

H U D S O N E A S T

Expansion Building K-105

November 1, 1965

P. O. 11-J

| BB 0014735 |

I N D E X

CONSTRUCTION AGREEMENT FORM

GENERAL TERMS & CONDITIONS.....Exhibit A

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PITTSBURGH PLATE GLASS COMPANY

CONSTRUCTION AGREEMENT

THIS AGREEMENT made this 1st day of November, 1965
by and between PITTSBURGH PLATE GLASS COMPANY of Pittsburgh, Pennsylvania,
hereinafter called the "Owner", and HUDSON EAST of
Lake Charles, Louisiana, hereinafter called the "Contractor",

WITNESSETH, That

WHEREAS the Owner desires the services of a construction company to perform construction for 1965 office expansion building K-105 to be located at Owner's plant site at Lake Charles, Louisiana.

NOW THEREFORE, for the considerations hereinafter stated, the parties hereto, intending to be legally bound, hereby covenant and agree as follows:

ARTICLE I -
SCOPE OF WORK:

- A. Except as otherwise specified herein, the Contractor shall provide material, labor, supervision, and necessary tools and equipment to construct the 1965 office expansion of building K-105, all in accordance with General Terms and Conditions (Exhibit A), Construction Specifications (Exhibit B), and List of Drawings (Exhibit C), attached and made a part hereof. The Contractor shall perform the aforesaid construction services.
- B. The Contractor shall, at the option of the Owner, render for compensation as provided in Article III of this agreement construction services for additional work not included in the Scope of Work but within the Contractor's field of practice.

BB 0014737

ARTICLE II -
TIME OF PERFORMANCE:

Contractor shall commence the work to be performed hereunder
November 1, 1965, and shall substantially complete said
work October 17, 1966.

ARTICLE III -
CONTRACTOR'S COMPENSATION:

- A. The Owner shall pay the Contractor for the performance of this contract,
subject to additions and deductions provided herein, in current funds
a lump sum price of _____ which shall be paid as follows:
Contractor will invoice the Owner monthly, as soon after the
last day of the month as possible, for value of work performed.
Owner will pay the Contractor 90% of such monthly billings within
thirty (30) days, with balance paid in accordance with provisions
of Article IV of this agreement.
- B. If the Owner elects to make additions to the Scope of Work as contemplated
in Article I, paragraph B, and approved purchase order change advice signed
by Owner's Purchasing Agent shall be issued, and the lump sum price shall
be adjusted to take into account such additions, either by negotiations
or, at Owner's option, by adding thereto amounts determined by following:
- (1) The aggregate of:
- A. Direct labor through craft foreman plus 48%
 - B. Equipment rental at AED rates
 - C. Direct materials plus 10%
- C. Any change that Owner shall require in work already performed by Contractor
in accordance with Owner's instructions, not amounting to a change in the
Scope of Work but involving an increase in excess of \$ _____

in Contractor's cost of performance (cost being determined as defined in subparagraph B (1) of this Article III,) shall be considered an addition to the lump sum price, and an approved purchase order change advice signed by the Owner's Purchasing Agent shall be issued providing for compensation of the Contractor as set forth in Paragraph B of this Article III.

- D. Any change in the Contractor's work required by the Owner, whether or not amounting to a change in the Scope of Work resulting in a reduction in the cost of performance by an amount in excess of \$ _____ (performance cost being determined as determined as stated below in this paragraph), shall provide the occasion for a reduction in the lump sum price, and an approved purchase order change advice signed by the Owner's Purchasing Agent shall be issued providing for said reduction in compensation. As used in this Paragraph D, performance cost shall be deemed to mean a reasonable estimate of all costs as outlined in Subparagraph B of this Article III plus _____ % of such estimated costs.

**ARTICLE IV -
ACCEPTANCE AND FINAL PAYMENT:**

The Owner shall review the work promptly upon receipt of written notice from the Contractor that the work has been substantially completed. Ten percent (10%) of total billing shall be due thirty (30) days after receipt of notice of substantial completion, provided the work be then fully completed and the contract fully performed. Provided, further, that Contractor shall have submitted evidence - release of liens or otherwise - satisfactory to Owner that all payrolls, material bills and other indebtedness connected with the work have been paid in full.

ARTICLE V -
ASSIGNMENT:

The Contractor shall not assign this contract in whole or in part without the prior written consent of the Owner, nor shall Contractor assign any monies due or to become due to him hereunder, without the prior written consent of the Owner.

Subject to the foregoing, this Agreement shall be binding upon and inure to the benefit of the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF, The parties hereto have executed this Agreement the day and year first above written.

PITTSBURGH PLATE GLASS COMPANY
(Owner)

ATTEST:

Title:

BY _____
Title:

HUDSON EAST
(Contractor)

ATTEST:

Title:

BY _____
Title:

PITTSBURGH PLATE GLASS COMPANY

GENERAL TERMS AND CONDITIONS

EXHIBIT A

Except as and to the extent otherwise expressly specified in the agreement, the following General Terms and Conditions shall be applicable to and constitute a part of the 1965 office expansion of building K-105 construction contract.

I. CONTRACT DOCUMENTS:

The Contract Documents shall consist of:

Construction Agreement

General Terms and Conditions (Exhibit A)

Construction Specifications (Exhibit B)

List of Drawings (Exhibit C)

including such drawings, specifications, and instructions, consistent with such drawings and specifications necessary for the proper execution of the work, as Owner may furnish, all of which form the Contract.

The intent of the contract is to include all labor, material, appliances and services of every kind necessary for the proper execution of the work, and the terms and conditions of payment therefor. The Contract Documents are to be considered as one, and whatever is called for by any one of the documents shall be as binding as if called for by all.

II. DETAILED DRAWINGS AND INSTRUCTIONS:

Owner shall furnish to Contractor, as promptly as is reasonably possible, additional instructions, by means of drawings or otherwise, consistent with the Contract Documents, as may be necessary for the proper execution of the work. Contractor shall execute the work in conformity therewith and shall do no work without proper drawings and instructions from Owner.

III. SUBCONTRACTS:

Contractor shall obtain Owner's prior written approval before entering into any subcontract hereunder not specifically referred to in Contractor's bid. All subcontractors shall be bound by the terms and conditions of this Contract, and Contractor warrants strict compliance therewith on the part of each of his subcontractors. Nothing contained in the Contract Document shall create any contractual relations between the Owner and any subcontractor, but Contractor shall be as fully responsible to Owner for all acts and omissions of his subcontractors, their agents and employees, as he is for the acts and omissions of persons directly employed by him.

IV. WARRANTIES:

Contractor warrants that it shall use sound construction principles and practices with respect to the work performed hereunder, and agrees to remedy, at its own expense, any injury or damage, excluding consequential damages, sustained by Owner within one (1) year after substantial completion of the building, as a result of the Contractor's failure to use sound construction principles or practices as herein warranted. Presence of Owner's engineers at job site or approvals by Owner's representative shall not negate the Contractor's liability under this provision.

V. CONTRACTOR'S LIABILITY:

The Contractor, in the performance of the work under this Contract, must abide by all laws of the United States, State of Louisiana, and any governmental subdivision of either, including all rules and regulations promulgated by said governmental agencies. Contractor shall be liable for the violation of any such law or regulation in the performance

of work under this Contract and agrees to hold harmless and indemnify Owner against any claim, penalty, fine, forfeiture and demand for violation of any federal or state laws or rules and regulations issued by any subdivision thereto, including any illegal hiring practices arising in connection with any work performed under this Contract and as a result of acts of commission or omission of the Contractor, his agents, servants, employees or licensees.

VI. PATENTS AND ROYALTIES:

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall indemnify and save harmless the Owner from liability or loss on account thereof, except that the Owner shall assume such liability and be responsible for such loss when a particular process or the product of a particular manufacturer or manufacturers is specified.

VII. FORCE MAJEURE:

Any delays in or failure by the Contractor in performance shall be excused if and to the extent caused by occurrences beyond the control of Contractor, including, but not limited to, decrees of government, restraints of government, acts of God, strikes, labor holidays, or other coercive action of employees, fire, flood, windstorms, explosions, riots, war, sabotage, inability to secure materials, tools, equipment, and by any other cause or causes, whether similar or dissimilar to those already specified, which cannot be controlled by the Contractor.

VIII. WAIVERS:

It is mutually understood and agreed that any failure by Owner at any

time, or from time to time, to enforce or require the strict keeping and performance by the Contractor of any of the terms or conditions of this Contract, shall not constitute a waiver by Owner of such terms or conditions, and shall not affect or impair such terms or conditions in any way, or the right of Owner at any time to avail itself of such remedies as it may have for any breach or breaches of such terms or conditions.

IX: COST INFORMATION:

The Contractor shall furnish detailed cost information only for the purpose of adjusting the lump sum price when deletions or additions to the work result in a reduction or increase in the Contractor's cost of performance as set forth in Article III, Paragraphs B, C, and D of the Construction Agreement.

X. PERSONNEL:

In its relationship with Contractor, Owner shall act by and through the Construction Engineer. All communications, directions and instructions hereunder from Owner shall be communicated to Contractor by such Construction Engineer, and all communications of any kind by Contractor to Owner hereunder shall be communicated to Contractor by such Construction Engineer, and all communications of any kind by Contractor to Owner hereunder shall be communicated to such Construction Engineer by the Contractor.

The Contractor shall keep on the work, during its progress, a competent Superintendent, an Assistant Superintendent with equal authority, one of which is always present on the work, and such necessary assistants

as may be requested or approved by the Owner, all of whom shall be acceptable to the Owner. The Contractor's Superintendent shall represent the Contractor, and all directions given to him or by him shall be binding upon the Contractor. The Owner reserves the right to bar or expel from its premises any employee of the Contractor for any cause which Owner deems reasonable.

XI. TERMINATION OF CONTRACT:

A. TERMINATION BY OWNER:

1. In the event that the Contractor shall be adjudged a bankrupt, or shall make a general assignment for the benefit of his creditors, or if a receiver shall be appointed on account of his insolvency, or if he shall default in the performance of any covenant to be performed by him under this Contract and such default shall not be cured within fifteen (15) days following written notice thereof from Owner, the Owner may, without prejudice to and other right or remedy, terminate this Contract and may take possession of the work completed or partially completed and finish the work by whatever method he may deem expedient. In the event of such termination by the Owner, the Contractor shall not be entitled to receive any further payment until the work is completed. If the unpaid balance of the Contractor's compensation shall exceed the cost to the Owner of completing the work, such excess shall be paid to the Contractor. If such completion cost to Owner shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner.
2. In the event that the Owner, at any time, elects not to proceed

with the construction as proposed in this Contract, the Owner may terminate said Contract, in which event the Contractor would discontinue all further work under the Contract. In the event of such termination, the payment by the Owner to the Contractor shall consist of the aggregate of the following:

- A. That portion of the lump sum payable under Article III, Paragraph A of the Construction Agreement which is commensurate with that portion of the work completed and not theretofore paid for plus the withheld 15% of the sums earned by the Contractor with respect to work already completed.
- B. The cost of any additional work performed prior to the termination and not theretofore reimbursed hereunder, computed in accordance with Article III, Paragraph B of the Construction Agreement.
- C. The estimated cost to the Contractor for terminating the work which estimated cost shall be deemed to consist of 10 per cent of the balance of the lump sum price after payment pursuant with Paragraph A, 2, A of this article.

B. TERMINATION BY CONTRACTOR:

In the event that the work shall be stopped pursuant to an order of court or other public authority, for a period in excess of ninety (90) days, through no fault of the Contractor, his agents or employees, or if the Owner shall fail to pay the Contractor any sum due under the Contract, within thirty (30) days of its maturity and presentation, the Contractor may, upon seven (7) days' written

notice to the Owner, stop work or terminate this Contract and recover from the Owner payment for all work executed and any loss sustained upon any mistake or equipment and reasonable profit and, if such termination be by reason of Owner's default, reasonable damages.

XII. OWNERSHIP OF DRAWINGS AND MODELS:

All drawings, specifications and copies thereof and all models furnished by the Owner or Contractor are the property or shall become the property of the Owner. They are not to be used on other work and are to be returned to Owner as set forth in Article XXI of these General Terms and Conditions.

XIII. ARBITRATION:

Any controversy or claim arising out of or relating to this Contract, or the breach thereof, shall be settled by arbitration in accordance with the rules, then obtaining, of the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

XIV. TAXES:

Contractor shall be responsible for and shall pay all the applicable federal, state and local taxes affecting its work hereunder. The Contractor's compensation specified in Article III of the Agreement shall include all taxes, if any, applicable to such work and Owner shall not be required to pay any such taxes or to reimburse Contractor therefor.

XV. PERMITS AND REGULATIONS:

The Owner shall secure and pay for all permits, licenses easements for

permanent structures or permanent changes in existing facilities. The Contractor shall secure and pay for all permits and licenses of a temporary nature necessary for the prosecution of the work and shall give all notices and comply with all laws, ordinances, rules and regulations relating to the conduct of the work as drawn and specified.

XVI. PROTECTION OF WORK AND PROPERTY:

The Contract contemplates that the Contractor shall protect his work from damage or loss and shall protect the Owner's immediate and adjacent property from damage or loss arising in connection with this Contract. Except as provided in item XVII of these General Terms and Conditions, Contractor shall, without cost to Owner, make good any such damage or loss caused by the fault or negligence of the Contractor, his agents or employees.

XVII. INSURANCE:

Contractor shall indemnify and hold harmless the Owner from and against any loss, liability, claim or demand for damages for personal injury, including death and/or property damage arising out of or relating to the performance of such work except when caused by the sole negligence of the Owner, its officers, agents or employees.

For the purposes of this Paragraph, the activities of Contractor's agents or employees on and about Owner's premises during the life of this Contract shall be deemed to relate to the performance of the work whether or not such activities are within the scope of their agency or employment.

Contractor shall procure and maintain in full force and effect during

the progress of the work insurance against risks and in amounts not less than such limits as are stipulated below. Such insurance shall be with such carriers approved by the Owner.

(1) Workmen's compensation in applicable statutory limits.

(2) Contractor's Liability, including completed operations and contractual endorsement (or products liability insurance)

Personal liability \$100,000/300,000

Property damage \$ 50,000

(3) Mobile Vehicles, Autos and Trucks

Personal liability \$100,000/300,000

Property damage \$ 50,000

Certificates acceptable to Owner evidencing Contractor's insurance coverage shall be presented to Owner prior to commencement of the work under this Contract.

It is expressly understood that Owner does not in any way represent that the types or the minimum limits of insurance hereinbefore specified are sufficient or adequate to protect Contractor's interests or liabilities.

The Owner shall effect and maintain fire insurance, including extended coverage to the full insurable value thereof on those items of labor and materials connected with the work of this Contract situated on Owner's property, including materials in place or to be used as part of the permanent construction, surplus materials, shanties or protective temporary structures and miscellaneous materials or supplies incident to the work. The loss, if any, payable thereunder is to be made adjustable with and payable to Owner and distributed by Owner in accordance with the loss or damage sustained by Owner, Contractor and others. To the extent that Contractor is not covered therefor by his Contractor's liability insurance, Owner hereby waives any right of recovery which he might otherwise have against Contractor resulting from acts of

Contractor, its agents or employees, which may cause loss through fire to the Owner's property.

XVIII. PROGRESS PAYMENTS INFORMATION:

In compliance with payments provided for in Article III of the Agreement, Contractor shall submit to the Owner a payment application and, if required by the Construction Engineer, receipts or other satisfactory evidence of payment for material and labor, including payments to the subcontractors.

XIX. ASSOCIATED GENERAL CONTRACTOR'S PARTICIPATION:

The Contractor shall subscribe to the Associated General Contractors, Lake Charles Chapter, while performing work in Owner's plant. The fee for such membership is one-quarter (1/4) of one (1) per cent of the gross bids up to a maximum of \$1200 in any one year. This cost is to be borne by the Contractor.

XX. PROGRESS REPORTS AND SCHEDULES:

Within a reasonable time after awarding of the Contract, the Contractor shall prepare a progress schedule, showing dates upon which the various phases of the work are to be carried on. This schedule must be approved by Owner's Construction Engineer. The Contractor shall provide a progress report each week listing percentage completion of each phase of the work along with revised completion dates if necessary.

XXI. PLANT PROTECTION:

Contractor will issue an identification badge to each of his own and his subcontractor's employees engaged in the work. Contractor

shall furnish to the Owner's Construction Engineer and keep current an index file in duplicate showing each outstanding badge and the employee to whom it has been issued. When an employee's employment is terminated, the Contractor shall repossess the badge issued to such employee and promptly advise the Construction Engineer that such person no longer has access to the work.

Contractor shall hold in confidence and refrain from using and disclosing to others, during and after completion of the work, all confidential information acquired by him from Owner relating to the details of the work and, upon the completion of the work, shall return to Owner all drawings and specifications, except that the Contractor may retain one complete set of said drawings and specifications until expiration of the warranty period at which time said drawings and specifications shall be promptly returned to Owner. Contractor shall not make copies of drawings without express written approval of Owner.

Contractor and all subcontractors and their respective employees shall stay within the confines of the work and shall not be permitted to visit other construction projects or plant operations. The Contractor shall not permit visitors on the job. Cameras are not permitted on Owner's plant premises. Approval must be procured from the Owner's Works Manager before any photographs may be taken within the plant property.

EXHIBIT B

CONSTRUCTION SPECIFICATIONS

| BB 0014752 |

SECTION NO. 1

BARRICADING, WRECKING AND CLEARING

BARRICADING:

Contractor shall provide suitable barricades and protection for giving adequate protection to the public while the work is in progress.

WRECKING AND CLEARING:

Contractor shall wreck out all existing work as shown on plans. All materials wrecked out, with the exception of items to be reused in the construction, and as noted otherwise, shall become the property of the contractor and shall be removed from the site at his own expense.

DEBRIS:

All debris from wrecking operations shall be removed from the premises as wrecked out and will not be permitted to accumulate. Material proposed for salvage shall be cleaned as soon as wrecked and neatly stacked for reuse. Accumulation of debris under no condition will be permitted, and the contractor will be held responsible for proper observation of safety regulations regarding fire and other hazards.

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SECTION NO. 2

EXCAVATION, CLEARING AND BACKFILLING

SCOPE OF WORK:

Work intended under this section shall include all labor, materials, equipment and appurtenant accessories necessary for, or incidental to, the execution of all clearing, excavation, filling and backfilling as indicated or reasonably implied by the drawings and as herein specified. Read and comply with the general conditions whether attached or not.

Contractor shall be held responsible for having visited the site to determine existing conditions and the extent of his work.

REMOVAL OF TOP SOIL REQUIRED:

Remove top soil suitable for finish grading. Store on premises for use in final finish grading. Top soil shall be stripped from the area of the building and from all paved areas to sufficient depth to remove grass, roots and debris; such soil may not be reused for filling under slabs.

FIELD MEASUREMENTS, BENCH MARKS AND GRADES:

Carefully establish property lines from data given on site plan or from existing monuments. After establishment of base lines, bench marks and grades by a competent engineer, accurately lay out new building lines and erect permanent batter boards. All shall be at such locations as to insure against any disturbance throughout construction operations. Should they be disturbed due to construction operations and it is necessary to restore them, the expense of restorations shall be charged to the contractor.

EXCAVATION REQUIRED FOR STRUCTURE:

Includes all materials encountered such as earth, mud, sand, clay, stumps, and other similar existing materials.

Lines and limits of excavation as required for installation of all work and to provide sufficient clearance for proper execution of work. Unless otherwise required, minimum clearance 1-foot outside grade beam lines.

Trim excavations to required levels indicated on drawings.

Execute footing excavations as shown on plans, of proper sizes, immediately before placing of concrete.

Allow ample room in excavations for pumping, draining and removing unsuitable material.

DRILLED PEDESTAL PILE FOUNDATION:

Pile Shafts: The pile shafts excavations shall be drilled by adequate and acceptable drilling equipment, to the bearing strata as shown on the drawings, and of the sizes and depths as called for.

The maximum acceptable tolerance from plumb in any one shaft, measured in the center of the shaft, shall not exceed one-sixteenth (1/16) inch per foot length of pile shaft.

PEDESTALS: The pedestal base excavations shall be machine or hand excavated to the sizes and shapes called for in the foundation schedules. The pedestal base shall be concentric with pile shaft. The center of the shaft at the ground surface shall be transferred accurately to the bottom of the base by means of a plumb-bob, and a piece of reinforcing steel, 1/2 inch round by 12 inches long, shall be driven into the bottom and left in place to serve as a fixed center to rotate the checking gage.

FILL:

Where concrete slabs are to be placed on earth, any loam or organic or other unsuitable material shall be removed. Fill, where required to raise the subgrade for concrete slabs to the elevations indicated on the drawings shall consist of clay. Earth fill required in excess of that obtained from required excavation shall be obtained from borrow areas off the site selected by the contractor and approved by architect. Fill shall be compacted by a power roller or other approved equipment, and the subgrade brought to a reasonably true and even plane. Earth used for fill shall be placed in layers not more than 6 inches thick. Each layer shall be uniformly spread, moistened, or dried as required, and then compacted to 90 per cent of maximum density obtained at the optimum moisture content.

BACKFILLING:

After completion of foundation footings, foundation walls, and other construction below the elevation of the final grades and prior to backfilling, forms shall be removed and the excavation shall be cleaned of trash and debris. Backfill shall consist of the excavation or borrow of sand, gravel or other approved material and shall be free of trash, lumber, or other debris. Backfill shall be placed in horizontal layers not more than 9 inches thick, and shall have a proper moisture content for the required degree of compaction. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to a density approximating that of the adjacent undisturbed soil. Backfill under concrete floor slabs shall be compacted to the density specified hereinbefore for fill. Backfill shall be brought to a suitable elevation above grade to provide for anticipated settlement and shrinkage thereof. Backfill shall not be placed against foundation walls prior to 7 days after completion of wall and then only after approved by the Architect. Backfill shall be brought up evenly on each side and compacting backfill shall not be operated closer to the wall than a distance equal to the height of the backfill above the top of footing.

SURPLUS MATERIAL:

All surplus material that remains after backfilling and subgrading is completed, shall be distributed on the site as directed by the architect.

PUMPING:

All excavations for footings, beams, etc., shall be kept reasonably

dry and free of rain water and seepage. Excess water collecting in these areas or in below grade areas during construction shall be promptly removed by pumping or other efficient means.

POROUS FILL AND MEMBRANE:

Porous fill under first floor slab shall be washed gravel placed and graded to thickness shown.

Membrane waterproofing shall be applied over washed gravel fill and shall consist of plastic polyethylene, Visqueen or equal 4 mil thickness (0.004), of any standard width lapping all edges 6".

SECTION NO. 3

CONCRETE AND CEMENT WORK

GENERAL STATEMENT:

At the owner's option, all structural concrete used in the construction of the building shall be designed and controlled by a recognized independent testing laboratory. All costs in connection with design, control and testing shall be borne by the Owner. Three copies of all testing laboratory reports shall be submitted to the Architect. There will be required test cylinders to be broken at seven (7) and twenty-eight (28) days for each fifty (50) cubic yards of concrete in the building.

SCOPE:

The work under this section shall include all labor, materials, and equipment necessary for the completion of all plain and reinforced concrete work and cement finish work of every description as indicated by the drawings and as herein specified.

SHOP DRAWINGS:

As soon as possible after the award of the Contract, this Contractor shall prepare and submit to the Architect, for approval, prints of reinforcement plans, details, diagrams and schedules. No part of the structure shall be installed for which shop drawing have not been submitted to the Architect for approval. The shop drawings shall indicate the location, general spacing and sizes of reinforcing members, together with all slots, chases, recesses, and openings required for installation of other items of work. The diagrams and general schedules shall indicate the bends, sizes, and lengths and reinforcing members. These plans, details, and diagrams, and schedules will be checked by the Architects, and one (1) print of each returned, either approved or for correction.

COOPERATION WITH OTHERS:

All inserts, hangers, anchors, sleeves, anchor bolts, plates, frames, bucks, flashings and similar items of work required by other trades to be built into the concrete will be provided and set by the particular trade or branch of the work requiring such miscellaneous items. The contractor shall, however, provide assistance, as necessary, to other subcontractors in setting such items and after they are set, he shall take due precautions during placing of forms, reinforcing, concrete and the like, to prevent any displacement or damage to them. If any item is displaced or damaged through the acts of the contractor or his employees, such steps as are necessary shall be taken by him, at his expense, to reset and, where necessary, renew the displacement or damaged item of work.

PORTLAND CEMENT:

Portland cement shall conform to the "Standard Specifications for Portland Cement" (A.S.T.M. Serial Designation: C150) and shall be type 1, and type 111 for high early.

Type 1 - For use in general concrete construction when the special properties specified for the Type 11, 111, 1V, and V are not required.

Type 111 - For use when high early strength is required.

NOTE: All Portland cement used in construction shall be Lone Star, or equal.

FINE AGGREGATE:

Fine aggregate shall consist of sand having clean, hard, durable, uncoated grains, free from deleterious substances, and shall range in size from fine to coarse within the following percentages by weight:

Passing No.	4 sieve	95 to 100 per cent
Passing No.	8 sieve	80 to 100 per cent
Passing No.	16 sieve	50 to 85 per cent
Passing No.	30 sieve	25 to 60 per cent
Passing No.	50 sieve	15 to 30 per cent
Passing No.	100 sieve	 2 to 10 per cent

Not more than 35 per cent shall pass a standard size sieve and be retained on the next smaller standard sieve. Fineness modulus shall not be less than 2.3 per cent nor more than 3.1 per cent and shall not vary more than .2 per cent.

COARSE AGGREGATE:

Coarse aggregate shall consist of crushed stone, gravel, slag, or other approved inert materials with similar characteristics or combination thereof, having clean, hard, durable, uncoated particles free from deleterious matter. After acceptance of a grading, a variation in the amount passing any sieve size of more than 10 per cent of the total will not be permitted and the grading shall be within the following percentage, by weight.

Passing A	1-1/2 in. sieve	.. 95 to 100 per cent
Passing A	3/4 in. sieve	.. 35 to 70 per cent
Passing A	3/8 in. sieve	.. 10 to 30 per cent
Passing A No.	4 in. sieve	.. 0 to 5 per cent

The Architect may at any time require delivery and stock piling of the coarse aggregate in two sizes divided on the 3/4 in. sieve. When the aggregate is required to be so divided the two sizes shall be used in such proportions that the combined aggregates will meet the grading given above.

DELETERIOUS SUBSTANCES:

Deleterious substances shall not be present in the aggregates in excess of the following amounts:

<u>Deleterious substance maximum percentage by weight</u>				
<u>Aggregate</u>	<u>Clay Lumps</u>	<u>Oven-dry material of specific Gravity less than 2.0</u>	<u>Material finer than No. 200 sieve</u>	<u>Soft fragments</u>
Fine	?	1/2	5	...
Coarse	1/4	1	1	5

SOUNDNESS:

The fine and coarse aggregate when subjected to five alternations of the sodium sulfate soundness test (ASTM Designation: C88-55T) shall not show an average weighted loss of more than 10 per cent for the fine aggregate and 12 per cent for the coarse aggregate, unless evidence satisfactory to the Architect is furnished that concrete of comparable proportions in which similar materials from the same sources were used, has given satisfactory service when exposed to weathering similar to that to be encountered.

WATER:

Water for concrete shall be from the city supply or other approved source. Water shall be clean and free from oil, acid and injurious amounts of vegetable matter, alkalies, or other salts.

MIXING CONCRETE:

The concrete shall be thoroughly mixed in a batch mixer of approved type. The mixer shall be equipped with suitable charging hopper. A water-storage and water measuring device shall be provided. The mixing of each batch shall continue for not less than one and one-half (1-1/2) minutes after all the materials are in the mixer, during which time the mixer shall rotate at a peripheral speed of approximately 200 feet per minute.

Should ready mixed concrete be used, it shall be mixed and delivered in accordance with the requirements set forth in the "Tentative Specifications for Ready Mixed Concrete" (A.S.T.M. Serial Designation C94-35).

METAL REINFORCEMENT:

All reinforcing bars shall be deformed, complying with the "Minimum Requirements for the Deformation of Deformed Steel Bars for Concrete Reinforcement", (ASTM Serial Designation A305).

Metal reinforcement, with exception of column reinforcements shall conform to the requirements of "Standard Specifications for New Billet Steel Concrete Reinforcement Bars" of intermediate Grade, Serial Designation A15-39, or subsequent revisions of the American Society for testing materials.

Column reinforcement shall be rail steel ASTM Designation A16.

Wire for concrete reinforcement shall conform to the requirements of the "Standard Specifications for Cold Drawn Steel Wire for Concrete Reinforcements", Serial Designation A82-34, or subsequent revisions of the American Society for Testing Materials.

Metal reinforcement before being placed shall be free from rust, scale, or other coating that will destroy or reduce the bond. Reinforcement shall be formed to the dimensions indicated on the plans. Cold bends shall be made around a pin having a diameter of four (4) or more times the least dimension of the bar.

Metal reinforcement shall not be bent or straightened in a manner that will injure the material. Bars with kinks or bends not shown on the plans shall not be used. Heating of reinforcement for bending will not be permitted.

Metal reinforcement shall be accurately placed and secured to the dimensions indicated on the plans, and shall be supported by concrete or metal chairs or spacers or metal hangers.

In slabs, beams and girders, where splices or reinforcement are necessary, such splices shall not be made at points of maximum stress. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear and the minimum length of lap shall not be less than forty (40) times the least dimension of the bar.

STORAGE OF MATERIALS:

Cement and aggregate shall be stored at the work in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged, shall not be used for concrete.

CONCRETE QUALITY:

The working stresses for the design of this structure are based on the specified minimum ultimate 28 day compressive strength of the concrete, or on the specified minimum ultimate compressive strength at the earlier age at which the concrete may be expected to receive its full load. The strengths of concrete at specified ages for which all parts of the structure were designed, are shown on the plans.

All concrete exposed to the weather, shall have a water content not to exceed 6 gal. per sack of Portland Cement.

DETERMINATION OF STRENGTH:

Proportions of the materials and water content shall be established

by tests which shall be made in advance of the beginning of operations, using the consistencies suitable for the work and in accordance with the "Standard Method of Making Compression tests of Concrete" (A.S.T.M. Serial Designation: C39-39). These tests shall be made and certified by a testing laboratory approved by the Architects and Engineers and paid by the contractor. A curve, representing the relation between the water content and the average 28 day compressive strength or earlier strength at which the concrete is to receive its full working load, shall be established by at least four test specimens. Amount of water used in concrete, for the structure as determined from the curve, shall correspond to a strength which is 20 per cent greater than that called for on the plans, for concrete of a compressive strength less than 2,500 lb. per sq. in. and 15 per cent greater for concrete of a compressive strength of 2,500 lb. per sq. inch or more. No substitutions shall be made in the materials used on the work without additional tests in accordance herewith to show that the water content per sack of cement as established by Laboratory Test be changed.

POZZOLITH:

Exposed concrete work, grade beams, etc., on the exterior walls of the building shall have included in the concrete an approved cement dispersing agent. The concrete shall be designed in accordance with the A.C.I. standard recommendation practice for concrete mix (ACI 613-44) normal Portland Cement shall be used and the dispersing agent shall be of the type which reduces the water cement ratio law. The strengths, slumps and water-content ratio shall be as called for elsewhere in the specifications. The top size aggregate with the Pozzoloth shall not exceed 3/4". The concrete shall be so designed so that the material will not segregate and excessive bleeding shall not occur.

TESTS ON CONCRETE:

During the progress of the work, compression tests shall be made in accordance with the "Standard Method of Making and Storing Compression Test Specimens of Concrete in the Field" (A.S.T.M. Serial Designation: C31-39). Each test shall be made on one laboratory control cylinder and one field control cylinder.

There shall be at least one test for each strength of concrete placed on any one day and at least one test for each 50 cu. yard of concrete or fraction thereof in the job.

The standard age of the test shall be 28 days, but 7 day tests may be used provided that the relation between the 7 and 28 day strengths of the concrete is established by test for the materials and proportions used.

In all cases where the average strength of the laboratory control cylinders shown by these tests for any portion of the structure falls below the minimum ultimate compressive strengths called for on the plans, the Architects shall have the right to order a change in the mix or in the water content for the remaining portion of the structure. In cases where the average strength of the cylinders cured on the job fall below the required strength, the Architects or Engineers shall have the right to

secure the required strength and may require load tests to be made on the portions of the building so affected.

NOTE: See "General Statement" Page 3 - 1 of this specification.

PROPORTIONS AND CONSISTENCY:

The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The combined aggregate shall be of such composition of sizes that when separated on the No. 4 standard sieve, the weight passing the sieve (fine aggregate) shall not be less than 30 per-cent nor greater than 50 per cent of the total unless otherwise required by the Architects.

The methods of measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work. Measurements shall be by weight. Measurement of materials for ready-mixed concrete shall conform to the "Tentative Specifications for Ready Mixed Concrete" for reinforced concrete shall be as follows:

	Max.	Min.
(1) Foundation Footings	5"	2"
(2) Reinforced concrete slabs and beams and columns	5"	3"

The contractor shall not use less than 5-1/2 sacks of cement to the cubic yard of concrete.

PREPARATIONS:

Before placing concrete, all equipment for mixing and transporting the concrete shall be cleaned, all debris shall be removed from the places to be occupied by the concrete, forms shall be thoroughly wetted (except in freezing weather), and the reinforcement shall be thoroughly cleaned of ice or other coatings. Water shall be removed from place of deposit before it is placed unless otherwise permitted by the Architects or Engineers.

MIXING:

The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged. For job-mixed concrete, the mixer shall be rotated at a speed recommended by the manufacturer and mixing shall be continued for at least 1 minute after all materials are in the mixer. Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in the "Tentative Specifications for Ready Mixed Concrete" (A.S.T.M. Serial Designations: C94-38).

CONVEYING:

Concrete shall be conveyed from the mixer to the place of final deposit

BY methods which will prevent the separation or loss of materials. Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end without separation of the materials.

DEPOSITING:

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. No concrete that has partially hardened or been contaminated by foreign materials shall be deposited on the work, nor shall retempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or section is completed. The top surface shall be generally level. When construction joints are necessary, they shall be made in accordance with the paragraph on construction joints.

All concrete shall be thoroughly compacted by suitable means during the operation of placing, and shall be thoroughly worked around reinforcement, embedded fixtures and into the corners of the forms. After concrete has been placed in forms the concrete shall be vibrated with power-driven vibrators.

Where conditions make compacting difficult, or where the reinforcement is congested, batches of mortar, containing the same proportion of cement to sand as used in the concrete, shall be first deposited in the forms. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the bars.

CURING:

Provisions shall be made for maintaining concrete in a moist condition for a period of at least 5 days after the placement of the concrete, except that for high early strength concrete, moist curing shall be provided for at least the first two days.

COLD WEATHER REQUIREMENTS:

Adequate equipment shall be provided for protecting the concrete during freezing weather. No frozen materials or materials containing ice shall be used.

All concrete materials and all reinforcement, form, fillers, and ground with which the concrete is to come in contact, shall be free from frost. Whenever the temperature of the surrounding air is below 40°F., all concrete placed in the forms shall have a temperature of between 70°F. and 80°F.; and adequate means shall be provided for maintaining a temperature of not less than 70°F. for three days, or 50°F. for five days except when high early strength concrete is used the temperature shall be maintained at not less than 70°F. for two days or 50°F. for three days or for as much more time as is necessary to insure proper curing of the concrete. No dependence shall be placed on salt or other chemicals for the prevention of freezing.

GENERAL PROCEDURES:

Slab and Beams: All slabs and beams shall be placed in one operation. Concrete columns and walls shall set at least two (2) hours before the floor system is poured.

Such surfaces as are to be finished shall be brought to proper grade, struck off, and finished in a workmanlike manner. No honeycombing, rough spots, or protruding stones shall be left exposed. Vertical surfaces shall be true and even, free from stone pockets, depressions or projections beyond the surface. All holes left by form ties shall be filled and all defects repaired.

Precautions must be taken to be sure that the thickness of floor slabs shown on the plans exists at all places.

The contractor's Superintendent in charge of concrete work shall mark in ink on the drawings, the time and the date of the placing of concrete in the different members. Such drawings shall be kept on file at the job until the completion of the building and shall be subject to the inspection of the Architect/Engineer at all times.

Construction Joints: Joints not indicated on the plans shall be so made and located as to least impair the strength of the structure. Plumb bulkheads used as joints at the end of a day's work shall be arranged at right angles to the plane of stress and in areas of minimum shear as directed by the Architect. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned and all laitance removed. In addition to the foregoing vertical joints shall be thoroughly wetted, but, not saturated, and slushed with a coat of neat cement grout immediately before the placing of new concrete.

Construction joints in floors shall be located near the middle of the spans of slabs, beams or girders, unless a beam intersects a girder at this point, in which case, the joints in the girders shall be offset a distance equal to twice the width of the beam. In this last case, provision shall be made for shear by use of inclined reinforcement.

FORM MATERIAL:

The Contractor will be held responsible for walls being plumb, with smooth finish walls free from fins, honeycombs, burrs or other imperfections and to this end forms shall be rigidly constructed and lined with plywood, or shall be 2" T&G, with faces sanded and cracks filled with cold water putty.

The form material shall be used in large size sheets and have close fitting joints. Patchwork and illogical location of joints are to be avoided. Holes and imperfections in the lining are to be filled with cold water putty or similar material and sanded flush with adjoining surfaces.

The layout of sheets and scheme of forming shall be subject to the Architects' approval.

All lumber shall be of good quality, seasoned, straight and free from

defects that might impair its strength.

WETTING AND OILING FORMS:

Wood forms are to be given a coat of liquid form oil, being careful to wipe the forms as clean as possible to remove all excess oil.

In case forms have been erected for some time and have become dry so that the joints have opened, the forms shall be thoroughly soaked at least twice each day for three (3) days prior to placing the concrete, so as to tighten all joints.

Concrete shall not be placed in any form until inspected by the Architects and permission is given to start placing. Plywood shall be thoroughly wet with water at least twenty-four (24) hours before being used.

REMOVAL OF FORMS:

Forms shall be removed in such a manner as to insure the complete safety of the structure. Vertical forms may be removed after 24 hours, providing the concrete is sufficiently set hard not to be injured thereby. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon.

CLEANING AND BENDING STEEL:

Metal reinforcement, at the time concrete is placed, shall be free from rust, scale, or other coatings that will destroy or reduce the bond. Bends for stirrups and ties shall be made around a pin having a diameter of not less than six times the minimum thickness of the bar, except that for bars larger than 1"; the pin shall be not less than eight times the minimum thickness of the bar. All bars shall be bent cold.

PLACING STEEL:

Metal reinforcement shall be accurately placed in accordance with the plans and shall be adequately secured in position by concrete or metal chairs and spacers.

SPLICES AND OFFSETS:

In slabs and beams splices or reinforcement at points of maximum stress shall generally be avoided. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear.

Where changes in the cross section of a column occur, the longitudinal bars shall be offset in a region where lateral support is afforded. Where offset, the slope of the inclined portion shall not be more than 1 in 6, and in the case of tied columns the ties shall be spaced not over 3" on centers for a distance of 1' below the actual point of offset.

PROTECTION COVERING ON STEEL:

The metal reinforcement shall be protected by the thickness of concrete indicated on the plans. Where not otherwise shown, the thickness of concrete over the reinforcement shall be as follows:

Where concrete is deposited against ground without the use of forms, not less than 3".

Where concrete may be exposed to the ground, but is placed in forms, not less than 2".

Where concrete may be exposed to the weather, not less than 1-1/2".

In slabs and walls not exposed to the ground or to the weather, not less than 3/4".

In all cases the thickness of concrete over the reinforcement shall be at least equal to the diameter of round bars and one and one-half times the side dimension of square bars. Exposed reinforcement bars intended for bonding with future extensions shall be protected from corrosion by concrete or other adequate covering.

PATCHING:

Where patching of defective concrete or interstices is necessary, this shall be done promptly upon removal of form work. Such defects shall first be inspected by the Architect and the method of repair approved before this work is done. Loose rocks in defective area shall be knocked out to the solid concrete and then thoroughly cleaned and wetted before applying the patch. The patching mortar shall be compacted into place. All holes made by breaking out ends of ties shall be carefully filled with a gun.

RUBBING:

After the forms are removed, the tie holes, form marks, and other irregularities of the surface shall be carefully treated as soon as possible, and the entire surface immediately ground lightly with a coarse carborundum stone so as to produce a smooth surface of uniform texture; water shall be applied to the concrete during grinding.

ROUGH SLAB FINISH:

Concrete slabs where same are to receive ceramic tile and terrazzo are not to be trowled but are to be floated off level and even and then roughened up with rake.

SLAB FINISHING:

All floors to remain concrete, or to receive resilient tile shall be steel troweled, by hand, as required to bring the finish to a smooth, impervious surface. No additional water shall be added to facilitate finishing. The final troweling shall be for the purpose of burnishing, and as it progresses there shall be evidence of shine or gloss to the surface throughout the entire area of the surface. Electric machines may be used for the last operation.

Curing of cement finish surfaces shall be as specified hereinbefore. After curing has been completed, this contractor shall cover and maintain all cement finished surfaces with a heavy grade "Krafit" paper.

STRENGTH OF MIXES:

After the aggregate source has been determined by the contractor he shall have the approved testing laboratory employed by him, design the mixes for the concrete to be used in the construction. This predetermination of mixes shall be performed at a time sufficient to definitely establish the various strength requirements necessary.

Strengths shall be developed on a 28 day test for locations as follows:

All concrete, not less than 3000 psi on a 28 day test.

EXPOSED AGGREGATE CONCRETE:

Concrete columns on exterior of building, where indicated on the drawings, shall have an exposed aggregate surface.

After forms are stripped and concrete has cured sufficiently the columns shall be sand blasted to expose the deep coarse aggregate as directed by architect.

HANGERS, INSERTS, ETC..

Dove tail anchor slots, hanger inserts, etc., required to anchor other materials to concrete work shall be furnished and installed in the proper locations prior to pouring concrete.

Refer to drawings and other sections of this specification for specific requirements.

CEMENT TOPPING:

Contractor shall install in penthouse, a cement topping floor finish over waterproofing membrane. Water-proofing is specified in Section 12 of this specification.

Cement topping material shall be composed of one (1) part Portland cement, one (1) part fine aggregate, and one and three-fourths (1-3/4) parts coarse aggregate ranging in sizes from one-eighth (1/8) inch to three-eighths (3/8) inch in graduation of sizes, as approved.

Floor topping shall be of thickness indicated on drawings, and shall be smooth trowel finished as specified hereinbefore, provide galvanized "Keydeck" reinforcing in topping.

SECTION NO. 4

STRUCTURAL AND MISCELLANEOUS STEEL

GENERAL:

Furnish and erect all structural steel and iron, and all miscellaneous iron indicated on drawings or called for herein. Furnish all lintels, shelf angles, anchors, connections, rivets, bolts and all other structural elements.

All steel and iron work unless otherwise specified, shall conform to the requirements and classifications of the Standard Specifications of the American Institute of Steel Construction for Buildings, Sixth Edition, 1963, which documents are hereby made a part thereof.

STRUCTURAL STEEL:

Structural Steel shall conform to the requirements of the "Standard Specifications for Structural Steel for Buildings" (ASTM Serial Designation: A-36).

SHOP DRAWINGS:

The structural design drawings indicate the general sizes, shapes and locations of the various framing elements with relation to the finished structure. The steel subcontractor shall prepare for approval shop drawings of all structural steel to be used, and shall in the preparation of shop drawings, check, verify, and compare dimensions and elevations of steel work with those of other trades, and shall cooperate with the Architects so as to properly coordinate the steel work with all other work.

In the detailing of shop and field connections, it shall be the responsibility of the steel sub-contractor to design all connections in accordance with the best accepted practice, and in no case shall the unit stresses established in the A.I.S.C. Specifications be exceeded.

ERECTION:

Anchor bolts shall be furnished by the steel and iron subcontractor, but will be set by the General Contractor. After base slabs have been properly leveled and set to proper alignment, the base slabs will be grouted in by the General Contractor. The General Contractor will establish datum and the base lines to facilitate the steel erector in setting of the base slabs.

Loose lintels and shelf angles, not directly bolted to the structural frame will be set by the General Contractor, but all lintels or shelf angles which attach to structural steel framing shall be connected by the steel subcontractor.

In the setting and erection of structural steel and in order to maintain proper location, alignment, and level of the work, each individual piece, or member and the framing as a unit, shall be carefully checked to conform to plan, dimension, etc. Error in excess of 1/4" in the location,

alignment, or level of an individual piece or member shall be adjusted and the structure as a whole shall be plumb, within 1/1000 of its height . It shall be incumbent upon the steel subcontractor to correct, at his own expense, any and all errors in excess of limits herein established, This responsibility shall cease only upon completion of the entire project.

Filler plates for the proper alignment of the work, as may be required, due to mill and fabrication tolerances, shall be furnished and set by the erector to meet conditions in the field.

PAINTING:

Steel encased in concrete shall not be painted. All other steel and iron work. Except contact surfaces and column base slabs, shall be shop and field painted. Milled surfaces of column base slabs shall be given a coat of white lead paint, and a heavy coat of tallow.

All scale, dirt and foreign matter shall be removed from structural steel, cast and wrought iron, before any painting is done in the shop, All structural steel shall be given a shop and field coat. Shop and field coats shall be:

Shop Coat: Pittsburgh Ironhide Inhibitive Red Metal Primer
Field Coat: Pittsburgh Metaleaf Aluminum

MISCELLANEOUS STEEL AND IRON:

Contractor shall furnish and erect all ornamental and miscellaneous cast or wrought steel and iron required for the proper completion of the building, together with all wall brackets, bolts, nuts, washers, and other necessary fastenings. He shall include all such ornamental and miscellaneous steel and iron such as supports.

ANCHOR BOLTS:

All anchor bolts shall be hot-dipped galvanized.

SECTION NO. 5

MASONRY WORK

SCOPE:

The work under this section shall include all labor, materials, and equipment necessary for the proper completion of all masonry work, as indicated by the drawings and as herein specified.

SHOP DRAWINGS:

Shop drawings shall be submitted to the Architects for approval, showing the complete installation of all structural glazed tile, and smooth unglazed facing tile.

MATERIALS:

All common brick used throughout the building shall be good, hard, well-burned brick; uniform in color, true to shape and free from checks, swollen or refuse brick. All common brick, when struck together, are to have a good clear ring. The Contractor shall submit samples to the Architect for his approval before purchasing these brick.

Face brick shall match existing brick in color and texture. Existing brick in the building is similar and equal to acme brick company's Perla Gray. Contractor shall submit samples of brick to Architect for approval prior to ordering brick.

Smooth unglazed facing tile for interior use shall be Acme Brick and Tile Company "Sani-Finish", or approved equal, and in accordance with the sample on display at the office of the Architect. Tile shall be Select Quality 6T series and shall be delivered to the job site carton-packed. Provide all required shapes.

Structural glazed tile shall be of dimensions indicated on the drawings; all required shapes shall be furnished. Structural glazed tile shall be as manufactured by Claycraft, Columbus 16, Ohio. Colors shall be selected by the Architect, from the field, Vitri-Granite, and/or claystone color lines.

SLOTS, CHASES & RECESSES:

The Contractor performing the work under this section shall build all slots, chases, recesses, and openings required for the proper installations of the work of other trades, in the locations indicated on the drawings. These openings shall be closed, if required, after the work has been installed and approved.

BUILDING IN WORK:

This subcontractor shall cooperate with other subcontractors for other trades whose work is to be built into or set in conjunction with masonry. All bedding required shall be executed by this subcontractor under the direction of the subcontractor whose work requires bedding.

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ANCHORS:

Provide and install all anchors required for the proper installation of all masonry work.

Face brick shall be anchored to backup masonry with Dur-O-Wall Reinforcing as hereinafter specified.

Anchors for door frames will be furnished with the metal door frame s but shall be well imbedded into masonry work.

JOINTS:

Joints in face brick shall be as indicated by Modular Standards. The face brick shall be laid out and adjusted to each space so that no course shall finish at an external corner, nor on a jamb with a piece less than 3-3/4' long. The joints shall be straight and true and the bond kept plumb throughout.

Courses shall be level and accurately spaced. Variations in the widths of vertical joints shall be inconspicuous and made only if necessary to maintain the bond. The finish of joints for exterior of face brick work shall be as directed by the Architects.

Joints in all other exposed masonry work shall have joints to match existing.

BONDING:

The bond of all face bricks shall be in accordance with sample as set up and approved by the Architects.

The bond of structural glazed tile shall be in accordance with sample as set up and approved by the Architects.

Sani-Finish tile shall be laid up in regular bond with joints well broken.

PROTECTION OF WORK:

The Contractor shall protect his work from damage from rain or freezing weather. The tops of all walls that are not completed or protected by other work shall be well protected with suitable coverings, during suspension of the work.

LAYING BRICK:

All brick work shall be laid in full beds of mortar and shoved into place with full head joints. All joints shall be filled solid, leaving no voids, unless otherwise directed. Particular emphasis shall be laid in the filling of all joints, and the Architect may stop the work if this is not being done. No furrowing of bed joints will be permitted.

All brick shall be drenched with water, allowed to drain, and laid while damp.

All brick shall be laid uniformly one scaffold high at a time, except where otherwise approved. All face brick shall be laid from scaffolding erected on the side of the wall on which the facing brick occurs.

LAYING SANI-FINISH TILE:

The manufacturers of this tile shall submit shop drawings to the Architects for approval. Special shapes shall be provided and installed where necessary, in accordance with the Architectural drawings, to make a complete installation.

This tile shall be laid with full vertical and horizontal joints and all joints shall be tooled to provide a concave joint.

The dimensions of all structural glazed tile shall be in accordance with those shown on details of architectural drawings and coves, bases, and caps shall be provided in accordance with these details also.

LAYING STRUCTURAL GLAZED TILE:

The manufacturer of this tile shall submit shop drawings to the Architect for approval. Special shapes shall be provided and installed where necessary, in accordance with the Architectural drawings, to make a complete installation.

The dimensions of all structural glazed tile shall be in accordance with those shown on details of architectural drawings.

Tile shall be layed with full vertical and horizontal joints. Before joints have set, they shall be raked out to a depth of 1/4" from the face of the tile and later pointed up as follows:

Pointing mortars for smooth, watertight joints shall be of the following mix:

White Portland Cement1 cu. ft.

No. 1 Ground Del Monte white sand (80 mesh).....2 cu. ft.

Lime putty (use only if tile are dry).....1/8 cu. ft.

Fill joints with pointing mortar, using rubber face trowel as a squeegee to spread and remove excess mortar. Wet wall joints thoroughly first if tile are dry. Fill all joints fully and flush with face of glazed units.

Use a clean, flat sponge and lightly wipe off all excess mortar from the glazed surface. Wipe carefully and make mortar smooth, flat and flush with the glazed surface. Take care that there are no hollows nor overlapping of mortar on the surface. No overlapping the surface of the units.

LINTELS:

Lintels for brick work shall be as shown on plans.

Lintels in hollow tile walls, in openings up to 7' in width shall be made by inserting two to four 1/2" round, deformed reinforcing bars in cells

with one part Portland Cement and to parts clean, sharp sand; the reinforcing bars to extend the full length of the lintel. These lintels are to be precast before being put in place. Openings over 7' shall have lintels made of plates and channels and shall be encased with split tile. The bottoms of these lintels shall be covered with metal lath and plaster.

MASONRY WALL REINFORCEMENT:

Wall reinforcement shall be Dur-O-Wall, or approved equal, with deformed side rods and shall comply with material requirements of ASTM Standard A-82-34 for High Tensile Steel. Deformation of side rods shall be of such extent as to develop a minimum surface bond stress of 527 p.s.i. when incorporated in Standard ASTM Class A mortar cubes.

Dur-O-Wall shall be placed in every third tile joint and every sixth brick bed joint (16" c to c) throughout structure. Dur-O-Wall in bed joint immediately above openings shall be continuous. Reinforcement shall be lapped sufficiently at splices (6" minimum) to insure continuity and corners shall be cut and bent as shown in details.

CLEANING:

After the completion of all masonry that is to remain exposed to view, it shall be pointed up where necessary and thoroughly cleaned. The cleaning shall be done with a solution which will not be harmful to the brick, tile, mortar, joints, or other adjacent materials. No acid will be permitted.

The cleaning operation shall, in all cases, start at the top and proceed downward. The Architect shall be notified immediately after each scaffold height of work is cleaned and pointed, to permit them to make an inspection of the work before the scaffolding is lowered.

SOLAR SCREEN TILE:

Solar screen tile at penthouse shall be 8" x 8" x 4" terra cotta tile as indicated on drawings. Lay in stack bond as shown.

Solar screen tile on fence (see site plan) shall be 8" x 8" x 8" laid in stack bond.

CAVITY WALL INSULATION:

Cavity between brick wythes on penthouse walls shall be filled with insulation as specified hereinafter.

Description: The insulation shall be a free-flowing inorganic material equal to Zonolite Water-Repellent Masonry Insulation specially treated and processed for the purpose of insulating masonry walls.

Materials: Insulation shall have been tested for water repellency in accordance with procedures developed by the National Bureau of Standards (BMS-82). Material shall be delivered to the job in manufacturer's unopened bag.

Installation:

In Concrete Masonry Units: Insulation shall be poured into the cores as directed by the Architect. Cores at windows shall be filled before installed sill. Do not rod or tamp.

In Wall Cavities: Cavity wall insulation shall be poured into the cavity at four-foot (4') high intervals as directed by the Architect after inspection of the cavity for mortar ledges and weep-hole plugs. At windows, fill cavity before installing sill. Rodding or tamping is not necessary. To prevent material from running out, Fiberglas shall be used to close outlets in header joints or weep-holes.

Physical Properties: The block wall insulation shall have the following characteristics:

1. It shall be capable of supporting its own weight in the cavity without settling.
2. It shall not permit moisture to be transmitted across the cavity.
3. It shall be inorganic.
4. It shall be free-flowing and non-bridging.
5. It shall be incapable of supporting combustion.
6. It shall be rot and termite-proof.

Zonolite Water Repellent Masonry Insulation is a registered trademark of the Zonolite Company, 135 South LaSalle Street, Chicago 3, Illinois.

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SECTION NO. 6

MORTAR

SCOPE:

The General Conditions of the Contract shall apply to all work specified under this heading.

The work includes the furnishing of all materials and labor required for the preparation of mortar required for all masonry work.

MATERIALS:

A) Masonry Cement shall conform to the requirements of ASTM current specification applicable to its use herein specified. To be Lone Star masons mix or approved equal.

B) Sand shall consist of well-screened, clean, hard siliceous particles, free from loam, silt, organic matter or other impurities. When dry, at least 97 per cent shall be retained on a No. 100 sieve and 80 per cent shall be retained on a No. 50 sieve.

C) Water shall be fresh, clean and free from oils, acids, alkali, vegetable, sewage, organic or other deleterious matter.

D) Waterproof Compound shall be a product of a reputable manufacturer, particularly manufactured for such purpose and approved by the Architect. Sonneborn Brothers Company's "Hydrocide Mortar Proofing" in the proportion of one (1) pound to each sack of Portland Cement or Masonry Cement shall be used. Manufacturer's directions shall be strictly followed in the use of waterproofing compound.

MIXTURES:

A) Masonry Cement Mortar shall be mixed one (1) part masonry cement and three (3) parts sand.

B) Waterproofing Compound shall be added to all mortar used for exterior masonry wall construction.

In lieu of masonry cement to which waterproofing compound is to be added, as herein specified, the contractor may, at his option substitute masonry cement to which waterproofing compound has been added at the place of manufacture, if such product is approved by the Architect in writing. Each sack or bag of such cement shall be marked "Waterproofed" by the manufacturer of such cement.

C) Mortar Materials shall be accurately measured by volume and thoroughly mixed in mechanical batch mixer of approved type, unless otherwise authorized by the Architect. The actual mixing time shall be not less than 2 minutes.

D) Water Content of mortar shall be kept as low as possible and the required plasticity shall be obtained by mixing.

GROUTING:

All spaces between masonry work and metal door frames shall be

SECTION NO. 7

CERAMIC TILE, QUARRY TILE

AND TERRAZZO

SCOPE OF WORK:

Work intended under this section shall include all labor, materials, equipment and appurtenant accessories necessary for, or incidental to, the execution of all ceramic tile, quarry tile, and terrazzo work as indicated or reasonably implied by the drawings and as herein specified.

Read and comply with General Conditions whether attached hereto or not.

MATERIALS:

Portland Cement: Latest addition, A.S.T.M. Designation C150 Type 1.

White Cement: White Atlas non-staining cement.

Sand: Latest addition, A.S.T.M. Designation C144.

Tile Setting Liquid: Latex type Bonding Agent, similar and equal to "Laticrete" tile setting liquid.

Wall Tile: Tile shall be 4-1/4" x 4-1/2" natural clay cushion edge matt glazed wall tile as manufactured by U. S. Ceramic Tile Company, or approved equal. Colors to be selected by Architect.

Floor Tile: The floors that are to receive ceramic tile shall be tiled with Random pattern Spartan Crsan tile as manufactured by the Sparta ceramic company. Colors to be selected by Architect.

Base: Where base is required, the base shall match the field tile in color and size and shall be 3/4" cove base.

Quarry tile: 6" x 6" x 1/2" quarry tile as manufactured by Summitville Tiles, Incorporated, or approved equal. Color shall be selected from standard color line.

SAMPLES REQUIRED:

Provide three (3) full size samples each color and type tile required. Mark with grade, color and locations for use.

NOTE:

Plastering contractor shall plaster surface to receive ceramic tile panel. Refer to section No. 15 of this specification.

MORTAR AND GROUT REQUIREMENTS:

Setting Mortar for Floor Tile and Quarry Tile: One (1) part Portland Cement, three (3) parts sand.

Adhesive for Setting Wall Tile: One (1) gallon Laticrete Tile

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setting liquid to two (2) gallons Portland Cement.

Filler Grout for Ceramic Tile: Mixture of neat white cement and lime putty with clean water added to produce consistency of thick cream.

Pointing Mortar: For wall tile, shall be one (1) part white cement one (1) part sand. For quarry tile substitute gray cement for white cement.

GENERAL SETTING REQUIREMENTS:

Carefully grind and joint out edges of tiles against any trim and finish.

Lay out all tile work on floors so that wherever possible, no tiles less than half full size will occur, lay up wall tile from centerline of wall out in both directions.

Keep all tiles dry while in packages and do not allow to lie in or upon wet sawdust or similar materials. Soak all tiles in clean water before being set.

Unless otherwise indicated, form all inside and outside vertical corners rounded.

All irregular faces or crooked joints or coursing will be rejected and on any and all rejections the Contractor will be required to tear out the faulty work and replace in acceptable manner.

SETTING QUARRY TILE - MINIMUM REQUIREMENTS:

Lay tiles to a straight edge at regular intervals.

Slope surfaces, not intended to be level, for purposes of draining. Tiled nosings, coves, or other moulded or shaped features shall be thoroughly backed or built up with mortar or concrete rigidly placed, reinforced or otherwise made firm and secure.

As soon as cement mortar beds have sufficiently set, wash tiles and grout or point joints between tile.

REQUIREMENTS FOR GROUTING & JOINTING QUARRY TILE:

Grout all floor tile. Force grout into joints, sprinkle with dry cement and finish flush and true. Remove surplus grouting and leave faces of tiles clean.

SETTING FLOOR TILE - MINIMUM REQUIREMENTS:

Keep joints between sheets of ceramic mosaic same width as those between mounted tile and set without showing where sections join. Where area of any floor is overapproximately 100 square feet, lay tiles or ceramic mosaic sheets to a straight edge at regular intervals

Slope surfaces, not intended to be level, for purposes of draining. Tiled

nosings, coves, or other moulded or shaped features, shall be thoroughly backed or built up with mortar or concrete rigidly placed, reinforced or otherwise made firm and secure.

As soon as cement mortar beds have sufficiently set, wash tiles and grout or point joints between tile.

REQUIREMENTS FOR GROUTING & JOINTING FLOOR TILE:

Grout all floor tile. Force grout into joints, sprinkle with dry cement and finish flush and true. Remove surplus grouting and leave faces of tiles clean.

SETTING WALL TILE - MINIMUM REQUIREMENTS:

All wall tile shall be set with Laticrete Tile Setting Liquid as manufactured by the U. S. Rubber Co. Naugatuck Chemical Division, Naugatuck, Connecticut.

Laticrete Mortar shall be applied to vertical surfaces as a skim coat using the flat side of the trowel followed by the notched side. A minimum mortar thickness of $3/32"$ is required.

Laticrete Mortars have an open time of approximately 45 minutes under normal atmospheric conditions. When skinning occurs, the tile should be pressed hard against the ridges so as to allow fresh adhesive to contact the surface of the tile. Fresh mortar material should be mixed when the ridges no longer release a fluid mix.

Mixing: Mix one gallon of Laticrete tile setting liquid to two gallons of Portland cement and mix to a buttery consistency. For leveling or truing operations mix one to two parts fine sand to the cement before adding the Laticrete tile setting liquid.

Cleaning: Before final set has been attained, traces of Laticrete Mortar may be removed from the face of the tile by using water and a sponge. A rotary motion with the sponge will aid in rolling up the dry film.

Grouting and Pointing: As soon as mortar setting bed has sufficiently hardened, wash tiles with clean fresh water and execute final grouting and pointing of joints.

PROTECTION REQUIRED:

After grouting and cleaning, cover all tile floors with protective covering of heavy building paper or wood shavings. Maintain protection.

FINAL CLEANING REQUIRED:

Carefully re-clean all parts of tile; carefully point all joints; cut out and replace all defective material; repair all damage; and do any required dressing or rubbing. Leave entire work clean and in perfect CONDITION.

TERRAZZO

SCOPE:

The General Conditions of the Contract shall apply to all work specified under this heading.

Included herein is the furnishing of all labor and materials required for the complete installation of terrazzo work as indicated on the drawings and as noted in Schedule of Finishes.

MATERIALS:

(A) Marble Chips: Chips shall be of domestic marble selected by the Architect and of sizes numbers 1 and 2 in proportions as designated by the Architect. Size No. 1 chips shall pass 1/4 inch mesh screen and shall be retained in a 1/8 inch mesh screen. Size No. 2 shall pass a 3/8 inch mesh screen and shall be retained on a 1/4 inch mesh screen.

(B) Cement: Shall be White Portland conforming to the requirements of Federal Specifications SS-C192, Type 1-A.

(C) Coloring: Coloring material shall be the best quality of mineral pigment of high purity, shall be sun-proof and lime-proof with a specific gravity similar to that of Portland cement and shall be ground to a fineness that will produce the desired color effect. Coloring material shall in no case exceed 5 per cent by weight of the cement used.

(D) Sand: Shall be clean, siliceous masonry and passing a 1/4 inch mesh screen, as approved by the Architect.

(E) Water: Shall be fresh, clean and free from acid, alkali, sewage and organic matter.

(F) Division Strips: Shall be of white alloy not less than 1/16 inch thick at the exposed edge and not less than 1 1/4 inch wide especially manufactured for the purpose and approved by the Architect. Spacing of division shall be as directed by the Architect (approximately 24").

(G) Edging Strips: Shall be of white alloy 1/8 inch thick and shall be provided with a standard form of anchorage having fins formed of not less than 18 gauge rustproofed steel as approved by the Architect.

(H) Reinforcement: Shall be of hexagonal fence type mesh either 1-1/2 inch or 2 inch size of not less than 20 gauge wire, galvanized after fabrication.

(I) Cleaning Compound: The product used for all cleaning of

terrazzo shall be an approved neutral chemical cleaner that will not change the color of terrazzo or damage it any way.

(J) Preservative Material: The product to be used as the preservative treatment for terrazzo floors shall produce a water-proof finish, the film of which will not be impaired by immersion in water at room temperature for a period of 2-1/2 hours, approximately 18 hours after the floor is finished by buffing as specified. The preservative materials shall not yellow the terrazzo nor leave a tacky or sticky finish film on the surface after buffing.

SAMPLES:

The following samples shall be submitted to the Architect for approval:

Finished terrazzo, 2 samples each 4" x 6".

Division Strips.

Edging strips.

GENERAL:

The thickness of terrazzo including the concrete shall be as indicated on the drawings. Concrete floor construction will be depressed for such work as indicated on the drawings.

On the concrete floor construction, apply a uniform thin layer of dry sand and on this apply a continuous sheet of building paper; on the building paper apply a concrete underbed consisting of one part Portland Cement to three parts sand, and bring to a level not less than 1/2 inch nor more than 3/4 inches below the surface of the finished floor. Reinforce the underbed throughout with steel wire mesh. This concrete underbed shall be provided and installed by the contractor for terrazzo work.

In the underbed while still in a semi-plastic state, install division strips set vertically and in pattern as noted. When patterns are not indicated on the drawings, the terrazzo work shall be laid off in squares not exceeding 24 inches in each dimension. In all cases, a border strip shall be provided between the field and the border and such border strip shall be extended in straight lines unless otherwise directed by the Architect.

Edging strips shall be placed at doorways between terrazzo and other types of floor finishes or floor coverings and the strip at each doorway shall be placed in line with the face of the door.

Terrazzo topping shall be not less than 1/2 inch and not more than 3/4 inches in thickness, shall be uniform in composition and the marble granules shall extend through the entire thickness.

Terrazzo shall be mixed in the proportion of 200 pounds of marble

granules to 100 pounds of White Portland Cement with coloring added, thoroughly mixed dry and with water added to produce a workable consistency. The mix shall then be placed and compacted by means of heavy rollers until all superfluous cement and water are extracted, after which the mix shall be troweled to an even surface disclosing the lines of the white alloy strips.

CURING:

All terrazzo work including underbed and finish, shall be kept moist for not less than 5 days and until thoroughly seasoned. The surfaces shall be kept free of traffic, shall be covered with building paper or shall be sprinkled with water at intervals not to exceed 10 hours.

FINISHING:

Following the curing period, the terrazzo shall be ground to a true even surface. After the first grinding, the floors shall be grouted with the same cement and color composition as specified for the matrix of the terrazzo mix. The grout shall be of the consistency of thick cream, and shall be brushed over the floor as to eliminate all imprisoned air and thoroughly fill the surface for final grinding the abrasive shall be of a grain or fineness that will produce a honed finish. Small areas, inaccessible portions and corners which cannot be reached by the grinding machine shall be ground and rubbed by hand. The honed surface of finished terrazzo shall show not less than 70 per cent of its area in exposed aggregate, evenly distributed, and the finished surface shall conform in appearance to the approved samples.

PROTECTION:

The walls and surfaces adjoining finished work of other trades shall be protected from damage during the application and finishing of terrazzo. Terrazzo shall be covered and protected with building paper or other approved material until the completion of the work of all other trades.

CLEANING AND COATING:

After the work of all other trades has been completed and the protective covering removed, all terrazzo work shall be washed with soap, mixed with warm water and using a fine abrasive where necessary to remove any stains or cement smears. The terrazzo shall be allowed to dry thoroughly and shall be given two coats of terrazine, as manufactured by the Hillyard Chemical Company of St. Louis, Missouri, or other sealing preparation possessing equal properties, that will not discolor the terrazzo nor leave a sticky, tacky, or varnish-like film on the surface of terrazzo after buffing. The sealing preparation shall be applied in accordance with the manufacturer's directions, leaving all terrazzo work in a clean condition and shall be buffed to uniform acceptable surface finish.

GUARANTEE:

All work shall be guaranteed for a period of one (1) year from

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the date of acceptance of the building against any defects which may be caused by the use of inferior materials or workmanship, and upon notification by the Owner the Contractor shall remove and properly replace, without cost to the Owner, all defective work.

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SECTION NO. 8

CAULKING

SCOPE OF WORK:

Work intended under this section of the specifications shall include all labor, materials, equipment and appurtenant accessories necessary for, or incidental to, the execution of all calking work, as indicated or reasonably implied by the drawings and as herein specified.

Read and comply with the General Conditions whether attached hereto or not.

MATERIALS:

CALKING: Shall be General Electric Silicone Construction Sealant, or equal. Sealing compound shall be of standard color to suit job requirements, and shall be applied in accordance with manufacturer's explicit instructions.

PROTECTION OR WORK:

Whenever necessary to afford complete protection to other work from these operations, install temporary coverings, tarpaulins, drop cloths or protections. All damage or smears on finished work shall be completely removed or the damaged work replaced at the expense of this contractor.

CALKING FRAMES, ETC.:

Where metal frames make contact with columns, slabs, and beams install calking so that joints are water-and-windtight-in general, junction between frames and adjoining surfaces shall be calked with a gun. Exterior thresholds shall be set in calking. Where frames finish in deep joints, oakum shall be driven in to form sound backing for the calking between frame and wall. All joints shall be fully calked with neat beads or bevels to the exterior. See drawings for any special places required to be calked.

GUARANTEE:

All calking shall be guaranteed waterproofed for a period of one year from date of acceptance of building by Owner.

SECTION NO. 9

CARPENTRY, MILLWORK, AND RELATED ITEMS

SCOPE:

The General Conditions of the Contract shall apply to all work specified under this heading.

Provide the required lumber, millwork, and related items and do all work necessary to fully complete the project as indicated and specified.

MATERIALS: GRADING & SEASONING:

All Lumber delivered on the job shall be grade-marked in grades as hereinafter specified.

Hardwood lumber shall conform to the standard rules for grading rules of the Lumber Manufacturing Association under whose jurisdiction the lumber is manufactured.

Moulded and turned stock shall be "Standard Moulding Grade", except as hereinafter specified.

Lumber shall be kiln dried and when delivered to the site shall be seasoned to a moisture content not to exceed the following percentages:

Framing and Blocking Lumber:	Pine 15%	Fir 18%
Finish Lumber and Millwork:		12%

All finish lumber and millwork when delivered to the site shall be stored so as to insure proper protection, ventilation and drainage.

LUMBER:

Grounds shall be "D" grade Southern Cypress. Rough bucks shall be hard, sound, yellow pine lumber.

All blocking, framing lumber, etc., coming in contact with metal, concrete, or other masonry materials, shall be "Wolmanized" Yellow Pine.

MILLWORK:

All millwork shall be perfectly smooth and, if necessary, shall be refinished on the job to produce this result; all millwork shall be manufactured in accordance with the best shop practice, all mortised and tenoned, wedged and glued and well manufactured.

The contractor shall furnish shop drawings of all millwork and finish for checking and approval by the Architects prior to fabrication.

CARPENTRY:

Carefully lay out, cut, fit and erect all framing lumber, blocking and other items of work necessary to complete the work indicated. Provide and erect all items of finished millwork and woodwork of every character required, whether specifically itemized herein or not. All work shall be carefully and properly executed in such a manner as to insure the greatest stability. All members shall be properly braced, plumbed and leveled. A sufficient number of nails spikes and bolts shall be used to insure the rigidity of all parts of the work.

All items of millwork shall be carefully erected with tight fitting joints. Exposed rails shall be set for putty.

WOOD GROUNDS:

Dressed wood grounds of thickness required shall be furnished for plaster, securing trim, base, and wherever required.

Grounds shall be set true and accurately aligned.

ROUGH HARDWARE:

The Contractor shall furnish all rough hardware, such as nails, bolts, rods, anchors, ties, and other items, as well as metal fastenings of any nature for the proper installation of carpentry and millwork.

Fastenings to concrete and other masonry for wood grounds, furring and other engaging woodwork, shall be of approved metal types, spaced to suit conditions. Nails, spikes, screws, and other similar items shall be of types and sizes sufficient to draw the members in place and securely hold same.

APPLICATION OF FINISH HARDWARE:

The Contractor shall receive all finish hardware, store, and be responsible for its safety, distribution and application, hardware shall be accurately fitted, securely applied and carefully adjusted.

Care shall be exercised not to mar or injure existing work when applying hardware.

All keys shall be properly tagged, indexed, and filed in the key cabinet, as directed. All keys locking the key cabinet shall be delivered to the Architect at completion and acceptance of the work.

Door knobs shall be kept covered with heavy cloth until acceptance. Door knobs shall, except as otherwise shown or required by other work, center 38" above the floor.

Door pulls shall center 35" above the floor (See Specification No. 10 for "Finish Hardware").

DOORS:

Doors shall be of sizes, thickness, and design indicated. See "Schedule of Doors" on drawings.

All doors shall be solid core construction manufactured with glued-up core of low density core wood of 2" maximum width, with standard thickness hardwood cross-banding, with face veneers not less than 1/28" thick. Side edge strips shall be 3/4" thick before trimming and shall match face veneers. Top and bottom edge strips shall be of hardwood or softwood, or according to manufacturer's standards. Specie of face veneer shall be as follows:

All doors shall be select white birch.

Doors shall be manufactured in accordance with the description under heading "Type A" construction contained in AWI Brouchure No. 5 (Revised). Approved door manufacturers include Perkins Door Company, U. S. Plywood Corporation, and IPIK Door Co., Inc.

Doors shall be hung with 1/16" clearance at sides and top in which case it shall be 5/8".

B-LABEL ONE-HOUR FIRE RETARDANT DOORS:

General: All B label doors required to maintain the integrity of One-Hour fire hazzard classification openings shall be seven ply Underwriters' Laboratories approved fire doors manufactured by the Roddis Plywood Corporation, Marshfield, Wisconsin and covered by the Roddis Life-time guarantee. The doors shall be constructed in strict accordance with the procedures and specifications approved to Underwriters' Laboratories and factory mutuals; specifications.

Core: Core shall be composed of fire-proofed wood particles bonded with a waterproof thermo-setting resin into a homogeneous slab by heat and pressure. Cores shall be railed with fireproofed bottom edges. The rails shall be glued and joined to the core with a well fitting tongue and groove joint.

Lock Block: The lock block shall be composed of an asbestos compound and shall measure 9" in height where it joins the edgestrip, tapering to 8" in height. Width shall be 7-1/4". Unless otherwise specified, the standard height to the center of the lock block will be 36" for 80" doors and 38" for 84" doors. The center of the lock block shall be marked with 1/8" golden dowel.

Face Panels: Both sides of the door shall be faced with a three ply veneer panel. Panel faces shall be well dried, standard thickness face veneers, laid with the grain perpendicular to that of the cross-banding. Both crossbanding (1/20" thick) and panel back (1/28" thick) shall be impregnated with fire-retardant chemicals. This three-ply panel shall extend the full width and length of the door.

Face veneers shall be paint grade unselect Birch.

Adhesives: The core and rails shall be bonded together with thermosetting waterproof adhesive. The three-ply face panels shall be bonded together with waterproof adhesive and bonded to the core with waterproof adhesive.

Sanding: Both door faces shall be thoroughly belt sanded to a smooth even texture. This is not to be interpreted as meaning that the doors will be ready for painter's finish, because grain may raise due to exposure to humidity and marks result from handling.

Fitting: To be in accordance with Underwriters' specifications.

Prime & Seal Coat: Doors shall be primed and sealed as hereinabove specified.

SOUND INSULATING DOORS:

Sound insulating doors, as indicated on the plans are to be Hardwood No. 35 as furnished by Hardwood Products Corporation, to provide a sound reduction of 35 decibels; or doors of equal sound insulating efficiency as certified by laboratory test. Doors are to be furnished complete with special stops, stop adjusters, gaskets and automatic threshold-sealing spaces. Jambs, trim and hardware to be furnished by others under separate contract.

MODERNFOLD DOOR:

Modernfold door as shown on plans shall be furnished and installed by an authorized representative of New Castle Products, Inc., of New Castle, Indiana.

Modernfold door shall be top supported without floor guide and shall be completely fabricated at the factory, including all necessary hardware and track for installation.

Modernfold door shall have a rust resistant frame of interlacing collapsible and extensible hinge plates, to provide true pantograph action at top, bottom, and necessary intermediate locations.

Hinge plates shall be connected to vertical 3/16" rods by welding to provide positive resistance to sideways, and to insure balanced action, vertical stability, prevention of winding or warping; and shall maintain uniform spacing of all folds during operation.

There shall be an equal number of folds on both sides of door.

The frame shall be completely enclosed within a covering of double, sun-fast, flame retardant fabric consisting of a vinyl coating on 1.85 drill.

The minimum standard weight shall be 18 oz. per square yard (27 oz. per linear yard 54" wide), plus 10% minus 5%, and shall not peel, craze or crack.

Modernfold coverings shall be back-coated with "Nuca-Seal", for maximum dimensional stability, drape and life.

Modernfold door shall include track of rust-resistant steel, not less than 16 gauge, be equipped with hardware and mouldings, and shall be guaranteed for one year against defects in material and/or workmanship.

Modernfold door shall be fabricated to receive lock unit which shall be adaptable to standard building master keying system, all of which shall be an integral part of the door pull design.

CABINET WORK AND SHELVING:

Furnish and install all cabinet work as shown and detailed on the drawings. All frames shall be mortised and tenoned construction and all work not exposed to view shall be of long leaf Yellow Pine or of plywood as detailed.

All exposed wood parts of cabinet work shall be Select White Ash.

Counter tops, edges, etc. where noted on drawings shall be covered with Consoweld #22 Indian Teak. Where Formica is noted on the drawings for counter tops, edges, etc., colors shall be selected by the Architect.

Posts, railings, Spandrelite frames, and miscellaneous parts relative thereto shall be Blumcraft of section numbers and finish noted on the drawings as manufactured by Blumcraft of Pittsburgh, 460 Melwood Street, Pittsburgh 13, Pennsylvania.

All drawers shall be equipped with Knappe & Vogt #1300 drawer slides. Shelving, where indicated on drawings, shall be supported by Knappe & Vogt No. 80 Boltless Brackets. Standards and Brackets shall be supplied in Ebony Black finish.

Storage room shelving shall be constructed of 3/4" thick A-B grade fir plywood with 3/4" x 3/4" "C" Yellow Pine edging strips glued to all exposed edges of plywood. Shelving shall be supported by 1" x 2" cleats attached to wall with toggle bolts. Shelving shall be made rigid with 2" x 2" "C" grade Yellow Pine uprights.

All cabinet work shall be mill-built and delivered to the job ready for installation. Provide necessary fillers and scribe mouldings as required to make a workmanlike installation.

Cabinet hardware as specified in "Finish Hardware" section of this specification shall be furnished by the finish hardware supplier. All other miscellaneous items such as drawer slides, brackets, shelf standards, etc. noted on drawings, or as required to make a complete job, shall be furnished by millwork supplier.

ACOUSTICAL CEILINGS:

Furnish and install where indicated in the room finish schedule

12" x 48" x 3/4", square edge, Travertone acoustical tile as manufactured by Armstrong Cork Company, Lancaster, Pennsylvania. Material shall be factory finished with two coats of white paint. Light reflection shall be .75 or more. The sound-absorption coefficient shall be .70 - .80.

Acoustical ceilings shall be mechanically suspended in a semi-exposed system as indicated on drawings. Semi-exposed system shall be as manufactured by K. E. Gordon Mfg., Inc., Shreveport, La. The main runner shall be type G4-17 spaced 48" on centers. Main runners shall be supported with #8 wire spaced at 48 o.c. Hanger wires for supporting acoustical ceiling system shall be installed in the concrete forms prior to the pouring of the second floor and roof slabs. This work shall be performed by the Acoustical contractor. Concealed cross braces shall be installed also at 48" o.c.

Concealed cross tees as manufactured by National Rolling Mills shall be installed at 12" o.c. Install type WA-2 wall angle at all fixed partitions and walls. All exposed aluminum members shall have a satin anodized finish.

All necessary supports for electrical or other materials and equipment shall be installed independent of the ceiling suspension system. These supports shall be furnished and installed by each respective trade. All materials such as poured or pre-cast concrete and gypsum roof decks, plaster, concrete and terrazzo shall be dry before installing acoustical ceilings.

The Acoustical contractor shall furnish shop drawings in triplicate indicating reflected ceiling layout.

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SECTION NO. 10

FINISH HARDWARE

SCOPE:

The General Conditions of the Contract shall apply to all work specified under this heading.

Hardware for metal windows is not included under this heading. All other hardware necessary for the proper fastening and operation of all new movable parts of the building construction included in the Contract, other than mechanical equipment, shall be furnished hereunder and installed complete and in proper working order.

If the hardware for any particular location is not described herein, it shall be similar to that specified for like location, insofar as practicable.

Where the finish, shape, or size of members requiring hardware is such as to prevent or make unsuitable the use of the exact type specified, suitable types shall be furnished, having as near as possible the same operation and quality as the type specified. All shall be ample for the service required.

GENERAL:

Hardware shall be furnished by those having technical experience and competent to correctly interpret the plans and these specifications and the detailed drawings in order that he may furnish appropriate hardware and who shall be prepared at all times to promptly provide an efficient builders' Hardware Engineer regularly employed by them, to service the hardware on the job as may be required until completion and final acceptance of the contract work.

The contractor shall furnish all finishing hardware as shown or specified and as obviously necessary to complete the building in accordance with the intent of the general drawings and details. The items of hardware described shall be considered as standard and unless otherwise specifically mentioned, all hardware used throughout the work shall be equal thereto in size, weight, materials, and workmanship. Any revision of the standard hardware, which may be necessary to conform with the details shall be provided. Items not specifically mentioned but necessary for the completion of the work shall be of the most suitable type matching in quality and finish with the items which are described. Hardware for metal windows is under another contract.

This Contractor shall furnish templates when required to other trades, who install the hardware which is furnished by this contractor.

All hardware shall be carefully wrapped, securely packed and marked in individual packages for the openings to which they apply. All

hardware shall be carefully wrapped, securely packed and marked in individual packages for the openings to which they apply. All screws, bolts, etc., necessary for the installation of the hardware shall be included in all packages.

SCHEDULE

HEADING A

#1,2,3, To Offices
#2 To Closet

1-1/2 pr. BB179 CMD 4-1/2x4-1/2 hinges on others
1-1/2 pr. 179 CMD 4-1/2x4-1/2 Hinges on others
1 700-7523PK-32D locksets
1 4013 closers on #2 to 105, 204, 202
* 1 1E64-26D cylinger
1 384-1/2 - 26D stop

HEADING B

#2 In Corridors

1-1/2 pr. BB179 CMD 4-1/2x 4-1/2 hinges
1 4013 closer
1 6 x 16 s.s. push plate
1 34 s.s. pull
1 10x34 s.s. kick plate
1 384-1/2-26D stop

HEADING C

#1 To Toilets

1-1/2 pr. BB179 CMD 4-1/2x4-1/2 hinges
1 4013 closer
1 6x16 s.s. push plate
1 34 s.s. pull
1 10x30 s.s. kick plate
1 384-1/2-26D stop

HEADING D

#4 to Stairwells

1-1/2 pr. BB173 CMD - 4-1/2" hinges
1 4013 closer
1 700-7510PK-32D latchset
1 384-1/2-26D stop

HEADING E

#2 Exterior from Stairwell

1 set 201/202/203-26D pivots
1 88TP-32D exit device
* 1 1E62-26D Cylinder
1 AL350 threshold
1 4014-17 bracket
1 n 4014 closer

HEADING F

PAIR #8 From Equipment

3 pr. 179P 4-1/2x4-1/2 hinges
2 458B26D-12" flush bolts
1 700-7523PK-32D lockset
1 AL350 threshold
2 GJ90-26D holders

HEADING G

#7 from Lobby
Pair 6 from lobby
#7 to 207,201C

* 2 1E64-26D cylinders, each opening

MANUFACTURERS

Hinges	Stanley Hardware
Pivots	P & F Corbin Division
Locks	P & F Corbin Division
Closers	LCN
Stops	P & F Corbin Division
Pulls	Cipco Corporation
Exit Devices	Von Duprin Division
Thresholds	Von Duprin Division
Holders	Glynn-Johnson Corporation
Cylinders	Best Universal Lock Company

* All Universal Best Cylinders and keys will be furnished by the Owner.

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SECTION NO. 11

RESILIENT FLOOR COVERING

SCOPE OF WORK:

Work intended under this section shall include all labor, materials, equipment and appurtenant accessories necessary for, floor covering work, as indicated or reasonably implied by the drawings and as herein specified. Read and comply with the General Conditions whether attached hereto or not.

MATERIALS - MINIMUM REQUIREMENTS:

Vinyl Asbestos Tile: 9" x 9" face size, 1/8" thick Hexacrome as manufactured by Flitkote, or equal. Colors to be selected by the Architect.

Cements and Primers: As recommended and/or manufactured by the tile manufacturer.

Edge Strips: B & T Metals Company (Chromedge) #140-20 or approved equal.

Wax: Flitkote water base wax.

SAMPLE REQUIREMENTS:

Submit for approval, three 9" x 9" samples of each color of tile selected.

DESIGN REQUIREMENTS:

Architect will select colors and patterns for various spaces and rooms after contract is awarded. He reserves right to select not more than two colors for each room or space and to select a type of pattern that will not require undue cutting of tile except for borders. Variations in tile patterns shall be taken up in borders.

INSTALLATION:

All resilient flooring specified herein shall be received at the job site at least 24 hours before installation at which time materials shall be placed in a room at normal temperature of 70° to 80°F. and permitted to warm to room temperature before installation is started. Cartons shall be opened and tiles placed in smaller stacks to facilitate this conditioning of material.

All areas, which are to receive resilient flooring specified herein, shall be divided into quarter sections by chalk lines snapped at right angles and bisected in the center of the area. These lines shall serve as a guide for the abis courses, or crossrows, of tile, and these cross-rows,

of tile shall be adjusted to produce border tiles of equal width on parallel sides of the area.

USING a standard notched trowel, proper adhesive shall be spread and otherwise handled in strict accordance with instructions printed on the adhesive containers. Spread adhesive, first, on the area to be covered by the two cross-rows and carefully set each tile in position making certain that full contact is established between the tile and the adhesive. After the two cross-rows have been installed, spread adhesive and install tile in one-quarter of area until that section is complete, then proceed to next quarter section until entire area is complete.

Do not spread adhesive too far ahead of tile being installed. This will prevent adhesive from setting up before tile is installed. Proper bond between adhesive and tile shall be secured at all times.

Any excess adhesive on the surface of the tile shall be removed before it dries.

No traffic will be permitted until adhesive has set up sufficiently.

Furniture and/or other equipment shall not be placed on the completed installation until the adhesive has set-up properly.

EDGING STRIP REQUIREMENTS:

Provide white metal edging for all exposed edges of floor tile, adjacent to finish floors of cement or other materials, to make a finished job.

CLEANING AND FINISHING REQUIRED:

At completion and when sufficient time has elapsed to permit proper adhesion, make a thorough inspection and replace loose tile and tile that are stained or otherwise defective.

After tile are properly seated and damaged tile are replaced, and at the direction of the General Contractor, thoroughly clean tile of excess adhesive, and other foreign material injurious to appearance.

After tile has been cleaned of excess adhesive, mop entire surface with clear warm water and allow to dry. After drying apply two coats Flintkote water base wax and buff with machine.

SECTION NO. 12

ROOFING & SHEETMETAL WORK

WATERPROOFING AND SPECIAL COATINGS

SCOPE:

Contractor shall furnish all labor and materials required to do all roofing and sheetmetal work, waterproofing, and special coatings as indicated on the drawings and specified hereinafter.

ROOF INSULATION:

All insulated roof areas shown on the drawings shall be insulated with 1-1/2" Foamglas-Board Insulation as manufactured by Pittsburgh Corning Corporation and shall be applied in accordance with the following recommendations: The deck shall be smooth, dry, and clean and primed.

Foamglas-Board shall be firmly adhered by laying the insulation in a mopping of pitch applied at a temperature of not less than 350°. The insulation board shall be laid immediately in the hot pitch.

Insulation shall be laid so all joints are tightly butted. Lay insulation in parallel courses and stagger all joints between insulation. When insulation is applied in more than one layer, the second layer of insulation shall be laid with the boards parallel to those of the first layer, so that the joints of the second layer break with those of the first layer, and apply second layer in same manner as first layer. Insulation shall be kept dry before and during application.

COMPOSITION ROOFING:

Apply to all roof areas of the building a Johns-Manville, or equal, four (4) ply tar and gravel roof, twenty-year specification.

Roof shall be applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces.

Application of Roofing: Lay four (4) plies of Johns-Manville, or equal, 15" tar saturated felt, lapping each sheet 24-1/2" over the preceding one, mopping the full width under each with Johns-Manville bonded pitch, or equal, and imbed therein, while hot, not less than 400# of gravel, for each 100 feet of roof surface.

Not less than 200# of pitch should be used for construction of each 100 square feet of completed roof. The approved roofing contractor shall furnish a 20 year guarantee bond.

SECTION NO. 12

ROOFING & SHEETMETAL WORK

WATERPROOFING AND SPECIAL COATINGS

SCOPE:

Contractor shall furnish all labor and materials required to do all roofing and sheetmetal work, waterproofing, and special coatings as indicated on the drawings and specified hereinafter.

ROOF INSULATION:

All insulated roof areas shown on the drawings shall be insulated with 1-1/2" Foamglas-Board Insulation as manufactured by Pittsburgh Corning Corporation and shall be applied in accordance with the following recommendations: The deck shall be smooth, dry, and clean and primed.

Foamglas-Board shall be firmly adhered by laying the insulation in a mopping of pitch applied at a temperature of not less than 350°. The insulation board shall be laid immediately in the hot pitch.

Insulation shall be laid so all joints are tightly butted. Lay insulation in parallel courses and stagger all joints between insulation. When insulation is applied in more than one layer, the second layer of insulation shall be laid with the boards parallel to those of the first layer, so that the joints of the second layer break with those of the first layer, and apply second layer in same manner as first layer. Insulation shall be kept dry before and during application.

COMPOSITION ROOFING:

Apply to all roof areas of the building a Johns-Manville, or equal, four (4) ply tar and gravel roof, twenty-year specification.

Roof shall be applied in accordance with the manufacturer's specifications, and all work shall be done by a roofing contractor approved by the manufacturer.

Roof deck shall be firm, dry and clean, and properly graded to outlets. Cants shall be installed in the angles formed by the deck and adjoining vertical surfaces.

Application of Roofing: Lay four (4) plies of Johns-Manville, or equal, 15" tar saturated felt, lapping each sheet 24-1/2" over the preceding one, mopping the full width under each with Johns-Manville bonded pitch, or equal, and imbed therein, while hot, not less than 400# of gravel, for each 100 feet of roof surface.

Not less than 200# of pitch should be used for construction of each 100 square feet of completed roof. The approved roofing contractor shall furnish a 20 year guarantee bond.

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FLASHING SYSTEM:

Flashings of the building shall be Johns-Manville Abestile flashing system, or approved equal.

Flashing system and application of same shall be in accordance with "Specification No. FE-3 for application over masonry walls with no nailing facilities, 20 year endorsement" shown on page 124 on handbook entitled "Johns-Manville Built-up Roofs," BU-155A, 2/65.

Contractor shall furnish 20 year flashing bond.

METAL FLASHINGS & MISCELLANEOUS METAL WORK:

Furnish and install all miscellaneous metal work, flashings, and counter-flashings, gravel guards, etc. as shown on drawings and/or required. All metal flashings shall be constructed of .032 gage mill finish aluminum. Seal all joints in flashings with Thikol Caulking Compound.

SMOOTH-SURFACE BUILT-UP ROOFING:

Furnish and install on #201C and 206 terrace floors, Johns-Manville Specification No. 812 Smooth-Surface Asbestor built-up roof to be overlaid with Promenade Surfacing.

Roofing shall be applied in strict accordance with manufacturers application instructions as shown on page 152 and 153 of handbook entitled "Johns-Manville Built-up Roofs", BU-155A, 2/65. Contractor shall furnish 20 year bond.

MEMBRANE WATERPROOFING:

Entire floor area of Pent House shall be waterproofed as herein specified prior to installation of cement topping.

Membrane waterproofing shall be of compotite (as specified above). Provide in widths convenient to room size, allowing not less than 6" per width for lapping, plus turn-ups. Completely seal overlays of laps with mastic asphalt laid on sufficiently for the mastic to extrude from the edges of the lap when pressed tight. Lay so direction of water flow is not against edge of lap. Protect exposed butt-edge of lap by wiping clean and applying 1-1/2" or wider plastic adhesive tape. Compotite shall be turned up 6" high at walls to form a complete pan.

ALUMINUM COPING:

Furnish and install where indicated on drawings, Alcoa Aluminum Coping Type G-8 as manufactured by Aluminum Company of America, 1211 Alcoa Building, Pittsburgh 19, Pennsylvania.

Material Specification:

Coping G-8, Section 66611; 6063-T42, extruded; 9'-10-1/2" long.

Welded mitered inside, outside corners 66611, 69177;
6063-T42, extruded; 1'-6" x 1'-6".
Gutter bars G-8; 5052-H34, stamped sheet; .081" thick.
Anchor bolt and plate assemblies G-8; steel, electro zinc
plated.
Sheet metal screws; 2024-T4; #10 x 3/4.
Joint covers; 3003-0 formed sheet; .032" thick x 4" wide.

Note: Store all components in clean, dry storage area. Prevent
contact with corrosive or staining materials.

Finish: All sections shall be provided with a standard mill finish.

Installation Procedure: Coping shall be installed in strict
accordance with manufacturer's recommended installation procedures.

SPECIAL COATINGS, VINYL PLASTIC:

General:

Applicable provisions of General Conditions govern work under
this division.

Work Included:

A. Roofing: The work covered by this division of the specifications
consists in furnishing all plant labor, equipment, appliances and
materials, and performing all operations in connection with the spray
application of Cocoon Vinyl Plastic Coating as manufactured by R. M.
Hollingshead Corporation, Camden, New Jersey, and/or approved equal,
and applied by an applicator authorized by the manufacturer, and finishing
work complete, in strict accordance with the following specifications and
the applicable drawings.

B. Apply Cocoon Vinyl Plastic, #550 to all exterior surfaces noted
on the drawings. Cocoon shall be applied to a minimum thickness of 30
mils. Color to be selected by Architect.

Work by Others:

Surface Protection: Surface shall be regular, straight, even, smooth,
clean without projections and free from any foreign substances. All
necessary work to obtain this condition shall have been completed by
all other trades as directed and approved by the General Contractor
before the Cocoon Sprayable Vinyl Plastic Coating is to be applied.

Storage:

Storage places for Cocoon materials will be mutually agreed upon by
the General Contractor and this contractor. Materials are volatile and
adequate precautions shall always be exercised to prevent fire. All
waste materials will be disposed of at the end of each day.

Examination of Surfaces:

Before starting work the applicator shall examine all surfaces to be coated with Cocoon and make sure that they are dry and have been properly prepared. Should he find that any surface is unsuited for the application of Cocoon he shall report same to the General Contractor who will inspect work and if the objection is warranted, have the complaint rectified. The starting of the work on any surface will be considered as evidence that the surface is satisfactory.

Protection of Work:

The Cocoon applicator shall protect his work as well as the work of all other contractors during the time his work is in progress.

Guarantee:

All work under this division of the specifications shall be guaranteed by the contractor for a period of ten (10) years, against crazing, cracking, delamination or development of voids and that all Cocoon materials will be of uniform quality.

Material:

Then vinyl plastic spray coating Cocoon shall have a vinyl resin base with added plasticizers, solvents, and coloring, free of benzol, chlorinated solvents or any other highly toxic material. As formulated and manufactured by the R. M. Hollingshead Corporation, Camden, New Jersey.

Cocoon coating shall have the following properties:

- A. Weight - 1 oz. per 10 mils of thickness
- B. The material shall have a tensile strength of 1500 pounds per square inch with elongation properties of 200% minimum.
- C. Abrasion resistance shall show a loss of not more than 0.58 milligrams per 1000 revolutions using 1000 mg. load and CS-17 wheel.
- D. Adhesion shall not be less than 10 lbs./in. ave. on steel surfaces.
- E. Chemical resistance - to inorganic acids, bases and salts in 10% solution. Resistance to dilute sulphuric and lactic acid for extended periods, also resistance to isopropyl alcohol, bleach, soap solution, oakite cleaning compound and fats.
- F. Color stability - the material shall not show color change up to 1000 hours fabeometer/test.
- G. Drying time - the applied plastic finish shall be dry to touch in one hour and completely dried in seventy-two hours.
- H. Fire resistance - self extinguishing, shall not support combustion.
- I. Flexibility - the plastic finish shall be able to withstand bending over 1" diameter mandrel between temperature limits of 32°F. and 180°F. It shall also be able to withstand steam pressure of 215°F. For short periods.

- J. Fungus and Bacterial Resistance - plastic finish shall not be affected by:

Chaetomium Globosum
Myrothecium Verrucaria
Aspergillus Niger

Asperigillus Terruus
Penicillium Citrinum
Fusarium Moniliforme

All at 14 days at 28 to 32° C. - (82.4°F. to 89.6°F.)

- K. Radioactive resistance - the material shall substantially reduce depth of penetration of radiation.
L. Vapor permeability - plastic finish shall have a vapor transmission rate of not more than the following:

15 mils -- .90 perms
25 mils -- .55 perms
35 mils -- .20 perms

- M. Washability - the cured surface shall pass a washing test (Canadian Gov't Specification Board - IGP - 71, 125.1) of ordinary soap solution and 1% sodium hydroxide, 5% citric acid, mercurachrome, 50% Ethyl Alcohol, hot lard 300°F.
N. Corrosiveness - shall cause no corrosion on plain low-carbon steel when exposed to an atmosphere of 95% humidity at 95°F. plus or minus .3°F. for 240 hours. Shall show no deterioration up to 250 hours salt spray. (ASTM B117-54T) test.
O. Solids contents shall be not less than 32%.

Reinforcing:

Cocoon vinyl Plastic coating shall be reinforced with "Railroad Cocoon Cloth" in areas indicated on the drawings.

Workmanship:

All Cocoon Vinyl Plastic Spray application work shall be of the type and quality equal in all respects to the recognized highest standards for the particular purpose for which the application is intended. The application shall be executed by a contractor who is an authorized and approved applicator of the RM Hollingshead Corporation and whose mechanics shall have been trained by the manufacturer of Cocoon.

Weather:

No work shall be performed or material applied under weather conditions or temperatures which might impair the qualities of the work.

Moisture:

Surfaces to which the material is to be applied shall be thoroughly dry at the time of the application so that no blistering shall occur.

Cleaning:

Upon completion of his work, the Cocoon applicator shall remove all surplus materials. All spots, spillings and the like, caused by his work, shall be removed and the entire premises shall be left broom clean.

TEDLAR ROOFING:

Where Tedlar roofing is indicated on the drawings (canopies), the roofing shall be Ruberoid T/NA 200 roofing membrane with DuPont's "Tedlar". Installation shall consist of T/NA 200 roofing membrane applied directly to the deck in a hot mopping of roofing asphalt. Base sheets will not be required. Installation shall be made in strict accordance with manufacturers instructions.

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SECTION NO. 13

METAL DOORS AND FRAMES, ALUMINUM ENTRANCES, AND WINDOW WALL SYSTEM

SCOPE:

Work intended under this section of the specifications shall include all labor, materials, equipment, and appurtenant accessories necessary for or incidental to the provision and installation of all metal doors and frames, aluminum entrance doors and frames, and window wall system as indicated or reasonably implied by the drawings and as herein specified. Read and comply with the General Conditions.

FULL LOUVERED METAL DOORS:

Contractor shall furnish and install full louvered metal doors of size indicated on drawings. Doors shall be type "SL" similar and equal to that manufactured by American Metal Works, Incorporated. Construction to be of 18 gage U. S. Standard cold rolled and stretcher leveled prime steel for all stiles and rails. Stiles and top rail shall be 5" in width and bottom rail shall be 10" in width. All stiles and rails shall be filled with suitable sound deadening material. Door shall be mortised, reinforced, drilled and tapped for mortised type template hardware at the factory. In addition, reinforcement plates are to be provided for surface applied hardware. Doors to be thoroughly cleaned of all oil, grease and other impurities, and shall be given a baked on coat of metal primer.

METAL DOOR FRAMES:

Contractor shall furnish and install metal frames as indicated on the drawings. Frames shall be manufactured on No. 16 U. S. Standard gauge prime new billet pickled steel sheet. Unit type welded construction to be used throughout with corners mitered, welded, and ground smooth on the outside. Profiles to be press bake formed. Removal steel spreaders are to be welded to bottom of frame. Frames shall be prepared for finish hardware specified in "Finish Hardware" section of this specification. Frames shall also be prepared for silencers, three (3) per door. Suitable reinforcement for hardware shall be provided inside frames. Wall anchors and floor clips to be provided of a suitable type to fit job conditions. Frames shall be primed with baked on metal primer.

VAULT DOORS:

The contractor shall furnish and install Diebold Model 2000, flat sill, Fire-insulated Vault Doors bearing the 2-hour labels of the Underwriters' Laboratories, Inc., and the Safe Manufacturers' National Association; and the Underwriters' Laboratories, Inc. approved relocking Device label for a relocking device designed to deadlock the door when the lock is under mechanical, explosive, or torch attack. The door shall have a clear opening of 78" high by 32" wide, with entrance flush with furnished floor level. Door and frame shall be filled with "Monolite", a monolithic

fire-insulation 2-1/4 thick over face of door. The door shall be locked by ten 3/4" dia. bolts, checked by a 3 tumbler, key-changing combination lock. The door shall be provided with an Emergency Unlocking Device for emergency escape. The door shall be erected according to the manufacturer's instructions for non-grout installation.

WINDOW WALL SYSTEM:

Furnish series 1600 Window Wall system as manufactured by Albritton Engineering Corp., Bryan, Texas. Included under this section are window wall units, mullions, sub-frames, aluminum stools, erection, perimeter caulking and factory glazing.

Window Wall shall be fabricated with Alenco Series 1600 fixed frames, 2-C mullions, 608 sub-frame at heads and jambs, and 848-C sub sill with provision for weep holes and positive anchor for mullions. All members shall be of commercial quality 6063-T5 extruded aluminum. Interior stools shall be roll formed aluminum as shown on plans. Sub-frames shall be designed to compensate for thermal expansion and contraction and construction tolerances in openings; also to allow erection after all masonry work is complete so that the finish of aluminum to be Duranodic Medium Bronze.

The contractor shall have the option of furnishing the window wall system "Factory glazed" using glass indicated on the drawings and specified in Section No. 17 of this specification. Spandrelite only shall have factory installed PPG Spandrel Insulation, consisting of a sheet of PPG Superfine fiber glass insulation faced on the indoor side with a semi-rigid vapor barrier, and aluminum heat reflecting surface. The Superfine fiber glass sheet shall be faced on the outdoor side with a perforated aluminum breather sheet, providing a reflective air space next to the Spandrelite spandrel glass. Glass and panels shall be held in place with extruded aluminum glazing beads.

Window wall manufacturer shall furnish complete shop drawings with full size details, indicating all conditions of construction relating to installation of wall system.

Erection shall be by an authorized representative of the window manufacturer and units shall be installed plumb and level, without distortion, and secured in accordance with the detailed shop drawings.

All work under this specification shall be guaranteed against defects in material and workmanship for a period of one year from the date of acceptance of the installation.

ALUMINUM ENTRANCES:

General: Aluminum entrances shall be Pittsburgh Plate Glass "Tubelite" tubular aluminum doors, frames, trim, anchors and hardware.

Material: All sections of doors and frames shall be extruded members of Architectural Alloy No. 6068-T5. Screws shall be of 24S-T4

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aluminum alloy and cadmium plate brass or bronze.

Fabrication: Doors shall be fabricated of extruded hollow aluminum tubes with no exposed seams. Frames may be either extruded tube or open channel, depending upon the strength of construction required. Wall thickness shall not be less than 1/8". Trim mouldings shall not be less than 1/16" in thickness. Anchor brackets at joints and reinforcement for hardware shall be completely concealed and fastened in place without fastening method being detectable on visible surfaces. Mechanical joints of doors and frames shall be accurately milled to a hairline water-tight joint. Glazing member is of such design that it is snapped in, eliminating use of exposed screws.

Finish: All parts shall be finished in Duranodic #312E. Sample of the finish will be submitted to architect for approval.

Erection: All openings shall be prepared plumb and square by others. Doors and frames shall be installed in the opening plumb and in true alignment, in accordance with instructions attached to all doors. Tubular frames shall be secured to the floor by means of anchors. Anchor screws shall be used at the side and head jambs. Channel frame shall be anchored to the jambs by means of steel cores securely fastened to the jambs, and the aluminum frame attached to the anchors in accordance with drawings prepared by the fabricator.

Finish Hardware: Doors shall be equipped with all hardware listed hereinafter. Finish of hardware shall match finish of doors.

Pair Doors #6: Floor and head pivots, concealed overhead door closers, standard push bar #500-50 and pull handle #500-5, aluminum threshold.

All other Doors: Floor and head pivots, concealed overhead door closer, concealed panic devices, pull handle #500-5, aluminum threshold.

Cylinders: All cylinders to be furnished by finish hardware supplier.

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SECTION 14

MOVABLE PARTITIONS

GENERAL:

Contractor shall furnish and install "M" Series Modern Walls of the type indicated on the drawings as manufactured by Modern Partitions, Inc., Holland, Michigan. Panels shall be furnished with the following surface finishes:

- (A) Vinyl wall covering over 1/8" tempered hardboard.
- (B) Videne polyester surfacing in Teak wood grain finish.
- (C) Videne polyester
- (D) Gypsum board or 1/8" tempered hardboard suitable for field painting.

Refer to "Room Finish Schedule" in drawings for location of finishes.

CONSTRUCTION:

Walls shall be assembled from panels joined with panel connectors which will receive a flush pilaster to form a post between panels. Panel units shall be manufactured in widths indicated on the drawings and as required to meet job conditions and actual field measurements. All measurements to be made to centerline of connector. Panels shall be so constructed to maintain standard module size regardless of "T" or corner conditions, framing for doors, etc. Construction shall be such that any panel unit may be removed and replaced without disturbing adjacent panels or wiring.

M3 SOUND CORE:

All partitions shall include M3 sound core having a sound transmission class of STC-43. Partition shall have been tested by a recognized independent testing laboratory using fullsize partition system installed in accordance with normal installation procedures. Certified sound test data reports shall be submitted by the qualified testing laboratory.

CONNECTORS:

Panels shall be connected to each other with one piece connectors secured into factory installed locking hardware in panel side rails. Connector shall be such as to accommodate lay-in wiring while still allowing removal of the connector without disturbing the wall panels.

ELECTRICAL WIRING:

Walls shall have 2" x 2" raceway between panels and continuous 2" x 4" lay-in wire raceway in base.

CROWN:

Crown shall be steel and shall be supplied in 12' lengths with corner crowns to be pre-formed at factory for greater stability. Crown shall provide continuous raceway across top of partitions and at same time allow use of top filler where required. Ends of crown shall allow for insertion of alignment plate to assure flush joints.

PILASTER:

Pilasters shall be steel and shall be furnished with spring type clips to snap into factory installed hardware on panel side rails to form a closure between panels. Pilasters are to be readily removable for access to wireway without removing base or crown. Pilaster shall allow for insert of panel material.

BASE:

Continuous base to be recessed type and to be provided in nominal 4' lengths. Base shall fit in continuous groove, top and bottom, and be constructed in such a manner that base sections can be removed and re-installed without use of tools.

FLOOR PLATE:

Floor plate to require no scribing or shimming, but to follow contour of floor. Floor plate shall be of extruded rigid vinyl material so formed to allow for gasketing.

SOLID TYPE PANELS:

This type shall have solid panels to full height except for base and crown. Refer to details on drawings for dimensions.

GLAZED PANELS:

Glazed type sections shall have solid panels extending from top of the base to a point 42" above floor. The glass shall extend from the sill line to a height of 66" above the floor. Glass shall be secured in place with rigid vinyl moulding without use of glazing compound or nails, screws, etc. Moulding shall be so designed that same extrusion accommodates all glass thicknesses. Walls shall be furnished with 1/4" polished plate glass where indicated on drawings. Glass shall be as specified in section no. 17 of this specification.

LEVELING DEVICES:

Panels shall be equipped with leveling devices which shall allow up to 7/8" adjustment, without shimming, to compensate for uneven floors.

DOOR FRAMES:

Door frames as detailed on the drawings shall be furnished and

installed in movable partitions by the partition manufacturer.

DOORS & FINISH HARDWARE:

Doors and finish hardware shall be furnished and installed by the General Contractor and shall be as specified in sections No. 9 and No. 10 of this specification.

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SECTION NO. 15

MISCELLANEOUS ITEMS

SCOPE:

Work included under this section shall include all labor, materials, equipment, and appurtenant accessories necessary for or incidental to, the execution of all miscellaneous items as indicated or reasonably implied by the drawings and as hereinafter specified. Read and comply with the General Conditions.

STAIR RAILINGS:

All tubular aluminum railings indicated and detailed on drawings for stair railings are to be "Econo-Rails" manufactured by Newman Brothers, Inc., Cincinnati, Ohio, of mechanical Double-Wall Construction.

Material: Railing shall be made of extruded aluminum, No. 6063ST5 alloy, with not less than 1/8" thick walls. All fittings and fasteners to be non-ferrous metals and shall be as noted on drawings. Joints between vertical and horizontal members shall be accurately machined to be sharp and true, and free from discolorations.

ROOF SCUTTLE:

Furnish and install where indicated on plans, one (1) metal roof scuttle type S-50 as manufactured by the Bilco Company, 164 Hallock Avenue, New Haven 5, Connecticut.

Cover shall be covered with 11 ga. aluminum with 3" beaded flange neatly welded and ground at corners. Insulation shall be 1" cork fully covered and protected by an 18 gauge aluminum liner.

Curb shall be 11 gauge aluminum covered formed with a 3-1/2" flange provided with holes for securing to roof deck. Curb shall be complete with an integral cap flashing of same material, full welded and ground at corners for absolute water tightness. Insulation on outside of curb shall be 1" cork.

Scuttle shall be completely assembled with heavy pintle hinges, two automatic hold open reverse action lifting levers, positive snap lock with turn handles on inside and outside, and extruded neoprene rubber draft seal. Provision shall be made to receive padlock on both outside and inside.

Spring lifting levers shall be installed to lift cover with minimum of effort and shall hold the cover in open position until manually pulled down. This arrangement shall allow roof scuttle cover to be opened and closed with one hand only.

STEEL LADDER:

Furnish and install steel ladder to roof scuttle as indicated on

the drawing. Ladder shall be constructed of 2" x 5/16" steel with 3/4" diameter rungs at 16" centers as detailed.

DOOR GRILLES:

Contractor shall furnish and install in all doors where indicated on the drawings, Tuttle & Bailey No. T980 WF door grilles, grilles shall be furnished in prime coat and shall be painted as specified in section No. 18 of this specification.

TOILET COMPARTMENTS & DIVIDER SCREENS:

Type: All metal compartments for toilets and divider screens shall be Century Type, Porcena finish as manufactured by the Sanymetal Products Co., Inc.

Doors and Partitions: Shall be 1" thick, made of 2 sheets of vitreous porcelain sheet steel (minimum steel thickness 18 gauge), assembled over and cemented under pressure to dense, sound-deadening Bridgecore insulation. Face plates of doors and partitions shall have formed edges sealed with a continuous oval-crown locking strip of polished stainless steel. Corners shall be finished with a die-cast fitting, assembled and made integral with the locking strip and finished to match the locking strip. Door edges shall be electrically welded together with welds spaced not over 18" apart around the entire perimeter of the door.

Century Type Pilasters: Century pilasters shall be 1-1/4" thick made of 2 sheets of vitreous porcelain sheet steel (minimum steel thickness 18 gauge), welded together and finished as specified for Partitions and Doors. Pilasters shall be secured to overhead carrying member (overhead members by others) by means of 7/16" diameter galvanized bolts through a 1/2" x 7/8" reinforced crossbar welded to and made integral with the pilaster, with a plaster key spacer between the bottom of supporting member and the finished ceiling line and designed to transmit the strain of lateral thrust and pull to the steel structural member independent of finished ceiling material.

Hardware and Fittings: Dividing partitions and pilasters shall be attached to one another and to the walls with brackets made of heat-treated polished and anodized extruded aluminum alloy and each stirrup bracket provided with holes for 4 attachment screws to the walls and at the panel connection to the pilaster. Each bracket shall be 3" long with the brackets thru-bolted through the dividing panels with 3/16" brass shoulder screws and brass sex nuts with Phillips head. Where the dividing panel brackets attach to the pilaster, a fibre gasket shall be placed between the bracket and the porcelain enamel surface of the pilaster and the brackets shall be attached to the pilaster by using 1/4 - 20 brass chrome-plated machine screws into concealed rivnut reinforcements. Attachment of pilaster to ceiling shall be concealed with a one-piece 3" high polished stainless steel trim made theft-proof by securing in place with concealed spring anchor clips without the use of exposed screws.

Doors shall be equipped with Sanymetal #7961 concealed, controlled

gravity type hinges. Doors shall be mounted on upper and lower hinge bracket of heat-treated high tensile cast aluminum alloy, factory-mounted on the pilaster in position and designed so that no bolts are externally visible and no portion of the bracket overlaps the front or back external surfaces of the pilaster beyond the locking strip, and shall be finished to match the stainless steel locking strip. Top hinge pivot door bracket to be recessed into edge of door approximately 2" below the top with steel pivot pin mounted within the door structure, supported both above and below the pivot bracket. Door weight shall be carried on a thrust-bearing fixed in place by a stationary vertical pintle concealed within the door structure. Operation of the door shall be controlled by opposing Zytel cams under spring tension, mounted on the fixed vertical pintle. Hinge to be adjustable to permit the door to come to rest at any angle, or to hold the door open or closed when not latched. Hinge to permit free movement without raising or lowering the door. All moving parts shall be self-lubricating and shall be completely concealed within the 1" thickness of the door. Top and bottom door hinge castings shall be heavy one-piece cast non-ferrous alloy and top and bottom hinge corners of the door sheets shall be so formed that when the door castings are applied, the outer face of the castings are flush with the face plates of the door, with no portion of the casting projecting beyond the face of the door plates, and the corner door casting interlocked with the oval-crown locking strip around the perimeter of the door.

Each door shall be equipped with a cast alloy chrome-plated coat hook and bumper and applied with one-way head brass machine screws, chrome plated into concealed rivnut reinforcements and a gasket shall be placed between the coat hook and the porcelain enameled surface. A Sanymetal #8800 concealed latch with face mortised flush with edge locking strip and all working parts completely concealed within the thickness of the door. Latch bolts shall be stainless steel and exposed escutcheon plate and handle polished chrome-plated cast alloy non-ferrous metal. Provide a one-piece heavy cast non-ferrous alloy stop and keeper, polished chrome-plated finish with 3/4" diameter rubber bumper locked in place. Stop and keeper to be thru-bolted through the pilaster with brass one-way head shoulder bolts and sex nuts.

Finish and Color: Partitions and doors shall be vitreous porcelain enameled on all interior and exterior surfaces with ground coat and finish coats of porcelain on exterior surfaces only. Colors shall be selected from manufacturer's standard Color Chart.

SOLAR SCREENS:

Solar screens shall be provided where indicated on the drawings. Solar screens shall be pattern No. 64-160 as manufactured by Sun Control Products, a division of I. E. Frank, Inc., 117 W. 21st Street, Hialeah, Florida. Members shall be constructed of 6063-T5 extruded aluminum. All aluminum parts shall have Duranodic No. 335S finish.

All materials shall be erected by the manufacturer or his authorized representative in strict accordance with approved shop drawings. The

general contractor shall confirm critical dimensions of adjacent construction and shall set anchor bolts, sleeves, or other anchorage devices as required and furnished by Sun Control Products Co.

EXTERIOR METAL RAILINGS:

Metal railings shall be provided on exterior of building where indicated on the drawings.

Railings shall be as manufactured by Architectural Manufacturing Company of America, P. O. Box 20202, Atlanta, Georgia, 30325. All parts shall be furnished in Duranodic No. 312 E finish. Parts shall be as follows:

Newel Posts - No. AR - 304, 2-1/2" x 2-1/2"
Pickets - No. AR - 305, 3/4" x 3/4"
Top Rail - No. AR - 302 - TR
Bottom Rail - No. AR-302-BR
Newel Post Base -- No. 34 TM
Mounting Arrangement - Type C-1

DRAPERY TRACK:

Furnish and install in all areas indicated on drawings, Silent Gliss drapery track No. SG-1014 cord traverse ceiling style, using Nos. SG-3517/18 Cord Guides and Returns, No. SG-3550 Eyelet Carriers 4" o.c., No. SG-3030 Pilots, No. SG-3042 Master Carriers, No. SG-3032 Spring Stops and No. SG-3090 Nylon Cord as distributed by Angevine Co., Crystal Lake, Ill., or Drapery Hardware Mfg. Co., Monrovia, Calif., Track to be assembled and installed as recommended by distributor.

STAIR NOSINGS:

Furnish and install on each stair tread, wooster type 46 aluminum abrasive stair nosing, 3" wide, 4 ribs, lip nose, square back. Nosing shall be recessed in concrete tread so that the top of nosing will be level with vinyl asbestos tile on stair tread.

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SECTION NO. 16

LATHING & PLASTERING

SCOPE:

Do all furring, lathing, and plastering as indicated by the drawings and schedules of interior finishes and as indicated herein.

MATERIALS:

Materials shall be standard commercial products of recognized manufacturers. Lath, Portland cement, lime, Keene's cement, gypsum plaster, and sand shall conform to applicable requirements of the A.S. T. M.

Packaged materials shall be delivered in original containers unopened and bearing the manufacturer's name and brand.

Channels shall be hot or cold-rolled unless otherwise noted, and shall be zinc coated or painted. 1-1/2" channels shall weigh not less than 0.442 pounds per linear foot for cold-rolled, and 0.860 pounds for hot-rolled.

Tie wire shall be soft annealed zinc-coated (galvanized) of gauges specified and recommended by the Metal Lath Manufacturers Association.

Metal lath shall be ribbed expanded metal lath.

Metal lath shall be coated with rust inhibitive paint after forming or formed from zinc-coated materials. Lath shall be protected from rust until installation.

Corner ties shall be strips of 2.5 pound flat expanded metal lath bent at right angles with 3" legs on each side of angles, and shall be used where plaster on lath meets plaster on masonry.

Provide Powell #90 expansion joints, where indicated on drawings, as manufactured by Powell Street Lath Corporation, 3737 North Powell Avenue, Franklin Park, Illinois.

Lime putty made from quicklime shall be thoroughly slaked, allowed to cool and then let stand for not less than 24 hours. Hydrated lime shall be soaked for at least 24 hours. All lime putty shall be kept moist until used.

Water shall be clean and fresh.

Sand shall be clean, free from deleterious matter, and shall be well graded from fine to coarse to produce a smooth working mix.

AREAS TO BE PLASTERED:

Contractor shall consult finish schedule on plans to determine plastered areas.

SUSPENDED CEILINGS:

Runner channels for suspended ceilings shall be 1-1/2", spaced not more than 4 foot centers, and 3" from parallel walls; or use 4 section 3/4" x 7/8" weighing 1 pound per foot maximum.

Support each channel at 4 foot intervals and at ends on hangers made of painted 7/32" round mild steel rods, or #8 gauge (.162") zinc coated wire hangers, or 1 x 3/16 inch flat zinc coated (galvanized). Hangers may be placed in concrete at the time of pouring or secured to inserts placed in forms or to expansion type anchors placed in forms or to expansion type anchors placed in the concrete slab.

Secure runner channels to hangers by looping hangers around channels and bolting if hangers are of flats, or by double loop and double twist if hangers are of wire.

Saddle tie furring channels to runner channels with double strand No. 18 gauge (.048) tie wire; place knot in center, or lock together with zinc/coated clips 14 gauge (.074) minimum.

Provide 3/4" furring channels spaced as required for the type of lath used and secure lath to furring channels in an approved manner.

KINDS AND MIXES OF PLASTER:

All plaster on walls where scheduled on drawings shall be sand finish Keene's cement.

Plaster on Poured Concrete: Plaster on poured concrete walls and ceilings shall be three (3) coats to a thickness of 1/2". Scratch coat shall be "Bondcrete" mixed as recommended by manufacturer.

Surfaces shall be wet previous to application of scratch coat.

Apply scratch coat as specified above.

Follow scratch coat with brown coat to bring out to grounds. Apply sand finish Keene's cement as hereafter specified.

Keene's cement wall finish shall be medium hard finish, mixed in the proportion of one part lime putty to one and one-half (1-1/2) parts USG Keene's cement by volume.

MIXING:

Plaster may either be mixed by hand in a mixing box or in a machine mixer. Mixing may be done as with sanded plaster, where the plaster and aggregate are first dry mixed before water is added but the following method is recommended;

The proper amount of water per batch shall first be poured into a

watertight mixing box. The gypsum plaster shall next be spread over the water and allowed to soak. After all dry plaster has been taken up by the water, the plaster aggregate shall be added and hoed into the wet plaster thoroughly. This method involves less labor and results in a plaster mix free of lumps. The approximate amount of water required for different mixtures is as follows:

100# plaster to 2 cu. ft. aggregate	- 12	gallons	water
100# plaster to 2-1/2 cu. ft. "	- 14	"	"
100# plaster to 3 cu. ft. "	- 16	"	"
100# plaster to 3-1/2 cu. ft. "	- 18	"	"

GENERAL APPLICATION:

All plastering shall be three (3) coat work: Namely, a scratch, brown and finish coat as hereinafter specified. The finish coat shall be applied as a separate coat as hereinafter specified unless otherwise directed by the Architect.

SCRATCH COAT:

All surfaces shall receive a scratch coat of Bondcrete mixed as hereto fore specified. Scratch coat shall be thoroughly set before the brown coat shall be applied. It shall not be dry.

BROWN COAT:

The brown coat may follow the scratch coat immediately and shall be rodded and darbied to a true surface, but back from all grounds to receive the finish coat. Surfaces which have been previously scratch coated shall be browned with plaster mixed as hereinafter specified, and shall be rodded and darbied to a true surface but back from grounds to receive the finish coat. Where excessive fills occur the surface shall be scratched in and allowed to set before filling out to bring the surface to a true plane.

For brown coat in application over scratch coats applied to concrete surfaces scratch coated with concrete bonding plaster, the mix shall be:

One part gypsum plaster to not more than three (3) parts sand by weight.

FINISH COAT:

Finish coat shall be mixed as hereinbefore specified. The brown coat shall not be allowed to get too dry nor be too wet before the application of finish coat. Finish shall be applied in one or two coats as Architect may direct to a thickness of about 1/8". Float with a carpet, sponge or mohair float to a uniform texture. Water shall be applied to surfaces while floating. At Contractor's option, texturing of plaster may be accomplished with trowel edge after slight setting up.

PATCHING:

Plastering with cracks, blisters or pits will not be acceptable.

After mechanics other than painters have finished the work, or as may be directed, the Contractor shall point up around trim and other set work and patch all plaster.

The patching of plaster shall match existing work in texture and finish and all joining with plaster previously applied shall be finished smooth. In no case shall sandpaper or other abrasive be used to clean or smooth off finished plaster surfaces.

CLEANING:

All other work shall be protected from damage during execution of plastering and on completion, all surfaces shall be cleaned and waste materials removed.

EXTERIOR PLASTER:

All exterior plastering work shall be done as follows:

Scratch Coat: Use 1:2:7-1/2 mix (1 bag of cement, 2 bags of lime and 7-1/2 cu. ft. plastering sand). Apply a full, even 3/8" coat and when firm, scratch entire surface for good bond.

Brown Coat: 1:2:9 mix. Apply 3/8" coats and use rod and darby to bring surface cut evenly to grounds. Before surface is dry, broom to produce roughness for bond of finished coat.

NOTE: Keep each coat damp for several days by spraying with water.

Finish Coat: Sand float finish - 1:2:9 mix. Apply over well-set but damp brown coat in two even coats. Float to even texture desired using wood, cork, carpet-covered or rubber float.

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SECTION NO. 17

GLASS AND GLAZING

SCOPE:

Provide all glass, glazing compound, glazing points and other materials required for the complete installation of glass and glazing for all openings requiring glass to properly complete the building.

SAMPLES:

Contractor shall submit duplicate samples of each kind and grade of glass specified to the Architect for approval. Samples shall be large enough to illustrate the various grades. After approval, one sample will be returned to the contractor, the other retained for comparison with the materials furnished. Inferior materials will be rejected and shall be immediately replaced with acceptable material for the grade specified.

GLAZING COMPOUND:

Glazing compound shall be of proper type recommended for the type of setting required, shall be manufactured specifically for the job intended, shall be of consistency to remain in perfect condition for a minimum period of two (2) years, shall contain no ingredients which will be injurious to aluminum or other metal settings. Glazing compound shall be color to match the aluminum and shall not require painting to prevent drying out.

GLASS:

- (1) Clear Plate Glass shall be 1/4" thick polished plate glass as manufactured by Pittsburgh Plate Glass.
- (2) Graylite Glass shall be Pennvernon Graylite "14" heavy sheet glass, 7/32" thickness, as manufactured by Pittsburgh Plate Glass Company.
- (3) Twindow Insulating Glass where indicated on the drawings shall be fabricated of 2 pieces 1/4" polished plate glass with 1/2" air space mounted in metal frame.

SPANDRELITE:

Spandrelite glass as manufactured by Pittsburgh Plate Glass Company shall be furnished and installed where indicated on the drawings. Spandrelite cannot be cut after firing. Therefore, it shall be cut at the factory to suit rabbet dimensions supplied in writing by the Architect. The glass dimensions established shall provide a 1/4 - 3/8 inch clearance between glass perimeter and rabbet on all four sides. The glass dimension tolerance shall be 0 - 3/16.

MANUFACTURER'S LABELS:

Labels showing strength, grade, thickness, type and quality will be required on each piece of glass. Labels must remain on glass until it has been set and inspected. When glass is not cut to size by manufacturer, and is furnished unlabeled from local stock, the contractor shall submit an affidavit stating the quality, thickness, type and manufacturer of the glass furnished.

INSTALLATION:

Do not set glass until rebates have been primed and priming is dried. Set obscure glass with smooth surface outside.

All glass shall be bedded, back-puttied, secured in place, apply putty uniformly, in straight lines, with accurately formed bevels and clean-out corners; remove excess putty from glass.

All glass to be left free from flaws, scratches or other imperfections. Glass shall be left whole and free from rattles. All broken or cracked glass shall be replaced with new glass at completion. At the completion of the work the contractor shall have all glass thoroughly washed clean by an expert window washer scraping off labels and thoroughly cleaning off all putty, paint, plaster, etc.

INSTALLATION OF SPANDRELITE:

Spandrelite shall be placed on two setting blocks at the 1/4 points of the bottom edge in rabbets with removable stops on all four sides. Rabbet details shall be such that the glass will not become load-bearing. Glass-face to stop-face clearance shall be 1/8 - 1/4-inch both inside and out. Spandrelite shall not contact other materials except in the glazing rabbet.

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SECTION NO. 18

PAINTING

SCOPE:

This portion of the work shall include the furnishing of all labor, materials, equipment and appliances necessary for or incidental to the proper and complete painting of all surfaces (unless specifically excepted) on both exterior and interior as hereinafter specified.

By "Painting" shall be included either staining and varnishing natural finish, or pigmented paint application.

WORKMANSHIP:

The Contractor shall submit the name of the Painting sub-contractor to the Architect for approval.

The Architect reserves the right to reject for this work any sub-contractor who, in his opinion, is not capable of executing work of the highest character.

All work shall be done in a workmanlike manner by skilled mechanics. All materials shall be evenly spread and smoothly flowed on and shall be free from runs and sags, and no paint, varnish or enamel shall be applied until preceding coat is thoroughly dry and hard.

No exterior painting shall be done in rainy, damp or frosty weather or until surface thoroughly dried out by artificial heat.

In general, and unless other wise recommended and specified, exterior paints shall be allowed to dry at least forty-eight hours between coats and interior paints shall be allowed to dry at least twenty-four hours between coats.

Enamels and varnished shall be allowed to dry at least forty-eight hours between coats unless noted in the detail specifications and shall be sanded lightly between coats with No. 0 sandpaper and dusted before succeeding coat is applied.

All nail holes shall be filled with putty tinted to match finish.

PREPARATION OF SURFACES:

Painting Contractor shall be wholly responsible for finish of his work, and therefore, shall not commence any part of it until surface is in proper condition in every respect. If painting contractor considers any surface so unsuitable for proper finish of his

that it cannot be rectified by slight sanding, he shall notify the Architect of this fact in writing before any materials are applied and he shall not apply any material until the unsuitable surfaces have been made satisfactory, or the Architect has instructed him to proceed.

All knots or sappy spots shall be given one coat shellac at least ten hours before painting.

All necessary puttying of holes, cracks and blemishes shall be done after priming coats have become hard and dry and before second coat is applied, and putty shall match the shade of finish coat.

All greasy or oily metal surface shall be cleaned with turpentine of benzine before applying any materials. All scale or rust shall be removed by scraping, wire brushing or sandblasting.

MATERIALS:

Materials shall be high grade products of well-known manufacturers, and shall be applied in strict accordance with the directions and recommendations of the manufacturers. A list of the materials to be used shall be submitted to the Architect for approval in writing.

Materials shall be delivered to the work in original, unbroken packages bearing the name and brand of the manufacturer. Materials shall be especially prepared for use on the surfaces specified.

All paint materials shall be those specified herein. Any materials not specified by name shall be submitted to the Architect for approval prior to purchasing same.

PAINING SCHEDULE

EXTERIOR MASONRY WORK: (including exposed brickwork on penthouse, solar screen tile at penthouse, solar screen tile fence, etc.)

(A) Two (2) coats Pittsburgh Speedhide Emulsion Masonry paint.

EXTERIOR FERROUS METAL WORK:

(A) One (1) coat Pittsburgh Ironhide Inhibitive Red primer, except where surfaces are factory primed.

(B) Two (2) coats Pittsburgh Ironhide Metal Paint

Note: Structural steel shall be shop and field coated as specified in section no. 4 of this specification. Structural steel exposed in finish work shall be given an additional coat of Pittsburgh Ironhide Metal paint.

EXTERIOR WOODWORK:

(A) One (1) coat Pittsburgh Sun-Proof primer

(B) Two (2) coats Pittsburgh Sun Proof Trim color.

INTERIOR WOODWORK:

DOORS:

- (A) One (1) coat Pittsburgh Speedhide Q.D. wood Sealer and finish.
- (B) Two (2) coats Pittsburgh Waterspar Extra Pale Satin Varnish.

CABINET WORK:

- (A) Fill all hardwood with Pittsburgh Paste Wood Filler
- (B) One (1) coat Pittsburgh Pigmented Wood Stain
- (C) Two (2) coats Pittsburgh Waterspar Extra Pale Satin Varnish.

ALL OTHER WOODWORK:

- (A) One (1) coat Pittsburgh Speedhide Enamel Undercoater
- (B) Two (2) coats Pittsburgh Speedhide Semi-Gloss Enamel

INTERIOR FERROUS METAL WORK: Including all exposed piping, conduit, exposed structural steel, etc. (except galvanized metal).

- (A) One (1) coat Pittsburgh Speedhide Q.D. Synthetic Primer.
- (B) Two (2) coats Pittsburgh Speedhide Semi-Gloss wall and trim enamel

Note: Delete primer where metal surfaces are factory primed.

EXPOSED INTERIOR GALVANIZED METAL SURFACES:

- (A) Clean all galvanized surfaces with Solvent, VM & P Naptha.
- (B) One (1) coat Pittsburgh Ironhide galvanized iron primer.
- (C) Two (2) coats Pittsburgh Wallhide Semi-Gloss enamel.

PLASTER AND EXPOSED CONCRETE:

- (A) One (1) coat Pittsburgh Speedhide alkali Resistant Primer
- (B) Two (2) coats Pittsburgh Wallhide Latex One-Coat Flat

GYPSUM BOARD, SANI-FINISH TILE, EXPOSED BRICKWORK:

- (A) Two (2) coats Pittsburgh Speedhide Interior Flat Emulsion Wall paint.

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prohibited by local ordinance, and in no case shall any fire be permitted without the due consideration of hazard and protection against the spreading or damage to property.

At the completion of the finish grading and construction work, the site shall be raked clean of all trash and cleared of all construction materials and debris.

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EXHIBIT C
LIST OF DRAWINGS

| BB 0014822 |

PITTSBURGH PLATE GLASS COMPANY
CHEMICAL DIVISION

LIST OF DRAWINGS

Exhibit C

Except as and to the extent otherwise expressly specified in the Agreement, the following list of drawings shall be applicable to and constitute a part of the 1965 Office Expansion of Building K-105 Contract.

50A - 530
50A - 531
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