2}$ inches (38 mm) between the wall and the handrail.

1006.10 Guardrails. Stairways open on one or both sides shall have guardrails as required by Section 1001.5.

1006.11 Protection of Exterior Wall Openings. Except in Group R, Division 3 Occupancies, all openings in the exterior wall below and within 10 feet (3048 mm), measured horizontally, of an exterior exit stairway or unprotected openings in an interior exit stairway serving a building over two stories in height or a floor level having such openings in two or more floors below shall be protected by fixed, self-closing, or automatic-closing fire assemblies having a three-fourths-hour fire-protection rating.

EXCEPTIONS: 1. Openings may be unprotected when two separated exterior stairways serve an exterior exit balcony.

2. Protection of openings is not required for open parking garages conforming to Section 405.

1006.12 Interior Stairway Construction. Interior stairways shall be constructed as specified in Sections 602.4, 603.4, 604.4, 605.4 and 606.4.

Except when enclosed usable space under stairs is prohibited by Section 1009.6, the walls and soffits of the enclosed space shall be protected on the enclosed side as required for one-hour fire-resistive construction.

All required interior stairways which extend to the top floor in any building four or more stories in height shall have, at the highest point of the stair shaft, an approved hatch openable to the exterior not less than 16 square feet (1.5 m²) in area with a minimum dimension of 2 feet (610 mm).

EXCEPTION: The hatch need not be provided on pressurized enclosures or on stairways that extend to the roof with an opening onto that roof.

Stairways exiting directly to the exterior of a building four or more stories in height shall be provided with means for emergency entry for fire department access.

1006.13 Exterior Stairway Construction. Exterior stairways shall be constructed as specified in Sections 602.4, 603.4, 604.4, 605.4 and 606.4.

Exterior stairways shall not project into yards where openings are not permitted or protection of openings is required.

Enclosed usable space under stairs shall have the walls and soffits protected on the enclosed side as required for one-hour fire-resistive construction.

Stairways exiting directly to the exterior of a building four or more stories in height shall be provided with means for emergency entry for fire department access.

1006.14 Stairway to Roof. In buildings four or more stories in height, one stairway shall extend to the roof surface, unless the roof has a slope greater than 4 in 12. See Section 1006.12 for roof hatch requirements.

1006.15 Headroom. Every stairway shall have a headroom clearance of not less than 6 feet 8 inches (2032 mm). Such clearances shall be measured vertically from a plane parallel and tangent to the stairway tread nosings to the soffit above at all points.

1006.16 Stairway Identification. Approved stairway identification signs shall be located at each floor level in all enclosed stairways in buildings four or more stories in height. The sign shall identify the stairway, indicate whether there is roof access, the floor level, and the upper and lower terminus of the stairway. The sign shall be located approximately 5 feet (1524 mm) above the floor landing in a position which is readily visible when the door is in the open or closed position. Signs shall comply with requirements of U.B.C. Standard 10-2.

SECTION 1007 — RAMPS

1007.1 General. Except for ramped aisles in assembly rooms, ramps used as exits shall conform to the provisions of this section. Ramped aisles within assembly rooms shall conform with the provisions in Section 1014. Ramps which are located within an accessible route of travel shall also comply with Chapter 11.

1007.2 Width. The width of ramps shall be determined as specified in Section 1003.2, but shall not be less than 44 inches (1118 mm), except as specified herein. Ramps serving an occupant load of 49 or less shall not be less than 36 inches (914 mm) in width.

Handrails may project into the required width a distance of 3 1/2 inches (89 mm) from each side of a ramp. Other projections, such as trim and similar decorative features, may project into the required width 1 1/2 inches (38 mm) on each side.

1007.3 Slope. The slope of ramps required by Chapter 11 which are located within an accessible route of travel shall not be steeper than 1 unit vertical in 12 units horizontal (8% slope). The slope of other ramps shall not be steeper than 1 unit vertical in 8 units horizontal (12.5% slope).

1007.4 Landings. Ramps having slopes steeper than 1 unit vertical in 15 units horizontal (6.7% slope) shall have landings at the top and bottom, and at least one intermediate landing shall be provided for each 5 feet (1524 mm) of rise. Top landings and intermediate landings shall have a dimension measured in the direction of ramp run of not less than 5 feet (1524 mm). Landings at the bottom of ramps shall have a dimension in the direction of ramp run of not less than 6 feet (1829 mm).

Doors in any position shall not reduce the minimum dimension of the landing to less than 42 inches (1067 mm) and shall not reduce the required width by more than 3 1/2 inches (89 mm) when fully open.

When ramp access is provided to comply with Chapter 11 and a door swings over a landing, the landing shall extend at least 24 inches (610 mm) beyond the latch edge of the door, measured parallel to the door in the closed position, and shall have a length parallel to the direction of travel through the doorway of not less than 5 feet (1524 mm).

1007.5 Handrails. Ramps having slopes steeper than 1 unit vertical in 15 units horizontal (6.7% slope) shall have handrails as required for stairways, except that intermediate handrails shall not be required. Ramped aisles need not have handrails on sides serving fixed seating.

1007.6 Construction. Ramps shall be constructed as required for stairways.

1007.7 Surface. The surface of ramps shall be roughened or shall be of slip-resistant materials.

1007.8 Guardrails. Ramps open on one or both sides shall have guardrails as required by Section 509.

1007.9 Headroom. Ramps shall have a headroom clearance of not less than 7 feet (2134 mm). Such clearances shall be measured vertically from the finished floor surface of the ramp and landings to the soffit above at all points.

SECTION 1008 — HORIZONTAL EXIT

1008.1 Used as a Required Exit. A horizontal exit may be considered as a required exit when conforming to the provisions of this chapter. A horizontal exit shall not serve as the only exit from a

1021.7.10 Minimum exit width. No exit shall be less than 42 inches (1067 mm) in width.

SECTION 1022 — BUILDING SECURITY

See Appendix Chapter 10 for requirements governing building security.

TABLE 10-A—MINIMUM EGRESS REQUIREMENTS¹

USE ²	MINIMUM OF TWO EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS AT LEAST	OCCUPANT LOAD FACTOR ³ (square feet) × 0.0029 for m ²
1. Aircraft hangars (no repair)	10	500
2. Auction rooms	30	7
3. Assembly areas, concentrated use (without fixed seats) Auditoriums Churches and chapels Dance floors Lobby accessory to assembly occupancy Lodge rooms Reviewing stands Stadiums Waiting area	50 50	7 3
4. Assembly areas, less-concentrated use Conference rooms Dining rooms Drinking establishments Exhibit rooms Gymnasiums Lounges Stages	50	15
5. Bowling alley (assume no occupant load for bowling lanes)	50	4
6. Children's homes and homes for the aged	6	80
7. Classrooms	50	20
8. Congregate residences	10	200
9. Courtrooms	50	40
10. Dormitories	10	50
11. Dwellings	10	300
12. Exercising rooms	50	50
13. Garage, parking	30	200
14. Hospitals and sanitariums— Health-care center Nursing homes Sleeping rooms Treatment rooms	10 6 10	80 80 80
15. Hotels and apartments	10	200
16. Kitchen—commercial	30	200
17. Library reading room	50	50
18. Locker rooms	30	50

(Continued)

TABLE 10-A—MINIMUM EGRESS REQUIREMENTS¹—(Continued)

USE ²	MINIMUM OF TWO EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS AT LEAST	OCCUPANT LOAD FACTOR ³ (square feet) × 0.0029 for m ²
19. Malls (see Chapter 4)	—	—
20. Manufacturing areas	30	200
21. Mechanical equipment room	30	300
22. Nurseries for children (day care)	7	35
23. Offices	30	100
24. School shops and vocational rooms	50	50
25. Skating rinks	50	50 on the skating area: 15 on the deck
26. Storage and stock rooms	30	300
27. Stores—retail sales rooms		
Basements and ground floor	50	30
Upper floors	50	60
28. Swimming pools	50	50 for the pool area: 15 on the deck
29. Warehouses	30	500
30. All others	50	100

¹Access to, and egress from, buildings for persons with disabilities shall be provided as specified in Chapter 11.

²For additional provisions on number of exits from Groups H and I Occupancies and from rooms containing fuel-fired equipment or cellulose nitrate, see Sections 1018, 1019 and 1020, respectively.

³This table shall not be used to determine working space requirements per person.

⁴Occupant load based on five persons for each alley, including 15 feet (4572 mm) of runway.

TABLE 10-B—CALCULATION FOR MINIMUM WIDTH IN BUILDINGS WITHOUT SMOKE-PROTECTED ASSEMBLY SEATING¹

NUMBER OF SEATS	STAIRS	INCH OF CLEAR WIDTH PER SEAT SERVED PASSAGEWAY, RAMPS AND DOORWAYS
		× 25.4 for mm
Unlimited	0.300 AB	0.220 C

¹See Section 1014.3 for determination of values A, B and C.

TABLE 10-C—CALCULATION FOR MINIMUM WIDTH IN BUILDINGS WITH SMOKE-PROTECTED ASSEMBLY SEATING¹

NUMBER OF SEATS	STAIRS	INCH OF CLEAR WIDTH PER SEAT SERVED PASSAGEWAYS, RAMPS AND DOORWAYS
		× 25.4 for mm
2,000	0.300 AB	0.220 C
5,000	0.200 AB	0.150 C
10,000	0.130 AB	0.100 C
15,000	0.096 AB	0.070 C
20,000	0.076 AB	0.056 C
25,000 or more	0.060 AB	0.044 C

¹See Section 1014.3 for determination of values A, B and C.

Chapter 30 ELEVATORS, DUMBWAITERS, ESCALATORS AND MOVING WALKS

SECTION 3001 — SCOPE

The provisions of this chapter shall apply to the design, construction, installation, operation, alteration and repair of elevators, dumbwaiters, escalators and moving walks and their hoistways.

SECTION 3002 — ELEVATOR AND ELEVATOR LOBBY ENCLOSURES

Walls and partitions enclosing elevator and dumbwaiter hoistway shafts and escalator shafts shall not be of less than the fire-resistive construction required under Types of Construction in Chapter 6 of this code.

Elevator hoistway shaft enclosure walls not required to have a fire-resistive rating may be constructed with glass. Such glass shall be laminated glass that passes the test requirements of Part I of U.B.C. Standard 24-2.

Elevator lobbies shall have at least one exit. The use of such exit shall not require keys, tools or special knowledge or effort.

SECTION 3003 — SPECIAL PROVISIONS

3003.1 Number of Cars in Hoistway. When there are three or fewer elevator cars in a building, they may be located within the same hoistway enclosure. When there are four elevator cars, they shall be divided in such a manner that at least two separate hoistway enclosures are provided. When there are more than four elevators, not more than four elevator cars may be located within a single hoistway enclosure.

3003.2 Smoke-detection Recall. When the elevator vertical travel is 25 feet (7620 mm) or more, each associated elevator lobby or entrance area and associated machine rooms shall be provided with an approved listed smoke detector for elevator recall purposes only. The detector may serve to close the elevator lobby door and additional doors at the hoistway opening allowed in Section 3006.

When the lobby or entrance area smoke detector, or machine room smoke detector is activated, elevator doors shall be prevented from opening and all cars serving that lobby or entrance area, or served by equipment in that machine room, shall return to the main floor where they shall be under manual control only. If the main floor or transfer floor lobby or entrance-area smoke detector is activated, all cars serving the main floor or transfer floor shall return to a location approved by the chief of the fire department and building official where they shall be under manual control only.

3003.3 Standby Power. Standby power when required by Section 403 shall be provided to at least one elevator in each bank. Standby power shall be manually transferable to all elevators in each bank. Standby power shall be provided by an approved self-contained generator set to operate automatically whenever there is a loss of electrical power to the building. The generator set shall be located in a separate room enclosed by at least a one-hour fire-resistive occupancy separation. The generator shall have a fuel supply adequate to operate the equipment connected to it for a minimum of two hours.

EXCEPTIONS: 1. Where a single elevator serves all floor levels in the building and is located so that all areas of the building can be reached within a travel distance of 300 feet (91.44 m) from the elevator, then only that elevator need be provided with standby power.

2. Standby power shall be capable of operating one elevator at a time in any bank or group of banks having a common lobby.

when the call is answered. Depth of flush or recessed button when operated shall not exceed $\frac{3}{8}$ inch (10 mm).

3003.4.15 Hall lantern. A visual and audible signal shall be provided at each hoistway entrance indicating to the prospective passenger the car answering the call and its direction of travel.

The visual signal for each direction shall be a minimum of $2\frac{1}{2}$ inches (64 mm) in size and visible from the proximity of the hall call button.

The audible signal shall sound once for the up direction and twice for the down direction.

The center line of the fixture shall be located a minimum of 6 feet (1829 mm) from the floor.

The use of in-car lanterns conforming to above and located in jamb shall be acceptable.

3003.4.16 Doorjamb marking. The floor designation shall be provided at each hoistway entrance on both sides of jamb visible from within the car and the elevator lobby at a height of 60 inches (1524 mm) above the floor. Designations shall be on a contrasting background 2 inches (51 mm) high and raised 0.030 inch (0.8 mm).

Applied plates permanently attached shall be acceptable.

3003.5 Stretcher Requirements. In all structures four or more stories in height, at least one elevator shall be provided with a minimum clear distance between walls or between walls and door excluding return panels, not less than 80 inches by 54 inches (2032 mm by 1372 mm), and a minimum distance from wall to return panel not less than 51 inches (1295 mm) with a 42-inch (1067 mm) side slide door, unless otherwise designed to accommodate an ambulance-type stretcher 76 inches (1930 mm) by 24 inches (610 mm) in the horizontal position.

In buildings where one elevator does not serve all floors, two or more elevators may be used. The elevators shall be identified by the international symbol for emergency medical services (Star of Life). The symbol shall not be less than 3 inches (76 mm) and placed inside on both sides of the hoistway door frame. The symbol shall be placed no lower than 78 inches (1981 mm) from the floor level or higher than 84 inches (2134 mm) from floor level.

3003.6 Emergency Signs. Except at the main entrance level, an approved pictorial sign of a standardized design shall be posted adjacent to each elevator call station which will indicate that, in case of fire, the elevator will not operate and that exit stairways should be used.

3003.7 Restricted or Limited-use Elevators. The building official may waive the requirements of this section for any elevator designed for limited or restricted use serving only specific floors or a specific function.

SECTION 3004 — HOISTWAY VENTING

Shafts (hoistways) housing elevators extending through more than two floor levels shall be vented to the outside. The area of the vent shall not be less than $3\frac{1}{2}$ percent of the area of the elevator shaft, provided a minimum of 3 square feet (0.279 m²) per elevator is provided. Vents shall be capable of manual operation only.

The venting of each individual hoistway shall be independent from any other hoistway venting, and the interconnection of separate hoistways for the purpose of venting is prohibited.

SECTION 3005 — ELEVATOR MACHINE ROOM

3005.1 Operation Solid-state Equipment. When solid-state equipment is used to operate the elevators, the elevator equipment room shall be provided with an independent ventilation or air-conditioning system to prevent the overheating of the electrical equipment. The operating temperature shall be established by the elevator equipment manufacturer's specification. When standby

SECTION 101 MACHINE ROOMS AND MACHINERY SPACES

Rule 101.1 Enclosure of Machine Rooms and Machinery Spaces

- ② **101.1a Enclosures Required for Elevators Having Fire-Resistive Hoistway Enclosures.** Spaces containing machines, control equipment, sheaves, and other machinery shall be protected from the weather, and shall be enclosed with fire-resistive enclosures. Enclosures and access doors thereto shall have a fire endurance at least equal to that required for the hoistway enclosure.

EXCEPTIONS (Rule 101.1a)

- ③ (1) Partitions between elevator machine rooms and fire-resistive hoistways (see Rule 100.1a(2)).
(2) Screw machines may be installed inside the hoistway without additional enclosures provided that the control equipment shall be located outside the hoistway.
(3) Enclosures located above the roof level may be of the openwork type. Such enclosures shall reject a ball 2 in. (51 mm) in diameter and shall be of noncombustible material.

NOTE (Rule 101.1a): See Rule 100.3 for floors of machine rooms and machinery spaces over hoistways.

Rule 101.1a Where a 2 hr fire-resistive hoistway enclosure is required, the machine room and/or machinery space must be enclosed by a 2 hr fire-resistive enclosure. Where a 1 hr hoistway enclosure is required, a 1 hr machine room and/or machinery space enclosure is required. Entrances to machine rooms and/or machinery spaces that are enclosed by fire-resistive construction must be rated at 1½ hr when a 2 hr fire-resistive hoistway enclosure is provided. When the hoistway and machine room enclosure has a fire-resistive rating other than 2 hr, the entrance rating must be as specified in the building code (see Section 3 definitions).

101.1b Enclosures Required for Elevators Having Non-Fire-Resistive Hoistway Enclosures. Spaces containing machines, control equipment, sheaves, and other machinery shall be enclosed with noncombustible material extending to a height of not less than 6 ft (1.83 m). Openwork material, if used, shall reject a ball 2 in. (51 mm) in diameter.

Rule 101.2 Equipment in Machine Rooms

Rule 101.2 The intent of this requirement is to prevent unauthorized personnel from entering an

area that is hazardous to the untrained. When the machine room is located at the top of the hoistway, other mechanical equipment essential to the operation of the building, such as HVAC equipment, can be in the same room provided the elevator machine and associated control equipment are separated from the other equipment by a 6 ft (1.83 m) high metal grille enclosure with a self-closing and self-locking gate. Clearances from electrical equipment in the enclosure must be maintained as required by other Rules in this Code and the National Electrical Code (see also Rule 210.4).

When the elevator machine room is not located at the top of the hoistway, equipment not essential to the operation of the elevator is prohibited from being in the machine room, as there would be no means to limit the spread of fire which started in a basement machine room. For this reason, the fire loading in the basement elevator machine room is limited to elevator machinery and equipment required for the operation of the elevator.

Elevator machine room and/or machinery spaces should only contain elevator machinery and associated control equipment (Rule 101.2a). Foreign equipment such as TV antenna controls, radio transmission equipment, etc. should not be in this room. Electronic and radio transmission equipment located in an elevator machine room could cause interference with solid state devices.

101.2a Equipment Permitted in Machinery and Control Spaces. Elevator machine and control equipment may be located in a room or space containing other machinery and equipment essential to the operation of the building, provided that they are separated from the other machinery or equipment by a substantial metal grille enclosure not less than 6 ft (1.83 m) high with a self-closing and self-locking door. The grille enclosure shall be of a design which will reject a ball 2 in. (51 mm) in diameter.

101.2b Equipment Prohibited in Machine Room. Where the elevator machine and control equipment are not located at the top of the hoistway, only machinery and equipment required for the operation of the elevator shall be permitted in the elevator machine room.

TABLE A-29-A—MINIMUM PLUMBING FIXTURES^{1, 2, 3}

TYPE OF BUILDING OR OCCUPANCY ⁴	WATER CLOSETS ⁵ (fixtures per person)		LAVATORIES ⁶ (fixtures per person)		BATHTUB OR SHOWER (fixtures per person)
	MALE	FEMALE	MALE	FEMALE	
For the occupancies listed below, use 30 square feet (2.29 m ²) per occupant for the minimum number of plumbing fixtures.					
Group A Conference rooms, dining rooms, drinking establishments, exhibit rooms, gymnasiums, lounges, stages and similar uses including restaurants classified as Group B Occupancies	1:1-25 2:26-75 3:76-125 4:126-200 5:201-300 6:301-400 Over 400, add one fixture for each additional 200 males or 150 females.	1:1-25 2:26-75 3:76-125 4:126-200 5:201-300 6:301-400	one for each water closet up to four; then one for each two additional water closets		
For the assembly occupancies listed below, use the number of fixed seating or, where no fixed seating is provided, use 15 square feet (1.39 m ²) per occupant for the minimum number of plumbing fixtures.					
Assembly places— Auditoriums, convention halls, dance floors, lodge rooms, stadiums and casinos	1:1-50 2:51-100 3:101-150 4:151-300 Over 300 males, add one fixture for each additional 200, and over 400 females add one for each 125.	3:1-50 4:51-100 6:101-200 8:201-400	1:1-200 2:201-400 3:401-750 Over 750, add one fixture for each additional 500 persons.	1:1-200 2:201-400 3:401-750	
For the assembly occupancies listed below, use the number of fixed seating or, where no fixed seating is provided, use 30 square feet (2.29 m ²) per occupant for the minimum number of plumbing fixtures.					
Worship places Principal assembly area Worship places Educational and activity unit	one per 150 one per 125	one per 75 one per 75	one per 2 water closets one per 2 water closets		
For the occupancies listed below, use 200 square feet (18.58 m ²) per occupant for the minimum number of plumbing fixtures.					
Group B	1:1-15 2:16-35 3:36-55 Over 55, add one for each 50 persons.	1:1-15 2:16-35 3:36-55	one per 2 water closets		

(Continued)

Jails and reformatories			
Cell	one per cell	one per cell	
Exercise room	one per exercise room	one per exercise room	
Other institutions (on each occupied floor)	one per 25	one per 10	one per eight
For the occupancies listed below, use 200 square feet (18.58 m ²) per occupant for the minimum number of plumbing fixtures.			
Group M Retail or wholesale stores	1:1-50 2:51-100 3:101-400 4:201-300 5:301-400 Over 400, add one fixture for each additional 500 males and one for each 150 females.	1:1-50 2:51-100 3:101-200 One for each two water closets.	
For Group R Occupancies, dwelling units and hotel guest rooms, use the chart. For congregate residences, use 200 square feet (18.58 m ²) for Group R, Division 1 Occupancies and 300 square feet (27.87 m ²) for Group R, Division 3 Occupancies for the minimum plumbing fixtures.			
Group R Dwelling units Hotel guest rooms	one per dwelling unit one per guest room	one per dwelling unit one per guest room	one per dwelling unit one per guest room
Congregate residences	one per 10 Add one fixture for each additional 25 males and one for each additional 20 females.	one per eight Over 12, add one fixture for each additional 20 males and one for each additional 15 females.	one per 12 Over 12, add one fixture for each additional 20 males and one for each additional 15 females.
For the occupancies listed below, use 5,000 square feet (464.5 m ²) per occupant for the minimum number of plumbing fixtures.			
Group S Warehouses	1:1-10 2:11-25 3:26-50 4:51-75 5:76-100 Over 100, add one for each 300 males and females.	1:1-10 2:11-25 3:26-50 4:51-75 5:76-100 One per 40 occupants of each sex.	one shower for each 15 persons exposed to excessive heat or to skin contamination with poisonous, infectious or irritating materials

¹The figures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction thereof.

²Any category not mentioned specifically or about which there are any questions shall be classified by the building official and included in the category which it most nearly resembles, based on the expected use of the plumbing facilities.

³Where urinals are provided, one water closet less than the number specified may be provided for each urinal installed, except the number of water closets in such cases shall not be reduced to less than one half of the minimum specified.

⁴Drinking fountains shall not be installed in toilet rooms.

⁵Twenty-four inches (610 mm) of wash sink or 18 inches (457 mm) of a circular basin, when provided with water outlets for such space, shall be considered equivalent to one lavatory.

⁶When the design occupant load is less than 10 persons, a facility usable by either sex may be approved by the building official.

NOTE: Occupant loads over 30 shall have one drinking fountain for each 150 occupants.

APPENDIX B

APPENDIX B OCCUPANT LOAD AND EXIT CALCULATIONS

October 1995

Rooms	Area	Occ. Factor	Occ. Load
FIRST FLOOR			
JUDICIAL SERVICES (PRISONER HOLDING)			
AST 145	260	15	17.33
Office 144	142	100	1.42
Office/ CL147	60	100	0.60
Storage 148	35	300	0.12
Janitor 149	20	-	-
Break 150	45	15	3.00
Cell 152A	42	15	2.80
Cell 152B	130.25	15	8.68
Open Office 152	400.5	100	4.01
Office 162	80	100	0.80
Office 163	60	100	0.60
SUBTOTAL	1274.75		39.36
JURY ASSEMBLY (COURT SERVICES)			
Jury Assembly 161	1415	NA	*96.00
Jury Clerk 156	228	100	2.28
Office 157	114	100	1.14
Office 158	176	100	1.76
Copy	99	100	0.99
SUBTOTAL	2032		102.17
TRAFFIC COURT (MAGISTRATES AND MASTERS)			
Office 105	120	100	1.20
Office 104	120	100	1.20
Courtroom 5	991.75	NA	*58.00
SUBTOTAL	1231.75		60.40
ACCOUNTING/TRAFFIC			

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Rooms	Area	Occ. Factor	Occ. Load
Office 112	115.5	100	1.16
Traffic Arraignments 107	908	100	9.08
SUBTOTAL	1023.5		10.24
TRANSCRIPTS			
Transcripts 116	688	100	6.88
Office 112	115.5	100	1.16
Office 111	136	100	1.36
Office 117	127.5	100	1.28
Files 118	157.5	300	0.53
Storage 113	27	300	0.09
SUBTOTAL	1251.5		11.30
CORONER/VITAL STATISTICS (MAGISTRATES AND MASTERS)			
Storage 119	115.5	300	0.39
Storage 120	99.75	300	0.33
Coroner 137	285	100	2.85
Storage 136	108.75	300	0.36
Office 135	130	100	1.30
Office 134	135	100	1.35
Storage 133	112	300	0.37
Marriage 138	231	100	2.31
SUBTOTAL	1217		9.26
LAW LIBRARY			
Law Library 131	4626	50	*92.52
Copy 127	264	100	2.64
Storage 130	121	300	0.40
Office 132	144	100	1.44
Office 139	156	100	1.56
SUBTOTAL	5311		98.56

Rooms	Area	Occ. Factor	Occ. Load
BUILDING SERVICES			
Maint. Shop 121	249.75	100	2.50
Maint. Storage 164	141.75	300	0.47
Electrical 163	94.5	-	-
Mechanical 122	602	-	-
Security 191	287	100	2.87
Restrooms			
Men 125	231	-	-
Women 126	225.5	-	-
SUBTOTAL	1831.5		5.84
TOTAL - Floor occupancy	15173 sf		337.13
CALCULATIONS FOR NUMBER OF EXITS REQUIRED - 1ST FLOOR			
Total Floor Occupancy			337.13
No. of exits required			2.00
CALCULATION FOR WIDTH OF EXITS REQUIRED			
Total Floor Occupancy			337.13
No. of exits provided			8.00
Total required exit door width		0.2	67.43"
Total exit width provided			432"
* Need two exits			

Rooms	Area	Occ. Factor	Occ. Load
SECOND FLOOR			
AREA COURT ADMINISTRATOR			
ACA/Personnel/Bailiff 202	440.5	100	4.41
Storage 201	200	300	0.67
Office 201A	152	100	1.52
Office 203	280	100	2.80
SUBTOTAL	1072.5		9.40
CHILD CUSTODY INVESTIGATION			
CI Office 209	371	100	3.71
Office 207	120	100	1.20
Office 211	120	100	1.20
SUBTOTAL	611		6.11
COMMITTING MAGISTRATE (MAGISTRATES AND MASTERS)			
CM Office 210A	244	100	2.44
Office 212	217	100	2.17
Office 210	132	100	1.32
SUBTOTAL	593		5.93
SUPERIOR COURT JUDGES' CHAMBERS			
J.C. 216	538.5	100	5.39
Office 213	162.75	100	1.63
Office 218	105	100	1.05
Office 219	110.25	100	1.10
SUBTOTAL	916.5		9.17
INCOURTS			
Office 221	210	100	2.10
Office 220	175	100	1.75
SUBTOTAL	385		3.85

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Rooms	Area	Occ. Factor	Occ. Load
PROBATES/A.L. CLOSUIT (MAGISTRATES AND MASTERS)			
Office 228	237.25	100	2.37
Office 223	225	100	2.25
Office 224	118.5	100	1.19
File 225	156	300	0.52
Office 227	156	100	1.56
SUBTOTAL	892.75		7.89
SPECIAL ASSAULT UNIT (D.A.)			
Office 251	200	100	2.00
Office 250	232	100	2.32
SUBTOTAL	432		4.32
DISTRICT ATTORNEY (LEASING)			
Office 229	136.5	100	1.37
Office 229A	94.5	100	0.95
Storage 231	112.5	300	0.38
Office 230	133	100	1.33
D.A. 233	250	100	2.50
Office 232	142.5	100	1.43
Office 235	135	100	1.35
Office 236	135	100	1.35
D.A. Office 237	487.5	100	4.88
Office 238	156.25	100	1.56
Office 239	112.5	100	1.13
Office 240	131.25	100	1.31
Office 242	187.5	100	1.88
Open Office 241	681.5	100	6.82
Files 244	293.75	300	0.98
Office 246	161	100	1.61

Rooms	Area	Occ. Factor	Occ. Load
DISTRICT ATTORNEY (LEASING) Cont.			
Dept of Law 247	306	100	3.06
Office 245	72	100	0.72
Office 247A	76.5	100	0.77
Office 248	175	100	1.75
Office 249	203	100	2.03
SUBTOTAL	4182.75		39.16
GRAND JURY			
Grand Jury 258C	645.75	NA	23.00
Toilet 258D	22.5	-	-
Toilet 258E	25	-	-
Vestibule 258F	55	-	-
Anteroom 258B	145	100	1.45
SUBTOTAL	893.25		24.45
SUPERIOR COURTROOMS E AND D			
Anteroom 263A	119	100	1.19
Sup Ctroom E/258A (with soundlock)	661.5	NA	33.00
Sup Ctroom D/258	1618.5	NA	*94.00
Storage 260	217	300	0.72
Jury Rm 259	281.25	NA	-
Toilet 259 B	30	-	-
Toilet 259 A	30	-	-
SUBTOTAL	2957.25		128.91

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Rooms	Area	Occ. Factor	Occ. Load
BLDG SERVICES			
Telephone 234	21	-	-
Mech 222	259	-	-
Mech 256	255	-	-
Janitor	87.5	-	-
Men 264	108	-	-
Women 263	104	-	-
Men 254	189.75	-	-
Women/252/254	315	-	-
SUBTOTAL	1339.25	-	-
TOTAL FLOOR OCCUPANCY	14275.25 sf		239.19
CALCULATION FOR NUMBER OF EXITS REQUIRED 2ND FLOOR			
Total Floor Occupancy			239.19
No. of exits required			2.00
CALCULATION FOR WIDTH OF EXITS REQUIRED			
Total Floor Occupancy			239.19
No. of exits provided			3.00
Total required exit door width		0.2	47.84"
Total exit width provided			108"
Min width/exit door			36"
Total exit stair width/flr		0.3	71.76"
Min. Width/Exit stair			23.92"
* Need two exits			

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Rooms	Area	Occ. Factor	Occ. Load
THIRD FLOOR			
CLERK OF COURT OFFICE			
COC Office 342	4386.75	100	43.87
Office 301	146.25	100	1.46
Office 301A	161.5	100	1.62
Office 342A	166.25	100	1.66
Office 342B	166.25	100	1.66
Vault 342C	120	-	-
Office 342E	198	100	1.98
Office 326	279	100	2.79
SUBTOTAL COCO	5624		*55.04
PRETRIAL SERVICES 341	217	100	2.17
SUBTOTAL	5841		57.21
DISTRICT COURT			
Attorney 320	136	100	1.36
Attorney 340	128	100	1.28
Witness 339	80	100	0.80
District Ctroom #1/319	1068.5	NA	*67.00
Jury Rm 1 / 318	296	NA	-
Toilet 317	31.5	-	-
District Ctroom #2/ 307	1047.25	-	*57.40
Jury Room #2/309	271.25	NA	-
Toilet 312	27	-	-
District Ctroom #3/303	935.75	NA	*54.00
Jury Rm #3/303 A	165.75	NA	-
Toilet 303B	39	-	-
SUBTOTAL	4226		181.89

Rooms	Area	Occ. Factor	Occ. Load
JUDGES CHAMBERS (DISTRICT COURT)			
Judges Chambers 313	584.5	100	5.85
Office 315	246	100	2.46
Office 314	234	100	2.34
Office 308	201	100	2.01
Toilet 311	24	-	-
Judges' Chambers 304	279	100	2.79
Toilet 343	18	-	-
Office 305	242	100	2.42
SUBTOTAL	1828.5		17.87
SUPERIOR COURT			
Superior Ctroom #4 / 338	1195	NA	*78.00
Anteroom 342D	204	100	2.04
Jury Room #4 / 338A	307	NA	-
Toilet 338B	35.75	-	-
SUBTOTAL	1741.75		80.04
BUILDING SERVICES			
Men 323	189.75	-	-
Women 324	315	-	-
Mech 322	255	-	-
Mech 306	259	-	-
Janitor 338A	40	-	-
SUBTOTAL	1058.75		-
TOTAL FLOOR OCCUPANCY	14696		336.96

Rooms	Area	Occ. Factor	Occ. Load
CALCULATION FOR NUMBER OF EXITS REQUIRED - 3RD FLOOR			
Total floor occupancy			336.96
No. of exits required			2.00
CALCULATION FOR WIDTH OF EXITS REQUIRED			
Total floor occupancy			336.96
No. of exits provided			3.00
Total required exit door width		0.2	67.39"
Total exit width provided			108"
Min. width/exit door			36"
Total exit stair width/floor		0.3	101.09"
Min. width/exit stair			33.70"

Rooms	Area	Occ. Factor	Occ. Load
FOURTH FLOOR			
SUPREME COURT			
S. Ct 418	440.5	100	4.41
Office 418A	318	100	3.18
Closet 418B	66	300	0.22
Conf. 418C	100	15	6.70
Office 418D	115	100	1.15
Office 418G	120	100	1.20
Library 418F	466.25	50	9.33
Toilet 418E	44	-	-
SUBTOTAL	1669.75		26.19
IN-COURTS			
Vault 411B	175	-	-
Copy 411	201.5	100	2.02
Storage 411A	155	300	0.52
Storage 407D	140	300	0.47
Storage 407C	88	300	0.29
Storage 407B	44	300	0.15
SUBTOTAL	803.5		3.45
SUPERIOR COURTS			
Sup. Courtroom A/452 (with soundlock)	1472.50	NA	*82.00
Jury Room A/445	308	NA	-
Toilet 448	33	-	-
Toilet 449	30	-	-
Anteroom 451	154	100	1.54
Sup. Courtrm. B/443(w/sound lock)	1401.25	NA	*82.00
Jury Room B/444	247.25	NA	-
Toilet 446	30	-	-
Toilet 447	33	-	-

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Rooms	Area	Occ. Factor	Occ. Load
Anteroom 450	161	100	1.61
Sup. Courtroom C/442	1401.25	NA	*95.00
Jury Room C/401	421.75	NA	-
Toilet 403	26	-	-
Toilet 402	26	-	-
Anteroom 442A	80.75	100	8.08
Jury Smoking 407	408	15	27.20
SUBTOTAL	6233.75		297.43
JUDGES' CHAMBERS (SUPERIOR COURT)			
Sup Court 439	1325	100	13.25
Office 424	310	100	3.10
Toilet 453	20.25	-	-
Office 425	270	100	2.70
Office 426	187.25	100	1.87
Toilet 427/8	40	-	-
Office 429	270	100	2.70
Office 430	199.75	100	2.00
Toilet 431/2	42.5	-	-
Office 433	288	100	2.88
Office 434	200.25	100	2.00
Toilet	42.5	-	-
Office 437	297	100	2.97
Office 438	252	100	2.52
Office 439C	104.5	100	1.05
Office 439B	114	100	1.14
Office 439A	90.25	100	0.90
SUBTOTAL	4053.25		39.08

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Rooms	Area	Occ. Factor	Occ. Load
JUDICIAL SERVICES			
Juvenile Holding	110	15	7.33
SUBTOTAL	110		7.33
BUILDING SERVICES			
Men 422	189.75	-	-
Women 423	315	-	-
Mech 420	255	-	-
Mech 404	259	-	-
Janitor 445A	22.5	-	-
Janitor 440A	21	-	-
SUBTOTAL	1062.25 sf		-
TOTAL FLOOR OCCUPANCY	13932.50 sf		366.15
CALCULATION FOR NUMBER OF EXITS REQUIRED - 4TH FLOOR			
Total Floor Occupancy			366.15
No. of exits required			2.00
CALCULATION FOR WIDTH OF EXITS REQUIRED			
Total Floor Occupancy			366.15
No. of exits provided			3.00
Total required exit door width		0.20	73.23"
Total exit width provided			108"
Min width/exit door			36"
Total exit stair width/floor		0.30	109.85"
Min width exit stair/floor			36.62"

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Rooms	Area	Occ. Factor	Occ. Load
PENTHOUSE (BUILDING SERVICES)			
Mech 500	1673.75	-	-
SUBTOTAL	1673.75		0
TOTAL FLOOR OCCUPANCY	1673.75		0
EXIT DOOR WIDTH			min 36"
EXIT STAIR WIDTH			min 36"
TOTAL BUILDING OCCUPANCY	59750.50		1279.43

Traffic/Arraignment Courtroom # 5 (First Floor)

Audience Bench Seating	49
Litigants/Defendants	4
Witness	1
Security Officers	2
Clerk	1
Judge	1
TOTAL	58

Superior Courtroom D (Second Floor)

Audience Bench Seating Other Seating	56 14
Litigants/Defendants	4
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	15
TOTAL	94

Superior Courtroom E (Second Floor)

Audience Bench Seating	23
Litigants/Defendants	5
Witness	1
Security Officers	2
Clerk	1
Judge	1
TOTAL	33

District Courtroom #1 (Third Floor)

Audience Bench Seating	49
Litigants/Defendants	6
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	7
TOTAL	67

District Courtroom #2 (Third Floor)

Audience Bench Seating	41.4
Litigants/Defendants	4
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	7
TOTAL	57.4

District Courtroom #3 (Third Floor)

Audience Bench Seating	32
Litigants/Defendants	4
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	13
TOTAL	54

Superior Courtroom #4 (Third Floor)

Audience	
Bench Seating	45
Other Seating	10
Litigants/Defendants	6
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	12
TOTAL	78

Superior Courtroom A (Fourth Floor)

Audience	
Bench Seating	57
Litigants/Defendants	5
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	15
TOTAL	82

Superior Courtroom B (Fourth Floor)

Audience: Bench Seating	57
Litigants/Defendants	6
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	14
TOTAL	82

Superior Courtroom C (Fourth Floor)

Audience Bench Seating	73
Litigants/Defendants	4
Witness	1
Security Officers	2
Clerk	1
Judge	1
Jury	13
TOTAL	95

APPENDIX C

APPENDIX C Bibliography

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