

M I N U T E S

SPECIAL COMMITTEE ON FEDERAL AND STATE AFFAIRS

September 8, 1977
Room 529 - State House

Members Present

Senator John Crofoot, Chairperson
Representative Ardena Matlack, Vice-Chairperson
Senator Leroy Hayden
Senator Edward Reilly
Senator Frank Smith
Representative Carlos Cooper
Representative Stan Gibson
Representative Joseph Mikesic
Representative Tom Slattery
Representative Kathryn Sughrue

Representative Anthony Hensley was excused.

Staff Present

Ron Smith, Kansas Legislative Research Department
Mary Ann Torrence, Revisor of Statutes Office

Conferees

Robert Spangler, Spangler Insulation Manufacturing, Belleville, Kansas
Jay Blough, Thermal Shield Manufacturing, Hesston, Kansas
William H. Griffin, Assistant Attorney General, Topeka, Kansas
Aubrey Radford, President, Urea Formaldehyde Manufacturers Association, Jacksonville, Florida
Lanny Ellis, Capitol City Insulation, Topeka, Kansas
Ken Carlat, Drywall Construction, Topeka, Kansas
Floyd Dibbern, State Fire Marshal, Topeka, Kansas
Richard Schultz, Court Administrator, Third Judicial District, Shawnee County, Topeka, Kansas
John Kennedy, Division of Planning and Research, Topeka, Kansas
Harold Gibbon, Division of Accounts and Reports, Topeka, Kansas

Morning Session

Proposal No. 26 - Insulation Standards

Chairperson Crofoot called the meeting to order at 10:00 a.m. The first order of business was consideration of Proposal No. 26 - Insulation Standards.

Mr. Robert Spangler, Spangler Insulation Manufacturing, Belleville, Kansas, testified that the existing regulations concerning insulation are becoming harder to interpret. He felt insulation installers need more policing; however, he did not feel that they needed new regulations. He said fire standards for insulation could be set too high: a flame spread rate of 35 is sufficient in most insulation applications. The only check of his materials was by the local fire department. He stated that chemical prices are extremely high: over three times as high as they were four years ago. He stated that the price for an untreated 30-pound bag of cellulose was approximately \$1.90, and the price of a treated 30-pound bag was about \$3.50. He said that he sees no problem with a Class 2 federal rating.

Jay Blough, Thermal Shield Manufacturing, Hesston, Kansas, presented a packet of information to Committee members concerning insulation. (Copies are available in the Legislative Research Department.) He reviewed this information for Committee members. He stated that consumers should keep in mind that insulation is treated with a fire retardant, which is not the same as fireproofing. U.L. does not

approve or disapprove insulation material, it only rates the fire spread. He would like to see a bag-labeling requirement enforced in Kansas. Mr. Blough stated that chemicals are 30-40 percent of the cost of a bag of insulation.

William H. Griffin, Assistant Attorney General, testified that his office had received a complaint concerning the high flammability of some insulation that was being installed in Douglas County. Mr. Griffin stated that the Consumer Protection Act is the only tool which he has to enforce insulation quality requirements. He noted that, in the past six months, there have been between 60 and 80 solar energy or insulation firms apply for incorporation in Kansas. He stated that uniform standards would be the most effective way to enforce insulation requirements in Kansas.

Aubrey Radford, President, Urea Formaldehyde Manufacturers Association, Jacksonville, Florida, discussed the qualities of urea formaldehyde. He stated that these materials are neither non-toxic or non-flammable; however, they follow Class 1 flame spread standards. He stated that the present economic situation is the reason consumers feel pressured into insulating; this opens the field for "fly-by-nighters." He felt that there would be federal standards to be followed and that manufacturers should have input into setting up the standards.

Mr. Radford stated that local enforcement of insulation standards would have to be left up to fire departments, city building inspectors, and other local agencies. He noted that the Federal Energy Administration has established a subcommittee to deal with insulation guidelines, but it will not recommend any standards before 1978. California has an extensive energy plan dealing with insulation standards and Mr. Radford suggested that Kansas look into that plan. He felt that education of the public is probably the best weapon against unscrupulous insulation installers.

Lanny Ellis, Capitol City Insulation, Topeka, stated that, as a dealer, he sends his employees to factories to learn the proper installation techniques for each product. He felt that present flammability standards are sufficient. Public information and education are the biggest factors in guarding against improper installation or poor insulation. He felt that legislation should only be enacted as a last resort if public education programs fail. Mr. Ellis stated that urea formaldehyde was the most effective insulation and cellulose was the next best; however, the urea formaldehyde costs approximately 30 percent more than cellulose. He suggested state licensure of both manufacturers and applicators of insulation.

Ken Carlat, Drywall Construction, Topeka, said that he had been in the insulation business for 12 years and had used urea formaldehyde for two years. He was not in favor of complete control of the insulation business by the state; however, he felt that the qualifications of installers should be controlled. He said that presently there are no guidelines to be followed by applicators. He believed the problem to be serious enough to require some sort of licensing for applicators. He also said that bonding would be the first step towards improving the quality of applicators.

Afternoon Session

Floyd Dibbern, State Fire Marshal, said that a study done by the President's Commission on Fire Safety and Control shows that 95 percent of the fire losses, both life and property, occur in buildings, homes, and other structures. Seven out of ten building fires occur in residences; therefore, residential insulation should be the primary concern. There is a public misconception that anything bearing the U.L. label is a guarantee; actually it is only a statement of testing. Kansas does not have accurate fire statistics due to poor reporting systems. He said that he could not estimate how many additional staff would be needed to enforce any new regulations. In his experience in Kansas, insulation had been the cause or contributing factor of fires in only one instance.

Representative Carlos Cooper moved to have the staff work with the Consumer Protection Division of the Attorney General's office to come up with an act which would prohibit the sale or installation of insulation with less than a Class 2 rating in homes and also requiring that each bag of insulation material be labeled. Representative Ardena Matlack seconded the motion. After discussion, the motion carried.

Proposal No. 25 - Annual State Census

Richard Schultz, Court Administrator, Third Judicial District, Shawnee County, Topeka, Kansas, testified that his office uses the agricultural census data when drawing up jury pools in Shawnee County. The office draws 250 names every two weeks for jury selection. Of the 250 letters sent out to prospective jurors, approximately 60 percent are returned with address errors. He said that the County Appraiser's

Office has a wealth of information but it is not kept current with the census list. He said the best list to use would be the Cross Reference Directory or the Polk Directory. However, under state statute, they are required to use the annual state census listing. He said that, no matter what action is taken in regard to the state census, his office would like a current list to be maintained somewhere. Mr. Schultz stated that a good census list in Shawnee County would save his office about \$45,000 annually.

Mr. John Kennedy, State Division of Planning and Research, stated that those counties already taking a thorough census would not be affected as much by increased costs as would counties taking a haphazard census. After the initial census, he estimated it would require an annual expenditure of \$500,000 to conduct the state census. He detailed briefly how a state agency could be established to conduct the census.

Senator Leroy Hayden said that he had surveyed 11 county assessors and county clerks in his district. They told him it cost from 9¢ to \$1.15 per person to take the annual census. Mr. Kennedy stated that he had been directed to survey county assessors and clerks to determine how much the census costs per person counted in each county. This information should be available to the Committee sometime in October.

Mr. Kennedy stated that the federal census estimate is a cooperative effort with the states. The federal estimate program is sometimes more accurate than the actual census taken by the states.

Proposal No. 28 - State Real Estate Transactions

Mr. Harold Gibbon, Division of Accounts and Reports, testified that the Division could take presently-filed inventory forms and establish a data file for an initial cost of \$13,000, and a cost of annual updating of \$1,704. It would be possible, at some additional cost, to sort the computer files and develop county lists, agency lists, or other listings. If land-use data were added to the present files, it would cost approximately \$1,754. Mr. Gibbon noted that additional personnel time would be required to keep these files updated. He recommended that the Department of Transportation land information not be included; the cost would be ten times higher if DOT information were added to the files. He noted that maps could not be made from these reports and that it would require additional moneys to set up a program to index the maps.

The Committee discussed the fact that Kansas University mapping capability might be a better alternative than a computer listing. Representative Cooper suggested that staff contact the Kansas Geological Survey and see if a mapping procedure could be established. Staff was directed to contact the Geological Survey.

A letter from the Legislative Division of Post Audit was distributed. In the letter, Mr. Meredith Williams notes that the audit expenses for the audit, Management of Surplus State-Owned Land, were \$46,733. (Attachment I).

Proposal No. 27 - Physically Handicapped Standards

A letter from Dr. Robert Harder, Department of Social and Rehabilitation Services, was presented to Committee members. The attached memorandum discusses the costs to SRS for complying with the new Section 504 accessibility standards. Dr. Harder estimated a minimum cost of \$335,000; however, if total compliance is necessary, the figure would probably be \$3-4 million. (Attachment II).

A letter from Dr. Richard Austin, Kansas State University, was also distributed (Attachment III). In the letter, Dr. Austin commented on the current ANSI standards for handicapped accessibility.

The meeting was adjourned.

Prepared by J. Russell Mills, Jr.

Approved by Committee on:

10-3-77
Date



Attachment I

Legislative Division of Post Audit

MILLS BUILDING
TOPEKA, KANSAS 66612

August 18, 1977

Senator John W. Crofoot, Chairman
Special Committee on Federal and
State Affairs
Cedar Point, Kansas 66843

Dear Senator Crofoot:

As you requested, we have determined the actual costs involved in the program audit, Management of Surplus State-Held Land, which was conducted in fiscal year 1976. Our computation of total audit expenses of \$46,733 is detailed in the attached table.

We also made inquiries concerning the costs involved in the 1972 Legislative Research Department review of state land holdings as well as the combined 1974 efforts of the Legislative Research Department and the Legislative Division of Post Audit in the same area. However, cost figures for these two projects were impossible to determine because time records for the projects are no longer available.

If you have any questions concerning the attached computations or the audit itself, please do not hesitate to contact us at your convenience.

Sincerely,

A handwritten signature in cursive script, appearing to read "Meredith C. Williams".

MEREDITH C. WILLIAMS
Assistant Legislative
Post Auditor

MCW/al
cc: J. Russell Mills, Jr.
Attachment

Atch. I

Management of Surplus State-Held Land

Summary of Expenses

Labor Costs(1)

Audit Team (3,588 hours @ \$7.03/hr.)	\$ 25,224	
Audit Review	7,387	
Clerical	<u>3,291</u>	\$ 35,902
Gross Salaries		
Fringe Benefits (10.5% of		
Gross Salaries)		<u>3,770</u>
Total Labor Costs		\$ 39,672

Other Costs (2)

Printing	\$ 772	
Travel	66	
Office Space & Equipment	5,663	
Office Supplies	560	
Total Other Costs		<u>7,061</u>

Total Audit Expense

\$ 46,733

Notes:

- (1) Audit team costs are actual and the 3,588 audit team hours represent 8.9% of all fiscal year 1976 audit hours. Audit review costs are equal to 8.9% of the fiscal year 1976 salaries of those staff members involved in the audit review process while clerical costs total 8.9% of clerical salaries for the same period.

- (2) Printing and travel costs are actual while office space & equipment and office supplies are equal to 8.9% of fiscal year 1976 expenditures in these categories.

Prepared by: Legislative Post Audit, August 1977.

Attachment II



STATE DEPARTMENT OF SOCIAL AND REHABILITATION SERVICES
State Office Building
TOPEKA, KANSAS 66612
ROBERT C. HARDER, Secretary

Division of
Vocational Rehabilitation

August 29, 1977

Division of
Social Services

Division of
Mental Health
and Retardation

Division of
Children and Youth

The Honorable John Crofoot
State Senator
Cedar Point, Kansas 66843

Division of
Administrative Services

Dear Senator Crofoot:

Enclosed is our best estimate as to the cost of remodeling the facilities under the direction of Social and Rehabilitation Services.

Alcohol and Drug Abuse
Section

As you can tell, these are very tentative estimates and will need to be refined as we go along.

State Office
Economic Opportunity

If I can be of further assistance, please let me hear from you.

Sincerely yours,

Robert C. Harder
Secretary

RCH:jcm
Enclosure

cc: Representative Ardena Matlack
Mr. Russ Mills, Jr.

C
O
P
Y

Atch. II

To Dr. Harder
~~Dr. Haines~~ *H*
8-24-77

STATE DEPARTMENT OF SOCIAL AND REHABILITATION SERVICES

MEMORANDUM

FROM: Leonard L. Eudaley *[Signature]*

RE: Physically Handicapped Code Compliance

DATE: August 24, 1977

As per your request the following is my estimation of the cost necessary to modify the existing buildings and grounds at the state hospitals and the youth centers to comply with the physically handicapped code on a minimum basis only.

Larned State Hospital	\$ 55,000
Osawatomie State Hospital	50,000
Topeka State Hospital	50,000
Parsons State Hospital & Training Center	25,000
Winfield State Hospital & Training Center	40,000
Kansas Neurological Institute	25,000
Norton State Hospital	25,000
Youth Center at Atchison	20,000
Youth Center at Beloit	20,000
Youth Center at Topeka	25,000
<hr/>	
TOTAL	\$335,000

The above estimates would construct curb cuts, some ramps to entrances of buildings and modify a few toilets to accommodate the handicapped.

If more complete compliance with the code is required, an additional \$1,000,000 would probably be required. This would modify most of the toilets, provide visual fire alarms, lower water fountains, lower switches and controls, provide raised letter room signs, provide knurl door handles on hazardous room, correct some stairs and make other modifications.

If total compliance is necessary and all the multi-storied buildings are required to have elevators, the final cost would probably be three to four million dollars.

Memo - Dr. Harder
Dr. Haines

-2-

August 24, 1977

As I have stated before, a definitive cost estimate on what is needed is very difficult to determine because there are possibly alternative measures which can be taken that would meet the requirements of the handicapped code. However, until the HEW and J.A.C.H. surveying teams review these measures we would not know if they would be accepted.

I would suggest that we include the \$335,000 (minimum compliance cost) in our FY 79 budget askings as a start toward meeting the physically handicapped requirements and modify this request as required after HEW has reviewed our plans of correction in future years.

I would further suggest that the funds be included as part of the present Fire Safety Fund which is handled by the Division Office. This would allow the distribution of funds to the individual institutions on a as needed basis and not tie-up funds in some institution which would not need them.

LLE:eh
cc: Art Schumann



KANSAS STATE UNIVERSITY

Attachment III

Landscape Architecture
College of Architecture and Design
Seaton Hall
Manhattan, Kansas 66506

August 23, 1977

Mr. Russell Mills, Jr.
Principal Analyst
The Legislative Research Department
Room 545-N, Statehouse
Topeka, Kansas 66612

Dear Mr. Mills:

Enclosed is a review copy, with a few comments, of the current ANSI Standards for the Handicapped.

I still believe that such standards are ill-advised, and that reliance on this type of data is dangerous.

A review committee made up of handicapped and non-handicapped persons would be able to render a more comprehensive service to the state and prevent much of the "over design" that is now being done by architects within the state.

If I may be of any further service to you, please let me know.

Sincerely,

Richard L. Austin, ASLA
Assistant Professor of
Landscape Architecture

RLA/k1

Atch. III

ANSI
A117.1-1961
(Reaffirmed 1971)

**American National Standard
Specifications for Making
Buildings and Facilities Accessible to,
and Usable by,
The Physically Handicapped**

Secretariat

National Society for Crippled Children and Adults
The President's Committee on Employment of the Physically Handicapped

Approved October 31, 1961

American National Standards Institute, Inc

and not deviating from the level of the existing ground immediately adjacent.

2.13 Appropriate Number. As used in this text, appropriate number means the number of a specific item that would be necessary, in accord with the purpose and function of a building or facility, to accommodate individuals with specific disabilities in proportion to the anticipated number of individuals with disabilities who would use a particular building or facility.

EXAMPLE: Although these specifications shall apply to all buildings and facilities used by the public, the numerical need for a specific item would differ, for example, between a major transportation terminal, where many individuals with diverse disabilities would be continually coming and going, an office building or factory, where varying numbers of individuals with disabilities of varying manifestations (in many instances, very large numbers) might be employed or have reason for frequent visits, a school or church, where the number of individuals may be fixed and activities more definitive, and the many other buildings and facilities dedicated to specific functions and purposes.

NOTE: Disabilities are specific and where the individual has been properly evaluated and properly oriented and where architectural barriers have been eliminated, a specific disability does not constitute a handicap. It should be emphasized that more and more of these physically disabled are becoming *participants*, rather than spectators, in the fullest meaning of the word.

3. General Principles and Considerations

3.1 Wheelchair Specifications. The collapsible-model wheelchair of tubular metal construction with plastic upholstery for back and seat is most commonly used. The standard model of all manufacturers falls within the following limits, which were used as the basis of consideration:

- (1) Length: 42 inches
- (2) Width, when open: 25 inches
- (3) Height of seat from floor: 19½ inches
- (4) Height of armrest from floor: 29 inches
- (5) Height of pusher handles (rear) from floor: 36 inches
- (6) Width, when collapsed: 11 inches

3.2 The Functioning of a Wheelchair

3.2.1 The fixed turning radius of a standard wheelchair, wheel to wheel, is 13 inches. The fixed turning radius, front structure to rear structure, is 31.5 inches.

3.2.2 The average turning space required (180 and 360 degrees) is 60 x 60 inches.

NOTE: Actually, a turning space that is longer than it is

wide, specifically, 63 x 56 inches, is more workable and desirable. In an area with two open ends, such as might be the case in a corridor, a minimum of 54 inches between two walls would permit a 360-degree turn.

3.2.3 A minimum width of 60 inches is required for two individuals in wheelchairs to pass each other.

3.3 The Adult Individual Functioning in a Wheelchair²

3.3.1 The average unilateral vertical reach is 60 inches and ranges from 54 inches to 78 inches.

3.3.2 The average horizontal working (table) reach is 30.8 inches and ranges from 28.5 inches to 33.2 inches.

3.3.3 The bilateral horizontal reach, both arms extended to each side, shoulder high, ranges from 54 inches to 71 inches and averages 64.5 inches.

3.3.4 An individual reaching diagonally, as would be required in using a wall-mounted dial telephone or towel dispenser, would make the average reach (on the wall) 48 inches from the floor.

3.4 The Individual Functioning on Crutches³

3.4.1 On the average, individuals 5 feet 6 inches tall require an average of 31 inches between crutch tips in the normally accepted gaits.

3.4.2 On the average, individuals 6 feet 0 inches tall require an average of 32.5 inches between crutch tips in the normally accepted gaits.⁴

4. Site Development⁵

4.1 Grading. The grading of ground, even contrary to existing topography, so that it attains a level with a normal entrance will make a facility accessible to individuals with physical disabilities.

²Extremely small, large, strong, or weak and involved individuals could fall outside the ranges in 3.3.1, 3.3.2, 3.3.3, and their reach could differ from the figure given in 3.3.4. However, these reaches were determined using a large number of individuals who were functionally trained, with a wide range in individual size and involvement.

³Most individuals ambulating on braces or crutches, or both, or on canes are able to manipulate within the specifications prescribed for wheelchairs, although doors present quite a problem at times. However, attention is called to the fact that a crutch tip extending laterally from an individual is not obvious to others in heavily trafficked areas, certainly not as obvious or protective as a wheelchair and is, therefore, a source of vulnerability.

⁴Some cerebral palsied individuals, and some severe arthritics, would be extreme exceptions to 3.4.1 and 3.4.2.

⁵Site development is the most effective means to resolve the problems created by topography, definitive architectural designs or concepts, water table, existing streets, and atypical problems, singularly or collectively, so that ingress, egress, and egress to buildings by physically disabled can be facilitated while preserving the desired design and effect of the architecture.

4.2 Walks

4.2.1 Public walks should be at least 48 inches wide and should have a gradient not greater than 5 percent.⁶

4.2.2 Such walks shall be of a continuing common surface, not interrupted by steps or abrupt changes in level.

4.2.3 Wherever walks cross other walks, driveways, or parking lots they should blend to a common level.⁷

NOTE: 4.1 and 4.2, separately or collectively, are greatly aided by terracing, retaining walls, and winding walks allowing for more gradual incline, thereby making almost any building accessible to individuals with permanent physical disabilities, while contributing to its esthetic qualities.

4.2.4 A walk shall have a level platform at the top which is at least 5 feet by 5 feet, if a door swings out onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

4.2.5 A walk shall have a level platform at least 3 feet deep and 5 feet wide, if the door does not swing onto the platform or toward the walk. This platform shall extend at least 1 foot beyond each side of the doorway.

4.3 Parking Lots

4.3.1 Spaces that are accessible and approximate to the facility should be set aside and identified for use by individuals with physical disabilities.

4.3.2 A parking space open on one side, allowing room for individuals in wheelchairs or individuals on braces and crutches to get in and out of an automobile onto a level surface, suitable for wheeling and walking, is adequate.

4.3.3 Parking spaces for individuals with physical disabilities when placed between two conventional

⁶It is essential that the gradient of walks and driveways be less than that prescribed for ramps, since walks would be void of handrails and curbs and would be considerably longer and more vulnerable to the elements. Walks of near maximum grade and considerable length should have level areas at intervals for purposes of rest and safety. Walks or driveways should have a nonslip surface.

⁷This specification does not require the elimination of curbs, which, particularly if they occur at regular intersections, are a distinct safety feature for all of the handicapped, particularly the blind. The preferred method of meeting the specification is to have the walk incline to the level of the street. However, at principal intersections, it is vitally important that the curb run parallel to the street, up to the point where the walk is inclined, at which point the curb would turn in and gradually meet the level of the walk at its highest point. A less preferred method would be to gradually bring the surface of the driveway or street to the level of the walk. The disadvantage of this method is that a blind person would not know when he has left the protection of a walk and entered the hazards of a street or driveway.

diagonal or head-on parking spaces should be 12 feet wide.

4.3.4 Care in planning should be exercised so that individuals in wheelchairs and individuals using braces and crutches are not compelled to wheel or walk behind parked cars.

4.3.5 Consideration should be given the distribution of spaces for use by the disabled, in accordance with the frequency and persistency of parking needs.

4.3.6 Walks shall be in conformity with 4.2.

5. Buildings

5.1 Ramps with Gradients. Where ramps with gradients are necessary or desired, they shall conform to the following specifications:

5.1.1 A ramp shall not have a slope greater than 1 foot rise in 12 feet, or 8.33 percent, or 4 degrees 50 minutes.

5.1.2 A ramp shall have handrails on at least one side, and preferably two sides, that are 32 inches in height, measured from the surface of the ramp, that are smooth, that extend 1 foot beyond the top and bottom of the ramp, and that otherwise conform with American Standard Safety Code for Floor and Wall Openings, Railings, and Toe Boards, A12-1932.

NOTE 1: Where codes specify handrails to be of heights other than 32 inches, it is recommended that two sets of handrails be installed to serve all people. Where major traffic is predominantly children, particularly physically disabled children, extra care should be exercised in the placement of handrails, in accordance with the nature of the facility and the age group or groups being serviced.

NOTE 2: Care should be taken that the extension of the handrail is not in itself a hazard. The extension may be made on the side of a continuing wall.

5.1.3 A ramp shall have a surface that is nonslip.

5.1.4 A ramp shall have a level platform at the top which is at least 5 feet by 5 feet, if a door swings out onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.5 A ramp shall have a level platform at least 3 feet deep and 5 feet wide, if the door does not swing onto the platform or toward the ramp. This platform shall extend at least 1 foot beyond each side of the doorway.

5.1.6 Each ramp shall have at least 6 feet of straight clearance at the bottom.

5.1.7 Ramps shall have level platforms at 30-foot intervals for purposes of rest and safety and shall have level platforms wherever they turn.

5.11 Identification. Appropriate identification of specific facilities within a building used by the public is particularly essential to the blind.

5.11.1 Raised letters or numbers shall be used to identify rooms or offices.

5.11.2 Such identification should be placed on the wall, to the right or left of the door, at a height between 4 feet 6 inches and 5 feet 6 inches, measured from the floor, and preferably at 5 feet.

5.11.3 Doors that are not intended for normal use, and that might prove dangerous if a blind person were to exit or enter by them, should be made quickly identifiable to the touch by knurling the door handle or knob. (See Fig. 2.)

EXAMPLE: Such doors might lead to loading platforms, boiler rooms, stages, fire escapes, etc.

5.12 Warning Signals

5.12.1 Audible warning signals shall be accompanied by simultaneous visual signals for the benefit of those with hearing disabilities.

5.12.2 Visual signals shall be accompanied by simultaneous audible signals for the benefit of the blind.

5.13 Hazards. Every effort shall be exercised to obviate hazards to individuals with physical disabilities.

5.13.1 Access panels or manholes in floors, walks, and walls can be extremely hazardous, particularly when in use, and should be avoided.

5.13.2 When manholes or access panels are open and in use, or when an open excavation exists on a site, particularly when it is approximate to normal pedestrian traffic, barricades shall be placed on all open sides, at least 8 feet from the hazard, and warning devices shall be installed in accord with 5.12.2.

5.13.3 Low-hanging door closers that remain within the opening of a doorway when the door is open, or that protrude hazardously into regular corridors or traffic ways when the door is closed, shall be avoided.

5.13.4 Low-hanging signs, ceiling lights, and similar objects or signs and fixtures that protrude into regular corridors or traffic ways shall be avoided. A minimum height of 7 feet, measured from the floor, is recommended.

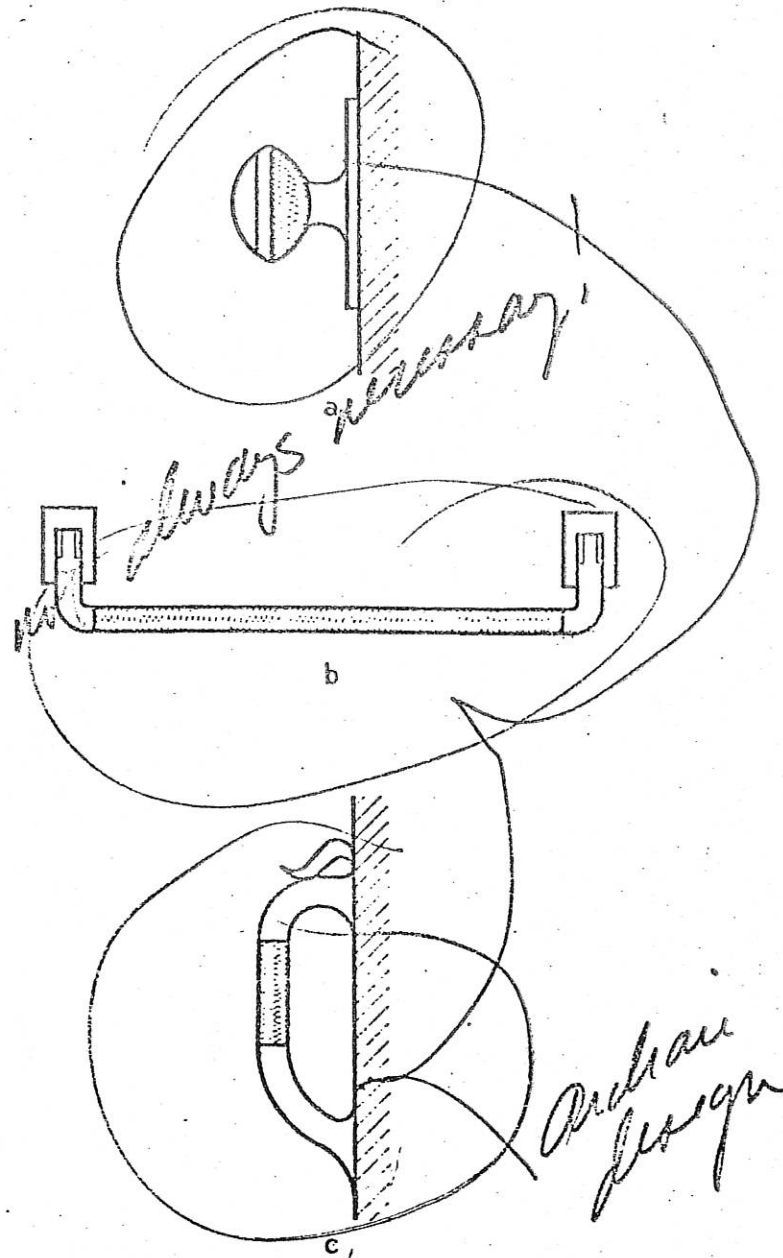


Fig. 2

Knurled Door Handles and Knobs

5.13.5 Lighting on ramps shall be in accord with 1201, 1202, 1203, and 1204 of American Standard A9.1-1953.

5.13.6 Exit signs shall be in accord with 1205 of American Standard A9.1-1953, except as modified by 5.11 of this standard.