ADDENDUM NO. 1 TO APPENDIX 6, PLANNING AND
DESIGN CRITERIA FOR HOUSING FOR LOW-INCOME
FAMILIES BY THE TURNKEY METHOD, RHA 74-20.1

(THESE ADDENDUM SUPERSEDES ADDENDUM NO. 1, DATED 8-1-69)

Note: This Addendum is not a modification of Appendix 6, Planning and Design Criteria, but is an addition thereto of items which are required in the Chicago Regional Office because of the geographical location of this Region and LHA and HAO experience in low-rent housing design, construction, and operation in this Region over the past 33 years.

1. GENERAL REQUIREMENTS

Basic design criteria are contained in Low-Rent Housing Turnkey Handbook, RHA 74-20.1, Appendix 6, latest edition and revisions.

A Utility Analysis must be made following the establishment in a preliminary way of the type of building and their respective wall sections which will comprise the project. It should be understood that the final determination and approval of the lowest cost combination of utilities will be made with the concurrence of the Chicago Regional Office of Housing Assistance. Direct communication with the Technical Review Branch during the preparation of the Utility Analysis is encouraged in order to avoid unreasonable assumptions on the part of the LHA and its architect or developer in connection with the completion of the analysis and premature final determination of project utilities.

Bathing by the elderly is best accomplished by the use of shower stalls, so the preference is for shower stalls in baths of all elderly dwelling units together with a tub room or rooms available to all occupants in a multi-story building. If local conditions or preferences favor tubs in all dwelling units then showers shall be installed over all tubs.

In the design of an efficiency dwelling unit where the bed space is not partitioned from the living room, the bed space shall be in an alcove with an available window for light and ventilation and have provisions for screening from the living room.

Elderly persons are not able to move beds easily, so
1. **GENERAL REQUIREMENTS** (Continued)

beds in elderly dwelling units shall be accessible from both sides and one end.

High-use exterior entrances shall be provided with vestibules and the doors must be so placed as to keep out cold air. The minimum depth of the vestibule shall not be less than 7' - 0".

The major assembly room of the community space shall seat a minimum of 60% of the population of the project in the manner of 4 persons per table. Table size to be 30" x 30".

Every dwelling unit not served by an interior corridor shall have windows on at least two sides, unless mechanical ventilation and air conditioning are installed to provide not less than one air change per hour.

In high-rise buildings avoid moving furniture, stretcher cases, etc., through the entrance lobby. Provide a separate receiving room opening on the service area and a rear door to the receiving room from the large secomtor for this purpose.

Provide schedule on drawings showing not areas both proposed and actual for community, management and maintenance spaces and for each type and size of dwelling unit.

Show areas of all closet and storage spaces.

Options, alternates, "approved equal," "equal" and "equivalent to" clauses are not permitted in the specifications or on drawings for the Turnkey Method.

Unless exterior doorways are recessed into the building construction, or are sheltered by a building overhang of at least 24 inches, provide an appropriate door canopy.

All family dwelling units shall be provided with ample storage for outdoor items (bicycles, wagons, sleds, garden and lawn equipment, etc.). Basement space is satisfactory as long as access to this storage space is adjacent to the service entrance. An out door area adjacent to the dwelling unit screened with a masonry wall is also acceptable.

For nonelderly housing dwelling units of three-bedroom size and larger, basements shall be provided.
1. **GENERAL REQUIREMENTS (Continued)**

Comply with Public Law 90-480 which states that certain buildings financed with federal funds are to be designed as may be necessary to insure that physically handicapped or elderly persons have ready access, and use of, such building.

In the design of efficiency dwelling units, the area shall be not less than 380 square feet.

In the design of one-bedroom dwelling units for elderly, the area shall be not less than 430 square feet.

2. **SITE WORK**

Site work includes the work between property lines and all curb lines. Contract limit lines are to be shown on all site plans.

Indicate soil boring locations on site plan.

Show on site plan all structures and utilities to be demolished and removed.

Show unit distribution tabulations and site data on all site plans (acreage, unit and person density, percent of building coverage, percent of parking, and percent of green area.)

Provide curbs at all drives and parking areas. Wood, asphalt or steel curbs are not acceptable.

Collector walks shall be minimum 5'-0" wide. Walks next to parking shall be minimum 6'-0" wide.

All walks shall be cross pitched 1/8 inch per lineal foot. Widths of all walks shall be shown on drawings.

**Drying Yard and Garbage Areas:**

A. Group drying yards shall be screened from public view. The height of pairs of standards supporting drying lines should vary in order to accommodate persons of different heights.

B. Garbage can storage should be provided near or adjacent to the dwelling unit it serves. The use of garbage can holders is recommended. The "Little Giant" manufactured by Albani Corporation, Tarpon Springs, Florida, is recommended and is the minimum standard of quality and design that is acceptable. Provide garbage
can holders for two 30-gallon cans at the service door of each dwelling unit of nonelderly housing and a holder for one 30-gallon can at the service door of each dwelling unit of elderly housing when in row houses. Screen garbage cans and holders from public view.

C. Community or group garbage areas may be used only in elderly projects. Garbage can holders should be used to hold cans off the concrete slab, to prevent rusting of cans and permit cleaning of the area.

Tot-Lots and Intermediate Recreation Areas:

A. Provide tot-lots with low equipment close to family units or groups of units. Tot-lots should be within sight of dwelling units.

B. Intermediate play areas should be centrally located and provided with play equipment.

C. Provide surfaced and open green areas adjacent to community building.

Grading: Site should be graded to drain all surface water away from buildings at a two percent slope for 25 feet or more and off the site by drainage swales or catch basins to storm sewers or natural drainage ways.

A. Maintain a minimum of 8" from top of concrete floor slab on grade or any wood framing and outside finished grade, and minimum of 6" for high-rise building between finished floor and finished grade.

B. Locate downspouts to drain onto splash blocks which should spill onto lawn areas large enough to absorb outflow.

C. Walkways are not to be used as paved drainage swales.

D. Site shall be graded so no ponding of surface water will occur within site boundary. Drainage plan must show contours and spot elevations at all pertinent locations. All catch basins and downspout locations must be shown on grading plan.

3. **Concrete**

Dwelling unit concrete floor slabs on grade shall be
3. **CONCRETE** (Continued)

floating type and shall not rest on foundation walls.

Floor slabs resting on foundation shall be self-supporting structural slabs. The top four inches of any fill under slabs on grade shall be no less than 3/4 inch gravel or crushed stone (no fines).

Footings under concrete block foundation walls shall be reinforced.

No additives are permitted in concrete, except for air-entrained concrete.

Use only plastic coated chairs for supporting reinforcing steel in multi-story floor construction.

4. **MASONRY**

Brick for exterior use shall be at least FBS Grade SW, ASTM 216.

Provide metal reinforcing in all concrete block walls.

Concrete block basement walls shall be parged and waterproofed.

Exterior masonry walls, other than cavity walls, in habitable spaces shall be furred. Provide weep holes and flashing at every floor for cavity wall construction as well as a soft joint at every shelf angle horizontally, a vertical soft joint at a maximum of 75' intervals, and a vertical soft joint at each corner 4" in from the end for buildings of three stories or more.

Concrete block shall not be used as an exposed exterior building wall material.

Concrete block may be used in screen walls built to conceal drying lines, garbage cans, outdoor furniture, children's wheel toys, gardening equipment, etc. The decorative type block is recommended painted with carefully selected colors where applicable.

5. **METALS**

Steel lintels shall have 1 inch of bearing for every foot of the span, minimum bearing being 6 inches.

Provide adjustable vents for crawl space ventilation. Vents shall have minimum net free area of 1/800 of the crawl space area.
5. **METALS (Continued)**

Eave vents shall be covered with 1/4 inch mesh hardware cloth and be placed at outer edge of soffit. (Do not place vents at junction point of wall and soffit.)

6. **CARPENTRY**

No utility grade lumber is permitted. Each piece of lumber shall be grade marked. Structural lumber in contact with concrete masonry or mortar shall be properly treated.

Any exterior building wall covering other than masonry shall be minimum 8'-0" above finish grade.

Particle board shall not be used as an underlayment for soft tile.

Kitchen cabinets must meet or exceed National Kitchen Cabinet Association Standards.

7. **MOISTURE PROTECTION**

Slabs on grade shall have a polyethylene vapor barrier under them no less than 6 mils thick.

Provide drains and polyethylene vapor barrier in all crawl spaces.

Basement walls shall be waterproofed.

Provide a vapor barrier on the warm side of all exterior walls and top ceiling. If the vapor barrier is integral with the insulation, then the "flaps" shall be fastened to the room side of studs and bottoms of ceiling joists.

Provide wall insulation having a minimum R factor of 7; provide ceiling insulation having a minimum R factor of 13. Approximately double these minimum requirements for electrically heated buildings.

Flash all the windows.

Built-up roofing shall be 20-year bondable type, carrying 10-year maintenance guarantee by developer. Shingle roofing shall carry 5-year guarantee, be stick-tab type and 235 lb. minimum.

Built-up roofing is not recommended for one and two-story buildings.

Flashings and gravel stops on structures of three stories
7. **MOISTURE PROTECTION** (Continued)

or more shall be stainless steel, copper or aluminum.

**Calking and Sealants:** For low-rise buildings, nonhardening calking compound is considered adequate. For multi-story buildings a morepermanent sealant shall be specified.

A special tub sealant shall be specified for the joint between tub rims, showers and wall finish.

Where dwelling units or public areas are above the boiler room, properly insulate boiler room ceiling.

8. **DOORS, WINDOWS AND GLASS**

Keep in mind that tenants are required to wash their own windows, so choice and design of windows must provide for easy washing.

Aluminum windows and sliding doors shall meet A.S.M.A.A.-2, requirements.

All aluminum windows shall be etched and coated with at least two coats of methacrylec lacquer.

Steel windows shall carry 10-year full guarantee by manufacturer.

Do not place windows over tubs or in shower stalls.

**Minimum** acceptable glass strength shall be DSB.

Provide tempered glass for all sliding glass doors.

Exterior doors of wood shall be solid core. Metal or metal clad doors are acceptable, providing they have thermal break or swing out.

Provide storm windows or double glazing for all window and storm doors on projects in areas of zero degree winter design temperature or colder.

Provide screens for all exterior doors and windows.

Screens shall be aluminum. Fiberglass cloth is not acceptable.

In elderly units, minimum interior door width shall be 2' - 6".

Provide doors on all closets. No door opening shall
8. **DOORS, WINDOWS AND GLASS (Continued)**

be less than 2'-0".

Provide optical viewers, name plates, numbers and knockers on all dwelling unit entry doors.

Exterior dwelling doors, apartment entry doors and high frequency use doors shall have 161 series hardware. All other doors shall have 160 series hardware (where applicable).

Aluminum hardware is not acceptable.

Keys for dwelling unit entrance door locks must be part of an integrated master-key system.

In buildings for elderly doors in bathrooms and public toilet compartments shall swing out or have hardware to permit double swing action.

Folding doors separating different community space areas shall have minimum sound rating of 40 db STC.

Interior window sills shall be impervious to water and in elderly units be placed no more than 30 to 32 inches above floor.

Provide drawings showing sections through doors and windows.

Window stools shall have lip over interior wall surface.

In buildings for elderly casement or crank-operated windows are not acceptable. Windows shall be double hung or horizontal sliding type.

9. **FINISHES**

**Plywood Exterior Use**

Plywood shall be identified by an approved agency as having been manufactured in accordance with U.S. Product Standard PS-I-66 and shall be exterior type.

Except where fully protected from the weather by overhangs or porches, smooth siding intended for conventional paint finishes shall be Medium Density Overlaid (MDO) as provided in PS-I-66.

Textured plywood siding shall comply with specifications for 303 Specialty Sidings and Texture One-
9. **FINISHES** (Continued)

Eleven published by the American Plywood Association.

For finishing recommendations, see American Plywood Association publications No. 63-60, *Finishing Softwood Plywoods*, particularly pages 18 to 21. Finish Medium Density Overlaid Plywood with conventional oil base, alkyd, or acrylic latex emulsion paints, using primer recommended by topcoat manufacturer.

Texture 1-11 and 303 Specialty Sidings such as saw texture, channel groove, reverse board and batten, fine-line or striated may be stained with either penetrating or opaque exterior oil stains, or painted with acrylic latex exterior house paint.

Other surface coatings may be used over plywood provided the plywood coating and the method of application are in accordance with specifications contained in the Certificate of Qualification issued to the coating manufacturer by the American Plywood Association.

Where it is desired to use exterior grade plywood in one application over studs to act as sheathing and exterior finish the minimum thickness shall be 5/8 inch and the textured specialty sidings meeting HAO approval to achieve quality in architectural design shall be used.

**Other Finishes**

Water-resistant gypsum board shall be used at tub and shower areas.

Gypsum board when used for walls and ceiling shall not be less than 1/2 inch thick.

Prefinished plywood paneling may be used as interior wall finish if installed in accordance with local code requirements.

Resilient flooring shall not be less than 3/32 inch thick if it is vinyl asbestos or 1/8 inch if it is asphalt tile. Vinyl sheet flooring is permitted in kitchen and baths only. Tile pattern (marbelizing) shall extend through full thickness of tile.

Kitchen and baths shall have vinyl asbestos tile or vinyl sheet flooring.

Walls and ceilings in kitchen and baths shall
9. **FINISHES** (Continued)

- Have easily washable surfaces such as low-lustre enamel.

  Tubs with showers and shower stalls shall have ceramic tile wainscot minimum 6' -0" above the floor.

  Tubs with no shower shall have at least four courses of ceramic tile at tub rim and around tub faucets.

  Provide smooth urine-proof wall finish behind urinal fixture in public toilets.

  Each tub or shower in elderly units shall have one "L" shape bar at the controls and one straight bar on a side. Bars installations shall withstand a 300 pound pull.

  Provide an additional 24" towel bar in all three, four and five-bedroom units.

  Metal partitions and sides of toilet partitions next to the urinal shall be porcelain enamel.

  Acoustical treatment (tile) shall be used only in nondwelling areas.

  For ranges or cook tops provide an easily washable nonflammable wainscot at least 15" above range top (other than paint) behind as well as on the side wall when range or cook top abuts a wall. Provide a minimum width of 2' -8" for range space.

10. **SPECIALTIES**

All party walls and floors shall have minimum sound transmission rating of 45 db STC.

Mail boxes in buildings having 50 or more dwelling units shall be rear load type serviced from a small mail room having separate entrance accessible to Postal personnel at all times. This mail room should meet Postal Standards and be ventilated.

Doors to mail boxes shall have no windows.

11. **EQUIPMENT**

Where the LHA furnishes appliances such as refrigerators, ranges, washers, dryers, etc., the specifications shall contain provisions for the contractor(s) to receive equipment at project site, store, uncrate, dispose of
11. **EQUIPMENT** (Continued)

rubbish, set unit in place, connect, inspect and test all units for proper operation. All defects in equipment and operation shall be reported to the LHA immediately after uncrating and testing. The specifications must provide for the installation and connection of the appliance cord and plug or flexible connector for gas, and furnishing of the same if not so furnished by the LHA. Cords or connectors must be of sufficient length to permit withdrawal of unit beyond front of counter to permit access to wall area behind unit.

Wall sleeves for individual air conditioning units in dwelling units may be provided, at the option of LHA.

Refrigerators for family units shall be the two-door type and not less than 11 cu. ft. capacity.

12. **FURNISHINGS**

Provide drapery rods for all windows.

Provide shades or blinds for all windows.

13. **SPECIAL CONSTRUCTION**

Incinerators when shown shall be of the double flue or by-pass type.

Compactor shall have metal refuse containers if local conditions permit.

No refuse shall be emptied from a chute onto the floor. Refuse shall be directly fed into incinerators or compactor.

14. **CONVEYING SYSTEMS**

In elderly projects, if more than 20 percent of all dwelling units are above the first floor, an elevator must be provided.

In buildings over two stories, one elevator must not be less than 5’ x 7’ (inside cab dimensions).

All buildings having six stories or more must have two elevators.

Minimum size of elevator is 4’ x 5’.

Provide electric floor indicators in all elevator cabs on elevators with three or more stops.
14. **CONVEYING SYSTEMS** (Continued)

Provide electric directional indicators at all elevator doors in the corridor.

Provide exhaust fans in all elevator cabs.

Provide phone or intercom between elevator cab and custodians apartment.

Provide rear door to large elevator cab from receiving room.

15. **MECHANICAL**

Minimum size of single compartment kitchen sink shall be 24" x 21". Double compartment sinks, minimum size 32" x 21", shall be provided in all dwelling units having more than one bedroom.

Provide a three-compartment stainless steel sink in the community room kitchen.

Provide sink with a plaster trap in crafts room.

Lavatories shall be minimum 18" x 20".

Water closets in public washroom shall have an elongated bowl with open front seat and flush valve. If tank type is used, tank cover shall have a vandal proof lock.

Bathtubs shall be 5' - 0" long. Fiberglass tubs, tub-walls and showers shall conform to USASI Standards 2124.1 and 124.2. Tubs in family units shall have a shower, at the option of the Local Housing Authority.

Bathtubs shall have nonskid bottoms, in elderly dwelling units.

On elderly projects, shower head rough-in shall be 5' - 6" from floor. Showers shall have a pressure-type mixing valve. Provide a flow control device on the shower head.

Shower stalls shall be minimum 32" x 48".

Laundry trays, in laundry rooms, shall be minimum 32" x 48" double compartment.

Single compartment laundry sinks may be used in individual family units.

Provide extra heavy cast-iron pipe for soil and waste lined under floor slabs.
15. **MECHANICAL** (Continued)

Underground domestic water piping of 3" and over in diameter shall be cast iron; pipe under 3" in diameter shall be type "K" copper, without joints under floor slabs.

Provide dielectric fitting where copper tubing joints east-iron pipe or other ferrous metals.

Provide type "L" copper pipes for all interior domestic water lines.

Do not install domestic hot and/or cold water pipes in exterior walls.

All concealed gas piping shall be run in ventilated pipe or furred space.

All gas piping must enter the building above grade. Provide dielectric union on service side of gas meter.

Provide a shut-off valve at the base of all domestic water, gas and heat risers.

Show a typical domestic water heater installation layout and provide dielectric unions at water connections to heater.

Domestic water heaters shall be glass lined and have 5 or 10-year unconditional guarantee.

Hot water heater sizes shall be:

**Gas**

30-gallon for 1 and 2-BR units.
40-gallon for 3 and 4-BR units.
50-gallon for 5 and 6-BR units.

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<thead>
<tr>
<th>Electric</th>
<th>Top Element Watts</th>
<th>Lower Element Watts</th>
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<tbody>
<tr>
<td>40-gallon for efficiency units</td>
<td>1250</td>
<td>750</td>
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<tr>
<td>52-gallon for 1 and 2-BR units</td>
<td>1500</td>
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<tr>
<td>66-gallon for 3 and 4-BR units</td>
<td>2000</td>
<td>1250</td>
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<tr>
<td>80-gallon for 5 and 6-BR units</td>
<td>2500</td>
<td>1500</td>
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Insulate all domestic hot, and cold and recirculating water lines, except for short runs and where cold water piping will not present condensation problems.

Insulate horizontal runs of all interior downspouts.
15. **MECHANICAL** (Continued)

Show locations of fire hydrants or utility plans.

Show locations of all wall hydrants or building perimeter.

Provide hot water connection to washdown ring at the top of trash chute and cold water connection to sprinkler heads.

Incinerator or compactor room shall have a floor drain and a hose bibb.

When "tub rooms" are used in elderly housing, shower shall be provided above the tub.

Show clearly on drawings the sizes of all sewer, water and gas lines.

Specify only the tests required by state and/or local plumbing code for drain waste and vent piping.

In central boiler rooms for 40 dwelling units or more provide modular boilers. If conventional boilers are installed a minimum of two shall be used and they shall be sized not less than two-thirds of the net load. In projects of less than 40 dwelling units use modular type boilers or a single conventional type sized to 100 percent of the heating load.

Hot water heating systems, except in small buildings, shall be reverse return system.

For elderly one-story housing of two units or more a small central heater room housing a small boiler with separate pumps for each unit and a central hot water unit is recommended.

Baseboard radiation is more desirable than forced warm air heating in units built for the elderly.

The indoor design temperature for elderly dwelling units shall be 75°F.

Provide a 250 watt heat lamp on a timer switch in all interior bathrooms located on the top floor of multi-story buildings. Provide baseboard radiation in all end unit bathrooms. The heat lamp shall be a separate unit; not a combination lamp and exhaust unit.

Provide unit heater in the maintenance area, if no other heat is available.
15. **MECHANICAL** (Continued)

All thermostats shall be wall mounted.

All enclosed habitable rooms shall be individually thermostat controlled where electric heat is used.

All heating supply and return piping shall be insulated.

Provide outdoor bulb(s) for zoning and modulating heating system water temperature(s).

Show locations of anchors, expansion joints and/or expansion loops on the heating system plans.

Locate boiler alarm system so it can be heard outside boiler room.

Avoid using underfloor, perimeter-type warm air heating system with counterflow furnace under a concrete slab on grade when there is any question of a high water table. Whenever this type of heating system is used the finished first floor line shall be a minimum of 12 inches above finished grade.

All heat supply distribution elements shall be located on perimeter walls at the floor line.

Provide no less than two (2) return air ducts in four and five-bedroom dwelling units.

All combustion air ducts shall be lined and brought down to 12" above finished floor.

Provide ceiling outlet grill or duct in furnace room.

Combustion air louvers in any large boiler room shall contain motorized damper wired into the boiler ignition circuit.

Place identification tags on all valves and color code piping in boiler rooms for buildings containing 60 dwelling units or more.

Provide pressurized corridors in double-loaded corridor plans. Electrically interlock corridor ventilation fan with roof exhaust fans on a timer so that they can be shut down between midnight and 6 a.m. during winter months.

Vent laundry driers using stainless steel or aluminum ducts with water tight joints. Provide easy access for lint removal.
15. **MECHANICAL** (Continued)

Provide exhaust fan and floor drain in central laundry rooms.

Provide thermostatically controlled, adequate ventilation in all penthouse elevator equipment rooms.

Exterior of fresh air intake duct, on corridor make up units, shall be insulated. Where corridor register is within 15 feet of the fan the supply duct shall be acoustically lined.

Projects with sewage lift stations are not acceptable unless the lift station is accepted in dedication by the city and is operated and maintained by it.

A standby emergency generator is not a requirement for low-rent housing. Do not provide unless this is a local code requirement.

Provide details of any new manholes, catch basins, cleanouts, meter pits and headwalls on the site utility plans.

Do not locate pumps or any water pipes near combustion air intake in boiler room.

Provide a schedule on the drawings or specifications showing plumbing fixtures by name of manufacturer, identification number, size, type and location of each kind.

16. **ELECTRICAL**

**General—Electrical Requirements:**

A. Design and installation to conform with requirements of the National Electrical Code as minimum standards; state and local codes and ordinances and the local utility company rules and regulations. Any deviation from the minimum standards of the N.E.C. must be substantiated by a written approved waiver from the local inspection authority permitting the deviation.

B. Equipment and materials to be U.L. approved where such standards exist.

C. Equipment and material to be of good quality conforming to applicable NEMA, ASA, NEFU, IPCEA and Federal Specifications.

D. Design must be based on the requirements of
16. **ELECTRICAL (Continued)**

the HAC-CRO approved utility analysis which determines the type of service, distribution, metering, appliances and heating plants to be used.

E. The plans and specifications shall clearly define the type, grade, quality and construction of the materials to be installed. Manufacturer's catalog numbers may be used to establish quality for recognized standard, widely advertised items. Catalog information and specifications may be required to be submitted for any questionable or specialty item. These data shall be the basis for deciding whether an item meets the contract specifications. The manufacturer's catalog number alone shall not be used as basis for compliance, since it may be subject to manufacturer's change in design, quality or grade.

**Outdoor Electrical Services:**

A. Show location of lines, transformers, etc., on site plan. Include outdoor lighting on site plan.

B. Also provide one-line diagram on electrical drawing.

C. Define clearly in "A" or "B" above the responsibility of work by electrical contractor, utility company, etc.

**Interior Wiring--Show on Electrical Drawings:**

A. One-line diagram of main switchgear and pertinent data.

B. Power riser diagram, fire alarm system (all stations, sensors, alarms, etc.).

C. TV system, telephone system, emergency alarm system, and communications system risers: Each tenant outlet for these systems in "C" need not be illustrated--a typical riser will suffice.

D. Ground floor wiring plan.

E. Other typical floor wiring plans for dwelling unit area.

F. Separate details for miscellaneous functions
16. **ELECTRICAL** (Continued)

such as laundry room, tub room, janitor's closet, central meter rooms, etc.

G. Typical electrical layout, drawn at a scale of $\frac{1}{4}'' = 1' 0''$ minimum, for each type dwelling unit; i.e., efficiency, 1 bedroom, 2 bedroom, etc.

**Miscellaneous Schedules to be Included on Electrical Drawings Such as:**

A. All power and lighting distribution panels, including tenants lighting panelboard. Indicate load served by circuit, that is circuit No. 1--kitchen appliance outlets; circuit No. 2--ceiling lights and convenience outlets, etc.

B. Lighting fixtures--include designation, such as "A", "B", etc., manufacturer, catalog number, lamps (number, watts, type) and brief description such as "recessed troffer with acrylic lens," "post light w/14'0' pole", etc.

C. Symbol legend--illustrate symbol and provide description.

**Metering Facilities:**

A. Elderly tenant dwelling units--neither meter not socket required by LHA for master-metered service.

B. For retail service, the utility company generally requires the LHA to supply the metering equipment grouped at designated locations. The utility company supplies the meter for retail service and in some cases may also supply the socket.

C. Family dwelling units--electrical metering required for either type service--"Master-metered" or "Retail". The LHA to provide all the tenant metering equipment for "Master-metered Service," and all metering equipment other than the meter for "Retail Service". In some cases, the utility company may also supply the socket.

D. For Row Houses--the metering equipment may be grouped, or possibly isolated from each other according to the requirements of the utility company.
E. LHA checkmeter sockets shall be of the automatic circuit closing type. Sockets for utility company's meters must conform to their requirements.

Circuit Protectors:

A. For 600 volt or less high-rise building service, the main switchboard shall have the proper current interrupting capacity to match or exceed that available from the power source at the site.

B. Switches rated 1200 amperes and higher shall be of the "bolted-pressure" type used in conjunction with current limiting fuses NEMA Class "L".

C. Molded case breaker approved by Underwriter's laboratory may be used within its limitations of 1200 amperes current rating and 100,000 ampere interrupting rating for fused molded-case circuit breakers. Cascade operation is not possible.

D. Provide dual element fuses for power distribution and lighting distribution panelboards.

E. Load center unit shall be located within the dwelling unit at a suitable location (readily accessible, not exposed to physical damage, and not in the vicinity of easily ignitable material).

F. Dwelling unit load center units shall have circuit breakers for branch circuit protection; twin-type circuit breakers are not acceptable. All single pole breakers shall be 15 amperes rating except for portable appliance circuits in the kitchen, dining room, laundry, etc., which require the 20 amperes rating.

Switches:

A. Install switch at top of basement stairs, but removed from the top tread for safety precaution. If exit is available at basement ground level, provide three-way switch at exit door and at top of stairs.

B. Switch mounting height in elderly dwelling units shall be 36 inches above finished floor.

C. Three-way switching required for stairs in
16. **ELECTRICAL** (Continued)

   two-story dwelling unit with switch located away from the top tread.

D. Bathroom wall switch shall be located beyond reach from the bathtub.

E. Install multiple switching where necessary for safe passage in both forward and reverse direction as follows:
   (1) Each level of stairs.
   (2) Long hallways.

F. Provide NEMA intermediate grade, quiet-type switches, 15 ampere rated for apartments where loading does not exceed 1000 watts; 20 ampere rating is recommended for the building circuits with multiple fixtures and heavy loading.

G. **Bathroom exhaust fans must be controlled through a separate switch independent from the light outlet.** It is recommended that the line side of the fan switch be wired for feed from the load side of the light switch.

H. Where bathrooms are provided with a 250 watt heat lamp, install a 15-minute timer with a positive "off" switch position to control the heat lamp.

I. Each heating plant shall be provided with a disconnect switch with an identified "off" position. A toggle switch may be the disconnect device if code permits.

**Receptacle Outlets:**

Provide NEMA intermediate grade quality receptacles.

In the bathroom locate the receptacle on the wall adjacent to the mirror in a safe accessible location about 42 inches above the floor. This receptacle may be omitted if one is contained at the bottom end of the vertically-mounted fluorescent sidelight. For family dwelling units only, the receptacle may be included in the bracket light assembly installed over the mirror and the separate wall receptacle omitted.

In the dining area, locate the receptacle above
16. **ELECTRICAL** (Continued)

table height, where the table will specifically be located against the wall.

In the kitchen, locate receptacle above counter height and sufficiently high to clear counter splash back.

For refrigerator, locate receptacle to the side of the refrigerator which will permit serving adjacent work space also. Check kitchen details before installation.

Likewise, provide receptacle cutout on both sides of sink basin and range in a manner such as to avoid attachment cord crossing basin or range.

For other areas in elderly dwelling units, locate receptacle outlet 2½ inches above finished floor.

The laundry receptacle shall be located in a manner such that it shall serve the washer and another laundry appliance such as gas dryer drive motor, or hand iron. Locate receptacle sufficiently high to clear top of laundry equipment back panel.

For projects where accommodation for tenant-owned or rented window-type or in-wall console-type air conditioner is requested by the LHA, provide one receptacle outlet per dwelling unit. The air conditioning unit is not necessarily restricted to the warmer climate since it may be required for health reasons, as for example asthma afflicting the elderly. The outlet shall be restricted to one 15 ampere, 115 volt circuit.

Other special purpose receptacles for dwelling units shall be provided where required and prior approval was obtained from HAC, Chicago Regional Office, such as for ranges, space heating, etc.

A head bolt heater outlet is permitted for tenant vehicles at the option of the LHA but is limited to projects in upper Michigan, Minnesota and upper Wisconsin areas.

**Lighting:**

A. Fixed lighting fixtures required in all habitable rooms, hallways, stairs, walk-in closets, storage rooms, and utility rooms. Particular attention must be directed to provide good lighting
over the dining table, kitchen sink, and laundry trays. A separate fixture need not be installed directly for these areas where sufficient illumination is available from adjacent lighting fixtures.

B. A ceiling lighting fixture need not be installed in the living room in the passageway and/or closet or stair area can be properly lighted from a lamp connected to a switched receptacle in the living room.

C. The bracket-mounted type fixtures may be used in the bathroom, in small closets, etc., or where ceiling mountings cannot be accomplished.

D. Bathroom light fixtures shall be centered over lavatory, either wall-mounted type centered over medicine cabinet (or two vertically-mounted side lights), or ceiling-mounted type 12" from wall.

For larger family dwelling units, additional ceiling light shall be required to illuminate the dining and adjacent areas for school age children's study purposes.

E. All closets, store rooms, etc., must be adequately illuminated. Light may be obtained from an adjacent fixed lighting unit, located off-center if necessary, and thus eliminate the closet fixture.

F. If a pull chain socket fixture is used in appropriate locations, it shall be equipped with levolor switch.

G. Each level and landing of a stairway must be provided with illumination.

H. Use economical fixtures of simple, sturdy, standard design permitting ready replacement and interchangeability. Avoid ornate, complicated and expensive units.

I. All plastic lens for fixtures shall be selected for high impact, heat resistance and nonyellowing aging characteristic.

J. Provide a nite light or a receptacle outlet
16. **ELECTRICAL** (Continued)

in which a plug-in nite light can be inserted which will light the path from the bedroom to the bathroom in elderly unit.

K. Levels of illumination shall approximate the latest I.E.S. recommendations.

L. Fixtures in public areas shall be vandal proof and protected against pilferage, i.e., using LH thread sockets, keyed construction, or other suitable protection.

M. Illumination in management and community areas should be fluorescent type to reduce operating costs and provide longer service life, especially if these areas are air conditioned.

N. Illumination levels should be 50-foot-C for offices and "Arts and Crafts" areas, 30-foot-C for community space.

O. Corridor lighting should be fluorescent type on approximately 14-foot centers. It is recommended that half the public area and corridor lighting be connected on the "emergency circuit". The other half should be connected to the regular lighting source and controlled by a time clock with astronomic dial to reduce electrical energy costs.

P. Install exterior lighting fixtures to illuminate all entries, service doorways, patios and balconies. Fixtures may be project, building or dwelling unit controlled. Please note that exterior fixtures under the tenant's control at the entries of a multi-unit project may be turned off. Therefore, the entry is not considered to be illuminated unless other project units perform the function.

Q. Provide a weatherproof receptacle at the dwelling unit entries and selected locations for seasonal decorative lighting.

R. Provide adequate lighting for parking area, outdoor steps, game areas, walks, etc. This may be accomplished by luminaries mounted on standards, mounted on the face of two-story buildings, or the walkways near the single-story buildings b. the entry light at the tenant's door. Coordinate with landscaping for
16. **ELECTRICAL** (Continued)

   effective lighting.

S. Use mercury vapor luminaries with color-corrected lamps wherever possible for economical operation and longer service life. Control by photocells wherever practical.

**Grounding:**

A. Provide lighting protection for boiler chimneys and any other points where local authorities require additional protection.

B. Ground fencing around electric distribution equipment, gas tanks and gas master meters, etc.

**Miscellaneous Systems:**

A. Provide telephone outlets, including conduit or prewiring by telephone company if within their policy, in kitchen, bedroom, No. 1, and living room of every dwelling unit. Provide telephone outlets in Management, Maintenance and Community spaces in accordance with local housing authority requirements. Plans will show main building entry point for telephone service as coordinated with telephone company.

B. Provide TV outlets, conduit systems, master TV antenna systems and wiring necessary to provide TV reception of the quality normally required in the community. Building structure and surroundings must be considered for possible interference with reception. This does not rule out use of "rabbit ear" antennas, if they will provide the quality of reception required. Where antennas are required for proper reception, the system shall be designed so as not to create an "antenna forest" effect on the project roof tops or site.

C. An empty conduit and outlet system only required for conventional (bid) jobs.

D. Fire alarm systems and emergency lighting systems shall be provided as required by applicable codes.

E. An entry to dwelling unit communication system shall be provided as required by the building
16. **ELECTRICAL** (Continued)

   design. In single-family units, provide electrically operated door bell.

   F. Provide an elderly emergency call system if required by the LHA. This may consist of a simple cord-operated switch in the bathroom and a signal light in hall over dwelling unit door and a continuous ringing bell in the hall with other system extensions as deemed necessary. "Tub rooms" shall have emergency alarm system.
This attachment is made part of and amends the drawings so as to include any of the applicable requirements. Special attention is to be given to items indicated by circled numbers entered on the drawings which refer to the corresponding paragraphs on these sheets.

1. **Pedestrian Protection.** Provide and maintain protection during construction or demolition operations for pedestrians on sidewalks or walkways in conformity with Section 1305.061 of the Uniform Building Code.

2. **Building Construction In Right-Of-Way.** All construction or alterations on public property shall be performed under permits from the Division of Engineering in accordance with "General Construction & Material Specifications for Streets and Sewers".

3. **Basement Wall Waterproofing.** Basement walls of buildings below grade shall be protected with not less than a one-coat application of approved waterproofing paint, undiluted hot tar, hot asphalt or other approved compound, or a one half (0.5) inch parging coat of Portland Cement mortar or other approved dampproof covering, except that when such walls are of masonry both the parging with mortar and the coating with compound shall be provided. (674.03)

4. **Exit Signs.** Required means of egress shall be indicated with approved metal signs reading "EXIT" in green letters at least 6 inches high on a white background or in other approved distinguishable colors; illuminated by an electric light of not less than 25 watts, visible from the exit approach and supplemented where necessary by directional signs in access corridors indicating the direction and way of egress. Exit signs may be internally illuminated when enclosed in a noncombustible case. The letters of internally illuminated signs shall be not less than 4.5 inches high. (626.01)

5. **Panic Hardware.** Provide panic proof hardware on all required exit doors. Panic proof hardware shall be latches or bolts which release under a pressure of 15 pounds. (614.042)

6. **Doors (Or Windows) Opening Over Public Property.** The projection of door and/or windows over public pro-
perty or beyond specific building line of more than 12 inches when opening or opened in a horizontal direction is prohibited. (310.0313)

7. **Beam, Girder, Joist - Masonry Support.** Provide a bearing of solid masonry at least 4 inches in height or approved equal under all beams, girders, joists and/or other concentrated loads. (840.01)

8. **Bridging.** Provide not less than one line of bridging for each 8 feet of span for all floor and attic framing, and roof framing of roofs having a slope of less than 3 in 12. Bridging shall consist of not less than 1 by 3 inch lumber, double-nailed at each end or approved equal. A line of bridging shall also be provided at supports where adequate lateral support is not otherwise provided. (855.015)

9. **Fire Extinguishers.** Provide hand operated auxiliary fire-extinguishing equipment of an approved type, in corridors or other locations, visible and readily accessible to the occupants of the building in accordance with the requirements of the Bureau of Fire Prevention. (1217.0)

10. **Ventilation.** Provide approved illumination and mechanical or gravity ventilation for rooms or interior spaces having an aggregate window area of less than one-tenth (0.1) of the floor area served, and with less than four-tenths (0.4) of the required glass area available for unobstructed ventilation. (509.04)

11. **Masonry Headers, Anchors, Ties.** Walls shall be bonded with headers spaced not more than 24 inches apart either horizontally or vertically and extending not less than 4 inches into the backing, or, walls shall be bonded by approved metal ties, spaced not more than 18 inches vertically nor more than 36 inches horizontally. There shall be one metal tie for not more than 4.5 square feet of wall area and ties shall be staggered in alternate courses. (ASA A41.1 Sec. 7)

12. **Access Panels - Fire.** Provide fire access panels in the first to the ninth stories. Such access panels shall not be less than 32" by 48", nor shall they be spaced more than 50' apart in each story, with a sill height of not more than 36". Approved means shall be provided so that fire-fighting personnel can promptly identify the location of each such opening from both interior and exterior, and it shall be unlawful to obliterate, disguise, or
otherwise render such markings unrecognizable or difficult of access. (861.0)

13. **Draft Curtains.** Roof area of building shall be subdivided by draft curtains into fire sections covering plan areas containing a maximum of ___ square feet and having a least plan dimension not smaller than one half the greatest plan dimension. Draft curtains shall be of draft-tight non-combustible construction designed to resist a lateral load of 10 pounds per square foot when at a temperature of 250 degrees fahrenheit, and shall extend from a draft-tight connection with the roof to a point below the bottom chord of roof trusses, where employed, but in no event higher than the bottom of the lowest point of roof beams, which ever is lowest. (913.033)

14. **Roof Vents.** Provide roof vents in each fire section having a combined relief area ratio of 1:200. Openings shall be spaced not more than 75 feet apart and shall open automatically within a curtain area when temperatures at the highest point of the roof reach a point approximately 5°F less than that at which the sprinkler heads will open, or, if no sprinkler protection is provided, at a temperature of 160°F. (913.0341)

15. **Toilet Rooms.** Minimum of 2+ sq. ft. required in each toilet room plus 10 sq. ft. for each fixture over two. Minimum door size 2'-6" x 6'-8".

16. **Storage Tanks.** Storage tanks for flammable liquids - including valves, fillers, vents and fittings - shall be installed under permits approved by the Bureau of Fire Prevention and issued by Permit Section, Division of Building Inspection. (iABFU)

17. **Signs.** All signs require separate permits. Signs having an area in excess of 60 square feet on one face and all roof signs and revolving signs require complete structural plans. (1402.01)

18. **Demolition.** Demolition permits must be obtained separately for each structure to be razed containing in excess of 300 sq. ft. of aggregate floor area.

19. **Storm Water Disposal.** The storm water from all roofs, courts, paved or hard surfaced areas shall be conveyed into the building storm sewer or other acceptable terminal, through a continuous watertight system of piping from acceptable collection
20. **Window Washers Safety Devices.** Window washers safety devices shall be provided on all windows 10' or more above grade or above adjacent flat roof surfaces, except that wherever windows are to be cleaned by the use of swinging scaffolds or by ladders or by other approved means or where the windows are of such type that they may be easily cleaned from the inside, they need not be so equipped. (515.0)

21. **Hoods And Exhaust Systems.** Provide hoods and exhaust systems for all cooking ranges, grills, deep fat fryers and other equally hazardous kitchen cooking appliances in hotels, restaurants, clubs, lodges, institutional buildings and in other establishments using restaurant type cooking equipment as regulated and approved by the Bureau of Fire Prevention. (1127.01)

22. **Ceiling Heights.** Ceiling heights shall not be less than those hereinafter specified for rooms and spaces used as indicated below. Ceiling heights shall be measured from the bottom of the lowest obstruction including beams, ducts, pipes, etc.

a. Rooms and spaces occupied by one or more persons for living, eating, sleeping or cooking; and corridors - 7' - 6".

b. Rooms or spaces used as bath, toilet, locker, laundry, utility, boiler, basement, garage or storage; and similar spaces - 7' - 0".

c. Assembly areas and all other rooms or spaces not otherwise covered in (a) and (b) above - 8' - 0".
Note: The following recommendations were made upon submission of the proposal of Lippman Associates, Indianapolis; however, the findings of the boring tests can be used as a guide for determining the type of structuring this thesis project will need.

RECOMMENDATIONS:

It is our understanding that the proposed structure is to contain a total of 4 stories, and will be completely masonry wall supported. The structure will be supported on continuous wall footings. The total load on the footings will be approximately 10 kips per linear foot. The finished grade of the structure is to be near present grade. The following recommendations are based on the above data; therefore, if these data are incorrect or if changes are made, this laboratory should be notified so that the new data can be reviewed.

The stratum of organic, river bottom sediment existing to depths up to 5 feet is unsuitable for the support of the structure or floor slab and should be removed from beneath the entire area of the structure if problems are to be avoided. The depth to which this stratum extends at each of those locations tested is as follows:

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Depth of River Bottom Sediment (Feet)</th>
<th>Elev. at Bottom of River Bottom Sediment (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.0</td>
<td>94.3</td>
</tr>
<tr>
<td>2</td>
<td>1.5</td>
<td>97.9</td>
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<tr>
<td>3</td>
<td>3.5</td>
<td>95.5</td>
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<tr>
<td>4</td>
<td>3.0</td>
<td>95.6</td>
</tr>
<tr>
<td>5</td>
<td>3.0</td>
<td>96.3</td>
</tr>
</tbody>
</table>

This material should be excavated from the entire area of the structure. The excavations should be refilled with suitable fill material compacted to a dry
unit weight equal to at least 90% of the maximum dry
unit weight as achieved by the Modified Proctor tests
and placed in accordance with the Specifications for
Engineered Fill included in this report.

The foundations for the structure should be placed
on original sand and gravel and designed for a bearing
capacity of 5,000 lbs. per square foot, except for the
area described below. An area of quite loose sand and
gravel was encountered at boring No. 5 between depths
of 14 feet and 20 feet; however, this stratum is deep
enough that the stress imposed upon it by the founda-
tions designed for a bearing capacity of 3,000 lbs.
per square foot will not be excessive. It is recom-
mended, therefore, that the foundations in this area
be widened so as to deliver a stress to the soil of
only 3,000 lbs. per square foot. This area is delineated
on the boring location plan. Extra steel should also
be used in the footings in this area.

Groundwater will not present a problem to the in-
stallation of foundations for the proposed structure.
All backfill for utility trenches, etc., should be
compacted to a dry unit weight equal to at least 90%
of the maximum dry unit weight as achieved by the Modi-
fied Proctor test. Some settlement of parking areas
should be expected due to the organic stratum of river
deposited silt. It appears, however, that it would be
more economical to accept some settlement and breakup of the driveways and parking areas than to try to remove all this material from the area. The differential settlement can be alleviated somewhat by removing all topsoil and placing a base of at least one foot of granular material beneath the parking area. This will not completely eliminate settlement of the parking area; however, it will tend to make differential settlements more uniform and prevent cracking and breakup of the parking area.

No other problems which would affect the design and/or construction of the proposed installation were observed.
BUILDING FUNCTIONS
Building Functions

Many investigations have been carried out concerning the living conditions, the needs, and the wishes of the older people. It is incorrect to assume that all of the elderly are sick, infirm or dependent upon specialized accommodations. There are, according to some investigations, less than 10 or 20 percent of them who will require any type of unusual considerations. The majority of the older people don't wish to impose on relatives or friends. Their main ambition is in maintaining their own independence.

Robert B. Rutherford, M.D., in his book "Architectural Designs", said the following:

"Housing well thought out, designed to meet the needs of older people and yet preserve the feeling of independence that they crave, is all important now and in the future. Removing any stigma from special facilities for the elderly - that hint of poverty of mind or body or purse or taste - challenges all of those who will participate - the building committee, the finance committee, the architect, and so forth. Providing housing that preserves this feeling of independence in the older people themselves is the goal. It won't be reached by drab boxes, on bare sites, full of quizzical old extroverts being herded into sad conformity."

The shock of change should be minimized by designing a home that preserves a sense of privacy. A common living room could be shared by six or seven people with their individual quarters adjacent.

Small dining rooms have been proved to not only be more pleasant and homelike, but less costly to operate. Residents who come early for meals should have a comfortable waiting area. The living room if adjacent to the
dining area could serve as the waiting room also.

Community Facilities and Services: Whether the home is developed in hard dollars and cents or in terms of providing the greatest possible number of amenities for the living environment, planning for community facilities and services relates first to the site location, and second, to the physical design of the facility. The source of services and the location of related facilities have obvious implications for physical design. A self-contained facility would require emphasis upon circulation and movement within it; a facility depending upon services from outside would require developed and regularized techniques, both of communication and transportation, for maintaining outside contacts. In either case, the anticipated pattern of services should be included in the physical design of the facility.

Education: Potential subjects for adult education in the elderly facility could include: civic and socio-economic problems, home life and personal problems, dietary and nutritional instruction, recreational and avocational pursuits, and special training for those whose abilities hinder full social participation. All or none of these areas might be dealt with within the home. On the other hand, arrangement for such educational activities outside the facility would require waiting shelters, bus stops, and assembly points at appropriate places within the surrounding community.

Outdoor Recreation: To a large extent, the outdoor needs for active play and recreation, as well as passive recreation, could be met within the limitations of the site. Swimming, golfing, shuffleboard, croquet and horseshoes are a few of the activities that could be made available for the community as well as those living in the facility. The need for shaded areas provided with benches for relaxation seem to be an essential of the elderly.

Indoor Social and Cultural Facilities: Religious worship and training, indoor sports and games, parties and dances sponsored by both the management and by community organizations are a few of the activities which would require a large area such as an auditorium or a combination of two or more adjoining spaces.

Health Service Facilities: Health service facilities should be considered for the home at any of the following levels of completeness:

1. As a minimum, there must be one or more physicians within the area or immediately on call.
2. A satellite health center offering medical consultation and treatment by a physician; general health service, special clinics such as arthritic, diabetic,
3. Infirmary with general nursing service and in-patient care in addition to the above.

4. The full range of medical health facilities normally found in an urban center.

The accomplishment of the first two levels of completeness are sufficient for the elderly. While health service facilities should be easily accessible, they should not intrude to the point where the home becomes a place for the sick and dying rather than a place for the living.

Utilities and Service: There are well-defined standards in connection with the provision of such services as water, light, fuel, telephone, sewer and storm drainage, garbage disposal, fire and police protection, and many others which should be planned accordingly. Being located beyond the reach of immediate fire protection, thought should be directed in providing a good sprinkler system within the facility, which in turn will call for a larger reservoir of water.

Safety and Comfort Features: In designing the facility in which the residents will reside, some general features should be kept in mind. Particular attention should be paid to ease of access; privacy; walking distance; hand rails for safety; resilient non-slip floors; elimination of stairs, steps and thresholds as much as possible; warm, even room temperatures with ample heat evenly distributed within the living quarters. The use of glass should be considered carefully. Wide windows in bed-sitting rooms provide a pleasant view and also give a larger appearance to the room; however, older eyes do not tolerate too much light, and the eye comfort of the elderly should be kept in mind. Being in the northern hemisphere, bathtubs should not be situated on outside walls. Abrasive tile floors are desirable. Each of the apartments should be furnished with both a bathtub and shower.
AREA REQUIREMENTS
### Area Requirements

**Non-Livable Space**

- Main Lobby: 450
- Receptionist: 100
- Main Office: 150
- Waiting Area: 200
- Lounge: 200
- Laundromat: 600
- Multi-purpose Room: 1200
- Arts & Crafts: 1200
- Nail Room: 100
- Public Toilets:
  - Men: 150
  - Women: 150
- Satellite Health Center: 2230
  - Receptionist: 100
  - Waiting Room: 400
  - Audiology Dept.:
    - Sound Room: 100
    - Office: 100
    - Exam Room: 80
  - Dental Dept.:
    - Office: 100
    - Dark Room: 100
    - Lab: 70
    - Exam Room: 80
  - Ophthalmology Dept.:
    - Test Room: 250
    - Sink: 70
    - Exam Room: 80
  - Nurses Quarters: 250
  - Linen Room: 100
  - Storage: 150
  - Lounge: 200
- Library:
  - Librarian's Office: 200
  - Check-out: 150
  - Display Area: 200
  - Catalog: 150
  - Reading Room: 350
  - Periodicals: 200
  - Stack Area: 900
  - Reference: 150
  - Technical Processing: 150
  - Study Carrels: 150

Total: 17680

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93
<table>
<thead>
<tr>
<th>Space</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Room</td>
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<td>Office</td>
<td>100</td>
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<tr>
<td>Rentable Space</td>
<td></td>
</tr>
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<td>Shops</td>
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<td>Classroom</td>
<td>3600</td>
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<tr>
<td>Maintenance Room</td>
<td>800</td>
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<tr>
<td>Boiler Room</td>
<td>300</td>
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<tr>
<td>Elevator Equipment Room</td>
<td>200</td>
</tr>
<tr>
<td>Janitor's Closet</td>
<td>100</td>
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<tr>
<td><strong>Livable Space</strong></td>
<td></td>
</tr>
<tr>
<td>100 Units</td>
<td></td>
</tr>
<tr>
<td>100 Units</td>
<td></td>
</tr>
<tr>
<td>80 One Bedroom</td>
<td></td>
</tr>
<tr>
<td>Living Room</td>
<td>150</td>
</tr>
<tr>
<td>Kitchen/Dining</td>
<td>150</td>
</tr>
<tr>
<td>Bath</td>
<td>50</td>
</tr>
<tr>
<td>Bedroom</td>
<td>150</td>
</tr>
<tr>
<td>20 Two Bedroom</td>
<td></td>
</tr>
<tr>
<td>Living Room</td>
<td>150</td>
</tr>
<tr>
<td>Kitchen/Dining</td>
<td>150</td>
</tr>
<tr>
<td>Den</td>
<td>50</td>
</tr>
<tr>
<td>Bath</td>
<td>50</td>
</tr>
<tr>
<td>Bedroom (2x 150)</td>
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</tr>
<tr>
<td>Lounge</td>
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<tr>
<td><strong>Net Total Sq. Ft.</strong></td>
<td>73680</td>
</tr>
<tr>
<td>&amp; 30% Circulation</td>
<td>22104</td>
</tr>
<tr>
<td><strong>Total Sq. Ft.</strong></td>
<td>95784</td>
</tr>
</tbody>
</table>
SITE ANALYSIS
THERE IS AN EXISTING TRAFFIC LIGHT AT THIS INTERSECTION OF HELMIA STREET AND STANLEY AVENUE. THIS IS THE MOST LOGICAL POINT OF ENTRY INTO THE SITE.
BUS STOP CONTAINING CITY MAP, FOUNTAINS, TELEPHONES, ETC., POSSIBLY BEING HEATED DURING WINTER MONTHS.

AN AREA FOR RELAXATION FOR ANYONE PASSING-BY, THOSE USING THE BUS STOP AS WELL AS THE ELDERLY. OUTDOOR COMMONS AREA.

THE TREES BECOME A BUFFER BETWEEN THE PARKING AREA AND THE COMMONS AREA.

THE THREE AREAS MARKED AS OUTDOOR ACTIVITY COULD BE USED BY ANYONE, ALTHOUGH THEY'RE NOT PART OF THE PLAN UPON WHICH THE ELDERLY FACILITY IS TO BE BUILT UPON AND ALSO STILL OWNED BY THE CITY. I PROPOSE THE TREES BE PLANTED IN SUCH A MANNER TO BREAK UP THE PAST OPEN AREA INTO SMALLER AREAS THAT HAVE A MORE HUMAN SCALE ABOUT THEM.

MORE OF A SEMI-PUBLIC AREA WHICH WOULD CONTAIN THE CHAPEL, OUTDOOR PLANT AREA FOR THOSE CHILDREN BEING TAUGHT CARE OF AT THE DAYCARE CENTER AND POSSIBLY A FLOWER BED WHICH THOSE AT THE FACILITY MAY WANT TO MAINTAIN.

COMMERCIAL SPAC Ed WHICH WOULD CONTAIN THE GIFT SHOP, BARBER SHOP, DAYCARE CENTER, AND NURSING CENTER.

MAIN LOBBY WHICH IS A VERY CRITICAL PT. BECAUSE OF THE PUBLIC, SEMI-PUBLIC, AND PRIVATE AREAS Bordering TO EACH OTHER, THE SERVICE ENTRANCE WILL BECOME A CRITICAL FACTOR. IT MUST BE TOTALLY SEPARATE FROM THE MAIN ENTRY.

PRIVATE AREA WHERE THE INDIVIDUAL LIVING UNITS WILL BE LOCATED AS WELL AS ALL OTHER AREAS PERIODICALLY TO THE ELDERLY.

SHOULD BE ARRANGED IN SUCH MANNER TO FORM SMALL PRIVATE OUTDOOR AREAS FOR RELAXATION GROWING PLANTS, ETC.

SITE STUDY
Living Arrangement
PRELIMINARY STUDY
MODELS
FINAL STUDY MODEL
WORKING DRAWINGS