

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

Fargo VA Health Care System

Community Resource & Referral Center
Fargo, North Dakota



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95% Construction Documents

S T O N E G r o u p A r c h i t e c t s
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DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

002413 - DESCRIPTION OF BIDS AND ALTERNATES

A. GENERAL CONSTRUCTION:

BASE BID: Complete Base Bid General Construction work as shown on drawings and as specified.

002415 - BASIS FOR BIDSA. GENERAL CONSTRUCTION:

1. Drawings: Sheets X1, A1 thru A dated December 20, 2019.
2. Specifications: Divisions 00, 01, 02, 03, 05, 06, 07, 08, 09, 10, 11 and 12 dated December 20, 2019.

007000 - CONDITIONS OF THE CONTRACT

A. General Conditions: The General Conditions of the Contract for the Construction of Buildings, Document No. A201, 2007, edition of the American Institute of Architects are, except as hereinafter modified made a part of this Specification to the same extent as if bound herein. The General Conditions may be examined or obtained at the Architect's office.

B. Modifications:

3.4.4 - ADD No trade shall commence work until conditions are right for carrying out the work properly, and surfaces to be covered are suitable.

3.4.5 - ADD Manufacturer's printed instructions covering details of installation shall be followed where not in conflict with these Specifications. If there is a conflict, notify the Architect and obtain his approval before proceeding.

11.1.2 - Insurance - Replace the text with: The Contractor shall procure and maintain, at his expense, Contractor's General Public Liability and Property Damage Insurance and Workmen's Compensation Insurance for the lifetime of this contract. Certificates evidencing the issuance of such insurance, shall be provided. The Building Owner and Architect shall be named as an additional insured of the Public Liability and Property Damage Insurance.

Insurance shall be written for not less than the following limits of liability or as required by law.

1. Contractor's Comprehensive General Liability Insurance:
 - a. Bodily Injury:
\$500 thousand - Each occurrence
One Million - Annual aggregate
 - b. Property Damage (Broad Form):
\$250 thousand - Each occurrence
\$500 thousand - Annual aggregate
2. Automobile Insurance, covering all Owned, Non-Owned, and Hired Vehicles:
 - a. Bodily Injury:
\$500 thousand - Each occurrence
One Million - Annual aggregate
 - b. Property Damage:
\$500 thousand - Each occurrence
\$500 thousand - Annual aggregate
3. Workmen's Compensation: Statutory
4. Contractor's Public Liability (Broad Form) to cover provisions of 4:18:
 - a. Bodily Injury:
\$500 thousand - Each occurrence
One Million - Annual aggregate
 - b. Property Damage:
\$500 thousand - Each occurrence
One Million - Annual aggregate
5. Umbrella Policy to cover excess liability:
 - a. Bodily Injury and Property Damage Combined:
One Million Dollars

The Architect shows no responsibility in the event that the limits set above are not adequate.

007000 - CONDITIONS OF THE CONTRACT (CONTINUED)B. Modifications: (Continued)

11.1.2 - Insurance - Replace the text with: (Continued)

Comprehensive General and Automobile Liability Policy form or policies shall be written by the same insurer who shall be a company licensed in the State where the work is located at the time the policy is issued. XCU Property Damage exclusions shall be eliminated in all cases where made applicable by the liability insurance classifications.

11.3.1 - Replace text with: **BUILDER'S RISK INSURANCE:** The Contractor shall effect and maintain "All Risk" insurance protection on a completed value form upon new portions of the entire structure on which Work of this Contract is done, using standard insuring forms or their equivalent for this purpose. Such contract of insurance shall be endorsed to include Architectural fees as part of the value insured and shall include permission for the partial occupancy prior to completion.

The Building Owner, Contractor and all Sub-Contractors, Architects and Engineers shall be named or designated in such capacity as insured jointly with the Contractor in this policy or policies, which shall be open to any of the insured's inspection.

The insurance required by this Article shall be written by a Company licensed in the State where the Work is located at the time the policy is issued.

END OF DIVISION 00

DIVISION 01 GENERAL REQUIREMENTS

010000 - SPECIAL CONDITIONS

- A. Examination of Site: Bidders are required to visit the site, compare the Drawings and Specification with the work in place and inform themselves of all conditions, including other work, if any, being performed. Failure to visit the site will in no way relieve the successful bidder from the necessity of furnishing any materials or performing any work that may be required to complete work in accordance with the Drawings and Specification.
- B. Laying Out Work: Each Contractor shall upon entering project site for the purpose of beginning work, locate all general reference points and take such action as is necessary to prevent their destruction; lay out his own work and be responsible for lines, elevations, and measurements of building executed by him under the contract. He must exercise proper precaution to verify figures shown on the Drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precaution.
- C. Building Permit: The Contractor shall include the cost of the Building Permit equal to 100% of his bid.
- D. Use of Premises:
1. The Contractors shall confine apparatus, material storage, and the operation of the workers to limits of the construction and site area set aside for staging. Construction Area shall be separated from existing occupied spaces by use of existing partitions and temporary construction partitions as required to contain construction dust and noise.
 2. Existing property which is damaged or disturbed outside of the limits of construction shall be restored to original condition or better.
 3. No smoking will be allowed on-site.
 4. No radios or audio music players allowed on site.
- E. Storage of Materials: Arrange and store materials for construction in neat and orderly manner within construction site boundaries.
- F. Safety Measures: Provide, erect and maintain lights, barriers, walks, and the like to protect the safety of the public, all in accordance with legal requirements.
- G. Intent of Documents:
1. Refer to the Drawings for measurements. Discrepancies found by Contractors shall be reported to the Architect at once. Should it appear that the Drawings and Specifications are not sufficiently explained, Contractor shall apply to the Architect for clarification.
 2. It is the intention of the Drawings and Specifications to provide for a complete job. All Contractors shall be responsible for this result and shall complete the building irrespective of whether each item is covered in minute detail.
 3. Items which are indicated on the Drawings but not mentioned in Specifications or items which are mentioned in Specifications but not indicated on Drawings, shall be provided to the same extent as if mentioned on both Drawings and Specifications.

010000 - SPECIAL CONDITIONS (CONTINUED)G. Intent of Documents: (Continued)

4. Work shall be done by mechanics who are thoroughly experienced in their particular trades executed in a substantial and workmanlike manner, and in accordance with all State and Local Codes and Regulations.
5. No trade shall commence work until conditions are right for carrying out the work properly, and surfaces to be covered are suitable.
6. Manufacturer's printed instructions covering details of installation shall be followed where not in conflict with these Specifications. If there is a conflict, notify the Architect and obtain his approval before proceeding.

H. Temporary Utility Services: Utility services for the construction site must be coordinated with the LESSOR prior to connections being made.

1. Electrical Power Service:
 - a. Power can be obtained from the existing building.
 - b. Temporary provisions for electric service and lighting remodeled areas by Electrical Contractor.
 - c. The Lessor will be responsible for electricity costs.
2. Water Service:
 - a. A water source can be obtained from the existing building.
 - b. Temporary provisions for water service in remodeled areas by Mechanical Contractor.
 - c. The Lessor will be responsible for water costs.
3. Sanitary Facilities:
 - a. The Contractor shall provide portable chemical toilets for use by Contractor's personnel.
4. Temporary Heat:
 - a. Construction shall be carried on continuously. It will be the responsibility of the Contractor to provide temporary heat in sufficient amount, as set forth herein, to carry on the work. Heat shall be sufficient to protect work and materials against injury from dampness and cold and to dry out building prior to finishing work. A minimum temperature of 50 degrees shall be maintained in space involved at all times during the placing, setting and curing of concrete and masonry materials. For a period of at least two (2) weeks prior to the installation of millwork items and other interior finishing, floor covering and painting work and continuously thereafter until acceptance of building by the Government, minimum temperatures of 70 degrees shall be maintained throughout the entire building. Under no conditions shall temperatures in enclosed units of construction, as hereinafter defined, be allowed to be less than 40 degrees, whether or not any construction operations are being performed in those areas.

010000 - SPECIAL CONDITIONS (CONTINUED)H. Temporary Utility Services: (Continued)

4. Temporary Heat: (Continued)

- b. Responsibility during demolition and remodeling work: Care, operation (automatic or manual) and service necessary for operating the existing heating system until substantial completion and/or final acceptance of the remodeled heating system shall be the responsibility of the Mechanical Sub-Contractor. The Mechanical Sub-Contractor shall utilize the existing heating system to maintain spaces being remodeled as well as existing spaces to remain at required temperatures. When all construction is complete and ready to be taken over by the Government, the Mechanical Sub-Contractor shall thoroughly check, service and adjust any and all permanent heating devices used for heating during the construction operations. All filters or reusable type shall be washed, or if damaged, shall be replaced. Throwaway type filters used during the construction shall be replaced with new units. Filters must be used in units requiring same during temporary heating periods. Use of heating system or elements thereof, must be coordinated with the Government. The Lessor will be responsible for the energy costs until date of substantial completion.

5. Telephone Service:

- a. Cellular phone service will be the responsibility of the Contractor.

I. Protection:

1. Contractors shall take every precaution to avoid unnecessary noise, dust or dirt. Debris shall be removed from areas being worked as soon as it accumulates. Existing partitions, temporary construction partitions, tarps and drops necessary to keep completed areas sealed off and to hold down the spread of dust and dirt shall be used. Repair damage done to property or any other person or persons on or off premises by reason of required work.
2. Contractors shall provide barricades necessary to protect the construction operation and also to protect the general public from injury from construction operations.
3. Contractors shall be responsible for the safety and protection from theft and vandalism of all materials stored during construction operations.

J. Construction Materials: No products or building materials used as a temporary or permanent element in the construction of a building will be allowed which have any form of asbestos containing or lead containing materials. Contractors shall be responsible to monitor shop drawings and product literature to verify the make-up of materials to be used in the building, and to remind material suppliers that their products must not contain asbestos or lead.

Contractors shall notify the Lessor immediately of any materials which are suspected of containing asbestos, and shall not disturb or attempt to abate any asbestos containing material. The Lessor will obtain and provide the services of professionals skilled in asbestos or lead removal.

The products and materials listed in this Standard are those that VA Health Care System has utilized and currently requires. Any product or material that may be substituted requires prior approval. No substitutions will be considered after the project has begun unless provided within the Contract.

010000 - SPECIAL CONDITIONS (CONTINUED)J. Construction Materials: (Continued)

All adhesives employed on this project (including, but not limited to, adhesives for carpet, carpet tile, plastic laminate, wall coverings, adhesives for wood, or sealants) shall meet at least one of the environmentally preferable criteria as outlined under the Green Procurement Compilation at [HTTPS://SFTOOL.GOV/GREENPROCUREMENT](https://SFTOOL.GOV/GREENPROCUREMENT), as well as the requirements of the manufacturer of the products adhered or involved. Use adhesives and sealants with no formaldehyde or heavy metals. Adhesives and other materials used for the installation of carpets shall be limited to those having a flash point of 140 degrees F or higher.

Sequence the installation of finish materials so that materials that are high emitters of volatile organic compounds (VOCs) are installed and allowed to cure before installing interior finish materials, especially soft materials that are woven, fibrous, or porous in nature, that may absorb contaminants and release them over time.

K. General Guarantee:

1. All materials and workmanship shall be guaranteed for a minimum period of one (1) year from the date of substantial completion unless noted otherwise in these specifications.

L. Construction Schedule:

1. Contractor shall set up a work schedule which shall be approved by the Government.
2. Schedule of critical path tasks to be monitored on a weekly basis. Contractor(s) to identify strategy to make-up lost time for any tasks not completed on schedule.
3. The following activities to start immediately following award of contract.
 - a. Prepare Shop Drawings for review and approval.
 - b. Fabricate long-lead items.

M. Dimensions and Details:

1. Figured dimensions shall be followed in preference to measurements by scale; large scale Drawings shall take precedence over those of a smaller scale. Figures on all Drawings, as the Detail Drawings themselves, are subject to measurements necessary in every case of adjacent or incorporated work. All such necessary measurements shall be taken before undertaking any work dependent upon such data.
2. Where on any of the Drawings a portion of the work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to other like portions of work.

N. ASTM Designations: ASTM Designations as found in the Specifications shall be of the latest edition for all sections of the Specifications.O. Construction Meetings: Periodic Construction Meetings will be held to coordinate the activities of the Contractors. Each meeting shall be attended by an office representative and field superintendent of each trade.

010000 - SPECIAL CONDITIONS (CONTINUED)

- P. Operation and Maintenance Manuals: Each Contractor shall provide two (2) complete bound sets and one (1) electronic copy in PDF format of Operation/Maintenance Manuals. The Maintenance Manuals shall be new hard cover three ring binders of size to comfortably hold all contents. Furnish more than one binder if necessary. Each manual shall include:
1. Cover: Identify each volume with typed or printed title "OPERATION AND MAINTENANCE MANUAL"; title of project; and subject matter included in Binder.
 2. List Architect, Contractor, Sub-Contractor and Supplier's name, company, address and telephone numbers. Identify local source of supply for replacement parts for every piece of equipment that operates or has moving or electrical parts. Include Specification Section.
 - a. Identify the Contractor who installed the product with the same information.
 3. Provide one complete set of Shop Drawings and product data as specified in individual specification sections.
- Q. Red Line Drawings: Each Prime Contractor shall maintain one set of drawings at the job site used as a master copy. Each change order or other revision, deletion, or addition shall be clearly marked and noted by colored pencil. Notations shall be printed. Upon completion of the project, and before final payment, each Contractor shall submit one (1) complete set of "Red Line Drawings" blueprints for review and preparation of "Record Drawings". The Architect will then forward the "Record Drawings" along with Contractor's "Red Line Drawings" to the Government.
- R. Cleaning:
1. Work Included: Throughout the construction period, the contractor will keep the premises free from waste material accumulation, or rubbish created by the construction project and maintain the building site in a standard of cleanliness (within construction limits) as described in this section.
 2. Quality - Assurance:
 - a. Inspection: Conduct daily inspection and more often if necessary to verify requirements of cleanliness are being met.
 3. Cleaning Materials and Equipment: Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

013000 – SHOP DRAWING SUBMITTALS

- A. Provide sufficient quantity of Shop Drawings for distribution of reviewed submittals to Contractor and Sub-Contractor; as well as retention by Architect and Government.
1. Provide Material Safety Data Sheets (MSDS) or other appropriate documents for the following products, including but not limited to, adhesives, caulking, sealants, insulating materials, fireproofing or fire stopping materials, paints, carpets, floor and wall patching or leveling materials, lubricants, clear finishes for wood surfaces, janitorial cleaning products, and pest control products.
 2. Maintain a complete file of approved Shop Drawings on-site.

017800 - CLOSEOUT PROCEDURES

- A. Upon completion of the project Contractor shall submit a Certificate of Occupancy issued by the local authority.
 - 1. Final inspection will not be conducted without prior delivery of all air balance and performance data, by an Independent Testing Firm, plus a spare parts list, operating instructions, and equipment descriptive literature that contains complete numbered replacement parts list.
 - 2. A complete replacement set of HVAC air filters must be supplied at the completion of the project.

END OF DIVISION 01

DIVISION 02 EXISTING CONDITIONS

020020 – WORK INCLUDED

- A. All labor, plant, and material necessary to complete site work, including but not limited to the following:
1. Demolition.

024100 - DEMOLITION

- A. General:
1. Section Includes:
 - a. Selective demolition of existing elements necessary to complete construction of Building Remodeling work.
 - b. The Mechanical and Electrical Sub-Contractors are responsible for cutting, removal, and replacement of concrete floor slabs as required to accommodate scheduled underfloor plumbing and/or electrical.
 2. Reference Standards:
 - a. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
 - b. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.
 3. Project Conditions:
 - a. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
 - b. Architect/Engineer assumes no responsibility for conditions of structures to be modified.
- B. Execution:
1. Scope:
 - a. Remove partitions, doors, and windows as required.
 - b. Remove floor, wall and ceiling finishes as required.
 - c. Remove and dispose of all debris, fixtures, equipment, electronics and other items not scheduled for reuse in new construction.
 - d. Remove and dispose of all light fixtures, ballasts, light bulbs and associated items not scheduled for reuse in new construction.
 - e. Remove all other items indicated on plans.
 2. General Procedures and Project Conditions
 - a. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1) Obtain required permits.
 - 2) Comply with current applicable hazardous waste disposal requirements.
 - 3) Comply with applicable requirements of NFPA 241.
 - 4) Use of explosives is not permitted.
 - 5) Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 6) Provide, erect, and maintain temporary barriers and security devices.

024100 – DEMOLITION (CONTINUED)

B. Execution: (Continued)

2. General Procedures and Project Conditions (Continued)
 - a. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public. (Continued)
 - 7) Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 8) Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 9) Do not close or obstruct roadways or sidewalks without permit.
 - 10) Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - 11) Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
 - b. Do not begin removal until receipt of notification to proceed.
 - c. Do not begin removal until built elements to be salvaged or relocated have been removed.
 - d. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
 - e. Protect existing structures and other elements that are not to be removed.
 - 1) Provide bracing and shoring.
 - 2) Prevent movement or settlement of adjacent structures.
 - 3) Stop work immediately if adjacent structures appear to be in danger.
 - f. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - g. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.
 - h. Exercise precautions for fire prevention. Burning of demolition debris is not permitted on site.
 - i. If hazardous materials are discovered during removal operations, stop work and notify Lessor; hazardous materials include regulated asbestos containing materials, lead, PCB's and mercury.
 - j. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.
 - k. Coordinate schedule for demolition with Abatement Contractor.
3. Existing Utilities:
 - a. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
 - b. Protect existing utilities to remain from damage.
 - c. Do not disrupt public utilities without permit from authority having jurisdiction.
 - d. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to the Lessor and the local governing authority.
 - e. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Utility Companies.
 - f. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
 - g. Remove all existing abandoned electric, telephone, and data cabling and devices, as well as any other improvements or fixtures in place to accommodate the project requirements.
4. Debris and Waste Removal:
 - a. Remove debris, junk, and trash from site.
 - b. Leave site in clean condition, ready for subsequent work.
 - c. Clean up spillage and wind-blown debris from public and private lands.

024100 – DEMOLITION (CONTINUED)

B. Execution: (Continued)

5. Salvage: All materials not removed or re-used in new construction shall become the property of the Contractor for that facet of work.
6. Construction Limits: The Contractor shall confine all activity to the construction area indicated on the Drawings. Access to the site shall be controlled only to the area so indicated. If the Contractor requires more space than indicated, approval must be obtained from the Lessor.

END OF DIVISION 02

DIVISION 03 CONCRETE

030020 - WORK INCLUDED

- A. All labor, plant, and material necessary to complete concrete work, including but not limited to the following:
1. Forming and Accessories
 2. Cast-In-Place Concrete
 3. Underslab Vapor Retarder
 4. The Mechanical and Electrical Sub-Contractors are responsible for cutting, removal and replacement of concrete floor slabs as required to accommodate scheduled under floor plumbing and/or electrical.

030030 - STANDARD SPECIFICATIONS

- A. Applicable provisions of the American Concrete Institute Specification 301 shall be included as part of this division.

031000 - CONCRETE FORMING AND ACCESSORIES

- A. General:
1. Design of formwork is the Contractor's responsibility.
 2. Use adequate numbers of skilled workmen who are completely familiar with the requirements and methods necessary for the proper performance of the work of this section.
- B. Products:
1. All materials for forming and accessories shall be in accordance with ACI 301 and ACI 347 Latest Editions.
- C. Execution: Construct forms according to ACI 301 Latest Editions.

032000 - CONCRETE REINFORCING

- A. General:
1. Provide Shop Drawings for all reinforcing steel.
 2. Shop Drawing submittals to indicate the following:
 - a. Sizes, locations of all reinforced concrete work.
 - b. Size, length, location, placing of all reinforcing steel.
 - c. Bending diagrams for all bent rods.
 - d. Typical sections, elevations of slabs, piers, footings, etc., showing detail position of spaces, chair supports, details of special conditions.
- B. Products:
1. Deformed bars shall conform to ASTM A-615.

032000 - CONCRETE REINFORCING (CONTINUED)

B. Products: (Continued)

- 2. Welded wire fabric shall conform to ASTM A-185.
- 3. Wire ties shall be #18 gauge black annealed wire.
- 4. Furnish chairs, spacers, etc., as necessary.
- 5. When ACI manuals are referenced, the Contractor shall refer to the most recent publication.

C. Execution: Fabricate, tag, ship, place all reinforcing steel and welded wire mesh in accordance with CRSI book, "Reinforced Concrete a Manual of Standard Practice", and ACI 315 Latest Edition, "Manual of Standard Practice of Detailing Reinforced Concrete Structures".

033000 - CAST-IN PLACE CONCRETE

A. General:

- 1. Submittals: Concrete Mix Designs.
- 2. Quality and Strength: The Compressive strength of the Concrete Floor Slabs at 28 days shall be 3,000 psi.
- 3. Concrete Proportions:
 - a. Concrete may contain up to 20% fly ash by weight.
 - b. A maximum water-cement ratio of 6-1/2 gallons per sack of cement shall not be exceeded.
 - c. Minimum cement content will be 4-3/4 bags per cubic yard of concrete.
 - d. The combined aggregates shall be of such composition, that when separated on a No. 4 standard sieve, the weight passing the sieve shall not be less than 30% nor greater than 50% of the total.
 - e. Concrete slump shall fall within the following limits for vibrated concrete:

<u>TYPE OF CONSTRUCTION</u>	<u>Max.</u>	<u>Min.</u>
Slabs and curbs	4"	3"

- 4. Tests and Samples:
 - a. Compressions and Strength Tests: Each Test shall consist of three standard 6" x 12" cylinders; one cylinder to be tested at the age of 7 days, one cylinder at the age of 28 days, and one to be held for 56 days. Not less than one test shall be made for each 100 c.y. of concrete of each class of concrete and in any event, not less than one test of each day's pour for each class of concrete. Samples from which compression tests specimens are molded shall be secured in accordance with ASTM C-172 Latest Edition. Specimens made to check the adequacy of the design for strength of concrete, or as a basis for acceptance of concrete, shall be made and laboratory cured in accordance with ASTM C-192 Latest Edition. Strength tests shall be made in accordance with ASTM C-39 Latest Edition. Average strength of two cylinders from the same sample tested at 28 days or the specified earlier age is required for each strength test. The cost of the tests shall be paid by the Contractor.

033000 - CAST-IN PLACE CONCRETE (CONTINUED)

A. General: (Continued)

4. Tests and Samples: (Continued)

- b. Slump Tests: Tests for slump shall be made at the place of deposit and in accordance with ASTM C-143 Latest Edition. Tests shall be made periodically when cylinders are made, and as often in the opinion of the Construction Manager when a change of consistency of the concrete mix is noted. (Note paragraph 03300.E.5). Unless otherwise noted or specified, the slump will be within the limits herein-before stated. The Contractor shall have available at the site the necessary apparatus for making slump tests. The cost of the tests shall be paid by the Contractor.
- c. Enforcement of Strength Requirements: When the ultimate compressive strength of any cylinder falls below the specified strength for the class of concrete specified, the defective parts shall be removed and replaced, or shall be reinforced.

B. Products:

1. Section 2.1.2: Portland cement shall be Type II for concrete exposed to earth. Air-entrained Portland cement shall be Type IA. Type IIIA may be used for exterior concreting. All remaining concrete shall have Type I Portland Cement.
2. Section 2.2: Unless approved by the Architect, admixtures shall not be used except for air-entrained admixtures.
3. Section 2.4: Aggregates shall be amended as follows: For non-exposed concrete and floor slabs not subject to wear, the maximum allowable quantities of deleterious material in fine aggregate shall be material lighter than a specific gravity of 2%.
4. Section 6.2.2: Expansion joints shall meet "Specifications for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and resilient non-bituminous types)" - ASTM D-1752.
5. Section 12.2.1.7: The following liquid curing/sealing/hardening agents shall be one of the following or approved equal:
 - a. "Kure-N-Seal" by Sonneborn.
 - b. "CS-309" by W.R. Meadows, Inc.,
 - c. Eucocure by Euclid Chemical Co.
 - d. L & M Cure
 - e. Dress & Seal #18
6. Waterstop shall be 6" wide standard PVC Type.
7. Bentonite waterstop shall be 1" square equal to Volclay.

C. Execution:

1. Preparation of Placing Concrete:
 - a. Before concrete is placed, remove all dirt, debris, water and ice from the forms, trenches and excavations.
 - b. The Architect shall be notified 24 hours in advance of pouring concrete.
 - c. Position and securing the reinforcements and form construction and configuration shall be checked and approved by the Architect.
 - d. The forms shall be thoroughly wetted (except in freezing weather) or oiled before concrete is poured.

033000 - CAST-IN PLACE CONCRETE (CONTINUED)

C. Execution: (Continued)

2. Mixing and Placing Concrete:
 - a. "Ready-Mix" concrete shall be mixed and delivered in accordance with the "Standard Specifications for 'Ready-Mix' Concrete" (ASTM C-94). There shall be a maximum of one (1) hour between the time concrete mix is placed in truck and the placing of the concrete in forms.
 - b. Concrete shall be conveyed from mixer to place of final deposit by methods which will prevent separation or loss of material.
 - c. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to handling and flowing. Retempered concrete shall not be used.
 - d. When concrete is once started, it shall be carried on as continuous operation until the panel or section is completed. The location of the construction joints shall be approved by the Architect. Adjoining pours shall be cast with a keyed construction joint. Joints not indicated on the Plans shall be made and located as to least impair the strength of the structure.
 - e. All concrete shall be thoroughly compacted by suitably means during the operation of placing and shall be thoroughly worked around reinforcement and into corners of forms. The concrete is at all times plastic and flows readily. Concrete shall be placed in layers not over 18" to 24" deep and each layer vibrated into place.
 - f. In case concrete is poured through chutes, the chutes shall be of metal or metal lined and slope of chutes shall be such that concrete will slide and not flow.
 - g. Concrete shall not be dropped more than 4' through space. When this distance is exceeded, a tremie or other approved means shall be used.
 - h. Concrete placement will not be permitted, when, in the opinion of the Architect, the sun, heat, wind, cold, or limitations of facilities furnished by the Contractor prevent proper finishing and curing of the concrete in accordance with the requirements of these Specifications.
3. Inserts and Fastening Devices for Other Work:
 - a. Provide for installation of inserts, hangers, metal ties, anchors, bolts, angle guards, dowels, slots, grounds, and other fastening devices required for attachment of other work. Properly locate in cooperation with other trades and secure in position before concrete is poured.
4. Curing, Hardening and Sealing:
 - a. Shall be by concrete curing materials specified above applied in one operation in one coat application at the rate recommended by the material manufacturer. Curing compound shall be used on all concrete surfaces where forms are left in place for curing.
 - b. Polyethylene Sheeting: Surfaces shall be completely covered. Where single sheet does not cover entire surface the end and edges shall be lapped 4" and sealed with adhesive tape.
5. Hot Weather Concrete:
 - a. Hot weather concreting shall conform to ACI 305. When temperature is 80 degrees F and rising, approval and clearance as to procedures of placing concrete shall be obtained. Maximum temperature of concrete when being placed shall not exceed 90 degrees F. Water, cement, and aggregate shall be cooled, as required, to a temperature that will assure that placing temperature of concrete does not exceed 90 degrees F. Dampen forms, subgrade, and reinforcing steel and protect from sun and wind. Take special care in timing and execution of appropriate specified curing methods. Arrangements for protecting concrete shall be made in advance of concrete placement. Take protective measures as quickly as concrete hardening and finishing operating will allow.

033000 - CAST-IN PLACE CONCRETE (CONTINUED)

C. Execution: (Continued)

6. Concrete Slabs and Curbs: All concrete slabs and curbs shall be thickness shown and reinforced as shown on the Drawings.
7. Flatness: Finish shall not exceed 3/16" in 10'-0"; or 1/16" in 1'-0".
8. Interior Finishes:
 - a. Interior finishes, whether exposed or covered with composition floor covering, shall be tamped, after screeding, to force the coarse aggregate away from the surface. Screed and float to bring to the required elevation. While concrete is still green, but sufficiently hardened to bear a man's weight without deep imprint, it shall be floated to a true and even plane with no coarse aggregate visible. Use sufficient pressure on float to bring moisture to the surface. It shall then be steel troweled twice to smooth impervious surface free from trowel marks.
9. Surface Finish of Exposed Concrete (Except Floors): Immediately after removing forms, remove all joint marks, bellies, projections, loose materials and cut back all metal ties and point up all voids with cement mortar of 1:2 mix.

034550 – UNDERSLAB VAPOR RETARDER

- A. General: Provide all labor, material and equipment to install underslab vapor retarder at all slab on grade; or at repair of floor slabs at scheduled underfloor plumbing.
- B. Products: Under Slab Vapor Retarder: Equal to Vapor Block 6 (6 mil Blue) by Raven Industries, Sioux Falls, SD, to meet or exceed ASTM E-1745, Class C.
- C. Execution:
 1. Vapor barrier joints lapped 6 inches and sealed with compatible waterproof pressure sensitive tape.
 2. Patch punctures and tears.

END OF DIVISION 03

DIVISION 05 METALS

050020 – WORK INCLUDED

- A. All labor, plant and material necessary for completion of metal work including but not limited to the following:
1. Miscellaneous Metals.

055000 – MISCELLANEOUS METALS

- A. General: All labor and materials to furnish and install the following:
1. Miscellaneous angles and headers.
 2. Shop Drawings: Indicate size, configuration, gauge and installation requirements for each item.
- B. Products:
1. Architectural, Miscellaneous Steel: Mild steel unless otherwise indicated.
 2. Structural Steel: ASTM A-7, A-26.
 3. Cast Iron: ASTM A-48.
 4. Malleable Cast Iron: ASTM A-47.
 5. Bolts, Nuts: ASTM A-307.
 6. Brass: Best commercial stock: 66% copper, 34% zinc.
 7. Aluminum: Standard extrusions.
- C. Execution:
1. All Work: Well formed to shape; size with sharp profiles.
 2. Weld permanent connections whenever possible; use continuous welds where exposed and grind smooth. Straighten members after welding.
 3. Rivet Heads: Flat; screws, bolt heads, countersunk. Grind countersunk heads flush; fill with lead to smooth surface. Cut off screws, bolts, flush with nuts of adjacent work; nick threads to prevent loosening.
 4. Do shop cutting, drilling, fitting whenever possible. Take field measurements before fabrication when required.
 5. Anchor to masonry with expansion or toggle bolts when built in anchorage is not provided; do not fasten to wood plugs set in masonry.
 6. Bolts, screws, etc., for field connections: Same material, finish as base material.

055000 – MISCELLANEOUS METALS (CONTINUED)

C. Execution: (Continued)

7. Painting:

- a. Clean free of all mill scale, rust and foreign matter by wire brushing, scraping, sandblasting, or flame cleaning. Remove grease, oil with solvent; dust, dirt, remove with air blast or brush.
- b. Apply one shop coat equal to Tnemec 99' red or brown by Tnemec Company, Inc., 125 West 23rd Avenue North, Kansas City, Missouri, or Hentzen 4080 Red Oxide Zinc Chromate Primer by the Wisconsin Paint Manufacturing Company.
- c. Immediately after erection, repaint field connections, weld burns, abraided surfaces. Loose and scaling paint, scrape and wire brush to sound metal; spot prime.
- d. Anchors to be built into masonry or concrete: galvanized or painted with asphalt base paint.

END OF DIVISION 05

DIVISION 06 CARPENTRY

060020 - WORK INCLUDED

- A. All labor and material necessary to complete carpentry including but not limited to the following:
1. Rough carpentry.
 2. Finish carpentry.
 3. Millwork.

061000 - ROUGH CARPENTRY

- A. General:
1. Furnish and install miscellaneous concealed wood blocking, preservative treatment of wood, fire retardant treatment of wood.
 2. References:
 - a. American National Standards Institute:
 - 1) ANSI A135.4 – Basic Hardboard.
 - 2) ANSI A208.1 – Mat-Formed Wood Particleboard.
 - b. American Wood-Preservers' Association: AWPA C1, Preservative Treatment by Pressure Process.
 - c. American Wood-Preservers' Association: AWPA C20, Fire-Retardant Treatment by Pressure Processes.
 - d. American Institute of Timber Construction, ANSI/AITC A1901.
 - e. American Plywood Association.
 - f. West Coast Lumber Inspection Bureau: WCLIB – Standard Grading Rules for West Coast Lumber.
 - g. Western Wood Products Association: WWPA G-5 – Western Lumber Grading Rules.
- B. Products:
1. Lumber Materials:
 - a. Lumber Grading Rules: Western Wood Products Association Product Standard PS 20-83 surface or kiln dried to produce a moisture content to not exceed 19% at the time of installation.
 - b. Framing Lumber: Spruce-Pine-Fir No. 2 or better.
 - c. Miscellaneous Framing: Standard or better Douglas-Fir-Larch, Hem-Fir, Western Hemlock and Southern Pine; 10 percent maximum moisture content.
 - d. Blocking, nailers, sill plates and other members indicated on the Drawings or in connection with roofing, flashing, masonry or concrete shall be pressure preservative-treated per AWPA C1.
 2. Plywood Materials:
 - a. Conform to Product Standard PS-1, with American Plywood Association (APA) grade marking. No plywood shall contain urea formaldehyde.
 - b. Exterior plywood substrate material: 1/2" APA C-D, plugged, preservative treated per AWPA C1.

061000 - ROUGH CARPENTRY (CONTINUED)

B. Products: (Continued)

3. Accessories:

- A. Miscellaneous nails, clips, screws, bolts, etc. for complete installation of work, hot dipped galvanized steel.
- b. Construction Adhesive: Conform to APA Specification AFG-01.

4. Factory Wood Treatment:

- a. Wood Preservative (Pressure Treatment): AWPA Treatment C1 rated as follows:
 - 1) Wood in contact with ground, concrete or masonry – 0.60 lbs./cu.ft.
 - 2) Wood exposed to the weather or wood in contact with roofing or flashing – 0.40 lbs./cu.ft.
 - 3) Deliver treated wood with moisture content of 19% and with the “Quality Mark” clearly displayed showing compliance with AWPA standards. Apply two swab coats of preservative after cutting in the field, in accordance with AWPA.

C. Execution:

1. Miscellaneous framing and blocking.

- a. Set members level plumb and true, in correct position.
- b. Anchor securely with fasteners or anchors of type and spacing best suited for purpose and condition unless shown otherwise.

062000 - FINISH CARPENTRY

A. General:

- 1. Installation of doors and hardware.
- 2. Installation of millwork.
- 3. Installation of finish hardware.

B. Products: Not used.

C. Execution:

- 1. First class job performed by skilled mechanics, edges carefully fitted, scribed to fit, with all joints flush and smooth. Exercise care to protect surfaces.
- 2. Millwork installation: Straight, edges securely anchored; cut and fit around pipes, etc., scribe to adjacent work.
- 3. Finish Hardware: Install and test all hardware for smooth operation, cover and otherwise protect from damage until completion; remove and reinstall for painting and finishing. Custody of hardware keys, cylinders, etc., to be sole responsibility of Construction Superintendent until building is turned over to the Government. Installation to be completed by experienced mechanics.

062200 - MILLWORK

A. General:

1. Submittals: Submit a minimum of three (3) sets of Shop Drawings sufficient in detail to illustrate the dimensions, materials, construction, field joints, and Contractor's understanding of the functional requirements and design intent. Include Manufacturer's catalog data sheets of millwork hardware and accessories.
2. Quality Standards: The AWI "Quality Standards of the Architectural Woodwork Industry" shall apply and by reference are made a part of this Specification.
3. Grade: 'Custom' (AWI Standards).
4. Delivery and Storage: Millwork Manufacturer and General Contractor shall be jointly responsible to make certain that items of millwork are not delivered until the building and/or storage area is sufficiently dry so that millwork will not be damaged or excessive changes in moisture content.
5. Plywood materials shall not emit formaldehyde in excess of 0.2 parts per million (ppm), and particleboard materials shall not emit formaldehyde of 0.3 ppm.

B. Products:

1. Particle Board: Premium Grade, filled surface.
2. Plywood: Grade A-C.
3. Plastic Laminate:
 - a. PL-1: (Countertops, Typical): Equal to Wilsonart; Color: Canyon Zephyr, No. 4842-60.
 - b. PL-2: (Cabinets, Typical): Equal to Wilsonart; Color: Classic Linen, No. 4943-38.
 - d. PL-3: (Reception 104 Desks): Equal to Formica; Color: Infinity, No. 1520-58.
4. Particle Board with cabinet liner: Equal to Kortron by Willamette, Inc.; Color: White.
5. CP: Cast Plastic Countertop
 - a. Product: Equal to Corian Solid Surface; Color: Silt.
 - b. Thickness: 0.5".
6. SPR: Solid Phenolic Resin Countertop
 - a. Product: Equal to Trespa; TopLab Plus; Color: Black, No. T90.0.0.
 - b. Thickness: 1".
7. PRP: Plastic Resin Panel
 - a. Manufacturer: Equal to 3form.
 - b. Resin Material: Varia Ecoresin.
 - c. Collection: Interlayers Textures.
 - d. Texture/Pattern: Quo Mezzo.
 - e. Color: Aqua.
 - f. Finish: Sandstone.

062200 – MILLWORK (CONTINUED)

B. Products: (Continued)

7. PRP: Plastic Resin Panel (Continued)
 - g. Gauges:
 - 1) Reception 104 Desk Face Panel: 0.25".
 - 2) Reception 104 Guest Workstation Partition: 0.5".
 - 3) Reception 104 Desk Partition: 0.75".
 - h. Hardware:
 - 1) Reception 104 Desk Face Panel: Standoff Point Support System with all necessary components, including 1" Cap and 1" Barrel; Finish: Satin Anodized.
 - 2) Reception 104 Desk and Guest Workstation Partitions: Fin Desktop Partition 200.43.02; Finish: Satin Anodized.
8. Countertop support bracket: Hafele; No. 287.77.003 Speed Brace; 304 Stainless Steel; 28" x 21" for 24" tops.
9. Millwork Hardware & Accessories:
 - a. Base Leveler: Hafele; No. 637.05.000 Base Leveler; White Cap; Zinc-Plated, M8 x 45mm.
 - b. Grommet: Hafele; No. 631.26.901; Two-piece Silver; 60mm.
 - a. Shelf Brackets: Knape & Vogt; Plastic Shelf Support Pin, No. 335P-WH.
 - d. Drawer Slides: Knape & Vogt; Heavy Duty Full Extension, No. 8800.
 - e. Cabinet Pulls: Stanley; No. 4484-626.
 - f. Cabinet Hinges: Blum; CLIP top 120°.
 - g. Cabinet Lock: Match Fargo VA standard Best Corporation; 7-pin core.

END OF DIVISION 06

DIVISION 07 MOISTURE CONTROL

070020 – WORK INCLUDED

- A. All labor and material necessary to complete Division 7, including but not limited to the following:
1. Thermal Protection.
 2. Vapor Barrier.
 3. Joint Protection.

072000 – THERMAL PROTECTION

- A. General:
1. This section includes all labor, material, equipment and related services necessary to furnish all building insulation indicated on the Drawings or specified herein. The work shall include, but not be limited to wall insulation.
 2. All insulation products shall contain recovered materials as required by EPA's CPG and related recycled content recommendations.
- B. Products:
1. Interior Partition Sound Attenuation Insulation: Fiberglass batt insulation, full thickness of studs.

079000 – JOINT PROTECTION

- A. General: Furnish and install caulking and sealants as drawn and specified.
1. Typical Exterior Sealant: Two-component polyurethane sealant equal to Tremco and Sika-Flex.
 2. Typical Interior Caulking: Siliconized acrylic latex caulk equal to Sonolastic Sonolac.
 3. Typical Mildew Resistant Sanitary Caulking at areas subject to moisture regularly: One component acetoxysilicon sealant equal to Sonolastic Omniplus.
 4. Typical Fire Stop Sealant: 3M #CP25N/S and SP25S/L
 5. Caulking Primer: As required and recommended by Caulking Manufacturer.
 6. Backing: For masonry and concrete control or expansion joints not filled by other specified materials, use "Ethaflex" non-asphaltic non-absorbent closed cell ropes as manufactured by Dow Chemical Co., or "Minicel Backer Rod", as manufactured by Haveg Industries, Inc., or equal. Backer rod to be 30% to 50% larger than joint width.

079000 – JOINT PROTECTION (CONTINUED)

C. Execution:

1. Joints deeper than 1/2" shall be built up to a depth of 3/8" below adjacent surfaces with specified filler material prior to applying caulk or sealant. Clean joints free from moisture or foreign matter. Any coating on building materials that will impair bond shall be removed. Masonry and concrete surfaces shall be sound and a brush coat of primer applied to such porous surfaces where recommended by Compound Manufacturer.
2. Surfaces adjacent to joints shall be masked to obtain a clean, neat line. Masking tape shall be removed immediately after tooling sealant. Finish with beading tool to give clean, smooth surface free from wrinkles, ragged edges and other defects.
3. Compound shall be applied by pouring or by gun with proper size nozzle or with knife. Fill all voids and joints solid; superficial pointing of joints with a skin bead will not be acceptable.
4. Sealant will be used from Manufacturer's original cartridge in a standard open-type hand operated caulking gun. Nozzle shall be cut to proper size to obtain neat, smooth, and uniform bead. When handling bulk materials, Manufacturer's instructions shall be followed.
5. A full bead of sealant shall be applied into joint under sufficient pressure drawing nozzle across sealant to leave a slightly concave surface. All sealed joints shall be watertight and a minimum of 1/4" thickness.
6. Joints shall be caulked before painting adjacent work with exception of interior hollow metal frames to be caulked to GWB after finish coat of paint. Caulk shall match paint color of the door frame.
7. On non-porous surfaces, excess uncured sealant shall be removed with a solvent moistened cloth immediately. On porous surfaces, excess sealant should be allowed to cure overnight, then removed by lightly wire brushing or sanding. All adjacent surfaces shall be clean and free from stains.
8. Caulk all exterior openings including control joints, window, door, louvers, lights and outlets.
9. Caulk all masonry control joints and intersections of dissimilar materials including lintels, relief angles, through wall flashing and wall penetrations.
10. Caulk all interior intersections of dissimilar materials including door frames and window frames.
11. Caulk all lap seams in sheet metal work with manufacturer's recommended sealant.

END OF DIVISION 07

DIVISION 08 DOORS, WINDOWS, AND GLASS

080020 - WORK INCLUDED

- A. All labor, plant, and material necessary to complete this division, including but not limited to the following:
1. Hollow Metal Doors and Frames.
 2. Aluminum Doors
 3. Interior Wood Doors.
 4. Glazed Aluminum Fixed Windows and Entrances
 5. Hardware.
 6. Automatic Door Operators
 7. Glazing.
 8. Blast Protection

081113 - HOLLOW METAL DOORS AND FRAMES

- A. General: Furnish and install hollow metal doors and frames.
1. Hollow Metal Work: All work in strict accordance with this Specification. Products of Curries Manufacturing; Ceco Corp.; Steelcraft; or approved equal by Addendum.
 2. Submittals: Submit Shop Drawings for Architect's review and approval. Drawings shall include details of frame reinforcing, anchorage, and pertinent details.
 3. Steel: Pickled, annealed, free from scale, rust, defects; Federal Specification QQ-S.636 cold rolled stretcher leveled. Exterior locations shall be hot dipped galvanized having A60 Zinc-Iron Alloy per ASTM 924.
 4. Gauge: Are as follows unless otherwise noted: Interior frames 16 gauge; Exterior frames 14 gauge; Flush doors 16 gauge; Reinforcement: 10 gauge.
 5. Door Silencers: CJ-64 Glynn-Johnson Corporation; use 3 per strike jamb or Trussbilt No. 340; use 2 per strike jamb. At heads of double doors, use one less silencer per leaf than strike jambs. Install after finishing painting.
- B. Products:
1. Hollow Metal Frames:
 - a. Types, sections and quantity and location of frames; see Drawings. Frames one piece type with heads and jambs completely welded in their entirety, ground smooth.
 - b. Knocked-down frames are acceptable.

081113 - HOLLOW METAL DOORS AND FRAMES (CONTINUED)

B. Products: (Continued)

1. Hollow Metal Frames: (Continued)
 - b. Provide closed metal covers over all hardware cutouts to protect against mortar and plaster.
 - c. Provide the following minimum reinforcements and appurtenances:
 - 1) Hinges: 3/16" x 1-1/2".
 - 2) Lock Strike: 10 Gauge.
 - 3) Angle Floor Clips; Fixed Type: (Use adjustable type at flooring topping, etc.). Use next heavier gauge than frame.
 - 4) Closer Reinforcements: 10 gauge channel or (2) 10 gauge angles.
 - 5) Spreader Channel: 16 gauge.
 - d. All dents and deformations shall be repaired before frames are set in place.
 - e. Door Frame Anchors: 16 ga. corrugated adjustable, slip type. Use 3 per jamb for anchorage to masonry. U.L. frames non-removable anchors. Furnish anchors for special wall, head conditions as required.
 - f. Identification: Stamp frame number on center hinge reinforcement.
 - g. Face weld joints in flat surfaces, grind smooth, spot prime immediately.
 - h. Frames to receive Supplier applied asphalt emulsion or other high build water resistant coating on inside face of frame.
2. Painting: All frames shall be completely cleaned, metallic filled as required and thoroughly sanded to provide a smooth finish. Provide two (2) coats of baked on rust inhibitive primer, neutral gray in color, sanded between coats, each coat baked on separately. Thoroughly paint unexposed inside of exterior doors. Sun baking not acceptable.

C. Execution:

1. All work shall be done in a first-class manner in accordance with Details and approved Shop Drawings.
2. Hardware mortises and reinforcements: Make according to templates. Provide hinge lock, door holder and closer hardware reinforcements. Mortise, drill, tap for hardware.
3. All material shall be preassembled at the factory in the largest size units permitted by shipping restrictions for maximum assembly of related parts at the job site. Field welding and grinding by erector.
4. Drilling and taping for surface mounted closures, brackets, rim exit devices, door holders and other surface hardware; done in field.
5. Provide Underwriter labels of a class called for by Plans. Labeled door shall have equal labeled frames.
6. Set door frames on finished floor, plumb and true. Frames in masonry walls to be filled with mortar as walls are laid.
7. Remove metal spreaders prior to setting if bent, otherwise immediately after installation.
8. Provide temporary wood spreaders in the middle of all door frames and cased opening frames while masonry partitions are being constructed around frames. Spreader shall be cut to fit frame at head of frame. Leave all spreaders in place until mortar is set. Check frequently to insure that frame is plumb and level.

081113 - HOLLOW METAL DOORS AND FRAMES (CONTINUED)

C. Execution: (Continued)

9. Attachments: Use oval head sheetmetal screws.
10. Strikes for cylindrical locks shall be 4-7/8" and conform to ANSI A115.1 and A115.2 specifications.

081316 – ALUMINUM DOORS

A. General:

1. Work Included: Furnish all necessary material, labor and equipment for the complete installation of aluminum door as shown on drawings and specified herein.

B. Products:

1. Aluminum Door: Equal to CMI Series 452 Wide Stile Aluminum Door. Similar products by Tubelite, Vistawall and U.S. Aluminum shall be considered equal.
2. 4-1/2" Stile; 4-1/2" Top Rail; 6" Bottom Rail; 4-1/2" Intermediate Rail.
3. 1-3/4" thick extruded tubular members with minimum 0.125" wall thickness.
4. 1" tempered insulated glass at exterior; 1/4" tempered glass at interior.
5. Door frame prepped for an electrified strike.
6. Color: Architectural Class 1 Architectural Anodic Coating with integral color in accordance with the Aluminum Association Standard AA-M12C22 A44 designated as #33 Dark Bronze (Match Existing).
7. Door Hardware by Aluminum Door Supplier
 - a. Butts: Hager BB1199 x NRP US32D (3 Thus – each door)
 - b. Rim Exit Device: Von Duprin 99NLOP US29D (100A)
 - c. Electric Strike: Von Duprin 6211 24V DC FSE US32 (100A)
 - d. Offset Pull: Hiawatha 658A US32D (100A, 100B)
 - e. Push Plate: Hiawatha 200F US32D (100B)
 - f. Provide Threshold, Weatherstrip and Sweep (100A)
 - g. Cylinders: Master keyed to Government's Best Access System 7-pin, small format, interchangeable cores – 2 thus. (100A)
8. Automatic Door Operator by Specification Section 087500.

C. Execution:

1. All work done in a first-class manner in accordance with details and Shop Drawings.
2. Hardware mortises and reinforcements: Make according to templates. Provide hinge, lock, door holder and closer reinforcements. Mortise, drill and tap for hardware.

081316 – ALUMINUM DOORS (CONTINUED)

C. Execution: (Continued)

3. Cleaning and Protection: After installation all metal surfaces shall be cleaned to remove any contaminants. After cleaning all work shall be protected against damage until accepted by General Contractor who shall then maintain protection and provide final cleaning.

081400 – INTERIOR WOOD DOORS

A. General:

1. Items Included: All solid core wood doors with laminate face.
 - a. All hardware items are to be installed to solid wood, stranded, blocking.
2. Moisture Content: Average 12% - range 9% to 14%.
3. Storage and Handling: Store doors in a dry, well-ventilated area away from possible damage; no wood doors to be brought into building until relative humidity is 50% or less.

B. Products:

1. Flush solid core wood door with laminate face. (See Door Schedule for required rated doors).
 - a. .050" high pressure decorative laminate meeting or exceeding NEMA Standards L023 Type CP50.
 - b. Glazing: On non-labeled doors use applied prefinished wood stops to match laminate face nailed tight on room side and attached on opposite side with flathead, countersunk wood screws, spaced approximately 125 mm (5 inches) on centers.
 - c. Warranty: Lifetime.
 - d. Acceptable Manufacturers: Marchfield, Fenestra, Graham, Mohawk, VTI.
 - e. Provide fire rated doors with wider rails and/or hardware reinforcement blocking as required to secure specified hardware. Reinforcement blocking shall be in compliance with Manufacturers labeling requirements.
2. Finish:
 - a. Selected laminate equal to Wilsonart "Fusion Maple" No. 7909-78.

- C. Execution: Install doors in accordance with Manufacturer's instructions and AWI Quality Standards Requirements.

084413 – GLAZED ALUMINUM FIXED WINDOWS AND ENTRANCES

A. General:

1. Work included: Furnish all necessary material, labor and equipment for the complete installation of aluminum framing as shown on the drawings and specified herein.
2. Submit Shop Drawings to include all related items, Glass and Sealants. Indicate all framing elements relationship to surrounding construction. Provide design load documentation with submittal.

084413 – GLAZED ALUMINUM FIXED WINDOWS AND ENTRANCES (CONTINUED)

A. General: (Continued)

3. Performance:
 - a. Air Infiltration: Shall be tested in accordance with ASTM E 283, air infiltration shall not exceed .06 CFM per square foot of fixed area at a test pressure of 12.0 P.S.F.
 - b. Water Infiltration: Shall be tested in accordance with ASTM E 331, no water penetration at a test pressure of 15.0 PSF.
 - c. Structural Performance: The system shall perform to these criteria under a wind-load of 20 PSF. Maximum deflection of 1/175 of the span and; allowable stress with safety factor of 1.5.
 - d. Thermal Performance: Shall be tested in accordance with ASTM C-236 and AAMA 1502.7. The assembly shall have a maximum U-value of 0.65 and a minimum CRF of 61.
4. Similar products by CMI, Tubelite, Vistawall and U.S. Aluminum shall be considered equal.

B. Products:

1. EXTERIOR Window and Entrance framing (1-3/4"x4-1/2") equal to CMI CTS Storefront System for 1" glazing; with butt glazing at 90° corner.
2. INTERIOR Window and Door framing (1-3/4"x4-1/2") equal to CMI 450FG framing system for 1/4" glazing.
3. Extrusions shall be 6063-T5 alloy and temper (ASTM B221 alloy G.S. 10A-T5). Fasteners, where exposed, shall be aluminum or stainless steel in accordance with ASTM A 164-71. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum. Mullion joinery shall be accomplished by the use of shear blocks or screw spline joinery. Internal gutters shall be properly blocked and sealed to direct moisture accumulation to the exterior. Thermal break and glazing shall be manufacturers standard for standard glazing.
4. All exposed aluminum surfaces shall be free of scratches and other serious blemishes. All exposed surfaces shall be given a caustic etch followed by an anodic oxide treatment to obtain the following finish: An Architectural Class I Architectural anodic coating with integral color in accordance with the Aluminum Association Standard AA-M12 C22 A44 designated as #33 Dark Bronze (Match existing).

C. Execution:

1. Installation: Framing shall be installed, glazed and adjusted by experienced workmen in accordance with the manufacturer's installation instructions and approved shop drawings.
2. Cleaning and Protection: After installation all metal surfaces shall be cleaned to remove mortar, plaster, paint or other contaminants. After cleaning, all work shall be protected against damage until it is accepted by the General Contractor. Thereafter, it shall be the responsibility of the General Contractor to maintain protection and provide final cleaning.

087100 – HARDWARE

- A. General: The work in this section includes the furnishing of all finish hardware as described in the specification and as required by hardware group numbers as shown on the drawings. Refer to the general conditions, special conditions and instructions to bidders for other requirements.
1. Quality Assurance: Hardware Supplier, after job site inspection, shall verify in writing that all hardware has been properly installed and adjusted. Submit to Architect two copies of this inspection report.
 2. Related Work in other Sections: Installation of Finish Hardware.
 3. Schedules:
 - a. Within thirty (30) days after the contract is awarded and before any hardware is ordered, submit six (6) copies of a complete, as well as electronic pdf copy, detailed hardware schedule for review. If resubmissions are required, one (1) copy will be returned with proper notations Resubmit four (4) copies, including electronic pdf copy. After final reviewed schedule is returned send copies and templates to fabricators requiring the same. NOTE: NDSU Approval of shop drawings required prior to ordering hardware.
 - b. The schedule cover page shall include the project name, hardware supplier, firm name of general contractor, architectural firm, name and manufacturers reference list of symbols used to abbreviate names of hardware manufacturers.
 - c. Catalog cuts of each piece of hardware shall accompany the hardware schedule.
 4. Templates:
 - a. Furnish a final hardware schedule and templates to door frame suppliers. If required, the hardware supplier shall furnish physical hardware to the door and frame manufacturers for application.
 - b. All reinforcements required to adapt hardware to metal doors or frames shall be supplied by the door and/or frame manufacturers.
 5. Marking, packing, delivery and storage: All hardware shall be delivered to the jobsite or, upon request to the door and/or frame manufacturers in the manufacturer's original cartons, marked to correspond with the reviewed hardware schedule. The General Contractor shall be responsible for the protection and storage of all hardware. All items shall be packed to prevent damage in transit.
 6. Finishes:

Unless otherwise indicated, finishes shall be as follows:

Butts	Exterior:	US32D (BMHA #630)
Butts	Interior:	US26D (626 or 652)
Locksets		US26D
Closers		Powder Coat Aluminum
Exit Devices		US32D
Pushes, Pulls, Kicks		US32D
Stops, Holders		US32D
Miscellaneous Items		US26D/32D/28

087100 – HARDWARE (CONTINUED)

A. General: (Continued)

7. Keying

- a. Contractor shall provide the lock cores as determined by Government's keyway requirement. Owner will provide the building master key codes and install the final lock cores.
- b. Cores shall be Best Access System 7-pin small format interchangeable cores in the keyway as specified by Government. Provide two blank keys for each core.

B. Products:

- 1. Hardware shall include all necessary fasteners. All fasteners shall be of the proper type, size, material and finish for its intended purpose. All screws, exposed either when the door is open or closed shall have Phillips heads.

2. Hinges:

- a. The following is a list of butt types which are considered acceptable:

	HAGER	McKINNEY	STANLEY
Type 1	BB1199	T4A3386	FBB199
Type 2	BB1168	T4A3786	FBB168
Type 3	BB1279	TA2714	FBB179

- b. Ball bearing butts shall be furnished throughout the project.
- c. Butt types shall be furnished as follows:

Exterior Outswinging doors Type 1 x NRP
 Vestibule doors Type 1
 Interior Doors over 3'-0" Wide . . Type 2
 Interior Doors thru 3'-0" Wide . . Type 3
 (All interior reverse bevel doors with lockable functions shall have NRP type butts.)

- d. Butt quantities and sizes shall be as follows:

Two butts for doors up to 5'-0" high.
 Provide one butt for every 30" of height unless otherwise indicated in spec groups.
 Four butts for Dutch Doors.

1 3/4" Exterior and Vestibule Doors 4-1/2" x 4-1/2" (minimum of 2 pair each leaf)
 1 3/4" Interior Doors 4-1/2" x 4-1/2"

- e. Provide proper butt width to clear trim and allow full 180 degree swing.
- f. All butts shall have flat bottom tips unless otherwise noted in hardware groups.
- g. See Hardware Groups for special butt requirements.

087100 - HARDWARE (CONTINUED)

B. Products: (Continued)

3. Locksets and Latchsets:

- a. Locksets and latchsets shall be heavy duty cylindrical type which meet the quality and design of those shown below:

SARGENT (or equal) SERIES 8200 DESIGN WTJ-26D

- b. Locksets, latchsets, trim and cylinders shall be the product of one manufacturer unless otherwise indicated above. Cylinders shall have 7 pin tumblers. Unless otherwise indicated, all locksets, deadlocks and latchsets shall have 2 3/4" backsets. Bolt throw on pairs of doors shall be not less than 5/8". Lever handle locksets and latchsets with base metal other than aluminum shall have U.L. required fire stop to prevent latchbolt from returning into the lock body during fire.
- c. Provide wrought boxes and strikes with proper length to protect trim not to project more than 1/8" beyond trim, frame or inactive leaf. Where required, provide open back strike and protected to allow practical and secure operation. Provide knurled knobs at doors to stairs other than exit stairs, loading platforms, boiler rooms, stages and doors to other hazardous locations.
- d. All final cores to be Best Access System, small format, 7-pin interchangeable combined cores supplied by Contractor. Owner (NDSU) will provide Building Master Key Code and install the final lock core. Provide two blank keys for each core.
4. Door Closers:
- a. Door closers shall have cast iron body. The arms shall be forged. Finish shall match the hardware on the side of the door to which the closer is mounted. All door closers shall have full rack and pinion mechanism with adjustable control for "sweep", "latch", and "backcheck" speeds. All adjustments shall require the use of tamper-proof tools or valve keys. Closers shall be equipped with adjustable spring power to adjust the closer size from size 2 through size 6.
- b. Furnish inverted installation, parallel arms, holder arms, drop plates, etc. as required to suit conditions. With closers mounted as follows unless details or other conditions dictate otherwise:
- 1) Room side of corridor doors.
 - 2) Inside of exterior doors (use parallel arm or top jamb mounting)
 - 3) Stair side of stairways.
- c. Closers shall be attached with thru-bolts on the following:
- 1) Mineral core doors.
- d. Hardware schedule shall indicate the closer manufacturer, finish, accessories, and degree of opening for each item.
- e. Acceptable Manufacturer: (Prebid approval required)

LCN	SARGENT	NORTON
4041	351	7500

087100 - HARDWARE (CONTINUED)

B. Products: (Continued)

5. Door Trim:
 - a. Unless otherwise indicated, all push plates shall be 6" x 16" for flush doors and 4" x 16" for doors which will not accept 6" plates.
 - b. Unless otherwise indicated, all door pulls shall be 1" round material with 12" centers and 2-1/2" projection for interior doors. For exterior doors, furnish pulls with 1" round material 12" centers and 2-1/2" projection. Concealed screw mounting shall be used whenever thru-bolt attachment would leave an exposed screw.
 - c. All kick plates and armor plates 16 ga. (.050). Width of kick plates and armor plates shall be 2" LDW on single doors and 1" LDW on pairs of doors. All kick plates shall be 8" high and armor plates shall be 40" high. No "plant on" protection plate shall exceed 16" in height for labeled doors.
 - d. Acceptable Manufacturers: (Prebid approval required)
BURNS INDUSTRIES, INC.
HIAWATHA HARDWARE CO.
TRIANGLE BRASS MFG. CO., INC.
ROCKWOOD
6. Stops and Holders: Furnish a stop or holder for each door whether or not equipped with a closer.
 - a. Interior doors requiring a stop shall have one of the following as indicated by conditions: **50W, 60W, WB11, WB11A, RB3, RB4, RB6 or 450** series.
NOTE: Use **450** or **90** Series when an overhead stop is required on labeled doors. If closer is used **SCUSH** or **H-SCUSH** arms are preferred. Floor or base stops shall be used only where definitely specified or absolutely unavoidable.
 - b. Interior doors requiring a holder shall have one of the following as indicated by surrounding conditions: **W20, W20A, W40 or 90** series.
 - c. Exterior and vestibule doors requiring a stop and holder shall have one of the following as indicated by surrounding conditions: **W20 or 90M** series.
 - d. Doors which are capable of swinging more than 110 degrees before striking a wall shall have an overhead type stop.

C. Execution:

1. Install hardware in accordance with manufacturer's printed instructions at mounting heights as described in the Door and Hardware Institute's "Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames" or "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames".
2. Holes and mortises in wood doors for locks and other hardware shall be cut with a jig approved or provided by the manufacturer of the item applied. All locks shall be mounted so the key enters the cylinder with the smooth side down. After hardware has been fitted, escutcheons and face-applied hardware shall be removed or masked until final painting has been completed. Hardware shall be reinstalled after painting is complete, properly adjusted, tested and left in perfect working condition.
3. The keys and cores shall be delivered to the Government, together with surplus envelopes for installation. Cores will be installed by The VA.

087100 - HARDWARE (CONTINUED)

C. Execution: (Continued)

4. Prior to completion of the job, after HVAC balancing completed, determine that all closers are in proper adjustment. No closer shall complete its full closing cycle in less than 4 to 6 seconds and there shall be no abrupt change in speed between the "sweep" and "latch" speeds. All knobs, levers, and latchbolts shall be free from binding. Turn all wrenches and adjusting tools, as provided with the hardware, to the Owner.

D. Hardware Groups and Suffixes:

1. The following schedule of hardware groups shall be considered a guide only and the supplier is cautioned to refer to the general conditions, special conditions, and the preamble to this section. It shall be the hardware supplier's responsibility to furnish all required hardware.
2. Refer to the door schedule for hardware group required for each opening. Ignore hardware groups not used on the door schedule.
3. Hardware Groups and Suffixes (example 2C) on drawings:
 - "A"- Add armor plate and door edge guards (2 for double-acting doors). Apply to push side of door. Refer to preamble for detailed information.
 - "B"- Inactive leaf of pairs shall be equipped with flush bolts, and dustproof strikes (automatic flush bolts with coordinator and closer for labeled pairs) butts and stop.
 - "C"- Add closer. Refer to preamble for detailed information.
 - "D"- Add delayed action function to closer specified.
 - "E"- Add fire/smoke life safety device unit. Refer to preamble for detailed information. Unit shall be similar to LCN 4040SE or approved equal. If door needs a stop option along with hold-open option, use either a CUSH arm on the closer with a SEH holder or use a overhead type stop with a pull side mounted fire/smoke life safety device. All electrical connections are specified in Division 16. Verify voltage with electrical engineer.
 - "G"- Add door edge guard. Refer to preamble for detailed information. Use DE-1A or equal.
 - "H"- Add hold-open feature to closer or magnetic holder as detailed if labeled opening. Refer to preamble for detailed information. All electrical connections are specified in Division 16.
 - "K"- Add kickplate. Refer to preamble for detailed information.
 - "L"- All mortised hardware shall be lead lined, including knobs and roses. Add L147 pivot with ML19 intermediate pivots spaced at same intervals as butts. (Equal to Ives) Add door edge and kickplates.
 - "P"- Change specified closer to CUSH type arm or use overhead type stop. Use brackets or spacers.
 - "Q"- Change specified closer to H-CUSH type arm. Use proper brackets or spacers.

087100 - HARDWARE (CONTINUED)

D. Hardware Groups and Suffixes: (Continued)

- "S"- Add electric strike. Equal to Folger-Adam 310 Series to match latching mechanism application. If locking device is a panic device, use "EL" option with power supply and power transfer as required by device manufacturer.
- "T"- Add a deadbolt, cylinder outside, turnpiece inside.
- "W"- Supply threshold weatherstrip & sweep as required. For exterior pairs, furnish astragal similar to Reese 964 each leaf.
- "X"- Operator to be supplied by others, omit closer.
- "Z"- Add alarm feature to (1) device similar to Von Duprin "ALK" option. Furnish power supply and power transfer as required by manufacturer of device.
- * Indicates - furnish GJWB11, WB11A, or GJ450/90 series where 50W or 60W is not applicable.

E. Hardware Groups:

HARDWARE SETS	
<p><u>Group 1</u> All hardware to be furnished by Aluminum Door Supplier.</p>	<p><u>Group 11</u> Each door shall have: Butts as required. 1 Privacy set 8265 Function: Latch bolt by lever either side EXCEPT when push button inside unlocks outside lever. Push button released by turning inside lever or by closing door. Emergency button on outside unlocks outside lever and releases inside lever. 1 Wall stop 50W* 1 Kickplate as required.</p>

087100 - HARDWARE (CONTINUED)

E. Hardware Groups: (Continued)

<p><u>GROUP 12</u></p> <p>Each door shall have:</p> <p>Butts as required.</p> <p>1 Lockset 8205-WTJ (office function)</p> <p>Function:</p> <p>Latchbolt by lever either side EXCEPT when outside lever is locked by toggle in lock front.</p> <p>Key outside retracts latch bolt.</p> <p>Deadlocking latch.</p> <p>1 Cylinder as required.</p> <p>1 Wall stop 60W *</p>	<p><u>GROUP 13</u></p> <p>Each door shall have:</p> <p>Butts as required.</p> <p>1 Lockset 8237-WTJ (classroom function)</p> <p>Function:</p> <p>Latch bolt by lever either side EXCEPT when key outside locks outside lever.</p> <p>Deadlocking latch.</p> <p>1 Cylinder as required.</p> <p>1 Wall stop 50W *</p>
<p><u>GROUP 31</u></p> <p>Each door shall have:</p> <p>Butts as required.</p> <p>1 Privacy set 8265-WTJ</p> <p>Function:</p> <p>Latch bolt by lever either side EXCEPT when push/turn button inside locks outside lever.</p> <p>Push/turn button released by turning inside lever or by closing door.</p> <p>Emergency button on outside unlocks outside lever and releases inside button.</p> <p>1 Closer as required.</p> <p>1 Kickplate as required.</p> <p>1 Wall stop 60W *</p>	<p><u>GROUP 33</u></p> <p>Each door shall have:</p> <p>Butts as required.</p> <p>1 Lockset 8237-WTJ (classroom function)</p> <p>Function:</p> <p>Latch bolt by lever either side EXCEPT when key outside locks outside lever.</p> <p>Deadlocking latch.</p> <p>1 Closer as required.</p> <p>1 Cylinder as required.</p> <p>1 Kickplate as required.</p> <p>1 Wall stop 50W *</p>

087100 - HARDWARE (CONTINUED)

E. Hardware Groups: (Continued)

<p><u>GROUP 34</u> Each door shall have: Butts as required. 1 Lockset 8204-WTJ (storeroom function) Function: Latch bolt by lever inside only. Outside lever always RIGID. Key outside retracts latch bolt. Deadlocking latch. 1 Closer as required 1 Cylinder as required. 1 Kickplate as required. 1 Wall stop 50W *</p>	<p><u>GROUP 35</u> Each door shall have: Butts as required. 1 Lockset L1021 Function: Latch bolt by lever inside only. Outside lever always RIGID. Push button combination or key outside retracts latch bolt. Deadlocking latch. 1 Closer as required 1 Cylinder as required. 1 Kickplate as required. 1 Wall stop 50W *</p>
<p><u>GROUP 90</u> Each door shall have: Butts as required. 1 Push as required. 1 Pull as required. 1 Closer as required. 1 Kickplate as required. 1 Wall stop 50W *</p>	

* Use overhead stop if 60W not applicable.

087113 - AUTOMATIC DOOR OPERATORS

A. General:

1. Furnish and install automatic low energy, power operated swing door operator as shown on the drawings and as specified herein. The self-contained swing door operator shall consist of the following components:
 - a. Operator housing. (Full width of pair of doors)
 - b. Swing power operator. (Automatic door operator activates RHR leaf of pair of doors)
 - c. Electronic control.
 - d. Connecting hardware.

2. Manual or Power Open:
 - a. The door shall function with normal manual operation or tap plate activated power open when unlocked, or when locked power open by card reader, where applicable.

087113 - AUTOMATIC DOOR OPERATORS (CONTINUED)

A. General: (Continued)

3. Power Open: The automatic door operator shall power the door open by forces transmitted mechanically to the drive shaft and shall maintain a constant engagement throughout the opening cycle.
 - a. The operator shall be designed to counteract exterior wind conditions and/or interior stack pressure without the need of additional power assist mechanisms.
 - b. The automatic door system shall function as a manual door closer in the event of a power failure.
 - c. The automatic door system shall be electro-mechanical in design requiring no remote pumps or compressors.
4. Spring Close: The automatic door operator shall be spring closed. The spring shall be of the size and design to counteract wind conditions and return the door to full close. Closing forces shall be regulated by utilizing the motor and gear assembly as a dynamic brake. The spring shall be compression type to ensure longevity.
5. Work Not Included:
 - a. Doors and frames.
 - b. Glass and Glazing.
6. Guarantee: Door Operator shall be guaranteed for a period of one (1) year from date of acceptance.

B. Products:

1. Automatic swing door operator shall be Besam Power Swing US, electrohydraulic, self-contained, overhead surface mounted system, all as manufactured by Besam US Inc., Monroe, NC 28110. Installation shall be performed by the local authorized Besam Distributor.
2. Activating Devices:
 - a. Actuation and safety devices shall be as indicated and specified herein. Controls shall cause door to open instantly when device(s) located on approach side of door is actuated; hold door in open position, and cause door to close - unless safety device or re-actuation of opening impulse overrides such operation.
 - b. Activating devices shall be tap plate on the outside of the opening and tap plate on the egress side of the doors.

C. Execution:

1. The swing door operator shall be installed in strict compliance with the Manufacturer's recommendations and according to approved Shop Drawings.
2. Low voltage wiring to Door Operator Activating Devices to be furnished and installed by Door Installer. Power supply to Door Operators to be furnished and installed by Electrical Contractor.

088000 - GLAZING

A. General: All labor and materials necessary to complete glass and glazing work.

1. Submissions: Submit samples of each type of glass.

088000 – GLAZING (CONTINUED)

B. Products:

1. Glass Type 'A': 1" Clear Insulating Glass: 1" total thickness. Outside lite 6mm clear tempered float. Inside lite 6mm clear tempered float with Soft Coat Low E² coating on No. 3 surface and argon gas between panes; factory assembled unit. Winter U-value .29.
2. Glass Type 'B': 1/4" Clear tempered and non-tempered as required.
3. Space Shims and Setting Blocks: Vari-Seal Corp., Lyndhurst, Ohio.
4. Acceptable silicone sealant is Lexon to be used where there is glazing installed and not where sealant will be immersed in water continuously.

C. Execution: Install as per Manufacturer's recommendations.

088753 – SECURITY FILM

A. General: All labor and materials necessary to complete glass and glazing security film installation.

1. Submissions: Submit samples of each type of security film.

B. Products:

- 1.

C. Execution: Install as per Manufacturer's recommendations.

END OF DIVISION 08

DIVISION 09 FINISHES

090020 - WORK INCLUDED

- A. All labor and material necessary to complete finishing, including but not limited to the following:
1. Gypsum Board.
 2. Porcelain Tile.
 3. Thin Set Ceramic Tile.
 4. Glass Tile.
 5. Acoustical Ceilings.
 6. Resilient Flooring.
 7. Sheet Vinyl.
 8. Carpeting.
 9. Vinyl Wallcovering.
 10. Painting and Coatings.

092900 - GYPSUM BOARD

- A. General: All labor, materials and equipment to erect all drywall partitions with related metal components and accessories. Gypsum Board material must be GREENGUARD Gold Certified or have 0 grams per liter of VOCs.
- B. Products:
1. Metal Studs: No. DWS-158 (1-5/8"); DWS 212 (2-1/2"); DWS-358 (3-5/8"); DWS-600 (6"). All metal studs to be 20 gauge.
 2. Metal Floor and Ceiling Runners: DWR-158 (1-5/8"); DWR 212 (2-1/2"); DWR-358 (3-5/8"); DWR-600 (6").
 3. Cold Formed Metal Framing: C-Studs shall be 20 gauge EQ (minimum); spaced 16" O.C.; and fastened at both sides on bottom and top track.
 4. Shaft Wall Framing: C-H Studs; E-Studs; J Channels.
 5. Ceiling Support Framing: 1-1/2" cold rolled steel channels.
 6. Furring Channels: 25 gauge; electro-galvanized steel; 7/8" deep; 2-3/4" wide overall; with 1/2" wing flanges (DWC).
 7. Furring Clip: Drywall furring channel clips (DWC).
 8. Face or Back-Up Board, Typical: Type SW 5/8"; ease edge; firecode "X" gypsum board.

092900 - GYPSUM BOARD (CONTINUED)

B. Products: (Continued)

9. Coreboard or Shaft Wall Liners: 1" firecode "X" gypsum coreboard with paper faces treated to resist moisture.
10. Cement Board: Equal to Durock at ceramic and porcelain tile.
11. Fasteners: USG; drywall screws, type S, type W, and type C; lengths as required; or equal.
12. Metal Trim (Corner Bead): USG; CB-114X114; or equal.
13. Metal Trim (Edge): USG; 'L'-Bead; thickness as required; or equal.
14. Joint Treatment: USG; 'Perfatape' system; or equal.
15. Laminating Adhesive: USG; 'Perfatape' compound; or equal.
16. Sound Control: Full-thickness Fiberglass Batt Insulation.
17. Acoustic Sealant: Non-hardening, non-skinning, non-staining sealant equal to Tremco; Acoustical Sealant.
18. Smoke/Fire Sealant: USG; Firecode compound; or equal.

C. Execution: All work under this section shall be performed according to the recommendations set forth in the "Gypsum Construction Handbook" published by the United States Gypsum Company.

1. Provide 3" high stenciled labels on each side of all smoke and/or fire rated partitions.
2. Install all gypsum boards horizontally.
3. Utilize tape and compound on corner beads. Corner beads shall be screwed in, not crimped.
4. Provide control joints at maximum of 30'-0" on center as per USG (United States Gypsum) Gypsum Construction Handbook. Install control joints with unattached cripple stud at top corner of door frame (Typical).
5. Notify Owner and Architect for inspection upon completion of taping, prior to priming.
6. Provide minimum of three (3) coats of taping compound at all walls and ceilings. All taping compound shall be feathered out. Level of gypsum finishing equal to Gypsum Association GA-214-96 "Level 4".
7. Install bridging in all interior walls using bridging clips per manufacturer's recommendations.

093110 – PORCELAIN TILE

A. General: All labor and material necessary to complete porcelain tile work as specified and scheduled.

093110 – PORCELAIN TILE (CONTINUED)

B. Products:

1. PT: Porcelain Tile
 - a. Manufacturer: Daltile; or equal product.
 - b. Product: Keystones.
 - c. Color: Desert Gray Speckle, No. D200.
 - d. Finish: Unglazed.
 - e. Size: 2" x 2" Mosaic.
 - f. Grout: Equal to TEC; AccuColor Premium Sanded Grout TA-650; Color: Mist, No. 939; Grout Joint: 1/8". Refer to tile manufacturer for recommended flatness values.

- C. Execution: Installation shall be in accordance with Manufacturer's written instructions and recommendations of the Tile Council of America, Inc., 800 Second Avenue, New York, New York.

093113 – THIN SET CERAMIC TILE

- A. General: All labor and material necessary to complete ceramic tile work as specified.

B. Products:

1. CT-1: Ceramic Tile
 - a. Manufacturer: Daltile; or equal product.
 - b. Product: Glazed Ceramic.
 - c. Collection: Color Wheel Collection – Classic.
 - d. Color: Biscuit, No. K175.
 - e. Finish: Glossy.
 - f. Size: 4-1/4" x 4-1/4" Field Tile.
 - g. Pattern: Running Bond.
2. CT-2: Ceramic Tile
 - a. Manufacturer: Daltile; or equal product.
 - b. Product: Glazed Ceramic.
 - c. Collection: Color Wheel Collection – Classic.
 - d. Color: Matte Biscuit, No. K775.
 - e. Finish: Matte.
 - f. Size: 3" x 6" Field Tile.
 - g. Pattern: Running Bond.
3. Grout: Equal to TEC; AccuColor Premium Unsanded Grout TA-620; Color: Bright White, No. 910; Grout Joint: 1/16". Refer to tile manufacturer for recommended flatness values.

- C. Execution: Installation shall be in accordance with Specifications and recommendations of the Tile Council of America, Inc., 800 Second Avenue, New York, New York.

093123 - GLASS TILE

- A. General: All labor and material necessary to complete glass tile work as specified and scheduled.

093123 - GLASS TILE (CONTINUED)

B. Products:

1. GT: Glass Tile (Backsplash at Kitchen 105; and 3" high accent strip at Ceramic Tile CT-2; See Drawings for locations)
 - a. Manufacturer: Reflections in Glass Tile; or equal product.
 - b. Product: Fixed Assemblies, Jive.
 - c. Colors; Random Blend:
 - 1) Dinner Mint (33.33%).
 - 2) Army Green (33.33%).
 - 3) Cyclone Grey (33.33%).
 - d. Finish: Glossy.
 - e. Size: Square foot sheets with random pattern of 5/8" x 4", 5/8" x 6, and 5/8 x 8" tiles.
 - f. Mounting: Back-Mounted (mesh), typical. Face-Mounted (clear film) at Showers 110 & 114.
2. Grout: Equal to TEC, AccuColor Premium Unsanded Grout TA-620; Color: Bright White, No. 910; Grout Joint: 1/16". Refer to tile manufacturer for recommended flatness values.

- C. Execution: Installation shall be in accordance with Specifications and recommendations of the Tile Council of America, Inc., 800 Second Avenue, New York, New York.

095100 – ACOUSTICAL CEILINGS

- A. General: All labor, materials and equipment to erect all acoustical treatment with related metal components and accessories; including but not limited to the following:

1. Acoustic Tile.
2. Tiles shall meet at least one of the environmentally preferable criteria as outlined under the Green Procurement Compilation at <HTTPS://SFTOOL.GOV/GREENPROCUREMENT>.

B. Products:

1. ACT-1: Lay-In Panel
 - a. Manufacturer: Armstrong; or equal products.
 - b. Product: School Zone Fine Fissured
 - c. Size: 2' x 2' x 3/4"
 - d. Edge: Square.
 - e. Color: White.
 - f. Noise Reduction Coefficient (NRC): 0.70
 - g. Ceiling Attenuation Class (CAC): 35
 - h. Suspension System: Exposed grid system; main runners and cross tees shall be cold rolled electro-galvanized steel with baked enamel factory applied paint finish. Main runners shall conform to the heavy duty structural classification of ASTM C635-69.
 - 1) Product: Prelude ML 15/16" Exposed Tee System.
 - 2) Color: White.
 - i. Edge Trim:
 - 1) Product: Prelude ML 15/16" Exposed Tee System.
 - 2) Color: White.
2. ACT-2: Cleanable Lay-In Panel
 - a. Manufacturer: Armstrong; or equal products.
 - b. Product: Clean Room VL Unperforated.
 - c. Size: 2' x 2'.

095100 – ACOUSTICAL CEILINGS (CONTINUED)

B. Products: (Continued)

2. ACT-2: Cleanable Lay-In Panel (Continued)
 - d. Edge: Square.
 - e. Color: White.
 - f. Noise Reduction Coefficient (NRC): N/A
 - g. Ceiling Attenuation Class (CAC): 40
 - h. Suspension System: Exposed grid system; main runners and cross tees shall be cold rolled electro-galvanized steel with baked enamel factory applied paint finish. Main runners shall conform to the heavy duty structural classification of ASTM C635-69.
 - 1) Product: Prelude ML 15/16" Exposed Tee System.
 - 2) Color: White.
 - i. Edge Trim:
 - 1) Product: Prelude ML 15/16" Exposed Tee System.
 - 2) Color: White.

C. Execution:

1. Measure and layout ceiling to avoid panels less than ¼ panel in size. Keep and use correct manufacturer's instructions. Follow ceiling layout to provide clearances for all other work.
2. Install ceiling system as per manufacturer's instructions, ASTM C636 and governing building code. Follow ceiling grid space pattern as designed in ceiling plans or approved by the Architect. Do not allow loads of anything but the ceiling system on the ceiling supports. Do not allow ceiling to brace or support mechanical or electrical equipment.
3. Tolerances: Level entire ceiling within a tolerance of 1/8" to 10' and straight within the same tolerance.
4. Openings for Other Trades: This Contractor shall be responsible for openings required by the Mechanical and Electrical Contractors for light fixtures, grilles, registers, etc., and shall install all necessary channels to receive these items.

096500 - RESILIENT FLOORING

A. General: All labor and materials to complete resilient flooring as scheduled and detailed.

B. Products:

1. VCT: Vinyl Composition Tile
 - a. Manufacturer: Armstrong; or equal product.
 - b. Product: Premium Excelon, Crown Texture.
 - c. Color: Pewter, No. 5C908.
2. LVT-1: Luxury Vinyl Tile, Typical
 - a. Manufacturer: Mannington; or equal product.
 - b. Collection: Amtico Anthology.
 - c. Style: City Grid.
 - d. Size: 18" x 18".
 - e. Color: Interaction, No. ANT104.
 - f. Pattern: Straight.

096500 - RESILIENT FLOORING (CONTINUED)

B. Products: (Continued)

3. LVT-2: Luxury Vinyl Tile
 - a. Manufacturer: Mannington; or equal product.
 - b. Collection: Amtico Collection.
 - c. Style: Wood.
 - d. Size: 4.5" x 36".
 - e. Color: Pilgrim Oak, No. AR0W8130.
 - f. Patterns: Stripwood and Herringbone; See Drawings.
4. VB: Vinyl Base
 - a. Manufacturer: Johnsonite; or equal product.
 - b. Size: 4" x 1/8" thickness; 120'-0" continuous roll stock.
 - c. Straight base at carpet; Cove base at resilient flooring.
 - d. Color: Moon Rock, No. 29.
5. FT: Flooring Transition Strip
 - a. Manufacturer: Mannington; or equal product.
 - b. Product: Burke Collection; Fusion Rubber Transition Strip; 2.5mm.
 - c. Color: Accord Color; Moonbeam, No. 050.
6. Primers: As recommended by flooring Manufacturer.
7. Adhesives: Waterproof adhesives as recommended by Manufacturer.

C. Execution:

1. The Contractor shall examine all floor surfaces to determine their suitability to receive floor covering and shall not start his work if there is any irregularity upon which covering cannot be laid straight or even. Adequate ventilation shall be provided to take off moisture and volatile fumes. Unless otherwise specified, all materials and methods used shall be in strict accordance with the recommendations of the Manufacturer. Concrete to be tested for moisture and alkalinity.
2. All products shall be delivered in the Manufacturer's original unopened containers with the Manufacturer's brand and name clearly marked, therein.
3. All cracks, minor holes and crevices shall be filled with Armstrong Floor Patch S-175. Areas requiring leveling and smoothing of rough spots shall be resurfaced with Armstrong Latex Underlayment S-180.
4. Installation of floor covering shall not begin until all work of all trades, including painting has been completed.
5. The General Contractor shall maintain all rooms at a minimum of 70°F for at least 48 hours before, during and after application of these floor coverings is completed.
6. Grind all high spots in floor slabs.
7. Install 4" vinyl base at all millwork cabinets in rooms with resilient or carpet flooring unless otherwise noted.
8. Cleaning: Floor shall be left mop clean and free from all blemishes and traces of adhesive.

096516 – SHEET VINYL

- A. General: All labor and materials to complete Linoleum as scheduled and detailed.
- B. Products:
1. SV: Sheet Vinyl
 - a. Manufacturer: Mannington; or equal product.
 - b. Product: BioSpec MD.
 - c. Color: Flint, No. 15384.
 - d. Seaming: Heat-welded with Manufacturer's recommended welding rod.
 - e. Integral Cove Base: Radius fillet strip and j-shape cap strip compatible with flooring.
 2. Mastic Underlayment and Leveling Compound (for concrete floors): To be provided as per Manufacturer's instructions and conditions require. Conditions to be corrected shall determine type of products selected for use.
 3. Primers (for concrete floors): As recommended by flooring Manufacturer.
 4. Adhesives: Waterproof Adhesives as recommended by flooring Manufacturer.
- C. Execution:
1. The Contractor shall examine all floor surfaces to determine their suitability to receive floor covering and shall not start his work if there is any irregularity upon which covering cannot be laid straight or even. Adequate ventilation shall be provided to take off moisture and volatile fumes. Unless otherwise specified, all materials and methods used shall be in strict accordance with the recommendations of the Manufacturer. Concrete to be tested for moisture and alkalinity.
 2. All products shall be delivered in the Manufacturer's original unopened containers with the Manufacturer's brand and name clearly marked, therein.
 3. All cracks, minor holes and crevices shall be filled with Floor Patch recommended by Manufacturer. Areas requiring leveling and smoothing of rough spots shall be resurfaced with product recommended by Manufacturer.
 4. Installation of floor covering shall not begin until all work of all trades, including painting has been completed.
 5. The General Contractor shall maintain all rooms at a minimum of 70°F for at least 48 hours before, during and after application of these floor coverings is completed.
 6. Grind all high spots in floor slabs.
 7. Cleaning: Floor shall be left mop clean and free from all blemishes and traces of adhesive.

096800 - CARPETING

- A. General: The Contractor shall furnish all labor and materials required to completely install all of the carpet where indicated on the Drawings, in the Finish Schedule and as hereinafter specified.

096800 – CARPETING (CONTINUED)

B. Products:

1. ECPT: Entryway Carpet Tile
 - a. Manufacturer: Mannington Commercial; or equal products.
 - b. Collection: Liason II Entryway.
 - c. Style: Ruffian II.
 - d. Color: Ebony Earth, No. 1506.
 - e. Size: 24" x 24".
 - f. Construction: Tip-Sheared Loop.
 - g. Face Fiber Type: 100% Type 6,6 Nylon.
 - h. Dye Method: Solution Dyed.
 - i. Gauge: 5/32.
 - j. Stitches Per Inch: 9.0 stitches/inch.
 - k. Finished Yarn Weight: 38 oz./square yard.
 - l. Pile Thickness: 0.155".
 - m. Average Density: 8825.
 - n. Primary Substrate: 100% synthetic.
 - o. Primary Precoat: 100% Non-Aqueous Closed Cell Polymer.
 - p. Secondary Backing: Infinity 2 Modular.
 - q. Installation: Monolithic in accordance with Manufacturer's Instructions.
 - r. Warranty: Lifetime Limited Wear and Backing Warranty; 15-year ColorSafe Color Loss and XGUARD Staining Warranties.

2. CPT-1: Carpet Tile, Typical
 - a. Manufacturer: Mannington Commercial; or equal product.
 - b. Collection: Heirloom.
 - c. Style: Relic.
 - d. Color: Union, No. 34636.
 - e. Size: 12" x 48".
 - f. Construction: Textured Pattern Loop.
 - g. Face Fiber Type: 100% Antron Lumena; Type 6,6 Nylon.
 - h. Dye Method: Solution Dyed.
 - i. Gauge: 5/64.
 - j. Stitches Per Inch: 10 stitches/inch.
 - k. Finished Yarn Weight: 20 oz./square yard.
 - l. Pile Thickness: 0.114".
 - m. Backing: Infinity 2 Modular.
 - n. Installation: Install in 3-Step Vertical Ashlar Pattern in accordance with Manufacturer's Instructions.
 - o. Warranty: Lifetime Limited Wear and Backing Warranty; 15-year ColorSafe Color Loss and XGUARD Staining Warranties.
 - p. Recycled Content: Contains Pre-Consumer Recycled Content.
 - q. NSF / ANSI-140 Certification: Gold.
 - r. CRI Green Label Plus and ISO 14001 Certified.

3. CPT-2: Carpet Tile
 - a. Manufacturer: Mannington Commercial; or equal product.
 - b. Collection: Heirloom.
 - c. Style: Memento.
 - d. Color: Union, No. 34636.
 - e. Size: 12" x 48".
 - f. Construction: Textured Pattern Loop.
 - g. Face Fiber Type: 100% Antron Lumena; Type 6,6 Nylon.
 - h. Dye Method: Solution Dyed.

096800 – CARPETING (CONTINUED)

B. Products: (Continued)

3. CPT-2: Carpet Tile (Continued)

- i. Gauge: 5/64.
- j. Stitches Per Inch: 10 stitches/inch.
- k. Finished Yarn Weight: 20 oz./square yard.
- l. Pile Thickness: 0.114”.
- m. Backing: Infinity 2 Modular.
- n. Installation: Random Installation Pattern with Carpet Tile CPT-1; in accordance with Manufacturer’s Instructions; See Drawings.
- o. Warranty: Lifetime Limited Wear and Backing Warranty; 15-year ColorSafe Color Loss and XGUARD Staining Warranties.

C. Execution: In general, installation shall be delayed until all surrounding work has been completed. Particular attention should be paid to the Manufacturer’s instruction for the type of installation shown.

1. Preparation:

- a. The floor shall be prepared to provide a suitable base for carpet installation. Fill all voids, cracks, and holes with latex fill material.
- b. Floor must be smooth, clean, dry, and wax free. Adhesive must be 45 degrees F or higher.
- c. Lay out floor and floor covering to Manufacturer’s instructions.

097200 –VINYL WALLCOVERING

A. General:

- 1. All labor, materials and equipment to complete vinyl wallcovering.

B. Products:

1. VWC-1: Vinyl Wallcovering

- a. Manufacturer: Symphony Wallcovering; or equal product.
- b. Pattern: Maestro.
- c. Color: Taupe, No. AZ52694MA.
- d. Weight: Type II, 20 oz. PLY/620 G/PLM 13.3 oz. PSY/451 G/PSM.
- e. Backing: Osnaburg.
- f. Width: 54”.
- g. Match: Reverse; Random.
- h. Meets or exceeds Federal Specification CCC-W-408D for Type II.

2. VWC-2: Vinyl Wallcovering

- a. Manufacturer: Symphony Wallcovering; or equal product.
- b. Pattern: A Cappella.
- c. Color: Molto Mint, No. AZ52937AC.
- d. Weight: Type II, 20 oz. PLY/620 G/PLM 13.3 oz. PSY/451 G/PSM.
- e. Backing: Osnaburg.
- f. Width: 54”.
- g. Match: Reverse; Random.
- h. Meets or exceeds Federal Specification CCC-W-408D for Type II.
- i. Recycled Content: 10%.
- j. Warranty: 5 year warranty against manufacturing defects.

097200 –VINYL WALLCOVERING (CONTINUED)

B. Products: (Continued)

3. Accessories:

- a. Adhesives: Equal to Roman ECO-788 clay adhesive; or ECO-888 clear adhesive.
- b. Substrate Primer/Sealer: White pigmented alkyd; or acrylic/latex base primer specifically formulated for use with vinyl wallcoverings.

C. Execution:

1. Examination:

- a. Examine substrates and installation conditions.
- b. Test substrates with a suitable moisture meter and verify that moisture content does not exceed 4 percent.
- c. Before installation, verify that walls are free from mold and mildew. If mold or mildew is present, or if walls show visible moisture damage, or if moisture content exceeds recommendations, do not proceed with installation until the condition has been fully corrected under the direction of a qualified expert.
- d. Verify substrate surfaces are clean, dry, smooth, structurally sound and free from surface defects and imperfections that would show through the finished surface.
- e. Evaluate all painted surfaces for the possibility of pigment bleed-through.
- f. Notify the Contractor and Architect in writing of any conditions detrimental to the proper and timely completion of the installation. Beginning of installation means acceptance of surface conditions.

2. Installation:

- a. Store the wallcovering in a clean, dry and protected environment. Maintain temperature of wallcovering between 70°F and 100°F for at least 72 hours prior to and during the installation.
- b. Before cutting, be sure the pattern and color are satisfactory as specified.
- c. Before hanging, examine pattern for color uniformity and repeat in design. If there is no design repeat (random texture) patterns should normally be reverse hung.
- d. All material must be installed in numerical roll sequence starting with the highest number.
- e. If, after applying three (3) strips, there is some question of appearance, stop and contact your local representative.
- f. Apply an even coat of adhesive to the fabric side of material using a roller or pasting machine. The wallcovering should be booked for a minimum of 12 minutes for vinyl wallcovering. When pasting several strips in advance, booking is recommended to insure proper wetting out of the fibers. Fold each end toward the middle, pasted sides together, aligning the edges carefully to prevent the paste on the edges from drying out. Caution: Do not crease the wallcovering! Avoid the stacking of strips that are pasted and booked in advance, as the added weight could cause creasing. Install wallcovering using a plastic smoother, working out air bubbles. Caution: Remove excess paste immediately with clean water and a moist natural sponge. Do not use man made (i.e. polyester) sponges. Dry with a clean cloth. If excess paste is not removed; permanent damage could result to the face of the wallcovering.
- g. This wallcovering is untrimmed. Random patterns must be double cut. On match patterns we recommend notching the overlapping selvage exposing the underlying pattern to insure a proper match.
- h. Only full widths of material should be used for the most satisfactory installation. Headers can cause unsatisfactory shading if hung out of sequence; "double-cut" seams. Do not "score" the dry wall.

097200 – VINYL WALLCOVERING (CONTINUED)

C. Execution: (Continued)

3. Clean-up Completion:
 - a. Upon completion of the work, remove surplus materials, rubbish and debris resulting from the wallcovering installation. Leave areas in neat clean and orderly condition.

099000 – PAINTING AND COATINGS

A. General: All labor, material and equipment necessary to complete painting, finishing and decorating as specified and scheduled.

1. Work Included:
 - a. All scheduled walls and ceilings.
 - b. All door frames and trim.
 - c. All exposed pipe and conduit.
2. Work Not Included:
 - a. Painting of non-ferrous metals.
 - b. Painting of piping and equipment in Mechanical Equipment Room.
 - c. Prime coats of items delivered with prime coats applied.
 - d. Factory finished surfaces.
3. Containers: Shall be delivered unbroken, bearing brand and Manufacturer's name.
4. Color Separation:
 - a. Metal items (diffusers, grilles, registers, piping, etc.) will generally be same color as background, except; door frames and convectors will be different color.
5. Fire Hazard Classifications:
 - a. Corridor Materials: 0-25 flame spread.
 - b. Other Areas: 76-225.
6. Required Characteristics:
 - a. All paints shall comply with the VOC limits of the Green Seal Standard GS-11.
 - b. Paints shall contain not less than 30% solids.

B. Products:

1. Approved Painting Materials: Equal to products by Sherwin Williams.
2. Metal: (Interior)
 - 1st Coat: Spot prime where required. S-W; Industrial Pro-Cryl Universal Acrylic Primer.
 - 2nd Coat: S-W; Pro Industrial High-Performance Acrylic - Eg-Shel; Extra White.
 - 3rd Coat: S-W; Pro Industrial High-Performance Acrylic - Eg-Shel; Extra White.
3. Metal: (Interior Galvanized)
 - 1st Coat: Solvent clean as per SSPC-SPI.
 - 2nd Coat: S-W; DTM Acrylic Primer; B50Z Series.
 - 3rd Coat: S-W; ProMar 200 Latex - Eg-Shel; B20W-200 Series.
 - 4th Coat: S-W; ProMar 200 Latex - Eg-Shel; B20W-200 Series.

099000 – PAINTING AND COATINGS (CONTINUED)

B. Products: (Continued)

4. Gypsum Wall Board Partitions and Ceilings:
1st Coat: S-W; ProMar 200 Zero VOC Latex Primer; White at new Gypsum Wall Board.
2nd Coat: S-W; ProMar 200 Zero VOC Interior Latex - Eg-Shel; Extra White.
3rd Coat: S-W; ProMar 200 Zero VOC Interior Latex - Eg-Shel; Extra White.
5. Gypsum Wall Board Partitions Requiring Specialty Coating:
1st Coat: S-W; ProMar 200 Zero VOC Latex Primer – White; at new Gypsum Wall Board.
2nd Coat: S-W; Pro Industrial 2-Part Water-Based Catalyzed Epoxy-Gloss; B73-300 / B73V300 Series.
3rd Coat: S-W; Pro Industrial 2-Part Water-Based Catalyzed Epoxy-Gloss; B73-300 / B73V300 Series.
6. Thinners: Pure, refined turpentine or equal quality thinner.

C. Execution:

1. Preparation of Surfaces:
 - a. Steel and Iron: Remove grease, rust scales and dust and tough up any chopped or abased places on items that have been shop coated. Where steel and iron have heavy coating or scale, it shall be removed by wire brushing or sand blasting as necessary to produce satisfactory surface for painting. Sand smooth all primer runs on exposed structural or miscellaneous steel items, steel door frames, etc.
 - b. Galvanized Metal: Thoroughly clean with gasoline and coat with solution consisting of 4 ounces of copper sulphate in one gallon water. Permit coating to remain on surface at least 12 hours and dust off with stiff brush.
 - c. Masonry and Concrete: All masonry units and concrete shall be thoroughly cleaned. Masonry shall be thoroughly dry, free from dust, oils or other foreign matter. Mortar or form fins shall be ground smooth and all irregularities filled before painting.
 - d. General: Before painting, remove hardware (except hinges) accessories, plates, lighting fixtures and similar items or approved ample protection of such items.
2. Surfaces to be painted shall be dry and clean.
3. No interior work shall be done in dusty room.
4. Wash all metal surfaces with benzine to remove dirt and/or grease before applying materials.
5. Sand surfaces between coats; remove dust. Fill chipboard edges where exposed.
6. Second and third coats of paint shall not be applied where preceding coat is dry and hard.
7. Paints must be evenly spread on, be free from runs, sags, crawling or other defects. Transitions between color blends and between coats and other material shall be sharp, clean and without overlaps.
8. Putty all nail holes, cracks, open joints and other defects after the priming and first coat is dry.
9. Notify Architect before application of final coat of paint.

D. Colors:

1. P-1 (Typical Walls and Hollow Metal Frames): Equal to Sherwin Williams; Color: Repose, No. SW7015.

099000 – PAINTING AND COATINGS (CONTINUED)

D. Colors: (Continued)

2. P-2 (Walls): Equal to Sherwin Williams; Color: Coastal Plain, No. SW6192.
3. P-3 (Walls): Equal to Sherwin Williams; Color: Refuge, No. SW6228.
4. P-4 (GWB Ceilings and Soffits): Equal to Sherwin Williams; Color: Pure White, No. SW7005.
5. SC (Specialty Coating): Equal to Sherwin Williams; Color: Repose, No. SW7015.

END OF DIVISION 09

DIVISION 10 SPECIALTIES

100020 – WORK INCLUDED

- A. All labor and material to complete this section, including but not limited to the following:
1. Interior Signage.
 2. Cubicle Curtain Tracks and Curtains.
 3. Wall Protection.
 4. Toilet Accessories.
 5. Fire Protection Specialties.
 6. Metal Lockers.

101400 – INTERIOR SIGNAGE

- A. General:
1. Furnish and install Interior Signage.
 2. All Signage shall conform to the requirements of the Americans with Disabilities Act (ADA).
 3. Submittals:
 - a. Shop Drawings: Scaled for manufacture and fabrication of sign types. Identify materials, show joints, anchorage, accessory items, mounting, and finishes.
 - b. Sign Schedule and Location Plan showing sign types, final text, and locations.
- B. Products:
1. Manufacturer: Equal to signs as manufactured by 2/90 Signage Systems for the Fargo VA Signage System.
 2. Provide signs complete with lettering, framing and related components for a complete installation.
 3. Provide signs of type, size, and design as per the attached Interior Sign Message Schedule and Sign Types; and in quantities and locations shown on Signage Plans.
 4. Provide text, arrows, and symbols in size, colors, typefaces and letter spacing as per the attached Symbols and Sign Types; final text for signs is listed on attached Sign Message Schedule.
- C. Execution:
1. Install in accordance with Shop Drawings, instructions, and recommendations.
 2. Refer to attached Installation Guidelines and Mounting Methods.

102123 - CUBICLE CURTAIN TRACKS AND CURTAINS

A. General:

1. Description:
 - a. This section specifies cubicle curtain track and cubicle curtains.
 - b. Refer to plan notes for location and configuration.
2. Submittals:
 - a. Shop Drawings: Showing layout of tracks and method of anchorage.
 - b. Manufacturer's Literature and Data: Cubicle curtain track.
 - c. Sample of actual cubicle curtain panel and mesh top materials.

B. Products:

1. Cubicle Curtain Track System:
 - a. Manufacturer: Equal to On the Right Track Systems, Inc.; New York, NY 10013.
 - b. Surface Mounted Track: Extruded Aluminum; Finish: Powder-Coated White.
 - c. Dimensions: 1.5" high x 0.375" wide.
 - d. Provide straight and bent sections as indicated on Drawings.
 - e. Provide all accessories, components, and fasteners necessary for a complete installation.
2. CUB: Cubicle Curtains
 - a. Manufacturer: Equal to On the Right Track Systems, Inc.; New York, NY 10013.
 - b. Product: Curtain with panel, mesh, and top designed for attachment to track without separate hooks.
 - c. Panel Size: Width equal to track length plus 15 percent for fullness; height to provide 12" clearance at floor, including 19" of mesh; hemmed as required.
 - d. Style: Custom; Equal to Pallas Textiles; Valetudo Collection – Arbor; Color: Griseus, No. 29.085.012.
 - e. Curtain Loading Tool: Manufacturer's standard, The Grabber.
 - f. Curtain Ring: Cream.

C. Execution:

1. Installation
 - a. Install tracks after finish painting and ceiling finishing operations are complete.
 - b. Install in accordance with manufacturer's recommendations.
 - c. Install track level and hangers plumb and securely anchor to the ceiling to form a rigid installation.
 - d. Anchor surface mounted curtain tracks directly to exposed grid of lay-in acoustical tile ceilings with suitable fasteners, spaced approximately 600 mm (24 inches) on center.
 - e. Securely fasten end stop caps to prevent their being forced out by the striking weight of curtain ring.
 - f. Remove damaged or defective components and replace with new components or repair to the original condition.
2. Acceptance
 - a. Track shall be installed neat, rigid, plumb, level and true, and securely anchored to the overhead construction.
 - b. Curtain rings shall operate smoothly and easily over the full range of travel.

102600 – WALL PROTECTION

A. General:

1. This section specifies handrail/wall guard combinations, wall guards, and corner guards.
2. Submittals:
 - a. Shop Drawings: show design and installation details.
 - b. Manufacturer's Literature and Data:
 - 1) Handrail/Wall Guard Combination.
 - 2) Wall Guards.
 - 3) Corner Guards.
 - 4) High Impact Wallcovering.
 - c. Color Samples of actual material.

B. Products:

1. Manufacturer: Equal to InPro Corporation; Muskego, Wisconsin 53150.
2. HR/WG: Handrail/Wall Guard Combination
 - a. Product: Equal to 1200 Series; Ergonomic Profile.
 - b. Size: 6.25" high; 1.5" grip.
 - c. Materials: .080" polyvinyl chloride snap-on cover over continuous aluminum retainer fabricated from .080" 6063-T5 aluminum with mill finish.
 - d. Texture and Color: Pebblette texture vinyl; Pepperdust, No. 0119.
 - e. Accessories: Furnish all end caps, fasteners and accessories required for a complete installation.
3. WG: Wall Guard
 - a. Product: Equal to 1600 Series.
 - b. Size: 6" high x 1" deep.
 - c. Materials: .080" polyvinyl chloride snap-on cover over continuous aluminum retainer fabricated from .080" 6063-T5 aluminum with mill finish.
 - d. Texture and Color: Pebblette texture vinyl; Pepperdust, No. 0119.
 - e. Accessories: Furnish all end caps, fasteners and accessories required for a complete installation.
 - f. Installation: Install directly above wall base.
4. CG: Corner Guards
 - a. Product: Equal to 160 Series; Surface Mount.
 - b. Size: 2" wing; 90-degree corner; 8' high.
 - c. Materials: .080" polyvinyl chloride snap-on cover over continuous aluminum retainer fabricated from .070" 6063-T5 aluminum with mill finish.
 - d. Texture and Color: Pebblette texture vinyl; Pepperdust, No. 0119.
 - e. Accessories: Furnish all end caps, fasteners and accessories required for a complete installation.
 - f. Installation: Install directly above wall base.

102600 – WALL PROTECTION (CONTINUED)

B. Products: (Continued)

5. HIWC: High Impact Wall Covering
 - a. Product: Equal to Palladium Rigid Sheet.
 - b. Size: 4' x 8' sheet.
 - c. Materials: .060" polyvinyl chloride.
 - d. Texture and Color: Pebblette texture vinyl; Pepperdust, No. 0119.
 - e. Accessories: Trim pieces and adhesive as recommended by Manufacturer for a complete installation.
 - f. Installation: Install directly above wall base; 4' height.
6. Fasteners and Anchors
 - a. Provide adhesives, fasteners, and anchors as required for each specific type of installation.
 - b. Where type, size, spacing or method of fastening is not shown or specified, submit shop drawings showing proposed installation details.

C. Execution:

1. Secure guards to walls with mounting cushions, retainers, brackets and fasteners in accordance with manufacturer's details and instructions.
2. Adhere rigid sheet and trim in accordance with manufacturer's instructions.
3. Provide backing as required for anchoring.
4. Clean all surfaces as recommended by Manufacturer.

102813 - TOILET ACCESSORIES

A. General:

1. Description: All labor and materials to provide complete installation of toilet accessories.
2. Submittals: Physical samples of pedestal bench color options for selection.

B. Products:

1. Grab Bar: Equal to Bradley; Model 832; Type 304. See Drawings for size and location.
2. Mirror: Equal to Bradley; Model 781-1836.
3. Mirror with Shelf: Equal to Bradley; Model 7815-1836.
4. Paper Towel Dispenser: Equal to Georgia-Pacific; enMotion Impulse 10 Automatic; Color: Translucent Smoke.
5. Soap Dispenser: Equal to Bradley; Model 6562.
6. Toilet Paper Dispenser: Equal to Bradley; Model 5234.
7. Disposable Toilet Seat Cover Dispenser: Equal to Bradley; Model 5831.

102813 - TOILET ACCESSORIES (CONTINUED)

B. Products: (Continued)

8. Sanitary Napkin Dispenser: Equal to Bradley; 4781-11
9. Sanitary Napkin/Tampon Vendor: Equal to Bradley; Model 407-11.
10. Changing Station: Equal to Rubbermaid; Model 7818-88.
11. Pedestal Bench: Equal to Bradley; Lenoxpedestal; 18" deep; 24" wide at Rooms 110 and 114, 48" wide at Rooms 124 and 126; Color: To be selected.
12. Folding Shower Seat: Equal to Bobrick; Model B-5181.
13. Shower Curtain Rod: Equal to Bobrick; Model B-207 x 60.
14. Shower Curtain Hooks: Equal to Bobrick; Model 204-1.
15. Shower Curtain: Equal to Bobrick; Model 204-3.
16. Robe Hook: Equal to Bobrick; Model B-6727.
 - a. Refer to Interior Elevations for robe hook locations.
 - b. Provide robe hook on back of Doors 116, 117, 120 and 122.
17. Utility Shelf with Mop and Broom Holders: Equal to Bradley; Model 9934.
18. Specimen Pass Thru Cabinet: Equal to American Specialties, Inc.; Model No. 8154.
19. Glove Dispenser: Equal to Bowman Manufacturing Co.; Model GP-340.

C. Execution:

1. Provide solid fire treated wood blocking as required for toilet accessories for locations as shown on Drawings.
2. Examine the areas and conditions under which work of this Section will be performed. Verify all mounting heights and backing required.
3. Any accessories that are installed after wall finishes are complete, care must be taken not to damage wall surface during installation.

104400 - FIRE PROTECTION SPECIALTIES

A. General:

1. Provide all labor and material necessary to install fire extinguishers and cabinets.
2. Submit Shop Drawings with complete details and installation instructions.

B. Products:

1. Manufacturer: Larsen's Manufacturing Co. or J.L. Industries, Minneapolis, Minnesota.

104400 - FIRE PROTECTION SPECIALTIES (CONTINUED)

B. Products: (Continued)

2. Cabinets: (See Floor Plan for locations)
 - a. Model: 2409-R1, Fully Recessed Cabinet.
 - b. Door Style: Full panel door with clear acrylic view window.
 - c. Finish: Red baked enamel door and cabinet with red letters FIRE EXTINGUISHER.
 - d. Provide theft-resistant, replaceable plastic locks. Key all cabinets alike.
 - e. Cabinet mounted Extinguisher: Multi-purpose dry chemical, MP-5, (2A1-10B; C, UL Rating 0).

C. Execution:

1. Install in accordance with Manufacturer's recommendations and instructions.
2. See Floor Plan for locations; mount cabinet at 3'-0" to top.

105113 - METAL LOCKERS

A. General:

1. Furnish and install steel lockers complete with standard hardware, accessories and necessary anchors, wood blocking, fillers, trim and corners for complete installation.
2. Submit Shop Drawings with complete details and installation instructions.

B. Products:

1. Manufacturer: Republic Storage Systems.
2. Standard Lockers with 16 gauge steel doors; 24 gauge steel body parts; premium paint finish throughout; continuous vertical door strikes, heavy gauge frame hooks; full-flanged, channel edged doors; double channel lock bar; and full loop, 2", 5 - knuckle hinges welded to frames, riveted to doors.
 - a. Overall Size: 12"W x 12"D x 60"H as scheduled.
 - b. Configuration:
 - 1) Double Tier, 30"H each compartment.
 - 3) Provide end panels, filler panels, tops and bases as required.
 - c. Locks: Lockers to be set-up for Owner furnished combination padlocks.
 - d. Color: To be selected from Manufacturer's Standards.
 - e. Quantity: Refer to drawing sheet AE451.

C. Execution: Installation of Lockers shall be in accordance with the manufacturer's standard recommendations and the following:

1. All parts shall be erected in a substantial manner, straight, level and plumb. Locker tops, faces and finished ends shall align.
2. Anchor units with appropriate anchor devices.
3. Bolt adjoining locker units together to provide rigid installation.
4. No evidence of drilling, cutting or patching shall be visible in the finished work.

105113 - METAL LOCKERS (CONTINUED)

C. Execution: (Continued)

5. Clearance at vertical edges of doors shall be uniform top to bottom.
6. Install end panels, filler panels, tops and bases to completely close off openings where they occur.
7. Finished surfaces shall be cleaned after installation and left free of imperfections.

END OF DIVISION 10

DIVISION 11 EQUIPMENT

110000 – WORK INCLUDED

- A. General: All labor, plant and material necessary to complete equipment, including but not limited to the following:
1. Food Service Equipment
 2. TV Mounts

114000 – FOOD SERVICE EQUIPMENT AND LAUNDRY APPLIANCES

- A. General: Coordinate clearance and rough-in requirements for installation of Government furnished food service and laundry appliances as shown on the drawings and as specified.

115270 - TV MOUNTS

- A. General:
1. This section specifies mounts for Owner-furnished TVs.
- B. Products:
1. Manufacturer: Equal to Peerless-AV.
 2. Product: SmartMount Articulating Wall Mount for 37" to 55" Displays; Model SA752PU.
 3. Features:
 - a. +15°/-5° vertical tilt movement.
 - b. Universal mount accommodates 200 x 100 to 600 x 400mm VESA mounting patterns.
 - c. Retracts to hold display 2.97"(75mm) from the wall.
 - d. Extends up to 26.47" (672mm).
 - e. ±90° degrees of pivot.
 - f. Leveling ±5° after display installation.
 - g. Hook-and-Hang; one-person installation.
 - h. Landscape or Portrait mounting options.
 - i. I-shaped adaptor plate.
 - k. Single stud wall plate design.
 - l. Includes all necessary wall and display attachment hardware.
 - m. Max load capacity: 90 lbs. UL listed and tested to four times stated load capacity.

115270 - TV MOUNTS (CONTINUED)

B. Products: (Continued)

- n. Integrated cable management.
 - o. Mounts to wood stud, concrete, cinder or breeze block.
3. Finish: Semi-gloss Black.

C. Execution:

1. Verify Owner-furnished TV size and model with Owner to determine compatibility of specified bracket before purchase.
2. Verify with Owner the exact mounting locations.
3. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.
4. Install in accordance with the manufacturer's printed instructions.
5. Install accessories plumb and level and securely anchor to substrate. Provide metal backing per Section 05 50 00 to support imposed loads at metal stud partitions.
6. Install in a manner that will permit the accessory to function as designed and allow for servicing as required without hampering or hindering the performance of other devices.
7. Install to prevent striking by other moving, items or interference with accessibility.
8. After installation, clean as recommended by the manufacturer and protect from damage until completion of the project.

END OF DIVISION 11

DIVISION 12 - FURNISHINGS

120020 - WORK INCLUDED

- A. All labor and material to complete this section, including but not limited to the following:
1. Horizontal Louver Blinds.
 2. Stainless Steel Casework.

122113 - HORIZONTAL LOUVER BLINDS

- A. General:
1. Furnish and install Horizontal Louver Blinds as specified herein.
 2. Related Work:
 - a. Site verify size of windows.
 - b. Provide solid wood blocking at all window heads receiving blinds.
 3. Submittals:
 - a. Sample of horizontal slat for specified color and pattern.
 - b. Manufacturer's Shop Drawings indicating size, fabrication, operation, maintenance and installation.
 - c. Manufacturer's Specifications and other data as required to demonstrate compliance with specification requirements.
- B. Products:
1. Blinds to be equal to Levolor Riveria 1" Horizontal Blinds.
 - a. Headrail: 1" high x 1-9/16" wide U-shaped .025" Tomized Steel. (Omit slat valance)
 - b. Slats: Unperforated, 1" x .0085" nominal thickness, aluminum.
 - c. Color: No. 34, Brushed Aluminum.
 2. Provide blinds at the following locations:
 - a. All existing exterior windows (103, 116, 117, 118, 119, 121, 129, 131, 135, 137 and 141)
 - b. Sidelights at Door Frame Type F2 (118, 119, 123 and 127)
- C. Execution:
1. Use skilled workmen who are experienced with the necessary crafts and who are completely familiar with the specified requirements and methods for the proper performance of the work of this specification.
 2. Field measure the size of each window to verify blind dimensions, clearances and mounting.
 3. Coordinate with other trades to verify the type and location of blocking.
 4. Install all items in accordance with Manufacturer's recommended installation procedure as approved by the Architect, anchoring all components firmly into position for long life under hard use; plumb level and square.
 5. Notify the Architect of any discrepancies which would affect proper installation and operation of blind system. Install after discrepancies are corrected.

123553 – STAINLESS STEEL CASEWORK

A. General:

1. Description
 - a. This section specifies all stainless steel cabinets and casework, including tops, supporting structures, and miscellaneous items listed in specifications, and drawings. Include delivery to the building, set in place, level, and scribe to walls and floors as required. Furnish and install all filler panels, knee space panels and scribes as shown or required for complete installation.
 - b. Related Work: All plumbing and electrical fittings to be furnished and installed by Division 22 and Division 26.
2. Quality Assurance
 - a. The stainless steel casework manufacturer shall also provide worktops manufactured or shipped from the same geographic location to assure proper staging, shipment and single source responsibility.
 - b. General Performance: Provide certification that furniture shall meet the performance requirements described in SEFA 8.
3. Submittals
 - a. Manufacturer's Data: Submit manufacturer's data and installation instructions for each type of casework.
 - b. Shop Drawings: Submit shop drawings for furniture assemblies showing plans, elevations, ends and cross-sections.
 - c. Coordinate shop drawings with other work involved, including mechanical and electrical services when required.

B. Products:

1. Manufacturer
 - a. The basis of this specification is stainless steel casework manufactured equal to the standards used by Kewaunee Scientific Corporation, 2700 Front Street, Statesville, North Carolina. The specified design is Research Collection. All casework covered by the specification shall be the product of one manufacturer and be fabricated at one geographic location to assure shipping continuity and single-source responsibility.
 - b. The selected manufacturer shall warrant that all products be free of defects in material and workmanship for a period of one year. The period shall start at the date of acceptance or immediately of any defective product. The manufacturer shall have a reasonable opportunity to inspect the goods. No products shall be returned before receipt of written shipping instructions from the manufacturer.
2. Cabinet Material
 - a. Stainless Steel: Cabinet bodies, drawer bodies, shelves, drawer heads and door assemblies shall be fabricated from stainless steel.
3. Drawer and Door Style
 - a. Inset – Square Edge: Drawers and doors, when closed, shall be recessed to create an overall flush face with 1/8" reveals. The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel. The top front corners of the door shall be welded and ground smooth. Cabinets shall be available with either Positive or Roller door catches and optional pulls.

123553 – STAINLESS STEEL CASEWORK (CONTINUED)

B. Products: (Continued)

4. Stainless Steel: Stainless Steel shall be Type 304; 12, 14, 16, 18 and 20 gauge U.S. Standard. Stainless steel shall be supplied with a #4 finish free of burns, weld marks, or other imperfections.
5. Drawer and Door Pulls: Pull Style 4 – 3/8" diameter stainless steel rod and brushed satin finish. Drawer and door pulls shall be mounted on 4" centers, offering a comfortable hand grip, and be securely fastened to doors and drawers.
6. Hinges: Inset 5-Knuckle Hinges: Inset style cabinets shall use 5-Knuckle hinges made of Type 304 stainless steel .089 thick, 2-1/2" high, with brushed satin finish, and shall be the institutional type with a five-knuckle bullet-type barrel. Hinges shall be attached to both door and case with two screws through each leaf. Welding of hinges to door or case will not be accepted. Doors under 36" in height shall be hung on one pair of hinges, and doors over 36" in height shall be hung on three hinges.
7. Drawer Slide: Heavy duty, full extension, soft-close, self-closing, zinc plated, ball-bearing slides, rated for 100 pound loads.
8. Locks: Locks when shown or called for shall be a pin tumbler with heavy duty interchangeable cylinder. Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity of at least 2000 primary key changes, and the capacity to be Master Keyed, Grand-master Keyed, Sub-master Keyed, and Mason Keyed.
9. Catches – For steel casework with 5-knuckle hinges: A two-piece heavy-duty cam action positive catch shall be confined within an integral cabinet top or divider rail, while latching post shall be mounted on the hinge side of door. Polyethylene roller type catches are not acceptable.
10. Elbow Catches: Elbow catches and strike plates shall be used on left hand doors of double door cases where locks are used, and are to be burnished cast aluminum, with satin finish.
11. Shelf Adjustment Clips: Shelf adjustment clips shall be die formed, nickel-plated steel.
12. Base Molding: Base molding shall be provided by others.
13. Sink Supports: Sink supports shall be the hanger type, suspended from end panels of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full-depth reinforcements, welded to the top of end panels. Two 3/4" x 1-1/2" x 12 gauge channels shall be hung on the treaded rods to provide an adjustable sink cradle for supporting sinks.
14. Stainless Steel Cabinet Construction:
 - a. The stainless steel casework shall be of modern design and shall be constructed in accordance with the best practices of the Scientific Laboratory Equipment Industry. First class quality casework shall be insured by the use of proper machinery, tools, dies, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
 - b. All cabinet bodies shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, tops, rails, bottoms and vertical posts in same plane without overlap. Exterior corners shall be spot welded with heavy back up reinforcements.
 - c. Each cabinet shall be complete so that units can be relocated at any subsequent time without requiring field application of finished ends or other such parts.

123553 – STAINLESS STEEL CASEWORK (CONTINUED)

B. Products: (Continued)

14. Stainless Steel Cabinet Construction: (Continued)

- d. Case openings of Inset style cabinets shall be rabbeted on all four sides for both hinged and sliding doors to provide a dust resistant case.
- e. All cabinets shall have a cleanable smooth interior. Bottoms shall be formed down on sides and back to create easily cleanable corners with no burrs or sharp edges.
- f. Cabinets shall be designed using a standardized grid pattern to allow reconfiguration of doors and drawers.
- g. Steel Gauges: Gauges of steel used in construction of cases shall be 18 gauge, except as follows:
 - 1) Leveling bolt reinforcements 12 gauge.
 - 2) Top and intermediate front horizontal rails, apron rails, hinge reinforcements, and reinforcement gussets, 16 gauge.
 - 3) Drawer assemblies, door assemblies, bottom, bottom back rail, toe space rail, and adjustable shelves, 20 gauge.

15. Base Cabinets:

- a. End uprights shall be formed into not less than an L formation at top, bottom, back and a 3/4" wide front C formation. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for the support of drawer channels, intermediate rails, hinge screws, and shelf adjustment holes.
- b. A 7/8" high top horizontal rail shall interlock with the flange at top of end panels for strength, but shall be flush at face of unit. Top rails not flush with face of end uprights are not acceptable.
- c. Intermediate rails shall be provided between doors and drawers, but shall not be provided between drawers unless made necessary by locks in drawers. Intermediate rails shall be recessed behind doors and drawer fronts, and designed so that security panels may be added as required.
- d. Intermediate vertical uprights shall be furnished to enclose cupboards when used in a unit in combination with a half width bank of drawers.
- e. Cabinet bottom shall be formed of one piece of steel, except in corner units, and shall be formed down on sides and back to create a square edge transition welded to cabinet end panels. Front edge shall include a C formation to form a 7/8" high bottom front rail and shall be flush with face of end uprights. Cabinet bottom front rails not flush with face of end uprights are not acceptable.
- f. Toe space rail shall extend up and forward to engage bottom panel to form a smooth surfaced fully enclosed toe space, 3" deep x 4" high.
- g. Back construction shall be one piece with integral channel formed for maximum strength and welded to back of top and bottom flanges of end uprights.
- h. Each bottom corner of base cabinets shall have a 3/8" -16 leveling bolt, 2-1/2" long capable of supporting 500 lbs. Access to the leveling bolts shall be through plug buttons in the cabinet bottom. Access to leveling bolts through toe space or leveling bolts requiring special tools to adjust are not acceptable.
- i. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear and formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments.

123553 – STAINLESS STEEL CASEWORK (CONTINUED)

B. Products: (Continued)

15. Base Cabinets: (Continued)

- j. Steel Door assembly (two-piece) for solid panel swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the full side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material. Door assemblies shall be painted prior to assembly, and shall be punched for attaching pulls. Inner pan formation of door shall be indented for in-field installation of locks when required.
- k. Doors shall be readily removable and hinges easily replaceable. Hinges shall be applied to the cabinet and door with screws. Welding of hinges to either cabinet or door will not be acceptable.
- l. Drawer Assemblies: Drawer bodies shall be made in one-piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.

16. Upper Cabinet Construction:

- a. Upper cabinets shall have a completely finished interior same as exterior and shall be designed so that no mounting hardware is visible when installed.
- b. End uprights shall be formed at front, bottom and back to provide maximum strength and rigidity. Front edge of end upright shall be 3/4" wide. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for hinge screws, and shelf adjustment holes.
- c. Cabinet tops shall be formed with a 7/8" high C formation at the front edge and turned down at the back to engage a wall hanging rail.
- d. Cabinet flush bottoms shall be formed with a 7/8" high C formation at the front edge.
- e. Cabinet false bottoms shall be formed down on all four edges and shall be removable.
- f. Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes. Holes shall be enclosed by end uprights.
- g. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments.

17. Stainless Steel Work Surface

- a. Material:
 - 1) Stainless steel tops with sinks are made from 14 gauge Type 304 stainless steel with #4 finish.
 - 2) Tops with welded field joints are made from 14 gauge Type 304 stainless steel with #4 finish.
 - 3) All other tops are made from 16 gauge Type 304 stainless steel with #4 finish.
- b. Tops: Form tops with 1" lip and 1/2" return flange, and provide 16 gauge stainless steel reinforcing channels applied to underside as required for rigidity and sound dampening. Form edges, flanges and curbs integrally with top, from one sheet of metal.
- c. Sink tops: Provide seamless, die formed 3/16" high integral marine edges at sink tops. Unless otherwise noted, provide plain edges at all other tops. Coat underside of all with sound dampening material.
- d. Sink bowls: All sink bowls are made from 16 gauge Type 304 stainless steel. Electrically weld stainless steel bowls to opening in top. Grind welds flush and polish to a satin finish to produce an integral unit with invisible joint line. Cover underside of sink bowls with sound dampening material.

123553 – STAINLESS STEEL CASEWORK (CONTINUED)

B. Products: (Continued)

17. Stainless Steel Work Surface (Continued)

- e. Joints: Electrically weld all shop joints; grind smooth and polish. Design field joints to be mechanically bolted and supported full length, resulting in a hair line seam with flat; level surfaces each side of joint.
- f. Sound dampening material: Material shall be waterborne and non-flammable in its liquid state. Material to contain clay, which will act as a flame retardant. Material shall contain no volatile organic compounds (VOC). Film thickness of spray-applied product shall be approximately 20 mil.

C. Execution

- 1. Preparation: Prior to beginning installation of casework, check and verify that no irregularities exist that would affect quality of execution of work specified.
- 2. Coordination: Coordinate the work of the Section with the schedule and other requirements of other work being prepared in the area at the same time both with regard to mechanical and electrical connections to and in general construction work.
- 3. Casework Installation:
 - a. Set casework components plumb, square, and straight with no distortion and securely anchor to building structure. Shim as required using concealed shims.
 - b. Bolt continuous cabinets together with joints flush, tight and uniform, and with alignment of adjacent units within 1/16" tolerance.
 - c. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board.
 - d. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8".
- 4. Worksurfaces Installation:
 - a. Where required due to field conditions, scribe to abutting surfaces.
 - b. Only factory prepared field joints, located per approved shop drawings, shall be permitted. Secure the joints in the field, where practical, in the same manner as in the factory.
 - c. Secure worksurfaces to casework and equipment components with materials and procedures recommended by the manufacturer.
- 5. Adjust and Clean:
 - a. Remove all debris, dirt and rubbish accumulated as a result of the installation of the stainless steel casework to an onsite container provided by others, leaving the premises broom clean and orderly.
 - b. Repair or remove and replace defective work, upon completion of installation.
 - c. Adjust doors, drawers and other moving or operating parts to function smoothly.
 - d. Clean shop finished casework, touch up as required.
 - e. Clean worksurfaces and leave them free of all grease and streaks.
 - f. Provide reasonable protective measures to prevent casework and equipment from being exposed to other construction activity.

END OF DIVISION 12