

[1]

Specifications for Workmanship and Materials.

CHEMICAL LABORATORY

Required in erecting.....

All works connected therewith that are herein specified or indicated by drawing, hereinafter mentioned, for
Mo., State University

These works are to be erected on grounds situated in
Columbia Mo.,

See Notice Museum Specifications.

CONTRACT FILES

The Contractor shall well and substantially, and in the best and most workmanlike manner, with best materials of their respective kinds, according to the plans, specifications, elevations, sections, detail drawings, and the notes or explanations marked on them defining dimension, quality, or materials or labor or both, all of which are accepted as entering into and constituting part of this contract, execute the same. And in case any further or fuller explanation or description shall be required than those hereinafter mentioned, then further detail drawings and instructions shall be furnished by the Architect, and shall be taken and deemed a part hereof, the same as if mentioned at the execution hereof.

OFFICE
COPY

The plans and drawings prepared for these works are designated Design No. Volume.....

M. Fred Bell's

ARCHITECTURAL WORKS,

OFFICE AND STUDIO,

FULTON, - - - MISSOURI.

Dated on this the..... first day of june 18 92

These specifications for the several parts of the works are arranged in classes in the following order:

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M. Fred Bell,
Architect  Superintendent of Buildings.
Nevada, Missouri.

The Contractor or Sub-Contractor hereby contracts to execute this work when the works are in proper condition, or when directed by the Superintendent. If not executed at the proper time, or when directed, the Superintendent may have it executed at their expense.

All of these works shall be executed according to the true spirit and meaning of the plans and specifications.

The Contractor or Sub-Contractor executing the works specified herein, hereby contracts to adequately protect the same, as well as the portions of the other works affected or exposed by the doing of the work, from all damage by the weather or other cause, and to keep the streets and other passages free from obstructions, accepting in so far as such obstructions may be allowed by the municipal authorities, until the works shall be completed and accepted. And if the material and work used or furnished is not of the quality specified, they hereby contract to immediately replace it, and pay all damages from delay and charges incident thereto, and do their class of work in the best manner known to the art, and shall during the erection of the works, when directed and required by the Architect, remove from the ~~Proprietor's~~ premises all materials and works which shall not, in the opinion of the Architect, be in accordance with the specifications, plans and drawings, either as regards quality of materials or workmanship. And if after forty-eight hours' notice the Contractor shall not comply with such directions or requisitions, it shall be lawful for the Architect to cause the removal and taking down of the materials and works objected to, and to cause materials and works to be found and executed by some other person or persons, and the costs, charges and expenses of the same or otherwise incidental thereto, or incurred ~~thereby~~, shall be deducted from the amount payable to the Contractor under the Contract, or otherwise shall be paid by the Contractor to the ~~Proprietor~~. The Architect has the liberty to examine or cause to be examined the works at any time, and whatever damage may be done the works in examining, shall be repaired by the Contractor.

Sub-Contractor who have endeavored to evade doing previous works as indicated by plans and specifications for them, whose names are on file in the office of the Architect as such, and this class of contractors shall not be employed on these works.

◆◆◆ SPECIFICATIONS FOR ◆◆◆

EXCAVATIONS AND GRADING.

The Contractor or Sub-Contractor shall well and substantially execute the works specified herein, and in the best and most workmanlike manner, with the best materials of their respective kinds, according to the plans, specifications, elevations, sections, detail drawings, and the figures or explanations marked on them, defining dimensions, quality or quantity, or materials or labor or both, all of which are accepted as entering into and constituting part of the contract. And in case any further or fuller explanation or description shall be required than these hereto mentioned, then further detail drawings and instructions shall be furnished by the Architect, and shall be taken and deemed a part hereof the same as if mentioned at the execution hereof.

Excavate for cellars, trenches, areas, and superfluous earth or matter that is required by the plans and specifications, and remove it from the premises, except so much as is required in grading about the works, this grading to be executed as the works require to make them and the surroundings complete.

After the walls are seasoned, the filling that is around them will be properly rammed solid as the natural ground, and always of a grade to throw the surface water from the works.

The Contractor shall not be required to provide earth to fill, as marked finished grade, but shall use all earth removed from excavations to grade around the building as Supt. may direct.

If the earth or matter at the bottom of the excavations is of made or insecure ground, then additional depth shall be excavated till acceptable hard matter is found, and said work shall be paid for in the same proportion as that specified.

The excavations are as follows, viz:

For basement under entire building, to have clear heights as indicated on sections,

Excavations shall extend 6" beyond footing line and remain unfilled until pointing is thoroughly dry.

Provide 6" sewer pipe laid at outer edge of footings extending around entire building with fittings to receive cast iron leaders as may be directed, said leaders to be furnished by the Contractor and shall extend 4 feet above finished grade line and of sufficient size to receive down pipes.

~~The measurement of excavations is by the yard of twenty-seven cubic feet.~~

Before filling / provide sufficient cinders to cover drain pipe and *extend to grade line all around building* also provide, connect, and extend 6" sewer pipe sufficient distance, with proper fall to thoroughly drain the works.

---:---:--- SPECIFICATIONS FOR ---:---:---

Rubble Masonry.

lime stone

The rubble masonry for the foundation walls will be constructed of good, large, flat ~~stone~~ laid on their natural bed, with close joints. Those stones in walls two feet thick and less shall not be less than one-third the thickness of the walls, others two-thirds the thickness, and through stones every six feet in each course or layer; all stone closely fitted to each other, and as little filling with pieces as possible. Special care must be taken to make the walls equally solid all through by proper filling and grouting.

~~The top of the walls will be capped with selected stone not less than _____ inches thick, unless for inner walls, or those that have wrought stone facing.~~

~~The external facings of these walls above the ground line will be of selected stone, four by twelve inches or larger. Back with rubble all stone facings that may be required, and build walls or piers necessary for steps, etc.~~

All arrises will be sharp and the walls straight, plumb, horizontal and true.

The foundation for steps, piers, areas, etc., will be of the same depth as other walls, unless otherwise drawn or specified.

Should the Board determine to add to, or omit any stone work differing from plans, the same shall be figured at the rate of \$325 per perch

"continued on next page" (a)

The works must be clean and neat when finished.

The footings of the walls to be formed of large, flat stone, laid transversely, ~~one-third of them~~ having their length not less than ~~the~~ *thickness of the masonry, indicated on sections*

The mortar shall be made a suitable distance from the works, that they will not be injured by reason of the mortar being dashed against them; and of quality equal in strength and solidity, that the compound will not disintegrate.

Provide footings as marked on sections for all walls, exterior and interior, not less than 10" thick for external and 7" thick for interior walls, with good beds all laid close and well bedded in wet trenches. All stone work from footings to finished grade line shall be built hammer-dressed range-work inside and outside in regular courses extending through walls, each course leveled and grouted as the work progresses.

From finished grade line to water-table the exterior walls shall be pitched-faced range-work, regular courses extending through walls and interior finished hammer-dressed range-work, each course leveled and grouted, with bush hammered jambs for all openings/ all well and thoroughly bonded together in best manner, All laid in mortar composed of best Louisville, Utica, or Ft. Scott cement, one part cement to two parts clean sharp sand, cement and sand thoroughly mixed before water is added and used before setting.

All interstices must be well filled and grouted, all hammer-dressed range work interior and exterior shall be well pointed with cement, and all pitch faced range work neatly bead pointed with best Portland cement, Build all air and vent flues/plastered inside/ as Supt., may direct.

"continued on next page" (B)

"page 3 continued"

(a) for hammer dressed range-work and 30 cents per superficial foot for pitched face range work, and added to or deducted from the contract price as the case may be.

"Stone masonry continued"

(B) also opening for tunnel with crown arch and inverted arch, also piers for support of columns, as shown. "Note" all interior walls colored red shall be laid with hard brick in cement mortar as above described, all thoroughly tied and bonded with stone wall intersections, both sides of said brick walls shall be laid to line, with joints neatly struck, all thoroughly grouted.

"Note" Build area walls 9" thick of hard brick laid in cement, around all basement openings as may be directed by Supt.,

»»» C.U.T. : S.T.O.N.E. «««

All projecting stone, window sills, corbels, &c., shall all be throated, and all mouldings, surfaces and enrichments shall be executed in the best style: furnish and use all requisite anchors for the security and sodility of the works; all joints shall be made to fit close, and shall be neatly pointed with the best mortar.

Square work shall be straight, plumb level and true.

The stone will be not less than the thickness hereinafter mentioned, in any exposed part.

The Contractor shall provide water-table 10" face exclusive of wash, face to be neatly pitched, wash shall be 1 1/2" X 3" dove, ~~The said water-table~~ to extend well into walls and continue around entire building, all wrought from native lime stone, free from blemishes or defects.

All stone work colored blue on drawings including window and door sills, caps, belt courses, buttresses, steps etc., shall be of Bedford gray lime-stone or stone equal thereto in every respect, all rubbed faces.

All stone steps shall have 6" rise, 12" tread, with heavy buttresses as shown.

Provide cut stone blocks 24" long, 10" thick, 12" wide, for support of iron girders extending into walls.

SPECIFICATIONS FOR BRICK WORK--AMERICAN BOND.

The materials for these works shall be of the best quality of best merchantable non-vitrified burned brick.

Those for the finish surface shall be straight and square, with sharp corners, of even surface, free from cracks or imperfections, and each wall of uniform cherry red color.

~~Vertical courses shall be laid to rise more than one inch beyond the raised heights of the molders, and make the mortar joint in~~
The faces of the walls shall have neat, flat, flush ^{exterior} joints excepting the walls that are to be plastered. These will be left rough. ^{cut-}
All walls shall be laid plumb, straight, horizontal and true, and will have indentures for pipes and requisite openings for the perfect completion of the works. *also air ducts as Supr. may direct.*

~~all of the bricks shall be thoroughly wetted; ~~and be laid in a~~~~
immediately before laying
The bricks and the execution of the work shall be of uniform quality, the top as good as the bottom; and when completed, all stains and blemishes shall be entirely removed; walls discolored by reason of wet weather or other causes, shall be taken down and rebuilt.
Turn heavy arches, wherever practicable, through the entire thickness of the walls. *over all openings and lintels*
All walls and intersections of walls shall be toothed together in the regular bond, and shall be built solid, except ducts and smoke flues: these will be not less than nine by thirteen inches, and larger if so drawn or figured; all flues shall be well plastered on the inside.

Bed in mortar all bond timber, timplates, lintels, plates, stone, strips of wood or wooden bricks the works require: ~~and~~
The mortar shall be made at a suitable distance from the works, that they will not be injured by reason of mortar being dashed against them. ~~and the mortar shall be made of the best~~

~~of best water cement. All pointing and repairing shall be executed at the proper time or when directed, by the best and most skillful artisans.~~

The Measurement of brick work is the solid content of the walls and the outer corners double, if the walls are thirteen or less inches thick. Where walls are of greater thickness, measure the solid contents and add thirteen inches square extra for the outer corners, unless there are corner buttresses or projections. In this case the walls and these projections measure solid, and add to measurement, for wall measurement, thirteen by eighteen inches; other projections or buttresses on the exterior, and piers, measure double, if one foot or less square if larger add thirteen inches square to the solid measurement. Brick cornices or bands measure solid. Pilasters projecting one course measure solid; when thicker they measure as buttresses. Internal walls and projections measure solid. Circular walls measure one and one-half solid. Chimneys measure solid. For sewers, vaults and arches measure the outside circumference by the length and thickness. Fractional projections (where extra bricks are used) measure one-half brick. Two inch or less hollow wall measure solid.

Deduct from the solid measurement, for the net measurement of bricks, (all openings less) one-half of the opening of arches, over six feet in diameter; those arches of less size measure solid, and deduct for stone or lintels set by other parties. Jambs or doorways that have struck joints the openings will measure nine inches less than the real openings between the jambs and the openings between each recess. Recesses of windows measure solid.

A wall one and one-half bricks thick and one foot square surface measures twenty-one bricks, and other thicknesses in like ratio.

Build all walls of thickness and heights indicated on drawings.

Provide for exterior of all walls including gables and towers

Sterling No. 10 pressed brick, or brick equal thereto in every respect (Bidders shall submit samples of pressed and building brick they propose to use).

Pressed brick to be laid in best white mortar, with cut joint, secret headers every sixth course. No pressed brick joint or cross joint shall exceed $\frac{3}{16}$ of an inch in thickness.

All interior work shall be of hard or red brick laid in mortar composed of best lime mortar and either Louisville, Utica, or Ft. Scott cement and best clean sharp sand, equal parts lime and cement mortar.

All walls shall be well grouted and all interstices filled as the work progresses. Lay headers every sixth course. The intersections of brick with stone walls /basement/ shall each have two heavy iron anchors four feet long built into walls.

Set all window and door frames as indicated, plumb and square, thoroughly bracing same. Braces to remain on same frames until secured by walls.

Build all walls to top of upper ceiling joists.

No soft or salmon brick shall be used, and shall not be unloaded on the grounds.

Build area walls around basement openings, /see page 3./

Build ventilating furnace, basement connected with vent shaft. said furnace to be arched, lined with fire-brick, provided with grate bars ash pit and iron doors, all completed as may be directed.

"Iron"

Provide and build in place, /stack/ circular vent, shaft made of No. 14 iron, securely riveted and braced in position, all provided with heavy shield cap, securely braced, extending over top of stack.

Said cap made of No. 14 iron, /hipped/ with ornamental finial.

Specifications for CARPENTER WORK!

All of the several floors of joist, ceilings, roof joists, scantlings for partitions, furrings, lintels, wall plates, boards and lumber of this character, shall be perfectly seasoned, sound, free from loose or dead knots, decay or other defects, that may impair strength.

The several floors of joist and roof shall be secured with anchors, which have wrought iron stems three-eighths inches by $1\frac{1}{2}$ " x 9" metal 3 feet 6 inches long

a three-eighth inch bolt through it and the joist, and for those joists that are parallel with the walls, the anchors shall extend back to third joists and a three-eighth inch bolt through it and the joists; the heads of these bolts shall be of iron, firmly fixed to the stems.
anchors to be placed on every sixth joists

The dimensions of lumber will be as follows: all of No. I yellow pine.

For sizes of joists and dimension lumber, see sections and figures thereon.

/No joists or floors in basement.

For description of girders (iron) see details and page I2.

The roof joist shall be placed 20 inches or less ~~apart~~ centres. The floors and ceiling joist shall be placed sixteen inches or less from the center;

of a gauged width and made to crown three-eighths of an inch in the center. Otherwise the surface shall be level equi feet distant from the center of the timber, cut in ~~two~~ rows of herring-bone bridging, and one row in those short lengths of one by two and a quarter inch lumber, and secured with two 12d nails in each end of each piece before the walls are built.

In framing the several floors of joists, ceilings and roofs, the headers and trimers, ridge pole, valleys and hips shall be double thickness properly framed. The wall-plate shall break joints.

and shall be fastened to the walls with five-eighths inch bolts six feet long at the corner, and every eight feet length of wall.

The ridge pole shall rest on and be anchored to the walls with the requisite support in the center, and rafters cut over them. Also frame for all air, ventilating or other ducts, and make external floors at an angle of two degrees, descending outward. The trap-door to the roof shall be 3 feet by 2 ft. 6" feet. Provide all requisite wooden bricks for the cornices, and three-eighths by four inch strips to build in the wall for nailing the grounds for bases, moulds, architraves, &c. Those around the windows and doors will be every two feet apart, of the requisite length.

The roof shall be covered with third rate pine boards of even thickness, Dsd. I.S. free from decay.

Set all bond timber, lintels, &c., where required. Furnish and set all centers for the arches where required.

The measurement of floors, joist, roofs, &c., is the net superficial surface. Partitions measure between the walls net surface. Furrings measure net surface.

∞SPECIFICATIONS FOR∞

CARPENTER WORK--FRAMES.

colored yellow

The partitions and furrings shall be put up with 3×4 scantlings, sixteen or less inches from centers; double at all openings fastened with ten-penny nails.

The heads over the openings shall be trussed, and all partitions shall have long braces cut in and firmly spiked in the place, and the fillings nailed to them.

Those not resting over partitions below shall be trussed to throw the weight on the solid bearing, and each angle of the partitions and portions uniting with brick walls shall be bolted together in at least two places each, with three-eights inch bolts, with washer and nuts, and then nail the strips to receive the end of lath every twelve inches, with sixteen-penny nails.

Partitions directly over partitions or girders shall extend down through the joist to the plate or girders.

Lath shall not be allowed to pass through the junction or angle of partition.

Set all quarters, furrings requisite sixteen or less from centers; the whole to be put up and completed in the most workmanlike manner.

WEATHER-BOARDING.

SPECIFICATIONS FOR JOINER'S WORK-WINDOWS.

The window frames, sash and blinds shall be made of clear, sound, thoroughly seasoned, soft pine deal, unless otherwise specified, excepting the backs of the frames, which may be of third rate lumber. The sash shall be of W.P. 1 3/4" thick the inside lining shall be of the same kind of wood the room is finished in, in which it is placed, and shall exhibit the same width margin to the jambs on the sides and top; the frames shall have requisite pockets, secured with screws. Said frames shall be set in the wall strictly in accordance with the detail drawings the exact distance from the corner or center, as figured on the plans; the height from the floor shall be according to the detail drawing. ~~And furthermore, all frames that have larger bottom than top sash, shall be made with box heads of sufficient length, that the bottom of the lower rail may lift as high as the check rail of top sash.~~

The sash shall be made to correspond with the outer contour of the frame, and shall be hung with cast and best braided 12" cord will be secured to the round weights. sash, by boring an inch and a quarter hole, one and one-quarter inch deep, in the sash stile inches from the top. From thence make a groove three inches long, three-fourths of an inch deep, and one-sixteenth less in width than the diameter of the sash cord; from thence to the top of the sash, a five-eighths of an inch groove; tie a knot on the end of the rope, then insert the knot in the hole, and the rope in the groove.

The lower sash weights will be one-half pound less weight than the glazed sash, and those for the top one-half pound more than the sash. The following named windows of the works will have ~~outside blinds with rolling slats.~~ No blinds

The hardware for the blinds is as follows, viz:

Hardware for frames and sash.

Axel Pulleys, " " 2 1/4"

Blind Hinges and fastenings.

Sash Lifts, " " Bronze

Sash Fasteners, " " Meeting rail

Sash Cord, " " best braided

basement
The ~~cellar~~ Windows

shall have no interior finish, and plain plank frames, /no weights/
Sash in two flights provided with sunken spring sash locks.



SPECIFICATIONS FOR FLOORS.



hard Maple dressed to 1 1/8" thick

The floors except where otherwise specified shall be laid with ~~seven eighths of an inch~~ mill worked battens, not over ~~five~~ and one-half inches wide, of best ~~second~~ clear thoroughly seasoned pine lumber. ~~The kitchen floor shall be laid with the best quality of pitch hard pine free from sap, and not over three and one-half inches wide.~~ All floors shall be closely fit to the walls and extend in the walls at the windows ~~sufficient to receive backs.~~ ~~The floors of the verandas or those exposed to the elements, shall be laid with the best quality of soft pine battens free from sap, not over~~ inches wide, the tongue and the groove to be heavily covered with white lead and oil when being laid. These floors shall be secret nailed with eight-penny heavy headed nails in each batten on every joist, those battens over the water or gas pipe shall be put down with two inch screws. And all uneven surfaces shall be fully smoothed off. in sections as laid

Floor all portions of first and second stories (except two vestibules first story) as above described, /No floor in basement./

The joists of the two vestibules first story shall be placed 5" below top of finished floor line and covered with 2" X 4" rough, laid 1/4" apart, well spiked, on which spread 2" concrete /American cement/ and finished with 6" octagon /Salmon/ and 2" blue dots Encaustic tile with neat 12" border all laid in best Portland cement, finished level with wood floors.

Specifications for

STAIRS

Build the stairs from the basement to the second story, as located on the drawings. They shall each be supported by 4 two by twelve inch joist carriers, securely bridged, braced and trussed.

All materials shall be sound and thoroughly seasoned pine lumber, ~~unless otherwise specified.~~

The steps shall be 2 X 11 1/2 and the risers seven-eighths of an inch thick, tongued and grooved together, of clear ~~soft pine~~ lumber, and housed into the wall stringer.

All of the work shall be properly blocked and glued. The tread shall have a nosing, with a cove beneath, and an ornamental scroll bracket on the outer stringer.

~~Make spandrel at the foot of the stairs~~
~~feet long from front riser. The spandrel panel shall be moulded.~~ The outer stringer will be ribbitted one-quarter by two inches, and will have a five-eighths return bead on the lower edge. The wall string above the stairs shall correspond with the base used in the hall.

The newel post shall be 7" X 7" inches ~~in diameter~~ with heavy moulded panel shaft; and base solid turned neck and cap.

The balusters shall be 3" inches square ^{base} and ~~moulded~~ neatly turned

Each part shall be made according to special drawings. The rail will be continuous

from basement with intersections of easements and drop newels, to wall of top landing.



The rails, newels and balusters shall be made of clear seasoned cherry

The treads, risers and strings of clear seasoned oak, rift sawn.

No Electric wiring, gas piping, plumbing or steam heating shall be figured.

SPECIFICATIONS FOR



Pantries and Closets.

The pantry closets and wainscoting shall be executed in accordance with the contract, specifications and plans, or either of them that define the job.

The pantries shall be fitted up with

SPECIFICATIONS FOR

EXTERNAL DRESSING

All of these external dressings, the cornices, ~~verandas, arcades, ballusters, balconies, conservatories, porches, steps, buttresses, railings, columns, turnings, carving, ridge-boards, angle hip beads,~~ and other requisit external finish shown on any of the plans or elevations, shall be furnished in accordance with specifications, plans, detail drawings, or either of them that define the job, the sections of which are or will be made full size; they exhibit the several forms or methods of construction.

The materials shall be of the best second clear soft pine, sound, free from shakes or sap, thoroughly seasoned and kiln-dried soft pine lumber. All of the above work shall be properly smoothed, well, solidly and firmly put up in a workmanlike manner, with the proper sized nails and fastenings.

All cornices, hip and ridge beads, brackets etc., (colored green on elevations) shall be constructed of No. 26 galvanized iron, all securely put up in the best manner.

All ridges provided with 3" beads, lipped.

Specifications Of Architraves and Interior Dressings.

The interior dressing and finish shall be made and put up in accordance with contract, specifications, plans, and the detail drawings. Furnish and strongly fix all the several works, moulded and otherwise completed in the manner delineated, or that may be required to harmonize with the drawings; for the completion of the various departments of work, including all kinds of beads, stops, fillets linings, back linings, and angle beads on all corners to protect the plastering.

~~All of the windows, not otherwise specified or drawn, shall be finished to the floor, the architraves the same style as those used for the doors.~~

~~The finish for the interior of the closets and presses will be of seven eights inch board~~ inches wide plane architraves; the base will be of the same thickness, inches wide above the shoe.

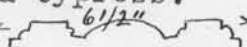

In whatever location a door or window may be situated, even if directly in the angle of the room, in all instances the architraves shall be made full size; nailings and grounds must be prepared accordingly. Solid grounds shall be put up before the plastering is executed, and it is the duty of the finisher to see that the scantlings are properly set for the grounds in such place or places where nailings for base, architraves, door-frames, or other grounds may be required; for uplight finish grounds, and angle beads on all corners except above the mantels. Use the requisite size, style and quality of nails and screws in fitting up the work; ~~and where hard woods are used, the wood shall be blind-nailed by nailing the wood with a gague, and when fastened immediately glue the wood back, with the paper covering until dry and hard.~~

All the work, mouldings, &c., shall be thoroughly smoothed off as the work advances, especially before the painter is permitted to cover the work.


All work shall have ground, as shown on the detail drawings.

The finishing shall include all portions of first and second stories, /No finishing in basement, except door jambs and doors, /

All jamb linings of windows, also base and base molds, window and door finish, black board molds, stiles and rails of door and door jambs etc., shall be of clear seasoned cypress.

The window and door finish shall be  wide with corner /rosette/ and plinth blocks. The base shall be 7/8 X 10" open with 3" lip mold and 7/8 

All door frames shall be made proper widths, Y.P. raised panels lip molded, stiles and rails 1 3/8 cypress rabbeted.

All rooms marked (K) /floor plans/ shall be fitted with chalk rail continued around room on line with window stools, also top mold Provide two rows 5" beaded strips with heavy coat and hat hooks /every 6" / extending around rooms marked "coat room" as Supt may direct. 

Provide and finish rooms marked (K) black-boards 3 feet 6 inch high of N.W.S.E. concrete black-board or a composition equal thereto in every respect.

Provide cases, /with double sets of glass doors, / 8 feet high, neat cornices, shelves and fittings complete. in balance rooms first and second stories, all as per details.

Specifications For



Painting . and . Glazing

galvanized

best lead and oil, colors as directed

All of the iron and planed wood-work of the exterior shall be painted three coats, ~~and planed wood-work, excepting the floors, including the stairs and edge of shelves that are not otherwise specified, on the interior of the job shall after the several surfaces are prepared, by being properly smoothed and cleaned and accepted as such, shall have all knots and pitchy wood well shellaced, and all of said works shall be painted, two heavy coats of strictly pure~~ ~~white lead mixed with pure linseed oil and turpentine, and each coat tinted as directed~~

Paint the backs of window and door frames and iron works one extra coat of Mineral Paint. After the priming coat is put on, the job shall be fully puttied and made smooth in all indentures and imperfections and the putty smoothed off when hard and before the second coat is put on. ~~The putty for hard wood shall be tinted to suit the color of those woods.~~

~~These portions of the job that are to be grained, the ground colors to be suitably tinted for those grainings.~~
~~These woods shall be grained in oil a~~ ~~rich tint, and shall have grain-work distributed in~~

~~distinct places on each side of the architraves, eight places on each side of the doors, and every four feet on the base around the rooms, together with the best cross-grain combing, and combing on all other portions of the surface; the other portions of the room shall be grained the same; the work on the doors and shelves in the wardrobe may be somewhat modified. The following portions of the works shall have these grainings, viz:~~

All interior finish, including doors, / except basement frames, / stairs etc., shall have one coat bleached shellac and finished with two coats Murphys' transparent wood finish, or wood finish equal thereto in every respect.

THEREON

As each floor is finished apply one heavy coat of Murphys' or Crockett's wood preservative. The doors and frames of basement shall be painted three coats, best lead and oil as Supt., may direct. Cast iron columns interior shall be painted three coats lead and oil and ornamented.

shellac

~~All grained work shall have two heavy coats of extra coach body varnish. The first coat of all varnishing shall be rubbed down with fine sand-paper; the last shall be a flowing coat.~~

~~The external blinds shall be primed a lead color, and painted to coats~~ ~~in oil.~~
The exterior doors shall be painted three coats best lead and oil, Bronze green with gilt line trimmings.

All tin work except the underside of all tin and valleys and inside of tin gutters, shall be painted two coats, as specified for wood-work. ~~The finish for the hard woods shall be one coat of best light wood filler, thin down one half with turpentine, and tint it to suit the color of the wood before using. Spread with a brush that is free from varnish. Let the filler lie on the work a few minutes, or till it flats, then rub across the grain of the wood with shavings making a smooth surface, and remove the surplus filler. Let the work dry, then put on~~

All of the works, except otherwise specified, shall be glazed with D.S.A. glass all of which shall be bedded in putty, braded, puttied and back puttied without springing the glass. lights less in size than 12" X 12" may be S.S.A. All glass shown diamond pattern shall be leaded Cathedral glass, all transom shall be glazed with figured enamel glass.

SPECIFICATIONS FOR

⚡ Bells . and . Speaking . Tubes . ⚡

Provide and hang with No. eighteen bell hanger's wire, each in zinc tubing put in and secured in proper places before the plastering is put on; together with all the requisit cranks, pulls and levers, all arranged in the most approved manner; the front door pull to be

SPECIFICATIONS FOR

PLASTER WORK.

~~All of the walls and ceilings of the several rooms, halls, pantries, and presses above the cellar, except otherwise specified, and the walls that are not furred, shall be covered with the best quality of sound seasoned sawed lath, five-sixteenths of an inch apart, the sap or bark side of the lath toward the timber, and nailed to all furrings, walls, joist or scantlings, with number four heavy lath nails.~~

~~Lathing shall not be executed before the angles of the apartment are bolted together by the framer.~~

~~The lathed work shall be plastered three coats, and other walls two coats, excepting the small presses not over four feet deep, that will be hard finished with two coats, and under the base and the architraves, that will not be hard finished but made flush. The first or scratch coat on the lath work shall be not less than one-quarter of an inch thick over the thickest lath, and thoroughly roughened, at least an eight of an inch deep furrows, every two inches diagonally each way.~~

~~The mortar for this coat shall be of a quality equal in strength and solidity that the compound will not disintegrate to eight bushels of the best new quick lime, four and two-thirds bushels of best long cow's hair to one yard of clean, coarse, sharp sand, thoroughly worked on lath.~~

~~The second or brown coat shall not be put on the lath work until the first coat is thoroughly dry, and not on the brick or rock walls until they are thoroughly wetted immediately before plastering. The mortar for this coat shall be of a quality equal in strength and solidity, that the compound will not disintegrate, to three and one-half bushels of best new quick lime, three-fourths of a bushel of best long cow's hair to one yard of clean, coarse, sharp sand, and shall be made to fit the grounds, or at least one-quarter inch thick in the thinnest part, all thoroughly worked on walls.~~

~~The above mentioned mortars must be thoroughly dry and accepted as dry by the superintendent before the last or putty coat is put on. This coat will be of a quality equal in strength and solidity, that the compound will not disintegrate, and in fineness of grain and whiteness. This coat shall be put on without making any joinings in any portion of the walls or ceilings.~~

~~All of those works shall be made straight, true plumb, and level.~~

~~The mortars shall be made at a suitable distance from the works, that they will not be injured by reason of the mortar being dashed against them. The limes are to be thoroughly slaked weeks before being used, and all of the ingredients thoroughly beaten and worked together. The hair in the first two coats of mortar shall not be put in the box, but put in the bed after it is run out and thoroughly raked through the mortar.~~

~~The Plasterer shall not sweep the floors before or while plastering, and plaster mortar that may fall on the floors shall not be re-used, neither shall any mortar be tempered or wet on the floors. As soon as each apartment is finished it shall be cleaned out; and on completion of the works remove from the premises all waste or superfluous matter made in or about the works.~~

The Plasterer (before commencing work) shall spread evenly over floors not less than one inch of saw-dust, and shall be held responsible for all mortar and water stains on floor.

All portions of first and second stories, also stair landing to basement, shall be plastered with either Acme, Adamant, Keens Winsor, Kings Windsor, or I.X.L., completed in a thorough and satisfactory manner. Smooth white finish, except wainscoting height, which shall be finished smooth gray, run quirk and bead at intersections of gray and white mortar. All ceilings of portions named, shall be laid with steel lath, either Bostwick, Hays, or expanded metal, securely fastened to joists, also wood partitions.

Furrow and extend lathing sheets around bottom of girders finishing with heavy cove and return beads run in plaster. No plastering in basement

Specifications For

MANTELS AND GRATES.

The mantels shall have hearths the whole length of the mantel, and inches wide.

Said hearths shall be set in strong mortar grouting.

~~The top edge of the hearths will be one-quarter of an inch above the floors.~~

Specifications for

DOORS

If any of these doors face apartments that have a different mould finish or trimming, these sides of the doors shall be made to correspond with them, and where doors for different rooms adjoining conflict in their dimensions or style of frame work, the largest sized doors or those that are to open in the better class rooms, shall be used.

The principal sizes of these doors are as given, and others to fit their locations.

Doors opening into presses not over four feet deep, may have the inner side of the door moulded on the solid, or a flush mould.

The door jambs will be made of the same kind and class of materials, and according to detail drawing.

The threshold will be made of clear ~~oak~~ lumber.

see Vestibule Closets

All double or ~~sliding doors~~ shall be double trimmed; and all doors shall be firmly made, tenons and wedges thoroughly glued and mouldings and doors made smooth.

The hardware will be as follows:

4 1/2 X 4. L.P. Butts, 3 to each door. Heavy mortise

Knobs, real bronze Locks, *Brass face*

Bolts, Elastic tip Escutcheons, Base stops,

Latch, all doors To have Transoms, *hung*

and fitted with Wol. Lifters.

See elevation front doors, thickness 1 3/4 lip mold two sides, all other doors except basement /single/ shall be 3ft.4" X 7ft.6" 1 3/4, 4 panel lip mold two sides. Seasoned clear cypress for stiles and rails and clear Y.P. panels, raised two sides, double doors shall be 5ft.6" X 7ft.6" style as single doors.

Provide wrought flush, top and bottom bolts for double doors.

Provide heavy real bronze rabbeted locks, with real bronze furniture six keys to each lock for two Main entrances and Vestibule leading to corridor doors.

The openings shown in basement shall have plain plank /beaded/ jambs 1 3/8 thick doors, 1 3/4 O.G. 4 panels W.P. 3ft. X 7ft. No transoms trimmed as above described.

Provide sash doors, rear as shown, exterior basement.

SPECIFICATIONS FOR

Roof . Work.

The measurement of roof is the net surface and six inches extra at the eaves, and where flashings are used; all flashings, counter-flashings, and covering of ridge and hip-beads, is included in this measurement:

Cover all pitched roofs with best Peach bottom black slate 18-10s with good lap, corners clipped 1 1/2 X 1 1/2 laid on two ply tarred paper, secured with heavy galvanized slating nails, two nails to each slate. Flashings of heavy sheet lead.

Hip and ridge beads of galvanized iron.

Decks of I.X. bright tin. /see tin work./

Iron and Miscellaneous Work

Provide sectional iron columns as shown on section and details, size basement 7" diameter, first and second stories 6" diameter, 1 1/2" metal with 30" X 30" X 1 1/4" base plates, ends of columns turned, ornamental base, neck molds and capitals, cast on columns at each floor, heavy brackets and bolting lugs for securing ~~two~~ two 12" (1) beams, girders and single beam 12" top ceiling. All sections shall have lugs at each story for bolting together. All columns must be cast smooth and straight. Provide all girders first and second floors extending across spans iron columns of (2) 12" (1) 40 pounds securely bolted with three separators to each span all securely bolted to columns and extending 8" into walls. Beams shall be drilled 3/8 hole every 3 ft. for bolting 2 X 6 joist bearers. see detail. Top girders carry ceiling joists shall be one (1) 12", 40lbs. securely bolted to columns and drilled for joist bearers. Provide 4 iron rods size 1" X 10ft. long to be built in corners of Main tower to bolt wall plates.

Provide weather vane and finish as shown. For anchors, see page 5.

Specifications
TIN AND COPPER WORK.

works, except otherwise specified, shall be of best brands of IX heavy bright tin
suitable ~~with~~ properly adjusted to fit their several positions; and will be put together with

responsible for the perfect drainage of the works, and shall examine and ascertain the fact that the Carpenter has
straight, and with sufficient fall to the down spout; if these works are not constructed in a manner that they will
up and replaced in such level that they will thoroughly drain. Gutters back of chimneys will extend six inches
returned and soldered

The ~~works~~ shall be 20 inches wide, made to fit their several locations, and will be put together with double lock seams
and shall have proper connections with the gutters, in a manner that the water will not dash over the cornice or make leaks.

All roofs or flats, (decks) about the works that have a pitch less than twenty-two degrees

Shall be covered with the best brands of IX bright tin

cross seams and valleys in connection with standing seams, shall be put together with single lock and solder

seams. These seams shall each consume one and one-eighth of an inch metal; ~~others than those mentioned above shall be the standing double
lock seam, and shall each consume two and one-quarter inches metal.~~ Each seam shall have a cleat every ten or less inches from centres and
each fastened to the roof boards with large barrel nails.

The tin shall extend over the roofs or flats three-fourths of an inch, and fastened on the edge every one and three-fourths of an inch with
said barrel nails. SIX

Flash the walls in connection with metal or chimneys ~~three~~ inches high, and counter-flash all flashings that are not built in the wall with
three pound lead, three inches wide. These flashings shall be properly inserted in the walls, and the joints cemented and works made com-
plete.

Put up the requisite number of down spouts, made with double backs joints, properly connected with the gutters, from the gutters to
the ground, and secured to the walls, every five or less feet, with patent spout holder fastenings, and shall be put up when the gutters are put in,
and shall ~~connect with the~~ pipe with cement joints extend to ground

The down spouts will be of the following dimensions, viz: 5" of No.26 galvanized iron placed as
Supt. may direct.

Paint with lead and best boiled oil, the tin down spouts three coats All tin work one
coat on the under side, and all gutters and valleys not in connection with tin roofs two coats on the top side immediately when the work is put
up and before the roofing materials are put on. with best Mineral

FINALLY.

Each and every part of the works shall be finished in a complete and perfect manner to the full and entire satisfaction of the Board Curators
and under the direction of the Superintendent. Anything requisite for the full completion of the works, shall be furnished by the Contractor,
whether herein mentioned or otherwise. This accompanying specification shall be deemed a part of the contract together with all elevations,
plans, details, etc., prepared for the works.

Special care shall be exercised in handling the specifications, plans, etc., and if the same are lost, after delivery to the Contractor he
shall be held accountable for them. The works will not be deemed complete until the plans, specifications, &c., are returned to the Board
or Architect.

Signed this..... day of.....
..... Pres. of Board
..... Contractor.
Witness..... Architect and Superintendent.

Columbia Mo June 22 1892

These Specifications are approved

San Francisco
Governor

James M. Deibert,
State Auditor

A. A. Lescuyer,
Secretary of State.

G. F. Rothwell

B. M. Wiley

Geo. S. Markson

General Board of the Curators
University of the State of N.Y.