Appendix G : Phase I [1888] & Phase II [1890] Specifications

Original
C. N. Potter
Secy.

SPECIFICATIONS

FOR THE

ERECTION AND COMPLETION

OF A

Capitol Building

—FOR—

WYOMING TERRITORY,

—TO BE—

LOCATED IN CHEYENNE.

AS DESIGNED BY

D. W. GIBBS & CO., ACHITECTS, TOLEDO, OHIO.

TOLEDO, O.
BARKDULL BROTHERS.
1886.

SPECIFICATIONS.

The several drawings herein described are designated as follows:

1st.—Block Plan.
2d.—Concrete Plan.
3d.—Basement Plan.
4th.—First Floor Plan.
5th.—Second Floor Plan.
6th.—Third Floor Plan.
7th.—Plan of Roof and Attic.
8th.—Front Elevation—South.
9th.—Elevation—West.
10th.—Elevation—North.
11th.—Elevation—East.
12th.—Transverse Sections (3) on C. D., E. F. and G. H.
13th.—Longitudinal Section on line A. B.
14th.—Beam Plans, (4.)

The above drawings are made to a uniform scale of eight (8) feet to 1 inch, and are designed, together with detail sheets Nos. 1, 2, 3, 4, 5, 6, 7, etc., and these specifications to represent all that is necessary to make a complete and finished Capitol Building.

Full sized and other details will be furnished the successful contractors as the work progresses.

GENERAL ARRANGEMENT & DIMENSIONS

Are to be obtained from plans, and the figures on same to be taken in preference to measurement by scale; and should any discrepencies be found, the contractor shall apply to the architects for instructions, they holding the right to interpret their own drawings.

It will be understood by the contractor that the figures given are correct in accordance with the general plans, and for his own protection he will prove the same by actual calculations before placing orders or erecting any part of the work; but as slight variations may have occurred in the execution of the various parts, the contractors interested in the different portions of the superstructure will be required to ascertain the exact dimensions by actual measurements, and will be held responsible for the proper construction of the work in accordance therewith.

EXCAVATION.

GRADE LINE.

It will be understood by contractors that the grade line of building will be about 30 inches above present surface in the center of Capitol grounds. Excavate full size of building; also for foundation footings shown on basement concrete plans and sections. Excavate for step foundations, tile drainage, gas and water pipes, areas, and all else under head of excavation required by the plans.

FILL AND GRADE.

When foundation walls are complete and mortar dry, fill in the surplus earth, ramming the same well down. The soil taken from excavations shall be graded about the building as shown by grade-line on sections and as directed by Commission and Superintendent. The gravel and sand not needed by contractor for concreting or filling, as before specified, will be removed from the premises.

SECURITY OF FOUNDATION.

It will be understood by contractors that a good and sufficient foundation is anticipated at bottom line of above specified excavation; if, however, upon examination by the Commission and Architects (after excavation is made), a greater depth is found necessary, it will be provided for by the Commission. Excavation must be made sufficiently large to allow the pointing of both sides of the wall.

DRAINAGE.

Contractors will be required to leave holes for sewer-pipe through walls where shown on basement and concrete plans or where required by Superintendent, and build in nine-inch hard tile at such points for sewerage, water and gas connections. Construct all drains outside of best hard tile material, laid in cement joints, and in best manner of size and location as shown on concrete plan; all piping from inside of building shall be furnished in position by the plumber, as hereafter specified. He will bring the sewer and one down-pipe to outside of building where contractor for drainage will connect and convey to the sewer on Furguson street, about 350 feet from center of building. The remaining storm water from down pipes will be taken away as shown on plan. All drains must be dug the

exact depth, so that tile will have natural bed; then place tile in position, connecting carefully and thoroughly each joint. Swab out by hand, after each section is laid, and free inside from all mortar droppings. Drains to have uniform fall from starting point to sewer. All branch connections will be by means of Y s. For sizes and system of drainage, see footing and concrete plan; also block plan. Trenches must be carefully filled after tile is laid, and well tamped down. Gas and water connections described in plumbing specifications.

CONCRETE FOUNDATIONS.

All foundations to be of concrete, composed of good, hard stone, or gravel, broken to the size of hens' eggs, (none to be larger than to pass through a two-inch ring), and clear, sharp sand. The exact proportions to be hereafter determined by Superintendent, depending upon the age of cement. They will not, however, vary much from one part cement to two parts sand. The mixing of concrete will be done in a large, tight box, first by measuring in sand and cement, then turn on water, and after quickly mixing to thickness of slush, throw in the stone and work rapidly till all are thoroughly coated, then into the trench. Care must be taken that no more mortar be used than is required to fill the interstices between stone and that each stone is coated with mortar. The concrete to be level in trenches in layers of about seven and one-half inches and to be thoroughly rammed down. Each batch to be mixed and put in place in quick time. In no case from the time of taking water till it is deposited in trench should it remain still a moment, and must be continually turned to prevent setting. Each layer to remain exposed twenty-four hours, and to be wet down every day, as directed by Superintendent. Contractors will understand that all concreting will be brought to level line at top where stone work is to begin, except that portion supporting tower and rotunda. (See concrete plans.) The trenches must be shaded as soon as concrete is put in, to prevent a too rapid evaporation of water.

MASONRY.

FOOTINGS AND RUBBLE MASONRY.

All walls throughout the building above concreting and extending to underline of first-floor beams, (except brick work, colored red), including all areas and step foundations, as colored blue on plans, to be

of best footing and rubble masonry. Footings must extend through wall in alternate courses and to break joints at least one foot. Spawl work is strictly forbidden; to that end all vertical joints must be pick-dressed on straight line, and stone fitted nicely together.

BASEMENT WALLS.

Rubble masonry above footings to be constructed of good-sized stone with level beds and fitted perfectly together. A perfect bond will be insisted upon and through-stone will be required every two feet in height. No toothing will be allowed. Leads must be run out at not less than an angle of forty-five degrees, and in no case will one wall be allowed more than scaffold high above another. Contractor for rubble masonry will be required to line all flues with brick and to plaster said flues in best manner. All stone to rest on natural bed, and mortar joints must be tight. In other words, mortar will not be allowed to fill large spaces. Great care must be taken to make a perfect and substantial job, and the stone masons will understand that nothing short of this will be accepted. (See foregoing drainage.)

BEAM TEMPLATES.

Contractors for the iron work will designate location of all beams and girders, preparatory to the leveling up of basement walls. The contractor for rubble masonry will locate at such points and on level line of basement story a large sized stone to form template for all first floor beams and girders.

QUALITY OF STONE.

Quality of stone for rubble work to be of best Fort Collins, known as "Stout" quarries, or its equivalent. Step foundations to be constructed of rubble masonry, as above described.

MORTAR.

Mortar for concrete to be composed of fresh Louisville cement or its equivalent, and sharp sand, one part cement and two parts sand, by measure. Mortar for footings and rubble work will be composed of fresh burnt quicklime and sharp sand sufficient to make a good mortar —proportions to be determined by the architects and superintendent. All joints in each course to be thoroughly grouted with liquid mortar of same material above described. All joints to be neatly pointed inside and outside, and allowed to dry before filling in the earth around them.

CUT STONE.

Cut stone for the entire exterior of building will be finished in the following manner:

Basement Story.—Plinth course to be vertically tooled four batts to the inch. Walling between plinth course and water-table to be split-rock face with two-inch tooled margins and angles, eight batts to the inch.

First Story.—Wall-spaces of pavilions between crandled piers to be same as above. Piers to have two inch square-sunk joints, two inch tooled margins, and fine crandled panels raised three-fourths of an inch.

Second and Mezanine Stories.—Wall-spaces between piers and pilasters to be rock-faced with one inch tool margins (8 batts), on face of angles, and all reveals tooled back. Pilasters to have tooled margins. The plain faces of pilasters and columns to be fish-scale hammered work. Other plain faces, as friezes, belts, pedestals, panels, etc., to be tooled, eight batts to the inch. Mouldings to be rubbed. (See details for full explanation of the different grades of work as above specified.) Rock face to be free from tool marks on face; blocks dressed perfectly square, pitched off to a level bed and set level with plumb bond. The voissoirs of arches must be especially neat, even joints, not over one-fourth inch thick. Ornamental carving as per detailed sketches, and must be done by professional carver and not by stone-cutter. The ornaments to be renaissance. (See detail.) Contractor will understand that the above covers the entire exterior walls of building, (four fronts,) from grade-line to top-line of pilaster capitals. All pediments, gables and chimneys, will be of galvanized iron.

It will be understood that tower above roof line will be of iron.

All of said cut-stone work must be done in the best manner, as shown in plans, sections, elevations and details, the different courses to be bonded together and to brick backing; beds to be at least 4 in. and 8 in. alternate bond.

Iron anchors and angle cramps must be used in the alternate thin courses. The piers in end elevations to be of solid block stone, running entirely through the wall.

Porch columns to be set in sheet-lead and balance of cut-stone work to be set in white putty and sharp sand-mortar on pasteboard chips the thickness of joint. Mortar will not be allowed to slop over on stone while being spread. Great care must be taken to make even joints, that the job may show good workmanship when completed.

All stone must be cut, fitted and set by the stone contractor, he furnishing his own mortar therefor. Each course of stone from bottom

to top must be jointed with reference to a proper bond, whether so shown on elevations and sections, or not.

Stone containing iron will not be allowed in the building where exposed to view.

It will be necessary, therefore, that the contractor carefully inspect his work after cutting and before setting. He will also see that his work is suitably protected from injury during the progress of building, and when brick-work is completed, all the cut stone must be cleaned off with sponge and water, to the end that no mortar or other stains be left, and the joints neatly pointed in stone color to suit the Architects and Commission. All head joints in projecting courses of cornices, etc., must be securely pointed in cement mortar by stone contractor.

Stone contractor will furnish all anchors required in his part of the work. Examine carefully the details and see General Items.

All rubbish connected with the above work (except such as can be used for concreting) must be removed from the premises by the contractor.

PORCH FLOORS.

The portico floor, porch platforms and ceilings will be of Fort Collins stone, joggle-jointed and caulked with lead and oakum. (See details.)

Cope all area walls with 4 inch flagging.

NOTE.—The contractor for cut stone work will understand that the porch lintels, long span (entablature), will be supported by I beams of wrought iron, anchored as shown on drawings.

QUALITY OF CUT STONE.

To be the best. Contractors are required to furnish cut samples showing quality of work specified for the building, with bid, and to state the cost complete for each variety of stone separate, in bid; the Commission reserving the right of selection.

The line of division between stone and galvanized iron will be the bottom line of cornice course, and all above pilaster capitals, except front main pediment, which will be of stone to the under side of archivolt on line of main wall. Chimney tops and the balance of said pediment ruturn will be of galvanized iron, as specified under head of galvanized iron work, and as tinted purple on elevations.

The stone contractor will state in bid the deduction that will be made if iron columns are substituted for stone in front portico.

BRICK WORK AND CONCRETING.

Construct all basement carrying walls (colored red on plans) of hardest burned brick, laid in fresh cement mortar, well mixed with sharp sand, three parts sand and one part cement, and to be used before first setting. Walls to be bonded every fourth course, both sides being laid by line.

All brick must be thoroughly wet down and laid while wet, in as close joints as brick will admit, each course of brick to be grouted. All joints must be filled to the end that walls be perfectly solid; and great care must be taken to make mortar-bed for all brick work, full. Turn all arches triple row lock (carpenter will furnish centers). Study the plans carefully and see that all flues, slots, channels, etc., shown thereon, or that may be hereafter ordered by the Architects, are started properly, and none omitted.

Also note all windows having recesses for panels underneath. Construct fire-places throughout the building wherever shown, and turn hearth arches for same.

All brick work not before specified, for entire building, will be of good, merchantable, hard brick, bonded every fifth course, laid in quick-lime and sharp sand-mortar, as described for basement work.

Partition walls on attic plan, colored red, will run to line of roof. Brick contractor must set all iron templates for beams and trusses, resting on brick walls, perfectly level. Same will be furnished and location marked by iron contractor. Brick in, in a secure manner, all anchorage for iron beams and other construction. Plaster all flues for both ventilating, heating or smoke, shown on plans, in the best manner, finishing with the "float," not a trowel; flues will be run as straight as other construction will admit, and must be kept full area from bottom to top, and left free from rubbish when completed. Holes for registers will be left near floor line—that is, bottom of registers on floor.

Water-closet seat vent-flues to be made round by six-inch wood mould, same to slide up as flue progresses. Leave slots for water, soil and other pipes, etc., and connect vault-hollow with ventilating flue, as hereafter directed by Architect or Superintendent.

Brick contractor will note that the flues in center pediment chimneys will be carried over side windows to chimney, as shown on plans and sections.

Contractors must furnish samples of brick with bid.

CONCRETING FLOORS.

Brick contractor will be required to concrete first, second and third floors and hall of attic to line two inches above top of beams. All floors will be level, consequently halls, etc., having lighter beams, will require concreting up to line of floors on the deepest beams. Concrete to be composed of broken stone, cinders, brick, gravel and cement. Cement one part, balance composition three parts.

The stone and brick must be broken fine, and pebbles not to be over three-fourths inch in diameter. Brick contractor will be entitled to all stone spalls, gravel and brick-bats not required by stone and brick contractors in the construction of said building. Louisville cement (or its equivalent) will be used where cement is called for.

Level up with concrete to top of deepest beams and let it set, and fill in after strips are laid. Level up halls, foyer of Senate, for marble tile, as directed by the Architects and Superintendent. (See note, General Items, relative to bids for floor construction; page 32.) Contractors will estimate on at least four inches of concrete over crown of corrugated arches.

VAULT CONCRETING.

Concrete all vaults, top and bottom. Top of vaults to be of cinders, sand and cement. Concrete vault floors to be of same material as specified for concrete floors, except cinders and brick-bats. The centers of all arches are to remain in position until brick work in building is completed.

Concrete basement halls, water closets, furnace, cold air and fuel rooms, three inches thick of material specified for floors above, and over all three inches of artificial stone of best make; balance of basement floor will be put in by carpenter, as hereafter specified.

Contractor will do all brick work in connection with the heating apparatus, setting of furnaces, registers, etc. The furnace covers will be two courses brick, laid flat.

The contractor will furnish suitable iron bars and sheet iron for covering warm air flues at the proper height, as shown on plans or directed by Superintendent, and lay two courses of brick and mortar on the iron.

PLASTERING.

Contractors must furnish in place temporary enclosure for all openings, before beginning plastering work, which must not be removed until the work is thoroughly dry.

Basement, first, second and third stories to be plastered, three coats on lath and two coats on brick work; first coat on lath to be a scratch coat of hair mortar, well broomed down, and when dry, over it and brick walls lay a coat of brown mortar, the whole to be straight-edge work, properly floated down, and over all, when dry, except court-rooms and chambers, halls and rotunda and all large office rooms of first and second stories, lay a white, hard finish.

Mortar to be composed of fresh burned lime and sharp sand.

Scratch and brown coat to have a sufficient amount of hair to make a secure job. White, hard finish to be composed of white lime, putty and plaster of Paris, troweled down to a smooth surface and left free from chip cracks, brushed off with clean water.

It will be understood by contractor that all lathing in fire-proof construction will be of iron, put on by the iron contractor, or porous terra cotta tiles. Closets will not require so fine a finish as larger rooms.

Estimate on plastering the light-shafts inside from ceiling light to roof.

Also estimate on plastering back of wainscoting down to floor, one coat only—brown,—and plaster up tight to all frames and grounds.

Plasterer will do all pointing necessary after the carpenter and other work is completed.

If any plastering is done in freezing weather, the contractor must furnish the necessary heat at his own expense.

STUCCO WORK.

Ceilings and walls of large rooms and rotunda to be stuccoed as shown on sections and details, carefully modelled in "renaissance." Walls and ceilings of court-room, the two chambers and rotunda, first, second and third story halls, including the large office rooms of first and second stories, to be finished in guaged brown mortar, smoothly floated down prepared for fresco; to be a first-class job of sand finish The girder and other arches to be beaded and finished as shown on section and details; and all ornamental work must be submitted to Architects or Superintendent for approval before put up. Stucco cornices will be run in all principal rooms on first floor.

NOTE.—If wood joist are used, estimate on lathing all partitions and ceilings, and one inch of mortar between floors, for deadening.

CARPENTER WORK.

The building will be *fire-proof*, (see page 16, specifying wood construction,) as near as may be. Carpenter will, however, be required to do all carpenter work properly coming under that head in the construction of the building; furnish all centers necessary in turning brick and stone arches, with means of staying them in position while work is being done. They must not be removed until brick work is completed.

MARBLE TILING.

Carpenter will estimate on tiling all halls and rotunda in first, second and third floors, including foyer of Senate Chamber, as shown on plans, with best quality marble tile—white and black, or pink, one inch thick, laid in English Portland cement, by expert workmen.

BASEMENT FLOORS.

Halls, water-closets, furnace, cold air and fuel rooms of basement will have artificial stone floors, as before specified, put down by concrete contractor: balance of basement floors to be of 4x4 inch sleepers, laid on two inches dry sand and air-slack lime—six parts sand and two parts lime, and filled in between even with top with same material. Then floor over with best grade $\frac{7}{8}$ inch No. 1 Georgia pine flooring.

WOOD FLOORING ABOVE BASEMENT.

The balance of basement, first, second and third floors, to be of clear, yellow pine—matched flooring-strips not over three inches wide, laid on 2x4 inch scantling, of hard pine, ripped diagonally through the center, forming two strips, each having bevel, and laid wide side down on top of beam and fastened to I beams by wood anchors nailed on side of strip and reaching under flange of beam concreted in.

Gallery floors to be of same material; the seat steps to have wood supports fastened to the iron floor framing.

STUDDING AND GROUNDS.

All stud partitions throughout the entire building (fire-proof) will be of iron, hereafter specified.

Carpenter will provide and fix grounds for all base, wainscoting and casing. Holes for bolts will be drilled by iron contractor.

Carpenter contractor will estimate on lantern sash of wood, as fully explained in plans, sections and details, and the two flag staffs of selected spar pine, fitted into iron fastenings at bottom, and to have pulley and copper ball on top. Staffs to be smooth and well oiled.

ROOF COVERING.

Cover entire roof with sheeting of 2 inch pine plank, matched with loose $\frac{3}{4}$ inch tongue, and dressed, one side, to $1\frac{7}{8}$ inch; said sheeting to be fastened over each beam and purlin by free use of bolts, $\frac{1}{2}$ inch, all furnished in place by carpenter. Dome of tower to be sheathed in same material, $\frac{7}{8}$ inch thick.

WINDOWS AND DOORS.

All window frames throughout the entire building (except in cold air rooms, which will be plank with sash hung on butts,) to be box, with sliding separators. Size of sash, $2\frac{1}{4}$ inch check rail; all fitted with brass or wire cords, or chain, and lead weights, and brass faced pulleys of best make—Sidney, Norris & Co's. or equivalent. Larger frames to have twin or double pulleys. Frames to be moulded, and parting stops cut in center to allow sash to be taken out at bottom, as per detail. Third story windows to have head-pockets sufficient to admit of sash sliding up two feet. (See detail.) Outside basement doors to be as per plan and details. First and second story doors as per detail; also transoms as shown in detail plans and sections.

First and second story doors to be made of two thicknesses, $1\frac{1}{8}$ inch each, glued and screwed together and veneered with $\frac{1}{4}$ inch natural wood as follows: All offices in *butternut*, and all halls, rotundas, court room, library and two chambers in *cherry*. (See details.)

All door frames as per detail, veneered as above described, to match finish of room. Hall jambs to be flaring where so shown, and plaster corners to receive a two inch wood bead. All doors marked "G" on plans to be glazed—size of glass marked.

The edges of all doors will be plowed out, the tenons cut back and a strip glued in to obscure tenon ends.

INSIDE FINISH.

The finish of principal rooms to be as per detail. Closets to receive plain bevel finish. All windows of first and second stories to be panelled underneath. Entire finish of all offices in first and second stories, to be in best butternut, and the finish of all halls, rotundas, court room and the two chambers in first, second and third stories to be in

best cherry, all hand-smoothed and fastened up with steel wire brads. All hard-wood finish in the work must be finished at the shop and have a coat of filling before being taken to the building, to prevent the absorption of moisture. All basement and third story finish not before covered to be of best clear white pine.

Inside wood work to be left in hand finish. Machine marks to be sufficient cause for rejection.

WAINSCOTING.

First floor halls, library and rotunda; second floor halls, the two chambers, rotunda, horticultural department, Supreme Court room and stair cases to third floor, to be wainscoted with material specified for doors, casings, etc., for the several departments. All water closets and washstands to be wainscoted with beaded ceiling.

All outside door frames to be dowelled in stone sills, with $\frac{5}{8}$ by 3 inch round iron, 1 inch in stone and two inches in jamb.

Great care should be taken in setting all frames plumb and square, and keep them so; to that end they should be watched closely during construction of building.

All outside door thresholds will be of cast-iron; and all inside of white ash or oak, straight grained. Carpenter will furnish said thresholds.

BLINDS.

All windows in first story and in office rooms of second story to have inside blinds, moulded and raised panels $1\frac{1}{8}$ inch thick, eight fold, of the material specified.

CLOAK ROOMS.

Cloak rooms to be furnished with strips and wardrobe hooks. Heavy school pattern, best quality, imitation bronze.

STAIRS

Leading from basement to first floor, to be baluster stairs ~~of butternut~~, with risers, treads and strings of wood and newel and rail of ash. Newels, string-finish balusters and rail to be of butternut. All as per detail. Stairs must be solid and substantial. Grand staircase, from first to second floor, to be of iron and cherry combined, put up in the most substantial manner. Close string, balusters, rail and newel to be of cherry. Steps and risers to be of cast iron, and strings to be of wrought iron—all to be a first-class job in every particular. (See detail.)

The stairs leading to third story will be a box stair in cherry, of best make, supplied with rail on back side, securely fastened to wainscoting. Treads, risers and strings to be of wood. The arched opening on front to be supplied with balustrade, as shown in drawings. Furnish complete a neat and substantial iron staircase leading to tower, extending to dome. All stairs to be of wood in case of adoption of wood construction.

WOOD WORK IN PLUMBING.

All wood work required in plumbing will be done by carpenter contractor. (See specification for plumbing). Enclose basement water closets with beaded ceiling and make a neat job of seat fittings, double on hinges. (See sections through said closets.) All to be in best clear yellow pine finish. All service tanks above basement floor, etc., for closets to be neatly enclosed in same material; those in basement will be left exposed.

CORNICE LOOKOUTS.

Furnish skeleton lookouts and back lining of wood for main cornice in addition to the iron lookouts; back lining to be of $\frac{7}{8}$ surfaced flooring, preparatory to receiving gutter. (See note, page 24.)

Carpenter will be required to set all wood construction wherever required throughout the building; plug the walls for grounds in brick work, for all finish.

In bidding on item No. 2, contractors will estimate on tower framing of wood; main posts to be 3x8, lattice trussed and bolted, all thoroughly cross braced, and the whole framed and bolted together. The upper curved ribs of dome will be of 2 inch stuff, covered with $\frac{7}{8}$ inch surfaced sheathing. The columns, projections, cornices, etc., will have skeleton framing and board backing for the secure fastening of galvanized iron covering; all to be thoroughly strapped to the iron construction of rotunda, and to conform in size, strength and appearance to that shown on iron drawings.

GRATES AND MANTELS.

Carpenter contractor will furnish in place all grates and mantels. Estimate cost, $40 each fire-place, complete.

CARPENTER WORK.

Construct gallery in Senate and House chamber, and in court room iron and wood combination as shown in drawings, and prepare floors ready for seating; but no seats or furniture of any kind will be considered as coming under these specifications.

Carpenter will also estimate floor, roof, rotunda tower and stair construction, including gallery columns, in wood; *i. e.*, all joist, rafters, studding, tower framing above base, stair strings and gallery columns, as per sections showing wood and iron construction; the Commission reserving the right of selection. (The core of rotunda—that is, column construction of rotunda—to top line of tower base, all girders and roof trusses, will be of iron in either case;) and all partitions will be supported by double joist with iron tie-rod in center, sufficiently strong for rigid support.

Under head of wood construction for floors and roof, estimate as follows: All joist (except ceiling of Horticultural Hall) to be 2x12 inch, twelve inch centers. Ceiling of Horticultural Hall to be of 2x14 inch, sixteen inch centers; and roof joist to be 2x8 inch, twelve inch centers. Said roof joist will rest upon iron trusses and girders furnished in position by the iron contractor.

Frame double trimmer joist around all stairways and chimney breasts, and put in hearth trimmers where grate fire-places are shown; trimmers in all cases to be kept at least one inch from face of wall. All joists to be sized, and those supporting partitions to be double and well bolted together, and to receive in addition a one-inch tie-rod, with suitable nut, washer, etc., and center plate to sustain tension. The floor over Horticultural Hall to be sustained by donble joist, and $1\frac{1}{4}$ inch iron tie-rod in every six feet of space, to be securely clamped. Every eight joist to be securely anchored to brick walls by means of $\frac{5}{8}$ inch round iron, 1 foot 4 inches long, ends bent at right angles, one up and the other down, $2\frac{1}{2}$ inch, one end inserted in top of joist, the other backed by a piece of 2x4 inch scantling in wall, two feet long. The inner ends of joists to be fastened together in a permanent manner. The same system to apply to each tier of joists, and, where joists run parallel with wall, insert iron anchors as specified above, in 2x4 inch scantling, let in and extending across and spiked to four joists. The inner ends of joist must not lap or extend through the walls, but must bevel (as also outside ends) for 4 inch bearings, and securely anchored together with iron anchors. Spans not over twelve feet to have one row of cross bridging; all over twelve feet must have two rows, and the ceiling over Horticultural Hall to have three rows; bridging stuff to be $\frac{7}{8}$x$2\frac{1}{2}$ inches; two nails in each end. All joists below roof to be stripped on each side two inches below top, and 1 inch culled lumber (free from decay) to be filled in and securely nailed preparatory to the mortar deadening by the plasterer. The joist for tile floors to be treated in same manner, but must be let down two inches lower, and prepared for tile by strong cement con-

crete. All studding to be 2x6 inch, twelve inch centers, thoroughly bridged.

The carpenter will understand that the basement stairs, as also stairs from second floor to attic, will be of wood in either case, whether fire-proof or wood construction is adopted by the Commission.

In estimating wood under item 2, consider the colonade above galleries in Senate and House, of wood with turned caps and bases. All grounds for stucco arches above to be of wood, well braced and prepared for lath. The partitions under galleries to be of 3x6 inch, thoroughly bridged, resting on curved wood girder on top of joist; said girder to be formed of 1x6 inch boards, on edge, securely nailed and bolted together—two bolts every three feet—following curve of partition. (See drawings.) The ceiling joist to be 2x6 inch, suspended from iron trusses, 16 inch centers. Grounds for all stucco panelling in ceilings will be of wood, as indicated on ceiling plans and sections.

QUALITY OF LUMBER.

All finishing lumber for basement, first, second and third stories, to be as before specified.

All flooring to be of best quality yellow pine flooring.

All rough lumber not before specified, to be of white or Eastern pine. All lumber to be perfectly dry, and finishing lumber must be kiln dried preparatory to going up. Outside doors and first floor, including casings, to be of cherry. (See detail.) Basement outside doors of white pine.

All exposed wood finish to be hand-smoothed and filled before delivery to the building and preparatory to going up. Neat and careful workmanship will be insisted upon, and none but competent and experienced carpenters will be allowed on the work.

HARDWARE

For front entrance and vestibule doors, and for court room, Senate and House chamber doors, to be extra heavy bronze, with heavy bar pulls. The court room, House and Senate chamber doors to have heavy bronze hinges, to swing both ways, with all necessary trimmings to correspond; all subject to acceptance of Architects, Superintendent and Commission.

HARDWARE—GENERAL.

Inside blinds to have imitation bronze butts—loose pin on outside fold and back flaps on inner fold. Sash to be supplied with imitation

bronze lifts and locks. Door and window trimmings for first, second and third stories, to cost $10 per door and $6 per window, same to be selected by Commission and Architects. These figures do not cover cost of court room and chamber door hinges. Doors and sash will be perfectly fitted and left in perfect running order when building is completed; to that end the carpenter will use extra care in adjusting them in a perfect manner.

Trimmings for basement will cost $4 and $2.50, in the order named.

All transoms to be furnished with Wallensack's transom lifts, best quality, (manufactured by J. F. Wallensack, Chicago), or its equivalent. Also furnish all nails, screws and spikes, bolts, etc., for grounds, etc., required in the completion of the work. No iron nails to be used on the work; estimate on steel.

Inside window-stops to be fastened with round-head screws, blued. The price for trimmings for doors and windows includes sash-weights and transom lifts. Carpenter will also set all ventilating registers required in base or wainscoting. Same to be furnished by heating contractor. Exposed wood finish to be securely fastened with steel wire nails, placed where least exposed.

GALVANIZED IRON WORK.

The entire main cornices, pediments and balustrades, pavilion cornices, etc., above the stone pilaster caps, as tinted purple on elevations, will be of best quality No. 26 galvanized iron.

All joints to be thoroughly riveted and soldered, and the whole work to be put up in the most perfect manner.

Main down spouts will be of cast iron, to be placed in position by plumbers.

The galvanized-iron contractor will connect with them just below line of main cornice, and be required to furnish wrought iron lookouts for all cornices and gutters, fastened to roof framing. The wrought iron contractor will do all drilling of holes for lookouts. Water from dome gutter to be taken down on inside and let onto roof. Use corrugated galvanized iron. Nails and rivets to be galvanized.

In addition to iron lookouts, the carpenter will furnish in place wood lookouts, 2 feet 6 inches, centers for all cornices, pediments, etc.

All ornamental work must be modelled in an artistic manner, renaissance design, and the whole to be a first class job of sheet metal work. Finials to be a combination of wrought and galvanized iron.

Galvanized iron contractor will understand that all plain surfaces in main cornices will be crimped, and grade of iron at these points will be No. 24.

In bidding under item 2, estimate on the entire covering of tower in galvanized iron above the base. The framing in this case will be of wood.

TIN WORK.

The entire main roof, as also all pediments and pavilion roofs, will be of Gilbertson's "old method" guaranteed roofing plates of tin. The main roof of building, as also pediment roofs, will be standing seam 1¼ inches high. The pavilion portico roof will be flat soldered seam. All gutter linings of main roof, back of balustrades, will be soldered flat seam above high water mark, with funnel inlets to down-pipes. The porch roofs and the decks at sides of pediments, to be flat soldered seam. The tops of tower balustrades and pediments, as also the floor of the tower deck, will be of same material, flat soldered seam and all properly flashed. Main cornice gutter, as also all gutters of tower and pavilions, will be carefully lined with tin in the very best manner, same quality.

WROUGHT AND CAST-IRON WORK.

All beams (I), angles (L), tees (T), channels ([), and other wrought iron used in the building, must be of first quality wrought iron, free from flaws and ragged edges, well straightened before use.

BEAM GIRDERS IN STONE AND BRICK WORK.

Furnish in place "I" beam lintels, supporting stone entablature over porch piers and portico columns and other points, as shown on beam plans and sections. All to be supplied with anchors and templates, and fitted with angles for proper support of stone work.

Furnish in place four flat-bar tie-rods in large arch in main pediment on front with anchor ends of size and form as shown in details.

FLOOR CONSTRUCTION.

First, second and third floors to be constructed of wrought iron "I" beams, with corrugated iron arches between No. 18, prepared for concrete filling; the size and location of all beams, channels, etc., is shown on floor plans. Beams comprising first floor are shown on basement plans; beams forming second floor are shown on first floor plans, and beams for third floor are shown on second floor plans. All beams, except where bearing on stone walls, to rest on wrought iron templates ⅜ inch thick, and must have a bearing each end of at least

8x8 inches. All heavy girders will rest on cast templates. All beams over 15 feet span will have tie bars ½x2 inches hooked around flanges. All beams to be punched at each end and to have a ⅝ inch iron hook anchored into wall. (See note, page 16.)

ROTUNDA FLOOR.

Floor of rotunda to be constructed with well-holes for stairways, as shown on plans; the small beams around the sides to be firmly fastened to girders, and all anchored into surrounding walls. The space from small beams down to ceiling line to be furred down with angle irons to receive lath.

Furnish cast templates, separators and bolts for large beam girders.

NOTE.—The iron contractor will state in bid the additional amount for eight portico columns on front elevation, should the Commission decide to substitute them for stone.

CAST COLUMNS AND OTHER CAST-IRON.

Furnish in place the eight cast-iron columns shown in halls and rotunda, same to have top and bottom plates complete and jointed, as shown on plans and details These columns will extend from first floor through to base line of tower frame. The joints on line of the several floors will have ledges carried out for the support of beams and braces. All joints to be faced off in the lathe and set in sheet lead. Frame work around these columns must be neatly fitted and firmly bolted, and the outer ends securely anchored in brick work and floor construction. Also furnish in place the four columns in basement rooms with bottom plates and lug shelves for girders at top. (See details.)

Furnish in place the ten columns in library, first floor, with bottom plates, and top plates fitted for carrying girders and beams for floor above as shown. Also one cast-iron post in railroad commissioner's office, and one in the attorney-general's office; with top and bottom plates as described for library columns. Furnish in place, resting upon iron girders, four cast-iron columns supporting gallery in House of Representatives, and two of similar construction in supreme court room, constructed as shown on detail. (See note, carpenter work, page 16.)

COLUMNS IN SENATE AND HOUSE GALLERIES.

The colonade above the galleries of Senate and House, will be of cast-iron and the grounds of stucco arches will be of wrought iron construction, (fire proof,) as shown on the details, plans and sections.

RETURN WALL OF MAIN PEDIMENT.

The return of main pediment cornice above the roof extending back to tower base will be construcied of galvanized iron, supported by the roof girders. To have proper provision for flashing of roof against it, the entire exterior construction of tower, (exclusive of roof covering of dome,) including lantern top, will be of light cast-iron, securely bolted to wrought iron frame work. Joints to be neatly fitted, allowing for expansion, and all joints on ledges to be made water-tight. (The covering of dome will be of sixteen ounce copper, fastened to wood sheathing). The outer ribs of dome will be of cast-iron, placed on top of the copper. Furnish in place cast-iron ribbed templates of the sizes marked on plans for the support of all plate girders or heavy girders in both floor and roof construction.

BUILT GIRDERS AND TRUSSED PARTITIONS.

The main carrying girders in first and second floors will be constructed of "I" beams bolted together, (and will be used in either case whether wood or fire-proof construction is adopted.)

The partition between foyer and Senate chamber will be trussed, constructed of channel studs or latticed angles, and will have a curved plate at bottom resting on the floor beams and securely bolted to same. The said plate will follow the line of the partition which will also have a channel plate at top with the curved joist of gallery floor framed into it with angles, as shown on details and plans. The partition under gallery in the House of Representatives will be of same construction. The girders between columns of rotunda will be of channels bolted together and to the lugs on rotunda columns, all securely anchored to brick walls, (in fire-proof construction.)

ROOF GIRDERS.

The main girders over the "Senate" and "House," will be riveted plate girders, the web to have vertical angle stiffeners, and the angles forming top and bottom chords will have additional plates riveted on, as shown on the details for same. Where beams are framed into them, they must have proper framing angles; and where they rest on top, they will be bolted to the girder for lateral support. The ceilings will be suspended from these girders, as shown.

The girders supporting roof of front and rear pediment pavilions will be constructed in the same manner.

NOTE.—The foregoing girders will be used in either case, whether fire-proof or wood construction is adopted, as specified under head of carpenter work and shown on special plans of wood construction.

ROOF CONSTRUCTION—TRUSSES.

The general dimensions, sizes and shapes of all trusses and plate girders are given on drawings, the straight part to be straightened in all directions after being riveted up. This is important, and must be carefully examined.

In all posts in both trusses and purlins, the flange of post, which is cut off, shall take a good bearing at top and bottom, and not depend on rivets for post strains.

In trusses where posts are outside of chords, the ends are to be cornered so to get a full and secure bearing on the angle irons, forming the chord both at top and bottom of posts.

The top chords of all trusses to be spread $\frac{5}{8}$ of an inch apart, (purlins also), and suitable wrought-iron plates are to be placed behind braces, of proper thickness to fill this space in trusses.

Washers of same description to be placed behind posts of purlins to fill the space, and behind the ends of the lower members where they are riveted into top chord. All braces and trusses are to have angles turned outward or away from each other, and are to be riveted together at intersections.

SKYLIGHTS.

Furnish in place the roof skylights, of iron construction, with copper gutters. Glass to be one inch thick, hammered or ribbed, held in position by brass hooks, and leaving space for the discharge of water underneath. Hayes' patent, or its equivalent, may be used.

TRUSS TEMPLATES.

All trusses to rest on cast templates, as before specified.

PURLINS.

All purlins marked will be made of beams with framing angles; must be well made and ends cut for mitres on the hips. Frame proper angle-irons around skylight openings for reception of sash, as also entire skylight roof frames, and for support of pediment gables, four fronts. Where cross purlins meet on top of trusses, proper cast-iron shoes must be bolted to trusses to receive the purlins or beams.

RIVETING.

All rivets used shall be equal in quality to "Berden's best." They shall be properly heated and have length sufficient to make head as

large as other heads, and be headed with a cup swage. All rivets found loose by tapping with a hammer will be cut out and replaced. No rivet holes shall be more than one-sixteenth inch greater in diameter than that of the rivet when cold, and shall be accurately spaced and not forced into place by "drift pins," except sufficiently to bring the parts into proper place. In all joints, in all parts of the work liable to a tensile strain, rivets of such size and such numbers shall be used as to make the aggregate shearing ends of the rivets equal to the tensile area of the member. Where a sufficient number for this cannot be used at a proper pitch, for want of room, "gusset plates" shall also be used. All riveting to be done in a thorough and workmanlike manner, equal to the standard of first-class iron bridge work.

ROOF COVERING.

Entire roof will be covered with 2 inch plank, dressed on one side, laid flat, bolted to purlins and rafters by means of $\frac{1}{2}$ inch bolts, hooking between and around leg of angle, forming top chord of purlins and and through the flange of beams. The lower edge of plank, at its junction with wall, will rest in an angle iron shoe anchored to wall; and plank will be furnished in place by carpenter.

TOWER CONSTRUCTION.

Tower construction is shown on plans, sections and details, and must be a secure job, well riveted and put together. Bolts may be used for the upper curved portion, with "Atwood's Safety Nuts," or their equivalent.

THE "SENATE," "HOUSE," SUPREME COURT AND ROTUNDA CEILING.

To be as shown on scale detail. Two inch angles, 2 feet 4 inch centers, framed and riveted to angle plates at top and bottom, will form cove, and ceiling will be carried by "I" beams, 5 feet apart, suspended from roof trusses.

The rods carrying ceiling to have a sectional area sufficient to carry their several proportions of the incumbent weight (construction and plastering stucco), and to have turn buckles for adjusting same. Thread end of rods to be upset to full section, exclusive of the thread. Upper ends of suspension rods to be fastened to lower chord of plate girders, thoroughly riveted or bolted (through the web), and bottom end to have a heavy jaw clutch, with jamb nuts to grasp the upper flange of ceiling beams. Iron contractor will furnish in place all iron

brackets or angles, required for support of seat steps of gallery in each of the Senate, House, and Supreme Court rooms.

IRON STUD PARTITIONS.—(FIRE-PROOF.)

All partitions throughout the building (colored blue on plans) to be constructed of 6 inch channels, or angle lattice stud work, 2 feet centers, with proper plates on bottom and top—fastened to beams—heads of openings to be trussed. The partition at rear of Senate to have channel plates riveted on beams for support of said partition on the floor, as before specified. (See plans). At all points where double beams are used they must be bolted together with cast separators and have extra large templates.

STUCCO AND CORNICE LOOKOUTS.

Furnish in place ¼x1 inch iron lookouts, or grounds, for all stucco cornices and panel work throughout the building bolted to iron work and fastened to brick in a permanent manner, ready to receive lath. This work must be put in place in a most secure and perfect manner, perfectly square—ribs in line and ceiling level. Angle irons may be used for grounds at all points where greater strength is required. The ceiling under the galleries of the Senate, House, and Supreme Court rooms, will be of curved angles 1¼ bolted to floor beams spaced ready to receive the lath. The rotunda ceiling will be of angles suspended from above, with framing to receive the lantern sash. The niches between the columns on the third floor of rotunda, as also the frame work of the arches and cornice on this floor will be of wrought iron construction, as shown on plans, sections and details.

CORNICE LOOKOUTS.

Furnish in place L iron lookouts, 2 foot 6 inch centers, for entire main cornice and pediments, securely bolted to roof beams and anchored into brick work. These lookouts must be punched with ⅜ inch holes for fastening wood at side, as shown. If wood construction is adopted, the iron lookouts will be omitted.

LATHING.

All ceilings, light shaft and stud partitions, to be lathed with corrugated metal lath, (Hoyt's patent or its equivalent), fastened to 1½ inch L, bolted to floor beams and ceilings with ⅜ by 1 inch lever bars—lath to be fastened with strap irons and hook bolts, hooked around leg

of angles. The grounds for all stucco work will be lathed in same manner.

PAINTING—IRON WORK.

All work put together at the shop and all parts inaccessible afterwards, to be covered with one coat of red lead and boiled oil before riveting up; and afterwards the whole to be painted in like manner before shipment.

All floor beams and arches must be painted in same manner before being set.

GRAND STAIRCASE.

From first to second floor will have cast-iron treads, risers and wrought strings, first run to have four strings, and each run from platform up, to have four; to be nine inch channels, with work on top for treads. Outside strings to have holes punched for bolting plank on bottom, and panelling of wood on outer strings. The bottom of strings to have lug and plate, and must be firmly bolted to floor beams, and to top of iron studding supporting platform, making a perfectly rigid support of second runs. Steps and risers to be smooth castings of designs shown on detail. Face of risers will be neatly panelled, and top of treads fluted. All to be firmly bolted to iron strings, which will be rough and obscured by final wood finish. All as shown on detail. The outer strings receiving wood work will have the flanges turned out.

FLAG STAFF FASTENINGS.

Furnish in place substantial fastenings in roof and attic beams for two flag staffs, shown on plans and elevations.

VAULT DOORS—IRON.

Furnish for each vault iron doors and frames, with double vestibule doors upon the inside of each; to be in every particular a safe job, with combination locks; in other words, made by a safe and lock works, and must be fire-proof. Estimate the cost at $100.00 each. Commission and Superintendent reserve the right of selection. Furnish in place four iron tie-rods and clamps for support of each vault arch. (See plans.)

WIRE SCREENS.

Furnish in place sliding window screen guards in all third story windows (transoms of second story windows), said screens to be crimped wire No. 9, with 1½ inch mesh, with metal rosettes placed at intervals of 6 inches; they will be fastened to wood sash and slide up in wall pockets. Must be provided with catches to sustain them when raised. The cold air room windows in basement will be provided with wire screens, 1 inch mesh, full size of window, hung on substantial wrought butts and provided with fasteners, hooks and staples or thumb latches. Sash or frames for screens to be 1⅜ inches thick.

PAINTING AND GLAZING.

All galvanized, cast iron, and exterior wood work not otherwise specified, to be primed with yellow ochre paint, and over all two coats best white lead and oil paint; last coat to receive a coat of Monroe sand.

ROOF AND DOME.

Dome to be of copper, as before specified. All ribs and outside work must imitate, as near as possible, the stone used in the building. All outside wood work, except doors, to receive three coats painting material on top of priming. All frames to be primed over before setting.

All tin roofs throughout will have three coats iron-clad paint; two weeks' time between each coat.

The under side of planking or other wood construction in roof will be painted with two coats native plumbago mixed with pure linseed oil, or other fire-proof paint acceptable to the Architect or Superintendent.

SASH.

Outside to be primed, then two coats dark olive or bronze green. The frames stone color, sanded.

OUTSIDE DOORS.

All outside doors above basement to have a hard oil finish, rubbed down, first class; entrance doors the same.

Inside iron work to have three coats, columns to be painted in color to harmonize with decorations, (to be hereafter considered,—probably antique bronze), and iron work of stairs in imitation of the wood used in finish. All iron work exposed in the light-shaft to be painted white.

INSIDE FINISH.

The basement, office rooms and third story rooms, will have a varnish finish; the wood to be filled and receive three coats of varnish, "hard oil finish," well haired down between the coats.

The furnace rooms of basement and all wood and iron work, not included in the room finish, will have three coats of paint.

The balance of all inside finish, including sash and blinds, first and second stories and third story halls and rotunda, to be finished in hard oil, in the best possible manner, using nothing but best material and labor. Pratt & Lambert's New York hard oil finish is recommended, with Sherwin, Williams & Co's. Cleveland filler. Three coats varnish, the last rubbed down with pulverized pumice stone and water, polished with sweet oil.

FRESCO.

Fresco work to be hereafter contracted for by the Commission, and will not be considered under these specifications.

GLASS.

For the entire exterior of building, first and second stories, to be French polished plate glass; for basement and all above second story, to be double thick "French sheet," unless otherwise specified. All interior glass for doors, windows and transoms, to be double strength French sheet.

Glass for roof skylights to be hammered glass one inch thick. The frames to be of the Hayes' patent, or its equivalent, furnished by the wrought iron contractor. See also skylights on ledge of tower-base; same quality.

DOME LANTERNS.

Lantern of rotunda to be opal and rolled cathedral-stained glass, in different shades and Mosaic designs, set in lead sash; to have movable sections, worked with cords, for ventilation. Design for this glass must be submitted to Architects, Superintendent and Commission, before use.

The ceilings of "Senate" and "House" will be fitted with lanterns of same material and construction as the rotunda, provided with movable section and cords, carried to side walls by means of pulley blocks.

The ceiling lights in the third-story halls will be of white enamelled glass, set in wood sash, in small lights, as shown on plans, with movable sections and cords, as described for the other lanterns.

All window and door glass must be set, bedded, sprigged and puttied in best manner, and left in perfect condition when building is accepted. Inside door-glass will be set in putty bed and fastened in with wood stops.

PLUMBING AND GAS FITTING.

Plumber will understand that no drain tile will be used inside the building walls. He will estimate, therefore, on making all connections to tile drain *outside* the walls with cast-iron pipe, extra heavy, suitable holes being left through them for that purpose.

"SUPPLY."

From city main run a 1½ inch extra strong lead pipe into the building, and up to basement ceiling; from the above pipe, branch a 1 inch extra strong lead pipe, extending it along wall near ceiling, well secured on strips with tags and screws, supplying each closet in basement with water through ⅝ inch extra strong lead pipe, each urinal with ½ inch extra strong lead pipe, and each basin with ½ inch extra strong lead pipe.

FIRST, SECOND AND THIRD FLOORS.

Branch ¾ inch extra strong lead pipe to supply water closets and wash stands wherever shown on plans.

The wash basins and urinals on these floors to be supplied through ½ inch extra strong pipe. All branch supply pipes must run horizontally in basement, thence up to the point of use, where possible.

NOTE.—The fixtures, (*i. e.*, wash stands, urinals and closets,) on third floor will not be put in under these specifications. The plumber will, however, estimate upon putting in place all supply and waste pipes necessary to their future introduction, the ends of the pipes to be securely sealed until such time as the Commission decide to put in the fixtures.

STOP AND WASTE COCKS.

Put ¾ inch stop and waste cocks in basement, so as to shut off each room separately—not to interfere with each other.

Place at a point where pipe enters the building 1¼ inch stop and waste cocks to shut off water from whole building. All lead pipe in building must be well secured to boards with lead tags and screws.

All horizontal pipes to have strips under them to prevent sagging.

Where pipes run into wall pockets they must be secured to boards as above, nailed to brick work.

All wood work work to be done by carpenter.

SOIL PIPES.

The soil pipes for water closets to be four inch cast-iron, extra heavy, coated inside and out with asphaltum. All joints to be well caulked with hot lead and oakum, being well connected to tile drain and extending up above the roof.

DOWN PIPES.

Plumber will furnish in place, well secured to wall, the 6 inch down pipes in corners, connecting in gutter with main cornice and sewer, all joints caulked, as marked on plans. *Down pipes*, or "D. P.," to be 6 inch cast-iron. Also furnish the 6 inch connections to main sewer. All soil pipes must extend up to atttic and out of roof.

WASH STANDS.

Furnish and fit up complete the wash stands shown on basement, first and second plans; each to have a 14 inch P. O. improved wash basin with metal connections, ball plugs and chains, supplied through large nickel plated compression basin cocks, (Fuller's patent,) each to have a 1½ inch lead waste pipe leading to and connecting to soil pipe, with brass soldering nipple.

MARBLE.

Furnish and set marble slabs for wash stands, size marked on plans; to have suitable backs 11 inches high, chamfered edges; to be made of the best Italian marble, countersunk and well polished. Backs to have chamfered edges also, and be well jointed.

MARBLE FOR BASEMENT URINALS.

Urinals in basement lavatories to be placed in stalls with marble floors, backs and sides. Floors to be 2 inches thick, countersunk. Sides and backs to be grooved together and into bottom. Size stalls, 2 feet 6 inches by 2 feet 6 inches, by 5 feet 6 inches high. All pipes must be concealed behind slabs, and each stall floor to have strainer and separate waste pipe, properly trapped and connected to sewer.

Place marble strips 6 inches across top of stalls. Thickness of stall slabs, 1¼ inch.

LEAD LININGS.

Line underneath all closets, above basement, (full size) with 4 pound sheet lead, to turn up 6 inches on all sides, and to have a 1¼ inch lead waste leading to basement, but not to any lead waste pipe; to have brass strainer. This to be done in first, second and third stories. Wash stands to be lined in same manner, as also urinals.

WATER CLOSETS.

Fit up complete where shown on plans, (basement and second floor only,) J. T. Cammeyer & Co's "America" (or equivalent) earthen bowl washout closets; to have wall pull and service tank supplied through ⅝ inch extra strong lead pipe, as before specified; each closet to be connected to soil pipe with "Y" branches by cast-iron sleeves, calked with hot lead and oakum.

URINALS.

Furnish in place complete where shown on basement plans, large earthenware Smith's Odorless Ventilated or Henry Huber & Co's Urinals, projecting front, or equivalent, supplied as before specified, through plated compression urinal cocks, each to have a 1½ inch lead pipe leading to and connecting with soil pipes with brass soldering nipples, and each to have a 2 inch "Sanitas" trap close to urinal. Waste pipe at urinal connection to be covered with plated shield.

DRAIN COCKS.

All pipes throughout the building to be graded, and have drain cocks placed at lowest points for convenience in draining the whole system of water when necessary.

TRAP VENTILATION.

All traps of water closets to be ventilated as directed by architects. Vent pipes for closet traps to be 2 inch lead pipe. Where possible, the vent pipes may be connected to soil pipe above *the last or highest point of receiving waste.* Where this cannot be done the vent pipe must be run separately to attic. The connection of vent pipe to traps must be done in a proper manner. Traps for all wash stands to be "Sanitas."

STAND-PIPE.

Furnish in place a 1½ inch galvanized stand-pipe, (galvanized gas pipe,) extending up to third floor, where marked on plan; each floor

to have a N. P. bibb cock with hose connection, ⅞ inch, placed about two feet from floor, with stop cock in basement.

In bidding on items 1 and 2, estimate on sealing the ends of all gas and water mains in central portion of building, and estimate on all connections to them in items 4 and 5.

SEAT VENTILATION OF WATER CLOSETS.

Flues will be noticed adjoining all water closets (in brick walls). Suitable connections must be made with them for ventilating under seats of all closets; to lead unobstructed to attic and out of roof.

Furnish all materials and perform all labor necessary to complete the work to the entire satisfaction of Commission and Architects.

GAS PIPING.

Furnish in place gas pipe leading to all points marked -O- (see specifications on file) on plans, according to the rules of City Gas Co., of Cheyenne, Wyoming Ter.

REFLECTORS.

Furnish in place in the ceilings of the Senate Chamber and House of Representatives, four U. S. double cone reflectors with ornamental coronas and corrugated silvered glass. Two reflectors in each room, before mentioned and one in the Supreme Court room. Reflectors to be placed where shown on ceiling plan and they will be 5 feet 6 inches in diameter, containing 30 burners each, with shut-off at convenient points of access. Gas pipe must be of sufficient capacity to supply reflectors.

ELECTRIC LIGHT WIRES.

Contractors must include in bid the complete running of wires necessary to the future lighting of the building by electricity; said wires to be put in before the building is plastered, and be concealed as far as possible, according to the system and rules of the Electric Light Co., of Cheyenne, Wyoming Ter.

All plumbing, drainage and water supply must accord with the city ordinance governing sanitary points.

GENERAL ITEMS.

It will be understood by the contractor that the heating and ventilating apparatus, including registers, must be included in his bid, on

the conditions named in the "Specification Relating to Heating and Ventilation."

All material and labor required in carrying out the work as specified under the different heads and as shown in plans, etc., shall be furnished by the contractor of each said branch of work as set forth; for instance, the stone contractor shall do all work pertaining to stone masonry, the brick contractor shall do all work pertaining to brick masonry, the plasterer all work pertaining to plastering, the carpenter all work pertaining to carpentry, and so on, except when otherwise specified.

In all cases where a particular thing is specified, or its equivalent, the equivalent will not be allowed without the consent of Architects or Commission.

Furnish all labor and material required to protect the cut stone projections, also to protect the walls of building and frames during the winter exposure.

Bids in gross will be received at the office of the ~~Wyoming~~ Capitol Building Commission in Cheyenne, up to noon 25th of August, 1886, as follows:

First:—Gross bid for the construction and full completion of central portion of building, (*i. e.*, exclusive of the two wings containing the House and Senate,) in iron construction, (fire-proof.)

Second:—Gross bid for construction and full completion of central portion of building, in wood construction, including tower of same construction, with galvanized iron covering above base.

Third:—Gross bid for the construction and full completion of central portion of building, in iron construction, exclusive of tower above base.

Fourth:—Gross bid for construction and full completion of both wings, in iron construction, (fire-proof,) exclusive of center portion of building.

Fifth.—Gross bid for construction and full completion of both wings, in wood construction, (*i. e.*, exclusive of central portion of building.)

It will be understood that items 1 and 4 cover a complete building, according to plans and specifications, in iron construction, and tower complete, with cast-iron covering. And items 2 and 5 cover a complete building according to plans and specifications, in wood construction, and tower complete, in galvanized iron covering.

Contractors will note that all girders, roof trusses, rotunda construction to tower base will be of iron, whether wood or iron construction is adopted.

The bids for central portion must include the bricking up of all openings in walls opening to wings; and bidders for item No. 3 must include a substantial deck covering over tower foundation above its base.

Contractors in estimating fire-proof floor construction, will state in bid the difference in cost between that shown in drawings, *i. e.*, corrugated iron, concrete and iron lath, and porous terra cotta.

The Commission reserve the right of choice and benefits derived.

Each contractor must furnish with bid a complete schedule of each and every kind of material and labor required for the construction of building, showing each class of work and each story of the building complete in itself.

Contractors will please observe the above and bid on blanks furnished by the Commission, in order that bids may be considered; and don't forget to sign bid and have bond properly executed.

NOTE.—The Architects wish to explain the reason for the above mode of taking bids. The Commission desire to make the within described building as near fire-proof as possible, within the appropriation; hence the division and separation, giving all contractors an equal chance and full competition, enabling the Commission to make an award at first letting, a point so much desired by all reputable contractors, especially so when the necessary expense attending this letting is taken into consideration.

The Architects and Superintendents in charge of said work will give monthly estimates of 90 per cent. as the work progresses, and upon completion of contract and acceptance of the work by the Architects and Commission, a certificate for the remaining 10 per cent

The successful contractor will be required to furnish an acceptable bond, in a sum equal to ~~one-half of~~ double the amount of contract, for the faithful fulfillment of the same.

The building must be completed ~~by the 1st day of~~ as provided by contract

GENERAL SPECIFICATIONS RELATING TO THE HEATING AND VENTILATION OF THE BUILDING.

The Commission has adopted the Ruttan-Smead system of warming and ventilation, and the general contractor will construct the building in accordance with the requirements of the said system of warming and

ventilation, as shown upon the plans and described in these specifications furnished by Isaac D. Smead & Co., Toledo, Ohio, who will be held responsible for the successful operation of the same. They can be called upon at any time to aid the contractor to fully understand the plans or to introduce the apparatus. It is further understood that the above mentioned plans are the property of Isaac D. Smead & Co., and are to be returned to them upon the completion of the building.

The general contractor for the building will provide, furnish and perform all brick and carpenter work connected with the construction of the warm air, smoke and ventilating flues, and the setting of the furnace, as shown on the various plans, and by the several drawings furnished by the Architects, and also furnished by Isaac D. Smead & Co. Special reference must be had at all times, by both contractors and superintendent, to the special sheets showing the size, location and direction of all such, and also showing the location of all register openings and valve frames, and which must be properly bricked into place, and under the direction of said Isaac D. Smead & Co., heating and ventilating engineers, Toledo, Ohio, or their authorized superintendent, who will have supervision of all parts of the work in connection with the warming and ventilation of the building; they not being allowed, however, in any case to interfere with or change the constructive design of the building as planned by the Architects, without consulting with them and obtaining their consent. In case any changes be found absolutely necessary for the successful ventilation of the building, said changes, if any are made, must all be made by and with the consent of the Commission.

Said Smead & Co. will, at the proper time, place in their proper position the furnaces, registers, warm air and smoke pipes, and the contractor for the building will at such times as they may direct, do all mason and carpenter work necessary in connection with the setting of the said apparatus, and pay said Isaac D. Smead & Co. the following sum, namely:—$7,000.00 for that part of the apparatus located in the building, exclusive of the Senate and House additions shown upon the plans, and described in the specifications furnished by the said Smead & Co.; payments to the said Smead & Co. to be made upon estimates furnished by the Architects, and the said Smead & Co. are to receive from the general contractors, orders upon the Building Commission for their pay.

The general contractor must protect from damage, by frost or breakage, the entire heating apparatus after it is set in position by the manufacturers, and deliver it to the Commission in the same condition as when set by the manufacturers.

The said Smead & Co. can be called upon to furnish, at any and all times, information with reference to anything pertaining to their part of the work.

Cheyenne Aug. 25th 1886. The contract for central section of building (exclusive of the two wings containing house and senate) has this day been awarded to A. Feick & Bro. of Sandusky Ohio under their bid ~~for~~ of $118,675.13 for second item which provides for wood and iron construction with the following changes added at an additional cost of $5600. Tower construction of wrought iron instead of wood carried as follows. Base cast iron - Superstructure and finial - Galvanized iron - and dome of copper - Base roof to be of galvanized iron including cornice coming over to cast iron. all as provided in plans, specifications and details including plastering of basement ceiling. The heating and ventilating of building by Isaac D. Smead & Co. at a cost of $7000. was also added to above bid making a total of $131,275.13

FINALLY.

Contractors will furnish all materials designated under the different heads required to build and complete the said structure, and they will understand that materials so furnished must be accepted by Superintendent before use. They will cause all labor to be performed in the best manner, and will be required to follow plans and drawings referred to in these specifications in their true meaning; and should it appear that any work hereby intended, or matters connected herewith, be not fully shown or explained in plans and specifications, the contractor shall apply to the Superintendents for such further detailed explanations as he may require, and perform their orders as a part of the contract.

It will be further understood by contractors that the building herein described, as shown in plans, sections, elevations and details, to which these specifications refer, is to be a complete and finished job of its kind, with exceptions before and herein noted.

It is understood that no advantage shall be taken of any clerical errors that may have occurred in either plans, specifications or details, the meaning of which is to exhibit or describe all that is necessary to fully complete the said building in all its requirements.

Phase I [1888] Specifications

It is further agreed and stipulated on the part of the contractor or contractors to whom the award is made and whose signatures are hereto attached, that they and each of them have examined carefully the plans and specifications for the construction of said building with said Architects, and hereby agree that the same are so full and complete; that said contractors undertake that in the completion of said building, or such parts of it as the Commission may decide to contract, there shall be no extra charge for either labor or material required to make said building or parts of it complete and substantial for the purpose designed. This, however, not to apply to matters excepted in specifications.

It is further understood that no extra work will be paid for unless ordered by the Commission and Architects, the amount of same being agreed upon and inserted in contract, and should changes be required during construction of said building, the value of such change or changes shall be arrived at *pro rata* by cost of building, and added to or taken from the contract price, as the case may be.

Each contractor, upon completion of his contract, will, preparatory to settlement with the Board, remove at his own expense, all rubbish (not required for concreting or filling lot) pertaining to his part of the work, from the premises.

When the building is fully completed and accepted by the Architects and Capitol Commission, the contractor shall return all plans, specifications and details, to the office of D. W. Gibbs & Co., Architects, Toledo, Ohio.

A. Reich & Bro

Contractors

E. Nagle
C. N. Potter
N. J. O'Brien

Capitol Building Commission

SPECIFICATIONS

FOR THE

ERECTION AND COMPLETION

OF THE

EAST AND WEST WINGS

—OF—

The Capitol Building

—FOR—

TERRITORY OF WYOMING,

LOCATED IN CHEYENNE.

AS DESIGNED BY

D. W. GIBBS & CO., ARCHITECTS, TOLEDO, OHIO.

TOLEDO, OHIO:
BARKDULL PRINTING HOUSE.
1888.

Certificate of Approval.

OFFICE OF

The Wyoming Capitol Commission.

CHEYENNE, WYOMING,.....*1888.*

We, the undersigned, do hereby approve and adopt the revised plans and specifications of the East and West Wings of the Capitol Building, Wyoming Territory, made and submitted by D. W. Gibbs & Co., Architects, of Toledo, Ohio.

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Specifications.

[NOTE.—It will be understood by all concerned, that the central portion of the within described Capitol Building has been erected and is now occupied. The wings, to which the following specifications refer, will be added to the east and west ends of the present structure, and will complete the building as originally designed. The contractor will take all necessary precautions in protecting the present building and contents, and prosecute the work without detriment to the occupants. Only such parts of the capitol grounds must be used for the piling of materials as will not interfere with travel to and from the building.

The original plans for the entire building are on file at the office of the "Capitol Building Commission," and contractors are respectfully referred to said plans, in connection with the several drawings for the wings, in order that they may fully understand what will constitute the finished building.]

The several drawings herein described are designated as follows:

1 – Block Plan.
2 – Concrete Plan.
3 – Basement Plan.
4 – First Floor Plan.
5 – Second Floor Plan.
6 – Third Floor,or Gallery Plan.
7 – Plan of Roof and Attic.
8 – Front Elevation — South; both wings.
9 – Elevation — West.
10 – Elevation — North; both wings.
11 – Elevation — East.
12 – Transverse Sections.
13 – Longitudinal Section.
14 – Beam Plans, (4) iron.
15 – Beam Plans, (4) wood.

The above drawings are made to a uniform scale of eight (8) feet to one inch, and together with scale and full size detail sheets and these specifications represent all that is necessary to complete the Capitol Building.

GENERAL ARRANGEMENT AND DIMENSIONS

Are to be obtained from plans, and the figures on same to be taken in preference to measurement by scale; and should any discrepancies be found, the contractor shall apply to the architects or superintendent for instructions—they holding the right to interpret their own drawings.

It will be understood by the contractor that the figures given are correct, in accordance with the general plans, and for his own protection, he will prove the same by actual calculations before placing orders or erecting any part of the work; but as slight variations may have occurred in the execution of the various parts of the central portion, the contractors interested in the different portions of the structure will be required to ascertain the exact dimensions by actual measurements, and will be held responsible for the proper construction of the work in accordance therewith. The foregoing clause relates particularly to the heights of stone courses, heights of stories, floor lines and pitch of roof.

EXCAVATION.

Grade Line.—The present building will establish the grade line. Excavate full size of each wing, also for foundation footings shown on basement concrete plans and sections. Excavate for step foundations, tile drainage, gas and water pipes, areas, and all else under head of excavation required by the plans.

Fill and Grade.—When foundation walls are complete and mortar dry, fill in the surplus earth, ramming the same well down. The soil taken from excavations shall be graded about the building as shown by the grade line on sections, and as directed by the Capitol building Commission ~~and superintendent~~. The gravel and sand not needed by contractor for concreting or filling, as before specified, will be removed from the premises.

Security of Foundation.—It will be understood by contractors that a good and sufficient foundation is anticipated at bottom line of above specified excavation; if however, upon examination by the Capitol Building Commission and architects, (after excavation is made), a greater depth is found necessary, it will be provided for by said Commission. Excavation must be made sufficiently large to allow the pointing of both sides of the wall.

Drainage.—Contractors will be obliged to leave openings for sewer pipe through walls where shown on basement and concrete plans, or where required by ~~superintendent~~ the Commission, and build in 9-inch hard tile at such points for sewerage, water and gas connections. Construct all drains outside of best hard tile material, laid in cement joints, and in best manner, of size and location as shown on concrete plan. All piping from inside of building shall be furnished in position by the plumber, as hereafter specified. Connect all wing drainage to that now in

position under central portion, discharging to the sewer on Ferguson street; the remaining storm water from down pipes, will be conducted away as shown on plan. All drains must be dug the exact depth, so that tile will have natural bed; then place tile in position, connecting carefully and thoroughly each joint. Swab out by hand, after each section is laid, and free inside from all mortar droppings. Drains to have uniform fall from starting point to sewer. All branch connections will be made by means of Y's. For sizes and system of drainage see footing and concrete plan, also block plan. Trenches must be carefully filled after tile is laid, and well tamped down. Gas and water connections are described in plumbing specifications.

Concrete Foundations.—All foundations to be of concrete, composed of good, hard stone, or gravel, broken to the size of hen's eggs, (none to be larger than to pass through a two inch ring), and clear, sharp sand—the exact proportions to be hereafter determined by the superintendent—depending upon the age of cement; but will not vary much, however, from one part cement to two parts sand. The mixing of concrete will be done in in a large, tight box, first by measuring in sand and cement, then turn on water, and after quickly mixing to thickness of slush, throw in the stone and work rapidly until all are thoroughly coated, then into the trench. Care must be taken that no more mortar be used than is required to fill the interstices between stone, and that each stone be coated with mortar. The concrete to be level in trenches in layers of about 7½ inches, and to be thoroughly rammed down. Each batch to be mixed and put in place in quick time. In no case from the time of taking water till it is deposited in trench, should it remain quiet a moment, and must be constantly turned to prevent setting. Each layer to remain exposed 24 hours, and to be wet down every day, as directed by superintendent. Contractors will understand that all concreting must be brought to level line at top where stone work is to begin. (See concrete plans). The trenches must be shaded as soon as concrete is put in to prevent a too rapid evaporation of water.

MASONRY.

The contractor for mason work will estimate upon all cutting and fitting necessary in joining his work to the present walls.

Footings and Rubble Masonry.—Footings will be of best Ft. Collins stone or its equivalent, and must extend through wall in alternate courses and to break joints at least one foot. Spawl work is strictly forbidden; to that end all vertical joints must be fitted nicely together and securely bedded in the trenches.

Basement Walls.—All walls throughout the building above footings and extending to underline of first floor beams, (except brick work, colored red), including all areas and step foundations, as colored blue on plans, to be of best rubble masonry, constructed of good sized stone with level beds and fitted perfectly together. A perfect bond will be insisted upon and through-stone will be required every two feet in height. No toothing will be allowed. Leads must be run out at not less than an angle of 45 degrees, and in no case will one wall be allowed more than scaffold high above another. Contractor for rubble masonry will be required to line all flues with brick and to plaster said flues in the best manner. All stone to rest on natural bed and mortar joints must be tight. In other words, mortar will not be allowed to fill large spaces. Great care must be taken to make a perfect and substantial job, and the stone masons will understand that nothing short of this will be accepted. (See foregoing drainage.)

Beam Templates.—Contractors for the iron work will designate location of all beams and girders, preparatory to the leveling up of basement walls. The contractor for rubble masonry will locate at such joints and on level line of basement story, a large sized stone—at least 16x24x4 inches, to form template for all first floor beams and girders.

Quality of Stone—for footings and rubble work to be of best Fort Collins, known as "Stout" quarries, or its equivalent. Step and area foundations to be constructed of rubble masonry, as above described.

Mortar—for concrete to be composed of fresh Louisville cement, or its equivalent, and sharp sand—one part cement and two parts sand, by measure. Mortar for footings and rubble work will be composed of fresh burnt quicklime and sharp sand sufficient to make a good mortar—proportions to be determined by the architects and superintendent. All joints in each course to be thoroughly grouted with liquid mortar of same material as above described. All joints to be neatly pointed inside and outside, and allowed to dry before filling in the earth around them.

Note.—In anticipation of slight settlement due to shrinkage, etc., the heights of the new walls should be kept up a little at the bottom, the difference becoming less as the walls are carried up and as the weight is increased. In the opinion of the architects ½ inch would be sufficient up to the line of the main water table.

Cut Stone—for the entire exterior of building will be finished in the following manner:

Basement Story.—Plinth course to be vertically tooled, four batts to the inch. Walling between plinth course and water-table to be bold

split-rock face with 2 inch tooled margins and angles, 8 batts to the inch.

First Story.—Wall spaces of pavilions between crandled piers to be same as above. Piers to have 2 inch square sunk joints, 2 inch tooled margins and fine crandled panels raised three-fourths of an inch.

Second and Mezanine Stories.—Wall spaces between piers and pilasters to be rock-faced with one inch tool margins, (8 batts), on face of angles, and all reveals tooled back; pilasters to have tooled margins. The plain faces of pilasters and columns to be rubbed work; other plain faces, (as friezes, belts, pedestals, panels, etc.), to be tooled, 8 batts to the inch. Mouldings to be rubbed. See details for full explanations of the different grades of work as above specified. Rock-face to be bold and free from tool marks on face; blocks dressed perfectly square, pitched off to a level bed and set level with plumb bond. The voissoirs of arches must be especially neat, even joints, not over one-fourth inch thick. Ornamental carving as per detailed sketches, and must be done by a professional carver and not by a stone-cutter. The ornaments to be renaissance. (See detail). Contractor will understand that the above covers the entire exterior walls of building, (four fronts), from grade line to top line of pilaster capitals. All pediments, gables and chimneys will be of galvanized iron.

All of said cut stone work must be done in the best manner, as shown in plans, sections, elevations and details, the different courses to be bonded together and to brick backing; beds to be at least 4 inches and 8 inches alternate bond.

Iron anchors and angle cramps must be used in the alternate thin courses. The piers in end elevations to be of solid block stone, running entirely through the wall. Jamb stones must return to frame without closures. Cut stone work to be set in white putty and sharp sand mortar, thickness of joint to be small as practicable, and not over $\frac{3}{8}$ of an inch. Mortar will not be allowed to slop over on stone while being spread. Great care must be taken to make even joints, that the job may show good workmanship when completed.

All stone must be cut, fitted and set by the stone contractor, he furnishing his own mortar therefor. Each course of stone from bottom to top must be jointed with reference to a proper bond, whether so shown on elevations and sections, or not.

Stone containing iron will not be allowed in the building where exposed to view. It will therefore be necessary that the contractor carefully inspect his work after cutting and before setting. He will also see that his work is suitably protected from injury during the progress of building, and when brick work is completed, all the cut stone must

be cleaned off with sponge and water, to the end that no mortar or other stains be left, and the joints neatly pointed in stone color. All head joints in projecting courses of cornices, etc., must be securely pointed in cement mortar by stone contractor. Flush blind joint in cut work and a bead in all rock face. Stone contractor will furnish all anchors repuired in his part of the work. Examine carefully the details and and see "General Items."

All rubbish connected with the above work. (except such as can be used for concreting), must be removed from the premises by the contractor.

Porch Floors.—The porch platform and ceiling over west entrance, will be of Fort Collins stone, or its equivalent, joggle jointed and caulked with lead and oakum. (See details). Cope all area walls with 4 inch flagging.

Note: The contractor for cut stone work will understand that the porch lintels and large window, long spans, (entablature), will be supported by I beams of steel, anchored as shown on drawings, with heavy bolts and washers. He will estimate on doing all cutting and fitting in joining his work to the present building and leave the work entirely finished.

Quality of Cut Stone—to be the best. Contractors are required to furnish cut samples showing quality of work specified for the building, with bid.

The line of division between stone and galvanized iron, will be the bottom line of cornice course, and all above pilaster capitals will be of galvanized iron, (as specified under head of galvanized iron work and tinted purple on elevations).

Brick Work and Concreting.—Construct all basement carrying walls and piers, (colored red on plans), of hardest burned brick, laid in fresh cement-mortar, well mixed with sharp sand,(3 parts sand and 1 part cement), and to be used before first setting. Walls to be bonded every fourth course, both sides being laid by line.

All brick must be thoroughly wet down and laid while wet in as close joints as brick will admit, each course of brick to be grouted. All joints must be filled, to the end that walls will be perfectly solid; and great care must be taken to make mortar bed for all brick work, full. Turn all arches triple row lock, carpenter to furnish centers. Study carefully the plans, and see to it that all flues, slots, channels etc., as thereon shown, or that hereafter may be ordered by the architects, are properly started and none omitted. Also note all windows having recesses for panels underneath. Construct fire places throughout the building wherever shown, turning hearth arches for same.

[Note.—Contractors will understand that outside steps and main plinth course at grade line, including basement door and window sills, will be of Ft. Collins stone or its equivalent; all other exterior cut stone work above said plinth course, will be of best quality of rock from "Rawlins" quarries.] or its equivalent

All brick work not before specified, for entire building, will be of good, merchantable, hard brick, bonded every fifth course, laid in quick lime and sharps and mortar, as described for basement work.

Brick contractor must set all iron templates for beams and trusses resting on brick walls perfectly level. Same will be furnished and location marked by iron contractor. Brick in—in a secure manner—all anchorage for steel beams and other construction. Plaster all flues for ventilating, heating or smoke, shown on plans, in the best manner, finishing with the float and not the trowel. Run flues as straight as other construction will admit, keeping full area from bottom to top, and leave them free from rubbish when completed. Openings for registers will be made near floor line; that is, bottom of registers on floor.

Brick contractor will do all cutting necessary in joining his work to the present walls, and make whatever changes are required in door or other openings in the present walls to carry out the wing design. He will notice projections, (flues), on the outside of end walls as now built. These projections must be carried up to the ceiling and the necessary register openings made in the flues for supplying the wings with warm air. He will do all brick work necessary in the setting of four additional furnaces, (shown on the plans but not now in the building), under the supervision of the contractor for furnace work.

Contractors must furnish samples of brick with bid.

Basement Concreting.—Basement floors to be of same material as specified for concrete floors, except cinders and brick bats.

Concrete the basement halls and fuel room 3 inches thick of material specified for floors above, and over all 3 inches of artificial stone of best make; balance of basement floors will be put in by carpenter, as hereafter specified.

Concreting Floors.—Brick contractor will be required to concrete over the arches of first, second and gallery floors and hall of attic to line two inches above top of beams. All floors will be level, consequently halls etc., having lighter beams, will require concreting up to line of floors of the deepest beams. Concrete to be composed of broken stone, cinders, brick, gravel and cement—one part cement, balance composition three parts. The stone and brick must be broken fine, and pebbles not to be more than ¾ inch in diameter. Brick contractor will be entitled to all stone spalls, gravel and brick bats not required

by stone and brick contractors in the construction of said building. Louisville cement (or its equivalent), will be used where cement is called for. Level up with concrete to top of deepest beams and let it set, and fill in after strips are laid. Level up halls and foyer of Senate for marble tile as directed by the architects and superintendent. (See note—General Items—relative to bids for floor construction.)

Contractors will estimate on at least 4 inches of concrete over crown of corrugated arches.

Plastering.—Contractors must furnish in place temporary enclosure for all openings, before beginning plastering work, which must not be removed until the work is thoroughly dry. Basement, first, second and third stories to be plastered three coats on lath, and two coats on brick work; first coat on to be a scratch coat of hair mortar well broomed down, and when dry, over it and brick walls, lay a coat of brown mortar; the whole to be straight edge work, plumbed and properly floated down; over all when dry, except the House and Senate Chambers and halls, lay a white, hard finish. Mortar to be composed of fresh burned lime and sharp sand. Scratch and brown coat to have a sufficient amount of hair to make a secure job. White, hard finish to be composed of white lime, putty and plaster of Paris, troweled down to a smooth surface and left free from chip cracks, brushed off with clear water.

It will be understood by contractor that all lathing in fire proof construction will be of iron, put on by the iron contractor.

Estimate on plastering the light shafts inside from ceiling light to roof. Also estimate on plastering back of wainscoting down to floor, one coat only—brown,—and plaster up tight to all frames and grounds. Plasterer will do all pointing necessary after carpenter and other work is completed. If any plastering is done in freezing weather, the contractor must furnish necessary heat at his own expense.

Stucco Work.—Ceiling and walls of large rooms to be stuccoed as shown on sections and details, carefully modelled in "renaissance." Walls and ceilings of the two chambers, second and third story halls, including the library room—first story, to be finished in guaged brown mortar, smoothly floated down prepared for fresco; to be a first-class job of sand finish. The girder and other arches to be beaded and finished as shown on section and details; and all ornamental work must be submitted to architects and superintendent for approval before put up. Stucco cornices will be run in all the office rooms on first floor.

Note.—If wood joist are used, estimate on lathing all partitions and ceilings, and one inch of mortar between floors, for deadening, and 4 inches of concrete for tiling.

CARPENTER WORK.

The wings will be *fire-proof*, (see note, specifying wood construction,) as near as may be. Carpenter will, however, be required to do all carpenter work properly coming under that head in the construction of the building; furnish all centers necessary in turning brick and stone arches, with means of staying them in position while work is being done. They must not be removed until brick work is completed.

Marble Tiling.—Carpenter will estimate on tiling all halls in first, second and third floors, including foyer of Senate Chamber, as shown on plans, with best quality 12 inch marble tile—white and black, one inch thick, laid in English Portland cement, by expert workmen, carefully joined to that now in the building.

Basement Floors.— Halls and fuel room of basement will have artificial stone floors, as before specified, put down by concrete contractor; balance of basenent floors to be of 4x4 inch sleepers, laid on two inches dry sand and air-slack lime—six parts sand and two parts lime, and filled in between even with top with same material, sleepers to be placed 20 inch centers. Then floor over with best grade $\frac{7}{8}$ inch No. 1 Georgia pine matched flooring, not over 4 in. wide. This includes "school of mines," etc.

Wood Flooring above Basement.—The first, second and third floors to be of clear, No. 1 Georgia pine—matched $\frac{7}{8}$ flooring-strips not over three inches wide, laid on 2x4 inch scantling, of hard pine, ripped diagonally through the centre, forming two strips, each having a bevel, and laid wide side down on top of beam and fastened to I beams by wood anchors nailed on side of strip and reaching under flange of beam concreted in, strips placed 16 inch centers.

Gallery floors to be of same material; the seat steps to have wood supports fastened to the iron floor framing.

Studding and Grounds.—All stud partitions throughout the entire building (fire proof) will be of iron, hereafter specified.

Carpenter will provide and fix grounds for all base, wainscoting, casing and frames. Holes for bolts will be drilled by iron contractor.

Carpenter contractor will estimate on lantern sash of wood, in the two chambers as fully explained in plans, sections and details, fitted into iron fastenings at bottom.

Roof Covering.—Cover entire roof with sheathing of 2 inch pine plank, not over 8 inches wide matched; with loose $\frac{3}{4}$ inch tongue, and

dressed one side, to $1\frac{7}{8}$ inch; each plank to be fastened over each iron beam and purlin by use of $\frac{1}{2}$ inch iron bolts, all furnished in place by carpenter.

Windows and Doors.—All window frames throughout the entire building (except in fuel room, which will be iron with doors hung on butts,) to be box, with sliding separators. Size of sash, $2\frac{1}{4}$ inch check rail; all fitted with brass or wire cords, or chain, and metal weights and brass faced $2\frac{1}{2}$ inch pulleys of best make —Sidney, Norris & Co's. or equivalent. Large frames center windows four fronts to have twin or double pulleys and lead weights, all other weights to be iron. Frames to be moulded, and parting stops cut in centre to allow sash to be taken out at bottom, as per detail. Third story windows to have head-pockets sufficient to admit of sash sliding up two feet. (See detail.) Outside basement doors to be as per plan and details. First and second story doors as per detail; also transoms as shown in detail plans and sections.

First, second and third story doors to have stiles made of $\frac{7}{8}$ and $1\frac{3}{4}$ pine strips, glued up to width and veneered with $\frac{1}{4}$ inch natural wood as follows: All offices and the two chambers in *butternut*, all halls in *cherry*, and the library in best American *white oak*. (See details.)

All door frames as per detail, veneered or solid as above described, to match finish of room. Hall jambs to be flaring where so shown and plaster corners to receive a two inch wood bead. All doors marked "G" on plans to be glazed—size of glass marked.

The edges of all doors to be plowed out, the tenons cut back and a strip glued in to obscure tenon ends.

Inside Finish.—The finish of principal rooms to be as per detail. Closets to receive plain bevel finish of pine. All windows of first and second stories to be panelled underneath. Entire finish of all offices in first and second stories as also the two chambers, to be in best butternut, and the finish of all halls in first, second and third stories to be in best cherry, all hand-smoothed and fastened up with steel wire brads. All hard-wood finish in the work must be finished at the shop and have a coat of filling before being taken to the building, to prevent the absorption of moisture. All basement and third story finish not before covered to be of best clear white pine. Library finish in best American white oak.

Inside woodwork to be left in hand finish. Machine marks to be sufficient cause for rejection.

Wainscoting.—First floor halls, library; second floor halls, and the two chambers, to be wainscoted with material specified for doors, cas-

ings, etc., for the several apartments. All water closets and wash-stands to be wainscoted with beaded ceiling of pine; or if exposed, in large rooms, of same wood as the finish of room.

All outside door frames to be dowelled in stone sills, with $\frac{5}{8}$ by 3 inch round iron, one inch in stone and two inches in jamb.

Great care should be taken in setting all frames plumb and square, and keep them so; to that end they should be watched closely during construction of building.

All outside door thresholds will be of cast iron; and all inside, of white ash or oak, straight grained. Carpenter will furnish said thresholds.

Blinds.—All windows in first story and in ~~office~~ and senate foyer rooms of second story to have inside blinds, moulded and raised panels $1\frac{1}{8}$ inch thick, eight fold, of the material specified.

Cloak Rooms.—Cloak rooms to be furnished with strips and wardrobe hooks; heavy school pattern, best quality, imitation bronze.

Stairs.—Stairs leading from gallery, with risers, treads and strings, of wood; all as per detail. Stairs must be solid and substantial.

Wood Work in Plumbing.—All wood work required in plumbing will be done by carpenter contractor. (See specification for plumbing.) Enclose water closets with beaded ceiling and make a neat job of seat fittings, double on hinges. All service tanks above basement floor, etc., for closets to be neatly enclosed in same material. All slots in walls will be covered with $\frac{7}{8}$'s inch moulded boards to conceal the pipes —same material as room finish.

Cornice Lookouts.—Furnish where they occur $1\frac{1}{2}$ inch skeleton lookouts and back lining of wood for main cornice in addition to the iron lookouts; back lining to be of $\frac{7}{8}$ surfaced flooring, preparatory to receiving gutter. (See note). Lookouts will be placed about 30 inches apart.

Carpenter will be required to set all wood construction wherever required throughout the building; plug the walls for and put up grounds in brick work, for all finish.

Grates and Mantels.—Carpenter contractor will furnish, in place all grates and mantels. Estimate cost, $50 each fireplace on third floor $75.00 on first floor complete.

Fire Proof Doors.—All openings from the central building to the wings will have fire proof doors (factory style) made of two thickness of $\frac{7}{8}$ in. matched white pine flooring, fastened together diagonally with wrought clinch nails and covered on all sides with tin. The hinges

bolted through and through and the tin locked together and fastened with tacks. These doors to be additional to the doors provided for entrance.

Carpenter Work.—Construct gallery in Senate and House chamber, iron and wood combination as shown in drawings, and prepare floors ready for seating; but no seats or furniture of any kind will be considered as coming under these specifications.

Alternate Specifications for Wood Construction.—Under head of wood construction for floors and roof, estimate as follows: All joist to be 2x12 inches, 12 inch centers, (unless otherwise marked;) and roof joist to be 2x8 inches, 12 inch centers. Said roof joist will rest upon iron trusses and girders furnished in position by the iron contractor. Roof covering to be of $1\frac{1}{4}$ inch hard pine, not over 6 inches wide, matched.

Frame double trimmer joist around all stairways and chimney breasts, and put in hearth trimmers where grate fire places are shown; trimmers in all cases to be kept at least one inch from face of wall. All joists to be sized, and those supporting partitions to be double and well bolted together, and to receive in addition a one-inch tie-rod, with suitable nut, washer, etc., and center plate to sustain tension.

Every eighth joist to be securely anchored to brick walls by means of $\frac{5}{8}$ inch round iron, 1 foot 4 inches long, ends bent at right angles, one up and the other down, $2\frac{1}{2}$ inch, one end inserted in top of joist, the other backed by a piece 2x4 inch scantling in wall, two feet long. The inner ends of joists to be fastened together in a permanent manner. The same system to apply to each tier of joists, and, where joists run parallel with wall, insert iron anchors as specified above, in 2x4 inch scantling, let in and extending across and spiked to four joists. The inner ends of joist must not lap or extend through the walls, but must bevel (as also outside ends) for 6 inch bearings, and securely anchored together with iron anchors. Spans not over twelve feet to have one row of cross bridging; all over 12 feet must have two rows; bridging stuff to be $1\frac{1}{8}$x$2\frac{1}{2}$ inches; two nails in each end. All joists below roof to be stripped on each side two inches below top, and 1 inch culled lumber (free from decay) to be filled in and securely nailed preparatory to the mortar deadening by the plasterer. The joist for tile floors to be treated in same manner, but must be let dnown two inches lower, and prepared for tile by strong cement concrete. All studding to be 2x6 inch, twelve inch centers, thoroughly bridged, two rows $1\frac{1}{8}$x$2\frac{1}{2}$ cross bridging in height of story.

In estimating wood under items 2 and 4, consider the colonade above

galleries in Senate and House, of wood with turned caps and bases. All grounds for stucco arches above to be of wood, well braced and prepared for lath. The partitions under galleries to be of 3x6 inch, thoroughly bridged, resting on curved wood girder on top of joist; said girder to be formed of 1x6 inch boards, on edge, securely nailed and bolted together—two bolts every three feet—following curve of partition. (See drawings.) The ceiling joist to be 2x6 inch, suspended from iron trusses, 16 inch centers. Grounds for all stucco panelling in ceilings will be of wood, as indicated on ceiling plans and sections.

Quality of Lumber.—All finishing lumber for basement, first, second and third stories, to be No. 1 quality, as before specified.

All flooring to be of best quality $\frac{7}{8}$ matched Georgia pine flooring.

All rough lumber not before specified, to be of white or eastern or Oregon pine. All lumber to be perfectly dry, and finishing lumber must be kiln dried preparatory to going up. Outside doors and vestibule, including casings, to be of cherry. (See detail.) Basement outside doors of white pine. Neat and careful workmanship will be insisted upon, and none but competent and experienced carpenters will be allowed on the work.

Hardware.—All doors (except chamber) will have three butts. $5\frac{1}{2}$ x$5\frac{1}{2}$ in. plain pattern, double bushed steel loose pin, ball tips, equal to Hopkins & Dickinson's real bronze; closet and basement doors to be fitted with the same number and style of butts, in imitation bronze.

Chamber doors to have "Van Wagoner, Williams & Co." N. Y. American Spring Hinges, double acting, 10 in. flange, ball tip, No. 2359; two hinges to each door.

Inside blinds to have plain bronze pattern, $1\frac{1}{2}$x$2\frac{1}{2}$ in., loose pin ball tip hinges, and back-flaps and bars to match.

Locks for front doors, main entrance, to be Hopkins & Dickinson's No. 1230 improved cylinder front door locks, flat beveled face, and $2\frac{1}{2}$ in. plain round polished knobs and escutcheon plate all of real bronze. Front doors to have in addition 4x16 in. plates and handle bars, polished, real bronze, equal to Hopkins & Dickinson's No. 493. Vestibule doors to have Hopkins & Dickinson's improved cylinder vestibule latch, No. 1232, $\frac{3}{8}$ in. spindles throughout, and anti-friction latches. All knobs to be $2\frac{1}{2}$ inch plain bronze as before specified. Outside and vestibule doors to have bronze flush face top and bottom bolts. Locks for inside doors (except chamber) will be equal to Hopkins & Dickinson's No. 6220, plain, bronze faced, mortise locks. All to have steel keys, trimmed complete. Chamber doors will have improved tubular lock, same quality as specified for vestibule (without latch.) Base-

ment doors will be trimmed with good three tumbler locks, mortise brass bolts, and steel keys, imitation bronze faces; outside door knobs and trimmings to be of real bronze.

Sash to be supplied with imitation bronze lifts and locks, "Champion" pattern.

All doors and sash will be perfectly fitted and left in perfect running order when building is completed; to that end the carpenter will use extra care in adjusting them in a perfect manner.

All transoms to be furnished with Wallensack's transom lifts, $\frac{3}{8}$ inch rods, best quality, (manufactured by J. F. Wallensack, Chicago,) or its equivalent. Also furnish all nails, screws and spikes, bolts, etc., for grounds, etc., required in the completion of the work. No iron nails to be used on the work; estimate on steel.

Inside window-stops to be fastened with round-head screws, blued. The price for trimmings for doors and windows includes sash-weights and transom lifts. Carpenter will also set all ventilating registers required in base or wainscoting Same to be furnished by heating contractor. Exposed wood finish to be securely fastened with steel wire nails, placed where least exposed

Galvanized Iron Work.—The entire main cornices, pediments and balustrades, etc., above the stone pilaster caps, as tinted purple on elevations, will be of best quality No. 26 galvanized iron.

All joints to be thoroughly riveted and soldered, and the whole work to be put up in the most perfect manner. Main down spouts will be of cast iron, to be placed in position by plumbers.

The galvanized-iron contractor will connect with them just below line of main cornice, and be required to furnish wrought iron lookouts of $\frac{3}{8}$x$1\frac{1}{2}$ inch iron for all cornices, pediments and gutters, fastened to roof framing. The wrought iron contractor will do all drilling of holes for lookouts. Nails and rivets to be galvanized.

In addition to iron lookouts, the carpenter will furnish in place wood lookouts, $1\frac{1}{2}$ inch thick, 2 feet 6 inches, centers for all cornices, pediments, etc. All ornamental work must be modeled in an artistic manner, renaissance design, and the whole to be a first class job of sheet metal work. Galvanized iron contractor will understand that all plain surfaces in main cornices will be crimped, and grade of iron at these points will be No. 24. All galvanized iron work must be carefully connected to that now on the building so as to make one continuous whole.

Tin Work.—The entire main roof, as also all pediments, together with fire walls between main building and wings, and pavil-

ion roofs, will be of Gilbertson's "old method" guaranteed roofing plates of tin, 20x28. I. C. The main roof of building, as also pediment roofs, will be standing seam 1 inch high. All gutter linings of main roof, back of balustrades, will be soldered flat seam above high water mark, with funnel inlets to down-pipes; tin to extend up and over balustrade. The roofs and the decks at sides of pediments, to be flat soldered seam, all properly flashed, and gutters carefully lined with tin in the very best manner, same quality of tin.

Wrought Steel and Cast-Iron Work.—All angles (L,) tees (T,) channels (⊏,) and other structural shapes used in the building, must be of first quality rolled metal, free from flaws and ragged edges, well straightened before use.

Beam Girders in Stone and Brick Work.—Furnish in place "I" beam lintels of steel supporting stone entablature over columns and other points as shown on beam plans and sections. All to be supplied with anchors, washers and templates, and fitted with angles for proper support of stone work.

Floor Construction—Steel Beams.—1st, 2nd and 3rd floors to be constructed of steel "I" beams, with corrugated iron arches between No. 18, prepared for concrete filling; the size and location of all beams, channels, etc., is shown on floor plans. Beams comprising first floor are shown on basement plans; beams forming second floor are shown on first floor plans, and beams for third floor are shown on second floor plans. All beams, except where bearing on stone walls, to rest on wrought iron templates $\frac{3}{8}$ inch thick, and must have a bearing each end of at least 8x8 inches. All heavy girders will rest on cast templates. All beams over 15 feet span will have tie bars $\frac{1}{2}$x2 inches hooked around flanges. All beams to be drilled at each end and to have a $\frac{3}{8}$ inch iron hook anchored into wall. (See note. below.)

Furnish cast templates, separators and bolts for large beam girders.

Cast Columns and Other Cast-Iron.—Furnish in place cast-iron columns shown on plans and details. The joints on line of the several floors will have ledges carried out for the support of beams and girders. All joints to be faced off in the lathe and set in sheet lead. Frame work around these columns must be neatly fitted and firmly bolted, and the outer ends securely anchored in brick work and floor construction. (See details.)

The iron contractor will do all cutting necessary in the present walls to secure a bearing for floor beams, girders, etc., and for all anchorage that may be required.

Note = No arches or concrete required in gallery floors.

Furnish columns with bottom plates, and top plates fitted for carrying girders and beams for floor above as shown. Also one cast-iron post in railroad commissioner's office, and one in the attorney-general's office, with top and bottom plates as described for other columns. Furnish in place, resting upon iron girders, the cast-iron columns supporting gallery in House of Representatives, constructed as shown on detail. (See note, carpenter work.)

Columns in Senate and House Galleries.—The colonade above the galleries of Senate and House will be of iron, and the grounds of stucco arches will be of wrought-iron construction, (fire proof,) as shown on the details, plans and sections.

Built Girders and Trussed Partitions.—The main carrying girders in first and second floors will be constructed of steel "I" beams bolted together, (and will be used in either case whether wood or fire-proof construction is adopted.)

The partition between foyer and Senate chamber will be trussed, constructed of channel studs or latticed angles, and will have a curved plate at bottom resting on the floor beams and securely bolted to same. The said plate will follow the line of the partition which will also have a channel plate at top with the curved joist of gallery floor framed into it with angles, as shown on details and plans. The partition under gallery in the House of Representatives will be of same construction, all securely anchored to brick walls, (in fire-proof construction.)

Roof Girders.—The main girders over the "Senate" and "House," will be riveted plate girders, the web to have vertical angle stiffeners, and the angles forming top and bottom chords will have additional plates riveted on, as shown on the details for same. Where beams are framed into them, they must have proper framing angles; and where they rest on top, they will be bolted to the girder for lateral support. The ceilings will be suspended from these girders, as shown.

NOTE.—The foregoing girders will be used in either case, whether fire-proof or wood construction is adopted, as specified under head of carpenter work and shown on special plans of wood construction.

Skylights.—Furnish in place the roof skylights, of iron construction, with copper gutters. Glass to be one inch thick, hammered or ribbed, held in position by brass hooks, and leaving space for the discharge of water underneath. Hayes' patent, or its equivalent, may be used.

Truss Templates.—All trusses to rest on large cast templates, as before specified.

Purlins.—All purlins and rafters marked will be made of beams with framing angles; must be well made and ends cut for mitres on the hips. Frame proper angle-irons around skylight openings for reception of sash, as also entire skylight roof frames, and for support of pediment gables, four fronts. Where cross purlins meet on top of trusses, proper cast-iron shoes must be bolted to trusses to receive the purlins or beams.

Riveting.—All rivets used shall be equal in quality to "Berden's best." They shall be properly heated and have length sufficient to make head as large as other heads, and be headed with a cup swage. All rivets found loose by tapping with a hammer will be cut out and replaced. No rivet holes shall be more than one-sixteenth inch greater in diameter than that of the rivet when cold, and shall be accurately spaced and not forced into place by "drift pins," except sufficiently to bring the parts into proper place. In all joints, in all parts of the work liable to a tensile strain, rivets of such size and such numbers shall be used as to make the aggregate shearing ends of the rivets equal to the tensile area of the member. Where a sufficient number for this cannot be used at a proper pitch, for want of room, "gusset plates" shall also be used. All riveting to be done in a thorough and workmanlike manner, equal to the standard of first-class iron bridge work.

Roof Covering.—Entire roof will be covered with 2 inch plank, dressed on one side, laid flat, bolted to purlins and rafters by means of $\frac{1}{2}$ inch bolts through the flange of beams. The lower edge of plank, at its junction with wall, will rest in an angle iron shoe anchored to wall; and plank will be furnished in place by carpenter.

The "Senate" and "House" Ceilings—to be as shown on scale detail. One inch angles, 2 feet 4 inch centers, framed and riveted to angle plates at top and bottom, will form cove, and ceiling will be carried by 4 inch "I" beams, 5 feet apart, suspended from roof trusses.

The rods carrying ceiling to have a sectional area, sufficient to carry their several proportions of the incumbent weight (construction and plastering stucco,) and to have turn buckles or nuts for adjusting same. Thread end of rods to be upset to full section, exclusive of the thread. Upper ends of suspension rods to be fastened to lower chord of plate girders, thoroughly riveted or bolted (through the web,) and bottom end to have a heavy jaw clutch, with jam nuts to grasp the upper flange of ceiling beams. Iron in tension must not be strained beyond 12000 pounds per square inch. Iron contractor will furnish in

place all iron brackets or angles, required for support or seat steps of gallery in each of the Senate and House.

Iron Stud Partitions—(Fire-Proof.)—All partitions throughout the building (colored blue on plans) to be constructed of 6 inch channels, or angle lattice stud work, 2 feet centers, with proper plates on bottom and top—fastened to beams—heads of openings to be trussed. The partition at rear of Senate to have channel plates riveted on beams for support of said partition on the floor, as before specified. (See plans.) At all points where double beams are used they must be bolted together with cast separators and have extra large templates.

Stucco and Cornice Lookouts.—Furnish in place $\frac{1}{4}$x1 inch iron lookouts, or grounds, for all stucco cornices and panel work throughout the building bolted to iron work and fastened to brick in a permanent manner, ready to receive lath. This work must be put in place in a most secure and perfect manner, perfectly square—ribs in line and ceiling level. Angle irons may be used for grounds at all points where greater strength is required. The ceiling under the galleries of the Senate and House will be of curved angles $1\frac{1}{4}$ bolted to floor beams spaced ready to receive the lath. Frame work of the arches and cornice on this floor will be of wrought iron construction, as shown on plans, sections and details.

Lathing.—All ceilings, light shafts and stud partitions, to be lathed with corrugated metal lath, (Hoyt's patent or its equivalent,) fastened to $1\frac{1}{4}$ inch L, bolted to floor beams and ceilings with $\frac{3}{8}$ by 1 inch lever bars, or a method equal to it. The grounds for all stucco work will be lathed in same manner.

Painting—Iron Work.—All work put together at the shop and all parts inaccessible afterwards, to be covered with one coat of red lead and boiled oil before riveting up; and afterwards the whole to be painted in like manner before shipment. All floor beams and arches must be painted in same manner before being set.

Wire Screens.—Furnish in place sliding window screen guards in all third story windows accessible from floors (transoms of second story windows,) said screens to be crimped wire No. 9, with $1\frac{1}{2}$ inch mesh, with metal rosettes placed at intervals of 6 inches; they will be fastened to wood sash and slide up in wall pockets. Must be provided with catches to sustain them when raised.

Painting and Glazing.—All galvanized, cast iron, and exterior wood work not otherwise specified, to be primed with yellow ochre

paint, and over all two coats best white lead and oil paint; last coat to receive a coat of Monroe sand, or equivalent.

Roof.—All outside wood work, except doors, to receive three coats painting material on top of priming. All frames to be primed over before setting. All tin roofs throughout will have three coats, iron clad paint; two week's time between each coat.

The under side of planking or other wood construction in roof (fire-proof) will be painted with two coats native plumbago mixed with pure linseed oil, or other fire proof paint acceptable to the architect or superintendent.

Sash.—Outside to be primed, then two coats dark olive or bronze green. The frames stone color, sanded.

Outside Doors.—All outside doors above basement to have a spar varnish finish, rubbed down, first-class; entrance doors the same.

Inside iron work to have three coats, columns to be painted in color to harmonize with decorations, (to be hereafter considered—probably antique bronze.) All iron work exposed in the light-shaft to be painted white.

Inside Finish.—The basement, office rooms and third story rooms, will have a varnish finish, the wood to be filled and receive three coats of varnish, *hard oil finish*, well haired down between coats.

The rooms of basement and and all wood and iron work, not included in the room finish, will have three coats of paint. Balance of all inside finish, including sash and blinds, first and second stories and third story halls, to be finished in hard oil, in best possible manner, using only best material and labor. Pratt & Lambert's New York hard oil finish is recommended, with Sherwin, Williams & Co's. Cleveland filler. Three coats varnish, the last rubbed down with pulverized pumice stone and water, polished with sweet oil.

Fresco.—Fresco work to be hereafter contracted for by the Commission and will not be considered under these specifications.

Glass—for entire exterior of building, first and second stories, to be polished plate glass. For basement and all above second story not showing in Senate or House rooms, to be double thick "French sheet" unless otherwise specified. All interior glass for doors, windows and transoms, to be double strength French sheet. Vestibule glass to be plate. Glass for roof skylights to be hammered glass one inch thick. (The frames to be of the Hayes' patent, or its equivalent, furnished by the wrought iron contractor.) The ceilings of Senate and House will be fitted with lanterns of cathedral glass leaded $1.50 per foot provided

with movable section and cords carried to side walls by means of pulley blocks.

All window and door glass must be set, bedded, sprigged and put-tied in best manner, and left in perfect condition when building is accepted. Inside door-glass will be set in putty bed and fastened in with wood stops.

Plumbing and Gas Fitting.—Plumber will understand that no drain tile will be used inside the building walls. He will estimate, therefore, on making all connections to tile drain now in position, *outside* the walls with cast-iron pipe, extra heavy, suitable holes being left through them for that purpose.

"Supply."—From building main, run a 1 inch extra strong lead pipe into the wings, and up to basement ceiling; from the above pipe, branch a 1 inch extra strong lead pipe, extending it along wall near ceiling, well secured on strips with tags and screws, supplying each closet with water through $\frac{5}{8}$ inch extra strong lead pipe, and each basin with $\frac{1}{2}$ inch extra strong lead pipe.

First and Second Floors.—Branch $\frac{3}{4}$ inch extra strong lead pipe to supply water closets wherever shown on plans. The wash basins on these floors to be supplied through $\frac{1}{2}$ inch extra strong pipe. All branch supply pipes must run horizontally in basement, thence up to the point of use, where possible.

Stop and Waste Cocks.—Put $\frac{3}{4}$ inch stop and waste cocks in basement, so as to shut off each room separately—not to interfere with each other. All lead pipe in building must be well secured to boards with lead tags and screws. All horinzontal pipes to have strips under them to prevent sagging. Where pipes run into wall pockets they must be secured to boards as above, nailed to brick work. All wood work to be done by carpenter.

Soil Pipes.—The soil pipes for water closets to be four inch cast-iron, extra heavy, coated inside and out with asphaltum. All joints to be well caulked with hot lead and oakum, being well connected to tile drain and extending up above the roof.

Down Pipes.—Plumber will furnish in place, well secured to wall, the 6 inch down pipes in corners, connecting in gutter with main cornice and sewer, all joints caulked, as marked on plans. *Down pipes*, or "D. P.," to be 6 inch cast-iron. Also furnish the 6 inch connections to main sewer. All soil pipes must extend up to attic and out of roof.

Wash Stands.—Furnish and fit up complete the wash stands

shown on first and second floor plans; each to have a 14 inch P. O. improved wash basin with metal connections, ball plugs and chains, supplied through large nickel plated compression basin cocks, (Fuller's patent,) each to have a 1½ inch lead waste pipe leading to and connecting with soil pipe, with brass soldering nipple.

Marble.—Furnish and set marble slabs for wash stands, size marked on plans; to have suitable backs 11 inches high, chamfered edges; to be made of the best Italian marble, countersunk and well polished. Backs to have chamfered edges also, and be well jointed.

Lead Linings.—Line underneath all closets above basement, (full size), with 4 lb. sheet lead, to turn up 4 inches on all sides, floors so pitched that water will run off, and to have a 1¼ inch lead waste leading to basement, but not to any lead waste pipe, and to have brass strainer. This to be done in first and second stories. Wash stands to be lined in same manner, as also all supply pipes running horizontally above ceilings.

Water Closets.—Fit up complete, where shown on plans, (basement and second floor only), "Weeden's (or equivalent), earthen bowl washout closets, with wall-pull and service tank supplied through ½ in. extra strong lead pipe as before specified; each closet to be connected to soil pipe with Y branches by cast iron sleeves, caulked with hot lead and oakum.

Plumbing in Janitor's Rooms.—Fit up complete where shown on basement plan an 18x36 inch wrought steel sink, supplied with hot and cold water from house main through ⅜ inch brass bibb cocks, and ⅜ inch extra strong lead pipe. Sink to have a 1½ inch lead waste pipe connected to the house drain and a 1½ inch Weeden trap, and brass strainer complete.

Boiler.—Fit up complete a 30 gallon galvanized iron boiler, tested and stamped, connected with the main supply with ¾ inch extra strong pipe, with the kitchen range and sink. Boiler to set on a cast iron stand, and have a sediment cock.

All pipes throughout the building to be graded and to have drain-cocks placed at lowest points for convenience in draining the whole system of water when necessary.

Ventilation.—Traps and bowls of all water closets to be ventilated as directed by the manufacturers of the closets. Vent pipes for closet traps to be 2 inch lead pipe. Where possible they may be connected to soil pipe above the last (or highest) point of receiving waste.

Where this cannot be done, the vent pipe must be run separately to attic and out of roof. The connection of vent pipe to traps must be done in proper manner. The vent for closet bowls must be extended to attic separate and will have no connection with soil pipe or trap vent. Traps for all wash stands to be 1½ inch "Sanitas."

Furnish all materials and perform all labor necessary to complete the work to the entire satisfaction of Commission and Architects.

Gas Piping.—Furnish in place gas pipe leading to all points marked -⊕- (see specifications on file) on plans, according to the rules of City Gas Co., of Cheyenne, Wyoming Territory.

The limit of supply to be as follows:

⅜	inch pipe,	not more than	3	lights in	15	feet.
½	"	"	6	"	25	"
¾	"	"	20	"	50	"
1	"	"	35	"	60	"
1¼	"	"	60	"	75	"
1½	"	"	100	"	100	"
2	"	"	200	"	200	"

All ceiling drops to be ½ inch and all wall drops ⅜ inch.

Electric Light Wires.—Contractors must include in bid the complete running of wires necessary to the future lighting of the building by electricity; said wires to be put in before the building is plastered, and be concealed as far as possible, according to the system and rules of the Electric Light Co., of Cheyenne, Wyoming Territory.

All plumbing, drainage and water supply, must accord with the city ordinance governing sanitary points.

General Items.—It will be understood by the contractor that the heating and ventilating apparatus, including registers, must be included in his bid, on the conditions named in the "Specifications Relating to Heating and Ventilation."

NOTE.—Contractors will note from plans, that janitor's rooms are located on the north side of west wing; they will, however, be constructed on the south side, and as the two sides are duplicate in plan, in carrying out the work, place the "School of Mines" on the north side and janitor's quarters on the south side, and make the sewer and other changes accordingly; also,

The lanterns or ceiling lights in the Senate chamber and "House of Representatives" will be of wood (sash) filled with Cathedral glass in leaded designs; the cost of glass to be not less than $1.50 per square foot.

All material and labor required in carrying out the work as specified under the different heads and as shown in plans, etc., shall be furnished by the contractor of each said branch of work as set forth;

for instance, the stone contractor shall do all work pertaining to stone masonry; the brick contractor shall do all work pertaining to brick masonry; the plasterer all work pertaining to plastering; the carpenter all work pertaining to carpentry, and so on, except when otherwise specified.

In all cases where a particular thing is specified, or its equivalent, the equivalent will not be allowed without the consent of Architects or Capitol Building Commission.

Stone contractor will furnish all labor and material required to protect the cut stone projections; also to protect the walls of building and frames during the winter exposure.

Bids in gross will be received at the office of the Wyoming Capitol Building Commission, in Cheyenne, up to —— of ———, 1888, as follows:

First.—Gross bid for construction and full completion of east wing, in iron construction, (fire-proof,) exclusive of center portion of building.

Second.—Gross bid for construction and full completion of east wing, in wood construction, (*i e.*, exclusive of central portion of building.)

Third.—Gross bid for construction and full completion of the west wing, iron construction.

Fourth.—Gross bid for construction and full completion of the west wing, wood construction.

Fifth.—Both wings complete, iron

Sixth.—Both wings complete, wood.

It will be understood that items 1 and 3 cover a complete building, according to plans and specifications, in iron construction. And items 2 and 4 cover a complete building according to plans and specifications, in wood construction.

Contractors will note that all girders and roof trusses will be of metal whether wood or iron construction is adopted.

The bids for wing portion must include the opening up of all openings in walls opening to wings.

Each contractor must furnish with bid a complete schedule of each and every kind of material and labor required for the construction of building, showing each class of work and each story of the building complete in itself.

Contractors will please observe the above and bid on blanks furnished by the Commission, in order that bids may be considered; and don't forget to sign bid and have bond properly executed.

NOTE.—The Architects wish to explain the reason for the above mode of taking bids. The Commission desire to make the within de-

scribed building as near fire proof as possible, within the appropriation; hence the division and separation, giving all contractors an equal chance and full competition, enabling the Commission to make an award at first letting, a point so much desired by all reputable contractors, especially so when the necessary expense attending this letting is taken into consideration.

The Architects ~~and~~ or Commission ~~Superintendents~~ in charge of said work will give monthly estimates of 90 per cent. as the work progresses, and upon completion of contract and acceptance of the work by the Architects and Commission, a certificate for the remaining 10 per cent.

The successful contractor will be required to furnish an acceptable bond, in a sum equal to the amount of contract, for the faithful fulfillment of the same.

GENERAL SPECIFICATIONS RELATING TO THE HEATING AND VENTILATING OF THE BUILDING.

The Commission has adopted the Ruttan-Smead system of warming and ventilation, and the general contractor will construct the wings in accordance with the requirements of the said system of warming and ventilation, as shown upon the plans and described in the specifications furnished by Isaac D. Smead & Co., Toledo, Ohio, who will be held responsible for the successful operation of the same. They can be called upon at any time to aid the contractor to fully understand plans or to introduce balance of apparatus. It is further understood that the above mentioned plans are the property of Isaac D. Smead & Co. and are to be returned to them upon the completion of the building.

The general contractor for the building will provide, furnish and perform all brick and carpenter work connected with the construction of warm air, smoke and ventilating flues, and the setting of four additional furnaces, as shown on the various plans, and by the several drawings furnished by the Architects, and also furnished by Isaac D. Smead & Co. Special reference must be had at all times, by both contractors and superintendent, to the special sheets showing the size, location and direction of all such, and also showing the location of all register openings and valve frames, and which must be properly bricked into place, and under the direction of said Isaac D. Smead & Co., heating and ventilating engineers, Toledo, Ohio, or their authorized superintendent, who will have supervision of all parts of the work in connection with the warming and ventilation of the building; they not being allowed, however, in any case, to interfere with or change the constructive design of the building as planned by the Architects, without

first consulting with them and obtaining their consent. In case any changes be found absolutely necessary for the successful ventilation of the building, said changes, if any are made, must all be made by and with the consent of the Commission.

Said Smead & Co. will, at the proper time, place in their proper position the furnaces, registers, warm air and smoke pipes, and the contractor for the building will at such times as they may direct, do all mason and carpenter work necessary in connection with the setting of the said apparatus, and pay said Isaac D. Smead & Co. the following sum, namely:—$6,500.00 for that part of the apparatus located for the Senate and House additions shown upon the plans, and described in the specifications furnished by the said Smead & Co.; payments to the said Smead & Co. to be made upon estimates furnished by the Architects, and the said Smead & Co. are to receive from the general contractors, orders upon the Capitol Building Commission for their pay.

The general contractor must protect from damage, by frost or breakage, the entire heating apparatus, after it is set in position by the manufacturers, and deliver it to the Commission in the same condition as when set by the manufacturers.

The said Smead & Co. can be called upon to furnish, at any and all times, information with reference to anything pertaining to their part of the work.

FINALLY.

Contractors will furnish all materials designated under the different heads required to build and complete the said structure, and they will understand that materials so furnished must be accepted by ~~Superintendent~~ the Commission before use. They will cause all labor to be performed in the best manner, and will be required to follow plans and drawings referred to in these specifications in their true meaning; and should it appear that any work hereby intended, or matters connected herewith, be not fully shown or explained in plans and specifications, the contractor shall apply to the ~~Superintendents~~ Commission for such further detailed explanations as he may require, and perform their orders as a part of the contract.

It will be further understood by contractors that the building herein described, as shown in plans, sections, elevations and details, to which these specifications refer, is to be a complete and finished job of its kind, with exceptions before and herein noted.

It is understood that no advantage shall be taken of any clerical errors that may have occurred in either plans, specifications or details,

the meaning of which is to exhibit or describe all that is necessary to fully complete the said building in all its requirements.

The scale details furnished show the character and contour of all stone and iron work, and the contractor in carrying them out, must make all continuous moldings, etc., conform in outline to those in the central building.

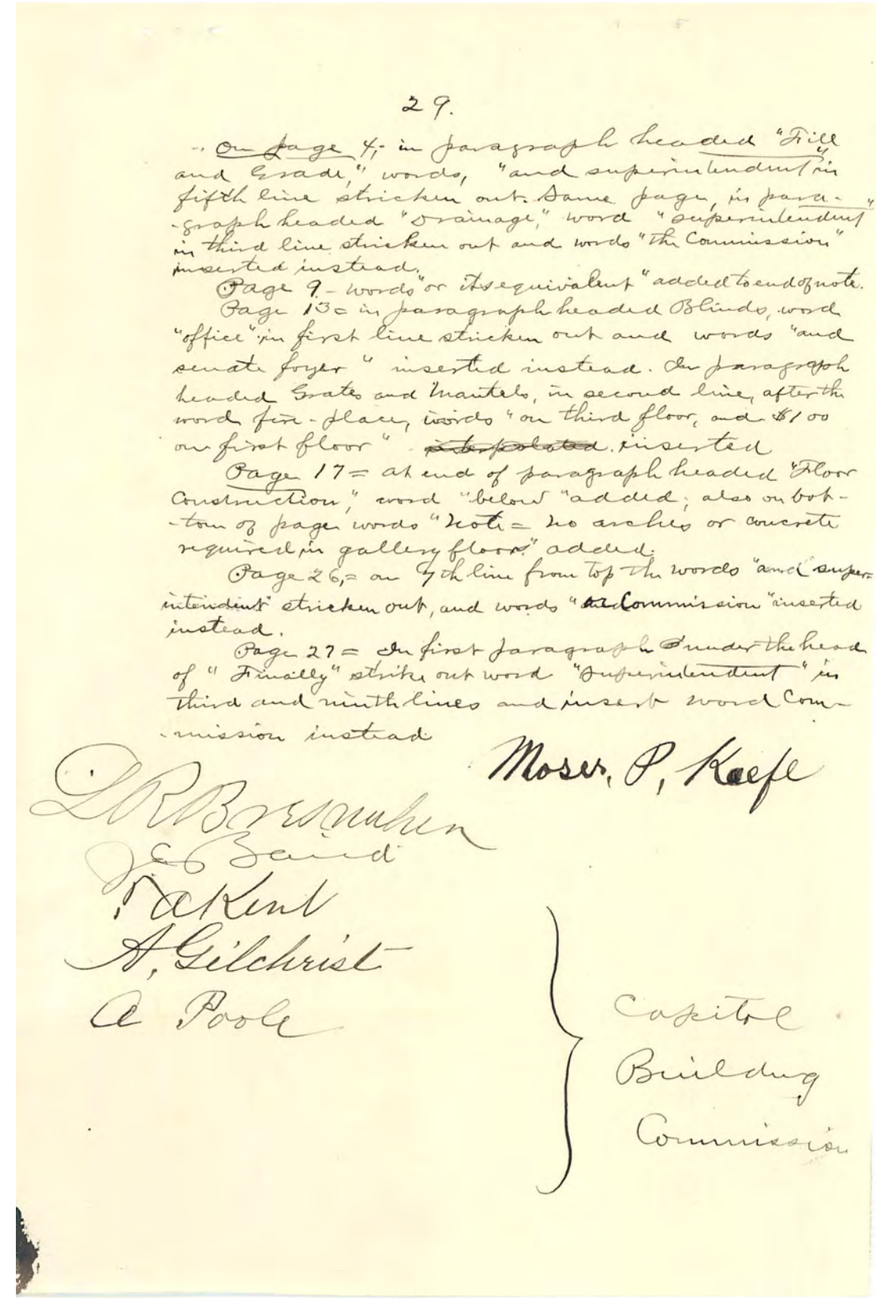
It is further agreed and stipulated on the part of the contractor or contractors to whom the award is made, and whose signatures are hereto attached, that they and each of them have examined carefully the plans and specifications for the construction of said building with said Architects, and hereby agree that the same are so full and complete, that said contractors undertake that in the completion of said building, or such parts of it as the Commission may decide to contract, there shall be no extra charge for either labor or material required to make said building or parts of it complete and substantial for the purposes designed. This, however, not to apply to matters excepted in specifications.

It is further understood that no extra work will be paid for unless ordered by the Capitol Building Commission and Architects, the amount of same being agreed upon and inserted in contract, and should changes be required during construction of said building, the value of such change or changes shall be arrived at *pro rata* by cost of building, and added to or taken from the contract price, as the case may be.

Each contractor, upon completion of his contract, will, preparatory to settlement with the Board, remove at his own expense, all rubbish (not required for concreting or filling lot) pertaining to his part of the work, from the premises.

When the building is fully completed and accepted by the Architects and Capitol Building Commission, the contractor shall return all plans, specifications and details, to the office of D. W. Gibbs & Co., Architects, Toledo, Ohio.

It is hereby stipulated and agreed by and between the Contractor and the Capitol Building Commission that the contract herein was made with the full knowledge of the corrections and alterations made in the printed specifications, said corrections and alterations being as follows, to-wit:



29.

On page 4, in paragraph headed "Fill and Grade," words, "and superintendent" in fifth line stricken out. Same page, in paragraph headed "Drainage," word "superintendent" in third line stricken out and words "the Commission" inserted instead.

Page 9 - words "or its equivalent" added to end of note.

Page 13 = in paragraph headed Blinds, word "office" in first line stricken out and words "and senate foyer" inserted instead. In paragraph headed Grates and Mantels, in second line, after the word fire-place, words "on third floor, and $100 on first floor" ~~interpolated~~ inserted

Page 17 = at end of paragraph headed "Floor Construction," word "below" added; also on bottom of page words "Note = No arches or concrete required in gallery floor" added.

Page 26, = on 4th line from top the words "and superintendent" stricken out, and words "the Commission" inserted instead.

Page 27 = In first paragraph under the head of "Finally" strike out word "Superintendent" in third and ninth lines and insert word Commission instead

Moses. P. Kaufl

L R Bressmaker
J C Baird
F A Kent
A. Gilchrist
A Poole

Capitol Building Commission