

THESIS

PLANS AND SPECIFICATIONS  
For A  
FIFTEEN APARTMENT BUILDING

For Degree of M. E.

EMIL C. POKORNY

1913

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## S P E C I F I C A T I O N S

OF MATERIAL AND LABOR required for the construction and completion of a fifteen apartment solid brick building, to be erected on the north side of Palmer Av., between John R and Brush sts. by E. C. Pokorny. Architect and General Contractor.

**THESIS**

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## GENERAL CONDITIONS.

These Conditions shall apply to all branches of the work with equal force, whether the work is done under one entire, or under several separate contracts.

**This** Specification and accompanying Drawings are intended to describe and provide for a finished piece of work. They are intended to be co-operative, and what is called by either is as binding as if called for by both. The contractor will understand that the work herein described is to be complete in every detail, notwithstanding every item necessarily involved is not particularly mentioned, and the Contractor will be held to provide all labor and materials for the entire completion of the work intended to be described.

Should it appear that the work hereby intended to be done, or any of the matters relative thereto, are not sufficiently detailed or explained on said drawings or in said specifications the Contractor shall apply to the Architect for such further drawings or explanations as may be necessary, and shall conform to the same as part of his contract, so far as they may be consistent with the original drawings; and in the event of any doubt or question arising respecting the true meaning of the drawings or specifications, reference shall be made to the Architect, whose decision thereon shall be final and conclusive.

On drawings preference is to be given to the figured dimensions rather than to the scale measurements. Sizes marked in rooms, unless witnessed by lines and points, are approximate only, and shall not be taken to regulate dimensions of the



building. The figures when so witnessed, are intended to show the exact dimensions for the construction of the building, but ~~the~~ the Contractor, without any extra charge, is to make such slight alterations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done.

Should any difference exist between the Drawings and specifications, the decision rests with the Architect, whether more or less expensive to the Contractor.

Should any error or inconsistency appear or occur in drawings or specifications, the Contractor, before proceeding with the work, shall make mention of the same to the Architect for proper adjustment, and in no case proceed with the work in uncertainty.

#### WORKMANSHIP; MATERIALS; ETC.

The various Contractors shall provide all material, labor and appliances necessary for the proper execution of the various portions of the work.

The different Artisans shall not prepare their work in the building without the consent of the Superintendent. All work and materials shall be properly prepared before it is brought to the building.

All materials and workmanship proposed to be used shall be the best of their respective kinds to be obtained in the market, and at all times to be subject to inspection for approval or rejection.

Should any dispute arise as to the quality or fitness



of material or workmanship, the decision shall rest upon the requirement that all work done or material furnished shall be first-class in every respect, and what is usual and customary in the erection of other buildings shall in no wise enter into any consideration or decision whatever.

All materials or workmanship of unsound or unfit character, or work or material which become damaged after they are in place in the building, shall be immediately removed, reconstructed or refinished to the satisfaction of the Superintendent upon receipt of notice, either verbal or in writing. The expense of doing so, or cost of delays and of making good other work disturbed by the changes, to be borne by the Contractor in fault.

Should it become necessary to retain any faulty work, which if remodelled would cause undue risk, injury or delay, a sum, to be adjusted by the Architect, but not exceeding the whole value of such work or material if correct, shall be deducted from the contract price.

No advantage to be taken of any manifest error, omission or discrepancy in the drawings or specifications, and in case of any doubt, speedy reference should be made to the Architect.

No deviations from the drawings and specifications shall be made in the execution of the work without the approval of the Architect.

## RESPONSIBILITY OF CONTRACTORS.

The Contractor or his foreman or clerk shall be on the works during all working hours,, to take any directions which may be given by the Superintendent; to secure a faithful carrying out of the drawings and specifications; to see when his particular work is required, and to set it out correctly. All directions about the works, given the foreman, shall be as conclusive as if given to the Contractor.

The Contractor shall be responsible for each and every violation of the Public Ordinances, and shall hold the Owner harmless for any damage or expense arising therefrom.

The Contractor shall be liable for, and shall indemnify and save harmless the Owner for all damages the Owner may sustain or be subject to by reason of any negligence on the part of the Contractor, or any of his employees, laborees, servants or sub-contractors, or by reason of any breach, on the part of the Contractor, of any condition herein mentioned.

The Contractor shall carry on his work at such parts of the building, and in such order of precedence, and at such times and seasons as may be directed by the Architect, and the Contractor shall make no claim against the Owner for damages arising from any act, delay or any default of any other Contractor engaged on the work.

The Contractor shall not cut away any timber, dig under any foundations, or into any walls, or other structural parts of the building, or in any case allow the same to be done, without the full knowledge and consent of the Superintendent, and shall be held responsible for any damage resulting from any violation of this clause.



The Mason shall employ a competent surveyer to stake out the lot and building and give proper levels, subject, before beginning the work, to the approval of the Architect. He is also to take out all Building or other Permits and to pay all fees in connection with same.

Each Contractor shall, at his own cost, amend and make good any defects, settlements, or other faults in his work arising from defective or improper materials or workmanship which may appear within twelve months after the completion of the building, and shall clear away, from time to time, the dirt and rubbish resulting from his operations, and cover and protect his work and materials from all damage by the elements or any other cause, during the progress of the building, and deliver the whole clean and in perfect condition. Each Contractor shall protect his own work from any damage whatever, except where it is herein specially mentioned for another Contractor to do so.

The Contractor shall render all necessary assistance to the Architect, and, if required, shall take and furnish him with measurements, levels, etc., on the works or grounds, as the case may be. He shall also furnish the Architect, if desired, with a correct **schedule** of all the quantities and prices of materials under contract, explained in detail, as may be wanted.

Before any important or special work is commenced, the Contractor shall notify the Architect of the time when such work is to be executed.



When any work is executed away from the premises, the Architect shall be notified, in reasonable time, where such work is being done and when it will be ready for inspection, so that he may inspect the same before delivery, should he deem it necessary.

The Contractor shall construct and furnish necessary scaffolding and ladders, and shall assume all responsibility in connection with the same.

The Contractor shall take the whole responsibility of the work, and should any unforeseen difficulty arise from bad weather, or from any other cause, involving a greater expenditure of money than the Contractor expected at the time of bidding, he must proceed with the remainder of the work, and no allowance will be made for any casualty.

No Contractor is to sublet the whole or any part of his work without the consent of the Owner.

The building or works must be delivered up free from all mechanics' liens or other claims chargeable to the Contractor.

#### INSURANCE.

The Owner and Contractor shall each protect his own interest against loss by fire. In case of such loss the Contractor shall replace the work or material as contracted for, and payments shall be made on same by the Owner in the same manner as provided for other payments by the Contractor.



## INGENERAL.

This specification is intended to describe a finished piece of work, and the materials mentioned in this specification and the labor necessary to put them properly in place shall be contracted for and done by the several contractors for the various branches of work, who shall leave the job complete in every respect. If there is any discrepancy or ambiguity in either drawings or specifications, the Architect shall be consulted at once and no allowane shall be made for work or changing of work necessary to leave the job complete to the entire satisfaction of the Architect.

### PERMITS:

The Owner will take out the building permit at his own expense. Each contractor shall obtain all necessary permits in connection with his work and pay all fees required. Each Contractor will be held responsible for all damage resulting from the use of inadequate or unfit tools or plant, negligence or non-compliance of ordinances and pay all fines or other expenses resulting therefrom in connection with his work.

### GENERAL ASSISTANCE:

The several contractors shall assist one another in a general way where the work overlaps or runs through one another's.

### MATERIALS AND WORKMANSHIP:

The materials mentioned in this specification and the labor necessary to put them properly in place shall be provided for by the Contractor for the branch of the work under



which they are specified, unless otherwise distinctly stated. When the make of material is mentioned, the Contractor shall use the kind specified; should it be found necessary to substitute another sort, the consent of the Architect shall be obtained before the change is made, and the material used shall be equal in every respect to the kind specified.

All work shall be done in a neat and skillful manner, exactly as specified and detailed, or if not distinctly specified or detailed, then as the Architect directs.

WATER SUPPLY:

The Owner will supply all the water necessary in connection with the work.

PROTECTION:

Each Contractor must protect his own work and deliver up the same free from all defects and not expect the Architect to see that the same is properly protected.

SURVEY:

The Owner will employ an experienced engineer or surveyor who will provide all the necessary lines and levels.

## MASON WORK.

See general conditions and specifications for contract work generally.

### PERMITS:

All the necessary permits shall be taken by the Mason ~~est~~ Contractor in ~~connection~~ with his work. He shall pay all fees required for the same.

### OBSTRUCTIONS:

All obstructions whatever character shall be removed from the site of the building.

### EXCAVATING:

The top soil or loam to be removed from the entire area of the building, placed in stacks and used for finishing the grade as directed. All necessary excavating for cellars, drains, foundation walls, or else where necessary to properly carry out the work as shown by drawings shall be done in a good and proper manner. The cellar shall be excavated to the extent and depth shown by ~~drawings~~, bottoms of the same to be left level, free from rubbish and reasonable smooth. Trenches for walls shall be of proper depth, banks being dug back well away from walls as may be required for proper building, pointing up and coating ~~of~~ the same. Trenches shall be pitched slightly in the direction of the grade of the tile drains. Drain trenches shall be left ~~with~~ hard smooth bottoms, properly graded towards outlets. All trenches and foundations shall be kept ~~free~~ from standing water. After walls and piers are



built and drains laid the earth shall be filled back into trenches, tamped down solid. Earth not required for filling in trenches shall be graded up around the building as may be directed, the surface being left free from clods and stones. Surplus earth if any shall be carried away from the premises.

#### CROCK DRAINS:

There shall be glazed crock drains of sizes marked, put in where shown on plans with the necessary curves and Y branches and with traps as marked. Drains to have socket joints set tight in the cement. Proper connections to be made with tile drains and main sewer. Drains shall be laid with all the uniform down grade that can be secured and below footings to point of outlet, no drains to be covered until inspected and approved by the Architect.

#### TILE DRAINS:

There shall be 3" tile drains laid in trenches at the inside and outside of footings and all outside walls. Drains shall be laid with open joints and covered in with not less than 8" of clean cinders, broken brick, or clean stone chips. Tile drains shall be laid with a good fall in the direction indicated and properly connected with crock drain.

#### FOOTINGS:

The footings of walls, etc., shall be formed of concrete composed of one part of Portland cement, two and one half of sand, and five of crushed stone; crushed stone only broken to pass through a one inch ring. The footings for walls, etc., generally to be 21" wide and 18" thick, others as indicated or

~~It~~ may be directed.

BRICK WORK:

Brick work generally shall be laid of a good quality of ~~W~~ hard burned common brick. All portions of front wall and returns indicated including walls etc., of front porch shall be faced up with a standard brick at \$20.00 per M as may be selected later. Walls of foundations for steps and the outside courses of foundations up to the grade to be of hard burned ~~V~~ brick and not a soft brick allowed on the job. All brick to be laid wet in sound and regular bond, the work generally to be bonded every fifth course. The facing will be tied to the walls by galvanized iron wall ties of a kind satisfactory to the Architect, the tie being used for each brick in every fifth course. All brick to be laid in full beds, all vertical joints being filled in solid. All walls to be carried up plumb and true. All stone work to be backed up solidly with good brick. The Mason shall properly bed all frames and point up carefully to the same, also to all cut stone work and other projections, special care being taken to point up thoroughly behind all frames and sills on the inside. The Mason shall set all wood brick and bond timbers where directed by the Carpenter. Brick over square headed openings to generally run through in straight courses on angle irons. The walls to be laid up with all flues, slots for pipe, and etc., as shown or here after directed. Chimneys to be built up in strict accordance with the fire Ordinances and topped off as shown. The furnace flue to be lined up with fire clay flue lining **arranged** at the bottom with opening for soot door and also





thimble opening for a 15" smoke pipe. The lining to continue up the full size to the top of the chimney as shown and to be built in solid on cement.

#### DAMP PROOF COURSE:

There shall be a damp proof course at the top of the grade in all outside walls and at the level of the top of the concrete floor, formed of one thickness of three ply ready roofing felt running through the full width of the wall. The outside of the basement walls <sup>from</sup> to bottom of footings to the grade line shall be covered with a heavy and continuous coating of Portland cement mortar and then swabbed over with a heavy coating of hot asphaltum.

#### MORTAR:

Brick work in general shall be laid up in a rich lime mortar, tempered with one fifth of Portland cement. All exterior brick facing including interior of porches shall be laid up in brown mortar tempered with Portland cement. Mortar to be mixed in small quantities and no mortar in which cement has commenced to set shall be used.

#### IRON WORK:

The Mason shall furnish all labor necessary for setting all iron work embodied in his work as noted in the cast and wrought iron specifications. The anchors shall be built in under the direction of the Carpenter.

#### CONCRETE:

All floors in basement to be filled into a finished thickness of three inches of course cinders well tamped down and brought to a level surface.

This is to be covered with 3" of concrete composed of 5 parts of clean gravel, 3 parts of clean sharp sand and one part of Portland cement. The concrete in the boiler room and laundry room is to be brought to a smooth surface and finished with 3/4" top dressing composed of clean sharp sand and Portland cement in equal parts, brought to a true ~~x~~ level surface pitched as may be directed in the direction of the bell traps, and well troweled to a smooth finish.

The floors of living room apartments are to have 3" of concrete composed of 4 parts of gravel and 2 parts of sharp sand all tamped to a level surface. In this concrete floor place galvanized iron anchors 16" C.C. and about 4ft apart, these anchors to be 12" long with 2 holes on one end and the other end bent 4" which is set into the concrete. This entire concrete floor is to be tared over with pitch and tar in such proportions that it will be hard enough to walk on four hours after applying the same.

## STONE WORK.

The quality of the stone to be the best of the various kinds specified, of uniform color and free from all defects. To be of the forms and of dimensions shown and to be worked to details and to brick sizes.

### BEDFORD STONE:

A good quality of light Buff Bedford lime stone to be used for all work not otherwise specified.

### CUTTINGS:

All door and window sills to be of the required width cut with lugs and wash on front only. Door sills and all steps to be finished with rounded edges, all work generally to be rubbed smooth. Stone work to be cut with all the necessary holes and slots to receive other work and with proper throatings and drips to throw off the water. Stone work generally to be worked to brick sizes, stone to be set close in Fine Lafarge cement mortar, carefully pointed up and left in perfect and clean condition after the completion of the building. Stone steps, and etc., shall be painted on the back with damp proof paint.

### TILE COPING:

The tile coping indicated shall be vitrified tile coping set in cement mortar in solid beds. All tile shall be perfect pieces and have the joints well cemented.



## IRON WORK.

See general conditions and specifications for contract work generally.

### ANCHORS:

All floor joists shall be anchored as far as practicable with 1/8" x 1-1/2" iron straps with 3/8" iron pipe running up and down 4" both ways into the brick work. The anchors to be long enough to reach across to the third joist where the joist run parallel to the wall.

### BEAMS:

All beams to be of rolled steel of sizes and weights marked and where double they shall be put together with standard separators. They shall have an anchor at each end, for properly anchoring into brick work. 1/2" x 12" x 12" steel bearing plates shall be placed under beams. Beams shall be long enough to obtain a bearing of at least 10" in every case. A 6" I beam shall be put in a substantial manner for a hoist beam together with a necessary hook fastenings, etc.

### ANGLE IRONS:

All square headed brick openings shall be provided with an angle iron over each opening. 3-1/2" x 4" x 1/4" angles over single openings and 5-1/2" x 5" x 3/8" angles over double openings. The angles shall be long enough to obtain a bearing of at least 6" at each end.

### SOOT DOORS:

Base to flues to be provided with cast iron soot doors with



iron frames and good latch fastenings; door to be width of flues in each case. the ash pit to have a 12" x 15" iron door and frame.

PAINING:

All iron work shall be painted one heavy coat of graphite paint before leaving the shop.

## PLASTERING.

See general conditions.

### VERIFY FURRINGS, WALLS, & ETC:

The plasterer shall examine and try all ceilings, partitions, and furrings, and notify the Carpenter of all that are not square and true, plumb and level, and shall see that **they** are corrected before lathing, and that all are firm and secure; otherwise the Plasterer shall replace in a proper manner at his own expense all plastering which may have to be removed to correct the above faults.

### HEATING:

It is expected, unless otherwise agreed, that from the time of the contract until the completion of the work, it shall proceed without interruption; to this end the Plasterer shall provide apparatus and fuel and maintain fires to properly warm the building while plastering is wet or being done, and shall continue the heating until the plaster is perfectly dry.

### PROTECTION:

Also, at all times, the Plasterer shall use proper precaution against injury by weather or other causes.

### HEATING APPARATUS:

In case the apparatus for the permanent heating of the building has been put in, the Plasterer may have use of same, but must furnish fuel, he must take proper care of same, and leave it in perfect condition.

### ~~METAL LATH:~~



DETAILED LATH:

Steam pipes, and all slots or recesses in the walls, not otherwise specified, to be covered.

The rounded corners of stud partitions, and all lintels, beams or arches, which are boxed down in any manner from the ceilings.

The joints between all stud partitions & brick walls, or chimneys, where they come in the same plane, and secure firmly at least 15" each side where the joint the entire height.

PATCHING:

All necessary patching, repairs, cleaning, etc., to plastering after all the workman are done, and the removal of rubbish resulting from the execution of this work, shall be properly performed.

DAMAGE TO OTHER WORK:

The Plasterer shall make good all damage done to floors, wood finish, or other work, through the carelessness or neglect of his employees, or from his failure to properly protect any work from damage resulting from the execution of his work.

LATHING:

All walls and ceilings, except brick partitions, which are to be plastered, shall be lathed with perfectly seasoned best #2 pine lath, free from red knots and bark. No lath shall be put on closer than 3/8" apart; joints to be broken every 18". There shall be no lathing from room to room.

PLASTERING:

No plastering shall be done until the Architect inspects and approves the lathing.



METAL LATH:

The entire basement ceiling shall be lathed with Hering-bone metal lath well secured.

PLASTER:

The first coat of plaster shall be prepared hard wall plaster not made up in in any of its parts at the building, b but to come in labeled sacks from the manufacture and to be on in accordance with their directions. The last coat shall be lime putty tempered with plaster of Paris.

WORKMANSHIP:

The best workmanship is expected and the first coat shall be brought up to a true even surface and the second coat shall be troweled to a perfect surface, and all angles shall be sharp and true and all jambs, etc., shall be perfectly plumb. The first coat shall run to the floor on all walls, and all plastering shall be worked to grounds.

SURFACE TO BE COVERED:

All walls and ceiling of the first and second and third stories and basement walls and any back plastering where necessary shall be done. The entire basement ceiling shall be plastered as above specified. Parker's Steel Corner Plate shall be used for all plaster corners and the same shall extend to the height of five feet from the floor and to be well secured.

IMITATION TILING:

The walls of the bath room below chair rail shall be plastered with Keene's cement and the same shall be marked off as

2-1/2" x 8" tiling in a neat and workmanlike manner.

EXTERIOR PLASTERING:

The ceiling of front concrete perch to have one good coat of cement plaster, troweled smooth.

## CARPENTER AND JOINER WORK:

See general conditions.

### HEATING:

The work must proceed without interruption, and heat will be required to put the building in proper condition to receive the finish; to this end the Carpenter shall provide apparatus and fuel, and maintain fires necessary for heating the building. He shall commence the heating at least one week before he commences the inside finish.

### TEMPORARY WATER CLOSET:

The Carpenter shall build and maintain during the progress of the work, a suitable privy or a water closet, for the use of all the mechanics on the building, and at the completion of the work shall remove the same and its contents from the premises.

### PREPARATION FOR PLASTERING:

The Carpenter shall on preparing the building for plastering, put up rough stands at all outside openings, putting in glazed sash to afford proper light, without nailing into finished wood work.

### CLOSING UP BUILDING:

If the work is being done during the months from October to April, inclusive, he shall board up all openings in the same manner.

### TEMPORARY DOORS:

The Carpenter shall provide temporary doors at entrances as directed; also keys to the same for the use of the Superintendent.



PROTECTING CUT STONE:

The Carpenter shall case in and thoroughly protect from damage all cut stone work from the time of setting until the completion of the work.

PROTECTING STAIRS PLASTER ETC:

The Carpenter shall cover all stairs, or other work which may require covering, that may have been put in previous to plastering; and after plastering is complete shall put up in all stairways dressed handrails 3-1/2ft high on the wall side; firmly secured, and temporarily covered with continuous curtains of boards or cotton cloth.

PROTECTING JOINER WORK:

The Carpenter shall do such work as is necessary to cover and protect all steps, porches, subsills, door and window jambs, or other work or material from damage of any character. Hard wood or other floors shall be temporarily covered with felt paper and boards as directed. Covering shall be maintained both before and after the painters work is executed, and any floors damaged through neglect of this clause shall be made good at the cost of the Carpenter.

PATCHING, CASING, PIPES, ETC:

The Carpenter shall do such work in his line as is usually required by the plumbers, gas and steam fitters, or other mechanics in the building, such as cutting away and rebuilding, putting in furrings, wall and ceiling pipes, casing in pipes on walls and ceilings, etc., without extra charge. The covering boards over pipes shall have neatly moulded edges, and shall be secured to places with screws.





provide neatly moulded wall plates for the support of water closet tanks and for brackets under bowls and sinks.

CARPENTER TO ASSIST OTHER MECHANICS, ETC:

Carpenter shall furnish the mason with heights of stories and other particulars, where desired, marked on a rod for the purpose; he shall also furnish, of the required forms and sizes, all wood brick, bond timbers, posts, lintels, furrings, rough brackets, etc., as required to properly carry out the work. Extra heavy furring to be put in where ever necessary to carry plastering or finish over box window heads, or to increase thickness of walls to allow room for inside blinds or finish.

FRAMING LUMBER:

Framing lumber of Bill stuff shall be as well seasoned as the market affords, sawed square, and free from large loose or black knots, shakes or other damaging imperfections; and framed together and secured in the most substantial manner. All framing lumber not otherwise, to be the best quality hemlock.

FINISHING LUMBER:

Finishing lumber shall be of cypress unless otherwise specified. All lumber finished to show the natural grain, and all sash shall be of first clear stuff. All lumber for finish shall be free from large, or unsound knots, pitch, shakes and sap. All to be thoroughly seasoned, and for all doors, sash, inside finish and finished flooring, thoroughly kiln dried. All exterior wood finish to have smoothly dressed surfaces without tool marks or other roughness.

SETTING NAILS: Nails in all exposed work to be finished; both interior and exterior, to be properly set, with nail set.



### REMOVAL OF RUBBISH:

All rubbish of what soever character whether caused by the Carpenter or not, shall be removed from , in or about the premises as often as may be deemed necessary. If immediate action is requested and there is no compliance within twenty four hours after notice has been given, the Architect may have the same removed and the expense of so doing charged to the Carpenter.

### CLEANING:

The Carpenter shall take special care to have each room thoroughly cleaned up before the painters finish is commenced and also to have the rooms kept clean during the execution of such work.

### CENTERS:

The Carpenter shall furnish and set all centers in connection with the mason work. Centers shall be strongly made and braced so as to sustain the loads, fit accurately to all parts and shall be left in place until ordered to be removed by the Architect.

### JOIST:

In general floor joist to be 2 x 12" ceiling joist to be 2 x 4" all spaced 16" O.C. and run both ways. All to be sized to width and jointed and to rest on plates and bond timbers and to be securely spiked to the same.

### HEADERS & TRIMMERS:

Headers and trimmers of common joist to be put in around the stair ways, chimneys, under partitions, carrying loads,



and elsewhere indicated or found necessary. To be supported by duplex or other joist hangers equally satisfactory to the Architect.

BRIDGING:

All joist having a span of ten feet or over shall have two rows of cross lattice bridging, and joist having a span of 10ft or less shall have one row of cross lattice bridging, all of 1" x 2-1/2" stuff, well fitted to joist and securely doubled nailed at both ends.

BOND TIMBERS:

Furnish all necessary bond timbers, nailing strips for furring etc., for the Mason to build in as instructed by the Carpenter.

STUDDING:

All studding to be 2 X 4" all spaced 16" C.C. All openings to be framed with doubled studs and lintels. Lintels carrying joist loads shall be formed of 2 x 12" joist securely spiked together. All angles to be made solid so that no lath can pass from room to room. Plates to be of full widths and doubled thickness of the studs. All studding to be set plumb and true and to be trussed over all openings as above specified, to carry weight of vertical supports. Partitions carrying loads shall be continuous from first to third floor levels and be 16" C.C. and have two rows of girts on first floor and one row on second.

### ROOFS:

Roofs to be of the forms shown. Main roof to be framed with 2" x 8" joist, 16" C.C. All parts to be well framed and securely spiked to wall plates. Deck of porch joist to be 2" x 8". Proper saddles to be formed where indicated on plans.

### ROOF BOARDS:

All roof joist to be covered with the best matched and dressed Southern Pine shiplap 8" wide and well blind nailed to every bearing.

### FURRING:

The outside walls that are to be plastered ~~are to be~~ ~~plaster~~ will be furred with 1 x 2" strips 16" C.C. and securely nailed, furring on walls shall be run vertically. All furring out of walls necessary to carry out the work as shown by drawings to be done with 2 x 4" studding 16"C.C. Proper grounds to be put under all finish. Grounds to be of thickness as directed by Plasterer.

### FLOORS:

All floor joists of the first, second, and third floors to be covered first with the best quality of 7/8" x 8" S.P. shiplap dressed boards laid diagonally with close joints and solidly nailed through both edges to every bearing. Finished floors to be as follows/- The floors of the public halls and floors of all the flats throughout are to be laid with the best Select red oak flooring..

### BASEMENT FLOORS:

### BASEMENT FLOORS:

To the galvanized iron anchors in the floors of the living apartments in basement, fasten the 2 x 4" sleepers, 16" C.C. Upon these sleepers put down 8" S.P. shiplap nailed securely to sleepers; cover this floor with one thickness of tar paper and one thickness of #1-1/2 deaden felt and then lay over this the oak flooring.

### PAPER

Between all floors lay one thickness of Asbestos paper and one thickness of #1-1/2 deaden felt.

### WINDOWS:

All frames and sash to be of the proper forms and sizes all being worked details and to brick sizes, with molded face casings as shown. Frame for single sash to be 2" plank frames. Frames for double hung sash to be box frames and in the usual manner and provided with 2-1/4" axle pulleys with turned iron wheel and bronzed iron fronts. All sash to be 1-3/8" thick. Bottom rails to be generally 3-1/2" wide. All sash to be ogee molded. Sash in box frames to be double hung with proper weights, tin weights being used and Silver Lake A sash cord. Sash in plank frames to be hung with butts. All frames to be arranged for screens for full size of windows on the windows on the outside,

### DOORS & FRAMES:

All doors, door frames, jamb linings, to be of woods corresponding to the finish in the various rooms. All doors and frames to be of proper forms and sizes made according to details where required.





Outside door frames to be of 1-3/4" clear cypress and rabbeted. All interior frames to be of 7/8" thick. Front door to be 1-3/4" thick according to detail and all doors generally shall be veneered plain red oak and shall be Morgan Doors in ~~any~~ style entitled Craftsman's Panel. The rear doors will be painted on the outside. All doors in basement surrounding stairway to be fire proof, 1-3/4" thick. Main entrance doors leading into apartments to be 1-3/4" others to be 1-3/8".

#### INSIDE FINISH:

The finish generally to be finished in the best plain red oak. The bath rooms and bed rooms to be finished in white wood for enameling. Window casings generally to rest on stools with neat aprons underneath. All finish will be as per detail. Casings to be 7/8" x 4-1/2" over all, Base shall be generally 7-1/2" high, neatly molded with shoe mold nailed to the floor. Base in closets to be 4-1/2" high. Rubber tip door strikes of suitable woods to be provided behind all doors.

#### CLOSETS:

All closets to receive one shelf at end and one row of hook strips all around.

#### MAIN HALL:

Main hall to be paneled 5'-6" high as per detail.

Front entrance to be in oak with glass as shown, see detail.

#### CABINETS:

CABINETS in kitchens and medicine cabinets in bath rooms to be made as per detail.

of clear white pine unless otherwise specified. Gutters to be worked in all cornices where indicated, properly lined and graded toward the conductors and proper outlooks for main cornices, etc., shall be formed according to detail and fastened securely, and shall be floored over with matched and dressed boards. All porches to be ceiled over head with narrow matched and beaded ceiling 5/4" thick, put on with close joints in single lengths and well blind nailed. Porch floors generally to be floored with the 1-1/8" white pine flooring laid in white lead furnished by the Carpenter. Rear porch shall be properly erected as indicated.

COAL BIN & ETC:

coal bin to be under rear porch surrounded by brick wall as shown. Basement partitions shall be built up of 8" S.P. boards all smoothly dressed. Bin to have door arranged to lift out.

HARDWARE:

The/ Owner to furnish all locks, knobs, escutcheons, bolts and butts for doors, also all pull down hooks, plates, butts and hooks for sash, transom lifts, locks and centers, clothes hooks and all hardware trimmings for cabinets and drawers, also all screws for fixing the same properly in place. The Carpenter to put all hardware in place and provide and fix all other hardware not specifically mentioned and may be necessary to make a complete and perfect job.

WAINSCOTING:

In kitchen and bath room put up grounds for chair rail 5'-6" from the floor.

DINING ROOM FINISH:

Dining room is to be paneled and to have plate rail, 6'-0" over all, See detail.

STAIRS:

Main stairs to be up in a good substantial manner, all parts being well glued and blocked together, to have 1-1/8" treads and 7/8" risers main stairs from first floor to third floor to be made of best plain red oak. Newels to be 5-1/2" square, panel shafts and moulded bases and caps. All as per detail. Rail to be 3-1/2" x 3-1/2" molded to details, balusters, to be of 1-1/8" stuff, well selected for grain and turned.

The rear stairs shall be formed entirely of S.P. with risers and shall be properly framed up as indicated and directed and have a hand rail.

PICTURE MOULD:

A 2" picture molding of finish to correspond with the various room to be put up securely at height as directed in principal rooms and in bed rooms.

SKYLIGHT:

Frame up skylight as indicated on plan.

OUTSIDE JOINER WORK:

All outside joiner work to be worked to detail of second

SHEET METAL WORK:

TIN:

All tin to be Osborns Old Style 1 x Roofing tin or equal.

GALVANIZED IRON:

All galvanized iron shall be of #26 and of the very best quality.

SOLDER:

All tin and sheet metal work on roof, gutters, etc., to be well locked and soldered together with 1/2 tin and 1/2 lead solder, using rosin as a flux.

PAINTING:

All tin or galv. iron work on roofs or gutters and all tin or other metal work to be painted one coat on both sides before laying.

PAPER LINING:

All tin work on roofs to be under lined with one thickness of red rosin sized building paper.

FLASHINGS:

All tin work necessary to make a complete and perfect job, such as flashing, etc., shall be done with the above specified tin. Where tin work comes up against brick walls it shall be turned up 6" and counter flashed with tin. The counter flashing shall be turned in and wedged in the horizontal joints of the brick work with wrought iron wedges, and the joints of the brick work shall be pointed up with rubber roofing cement. The counter flashing to come down within 2" of the roof, the vertical joints being soldered.

### GUTTERS:

Main gutter shall be 5" x 6" with 3/4" bead and formed of galv. iron, the iron to extend 6" under the roofing and secured in place with galv. wrought iron hooks every 24". Front porch gutter shall be worked in cornice and formed of tin with proper pitch towards conductor. Rear porch gutter shall be galv. milled gutter connected to main conductor.

### CONDUCTORS:

Conductors on porch to be galv. iron of 3" capacity, and from the main roof 6" round corrugated. The conductors shall be secured to the walls with galv. wrought iron hooks and supported in such a way as to allow the conductors to stand clear of all moldings etc. The conductors to connect to the crock and flanged down over the edge of crock drains.

### TIN ROOFING:

Front porch and deck roofs in general to be covered with the above specified tin, well locked and soldered together and the tin to be carried over the edge of cornice and hooked on to same.

### CANVAS DECKS:

The second and third story front and rear porch floors shall be covered with No. 8 canvas properly lapped and run up on walls 5". The canvas shall be laid in a heavy coat of pure white lead upon the floor which will be given a priming coat by the painter. The canvas will be secured in place with tacks and special care is to be taken to make this roof perfectly water-tight together with the necessary iron flashings.

### SKYLIGHT:

Frame up the skylight indicated over main stairway of galvanized iron No. 26 in a substantial manner and properly cover all walls of the same with galv. iron, and the necessary flashing. The skylight shall be glazed by the sheet metal Contractor with 3/16" ribbed glass.

### COMPOSITION ROOF:

The entire roof shall be covered with a gravel roof 4 ply # 2 Barrett's felt to be used. The whole of the roof to be t thoroughly and heavily coated with hot pitch over which a layer of fine gravel shall be thoroughly and evenly spread. A written guarantee for five years shall be given by the Contractor for the same.

### VENTS:

2 - 10" vents shall be placed in skylight as shown.

### CORNICE:

The main cornice shall be formed according to detail of #26 galv. iron and shall be erected in a most workmanlike manner. The deck shall be covered with above specified tin or galv. iron.

PAINTING AND GLAZING:

See general conditions.

PAINTING:

PREPARING WORK:

All work to be properly prepared before painting and varnishing. If wood work is not left sand papered smooth by the Carpenter, the painter shall notify the Architect <sup>before</sup> priming.

SAND PAPERING:

The painter shall sand paper smooth any roughness which may appear after the priming coat.

STOPPING OUT KNOTS ETC:

All knots and pitch to be stopped out with shellac, and all imperfections or discolored places or small black knots in wood-work to be varnished, shall be covered over to give the work a fair and clean appearance.

PAINTING ETC:

Walls that are specified to be kalsomined or painted shall first all roughness made smooth, and all holes, cracks, and joints properly filled and smoothly surfaced.

PRIMING:

All outside work to be primed as soon or before being put up. All wood finish put up before plastering to receive priming coat before plastering is done.

MINERAL PAINT:

The first coat on all ~~mineral~~ metal work and all pipes





exposed to view, both inside and out, will be of mineral or of red pure ~~white~~ lead paint, as may be directed by the Architect.

PAINTS:

Strictly pure white lead and linseed oil to form the basis of all other paints; all to be of such colors as the Architect may direct.

PROTECTION OF WORK:

When it becomes necessary for the Painters to remove the temporary coverings from any character of work or finish, in order to execute their work, they shall replace the same in a proper manner. In case the coverings cannot be replaced, the Painter shall protect the work in some other satisfactory manner, and shall make good all damage resulting from a neglect of this clause.

PUTTY NAIL HOLES:

All nail holes, etc., in finished wood work of what ever nature shall be properly puttied after priming, and on natural interior finish the putty may be colored to match the finish of same.

PAINTS:

The first coat on metal work generally will be put on by the sheet metal Contractor. Strictly pure white lead and linseed oil to form the basis of all other paints all to be of such colors as may be selected. All varnish to be brought to the building in their original packages.



FILLER:

Wheeler's Patent Wood Filler to be used on the oak finish.

METAL WORK:

All outside metal work to be painted 2 coats. All inside metal work exposed to view, except nickel plated pipes, to be painted 2 coats.

RADIATORS:

All radiators and exposed pipes in basement living rooms shall be bronzed.

OUTSIDE WOODWORK:

All outside woodwork in general shall be given 3 coats of white lead paint, to colors as may be directed. The front door and frame shall be well prepared and given 2 coats of Berry Brothers' Spar Varnish.

All sash and exterior joiner work in general shall be painted 2 coats.

INSIDE WOODWORK:

All interior pine finish in rear basement or wherever usually painted to receive 2 coats.

Bath rooms and bed rooms to be painted three coats of white paint and then given 2 coats of Scotch Enamel being lightly sand papered after each coat.

The oak finish shall be filled to color and as directed later and finished with 3 coats of Luxeberry Varnish. The outside of the bath tubs, etc., to be given 5 coats of porcelain enamel paint. Kitchens to be finished with 2 coats of Berry Bros. Interior Coach. The inside of cabinet doors to receive one coat of Interior Coach.

FLOORS:

The oak floors shall be filled to color directed and to given 2 coats of Liquid Granite A.

WALL FINISH:

The walls and ceiling of the bath rooms and kitchens shall be given one coat of size 1& two coats of white lead paint. Kitchens to be tinted, as directed. Bath rooms to have 2 coats of Scotch enamel, The whole surface being gone over first and made perfectly smooth.

GLAZING

All glass to be of proper forms and sizes properly set in primed sash and left clean and in perfect condition at the completion of the building. All sash shall be glazed with D.D. American.

The glass in front doors and side lights of the first floor shall be 1-1/2" polish beveled American Plate.

1" bevel Plate glass mirror shall be put in medicine cabinet doors.

## HEATING.

### HEATER:

Furnish and set up complete in boiler room an Ideal Sectional steam boiler S - 36 - 7 rated at 3150ft. The entire boiler is to be covered with plastic asbestoes cement, and canvas, then to be given a heavy coat of asbestoes water paint.

### SMOKE PIPE:

The heating Contractor is to connect boiler to chimney with black iron pipe #22 gauge of size given the boiler.

### RADIATOR VALVES:

The radiators are to be provided with wood wheel rough body nickel plated Packless Valves.

### VENTS:

All radiators to be fitted with Monash #6 air vents.

### PIPING:

The system of piping shall be as per diagram with 4" and 3" steam mains, and returns to be 2" fitted with air vants on end of returns.

All pipes used in connection with apparatus to be the best quality of steel pipe of standard weights and dimensions.

### FITTINGS:

All fittings to be the best grey cast iron heavy beaded.

### HANGERS:

All horizontal overhead pipes to be hung with pipe hangers.

PIPE COVERING:

All pipes in laundry and boiler rooms shall be covered 1/2" wool felt, neatly put on and carefully fastened in place and given one coat of water paint.

All exposed pipes in living rooms in basement shall be bronzed with gold or aluminum.

IN GENERAL:

All material used in construction of this apparatus shall be new and of best quality, put up by skilled workman. When the apparatus is completed it shall be filled with water, ~~fired~~ fired up, tested, and left ready for use.

HEATING SCHEDULE.

|              |           |       |            |         |        |
|--------------|-----------|-------|------------|---------|--------|
| Public hall  |           | 3 col | 38" Rococo | 11 sec. | 55ft . |
| Living rooms | 1st floor | 3 "   | 38" "      | 7 "     | 35ft.  |
| "            | " 2nd "   | 3 "   | 38" "      | 7 "     | 35ft.  |
| "            | " 3rd "   | 3 "   | 38" "      | 8 "     | 40ft.  |
| Dining rooms | 1st "     | 3 "   | 38" "      | 6 "     | 30ft.  |
| "            | " 2nd "   | 3 "   | 38" "      | 6 "     | 30ft.  |
| "            | " 3rd "   | 3 "   | 38" "      | 7 "     | 35ft.  |
| Bath rooms   |           | 2 "   | 38" "      | 4 "     | 16ft.  |
| Kitchens     |           | 2 "   | 38" "      | 4 "     | 16ft   |

GROUND FLOOR:

|                 |             |         |        |           |            |
|-----------------|-------------|---------|--------|-----------|------------|
| Living rooms    | Rococo wall | Fig. 16 | 4 sec. | each 7ft. | 28ft.      |
| Dining rooms    | " "         | " 16    | 4 "    | " "       | 7ft. 28ft. |
| Front bed rooms | " "         | " 16    | 2 "    | " "       | 7ft. 14ft. |
| Bath rooms      | " "         | " 16    | 2 "    | " "       | 7ft. 14ft. |

GENERAL REPORTING:

NOTE:

The amount of radiation required for the building is 1721 sq.ft. The size of the boiler used is 3 - 36 - 7 rated at 5150 sq. ft. This shows a surplus radiation of about 82%, the usual practice in residence buildings is a surplus of 50%. We find from experience that it is more economical to run a boiler with a surplus amount of radiation of from 75% to 100% than with only 50%. The larger boiler requires less attention and burns less fuel.

PLUMBING AND GAS FITTING:

PIPING:

Supply pipes to be , generally, of galvanized steel pipe and where necessary in making connections, extra heavy lead pipe shall be used, all connections with iron pipe shall be made with brass wiping furrules. All joints in connection with lead pipe shall be neatly wiped. No pipes to be carried on outside walls. All pipes shall be properly supported and all connections made to put the entire job in perfect working order. All branches to run as directly as practicable from point of outlet to cellar.

An 1-1/2" extra heavy service pipe taken off the street main with 2-1" taps, shall be brought in to meter pit and then continued on outside of building with lead pipe to boiler room. From this point the main supply is run direct to heater and tank, with branches taken off as follows.-

Main risers for kitchens shall be 1" for first and second floors and 3/4" for third floor.

Main risers for bath rooms shall be 1" for first and second floors and 3/4" for third floors and to be a recirculating line.

Lawn sprinkler front and rear shall be 3/4".

Supply to steam boiler shall be 3/4"

Bath tub supply " " 5/8"

Sinks wash bowls & closets shall be 5/8"

All pipes exposed to view except in kitchens shall be nickel plated pipe.

All roof flashings must be put on roof before gravel roof is put on



### WASTE PIPES:

All pipes in connection with house drainage inside of the foundation walls and out through the same to the point of indication, also all soil pipes and waste not otherwise specified shall be heavy cast iron pipe of the sizes marked and according to the Board of Health Rules. Joints to be made of oakum and lead thoroughly caulked. All connections of wastes into soil pipes to be made with Y branches. Soil pipes to continue up and open out 2' above the roof.

A 4" cast iron hand hole vent trap to be provided in iron drain where indicated, hand hole to be provided with a brass C screw cap. The ~~vent~~ vent opening to be connected with open air by a 4" cast iron pipe through wall in rear and above cement walks. Waste to kitchen sinks, laundry tubs, and wash stands shall be connected to 3" stacks and have the proper traps and clean outs.

### SILL COCKS:

There shall be a sill cock arranged for connecting hose on the front and rear wall where directed and one in the laundry room.

### LAUNDRY TUB:

In laundry room there shall be put up ~~a~~ complete 3 - 2 compartment cement tubs and all necessary fittings, traps, etc.

### REFRIGERATOR DRAIN SERVICE:

A black iron sink and water supply shall be put in complete as shown in laundry room. Main stacks for refriger-

ators shall be 1-1/2" galv. pipe with 1-1/4" branches connected to 1-1/4" Ideal galv. trap. Stack shall connect into 2" iron pipe with Durham fittings, and all necessary clean outs.

LAVATORY CORNER OR FLAT BACK:

Selas Plate No.621 - A - or Selas No.608 - A - 19 x 20 Iron Enameled Apron Lavatory fitted with Gloria China Index Comp. Basin cocks 3/8" N.P. Angle supplies and 1-1/4" N.P. Dubois P. Trap.

BATH TUBS:

Selas Plate #823 - A - 5' Iron Enamel 3" roll Rim Guaranteed Bath Tub fitted with 4-1/2 Fuller Bath Cock, 1-1/8" supplies C. W. & O.

CLOSETS:

Selas & Co,'s "Bagley" Ant. Oak washdown Closet Combination with low down push button tank with box. Top and saddle seat guaranteed for 5 years. Tank to be fitted with 10oz corrugated copper lining, reinforced flush ball, etc. complete.

SINK:

20 x 24" Iron Enamel Roll Rim Sink with 12" Intergal Back one piece, fitted with 5/8" N.P. China Index Comp. Flgd. Bibb. 1-1/5" Clean sweep lead trap.

HOT WATER BOILER:

On an iron stand in basement as shown, there shall be fitted <sup>up</sup> complete with all necessary pipes, couplings etc., a 250 gal. steel tank with proper relief valves.

### WATER HEATER:

In front of tank as shown fit up complete an Ideal Junior Heater #20 with all necessary trimmings, etc., and properly connected up to hot water tank. Heater to be connected to chimney with galv. iron smoke pipe and damper.

### COVERING:

The tank and heater shall be covered with one inch asbestos and corrugated asbestos paper and canvased and painted.

### FITTINGS:

All bibbs and faucets except where otherwise specified shall be Fuller's pattern.

### GAS FITTING:

The building to be piped for illuminating gas in kitchens only. Fuel gas shall be brought up and connected to the stove in each kitchen and gas plate in basement laundry room. Each flat shall be piped independently of each other for both fuel and light, and shall be arranged for meters as shown and left ready for connections for Gas Co.

All rules and regulations of Gas Co. to be complied with & all pipes to be thoroughly tested, and have the necessary connections shut off valves etc. The gas service in laundry room shall be arranged for fuel only, to be supplied off the service of each flat with valves arranged to cut out the service in laundry room, and the valves to be located next to the gas plate and so arranged for padlocks that each service may be locked.

## TILE AND MARBLE WORK:

### WORKMANSHIP:

The workmanship shall be of the very best and the work is to be properly protected and left in perfect condition and clean at the completion of the building. All joints shall run in straight lines and all tile shall be laid to a true level surface being properly set in Portland cement mortar.

### CONCRETE BEDS:

Put in all necessary beds of concrete, etc., and the same shall be composed of one part of Portland cement, five parts of clean sharp sand and gravel, well mixed and tamped down.

### TILE FLOORS:

The floors of the main hall and vestibule to be laid of vitreous tile of colors and pattern as shall be selected later.

The sides of vestibule to have tile wainscoting 6'-6" high. Size, etc., to be selected later.

### MARBLE THRESHOLDS:

Put in light Tennessee marble thresholds in all doorways where tile joins wood floors.



## ELECTRIC WIRING.

### IN GENERAL:

All work of this Contractor begins with and includes the leading in wires and the three wire service cut out and switch and ends with the lamp outlets, except where otherwise specified. The number of lamps to be wired is shown by the plan.

The location of lamp outlets are only approximately given on plans. The exact location of these will be determined by the Architect or the Owner. The building is to be wired for all lights and switches in accordance with the Rules and Regulations of the Public Lighting Commission. The Contractor shall do all cutting and fitting necessary, but under the direction of the Architect. He shall replace all constructive work damaged by cutting and pay for the repair of all work or other Contractors damage by his workmen. The number of lamp outlets and switch outlets may be increased or diminished, or the position changed by the Owner after the letting of the contract. The cost of extra outlets or rebates for commissions shall be determined by a fair rate proportional to the contract figure.

The Contractor shall furnish all material and labor of the best quality and the kind specified for the complete construction of the lighting system, and shall leave it in complete and first class order.

### WIRE & INSULATION:

For all wires and cables specified herein, only the best standard insulation to be used, such as will be acceptable to the Architect. If any circuits of open work wiring must be ~~run near ceiling~~

run near cold water or gas pipes or other metal work, the insulation shall be reinforced by circular loom tubing taped to the wires. The wires shall never under any circumstances, come in contact with other than the proper insulating supports.

#### SYSTEM OF WIRING:

The circuit wiring shall be done on the **3** wire system, but the main distributing board wired "convertible" in such a way that either an Edison current or alternating current with 2 wire 50 volt secondary may be used. All lamps are to be figured at 16 C.P. on the basis of 60 watts.

#### SERVICE SWITCHES:

The Contractor shall provide Edison type porcelain cut out and double break knife service switch with slate bases.

#### METER LOOP:

Heat oak meter boards painted with 2 coats of P & B paint shall be provided near the main cut out and three wire meter loops provided for connection.

#### MAINS:

The three wire mains shall be carried in an iron armored interior conduits to service switch.

#### DISTRIBUTING BOARD:

The distributing boards shall be located where directed and must be firmly secured on walls.

### LAMP CIRCUITS:

Lamp circuits are to be of one size of wire throughout their entire length. No wire smaller than #14 shall be used. All the lamp wiring in the building is to be done on the loop system, in which the wires are carried from outlet to outlet, and joints are made only at the outlets.

All the lamp outlets are approximately shown on the plans. The Contractor shall change outlets without extra charge, if they are found not to be in center finished panels.

The apartments and public halls shall be wired independently and brought to the meter boards in the basement. ( at each place a 10 circuit Panel board).

The halls, stairway, front porch, and basement furnace and laundry room, and rear stairway will be wired on one service, the public service of the building.

### SWITCHES

Switches shall be the latest pattern Perkins flush push button switches, and shall be supplied one for each outlet generally. Fixture hangers and supports of a kind satisfactory to the Architect shall be supplied by this Contractor and put in place at each fixture end.

### INSPECTION AND TEST:

All work and material will be subject at any time to inspection by the Architect, under the Rules or the National Board of Fire Underwriters. The Contractors shall furnish the Architect gratis with certificate issued by the Michigan Inspection Bureau, stating that the work had received their approval.





Before the work is excepted, it shall be thoroughly tested for insulation resistance, this test to be made when the wiring Contractor has completed his work, but before the fixtures have been connected.

### FIXTURES

Fixtures, together with the insulating joints, are to be supplied and hung by another Contractor, who will make all fixture connections, except in basement where the contractor shall put up a drop cord with snaps, sockets complete where single lights are shown and rosettes where two or more lights are indicated.

### ELECTRIC BELLS:

In each flat furnish and put up ready for use an electric call bell, from front door to private hall .

### LETTER BOXES:

At the main entrance where directed put in combination mail boxes<sup>v</sup>, speaking tubes, and push button for each flat and one for basement. Two of these mail boxes complete with bells are to be put in front basement under main porch for 2 front basement flats.

All wiring shall be done with No. 16 Band S rubber covered and braided wire installed on No. 5 porcelain knobs and protected from plaster, etc., with loom tubing.

Approved batteries of sufficient power to insure the proper working of the system shall be installed on a neat shelf in the basement. The whole to be guaranteed for one year.

ELECTRIC DOOR OPENER:

Furnish and put in complete an electric door opener on front door lock arranged to be operated from each flat and the rear basement flat.

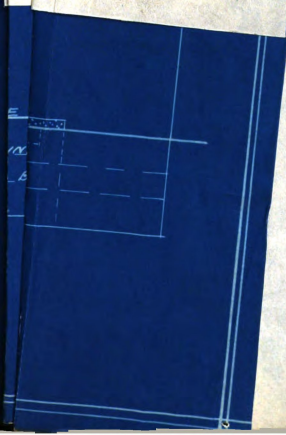
SPEAKING TUBE:

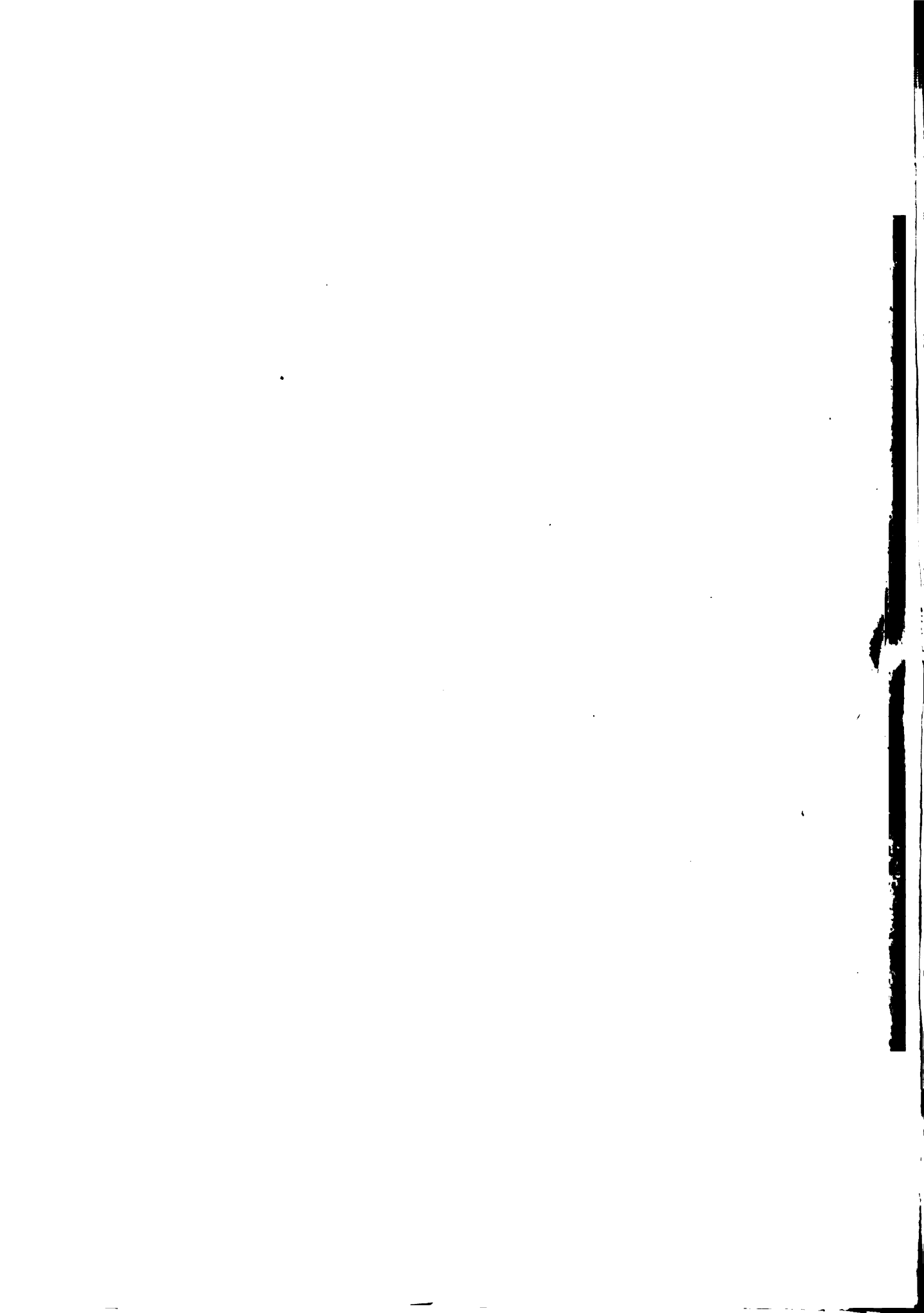
Install complete a one inch diam. tin speaking tube from the front door to each private hall and basement where directed. The tube having neat mouth pieces and whistle on a plate in each apartment hall. The tube to be properly supported throughout and all joints shall be perfectly soldered and made air tight and the whole shall be complete in every respect.

ESTIMATED COST OF BUILDING.

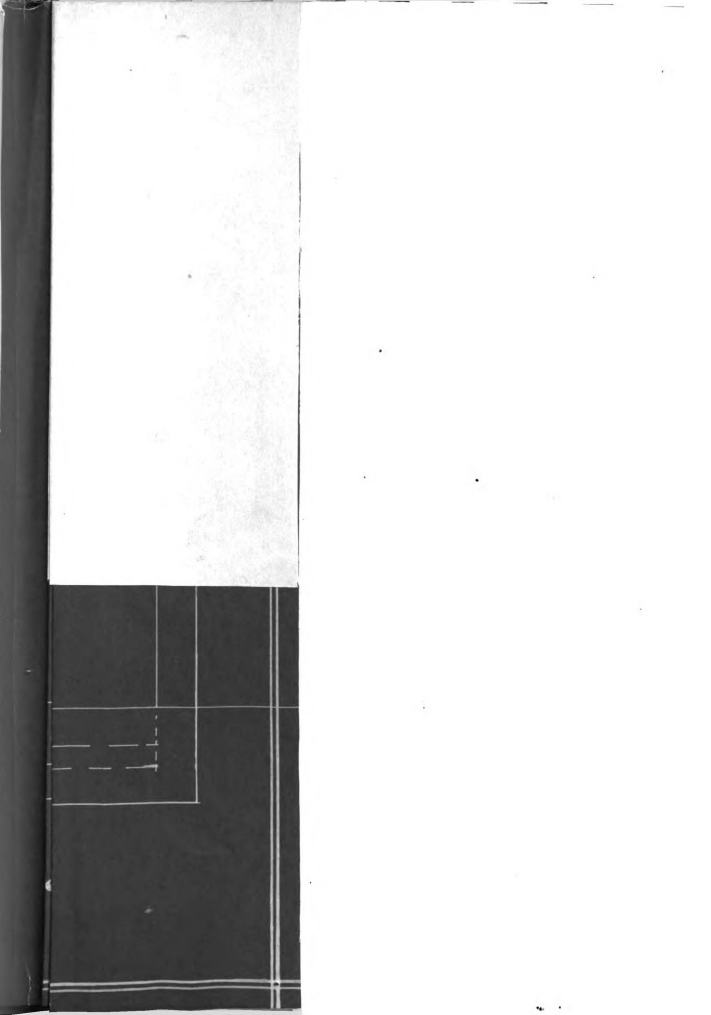
|  |                   |
|--|-------------------|
| Excavating, sewers, etc.-----                            | 150.00            |
| Stone work-----  | 550.00            |
| Glass-----   | 320.00            |
| Roofing and sheet metal work -----                       | 490.00            |
| Electric wiring -----                                    | 525.00            |
| Plumbing and gas fitting -----                           | 2400.00           |
| Steam fitting -----                                      | 1600.00           |
| Plastering -----   | 1700.00           |
| Iron work -----  | 485.00            |
| Mason work -----   | 9250.00           |
| Rough Lumber etc.--\$3300.00--Interior Finish--1600.00-- | 4900.00           |
| Carpenter labor--\$1600.00-- Finish 3500.00-----         | 5100.00           |
| Hardware-----  | 570.00            |
| Varnishing and painting -----                            | 650.00            |
| Interior decorating -----                                | 650.00            |
| Hanging window sash -----                                | 130.00            |
| Window shades -----                                      | 70.00             |
| Rubber matting -----                                     | 90.00             |
| Refrigerators & Gas stoves -----                         | 360.00            |
| Grading and sodding -----                                | 160.00            |
| Electric fixtures -----                                  | 400.00            |
| Tile work & Floors -----                                 | 170.00            |
| Laying & Scraping floors -----                           | 540.00            |
| Insurance -----  | 120.00            |
| Incidentals -----  | 600.00            |
|  | <u>\$31980.00</u> |

Thirty One Thousand Nine Hundred Eighty Dollar

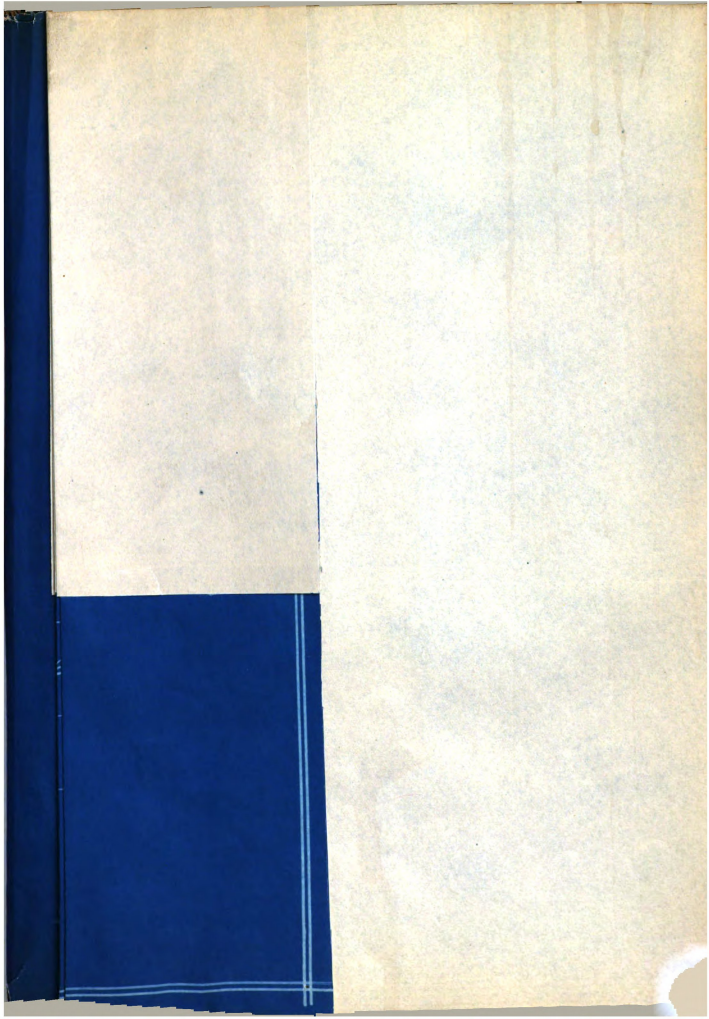








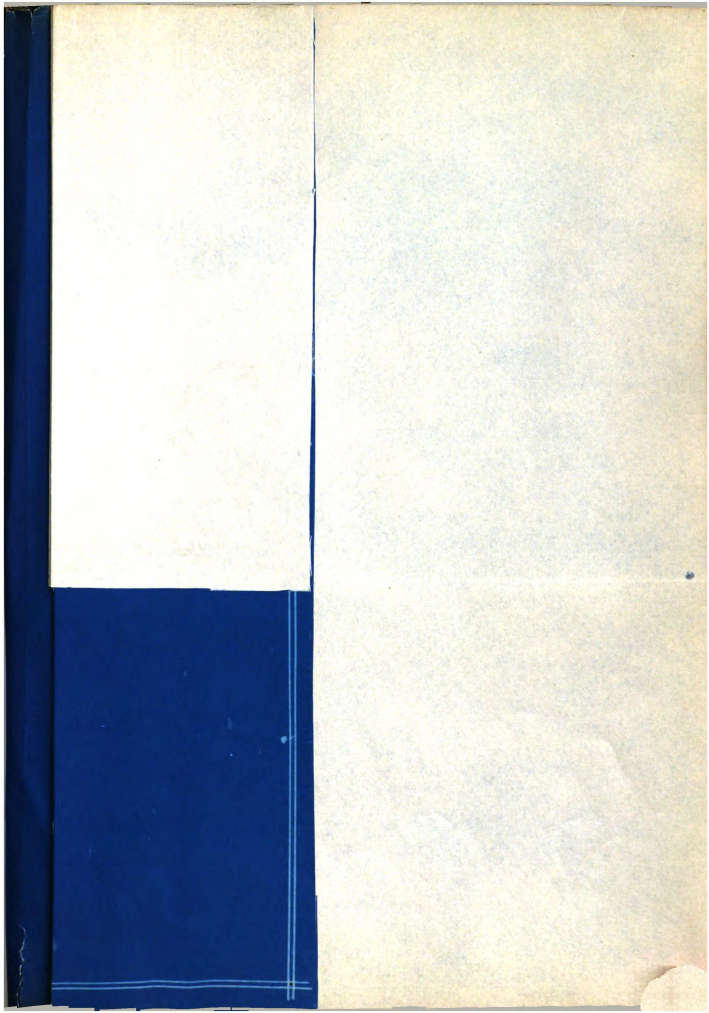


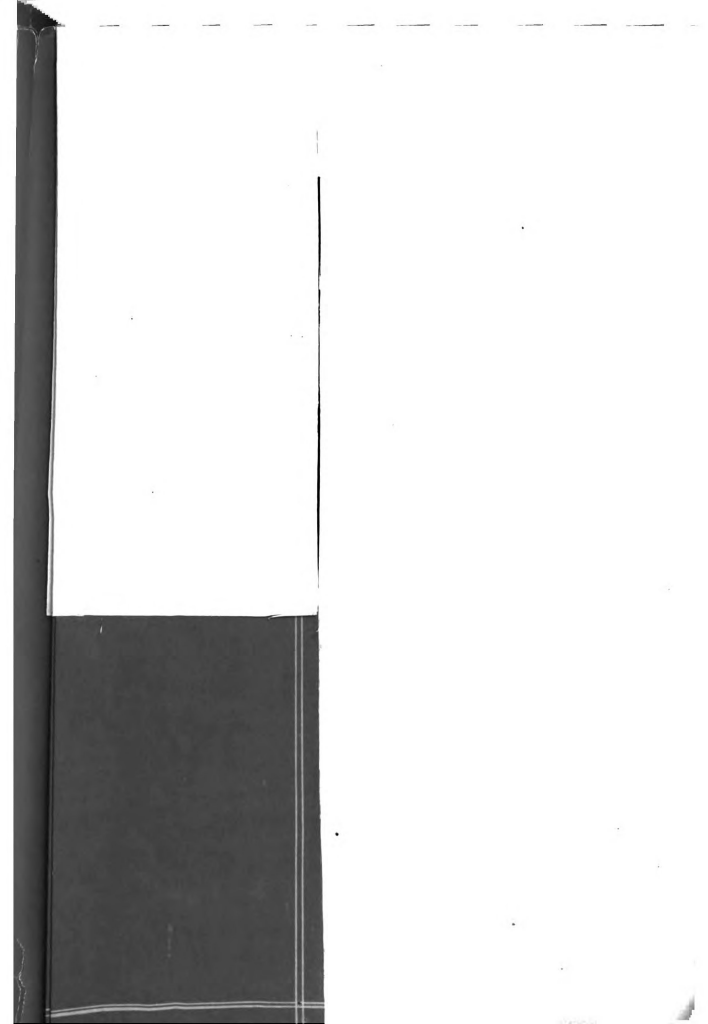


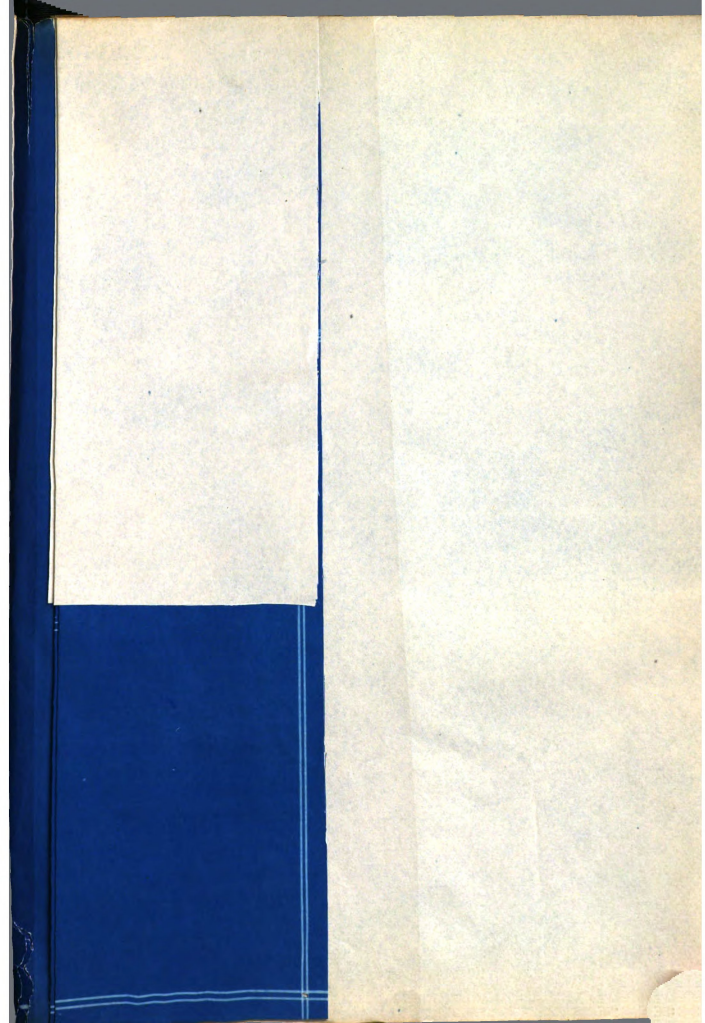
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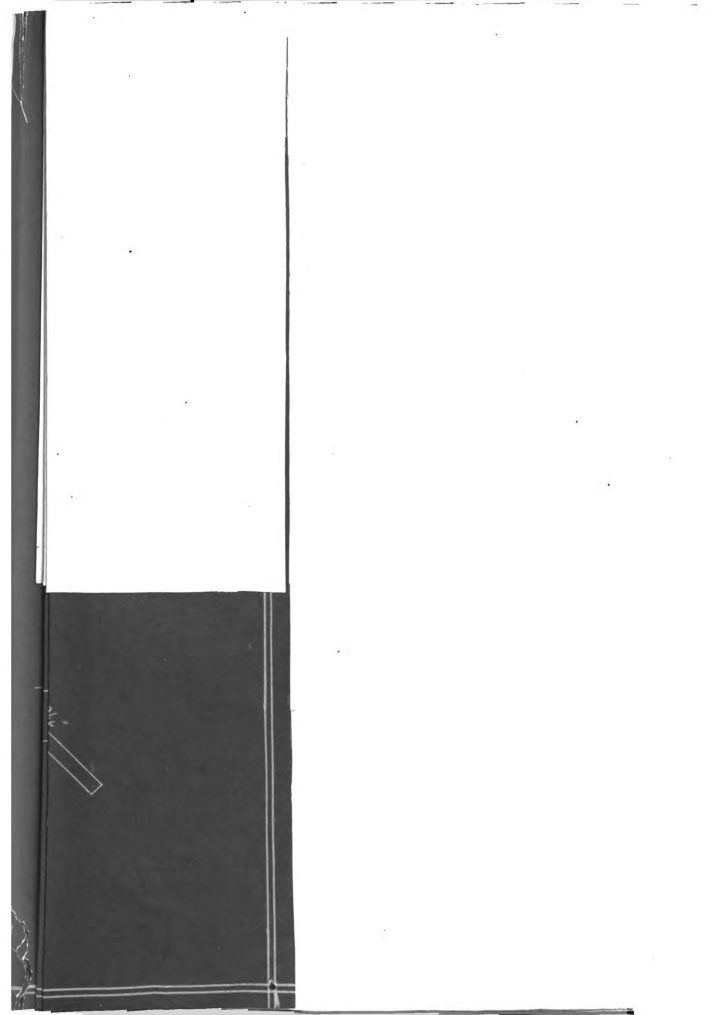
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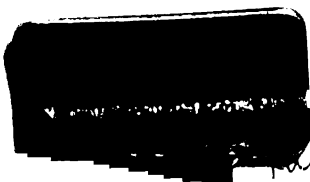
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