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specifications

OF MATERIALS AND LABOR TO BE USED IN ERECTION AND COMPLETION OF

PRELIMINARY SPECIFICATIONS

for

FORSYTH LIBRARY
FORT HAYS KANSAS STATE COLLEGE
HAYS, KANSAS

woods and starr architects

209 WEST 12TH STREET - HAYS, KANSAS

PRELIMINARY SPECIFICATIONS

for

FORSYTH LIBRARY
HAYS, KANSAS

February 25, 1964

Woods and Starr Architects
Hays, Kansas

Burgess, Latimer & Miller
Mechanical and Electrical Engineers
Topeka, Kansas

Finney and Turnipseed
Structural Engineers
Topeka, Kansas

PRELIMINARY SPECIFICATIONS

for

FORSYTH LIBRARY

Fort Hays Kansas State College

Hays, Kansas

Item #1. Provide a study of the problems involved in the building of a new library for Fort Hays Kansas State College, Hays, Kansas. This building is to provide library facilities for the present enrollment with the possibility of future expansion.

A review of the present facilities was made and the following statements are a result of that study.

| <u>PRESENT BUILDING</u> | <u>PRESENT ENROLLMENT</u> | <u>TOTAL SQ. FT. LIBRARY USE</u> |
|---|---------------------------|--------------------------------------|
| Built in 1926 for 500 enrollment | 3,500 | 28,929 |
| Seating - $11\% \times 3500 = 369$ seats @ 10.6 sq. ft. | = | 3,912 Sq. Ft. |
| Volumes - 200,000 @ 20 per sq. ft. | = | 9,500 Sq. Ft. |
| Documents - 250,000 actually in 500 lin. ft. shelving | = | 3,375 Sq. Ft. |
| Total space for other library facilities and services | = | <u>12,142 Sq. Ft.</u> |
| Total Building Space (Present Library Use) | | 28,929 Sq. Ft. |

Item #2. Description of Project:

After a careful study of the problem, the facilities to be offered, and the budgeted money available the preliminary plans were prepared. The plan calls for a two story building. The total floor space enclosed will be 76,930 square feet. Complete air conditioning will be provided for the building. Sidewalks, necessary parking, and landscaping will be provided. The building will be of reinforced concrete design, and shall have its structural foundations resting on shale. The building itself will contain the following items.

Basement:

A. Basement area consisting of storage and mechanical equipment room.

First Floor:

A. Shipping and receiving area.

B. Processing, cataloguing, acquisition, serials and documents.

C. Stack area.

D. Seating area.

E. Work Room.

F. Service counter.

G. Rare books and western collection.

- H. Map room and rare book room.
- I. Offices.
- J. Catalogues, indexes and bibliographies.
- K. Stairs.
- L. Elevator.
- M. Toilets.
- N. Janitor closet.
- O. Lobby and entrance.

Second Floor:

- A. Stacks.
- B. Seating.
- C. Workroom.
- D. Service counter.
- E. Student toilets.
- F. Stairs.
- G. Elevator.
- H. Janitor closet.

Item #3. OUTLINE SPECIFICATIONS OF MATERIALS TO BE USED IN CONSTRUCTION:

1. Footings and Structural Frames:

- (A) A soil investigation test was conducted on the speech and music center building 165 feet west of the library site and a previous test at the new Women's Dormitory approximately 800 feet south-east of the library site indicates that the footings for this building will have to be taken down to shale. This will mean the use of pedestals for the foundation of this building.

The structural frame for the building proper will be of reinforced concrete slab type construction with columns spacing 23'-0" on center.

2. Roof and Floor Construction:

- (A) Reinforced slab type construction for floors and roof will be used in all areas.
- (B) The structural roof slab will be covered with rigid insulation ready to receive the built-up roof. This rigid roof insulation and roof material will have to be removed when stage two is constructed.

3. Masonry Walls:

- (A) Exterior walls shall be of pitch-face stone with lightweight masonry block backup.
- (B) Interior partitions shall be of lightweight masonry block units.
- (C) Toilet areas shall be of lightweight masonry block with a ceramic tile wainscoting.

4. Roofing Materials:

- (A) Roofing shall be constructed of a built-up pitch and gravel roof using a specification for a 20 year bonded roof.

5. Windows:

- (A) Windows shall be of aluminum, a fixed type and shall be glazed with a graylite plate glass.
- (B) Entrance windows and doors shall be of aluminum and shall be glazed with 1/4" graylite plate glass.

6. Doors and Door Frames:

- (A) Exterior doors or entrance doors shall be aluminum similar to Amarlite.
- (B) Service doors shall be of steel and set in steel door frames.
- (C) Stairwells shall have enclosing doors and frames of 2-hour fire resistant rating.
- (D) Doors to rooms within the building shall be of wood solid core and shall be installed in a metal door frame.

7. Floor Finish:

- (A) All floors shall have a rubber tile type flooring 1/8" thick, which is recommended for library use.
- (B) Ceramic tile floors for toilet areas will be used.
- (C) Stairways shall be quarry tile.

8. Wall Finish:

- (A) Toilet rooms to have ceramic tile wall wainscoting.
- (B) Lightweight masonry blocks to be painted.
- (C) Plaster to be painted.

9. Ceiling Finish:

- (A) Acoustical tile in all areas except toilet and locker rooms, basement and penthouse.

10. Electrical Work:

Lightings: Illumination will basically be fluorescent lights with appropriate illumination levels to fit the seeing task. Foot candles range shall be from a minimum of 50 to a maximum of 70 foot candles working level. Rooms in general will have a patterned fluorescent layout to provide maximum flexibility in relocating the varying switching arrangements, with receptacles for desk and floor lamps.

Fluorescent and incandescent lighting will be utilized in lobbies where design high lights dictates.

Electrical work shall include a complete system of lighting including fixtures, outlets, switches, conduit, main services, lighting panelboards, main distribution panel. Power for all equipment and motors, two-way intercommunication system to all key office, telephone service, and a fire alarm system shall be installed throughout the building.

- (A) Main electrical services - 12,470 volt primary underground into main power center located in the building.
- (B) Conduit:
 - 1. Rigid conduit will be used for all conduit $1\frac{1}{4}$ " and larger, conduit in concrete work, conduit buried in earth, main feeders, motor services, and home run conduit. Minimum size conduit $3/4$ ".
- (C) Outlets: Galvanized steel boxes.
- (D) Wiring: Type "RHW" for 600 voltage feeder services, type vulkane for 15,000 volts, type "RH" for panel and motor feeders and type "R" or "TW" for branch wiring.
- (E) Wall switches: Sierra (Quiet) ivory with ivory cover plates.
- (F) Receptacles:
 - 1. Duplex receptacles sierra, ivory with ivory cover plates.
 - 2. Combination duplex receptacles in corridors at approximately 50'-0" intervals for polishing equipment. Heavy duty receptacles as required for special equipment.
- (G) Disconnect switch: Type "ND" as required.
- (H) Starters: Magnetic type with undervoltage and overload protection.
- (I) Fuses: Type dual element fustrons as required.
- (J) Lighting Panels: Type "NQO" circuit breaker trip indicating type.
- (K) Main distribution Panels: Type "QMB" switch and fuse type for motor power distribution. Molded case breakers for lighting panel distribution.
- (L) Main Switchboards: Free standing switchboard mounted next to power center. Switches shall be of molded case breakers as required for building loads.
- (M) Motor control Center: Free standing motor control center located close to refrigeration equipment to house "QMB" type fusible switches and starters for motor in equipment room.
- (N) Lighting fixtures: Fluorescent light fixtures throughout, except incandescent in utility areas. Lighting level 70 foot candles in study areas. 50 foot candles in stack areas.
- (O) Intercommunication system: Audio contact with call-in and speakers with privacy feature in offices and other key call-in areas.
- (P) Public Address System: Amplifier and speakers for paging stack and lounge areas, corridors and toilets. AM/FM radio, record changer and provisions for tape input.
- (Q) Fire Alarm System: Non-supervised non-code as required by code.
- (R) Telephone System: Telephone automatic dial system with telephone outlet in each office, telephone booths, and other locations as selected.

11. Plumbing Work:

Provide all materials, equipment and appliances for complete system including soil, waste, drain, venting systems, including connection to sewer system, hot and cold water piping, hot water storage tank and heater with circulating pump, plumbing fixtures, and toilet room accessories.

12. Heating, Ventilating and Air Conditionings:

- (A) Mechanical Equipment: The central mechanical room will be located in the basement. All heating will be derived from the college central plant steam main in utility tunnel. Cooling will be acquired by the installation of centrifugal chiller unit installed in the central equipment space in the basement.
- (B) Distribution: Air conditioning and ventilating will be distributed by a medium pressure air handling unit in round ductwork to terminal mixing boxes which will be sized and selected to provide maximum flexibility commensurate with good zone control. Air handling units will be provided with steam and direct expansion coils for direct utilization of heating and cooling media. A small secondary steam converter will provide for hot water for circular perimeter radiation. Such radiation sized to handle only skin effect heat loss and provide adequate night set back heating of the building to allow stopping of the air handling units at night except in severe weather. Radiation will be controlled on a zone basis with hot water reset control to equal load with outdoor conditions.

Interior ventilation appears to be primary consideration. With dual duct mixing boxes the system will be able to provide this individual area ventilation control on a large or as small an area basis as application demands and still give the extra flexibility of the owner being able to relocate, resize or rezone the installation with a minimum of expense. Such a system also provides the ideal environment for humidity control required now and in the future.

(C) Piping and Fittings:

1. Steel pipe shall conform to the latest standards of A.S.T.M. and shall be of weight and specification for service as hereinafter specified, except all short and close nipples shall be extra heavy weight. Ferrous threaded fittings shall be Crane, Stockham, or Walworth, malleable iron or cast iron fittings of weight and specification for service as hereinafter specified.
2. Cast iron soil pipe and fittings shall be Alabama, Tyler, or Clow-National meeting American Standard Specifications and asphaltum coated inside and outside. Ty-Seal type joints.
3. Soil and waste in ground and size 2" and larger above ground shall be standard weight centrifugally cast iron pipe with extra heavy cast iron drainage fittings.
4. Soil and waste pipe outside of building to a point 5'-0" from building shall be standard weight.
5. Vent and roof drain piping except main 4" vent stack shall be standard galvanized steel pipe and standard, steam pattern cast iron fittings. Main 4" vent shall be same as soil piping.
6. Water piping inside of building from main cut-off on shall be Mueller, Revere, Chase, type "L" hard drawn copper tubing for all cold water supply, hot water supply and hot water return.

7. Condenser water piping: Byers wrought iron or type "K" hard drawn copper.
8. Freon Refrigerant: Type "K" hard drawn copper tubing for 250# working pressure and all fittings shall be for freon pipe construction.
9. Copper Pipe: Mueller, Revere, Chase, or Anaconda copper tubing of weight and specification for service as hereinafter specified.
10. Ferrous Fittings: Crane, Stockham, Walworth, or Armco steel or cast iron of weight and specification for service as hereinafter specified except all fittings for pipe size 5" and over shall be welded steel with welding flanges where required. At contractor's opinion, all fittings size 2" to 5" may be welded fittings.
11. Copper Fittings: Mueller, Revere, Chase, or Nibco wrought or cast copper of weight and specification for service as hereinafter specified.
12. All piping to be installed concealed above ceilings except in equipment rooms and utility rooms.

(D) Valves:

1. Make: Crane, Walworth, Jenkins, Nordstrom or Powell, for specification and for working pressure and service as hereinafter specified and with working pressure and manufacturer's name case in body of valve.
2. Working pressure: 200# non-shock for all service except freon refrigerant. 250# valves for freon refrigerant.
3. Gate Valves: Valves 2" and smaller shall be all brass, with wedge disc non-rising stem and flanged ends.
4. Check valves: Valves 2" and smaller shall be all brass, with swing disc and screwed ends. Valves 2½" and larger shall be iron body, brass trimmed with swing disc and flanged ends.
5. Globe Valves: Valves 2" and smaller shall be all brass, with renewable plug type disc and screwed ends. Valves 2½" and larger shall be iron body, brass trimmed with renewable plug type disc and flanged ends.
6. Flow control valves: Nordstrom, figure 142 or figure 143 or equal. Semi-steel lubricated plug cocks, for 175# working pressure. Valves 2" and larger shall have flanged ends.
7. Freon Valves: Freon valves shall be refrigerant type valves designed for use in freon systems and for 250# working pressure.

- (E) Insulation: All supply and all fresh air ducts shall be wrapped with 1" thick 3#/cu. ft. density insulation. All exhaust branch ducts to point of exhaust grille to main duct shall be lined with acoustical insulation 1/2" thick 2# density. All piping that will sweat shall be covered with 1" thick vapor barrier insulation.

(F) Sheet Metal Work:

1. Ductwork to be best grade, prime, open hearth galvanized sheet steel of gauges and reinforced in accordance with heating and air conditioning guide.
2. Registers, grilles, diffusers and dampers, as required for air distribution and balancing to be of type as manufactured by Titus Company.
3. Air handling units to be of centrifugal type fan blow through coil with steam coil, direct expansion cooling coil. Units shall be constructed and insulated for up to 8" static pressure with dual duct controls.

- (G) Automatic Drain: Type W-122, 1/2" NPT, 1/2" x 1/2" for handling of steam condensate from convectors and coils in air handling units, to condensate return mains.
- (H) Water Storage and Heaters: Tank shall be lined with baked on phenolic resin and tank to be ASME labeled.
- (I) Circulating water pumps: Pumps vertical, single stage, mechanical seals for the circulation of water to perimeter radiation, cooling tower and air handling unit coils.
- (J) Domestic circulating water pump: 120° hot water circulating pump of in-the-line type for circulating domestic hot water.
- (K) Refrigeration: Electric driven centrifugal type refrigeration machine type, as manufactured by "Trane" to provide chilled water to the air handling units cooling coils.
- (L) Cooling tower: A double flow aquatower heavy duty wood casing with corrugated asbestos cement board sides and redwood filler will be used and will be located as shown on the plot plan.
- (M) Chemical Feeder: Provide micrometer chemical plates installed in tower basin.
- (N) Temperature controls: Pneumatic system with individual room area control.
- (O) Dual Duct Mixing Boxes: Medium pressure boxes to blend hot and cold air in proportion to outside temperature to supply fresh air as required for each room.
- (P) Stand Pipe System: Fire department connection, hose connections, and stand pipe as required by code.
- (Q) Plumbing Fixtures:
 1. Drinking fountains: Halsey Taylor or Temprite model WT-13 wall mounted electric with capacity 13 GPH each.
 2. Water Closets: Wall mounted with flush bowl, vitreous china.
 3. Lavatories: Crane #1-195V, 20" x 18" wall mounted vitreous china.
 4. Service sinks: Crane #7-563, 24" x 20" acid-resisting enamel inside and painted outside.
 5. Floor Drains: Aseo series 3800 with trap and brass grating.
- (R) Hose Bibs: Rough-plated brass single faucet in equipment room.
- (S) Wall Hydrants: Non-freezing type as locations so that any area can be reached with 100 ft. garden hose.
- (T) Cleanouts: Flush floor and end of line cleanouts to allow proper rodding of soil lines.
- (U) Traps: Traps on all plumbing fixtures, etc., as required for sanitary and code requirements.

Item #4.

BUILDING AREA:

| | |
|-------------------|-----------------------|
| Basement----- | 6,128 Sq. Ft. |
| First Floor----- | 36,206 Sq. Ft. |
| Second Floor----- | <u>34,596 Sq. Ft.</u> |
| Total ----- | 76,930 Sq. Ft. |

Item #5.

ESTIMATED PROJECT COST:

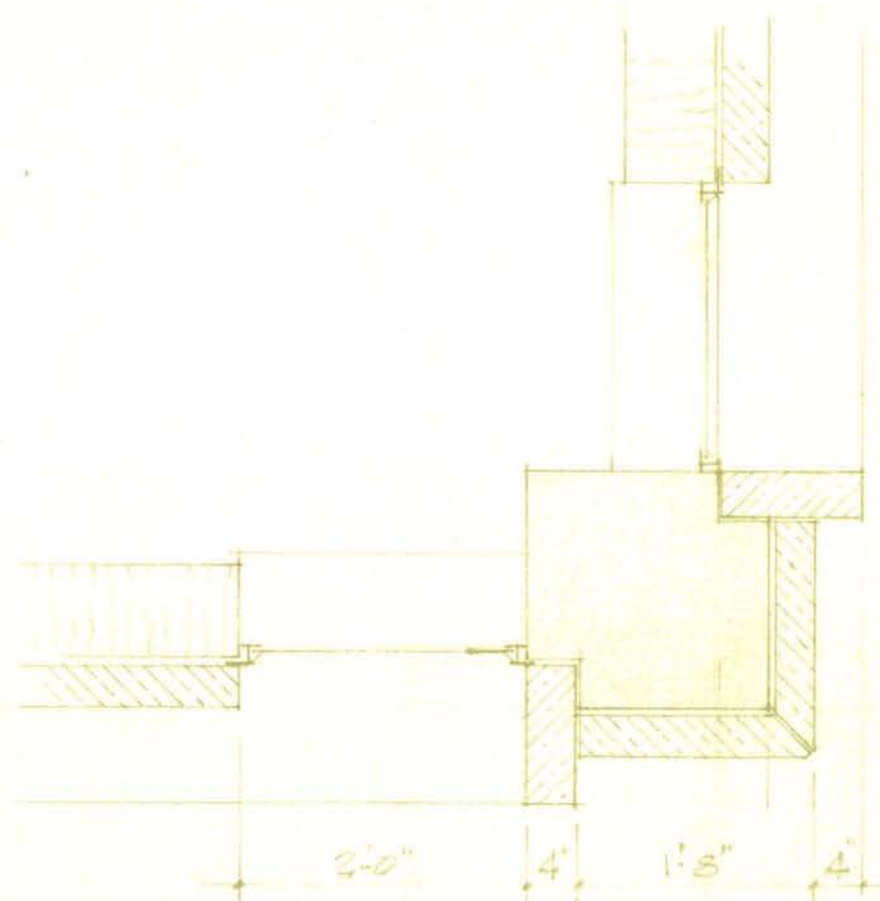
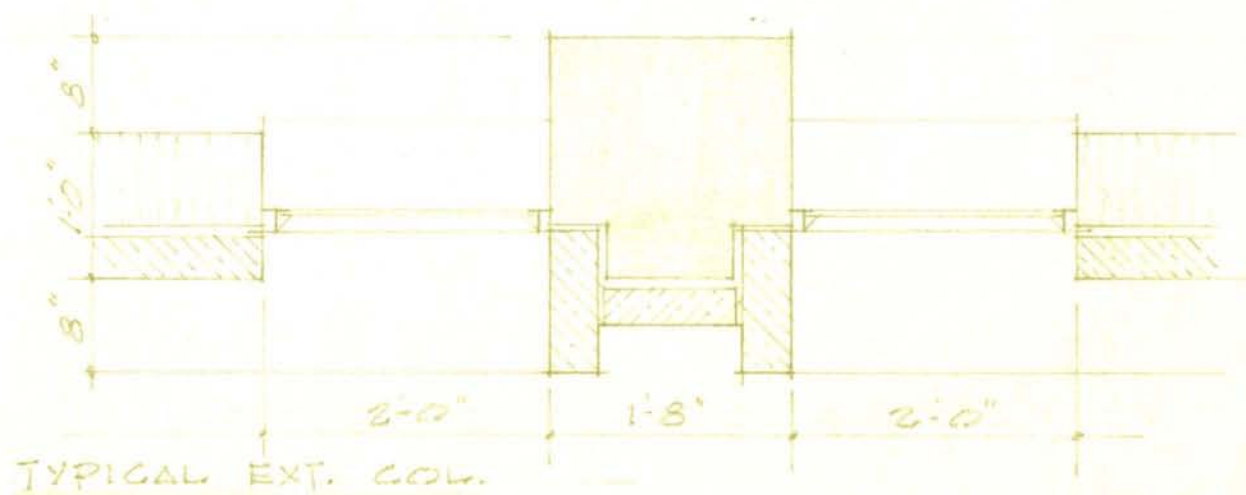
| | |
|------------------------|-----------------------|
| Building----- | \$1,230,880.00 |
| Site Improvements----- | 5,000.00 |
| Utilities----- | 15,000.00 |
| Library Equipment----- | 152,959.00 |
| Contingencies----- | 36,926.00 |
| Architect's Fee----- | 49,235.00 |
| Supervision----- | <u>10,000.00</u> |
| GRAND TOTAL----- | <u>\$1,500,000.00</u> |

$$\frac{97.5}{7} = 10\frac{1}{2}$$

7-10 1/2

20 E. @ $7\frac{1}{2}^\circ = 120^\circ$

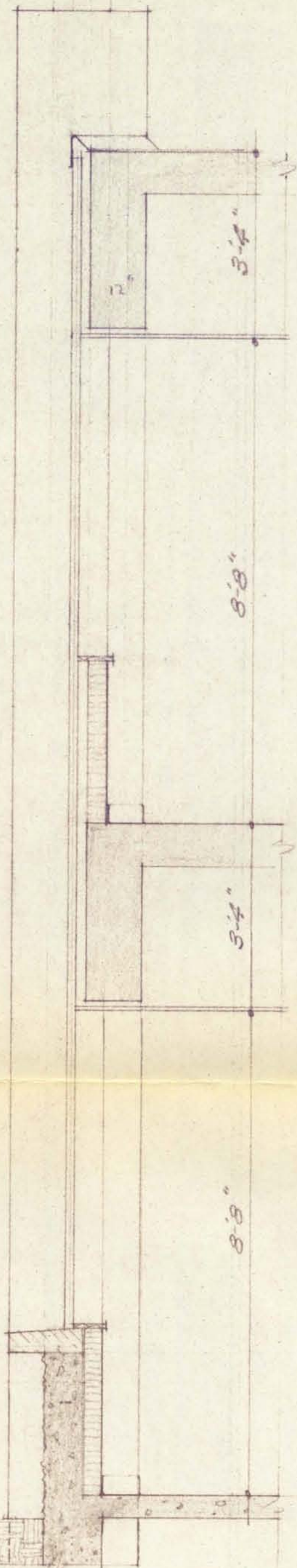
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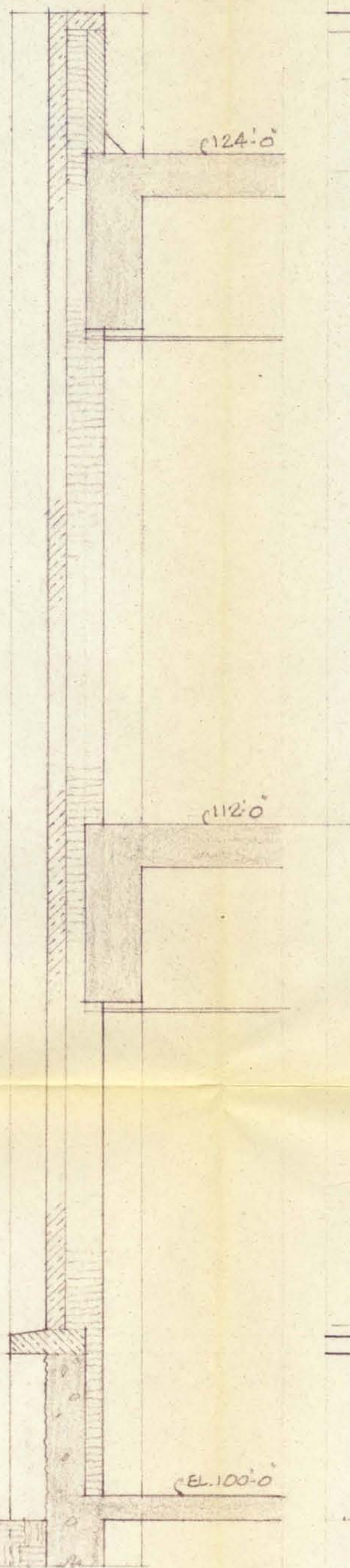
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LIBRARY, F.H.K.A. CO. WOODS & STARR, HAYS KS

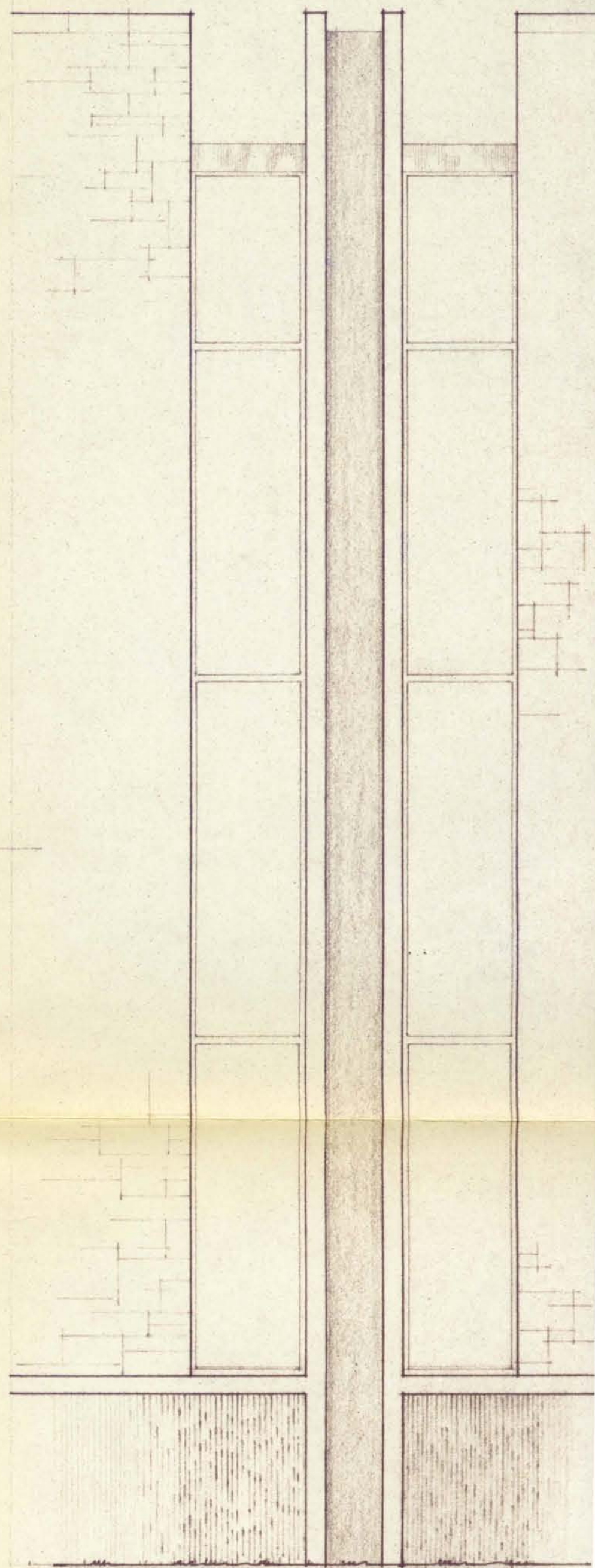
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SECTION THRU WINDOW



SECTION THRU WALL



ELEVATION

LIBRARY. F.H.K.S.C.

WOODS & STARR, HAYS KS

