PROJECT MANUAL / SPECIFICATIONS

FOR

Dollar Tree

AT

104 Jacobs Highway
Clinton, South Carolina 29325

July 22, 2016

DEVELOPED BY:

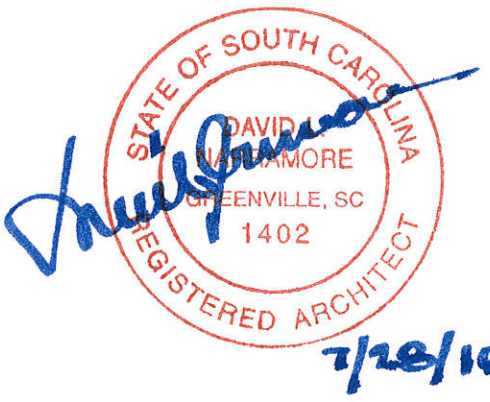
Browning Clinton, LLC.

125 Greenville St. SW
Aiken, SC 29801
(864) 363-2274

SITE WORK BY:

Seamon Whiteside & Associates, Inc.

508 Rhett St.
Suite 101
Greenville, SC 29601
(864) 298-0534



NARRAMORE ASSOCIATES, INC.
Architects & Planners
310 MILLS AVE., SUITE 203, GREENVILLE, SC 29605 • 864-242-9881

PROJECT MANUAL

For

Dollar Tree

at

104 Jacobs Highway
Clinton, South Carolina

DEVELOPED BY: **Browning Clinton, LLC**
125 Greenville St. SW
Aiken, SC 29801

ARCHITECT: **Narramore Associates, Inc.**
Architects and Planners
310 Mills Avenue, Suite 203
Greenville, SC 29605
(864) 242-9881

Contract Documents for the Site Work were prepared by:

Seamon Whiteside & Associates, Inc.
508 Rhett St., Suite 101
Greenville, SC 29601
(864) 271-8869

DOCUMENT 00010

TABLE OF CONTENTS

END OF TABLE OF CONTENTS

DOCUMENT 00700

INSTRUCTIONS TO BIDDERS

1. Project Name and Location: Dollar Tree, 104 Jacobs Highway, Clinton, South Carolina.

2. This document contains instructions to bidders for the project named above. This bidding document is omitted from the Contract Documents, unless specifically referenced in the Owner/Contractor Agreement.

3. To obtain bidding documents contact:

   Browning Clinton, LLC
   125 Greenville St. SW
   Aiken, SC 29801
   864-363-2274

4. Bids will be opened in private. Unless approved by Browning Clinton, Inc., bidders may not be present. Bids may not be withdrawn for 90 calendar days after receipt of bids. Announcements of bid results may be made at the Owners discretion.

5. A Performance and Payment Bond is required. Verify bonding conditions with Browning Clinton, Inc. prior to submission of bids. Bonds must be executed by a surety company licensed to do business at the location of the project. Bond form shall be AIA Document A312.

6. The Owner reserves the right to reject or accept any or all bids or to enter into negotiations with any bidder. The Owner reserves the right to waive any alleged breach of technicality.

7. The Owner reserves the right to modify the Contract Documents and if necessary, re-bid the project to meet the Owner's budgetary requirements.

8. Questions: During the bidding period, submit only written questions to the person named below. All questions will be answered in writing and distributed to Browning Clinton, Inc. for final distribution to bidders of record.

   Daphne Bigley
   Narramore Associates, Inc., Architects & Planners
   310 Mills Ave
   Greenville, SC 29605
   864-242-9881
   fax 864-232-5202
   daphneb@narramore.net

9. Site Visit: A site visit is recommended. Contact Browning Clinton, Inc. to arrange site visit(s). No allowances will be made for the contractor’s failure to avail himself of recommended site visits and investigations.

END OF DOCUMENT

SECTION 00800

SUPPLEMENTARY CONDITIONS TO THE GENERAL CONDITIONS

GENERAL

The Supplementary Conditions modify, change, delete from, or add to the "General Conditions of the Contract for Construction," A.I.A. Document A201, 2007 Edition. Where any Article of the General Conditions is modified, or any paragraph, subparagraph, or clause thereof is modified or deleted by these Supplementary General Conditions, the unaltered provisions of that Article, paragraph, subparagraph, or clause shall remain in effect.

ARTICLE 11 – INSURANCE AND BONDS

A. Paragraph 11.1.1 - At end of paragraph, add:

9. The Contractor shall require his subcontractors to carry similar insurance and he shall be wholly responsible for securing from them such certificates of coverage as the Owner may require.

B. Paragraph 11.1.2 - At end of paragraph. add:
Contractor's liability insurance shall be in sufficient amounts to reasonably assure the Contractor's and/or Sub-contractor's solvency in the event of any injuries, deaths or property damage.

Limits of coverage shall be not less than $2,000,000.00 combined single limits for bodily injury and property damage and shall include coverage for products and complete operations. Automobile coverage shall be not less than $2,000,000.00 combined single limit and shall include owned, non-owned and hired vehicles.

The Contractor shall require his sub-contractors to carry similar insurance and he shall be wholly responsible for securing from them such certificates of coverage as the Owner may require.

C. Delete paragraph 11.2 "Owner's Liability Insurance" and substitute:

11.2 Owner's Protective Liability Insurance

1. Owner shall take out and maintain during the life of this contract Owner's Protective Liability Insurance with both the Owner and the Architect as named insured with exact names of each shown on the policy. Deductible will be paid by Owner in the event of a claim by the Contractor.

2. Policy shall be written in amount not less than $1,000,000.00 combined single limit.

3. Location of the work shall be shown on the policy.

4. Policy and certificates of coverage shall include an agreement that the policy will not be cancelled or changed until thirty days prior written notice has been given the Owner as evidenced by return receipt of Certified Mail.

:

END OF SECTION

SECTION 00810

SPECIAL CONDITIONS

GENERAL:

The following Special Conditions supplement, add to, and/or clarify specific items within the General Conditions, A.I.A. Document A201, 2007 Edition.

ADDENDA AND INTERPRETATIONS

Should there be conflicting statements or questions of intent in these Specifications, or in the Drawings, the General Contractor or Subcontractor shall notify the Architect. Any such interpretations shall be issued in the form of Addendum and become a part of the contract Documents.

GUARANTEE

The Contractor agrees to repair or replace any defect in materials or workmanship for a period of one (1) year after possession without cost to the Owner and, to the Owner's satisfaction. Date of final acceptance shall be the date of substantial completion or beneficial occupancy by the Owner.

SPECIFICATION DIVISIONS

a. For convenience of reference, and to facilitate letting of sub-contracts, the Specifications are separated into divisions. These divisions shall not operate to make the Architect or Engineer an arbiter to establish subcontract to limits between Contractor and Subcontractor, nor shall such separations operate as limitation upon Contractor's full and complete performance hereunder the Contract Documents. It is understood that the Contractor and/or Subcontractors are independent contractors, and that no employer-employee relationship exists between the Owner and Subcontractor.

b. Contractors for each division indicated in the Specifications shall supply all labor and materials specified therein and shown on the drawings.

UTILITY COSTS

a. The Contractor shall arrange for and pay all temporary utility charges for water, temporary electrical service, temporary telephone and temporary heat.

b. Owner to pay tap fees and meter costs.

SAFETY

All open trenches, excavations, and construction shall be adequately protected with barriers, barricades, and/or lanterns and warning lights. Safety measures shall conform to all local and OSHA requirements.

LAYOUT

a. The Contractor shall be responsible for accurate layout lines and grades and the adequate maintenance of same. Line and elevation shall be established accurately and maintained at each floor level. A Certified Surveyor shall be employed by the Contractor to establish these lines and grades. A Certified wall check survey must be provided prior

to the first request for a "Draw."

b. Initially, an accurate check shall be made by the Surveyor of the building location relative to property set-backs. If any infringement on the set-backs by the proposed new construction exists, the Surveyor shall notify the Contractor, who,in turn, shall notify the Architect immediately, to allow modification on the design to meet the conditions.

SHOP DRAWINGS

a. All shop drawings must be furnished to and be approved by the Owner and the Architect before any of the work which requires drawings is commenced. The approval of such drawings shall be general and does not mean that such drawings have been checked, and in no way relieves the Contractor of the responsibility for proper fitting and construction of the work in strict accordance with the Contract requirements nor from the necessity of furnishing the materials and workmanship required by the drawings and Specifications, which may not be indicated on the Shop Drawings when approved. All Shop Drawings must be marked with the name of the building and submitted in quadruplicate or in numbers hereinafter required, sufficiently in advance of the work to permit correction if necessary, without delaying progress. Shop Drawings shall be checked and coordinated by the General Contractor before submission to the Architect and Owner. Shop Drawings failing to meet the foregoing will be returned uncorrected for revisions necessary to comply.

b. At the time of Shop Drawing submission, the General Contractor shall inform the Architect or Engineer, in writing, of any deviations or omissions from the Contract Documents.

c. The General Contractor shall review all Shop Drawings before submission to the Architect or Engineer, and make all corrections as he deems necessary and stamp, date, and sign the Shop Drawings indicating that he has done so.

d. Should the Architect's notation or change on a shop drawing involve work which the Contractor does not consider covered by the original Contract Documents, such notation or change shall not be construed as an order covering additional costs, but the Architect shall be notified immediately that the Contractor protests and said notation or change, in which case, the matter shall be cleared and a written order obtained from the Architect before the work is undertaken.

SAMPLES

The Contractor is to submit samples to the Architect when requested or required; and no work is to be manufactured, installed, or applied until samples are approved.

WORKMANSHIP AND MATERIALS

All work must be executed in strict accordance with the drawings and details as may be furnished by this Specification and the instructions of the Architect. All materials and workmanship shall be of the best quality and grade.

EXPLANATION

The general character of the detail work is shown on scale drawings; however, minor modifications may be made at the discretion of the Architect. Wall sections, unless otherwise noted, are typical and all similar locations are to be given treatments as shown, whether repeated on the drawings or not. This Specification is intended to supplement drawings, and therefore it will not be the province of these Specifications to mention any portion of the construction which

the drawings are competent to explain, and such omission is not to relieve the Contractor from carrying out the portions indicated on the drawings, and should items be required by these Specifications which are not indicated on the drawings, or mentioned therein but are necessary to complete the entire work called for, they must be supplied in place. The decision of the Architect as to the interpretation of the Drawings and Specifications shall be final.

MEASUREMENTS

The dimensions of the work are given on the drawings, but the Contractor must verify same and take all measurements for getting out his work at the building. Figured dimensions are to take precedence over scaled dimensions. All dimensions shall be made to conform to work in place. Field measurements of existing conditions as shown are for general information only. No guarantee of their accuracy is guaranteed or to be implied. Contractor shall check and verify all such dimensions.

COORDINATION OF TRADES

a. The General Contractor shall be responsible for the coordination of all trades and subcontracts, regardless of the Specification headings and for making necessary provision for accommodation of all equipment and fittings and patching after installation.

b. The General Contractor shall also be responsible for the coordination of installation of "Not-In-Contract" materials and equipment which, by their nature, must be "dove-tailed" into the construction process.

IDENTIFICATION OF PRODUCTS

a. Materials, equipment, fixtures, apparatus, appliances, accessories, and other manufactured articles shall be delivered in unbroken crates, boxes, cans, and similar packages and shall bear the manufacturer's name, brand, quality, and designation or similar markings for convenient field checking. Any such articles that are not easily identifiable or show indication of possible adulteration will be rejected at the discretion of the Architect whose decision is final.

b. The Contractor shall assume full responsibility for materials, equipment, fixtures, apparatus, appliances, accessories, and other manufactured articles from the time or ordering through delivery and until completion and final acceptance of the finished work. Damage to all such items occurring in this time interval shall be made good to the full satisfaction of the Architect at the Contractor's expense.

DAMAGE TO PROPERTY

The Contractor shall be held responsible for, and be required to make good at his own expense, all damages to the Owner's property or adjacent properties caused in the execution of his Contract.

CERTIFICATE OF OCCUPANCY

The Contractor shall obtain evidence that a Certificate of Occupancy has been issued for his work and submit same with the final requisition or before.

DISCREPANCIES

It is the responsibility of the General Contractor to bring any discrepancies found in the Drawings and Specifications immediately to the attention of the Architect. Prior to bid, all discrepancies found will be clarified by Addenda. If not clarified by Addenda, wherever a discrepancy exists, the more restrictive shall govern.

END OF SECTION

SECTION 01100

PROJECT SUMMARY

PART 1 - GENERAL

1.01 SUMMARY

A. Project Identification: Dollar Tree, 104 Jacobs Highway, Clinton, South Carolina 29325.

B. Project Summary: A building totaling approximately 10,098 square feet.

C. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company charges required to complete the work. Submit copies of all permits to Architect.

D. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of all inspection reports, notices and similar communications to Architect.

E. Coordination:

1. Coordinate the work of all trades.
2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.
3. Verify location of underground utilities and existing conditions.

F. Installation Requirements, General:

1. Inspect substrates and report unsatisfactory conditions in writing.
2. Do not proceed until unsatisfactory conditions have been corrected.
3. Take field measurements prior to fabrication. Form to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
4. Install materials in exact accordance with manufacturer’s instructions and approved submittals.
5. Install materials in proper relation with adjacent construction and with proper appearance.
6. Restore units damaged during installation. Replace units that cannot be restored without additional expense to the Owner.
7. Refer to additional installation requirements and tolerances specified under individual specification sections.

G. Definitions:

1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
3. Match Existing: Match existing as acceptable to the Owner
4. Overlapping/Conflicting Requirements: The most stringent requirement written directly into the contract documents is intended and will be enforced.
5. Minimum Requirements: Minimum requirements are a level of quality or quantity that is normally recognized within the trade or industry.
6. Approved By Architect/Engineer: Approval relates only to design intent and does not relieve the contractor from fulfilling all contract document requirements.

H. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.

I. Writing style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

M. Work performed by Others:
   1. General site construction shall be performed under a separated contract.
   2. Specific tenant improvements to individual retail spaces.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide administrative requirements for the proper coordination and completion of work including the following:

1. Supervisory personnel.
2. Preconstruction and preinstallation conferences as required.
3. Project meetings at a frequency appropriate to the project level of completion.
4. Project inspections and testing services.

B. Prepare submittal schedule; coordinate with progress schedule.

C. Perform surveys:

1. Initial laying out the work and verifying locations during construction.
   a. Calculate dimensions for project layout, do not scale drawings
2. Record any deviations between final survey and original drawings.

D. Post a list of emergency telephone numbers and address for individuals to be contacted in case of emergency.

E. Maintain record drawings and specifications. Annotations to be completed by the Contractor as work progresses.

F. Provide testing services as required by the Owner. Schedule and provide required inspections so the project schedule will not be delayed.

G. At all times, keep the project site clean and protect the work in place.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide types of submittals listed in individual trade sections with number of required copies as listed below.

1. All Shop drawings shall be previously reviewed and annotated by the Contractor – 2 blackline or blueline prints. One set shall be returned to Contractor.
2. Product data - 2 copies.
3. Samples – 2 sets plus, any extra samples as required to clearly show anticipated ranges of color, finish, and textures.
4. Inspection and test reports – 1 copy.
5. Warranties - 1 copy.
6. Survey data / Field Records – 1 copy.
7. Closeout submittals - 1 copy.
8. Project Maintenance Manuals – 1 bound copy.

B. Comply with project format for submittals.

C. Comply with submittal procedures established by Architect including Architect's submittal and shop drawing stamp. Provide required resubmittals if original submittals are not approved. Provide distribution of approved copies including modifications after submittals have been approved.

D. Samples and shop drawings shall be prepared specifically for this project. Shop drawings shall include dimensions and details, including adjacent construction and related work. Note special coordination required. Note any deviations from requirements of the Contract Documents.

1. Submit shop drawings on full size copies or original documents. Do not submit reduced size or faxed copies.

E. Provide warranties as specified by individual trade sections. Warranties shall be signed by the contractor, supplier or installer responsible for maintenance of the warranty.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 QUALITY CONTROL

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.

1.03 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

1.04 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.

1. Observe site conditions.
2. Conditions of surfaces and installation.
3. Quality of workmanship.
4. Start-up of equipment.
5. Test, adjust and balance of equipment.

1.05 CONTRACTOR'S QUALITY CONTROL

A. Perform quality control during installation.

1.06 MOCK-UP REQUIREMENTS

A. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work.

B. Where mock-up has been accepted by Owner and is no longer needed, remove mock-up and clear area when directed to do so.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide, install and maintain temporary services and utilities, including utility costs:

1. Water (potable and non-potable), including required distribution system.
2. Lighting and power distribution system. (Provide one 4-gang outlet with a 20 amp. circuit at least 200’ on center.)
3. Metering.
4. Telephone.
5. Toilet facilities. (No more than 300’ travel between units and 1 story vertically.)
6. Materials storage areas and protection.

B. Provide, install and maintain construction facilities, including utility costs:

1. Construction equipment.
2. Dewatering and pumping.
3. Enclosures.
4. Heating.
5. Lighting.
6. Site access.
7. Public roads and highways.
9. Erosion control and protection devices.

C. Provide, install and maintain security and protection requirements:

1. Fire extinguishers.
2. Site enclosure fence, barricades, warning signs, and lights.
3. Building enclosure and lock-up.
4. Environmental protection appropriate for project activity.
5. Pest control during and at the end of construction.
6. Snow and ice removal if applicable.

D. Provide and maintain personnel support facilities:

1. Contractor's field office. Maintain up to date copies of all project drawings, documents and correspondence.
2. Sanitary facilities.
3. Drinking water.
4. Cleaning, trash removal and legal disposal of materials.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide products from one manufacturer for each type or kind as applicable. Provide secondary or substrate materials as acceptable to manufacturers of primary surface materials.

B. Provide products selected or equal approved by Architect. Products submitted for substitution shall be submitted with complete supporting documentation..

C. Request for substitutions must be in writing. Conditions for substitution include:

1. An 'or equal' phrase in the specifications.
2. Specified material cannot be coordinated with other work or is no longer available.
3. Specified material is not acceptable to local authorities having jurisdiction.
4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.

D. Unless otherwise approved by the Owner, all substitutions shall be submitted prior to award of contract.

E. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless item is clearly presented as a substitution at the time of submittal.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

A. The following are minimum prerequisites to substantial completion. Provide the following:

1. Supporting documentation.
2. Warranties.
3. Certifications.
4. Occupancy permit.
5. Start-up and testing of all building systems.
6. Change over of locks.

B. Provide the following prerequisites to final acceptance:

1. Final payment request with supporting affidavits.
2. Completed punch list.

C. Provide a marked-up set of drawings including changes which occurred during construction.

D. Provide the following during project closeout:

1. Submission of record documents.
2. Submission of maintenance manuals.
3. Training and turnover to Owner's personnel.
4. Final cleaning and touch-up.
5. Removal of temporary facilities.

PART 2 - PRODUCTS - Not Applicable To This Section

PART 3 - EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01730

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide cutting and patching work to properly complete the work of the project, complying with project requirements for:

1. Structural work.
2. Mechanical/electrical systems.
3. Visual requirements, including detailing and tolerances.
4. Operational and safety limitations.
5. Fire resistance ratings.
6. Inspection, preparation, and performance.
7. Cleaning.

B. Do not cut and patch in a manner that would result in a failure of the work or system to perform as intended, decrease energy performance, increase maintenance, decrease operational life, or decrease life safety performance.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Match existing materials for cutting and patching work with new materials conforming to project requirements.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Inspect conditions prior to work to identify scope and type of work required. Protect adjacent work. Notify Owner of work requiring interruption to building services or Owner's operations.

B. Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work for approval.

C. Cutting: Use cutting or boring tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Inspect for concealed utilities and structure before cutting.

D. Patching: Make patches, seams, and joints durable and inconspicuous. Comply with tolerances for new work.

E. Clean work area and areas affected by cutting and patching operations.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.01 SUMMARY

A. Perform excavation, filling, compacting and grading operations both inside and outside building foundations as required for below-grade improvements and to achieve grades and elevations indicated.

B. Provide trenching and backfill for all underground mechanical and electrical utility work within 5’-0” of the building foundation lines. Refer to civil engineering documents for utility trench backfilling requirements.

C. Provide subbase materials, drainage fill, common fill, and structural fill materials for slabs, pavements, and improvements.

D. Provide suitable fill from off-site if on-site quantities are insufficient or unacceptable.

E. Legally dispose of excess or unsuitable fill materials off-site.

F. Provide rock excavation without blasting unless controlled blasting is specifically approved by local authorities.

G. Refer to Civil Engineering documents for continuation and coordination of all utility and site improvement work extending from 5’-0” outside the building foundation lines to project contract limits as determined by the Owner.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Test Reports: Submit copies of any required soil test reports.

1.03 QUALITY ASSURANCE

A. Compaction:

1. Under structures, building slabs, steps, pavements, and walkways, 95 percent maximum density, ASTM D 1557.
2. Under lawns or unpaved areas, 90 percent maximum density, ASTM D 1557.

B. Grading Tolerances Outside Building Lines:

1. Lawns, unpaved areas, and walks, plus or minus 1 inch.
2. Pavements, plus or minus 1/2 inch.

C. Grading Tolerance for Fill Under Building Slabs: Plus or minus 1/2 inch measured with 10 foot straightedge.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Subbase material: Gravel or crushed stone graded for intended use as subbase for paving materials specified.

B. Drainage fill: Washed gravel or crushed stone, 1/4" to 3/4" size; ASTM C 33, Size 67.

C. Common fill: Mineral soil substantially free from organic and unsuitable materials, and free from rock or gravel larger than 2" in diameter; 80 percent passing No. 40 sieve and not more than 50 percent passing No. 200 sieve.

D. Structural fill: Gravel or sandy gravel free of organic and unsuitable materials and within the following gradation limits: 4" sieve, 100 percent finer by weight; 1" sieve, 60 to 100 percent; No. 4 sieve, 25 to 85 percent; No. 20 sieve, 10 to 60 percent; No. 50 sieve, 4 to 35 percent; No. 200 sieve, 0 to 5 percent.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated as follows:

1. At Structure: Concrete or compacted structural fill.
2. Elsewhere: Backfill and compact as directed.

B. Maintain stability of excavations; coordinate shoring and bracing as required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage and do not stockpile materials within drip line of trees to remain.

C. Compact materials at the optimum moisture content as determined by ASTM D 1557 by aeration or wetting to the following percentages of maximum dry density:

1. Structure, Pavement, Walkways: Subgrade and each fill layer to 95% of maximum dry density to suitable depth.
2. Unpaved Areas: Top 6" of subgrade and each fill layer to 90% maximum dry density.

D. Place acceptable materials in layers not more than 8" loose depth for materials compacted by heavy equipment and not more than 4" loose depth for materials compacted by hand equipment to subgrades indicated as follows:

1. Structural Fill: Use under foundations, slabs on grade in layers as indicated.
2. Drainage Fill: Use under designated building slabs, at foundation drainage and elsewhere as indicated.
3. Common Fill: Use under unpaved areas.
4. Subbase Material: Use under pavement, walks, steps, piping and conduit.

E. Grade to within 1/2" above or below required subgrade and within a tolerance of 1/2" in 10'.

F. Protect newly graded areas from traffic and erosion. Recompact and regrade settled, disturbed and damaged areas as necessary to restore quality, appearance, and condition of work.

G. Control erosion to prevent runoff into sewers or damage to sloped or surfaced areas.

H. Control dust to prevent hazards to adjacent properties and vehicles. Immediately repair or remedy damage caused by dust including air filters in equipment and vehicles. Clean soiled surfaces.

I. Dispose of waste and unsuitable materials off-site in a legal manner.

END OF SECTION

SECTION 02362

TERMITE CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. Provide soil treatment for termite control.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Warranty Period: 5 years.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced and licensed installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Soil Treatment Materials: Soil treatment materials shall bear Federal registration number of U.S. Environmental Protection Agency and acceptable to authorities having jurisdiction. If acceptable, products may include chloropyrifos, permathrin, cypermethrine, fenvalerate, isofenphose.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Treat soil in strict compliance with National Pest Control Association standards and with manufacturer's printed instructions and recommendations.

B. Treat areas under floor slabs prior to placement of concrete. Treat areas outside foundation walls after excavation, filling and grading are complete. Do not apply treatment to frozen or excessively wet soils.

C. Post signs and other warnings indicating that soil poisoning has been applied. Protect persons and property from injury or damage from soil treatment work.

END OF SECTION

SECTION 02510

WATER DISTRIBUTION

PART 1 - GENERAL

1.01 SUMMARY

A. Provide an operating underground, exterior water service piping system. Include piping and control valves. Include water service system and piping, accessories, and appurtenances for potable water and fire service within 5’-0” of the building foundation line.

B. Coordinate potable water system installation described in this section with the utility work described in the civil engineering documents.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Testing: Hydrostatic tests at minimum 2 times working pressure for 2 hours.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Copper Water Tube 2 Inches and Smaller: ASTM B 88, Type K seamless, annealed temper; ANSI B16.22 wrought-copper solder-joint copper fittings.

B. PVC Pipe 3 Inches and Smaller: ASTM D 1785, Schedule 40; Schedule 40 socket-type PVC fittings or elastomeric gasketed joint.

C. Valves:

1. Nonrising stem gate valves 2 inches and smaller, MSS SP-80.
2. Service clamps and corporation stops for new connections 2 inches and smaller.

D. Anchorages:

1. Clamps, Straps, and Washers: ASTM A 506, steel.
2. Rods: ASTM A 575, steel.
3. Rod Couplings: ASTM A 197, malleable iron.
4. Bolts: ASTM A 307, steel.
5. Cast-Iron Washers: ASTM A 126, gray iron.

E. Water Meter: Interior mounted water meter approved by local utility. Provide remote exterior digital readout device approved by the local utility.

F. Identification: Metallic-lined plastic underground warning tapes.

G. Fire Service Main Accessories:

1. Alarm Devices: UL 753 and FM approved including water flow indicators, supervisory switches, and pressure switches.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

B. Clean and disinfect system. Test for proper operation. Backfill and protect work from damage.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Provide cast-in-place concrete for general building construction, including, without limitation:

1. Footings and foundation walls.
2. Slabs on grade.

B. Requirements (materials, mixes, finishes) apply to concrete work specified in other sections, such as sidewalk paving and fill for metal pan stair treads.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1. Shop drawings shall be prepared in accordance with ACI Detailing Manual.
2. Prior to fabrication, project structural engineer shall review reinforcing steel drawings.

C. Mix Design: Submit for approval mix design(s) proposed for use.

D. Testing Reports: On the day of issue, submit two (2) copies of all specified tests to the Architect.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Testing: Employ an independent testing agency to design concrete mixes and to perform material evaluation tests. Provide 7 and 28 day cylinder tests. Comply with ASTM C 143, C 173, C 31 and C 39.

C. Standards:

1. ACI 301, Specifications for structural Concrete for Buildings.
2. ACI 318, Building Code Requirements for Reinforced Concrete, and CRSI Manual of Standard Practice.

D. Mock-Ups: Provide mock-up as required by the Owner to demonstrate quality of workmanship.

E. Floor Flatness and Levelness Tolerances:

1. Subfloors Under Materials Such as Concrete Toppings, Ceramic Tile, and Sand Bed Terrazzo: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 15, floor levelness (Fl) of 13.
2. Subfloors Under Materials Such As Vinyl Tile, Epoxy Toppings, Paint, and Carpet: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 20, floor levelness (Fl) of 17.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Concrete Design Mixes, ASTM C 94, 28 Day Compressive Strength:

1. Columns, Beams, Walls, Foundations, and Footings:
   a. Compressive Strength: 3000 psi.
2. Slabs on Grade and Paving Base:
   a. Compressive Strength: 3000 psi.
3. Exterior Site Concrete and Pads Exposed to Weather:
   a. Compressive Strength: 3500 psi.

B. Formwork: Plywood or metal panel formwork sufficient for structural and visual requirements.

1. Special forms for textured finish concrete as shown on the drawings.
2. Metal, plastic or coated paper tubes for cylindrical columns and supports.

C. Reinforcing Materials: (see drawings for specific reinforcing applications)

1. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
2. Reinforcing Bars: ASTM A 767, Class II, galvanized.
3. Reinforcing Bars: ASTM A 775, epoxy-coated.
4. Steel Wire: ASTM A 82.
5. Steel Wire Fabric: ASTM A 185, welded.
6. Steel Wire Fabric: ASTM A 497, welded, deformed.
7. Fiber Reinforcement: Engineered polypropylene fibers for secondary reinforcement of slabs. (verify requirements with Owner)

D. Concrete Materials: ASTM C 150, Type I, Portland cement; potable water.

1. Normal weight aggregates, ASTM C 33.
2. Light weight aggregates, ASTM C 330.
3. Fly Ash: ASTM C 618, Type F.
4. Fiber Reinforcement: Polypropylene fibers for secondary reinforcement, ASTM C 1116, Type III.

E. Concrete Admixtures: Containing less than 0.1 percent chloride ions.

1. Air-Entraining Admixture: ASTM C 260, for exterior exposed concrete and foundations exposed to freeze-thaw. (4% to 8% range)
2. Water-Reducing Admixture: ASTM C 494, Type A, for placement and workability.
3. High-Range Water-Reducing Admixture, Super Plasticizer: ASTM C 494, Type F or G for placement and workability.
4. Water-Reducing, Accelerating Admixture: ASTM C 494, Type E for placement and workability.
5. Water-Reducing, Retarding Admixture: ASTM C 494, Type D for placement and workability.

F. Auxiliary Materials:

1. Reglets: Galvanized sheet steel reglets, minimum 26 gauge (.018 inch).
2. Waterstops: PVC waterstops.
3. Vapor Retarder: ASTM E 154 polyethylene sheet, 8 mils.
4. Vapor Barrier: Clear, 6 mil thick polyethylene sheet.
5. Liquid Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class A.
6. Bonding Compound: Polyvinyl acetate or acrylic base.

G. Concrete Finishes For Formed Surfaces:

1. Surfaces Not Exposed To View: As-cast form finish.
2. Surfaces Exposed To View: Smooth form finish.

H. Concrete Finishes for Monolithic Slabs:

1. Scratch finish for surfaces to receive concrete floor topping or mortar setting bed.
2. Trowel finish for surfaces to be exposed to view or covered with resilient flooring, carpet, tile, or other thin finish system.
3. Trowel and fine broom finish for surfaces to receive thin-set ceramic or quarry tile.
4. Nonslip broom finish for exterior concrete platforms, steps, ramps, and sloped walls.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with ASTM C 94. Do not change mix design without approval. Calcium chloride admixtures are not permitted.

B. Chamfer exposed edges/corners to provide straight lines.

C. Tolerance: Plus 1/8" in 10' for grade, alignment, and straightness.

D. Construction Joints: Use keyways, continue reinforcement through joint.

E. Expansion Joints: For exterior work locate at locations as shown on the drawings. Provide smooth dowels across joint which permit 1" horizontal movement and no vertical shear movement.

F. Isolation Joints: Provide between slabs and vertical elements such as columns and structural walls.

G. Control Joints: Provide sawn or tooled joints or removeable insert strips; depth equal to 1/4 slab thickness. Spacing as required and approved.

H. Wall Finishes: As-cast and patched for concealed work; rubbed smooth, filled and cement paste coated for exposed work.

I. Slab Finishes: Obtain sample approval before beginning work.

1. Scratch: For surfaces to receive mortar setting beds or cementitious flooring materials.
2. Trowel: Hard, smooth, uniform surface for areas to receive resilient flooring, carpet, or other thin finish material.
3. Broom: After trowel finishing, roughen surface by coarse brooming perpendicular to traffic direction for exposed exterior walks, steps and ramps.

J. Position, support and secure all reinforcement against displacement

K. Comply with ACI 318 for hot and cold weather concrete placement.

L. Cure and protect work. Report defective work in writing.

END OF SECTION

SECTION 04800

MASONRY ASSEMBLIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide the following unit masonry construction where indicated on the drawings:

1. Concrete masonry bearing walls.
2. Concrete masonry non-bearing walls.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit necessary shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.03 QUALITY ASSURANCE

A. Fire Performance for Fire-Rated Concrete Block Assemblies: ASTM E 119.

B. Testing: Independent Testing Laboratory.

C. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.

D. Comply with governing codes and regulations.

E. Provide products of acceptable manufacturers' that have been in satisfactory use in similar service for at least five (5) years.

F. Use experienced installers with at least three (3) years of documented experience in projects of similar scope and complexity.

G. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Concrete Masonry Units:

1. Concrete Masonry Units:
   a. Hollow, load-bearing units: ASTM C 90, Type I, Grade N-1
   b. Hollow masonry units: ASTM C 129, Type I
   c. Solid masonry units: ASTM C 145, Type I, Grade N-1
   d. Concrete brick: ASTM C 55
   e. 75% Solid units for rated wall construction where shown on drawings.
2. Size: See drawings for required sizes and applications.
3. Special Finish: See drawings for special finish or color applications.
4. Special Shapes: See drawings for required special shapes.
5. Bond Pattern: Running Bond, unless noted otherwise on drawings.
6. Integral Water Repellent: Liquid polymeric admixture.

B. Mortar and Grout for Concrete Masonry Unit Assemblies:

1. Mortar Mix: ASTM C 270, Type S, for reinforced masonry, masonry below grade and masonry in contact with earth and ASTM C 270, Type N, for above-grade loadbearing and nonloadbearing walls and parapet walls and for interior loadbearing and nonloadbearing partitions.
2. Mortar Materials: Portland cement, ASTM C 150, Type I or II.
3. Mortar Materials: Masonry cement, ASTM C 91.
4. Mortar Materials: Ready mixed, ASTM C 207, Type S.
5. Mortar Aggregate: Natural color, ASTM C 144.
6. Mortar Aggregate: White color, ASTM C 144.
7. Mortar Aggregate: Special color, ASTM C 144.
8. Grout Aggregate: ASTM C 404.
9. Hydrated Lime: ASTM C 207, Type S.
10. Color: Unless noted otherwise on drawings, color shall be natural mortar.
11. Integral Water Repellent: Liquid polymeric admixture.

C. Reinforcing Steel:

1. Reinforcing Bars: ASTM A 615, Grade 60.
2. Reinforcing Bars: ASTM A 615, and ASTM A 775, Grade 60 epoxy-coated.
3. Deformed Reinforcing Wire: ASTM A 496.
4. Welded Wire Fabric: ASTM A 185, plain.
5. Welded Wire Fabric: ASTM A 497, deformed.

D. Reinforcing: Welded wire with deformed side rods.

1. Steel Wire: 9 gauge (.1875 inch) galvanized steel.
2. Type: Ladder or truss type.

E. Ties and Anchors:

1. Bent Wire Ties: Galvanized steel.
2. Rigid Anchors: Galvanized steel straps.
3. Masonry to Concrete Frame: Two-piece galvanized steel anchor.
4. Masonry to Steel Frame: Anchor with crimped wire anchor section for welding to steel.
5. Adjustable Masonry Veneer Anchors: Screw-attached two-piece galvanized triangular or rectangular wire tie and metal anchor.
6. Screws for Steel Studs: ASTM C 954 organic polymer coated steel drill screws.
7. Unit Type Masonry Inserts in Concrete: Malleable iron.
8. Dovetail Slots: Galvanized sheet metal.
9. Anchor Bolts: ASTM A 307, Grade A, galvanized.
10. Post-installed Anchors: Chemical anchors.

F. Masonry Accessories:

1. Nonmetallic expansion joint strips.
2. Preformed control joint gaskets.
3. Bond breaker strips.
4. Open head-joint weeps.
5. Cavity vents.

J. Flashing:

1. Copper Masonry Flashing: ASTM B 370, cold-rolled, 10 oz. sheet deformed for 2 direction mechanical bond when used as thru-the-wall.
2. PVC with plasticizers and modifiers, formed into a 20-mil. flexible sheet.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation of Masonry Assemblies:

1. Comply with PCA Recommended Practices for Laying Concrete Block, Brick Institute of America BIA Tech Notes, and NCMA TEK Bulletins.
2. Comply with cold weather and warm weather protection procedures as recommended in BIA Tech Notes.
3. Provide fire-rated assemblies complying with ASTM E 119.
4. Sawcut units when required. Maintain uniform joint width. Provide full bed, head and collar joints except at weepholes.
5. Install lintels and accessories in masonry construction.
6. Coordinate installation of flashings.
7. Comply with applicable codes and regulations for spacing of ties and horizontal reinforcing.
8. Provide expansion and control joints in accordance with BIA and NCMA recommendations.
9. Remove and replace damaged units.
10. Clean brick using bucket and brush method, BIA Tech Note 20.
11. Clean concrete masonry by dry brushing, NCMA TEK No. 28.
12. Remove and replace damaged units. Enlarge holes in mortar and re-point.
13. Prepare joints to receive sealants where applicable.
14. At all times, protect work from damage.
15. Provide a one (1) year warranty on all masonry work.

END OF SECTION

SECTION 05400

COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide cold-formed metal framing units:

1. Exterior load-bearing steel-stud walls.
2. Exterior non-load-bearing steel-stud walls.
3. Bracing

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three (3) years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards:

1. AISI, Specification for Design of Cold-Formed Steel Structural Members.
2. UL, Specifications for Fire Rated Assemblies (see drawings for location of rate assemblies)

C. Fabrication Tolerances: 1/8" in 10'.

D. Erection Tolerances: 1/16".

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cold-Formed Metal Framing Materials: (see drawings)

1. Wall Framing: C-shaped load-bearing steel studs.
2. Joist Framing: C-shaped load-bearing steel joists.
3. Units 16 gauge (.0598 inch) and heavier: ASTM A 653, yield point 50,000.
4. Units 18 gauge (.0358 inch): ASTM A 653, yield point 37,000 psi.
5. Units 20 gauge (.0329 inch): ASTM A 653, yield point 33,000 psi.
6. Finish: Galvanized, ASTM A 653, G60.

B. Framing Accessories:

1. Supplementary framing.
2. Bracing, bridging, and solid blocking.
3. Web stiffeners.
4. Deflection track and vertical side clips.
5. Stud kickers and girts.
6. Reinforcement plates.
7. Anchors, clips, and fasteners.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

B. Comply with requirements of ASTM C 1007 for installation of steel studs and accessories and Metal Lath/Steel Framing Association Lightweight Steel Framing Systems Manual.

C. Where possible, prefabricate components into panels prior to erection. Prevent panel distortion during lifting and location.

D. Weld or screw components as indicted on the drawings.

C. Restore damaged components. Protect work from damage.

END OF SECTION

SECTION 05500

METAL FABRICATIONS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide the following metal fabrications as shown on the drawings:

1. Loose bearing and leveling plates.
2. Loose steel lintels.
3. Miscellaneous steel trim.
4. Pipe bollards.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit two representative samples of each requested material indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Ferrous Materials:

1. Steel Plates, Shapes and Bars: ASTM A 36.
2. Rolled Steel Floor Plates: ASTM A 786.
3. Steel Tubing: ASTM A 500 or A 501.
4. Uncoated Structural Steel Sheet: ASTM A 611 or A 570.
5. Uncoated Steel Sheet: ASTM A 366 or A 569.
6. Galvanized Steel Sheet: ASTM A 653, G90.
7. Steel Pipe, Black Finish: ASTM A 53.
8. Steel Pipe, Galvanized Finish: ASTM A 53.
9. Gray Iron Castings: ASTM A 48, Class 30.
10. Malleable Iron Castings: ASTM A 47, Grade 32510.
11. Reinforcing Bars: ASTM A 615, Grade 60.
12. Concrete Inserts: Threaded or wedge type.
13. Welding Rods and Bare Electrodes: AWS specifications.
14. Zinc-Coating: Hot-dip galvanized coating for materials in exterior assemblies or exterior walls.

B. Stainless Steel Materials:

1. Bar Stock: ASTM A 276, Type 302 or 304.
2. Plate: ASTM A 666, Type 302 or 304.

C. Aluminum Materials:

1. Extruded Bars and Shapes: ASTM B 221 aluminum alloy.
2. Rolled Tread Plate: ASTM B 632 aluminum alloy.
3. Rivets: ASTM B 316, aluminum alloy.
4. Fasteners: ASTM A 153.
5. Finish: Mill finish.
6. Finish: Clear anodized.

D. Fasteners:

1. Bolts and Nuts: Hexagon head type, ASTM A 307, Grade A.
2. Lag Bolts: Square head, FS FF-B-561.
3. Machine Screws: Cadmium plated steel, FS FF-S-92.
4. Wood Screws: carbon steel, FS FF-S-111.
5. Plain Washers: Round carbon steel, FS FF-W-92.
6. Drilled-In Expansion Anchors: FS FF-S-325.
7. Toggle Bolts: Tumble-wing type, FS FF-B-588.
8. Lock Washers: Spring type carbon steel, FS FF-W-84.
9. Zinc-Coating: Fasteners in exterior assemblies or exterior walls.

E. Auxiliary Materials:

1. Nonshrink Metallic Grout: CE CRD-C621.
2. Exterior/Interior Anchoring Cement: Erosion-resistant hydraulic expansion cement.
3. Shop Primer: Alkyd primer, FS TT-P-645, compatible with topcoats.
4. Galvanizing Repair Paint: SSPC - Paint 20.
5. Bituminous Paint: Asphalt mastic, SSPC - Paint 12.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Take field measurements prior to preparation of shop drawings and fabrication. Do not delay job; allow for cutting and fitting if field measurement not practical.

B. Form work true to line with sharp angles and edges. Weld continuously, grind flush and make smooth on exposed surfaces.

C. Install work plumb and level with hairline joints and ground flush welds.

D. Lintels: Provide sizes where indicated with 8" minimum bearing at each end.

E. Touch-up damaged coatings with shop primer and galvanizing repair paint.

F. Paint items scheduled in accordance with painting section.

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

A. Provide rough carpentry as indicated for non-combustible construction, including but not limited to:

1. Rough framing with dimension lumber.
2. Wood grounds, nailers, and blocking.
3. Backing panels.
4. Sheathing.
5. Air infiltration barrier.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three (3) years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Lumber Standards and Grade Stamps: U.S. Product Standard PS 20, American Softwood Lumber Standard and inspection agency grade stamps.

C. Construction Panel Standards: PS 1, U.S. Product Standard for Construction and Industrial Plywood; APA PRP-108.

D. Wood Framing Standards: NFPA House Framing Manual.

E. Preservative Treatment: AWPA C2 for lumber and AWPA C9 for plywood; waterborne pressure treatment. Provide for wood in contact with soil, concrete, masonry, roofing, flashing, dampproofing and waterproofing.

F. Fire-Retardant Treatment: AWPA C20 for lumber and AWPA C27 for plywood; noncorrosive type. Provide UL label or other acceptable testing agency label on each treated piece.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Dimension Lumber:

1. Light Framing: Stud, No. 3 or Standard grade.
2. Structural Framing: No. 2 grade.
3. Species: Any species of grade indicated.
4. Exposed Framing: Appearance grade.

B. Boards:

1. Exposed Boards: 15 percent moisture content.
2. Exposed Boards: 19 percent moisture content.
3. Concealed Boards: 19 percent moisture content.

C. Miscellaneous Lumber:

1. Moisture Content: 19 percent.
2. Grade: Standard grade light framing.

D. Construction Panels:

1. Wall Sheathing: APA Sheathing, Exterior.
2. Roof Sheathing: APA Sheathing, Exterior.

E. Gypsum Sheathing:

1. Material: Gypsum sheathing board with water-resistant core and faces.
2. Type: Type X fire-resistant ASTM C 79.

F. Auxiliary Materials:

1. Air Infiltration Barrier: Asphalt-saturated organic felt, ASTM D 226, Type I, No. 15 felt, unperforated.
2. Framing Anchors and Fasteners: Non-corrosive, suitable for load and exposure. Drywall screws are not acceptable.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Wood framing: Comply with recommendations of NFPA Manual for House Framing, NFPA Recommended Nailing Schedule, and NFPA National Design Specifications for Wood Construction.

B. Plywood: Comply with recommendations of APA Design and Construction Guide - Residential and Commercial.

C. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.

D. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.

E. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.

F. Restore damaged components. Protect work from damage.

END OF SECTION

SECTION 07210

BUILDING INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Provide building insulation and vapor retarders.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three (3) years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Blanket/Batt Insulation: (Flame spread not more than 25; smoke developed less than 450)

1. Application: Thermal insulation in studs in interior walls.
2. Application: Thermal insulation over heated spaces.
3. Type: (Walls) Glass fiber or mineral slag fiber, ASTM C 665, Type III (kraft vapor-retarder membrane).
4. Type: (Ceiling) Unfaced batt insulation,Type I- (where required by tenant only)
5. Thickness: See drawings

B. Foamed in Place Insulation:

1. Application: Thermal insulation in masonry cells.
2. Type: Core-Fill 500, ASTM C-177 (Tailored Chemical Products, Hickory, NC (800) 627-1687.) (Or approved equal)

C. Vapor Retarder (Not Integral with Insulation):

1. Application: Exterior walls.
2. Type: Polyethylene, ASTM D 4397, 6 mils, 0.13 perm vapor transmission rating.

D. Accessories:

1. Adhesives and mechanical anchors and clips.
2. Protection board.
3. Crack sealers and tapes.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Provide full thickness in one layer over entire area, tightly fitting around penetrations.

B. Pour loose insulation into cavities indicated; provide uniform coverage at correct density and thickness.

C. Install vapor retarder over entire area of inside face of exterior walls and elsewhere as indicated. Seal all seams and around perimeter and penetrations with duct tape to form a continuous vapor retarder free of holes.

D. Protect installed insulation and vapor retarder.

END OF SECTION

SECTION 07240

EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide exterior insulation and finish systems.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit one representative sample of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

D. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Warranty Period: 5 years.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five (5) years. Use experienced installers with at least five (5) years documented experience in project of similar scope and complexity

B. Deliver, handle, and store materials in accordance with manufacturer's instructions.

C. Mock-Ups: Provide mock-ups as required to demonstrate color(s), finish(es), and quality of workmanship.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Acrocrete, Inc., Dryvit Systems, Inc., Parex Incorporated., Pleko Products, Inc., Senergy Div. of Harris Specialty Chemicals., Sto Corp., Finestone, or approved equal.

B. Finish Coating over Molded Polystyrene Board:

1. Type: EIMA Class PB.
2. Base Coat: Portland cement and polymer adhesive.
3. Finish Coat: Polymer emulsion.
4. Thermal Insulation: Molded rigid cellular polystyrene. Thickness as shown on drawings.
5. Reinforcing Fabric: Standard weight with high-impact type at areas subject to damage.
6. Insulation Attachment: Adhesive and mechanical anchors.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Inspect substrate and report unsatisfactory conditions in writing; beginning work means acceptance of substrate.

B. Comply with system manufacturer's instructions and recommendations; admixtures shall not be used.

C. Provide reinforced base and finish coats to provide a uniform appearance. Completely cover all insulation board including edges.

D. Provide soft joints at all changes of substrate, at intervals suggested by manufacturers, and at locations as indicated on the drawings.

E. Install areas of special patterns as detailed on the drawings.

F. Clean and protect work.

END OF SECTION

SECTION 07412

PREFORMED METAL WALL & SOFFIT PANELS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide preformed metal wall panels.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit one representative sample of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

D. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Warranty Period: 20 years on finish and material
2. Warranty Period: 2 years on system installation and watertightness.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three (3) years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Fire Resistance Rating: See drawings for required roof system UL Fire Resistance rating.

D. Thermal Movement: Completed wall panel system shall withstand expansion and contraction without inducing panel buckling, sheet tearing, or excess stresses in fasteners and clips.

E. SMACNA: Fabricate materials in accordance with Sheetmetal and Air Conditioning Contractors National Association guidelines.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Berridge Manufacturing, Petersen Aluminum, Smith Steelite, VicWest Steel, or approved equal.

B. System Type:

1. Non-mechanically seamed, snap-on 1” high batten, 16” coverage
2. Smooth face, formed roof panels with concealed fasteners.

C. Manufactured Roof Panels:

1. Sheet Materials: Aluminum-zinc alloy coated steel sheet, ASTM A 792, with Class AZ-50 coating, (.0239 inch).
2. Finish: Kynar 500.

D. Manufactured Soffit Panels:

1. Sheet Materials: (.040) inch Perforated aluminum sheet, with Class AZ-50 coating.
2. Finish: Fluoropolymer, standard white color.

E. Accessory Materials:

1. Sealants: Exposed applications and concealed applications as recommended by the manufacturer. Color selection by Architect from available standard colors.
2. Fasteners: Concealed; corrosion resistant steel. Exposed; corrosion resistant steel with sealing washers. Exposed color shall match wall panel color.
3. Flashing Sheet Materials: Aluminum-zinc alloy coated steel sheet, ASTM A 792, with Class AZ-50 coating, 24 gauge (.0239 inch). Color shall match wall panel selection.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Beginning of installation indicates acceptance of existing conditions and substrate.

C. Isolate dissimilar materials with bituminous coatings.

D. Remove any damaged components and replace with undamaged components.

E. Touch up exposed fasteners and other abraded surfaces with touch up paint supplied by the wall panel system manufacturer.

F. At completion of installation, clean wall panel system and adjoining surfaces.

END OF SECTION

SECTION 07600

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 SUMMARY

A. Provide flashing and sheet metal fabrications.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit one representative sample of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations.

B. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three (3) years. Use experienced installers with at least three (3) years of documented experience.

C. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Applications:

1. Metal cap flashings, counter flashing and base flashing.
2. Exterior wall flashing and expansion joints.
3. Built-in metal valleys and scuppers.
4. Gutters and downspouts.
5. Exposed metal trim and fascia units.
6. Elastic flashing.
7. Elastic roof and wall expansion joint systems.
8. Laminated composition flashing.
9. Sheet metal accessories.

B. Sheet Metal Flashing and Trim:

1. Zinc-Coated Steel: ASTM A 653, G90 hot-dip galvanized, 20 gauge (.0359 inch).
2. Stainless Steel: AISI Type 302/304, ASTM A 666, 2D annealed finish, 28 gauge (.0156 inch).
3. Sheet Aluminum: ASTM B 209, alloy 3003, clear anodized, 20 gauge (.0359 inch).
4. Extruded Aluminum: 6063-T52, clear anodized, 0.080 inches for primary legs of extrusion.

C. Flexible Sheet Membrane Flashing: Nonreinforced flexible black elastic sheet, 50 to 65 mils thick, neoprene synthetic rubber.

D. Flexible Sheet Membrane Flashing: Nonreinforced flexible black elastic sheet, 50 to 65 mils thick, butyl synthetic rubber.

E. Laminated Composition Sheet Flashing: 5 ounce copper sheet laminated between 2 layers of bituminous impregnated Kraft paper or saturated fabric.

F. Fabricated Units: Compliance with SMACNA Sheet Metal Manual.

G. Elastic Expansion Joints: Factory-fabricated metal-flanged edges to fit curbs and curb substrate.

H. Auxiliary Materials:

1. Solder compatible with metal.
2. Bituminous isolation coating.
3. Mastic and elastomeric sealants.
4. Epoxy seam sealer.
5. Rosin-sized building paper slip sheet.
6. Polyethylene underlayment.
7. Reglets and metal accessories.
8. Gutter and conductor head guards.
9. Asphaltic roofing cement.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Follow recommendations of SMACNA Sheet Metal Manual. Allow for expansion. Isolate dissimilar materials using bituminous coatings.

B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

C. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION

SECTION 07840

FIRESTOPPING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide firestopping at locations required by code.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Submit for approval test reports.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Fire Performance: ASTM E 119, ASTM E 814, and local regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Through-Penetration Firestop Systems: Subject to compliance with requirements, provide systems designed for use required, of one or more of the following types:

1. Endothermic, latex sealant and compounds.
2. Intumescent latex sealant, putty and wrap strips.
3. Mortar.
4. Silicone foams and sealants.

B. Fire-Resistive Elastomeric Joint Sealants:

1. Single-component, neutral-curing, silicone sealant.
2. Single-component, nonsag, urethane sealant.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Review extent of work with authorities having jurisdiction and obtain approval of installation thicknesses and methods.

B. Sequence work to avoid need for removal of firestopping by work of other trades.

C. Comply with manufacturers' instructions and recommendations. Securely anchor insulation with safing clips. Install firestops without gaps or voids.

D. Protect, inspect and repair work until final acceptance.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide joint sealers at interior and exterior vertical and horizontal joints.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1. Include manufacturer’s full range of color and finish options if additional selection is required.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Field-Constructed Mock-Ups: Each joint type.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Urethane Elastomeric Joint Sealants:

1. Manufacturers: Pecora Corp., Sika Corp., Tremco or approved equal.
2. Type and Application: One-part nonsag urethane sealant, ASTM C 920:
   a. Application: For joints in vertical surfaces.
   b. Application: For joints in vertical and horizontal surfaces.
   c. Application: For joints in horizontal. surfaces.
   d. Exterior use.

B. Silicone Elastomeric Joint Sealants:

1. Manufacturers: Dow Corning, GE Silicones, Tremco, or approved equal.
2. Type and Application: One-part nonacid-curing silicone sealant, ASTM C 920, modulus as required for application:
   a. Application: For joints in vertical surfaces.
   b. Application: For joints in vertical and horizontal surfaces.
   c. Application: For joints in horizontal. surfaces.
   d. Exterior and interior use.
3. Type and Application: One-part acid-curing silicone sealant, ASTM C 920, for joints in vertical surfaces:
   a. Exterior use.
   b. Exterior and interior use.
4. Type and Application: One-part mildew-resistant silicone sealant, ASTM C 920, for sanitary applications, interior use.

C. Polysulfide Elastomeric Joint Sealants:

1. Manufacturers: W. R. Meadows, Pecora Corp., Sonneborn Building Products or approved equal.
2. Type and Application: Two-part nonsag polysulfide sealant, ASTM C 920, for joints in vertical surfaces:
   a. Exterior use.
   b. Exterior and interior use.
3. Type and Application: Two-part polysulfide sealant, ASTM C 920, for water immersion.

D. Latex Joint Sealants:

1. Manufacturers: Pecora Corporation, Polymeric Systems, Inc., Sonneborn Building Products, Tremco, or approved equal.
2. Type: Silicone emulsion, ASTM C 834, and ASTM C 920.
3. Application: Interior joints in vertical and overhead surfaces with limited movement.

E. Solvent-Release-Curing Joint Sealants:

1. Manufacturers: H.B. Fuller Company, Pecora Corporation, Polymeric Systems, Inc., Sonneborn Building Products, Tremco, or approved equal.
2. Type: Acrylic, ASTM C 920.
3. Type: Butyl, FS TT-S-001657.
4. Application: Exterior vertical surfaces with limited movement.

F. Compression Seals:

1. Type: Preformed foam sealant.
2. Type: Application: Wide exterior joints in vertical surfaces.

G. Fire-Resistive Joint Sealers:

1. Type: One part fire-stopping sealant.
2. Application: Penetrations in fire-rated floor and wall assemblies.

H. Specialty Sealants:

1. Type and Application: Synthetic rubber for acoustical sealant for concealed joints.
2. Type and Application: Butyl-polyisobutylene sealant and tape sealant for concealed joints.

I. Paving Joint Fillers:

1. Type: Bituminous fiber.
2. Application: Filler for exterior paving joints.

J. Auxiliary Materials:

1. Plastic foam joint fillers.
2. Elastomeric tubing backer rods.
3. Bond breaker tape.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Examine substrate; report unsatisfactory conditions in writing. Beginning work means acceptance of substrates.

B. Provide sealants in colors as selected from manufacturer's standards.

C. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections. Clean and prime joints, and install bond breakers, backer rods and sealant as recommended by manufacturers.

D. Depth shall equal width up to 1/2" wide; depth shall equal 1/2 width for joints over 1/2" wide.

E. Cure and protect sealants as directed by manufacturers. Replace or restore damaged sealants. Clean adjacent surfaces to remove spillage.

END OF SECTION

SECTION 08110

STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide steel doors and frames.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames.

C. Performance Standards:

1. Fire-Rated Assemblies: NFPA 80, and acceptable testing agency listing.
2. Thermal-Rated Assemblies at Exterior: ASTM C 236 or ASTM C 976.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Amweld Building Products, Ceco Door Products, Curries Co., Mesker Door, Steelcraft Manufacturing, or approved equal.

B. Steel Doors:

1. Door Type: Standard steel doors with hollow or composite construction.
2. Interior Doors: ANSI/SDI-100, Grade II, heavy-duty, minimum 18 gauge (.0358 inch) cold-rolled steel, 1-3/4 inches thick.
3. Exterior Doors: ANSI/SDI-100, Grade II, heavy-duty, minimum 20 gauge galvanized sheet steel, 1-3/4 inches thick.
4. Accessories:
5. Finish: Factory primed and field painted.

C. Steel Frames:

1. Interior Frames:
   a. Material: Sheet steel.
   b. Corners: Mitered or coped.
   c. Type: Welded.
   d. Type: Drywall slip-on.
   e. Thickness: 18 gauge (.0358 inch).
2. Exterior Frames:
   a. Material: Galvanized sheet steel.

b. Corners: Mitered or coped.
c. Type: Welded.
d. Thickness: 16 gauge (.0358 inch).

3. Accessories:
a. Door silencers.
b. Plaster guards.

4. Finish: Factory primed and field painted.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Fabricate work to be rigid, neat and free from seams, defects, dents, warp, buckle, and exposed fasteners. Install doors and frames in compliance with SDI-100, NFPA 80, and requirements of authorities having jurisdiction.

B. Provide thermally improved doors with maximum U-value of 0.24 BTU/hr./sq. ft. degree F (ASTM C 236) for all exterior doors and elsewhere as noted.

C. Provide acoustically improved doors with minimum STC of 33 (ASTM E 90 and ASTM E 413) where indicated.

D. Hardware: Prepare doors and frames to receive hardware on final schedule. Provide for 3 silencers on single door frames; 2 on double door frames.

E. Shop Finish: Clean, treat and prime paint all work with rust-inhibiting primer comparable with finish paint specified in Division 9 section. Provide asphalt emulsion sound deadening coating on concealed frame interiors.

F. Touch-up damaged coatings and leave ready to receive finish painting.

END OF SECTION

SECTION 08210

FLUSH WOOD DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide flush wood doors.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

C. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Warranty Period: 5 years.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Quality Standards: NWWDA I.S. 1A, and AWI Architectural Quality Standards.

C. Quality Standards: NWWDA I.S. 1A, and WIC Manual of Millwork.

D. Fire Rated Wood Doors: Meet ASTM E 152 requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Algoma Hardwoods, Eggers Industries, Mohawk Architectural Doors, or approved equal.

B. Interior Solid Core Doors:

1. Thickness: 1-3/4 inches thick.
2. Grade: Custom.
3. Construction: 7-ply construction.
4. Core: Particleboard.
5. Face: Rotary Sawn Birch.
6. Finish: Opaque finish on hardboard faces.
7. Finish: clear finish on hardwood faces.

C. Fitting and Finish:

1. Fitting: Factory pre-fit and pre-machined doors.
2. Site Finish: Shop prime and site finish. (See Section 09910 PAINTING)

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with NWMA I.S. 1A and specified quality standard. Pre-fit doors to frames. Pre-machine doors for hardware listed on final schedules. Factory bevel doors.

B. Install doors with not more than 1/8" clearance at top and sides, 1/4" at bottom. Comply with NFPA 80 for rated assemblies.

C. Adjust, clean, and protect.

END OF SECTION

SECTION 08310

ACCESS DOORS AND PANELS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide access doors and panels for soffits.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: J. L. Industries, Karp Associates, Milcor, or approved equal.

B. Access Doors:

1. Frames: 16 gauge (.0598 inch) sheet steel with flange suitable for adjacent material.
2. Doors: 14 gauge (.0625 inch) sheet steel.
3. Door Type: Flush panel; 24”x24”
4. Locking Devices: Cylinder locks.
5. Fire Rating: NFPA 80.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections. Install assemblies complete with all hardware, anchors, inserts, supports and accessories. Test and adjust operation.

B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 08411

ALUMINUM-FRAMED STOREFRONTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide aluminum entrances and storefront.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Warranty Period: 5 years.

D. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: EFCO Corp., Kawneer Company, Tubelite Architectural Products, United States Aluminum, Vistawall Architectural Products, or approved equal.

B. Aluminum Entrances and Storefront:

1. Aluminum Members: Kawneer 451T or equal - ASTM B 221, B 209 and B 211.
2. Steel Reinforcement: ASTM A 36, ASTM A 611, and ASTM A 570.
3. Door Style: Medium stile and rail doors.
4. Glass and Glazing: 1” insulated glazing- ¼” clear w/Low “E” coating backside, ½” air, ¼” clear
   a. Tempered where required and/or indicated on drawings
5. Glazing Color: Clear glass – w/Low “E” coating.
6. Door Hanging Devices: Ball-bearing butts.
7. Closers: Surface mounted.
8. Closer Operation: Single acting closers.
9. Aluminum Finish: clear anodized.

C. Auxiliary Materials:

1. Push/pulls, door stops, overhead holders, and deadlocks.
2. Weatherstripping and thresholds.
3. Exit devices.
4. Removable center stile for pair doors.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Take field measurements before fabrication where possible; do not delay job progress.

B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

C. Anchor securely in place; install plumb, level and in true alignment. Isolate dissimilar materials to prevent corrosion.

D. Coordinate with glass and glazing work; install hardware and adjust for smooth, proper operation.

E. Clean and protect completed system; repair damage.

END OF SECTION

SECTION 08710

DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Provide door hardware.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

C. Submit for approval hardware schedule proposed for use based on Owner's requirements.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Hardware for Fire-Rated Openings: NFPA 80, and local requirements.

C. Materials and Application: ANSI A156 series standards, Grade 2 cylindrical

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Corbin Russwin Architectural Hardware, Sargent Manufacturing, Schlage Lock Co., Yale Locks and Hardware, or approved equal. For tenant specific door hardware requirements, refer to the door schedule, A6 sheets, and tenant upfit plans.

B. Door Hardware:

1. Quality Level: Commercial.
2. Locksets and Latchsets: Cylindrical Leverset type.
3. Lock Cylinders: Integral.
4. Keying: Owner's requirements.
5. Hinges and Butts: Full-mortise type with nonremovable pins at exterior doors.
6. Closers, Door Control: Surface Mounted
7. Push/Pull Units: Through-bolted type.
8. Hardware Finishes: Satin chrome finish on exposed surfaces.

C. Auxiliary Materials:

1. Door Trim Units: Stops and kick - type door holders.
2. Weatherstripping and thresholds.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Follow guidelines of DHI "Recommended Locations for Builder's Hardware and hardware manufacturers' instructions.

B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

C. Adjust operation, clean and protect.

END OF SECTION

SECTION 08800

GLAZING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide glass and glazing for the following:

1. Storefront.
2. Entrances.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

D. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

1. Laminated Glass: Manufacturer's 4 year warranty.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: AFG Industries, Cardinal IG, Libby Owens Ford, Viracon, or approved equal.

B. Glass:

1. Primary Glass Products: Clear float, tinted float, patterned, and wire glass, ASTM C 1036.
2. Heat-Treated Glass Products: Heat-strengthened, tempered, coated, and spandrel glass, ASTM C 1048.
3. Laminated Glass Units: Polyvinyl butyral interlayer.
4. Mirrors: Silvering and protective coatings.

C. Glazing Accessories:

1. Elastomeric glazing sealants.
2. Preformed glazing tapes.
3. Glazing gaskets.
4. Setting blocks, spacers, and compressible filler rods.
5. Mirror adhesive.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Inspect framing and report unsatisfactory conditions in writing.

B. Comply with GANA "Glazing Manual" and manufacturers instructions and recommendations. Use manufacturer's recommended spacers, blocks, primers, sealers, gaskets and accessories.

C. Install glass with uniformity of pattern, draw, bow and roller marks.

D. Install sealants to provide complete wetting and bond and to create a substantial wash away from glass.

E. Set mirrors on stainless steel clips and adhere to wall with mirror adhesive.

F. Remove and replace damaged glass and glazing. Wash, polish and protect all glass supplied under this section.

3.02 SCHEDULE

A. Glazing Schedule:

1. Storefront: 1 inch insulated Low “E” coating. (See drawings for tempered units)
2. Entrances: 1 inch thick insulated Low “E” tempered glass unit.
3. Mirrors: ¼ inch thick silvered glass with protective coating

END OF SECTION

SECTION 09253

GYPSUM SHEATHING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide gypsum sheathing at exterior of studs at exterior walls.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Georgia-Pacific, United States Gypsum, LaFarge or approved equal.

B. Gypsum Sheathing Board:

1. Type: ASTM C 79, regular and fire-rated types:
   a. 1/2 inch typical thickness.
   b. 5/8 inch typical thickness.
2. Construction: Water-resistant core gypsum sheathing board.

C. Auxiliary Materials:

1. Asphalt-saturated organic felt, ASTM D 226, Type I, No. 15, unperforated air infiltration barrier.
2. Polyethylene sheet air infiltration barrier, DuPont Tyvek or approved equal.
3. Fasteners, Type S steel drill screws with corrosion-resistant finish.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturers instructions and recommendations.

B. Install gypsum sheathing horizontally. Fit tightly around obstructions, but allow for building expansion and structural movement.

C. Provide air infiltration barrier over sheathing, overlapping edges at least 2 inches and tape seams with sheathing tape.

D. Seal perimeter of system and at interface with other materials.

END OF SECTION

SECTION 09260

GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide gypsum board assemblies:

1. Interior walls, partitions, and ceilings with tape and joint compound finish.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Tolerances: Not more than 1/16 inch difference in true plane at joints between adjacent boards before finishing. After finishing, joints shall be not be visible. Not more than 1/8 inch in 10 feet deviation from true plane, plumb, level and proper relation to adjacent surfaces in finished work.

C. Fire Resistance for Fire-Rated Assemblies: ASTM E 119.

D. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers of Gypsum Board: Domtar Gypsum, Georgia-Pacific Corp., National Gypsum Co., United States Gypsum Co., LaFarge, or approved equal.

B. Manufacturers of Steel Framing and Furring: Dale Incor, Dietrich Industries, Marino Ware, National Gypsum Co., Unimast, or approved equal.

C. Gypsum Board:

1. Gypsum Wallboard for Tape and Joint Compound Finish: ASTM C 36, regular and fire-rated types as required:
   a. Typical Thickness: 1/2 inch.
   b. Typical Thickness: 5/8 inch.
2. Joint Treatment: ASTM C 475 and ASTM C 840, 3-coat system, paper or fiberglass tape.
3. Joint Reinforcing Materials: ASTM C 587.
4. Thickness: 5/8 inch nominal.

D. Trim Accessories:

1. Material: Metal or plastic trim.
2. Types: Cornerbead, edge trim, and control joints.

E. Steel Framing for Walls and Partitions:

1. Steel Studs and Runners: ASTM C 645, steel studs with manufacturer's standard corrosion-resistant coating:
    a. Thickness: 20 gauge (.0329 inch).
    b. Thickness: 22 gauge (.0276 inch).
    c. Typical Depth: 2-1/2 inch.
    d. Typical Depth: 3-5/8 inch.
    e. Typical Depth: 4 inch.
    f. Typical Depth: 6 inch.
2. Furring Channels: ASTM C 645 with manufacturer's standard corrosion-resistant coating:
    a. Thickness: 20 gauge (.0329 inch).
3. Auxiliary Framing Components: Furring brackets, resilient furring channels, Z-furring members, and non-corrosive fasteners.

F. Auxiliary Materials:

1. Gypsum board screws, ASTM C 1002.
2. Fastening adhesive.
3. Concealed acoustical sealant.
4. Mineral fiber thermal insulation.
5. Polyethylene vapor retarder, 6 mils.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install steel framing in compliance with ASTM C 754. Install with tolerances necessary to produce substrate for gypsum board assemblies with tolerances specified. Include blocking for items such as railings, grab bars, casework, toilet accessories and similar items.

B. Install wood framing in compliance with Section 06100 - Rough Carpentry. Install with tolerances necessary to produce substrate for gypsum board assemblies with tolerances specified. Include blocking for items such as railings, grab bars, casework, toilet accessories and similar items.

C. Install gypsum board for tape and 3-coat joint compound finish in compliance with ASTM C 840 and GA 216, Recommended Specifications for the Application and Finishing of Gypsum Board. Install gypsum board assemblies true, plumb, level and in proper relation to adjacent surfaces.

D. Provide continuous vapor retarder at exterior walls.

E. Provide fire-rated systems where indicated and where required by authorities having jurisdiction.

F. Do not allow butt-to-butt joints and joints that do not fall over framing members.

G. Where new partitions meet existing construction, remove existing cornerbeads to provide a smooth transition.

H. Provide insulation full height and thickness in partitions at conference rooms, toilet rooms, between different occupancies, and where required.

I. Provide acoustical sealant at both faces at top and bottom runner tracks, wall perimeters, openings, expansion and control joints.

J. Install trim in strict compliance with manufacturer's instructions and recommendations.

K. Repair surface defects. Leave ready for finish painting or wall treatment.

END OF SECTION

SECTION 09512

ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide acoustical lay-in panel ceilings and exposed metal suspension system.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

C. Extra Stock: Submit extra stock equal to 1% of amount installed.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities. Acoustical performance based on project requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Armstrong World Industries, Celotex, USG Interiors or approved equal. For tenant specific requirements, refer to the A6 sheets and tenant upfit plans.

B. Mineral Base Panels, Nodular, Cast or Molded Type:

1. Size: 24 by 48 inches by 5/8 inch.
2. Edge Detail: Square edge.
3. Pattern: Fissured.
4. Type and Finish: Painted finish, Type III, Form 2.

C. Direct-Hung Suspension Systems, Non-Fire-Resistance Rated:

1. Type: Wide-face, capped double web galvanized steel, ASTM C 635.
   a. G30 hot dipped galvanized steel white exposed suspension system.
2. Classification: Intermediate duty.
3. Suspension System Accessories: Attachment devices and hangers, ASTM C 635.
4. Cap Material: Painted steel finish.

D. Direct-Hung Suspension Systems, Fire-Resistance Rated:

E. Auxiliary Materials:

1. Edge molding and trim.
2. Hold-down clips and impact clips.
3. Concealed acoustical sealant.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and suspension systems in accordance with manufacturer's instructions and recommendations, and ASTM C 636. Coordinate installation with location of mechanical and electrical work to ensure proper locations and anchorage.

B. Level ceiling to within 1/8" in 10' in both directions. Scribe and cut panels to fit accurately. Measure and layout to avoid less than half panel units.

C. Adjust, clean, and touch-up all system components.

D. Provide and install acoustical ceiling tile clips at vestibules.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide resilient flooring and floor preparation.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

C. Extra Stock: Submit extra stock equal to 1% of total used.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Performance: Fire performance meeting requirements of building code and local authorities.

C. Provide materials and adhesives which do not contain asbestos.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Vinyl Sheet Flooring:

1. Manufacturers: Armstrong Connection Classic Corlon Series.
2. Vinyl Sheet Flooring: ASTM F 1066, Composition 1, nonasbestos formulated:
   a. Class 1.
3. Thickness: 2.0 mm.

B. Auxiliary Materials:

1. Edge strips and terminations.
2. Leveling compound.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's instructions and recommendations. Install in proper relation to adjacent work.

B. Prepare surfaces by cleaning, leveling and priming as required. Test adhesive for bond before general installation. Level to 1/8" in 10' tolerance.

C. Clean, polish, and protect.

END OF SECTION

SECTION 09651

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide resilient wall base and accessories.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Performance: Fire performance meeting requirements of building code and local authorities.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: AFCO Rubber Corp., Johnsonite, Roppe, or approved equal.

B. Resilient Wall Base:

1. Vinyl Wall Base: FS SS-W-40, Type II. Radius; 3/8”.
2. Thickness: 0.125 inches thick.
3. Height: 6 inches with cove stick.

C. Installation Accessories:

1. Concrete Slab Primer: Nonstaining type.
2. Trowelable Underlayments and Patching Compounds: Latex-modified, Portland-cement-based formulation.
3. Adhesives: Water-resistant type.
4. Aluminum Cap Trim, Black vinyl reducer strips, as required.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's instructions and recommendations. Install in proper relation to adjacent work.

B. Install base and accessories to minimize joints. Install base with joints as far from corners as practical.

C. Clean, polish, and protec

END OF SECTION

SECTION 09910

PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide the following:

1. Painting and surface preparation for interior unfinished surfaces as scheduled.
2. Painting and surface preparation for exterior unfinished surfaces as scheduled.
3. Field-painting and surface preparation of exposed mechanical and electrical piping, conduit, ductwork, and equipment.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1. Include manufacturer’s full range of color and finish options if additional selection is required.

C. Extra Stock: Submit 2 unopened gallons of each paint and color used in the project.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Regulations: Compliance with VOC and environmental regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: ICI Devoe Coatings, Benjamin Moore, Pratt and Lambert, Sherwin Williams or approved equal. Provide only first-line commercial-quality products for all coating systems.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Inspect surfaces, report unsatisfactory conditions in writing; beginning work means acceptance of substrate.

B. Comply with manufacturer's instructions and recommendations for preparation, priming and coating work. Coordinate with work of other sections.

C. Perform related minor preparation including caulk and glazing compounds. Spot prime bare areas before priming and painting as specified.

D. Match approved mock-ups for color, texture, and pattern. Re-coat or remove and replace work that does not match or shows loss of adhesion. Clean up, touch up and protect work.

3.02 PAINT SCHEDULE

A. Gypsum Drywall:

1. Gloss:
   a. Semi
2. System:
   a. 1 coat latex primer
   b. 2 coats latex finish

B. Gypsum Drywall and Ceilings in Bathrooms:

1. Gloss:
   a. Semi
2. System:
   a. 1 coat latex primer
   b. 2 coats latex finish

C. Interior Wood for Painted Finish:

1. Gloss:
   a. Semi
2. System:
   a. 2 coats latex enamel

D. Exterior Wood for Painted Finish:

1. Gloss:
   a. High
2. System:
   a. 1 coat exterior primer
   b. 2 coats latex enamel

E. Concrete Masonry Units:

1. Gloss:
   a. Semi
2. System:
   a. 1 coat heavy duty block filler
   b. 2 coats elastomeric coating

F. Ferrous Metals:

1. Gloss:
   a. High
2. System:
   a. 1 coat rust-inhibiting primer
   b. 2 coats alkyd enamel

G. Galvanized Metal:

1. Gloss:
   a. High
2. System:
   a. 1 coat galvanized metal primer
   b. 2 coats alkyd enamel

END OF SECTION

SECTION 10523

FIRE EXTINGUISHERS AND CABINETS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide fire extinguishers and cabinets.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: UL and FM listed products, NFPA 10.

C. Regulations: ADAAG.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufactures: J. L. Industries, Larsen’s Manufacturing, Potter-Roemer, or approved equal.

B. Fire Extinguishers:

1. Type: Multipurpose dry chemical type.
2. Type: Stored-pressure water type.
3. Rating: Sized for project requirements.
4. Public Area Mounting: Cabinet mounted.
5. Service Area Mounting: Metal brackets.

C. Cabinets:

1. Mounting: Surface-mounted.
2. Trim: Exposed.
3. Doors: Plastic laminate.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Install fire extinguishers in mechanical and service areas with wall-hung brackets at locations and heights indicated and acceptable to authorities having jurisdiction.

C. Install fire extinguishers in cabinets in public areas plumb and level at heights acceptable to authorities having jurisdiction.

D. Restore damaged finishes. Clean and protect work from damage.

END OF SECTION

SECTION 10810

TOILET ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide toilet accessories and metal-framed mirrors.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: A&J Washroom Accessories, Bobrick Washroom Equipment, Bradley Corp., GAMCO, McKinney/Parker, or approved equal.

B. Toilet Accessories:

1. Toilet tissue dispensers, single roll.
2. Grab bars.

C. Mirrors and Frames:

1. Glazing: Mirror glass, 1/4 inch thick, ASTM C 1036.
2. Frames: Stainless steel.
3. Type: Fixed tilt type.

D. Finishes:

1. Stainless Steel; AISI Type 302 or 304, No. 4 polished finish.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 13129

PRE-ENGINEERED STEEL BUILDINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide metal building frame, metal wall panels, metal roof panels, accessories and miscellaneous materials for a complete enclosure including supports for building components specified in other sections.

B. Design structural systems according to professionally recognized methods and standards and legally adopted building codes.

C. Design under the supervision of professional engineer licensed in the jurisdiction of the Project.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.

C. Warranty: Submit manufacturer’s standard warranty. Include labor and materials to repair or replace defective materials.

D. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Structural Design: Certified by registered engineer licensed in jurisdiction of project.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Manufacturers: Butler Manufacturing, Chief Buildings, MBCI, Varco-Pruden, or approved equal.

B. Framing:

1. Structural Framing: Structural steel shapes, ASTM A 36, and primary, secondary, and endwall framing including columns, beams, portal frames, purlins, girts, struts and bracing.

C. Siding Panels:

1. Panel Type: Non-Insulated (field insulated).
2. Fasteners: Exposed.

3. Fasteners: Concealed.
4. Material: Zinc-coated steel sheets.
5. Siding Panel Finish: Fluoropolymer, Kynar 500.

D. Roofing Panels:

1. Type: Factory-formed lap-seam roof panel system (field insulated).
2. Type: Factory-formed standing-seam roof panel system.
3. Material: Zinc-coated steel sheets.
4. Roofing Panel Finish: Fluoropolymer, Kynar 500.

E. Panel Rib Liner Panels; 36 inch (915 mm) wide net coverage, with 1-3/16 inch (30 mm) high major ribs with minor ribs spaced between the major ribs.

1. Material: Zinc-coated steel sheets.
2. Siding Panel Finish: Fluoropolymer, Kynar 500
3. Thickness: 26 gage (0.45 mm) Provide full height liner panels at pit safety lane divider interior wall, refer to drawings.

J. Related Materials:

1. Vapor barriers.
2. Gutters and downspouts.
3. Caulking and sealants.
4. “Envy Green” cleated finish cap flash for all parapets.

2.02 INSULATION

A. Roof Insulation: Nominal values:
1. Blanket insulation - 6 inches (150 mm); R-value: 19.

B. Wall Insulation: Nominal values:
1. Blanket insulation - 6 inches (150 mm); R-value: 19.

C. Blanket Insulation: Glass fiber, with factory laminated facing material
1. Glass fiber: Odorless, neutral colored, long filament, flexible resilient, produced in compliance with NAIMA 202-96.
2. Flame spread Index: The composite of fiberglass and facing shall have surface burning characteristics not to exceed 25 flame spread when tested in accordance with UL 723 or ÅSTM E 84 test methods.
3. Smoke Developed Index: not to exceed 50 smoke development when tested in accordance with UL 723 or ASTM E 84 test methods.
4. UL Classified.
5. Plain Vinyl Facing: White vinyl; embossed, 0.0032 inch (0.09 mm) thick plus or minus 10 percent; permeance in compliance with ÅSTM E 96 1.00 perm (5.17 ng/Ns). fiberglass and facing meeting Flame Spread of 25 or less, Smoke Developed of 50 or less, when tested in accordance with UL 723.

PART 3 – EXECUTION

3.02 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

END OF SECTION

SECTION 15050

BASIC MECHANICAL MATERIALS

PART 1 - GENERAL

1.01 SUMMARY

A. Work of this section includes providing basic mechanical materials including, but not limited to, the following:

1. Valves.
2. Pipe expansion joints.
3. Supports and anchors.
4. Mechanical identification.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Pipe, Fittings, and Specialties: Refer to individual piping systems specifications for materials and installation requirements.

B. Valves: General duty valves cast iron, bronze, and brass, fabricated to comply with Manufacturers Standardization Society (MSS) classification listed. Gate, globe, ball, butterfly, and plug valves for shutoff duty; globe, ball, and plug valves for throttling duty.

1. Gate Valves, 2-Inch and Smaller for Domestic Hot and Cold Water: MSS SP-80, Class 125 or 150 based on system pressure, cast bronze, threaded or solder ends based on service.
2. Gate Valves, 2-1/2-Inch and Larger: MSS SP-70, Class 125, iron body, flanged ends.
3. Ball Valves, 1 Inch and Smaller: Rated for 150 psi saturated steam pressure, 400 psi WOG pressure, 2 piece construction, bronze body, threaded or solder ends based on service.
4. Ball Valves, 1-1/4-Inch to 2-Inch: Rated for 150 psi saturated steam pressure, 400 psi WOG pressure, 3 piece construction, bronze body, threaded or solder ends based on service.
5. Plug Valves, 2-Inch and Smaller: Rated at 150 psi WOG, bronze body, threaded ends.
6. Plug Valves, 2-1/2-Inchand Larger: MSS SP-78, rated at 175 psi WOG, semi-steel body, flanged ends.

7. Globe Valves, 2-Inch and Smaller: MSS SP-80, Class 125 or 150 based on system pressure, cast bronze, threaded or solder ends based on service.
8. Globe Valves, 2-1/2-Inch and Larger: MSS SP-85, Class 125, iron body, flanged ends.
9. Butterfly Valves: 2-1/2-Inch and Larger: MSS SP-67, rated at 200 psi, cast iron body, field replaceable sleeve, stainless steel stem, lug or wafer type based on service.
10. Swing Check Valves, 2-Inch and Smaller: MSS SP-80, Class 125 or 150 based on system pressure, cast-iron body and cap, threaded or solder ends based on service.
11. Swing Check Valves, 2-1/2 Inch and Larger: MSS SP-71, Class 125 or Class 175 FM for fire protection piping systems), cast iron body and cap, flanged ends.
12. Lift Check Valves, 2-Inch and Smaller: Class 125, cast-bronze body and cap, threaded ends.

C. Expansion Joints for Piping Systems: Joints shall provide 200 percent absorption capacity of piping expansion between anchors.

1. Packless expansion joints.
2. Mechanical grooved fittings.
3. Fabricated expansion loops.

D. Supports and Anchors: Hangers and Support Components: MSS SP-58, pipe and equipment hangers and supports including clamps, hanger-rod attachments, saddles and shields, spring hangers, pipe alignment guides, and anchors.

E. Mechanical Identification: ASME A13.1 as applicable, color coded, of the following types: Standard stencils, snap-on plastic pipe markers, pressure-sensitive pipe markers, plastic duct markers, plastic tape, valve tags, valve tag fasteners, access panel markers, valve schedule frames, engraved plastic laminate signs, plastic equipment markers, plasticized tags suitable for use.

F. Vibration Control: Fiberglass pads and shapes, neoprene pads, vibration isolation springs, pad-type isolators, plate-type isolators, double-plate-type isolators, threaded double-plate- type isolators, all-directional anchors, neoprene mountings, free standing spring isolators, housed spring isolators, vertically-restrained spring isolators, earthquake-resistant spring isolators, seismic snubbers, thrust restraints, equipment rails, fabricated equipment bases, inertia base frames, roof-curb isolators, isolation hangers, riser isolators, flexible pipe connectors suitable for use.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Test and balance all systems for proper operation.

E. Restore damaged finishes. Clean and protect work from damage.

F. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15080

MECHANICAL INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Provide pipe insulation, equipment insulation, and external duct and plenum insulation.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 PRODUCTS

A. Mechanical Insulation Types:

1. Pipe Insulation: Glass fiber type. (K-factor less than .22 at 75 degrees F.)
2. Equipment Insulation: Glass fiber type. (K-factor less than .22 at 75 degrees F.)
3. Duct and Plenum Insulation: Glass fiber type. (K-factor less than .25 at 75 degrees F.)

B. Mechanical Insulation Materials:

1. Glass Fiber Insulation: Inorganic glass fibers bonded with thermosetting resin; board type, ASTM C 612, Class 2, semi-rigid jacketed board; blanket type, ASTM C 553, Type II, Class F-1, jacketed flexible blankets; preformed pipe insulation, ASTM C 547, Class 1, rigid pipe insulation, jacketed.

C. Fire Performance: (Flame Spread less than 25 – smoke developed less than 450)

1. Vapor Barrier: Type suitable for service. (Foil skin kraft facing at ducts and plenums)
2. Insulation Accessories: Insulating cements, adhesives, jackets, glass cloth and tape, bands, wire, and sealing compounds suitable for service and exposure.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Restore damaged finishes. Clean and protect work from damage.

END OF SECTION

SECTION 15100

BUILDING SERVICES PIPING

PART 1 - GENERAL

1.01 PROJECT INCLUDES

A. Provide plumbing piping systems within the building including the following:

1. Potable water distribution, including cold and hot water supply.
2. Sanitary drainage and vent systems.

B. Provide plumbing specialties for water distribution systems; soil, waste, and vent systems.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards:

1. Materials, Products, and Installation: ASME B31.9.
2. Plastic Piping Components: NSF 14.

C. Compliance: ASME B31.9.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Piping System Working Pressure Ratings:

1. Water Distribution Systems, Below Ground: 150 psig.
2. Water Distribution Systems, Above Ground: 125 psig.
3. Soil, Waste, and Vent Systems: 10 foot head of water.

B. Pipes and Tubes:

1. Hard Copper Tube: ASTM B 88, Types K, L, and M, water tube, drawn temper.
2. Soft Copper Tube: ASTM B 88, Types K and L, water tube, annealed temper.
3. Steel Pipe: ASTM A 53, Type S, Grade A, Schedule 40, galvanized, plain ends.
4. Ductile-Iron Pipe: AWWA C151, Classes 50 and 51, mechanical joint and push-on joint, with AWWA C104 cement-mortar lining.
5. Flanged Ductile-Iron Pipe: AWWA C115, ductile-iron barrel, Class 150 or 300 iron- alloy threaded flanges, with AWWA C104 cement-mortar lining.
6. Hub and Spigot, Cast-Iron Soil Pipe: ASTM A 74, service class.
7. Hubless, Cast-Iron Soil Pipe: CISPI 301.
8. ABS Plastic Pipe: ASTM D 2661, Schedule 40, plain ends.
9. CPVC Plastic Pipe and Tube: ASTM D 2846, SDR 11, plain ends.
10. CPVC Plastic Pipe: ASTM F 441, Schedules 40, plain ends.

11. PB Plastic Pipe: ASTM D 2662, SIDR11.5 or SIDR9.
12. PB Plastic Pipe: AWWA C901, IDR or DR.
13. PVC Plastic Water Pipe: ASTM D 1785; Schedules 40, 80, and 120; plain ends.
14. PVC Plastic DWV Pipe: ASTM D 2665, Schedule 40, plain ends.
15.

C. Fittings and Valves:

1. Pressure and Drainage Fittings for Pipe and Tubes: Suitable for working pressure, pipe, tube, and service.
2. Joining Materials: Solder, brazing and welding filler metals; couplings.
3. Valves: Gate, globe, ball, butterfly, and check valves suitable for service.

D. Plumbing Specialties:

1. Water Meters: AWWA C700-C710 series; type as required by local utility company for service, register in gallons or cubic feet as required.
2. Backflow Preventers: ASSE Standard backflow preventers for flow rate and maximum pressure loss required, 150 psig minimum working pressure.
3. Water Pressure Regulators: ASSE 1003, initial working pressure 150 psig minimum.
4. Miscellaneous Piping Specialties: Strainers, hose bibbs, wall hydrants, water hammer arresters, trap seal primer valves, horizontal backwater valves, stack flashing fittings, vent caps, vent terminals, roof flashing assemblies.
5. Cleanouts:
   a. Cast-iron cleanouts, ASME A112.36.2M.
   b. Plastic cleanouts.
6. Sleeve Penetration Systems: UL 1479, through-penetration firestop assembly.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Support piping properly. Pitch to drain points. Install with pipe expansion loops, mechanical expansion joints, and anchors.

C. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

D. Clearly label and tag all components.

E. Test and balance all systems for proper operation.

F. Restore damaged finishes. Clean and protect work from damage.

G. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15410

PLUMBING FIXTURES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide plumbing fixtures and trim, fittings, and related accessories and appliances.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards:

1. Materials, Products, and Installation: ASME B31.9.
2. Plastic Piping Components: NSF 14.

C. Compliance: ANSI A117.1 and local regulations.

D. Accessibility Requirements: ADAAG and local requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Plumbing Fixtures:

1. Water Closets: Consumption per flush cycle, material, bowl type, mounting, outlet, rim height, tank type, trim suitable for service required.
2. Lavatories: Material, mounting, fittings and accessories suitable for service required.
3. Service Sinks: Material, trap standard or floor mounting, fittings suitable for service required.
4. Water Coolers: ARI 100, type, capacity, and fittings suitable for service required.
5. Toilet Seats: Compatible with water closet.
6. Commercial Faucets: Cast-brass faucets.
7. Supports: ASME A112.6.1M, categories and types as required for fixtures required, including wall reinforcement.

2.02 SCHEDULE

A. Water Closets: Handicapped Height, Tank Type with elongated bowl; provide water supply with stop. White color. (Kohler K-3500-EB or equal)

B. Lavatories: Wall hung with chrome wrist blade faucet sets; provide P-trap with escutcheon; provide supplies and stops with escutcheons. Protect supplies and drain from direct contact. (Kohler K-2030 or equal)

C. Service Sinks: Thermoplastic with steel legs; 24”x24”; color shall be white. Provide chrome faucet set with threaded nozzle and wrist blades. Provide tailpiece, supplies and stops with escutcheons.

D. Water Coolers: Handicapped accessible. Mount spout 36” above finished floor. (Elkay EDFPA17C or equal)

E. Toilet Seats: Open front, elongated, white color. (Kohler K4650 or equal)

PART 3 - EXECUTION

3.02 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Support piping properly. Pitch to drain points. Install with pipe expansion loops, mechanical expansion joints, and anchors.

C. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

D. Clearly label and tag all components.

E. Test and balance all systems for proper operation.

F. Restore damaged finishes. Clean and protect work from damage.

G. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15460

PLUMBING EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Provide the following

1. Commercial water heaters for potable water heat systems.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards:

1. Materials, Products, and Installation: ASME B31.9.
2. Plastic Piping Components: NSF 14.

C. Compliance, Water Heaters: UL 174, 732, 778, 1261, 1453; NSF 5; ASME Code Compliance.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Water Heaters:

1. Electric Water Heaters: 6-gallon, automatic type, vertical 150 psig rated storage tank, integral controls, drain valve, relief valve.
2. Accessories: sheet metal overflow containment basin

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Support piping properly. Pitch to drain points. Install with pipe expansion loops, mechanical expansion joints, and anchors.

C. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

D. Clearly label and tag all components.

E. Test and balance all systems for proper operation.

F. Restore damaged finishes. Clean and protect work from damage.

G. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15630

PACKAGED GAS-FIRED HEATING/COOLING UNITS

PART 1 - GENERAL

1.01 SUMMARY

A. Scope of work:

1. Provide natural gas fired packaged heating / cooling units

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: American Gas Association standards for outdoor applications.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Casing:

1. Panels shall be 20 gauge steel, gasketed and insulated with one (1) inch thick, 1 pound density foil faced fiberglass. Provide protective wire covering or grill at exterior condensing coils.

B. Compressor(s):

1. Scroll type, internally protected.
2. Hermetically sealed, 3,600 r.p.m..
3. Factory rubber-shock mounted and internally spring mounted for vibration isolation.
1. On independent circuits.
4. Provide over-temperature, over-current and high pressure controls.
5. Provide crankcase heaters

C. Evaporator Coil:

1. 3/8" O.D. seamless copper tubing bonded to aluminum fins.
2. Provide factory leak testing at 225 psig minimum.

D. Drain Pan:

1. Internally sealed and insulated.
2. Provide for copper drainline connection.

E. Condensor Coil:

1. 3/8" O.D. seamless copper tubing bonded to aluminum fins.
2. Provide factory leak testing at 425 psig minimum.

F. Fans

1. Indoor Air Fans: belt-driven, forward curved centrifugal type with adjustable sheaves and permanently lubricated bearings. Motor shall include thermal overload protection. Mount on rubber vibration isolators.
2. Condenser Fans: Direct-drive, balanced propeller with weatherproof motors UL listed for outdoor use. Include thermal overload protection.

G. Filters:

1. Filter rack shall be designed for removable, 2” thick filters.
2. Provide “Farr 30-30” filters.

H. Heating Section:

1. Self-contained design certified by the AGA for outdoor applications.
2. Provide threaded gas connections and regulator appropriate for local service pressures.

I. Heat Exchanger:

1. Embossed, formed and seamed 18 gauge aluminized steel..
2. Provide factory leak testing

J. Burners:

1. Stamped and welded 20 gauge aluminized steel.
2. Forced combustion blower motor shall not be in the hot air stream.

K. Electronic Ignition System:

1. Pilot shall be lit each time thermostat calls for heat. Flame sensor shall provide pilot flame and turn on main burner.
2. At loss of flame, provide re-spark within 0.8 seconds

L. Controls:

1. Provide electronic programmable type thermostat.

M. Outside Air Dampers:

1. Provide manually adjustable outside air dampers.
2. Adjust outside air to provide fresh air volumes as noted on the drawings.

2.02 ACCEPTABLE UNIT MANUFACTURERS

A. Carrier, Trane, York, or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Test and balance all systems for proper operation.

E. Restore damaged finishes. Clean and protect work from damage.

F. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15810

DUCTS AND DUCT ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide air distributions systems including ductwork, duct systems, HVAC casings, duct accessories, air outlets and inlets.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: NFPA 90A, 96.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Metal Ductwork:

1. Types: Rectangular plenums for HVAC systems in pressure classes from Minus 2 inches to plus 10 inches water gauge.
2. Galvanized Sheet Steel: Lock-forming quality, ASTM A 653 G90.
3. Sealing Materials: Joint and seam sealants, tapes and mastics.
4. Firestopping: Fire-resistant sealant.
5. Hangers and Supports: Concrete inserts, powder actuated fasteners, structural steel fasteners suitable for use; galvanized sheet steel hangers; duct attachments; trapeze and riser supports.
6. Fabrication: SMACNA HVAC Duct construction Standards.

B. Duct Accessories:

1. Backdraft Dampers: Extruded aluminum frame, blades, blade seals, and axles.
2. Manual Volume Control Dampers: Extruded aluminum standard volume, low-leakage volume, and high-performance volume control dampers; galvanized steel jackshaft; damper control hardware
3. Fire Dampers: UL 555 with galvanized steel frame, mounting sleeve, blades, horizontal dampers, fusible link.
4. Duct Silencers: Factory-fabricated rectangular and round units; acoustic fill.
5. Turning Vanes: Manufactured and acoustic turning vanes.
6. Duct-Mounted Access Doors and Panels: Manufactured units.
7. Flexible Connectors: UL 181, Class 1, flame-retardant or noncombustible fabrics.
8. Flexible Ducts: UL 181, Class 1, insulated types.
9. Accessory Hardware: Instrument test holes, splitter damper accessories, flexible duct clamps, adhesives.

C. Air Outlets and Inlets:

1. Ceiling Air Diffusers: Diffuser faces, mountings, patterns, dampers, accessories, and finishes suitable for service, use, and location.
2. Wall Registers and Grilles: Materials, faces, patterns, dampers, accessories, and finishes suitable for service, use, and location as selected.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing. Flexible ductwork lengths shall be limited to 5’-0” maximum.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating. Provide a return duct mounted smoke detector to provide positive shutdown of the fan blower motor.

C. Clearly label and tag all components.

D. Test and balance all systems for proper operation.

E. Restore damaged finishes. Clean and protect work from damage.

F. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15900

HVAC INSTRUMENTATION AND CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

A. Scope of work:

1. Provide electric temperature control systems used for building HVAC systems. (24 volt)

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Electric Control System Components:

1. Thermostats: Room thermostats, remote-bulb thermostats, fire protection thermostats, low-temperature protection thermostats.
2. Sensors: Electronic temperature.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Test and balance all systems for proper operation.

E. Restore damaged finishes. Clean and protect work from damage.

F. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 15950

TESTING, ADJUSTING, AND BALANCING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide complete testing, adjusting, and balancing for mechanical systems to meet design specifications.

1.02 SUBMITTALS

A. Operations Plan: Submit list of systems to be tested, adjusted and balanced.

B. Final Report: Submit list of tests performed, results observed, and remedial actions taken. Submit schedule and scope for recommended operation and maintenance of equipment.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: Associated Air Balance Council (AABC) requirements; National Environmental Balancing Bureau (NEBB) requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Systems for Testing:

1. Supply air systems, all pressure ranges.
2. Return air systems.
3. Exhaust air systems.
4. Temperature control system.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 16050

BASIC ELECTRICAL METHODS

PART 1 – GENERAL

1.01 SUMMARY OF WORK

A. Work shall include the following systems:
   1. Power and distribution systems. (Temporary and Permanent)
   2. Interior and exterior lighting systems. (Temporary and Permanent)
   3. Emergency lighting systems.
   4. Empty telephone raceway system and service entrance.
   5. Power connections for work covered by other sections of this specification.
   6. Modification to existing systems. (Where applicable)
   7. Final testing and Record Documents
   8. Training for Owner's employees

B. Provide all incidental material and labor as required for complete and fully functional systems including, but not limited to:
   1. Permits and fees.
   2. Excavation and backfilling.
   3. Cutting and patching.
   4. Coordination with local utility providers.
   5. Labeling and marking
   6. Maintenance manuals, Record Drawings, and Owner training.

1.02 SUBMITTALS

A. Provide submittals as described in individual sections of this specification.

1.03 REFERENCE STANDARDS

A. Work of this section shall comply with all current governing codes and regulations including, but not limited to:
   1. National Fire Protection Association (NFPA)
   2. Underwriters' Laboratories (UL)
   3. National Electrical Manufacturers' Association (NEMA)
   4. American National Standards Institute (ANSI)
   5. American Society for Testing Materials (ASTM)
   6. National Electrical Code (NEC)

1.04 QUALITY ASSURANCE

A. Installers shall be trained and skilled in the proper installation of all materials associated with the work of this section.
B. All work associated with this section shall be performed using the established best practices and standards of the trade.

1.05 COORDINATION

A. This contractor shall schedule and coordinate his work with the work described in all other sections of this specification and with representatives of local utility providers.

B. Work associated with underground service entrance shall be divided as follows:
   1. Local utility provider shall:
      a. Provide and install primary feeders and transformers
      b. Provide CT cabinet and KWHD meter base
      c. Provide and install KWHD meter
   2. Contractor shall:
      a. Install CT cabinet and KWHD meter base
      b. Provide and install service entrance conduits, conductors and connections.
      c. Provide and install all cables for secondary service.

1.06 DRAWINGS

A. Electrical drawings are diagrammatic. The indicated location of raceways, fixtures, devices, switches, outlets, etc. is approximate. Coordinate final installations with the work as described in other sections of this specification.

B. Refer to general construction drawings to become familiar with all conditions affecting the work of this section.

PART 2 – PRODUCTS

2.01 MATERIALS

A. All materials shall be new and shall conform to grade, quality and standard or those specified.

2.02 STORAGE AND HANDLING

A. Deliver materials in original, unopened packaging.

B. Store all materials of this section off the ground and in a dry environment.

PART 3 – EXECUTION

3.01 WORKMANSHIP

A. Devices, plates, enclosures, fixtures, exposed raceways, etc. shall be installed perpendicular with adjacent building structure and components.

B. Wiring terminations in panels shall be neatly looped and laced. Do not bundle conductors inside panels or enclosures.

C. Conductor terminations shall be clearly tagged and identified at each end. Panel board circuitry shall be clearly identified on documentation placed inside each panel board. Indicate all space circuits.

D. Conductor splices shall be kept to a minimum. Use splice and tap connectors which are compatible with respective conductor materials.

END OF SECTION

SECTION 16120

CONDUCTORS AND CABLES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide wires, cables, and connectors for power, lighting, signal, control and related systems rated 600 volts and less.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: National Electrical Code; UL 4, 83, 486A, 486B, 854; NEMA/ICEA WC-5, WC- 7, WC-8; IEEE 82.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Wire Components:

1. Conductors for Power and Lighting Circuits: Solid conductors for No. 10 AWG and smaller; stranded conductors for No. 8 AWG and larger.
2. Insulation: THHN/THWN for conductors size 500MCM and larger and No. 8 AWG and smaller; THW, THHN/THWN or XHHW insulation for other sizes based on location.
3. Jackets: Factory-applied nylon or PVC.
4. Conductor Material: Copper.

B. Cables:

1. Nonmetallic-Sheathed Cable for Lighting Wiring: UL Type NM and NMC.
2. Underground Service Entrance Cable: UL Type USE.
3. Underground Feeder and Branch-Circuit Cable: UL Type UF.

C. Connectors: UL listed solderless metal connectors with appropriate temperature ratings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Test and balance all systems for proper operation.

E. Restore damaged finishes. Clean and protect work from damage.

END OF SECTION

SECTION 16130

RACEWAYS AND BOXES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide electrical conduit, tubing, surface raceways, wireways, cable trays, boxes, and cabinets for electrical power and signal distribution.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Wiring Methods:

1. Exposed Indoor Wiring: Electrical metallic tubing or rigid nonmetallic conduit 6 feet or more above finished floor; galvanized steel conduit below 6 feet above finished floor.
2. Concealed Indoor Wiring: Electrical metallic tubing, electrical nonmetallic tubing, or rigid nonmetallic conduit.
3. Exposed Outdoor Wiring: Intermediate steel conduit.
4. Concealed Outdoor Wiring: Intermediate steel conduit.
5. Underground Wiring, Single Run: Rigid nonmetallic conduit.
6. Underground Wiring, Grouped: Rigid nonmetallic conduit.
7. Connection to Vibrating Equipment: Flexible Metal conduit, liquidtight at exterior.
8. Low voltage (12 / 24 volt) installed without conduit per NEC.

B. Metal Conduit and Tubing:

1. Rigid Steel Conduit: ANSI C80.1.
2. Intermediate Steel Conduit: UL 1242.
3. Electrical Metallic Tubing (EMT) and Fittings: ANSI C80.3.
4. Flexible Metal Conduit: UL 1 aluminum.
5. Flexible Metal Conduit: UL 1 zinc-coated steel.
6. Liquidtight Flexible Metal Conduit and Fittings: UL 360.

C. Nonmetallic Conduit and Ducts:

1. Electrical Nonmetallic Tubing (ENT): NEMA TC 13.
2. Rigid Nonmetallic Conduit (RNC): NEMA TC 2 and UL 651, Schedule 40 or 80 PVC.
3. Underground PVC and ABS Plastic Utilities Duct: NEMA TC 6, Type I for encased burial in concrete, Type II for direct burial.
4. PVC and ABS Plastic Utilities Duct Fittings: NEMA TC 9.
5. Liquidtight Flexible Nonmetallic Conduit and Fittings: UL 1660.

D. Raceway Accessory Materials:

1. Conduit Bodies: NEC requirements.
2. Wireways: NEC requirements.
3. Surface Raceways, Metallic: Galvanized steel, with snap-on covers.
4. Surface Raceways, Nonmetallic: Rigid PVC, UL 94.

E. Cable Trays:

1. Materials: Hot-dip galvanized steel.
2. Materials: PVC-coated steel.
3. Configuration: Ladder type, trough-type, solid-bottom type, channel type.
4. Covers: Solid type, louvered type, and ventilated-hat type.

F. Boxes and Fittings:

1. Cabinet Boxes: UL 50, sheet steel, NEMA 1.
2. Pull and Junction Boxes: UL 50, steel boxes.
3. Metal Outlet, Device and Small Wiring Boxes: UL 514A and OS 1.
4. Nonmetallic Outlet, Device and Small Wiring Boxes: NEMA OS 2.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Restore damaged finishes. Clean and protect work from damage.

E. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 16140

WIRING DEVICES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide wiring devices for electrical service.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

C. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: National Electrical Code, NEMA WD 1, UL.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Wiring Devices and Components:

1. Receptacles: UL 498 and NEMA WD 1, ivory color.
2. Ground-Fault Interrupter (GFI) Receptacles: Feed-thru type ground-fault circuit interrupter with integral duplex receptacles, ivory color.
3. Toggle Switches: UL 20 and NEMA WD 1, AC switches, ivory color.
4. Telephone Jacks: 8 position modular, flush in face of wall, plated.
5. Wall Plates: Single and combination types, steel plate with baked-on ivory finish.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Maintain the following mounting heights from finished floor:
1. Switches (centerlines): +48” or +6” above countertops or sinks
2. Receptacles (centerlines): +12” or +6” above countertops or sinks

(Adjust mounting heights for even coursing at all masonry walls.)

D. When devices are ganged, use appropriate coverplates for each type.

E. Equip all panelboards with directory cards. Information shall be neatly typed and shall identify all branch circuits by room designation or other location acceptable to the Owner.

3.02 TESTING

A. Contractor shall perform testing and retesting as required to verify that no short circuits or other deficiencies in the entire electrical system are present.

B. Perform testing for equipment circuits with the testing of each piece of equipment.

3.03 CLEANING

A. Following installation, insure that no surface dirt or discoloration is present. Repair and repaint metal surface that have become scratched or rusted.

END OF SECTION

SECTION 16300

TRANSMISSION AND DISTRIBUTION

PART 1 - GENERAL

1.01 SUMMARY

A. Provide electrical service and distribution including but not limited to service entrance, grounding, panelboards, overcurrent protective devices, and motor controllers.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. List project-specific information, including incoming service characteristics, connection types, transformers, and distribution system characteristics if available.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Service Entrance:

1. Meter Centers: Acceptable to local utility company.
2. Switches: Heavy-duty safety switches with NEMA Type 1 enclosure.
3. Meter Bases: Acceptable to local utility company

B. Grounding:

1. Grounding Equipment: UL 467; copper conductors; NEC Table 8 wire and cable conductors; connectors.
2. Grounding Electrodes: Copper-clad steel ground rods; copper plate electrodes.

C. Panelboards:

1. Panelboard Type: Load-center-type panelboards;

D. Overcurrent Protective Devices:

1. Overcurrent Protective Devices: Integral to panelboards, switchboards, and motor control centers.

E. Fuses:

1. Cartridge Fuses: ANSI/IEEE FU 1, nonrenewable cartridge type, noninterchangeable type.

F. Motor Controllers:

1. Combination Controller/Disconnect: Suitable for use.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Test all systems for proper operation. Label circuits in electrical panels.

D. Restore damaged finishes. Clean and protect work from damage.

E. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 16510

INTERIOR LUMINAIRES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide interior lighting fixtures, lamps, ballasts, emergency lighting units, and accessories.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: NFPA 70 "National Electrical Code."

PART 2 - PRODUCTS

2.01 MATERIALS

A. Interior Lighting Components:

1. Fluorescent Fixtures: Fixtures, UL 1570; ballasts, UL 935, energy-saving electronic type.
2. Exit Signs: UL 924, self-powered battery type and self-powered luminous source type.
3. Emergency Lighting Units: UL 924.
4. Lamps: ANSI Standards, C78 series. (Provide not less than 5% replacement lamps)

2.02 SCHEDULE

A. Interior Lighting Fixture Schedule: (See Drawings for fixture schedules and descriptions)

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Test all systems for proper operation. Label lighting circuits in electrical panelboards.

D. Instruct Owner's personnel in proper operation and maintenance of lighting systems.

END OF SECTION

SECTION 16521

EXTERIOR LUMINAIRES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide exterior lighting fixtures, lamps, ballasts, poles, concrete standards, and accessories.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for five years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: NFPA 70 "National Electrical Code."

PART 2 - PRODUCTS

2.01 MATERIALS

A. Exterior Lighting Components:

1. Light Emitting Diode (LED) fixtures.
2. Lamps: ANSI Standards, C78 series.
3. Fixture Support Poles, Mast Arms and Brackets:
    a. Aluminum.

2.02 SCHEDULE

A. Exterior Lighting Fixture Schedule: (See drawings for exterior lighting fixture and pole schedules)

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals.

B. Test and balance all systems for proper operation. Clearly label and tag all components.

C. Restore damaged finishes. Clean and protect work from damage.

D. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 16720

TELEPHONE AND INTERCOMMUNICATION EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Provide telephone and intercommunication equipment as follows:

1. Empty telephone distribution system as shown on the drawings.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Operation and Maintenance Data: Submit manufacturer’s operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Compliance: FCC regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Telephone System Components:

1. Empty telephone service raceway
2. Empty raceways and outlets to accommodate future wiring
3. Telephone equipment enclosure to accommodate termination

B. Telephone Distribution System Components:

1. Raceways, Outlet Boxes, Cabinets: Comply with project standards.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.

B. Maintain indicated fire ratings of walls, partitions, ceilings and floors at penetrations. Seal with firestopping to maintain fire rating.

C. Clearly label and tag all components.

D. Instruct Owner's personnel in proper operation of systems.

END OF SECTION