PROJECT MANUAL

FOR

A New Clinic & Infusion Center For LITTLE ROCK OPTIMAL OUTCOMES PHASE II

West Markham & North Fillmore Streets

Little Rock, AR

May 6, 2025

RPPY PROJECT #1785B

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DOCUMENT 00 01 10

TABLE OF CONTENTS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 84 00	Firestopping	3

DIVISION 08 - OPENINGS

08 11 13	Hollow Metal Door Frames	2
08 14 23	High Pressure Decorative Laminate Faced Wood Doors	2
08 71 00	Door Hardware	12
08 80 00	Glazing	3

DIVISION 09 - FINISHES

09 21 16	Gypsum Board Assemblies	5
09 30 00	Tiling	2
09 51 13	Acoustical Panel Ceilings	3
09 65 00	Resilient Flooring	3
09 90 00	Painting and Coating	5

DIVISION 10 - SPECIALTIES

10 14 00	Signage	2
10 26 00	Wall Protection	1
10 28 00	Toilet Accessories	3
10 44 00	Fire Protection Specialties	3

DIVISION 11 - EQUIPMENT
(Not Applicable)

DIVISION 12 - FURNISHINGS

12 20 00	Window Coverings	2

DIVISION 13 - SPECIAL CONSTRUCTION
(Not Applicable)

DIVISION 14 - CONVEYING EQUIPMENT

14 25 00	Dumbwaiter	2

DIVISIONS 15 TO 19 - NOT USED

FACILITY SERVICES SUBGROUP

DIVISION 20 - NOT USED

DIVISION 21 - FIRE SUPPRESSION

21 00 00	Fire Suppression	4

DIVISION 22 – PLUMBING

22 00 00	Plumbing - General	3

DIVISION 23 - HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

23 00 00	HVAC - General	4

DIVISION 24 - NOT USED

DIVISION 25 - INTEGRATED AUTOMATION
(Not Applicable)

DIVISION 26 - ELECTRICAL

26 00 00	Basic Electrical Requirements	10
26 05 19	Wire and Cable	2
26 05 26	Secondary Grounding	1
26 05 33a	Conduit	3
26 05 33b	Boxes	3
26 05 48	Seismic Protection	5
26 24 00	Panelboards	2
26 27 26	Wiring Devices	2
26 28 00	Disconnect Switches	2
26 50 00	Lighting	2

DIVISION 27 – COMMUNICATIONS

27 30 00	Telecommunication Raceway System	2

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

28 31 00	Fire Alarm System	4

DIVISION 29 - NOT USED

SITE AND INFRASTRUCTURE SUBGROUP
DIVISION 30 - NOT USED
DIVISION 31 - EARTHWORK
(Not Applicable)

DIVISION 32 - EXTERIOR IMPROVEMENTS
(Not Applicable)

DIVISION 33 - UTILITIES
(Not Applicable)

DIVISION 34 - TRANSPORTATION
(Not Applicable)

DIVISIONS 35 TO 39 - NOT USED

PROCESS EQUIPMENT SUBGROUP
DIVISION 40 - PROCESS INTEGRATION
(Not Applicable)

DIVISIONS 41 TO 43 - NOT USED

DIVISION 44 POLLUTION CONTROL EQUIPMENT – NOT USED

DIVISIONS 45 TO 49 - NOT USED

END OF DOCUMENT

DOCUMENT 00 72 14

GENERAL CONDITIONS

1.1 SUMMARY

A. Document Includes: General Conditions.

B. Related Documents:
1. Document 00 73 13 - Supplementary Conditions.

1.2 GENERAL CONDITIONS

A. AIA Document A201-2017, General Conditions of the Contract for Construction, is the General Conditions of the Contract. They are hereby incorporated into and made as much a part of this Project Manual as if bound herein. A copy of the General Conditions is on file and may be examined in the Architect's office. The printed General Conditions will be bound in each of the contract copies of the Project Manual to be retained by the Owner, Architect, and Contractor as part of the executed Contract Documents.

1.3 SUPPLEMENTARY CONDITIONS

A. Refer to Document 00 73 13 for modifications to General Conditions.

END OF DOCUMENT

DOCUMENT 00 73 13

SUPPLEMENTARY CONDITIONS

1.1 SUMMARY

A. Document Includes: Supplementary Conditions.

B. Related Documents:
1. Document 00 72 14 - General Conditions.

1.2 SUPPLEMENTARY CONDITIONS

A. These Supplementary Conditions modify the General Conditions of the Contract for Construction, AIA Document A201-2017, and other provisions of the Contract Documents as indicated below. All provisions which are not so modified remain in full force and effect.

B. The terms used in these Supplementary Conditions which are defined in the General Conditions of the Contract for Construction, AIA Document A201-2017, have the meanings assigned to them in the General Conditions.

ARTICLE 1.1 - BASIC DEFINITIONS

Delete subparagraph 1.2.1 and substitute the following:

"1.2.1The Architect shall identify those Contract Documents which are a part of the Agreement."

ARTICLE 3 - CONTRACTOR

Add subparagraph 3.4.4 under paragraph 3.4 as follows:

"3.4.4 All contractors and subcontractors engaged in the Owner/Contractor Agreement shall conform to the labor laws of the State of Arkansas and the various acts amendatory and supplementary thereto; and to all other laws, ordinances and legal requirements applicable thereto."

Add the following to the end of paragraph 3.5 as follows:

"The Contractor shall guarantee and warrant his and his subcontractors' work and materials (including the materials and work of suppliers of the Contractor and his subcontractors) for a period of one year from the date of acceptance of the project by the Owner. This warranty shall be for a longer period on certain items if so designated in the specifications. The foregoing one-year guaranty and warranty shall not in any way limit, restrict or affect the liability of the Contractor, or his subcontractors, for indemnity as provided for in this Contract, nor shall it in any way shorten the period of limitation fixed by law for the filing of any action against the Contractor for enforcement or for breach of any provisions of the Contract Documents. Should the Contractor elect to use any of the equipment in the building during the construction period, he shall make arrangements with the subcontractor or supplier of the equipment for any

extension of warranty of that equipment made necessary by such use. The warranty period for such equipment to the Owner shall not be reduced by the use of equipment by the Contractor."

Add the following sentence to subparagraph 3.7.1:

"Specifically including the Occupancy Permit."

Add the following sentence to subparagraph 3.9.3:

"The Contractor shall, at all times, enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the Work assigned to him."

ARTICLE 5 - SUBCONTRACTORS

Add subparagraph 5.2.5 under paragraph 5.2 as follows:

"5.2.5 Where any of the provisions of this paragraph 5.2 conflict with laws of the State of Arkansas, as amended, the provisions of such laws and amendments thereto shall govern."

ARTICLE 7 - CHANGES IN THE WORK

Delete subparagraph 7.3 and substitute the following new paragraph 7.1.4 in lieu thereof:

"7.1.4 The method used in determining adjustments in the contract sum shall be as follows:

1. Without invalidating the Contract, the Owner may order extra Work or make changes by altering, adding to or deducting from the Work, the contract sum being adjusted accordingly, and with the Contractor obtaining the consent of the surety where necessary or desirable.
2. No claims for any extra Work or materials shall be allowed unless the Work is ordered in writing by the Architect.
3. Any changes in the Work will be on a basis of actual cost plus 12% of the cost for overhead and profit, including insurance, for the Contractor performing the Work (subcontractor or General Contractor).
4. If changes in the Work are performed by a subcontractor, the value of any such Work shall be computed as outlined in subparagraph 3 above, to which the General Contractor may add an overhead and profit charge of six percent (6%), including insurance.
5. Work omitted that was included in the original Contract shall be computed on the same basis.
6. The Contractor shall furnish an itemized breakdown for the requested change in Work.
7. Bills for extras will be allowed only when Work is ordered in writing. No bills based on verbal orders will be allowed unless accompanied by a written order from the Owner.
8. The Contractor waives all claims for extension of time of completion on account of extra Work, unless application for such extension of time is made by the Contractor in writing within 24 hours of the time such Work is ordered."

ARTICLE 9 - PAYMENTS AND COMPLETION

Delete paragraph 9.3 in its entirety and substitute the following paragraph 9.3 in lieu thereof:

"9.3 APPLICATIONS FOR PAYMENT

9.3.1 The Contractor shall present to the Architect an application for payment on or before the twenty-fifth day of each calendar month. These periodical estimates for partial payment shall be submitted on AIA Document G702 and G703.

In preparing estimates, the material delivered and suitably stored on the site and preparatory Work done may be taken into consideration. The Architect shall review the applications for payment in accordance with the general observations of the Work and the percentage of completion of each category before submitting them to the Owner for payment. No later than the 10th day of each calendar month, the Owner will make partial payment to the Contractor, but the Owner will retain 10% of the amount of each such estimate. There shall be retained 10% on the estimated amounts until final completion and acceptance of all Work covered by the Contract. Before issuance of the final certificate, the Contractor shall obtain in writing from the bonding company, approval of such payment. No certificate issued nor payment made to the Contractor, nor partial or entire use or occupancy of the Contract Work by the Owner, shall be an acceptance of any Work or materials not in accordance with this Contract.

9.3.2 If approved in advance by the Owner, payment may similarly be made for materials and equipment suitable stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include applicable insurance, storage and transportation to the site for such materials and equipment stored off the site."

ARTICLE 11 - INSURANCE AND BONDS

Delete paragraphs 11.1, 11.2, 11.3, and 11.4, and substitute the new paragraphs 11.1, 11.2, 11.3, and 11.4 as follows:

"11.1 GENERAL

11.1.1 The Contractor shall not commence Work under this Contract or allow any subcontractor or anyone directly or indirectly employed by anyone of them, to commence Work until he has obtained all insurance required under this section and duly executed certificates of such insurance have been filed with the Architect and approved by the Owner. All insurance policies, certificates and endorsements shall be submitted to the Architect in duplicate; one copy of which will be retained by the Architect and the other forwarded to the Owner. The Contractor shall require all subcontractors or anyone directly or indirectly employed by any of them, and anyone for whose acts any of them may be

liable, to either obtain statutory Workmen's Compensation, Comprehensive General Liability and Comprehensive Automobile Insurance coverage for his (the subcontractor's) portion of the Work or reimburse the Contractor for providing such insurance coverage. Comprehensive General Liability insurance and Comprehensive Automobile Liability insurance shall protect the Contractor from claims for bodily injury including death to his employees, or of any person other than his employees, and all other claims for property damage including water damage legal liability, personal injury liability, damage from collapse, damage from grading, excavation and all underground work, any and all of which may arise out of or result from the Contractor's operations required for the project, whether such operations be by himself or by any subcontractor or anyone directly employed by either of them.

11.1.2 The required insurance must be written by a company licensed to do business in the State of Arkansas, at the time of the policy issue. In addition, the companies must be acceptable to the Owner.

11.1.3 The Contractor shall not cause any insurance to be canceled nor permit any insurance to lapse. All insurance policies shall contain a clause to the effect that the policy shall not be cancelled or reduced, restricted or limited until fifteen days after the Owner and Architect have received written notice. Certificates of insurance shall contain transcripts from the proper office of the insurer, evidencing in particular, those insured, the extent of the insurance, the location, and the operations to which the insurance applies, the expiration date, and the above mentioned notice of cancellation clause.

11.2 WORKMEN'S COMPENSATION INSURANCE

11.2.1 The Contractor shall procure and maintain during the term of the Contract, Workmen's Compensation Insurance for all his employees engaged at the site of the Work, in accordance with the statutes of the State of Arkansas. In case any hazardous occupations are required for the execution of the Work, which are not covered by the above insurance, special Employer's Liability policy shall be procured and maintained during the term of the Contract by the Contractor to cover workmen engaged in such hazardous occupations.

11.3 LIABILITY AND PROPERTY INSURANCE

11.3.1 Comprehensive General Liability Insurance - The Contractor shall procure and maintain during the term of this Contract, at the Contractor's expense, a comprehensive general liability policy including products/completed operations with limits no less than $1,000,000 combined single limit or $500,000 each occurrence and $1,000,000 aggregate for bodily injury and $500,000 each occurrence and $500,000 aggregate for property damage. Contractor shall also furnish umbrella limits of $1,000,000.

This policy must include "Contractual Coverage" to cover contractual indemnity, and hold harmless the Owner and Architect and all their agents and employees from and against all claims, damages, losses, and expenses, including attorney's fees arising out of or resulting from the performance of the Work, provided such claim, damage, loss, injury, sickness, disease, death or injury to or destruction of

tangible property other than the Work itself, including the loss of use resulting therefrom, and is caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a part indemnified thereunder. Provide an endorsement to the policy to include the Architect as additional insured.

11.3.2 Comprehensive Automobile Liability Insurance - The Contractor shall procure and maintain during the term of the contract, at the Contractor's expense, comprehensive automobile liability limits not less than $1,000,000 combined single limit or $500,000 per person and $500,000 per accident for bodily injury and $500,000 limit per accident for property damage. Umbrella liability limits may be used to certify the limits. Provide an endorsement to the policy to include the Architect as additional insured.

11.3.3 Builder's Risk Insurance - The Contractor shall take out and maintain during the life of the Contract and until same has been accepted, Builder's Risk, Fire Extended Coverage, Vandalism, and Malicious Mischief Insurance for an amount equal to 100% of the total value of the Contract sum of the Work. Said insurance coverage to be written in the name of the Contractor and Owner. This insurance shall not be cancelled or reduced upon Substantial Completion of the Project, but shall be kept in force until final acceptance of the Project and final payment is made.

11.4 PERFORMANCE AND PAYMENT BOND

11.4.1 If requested by the Owner, furnish a Performance and Payment Bond in the amount equal to 100% of the Contract Price, as security for the faithful performance of this Contract and for payment of all indebtedness for labor and materials furnished in connection with this Contract. The bond shall be written by a surety company which has qualified and is authorized to do business in the State of Arkansas and must be executed by a resident local agent who shall be entitled to full commission paid local agents and who is licensed by the Insurance Commissioner to represent the surety company executing said bond and filing with said bond, his power of attorney as his authority. The mere countersigning of a bond will not be sufficient. The bond shall be written in favor of the Owner.

11.4.2 An original and two copies of the bond must be furnished, with power of attorney attached to each. The bond must not be dated prior to the date of the Contract. The Contractor shall file (not record) the original with the Clerk of the Circuit Court of the County in which the Work to be performed is located. The Contractor is to pay all expenses incident to the filing of the bond. The remaining two copies should be certified by the Clerk to evidence the filing of the original and these two copies submitted to the Architect."

ARTICLE 13 - MISCELLANEOUS PROVISIONS

Add paragraph 13.6, "SUBSTITUTIONS", as follows:

"13.6 SUBSTITUTIONS

13.6.1 Where a definite material is specified, it is not the intent to discriminate against any equal product of another manufacturer. It is the intent to set a definite standard. Open competition is expected, but in all cases, complete data must be submitted on all proposed substitutes and samples shall be submitted for comparison and test when requested by the Architect. No substitution shall be made unless authorized in writing by the Architect. If the Contractor intends to substitute an equal product, he shall make this fact known, in writing, to the Architect within 30 days after the award of the Contract, including any changes in the Work required to accommodate the substitution.

13.6.2 Should a substitution be accepted and should the substitute material prove defective or otherwise unsatisfactory for the service intended and within the guaranty period, the Contractor shall replace this material or equipment with the material or equipment specified by name.

13.6.3 After execution of the Contract Agreement, proposed substitutions will be considered only if there is no decrease in quality, and only when submitted by or through the General Contractor. Such requests shall be submitted promptly in order to allow adequate time for checking and study by the Owner and Architect without delaying the project. Requests for time extensions will not be approved for delays due to related substitutions. No substitution will be allowed without the Architect's approval, in writing.

ARTICLE 15 - CLAIMS AND DISPUTES

In subparagraph 15.4.1, after the words, "American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the agreement", add the words, "subject to applicable laws of the state of Arkansas".

END OF DOCUMENT

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. Work by Owner.

C. Owner supplied products.

1.2 CONTRACT DESCRIPTION

A. Work Covered by Contract Documents: Architect's Project #1785B dated May 6, 2025 includes furnishing tools, labor and equipment to perform the work required for the Phase II of the new Clinic and Infusion Center for Little Rock Optimal Outcomes, located at West Markham and North Fillmore Streets in Little Rock, AR including general construction, fire protection, mechanical and electrical work in accordance with the following:
   1. Conditions of Contract: General Conditions, Supplementary Conditions
   2. Specifications: Divisions 0, 1, 2, 5 through 10, 12, 21, 22, 23, 26, 27, 28
   3. Drawings:
      a. Cover Sheet
      b. Architectural Sheet Nos. A1.1, A1.2, A1.3, A5.1, A6.1, A6.2, A7.1, A9.1, A10.1
      c. Mechanical Sheet Nos. M0.1, M1.1, M2.1, M3.1
      d. Plumbing Sheet Nos. P0.1, P1.1, P2.1, P3.1
      e. Electrical Sheet Nos. E2.01, E3.01, E3.02, E4.01
      f. Fire Protection Sheet F1.1
   4. Addenda: Any addenda issued during the bidding period and made a part of the Contract Documents.
   5. Agreements: Contract Agreement between Owner and Contractor as executed, and mutually agreed upon Bid Modification Documents and change orders issued.

1.3 WORK BY OWNER

A. Items noted NIC (Not in Contract), will be furnished and installed by Owner beginning Substantial Completion.

B. Schedule:
   1. Furniture
   2. Televisions
   3. Copiers

1.4 OWNER FURNISHED CONTRACTOR INSTALLED (OFCI) PRODUCTS

A. Owner's Responsibilities:

1. Arrange for and deliver Owner-reviewed Shop Drawings, Product Data, and Samples, to Contractor.
2. Arrange and pay for delivery to site.
3. On delivery, inspect products jointly with Contractor.
4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:
1. Review Owner-reviewed Shop Drawings, Product Data, and Samples.
2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
3. Handle, store, install and finish products.
4. Repair or replace items damaged after receipt.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule of values.

B. Applications for payment.

C. Change procedures.

D. Alternates.

1.2 SCHEDULE OF VALUES

A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702.

B. Submit Schedule of Values in duplicate within 15 days after date established in Notice to Proceed.

C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section.

D. Include in each line item, amount of Allowances specified in this section.

E. Include separately from each line item, direct proportional amount of Contractor's overhead and profit.

F. Revise schedule to list approved Change Orders, with each Application for Payment.

1.3 APPLICATIONS FOR PAYMENT

A. Submit each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702. Submit electronically.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Monthly, as stated in the Supplementary Conditions.

E. Substantiating Data: When Architect requires substantiating information, submit data justifying dollar amounts in question.

1.4 CHANGE PROCEDURES

A. The Architect will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing a Drawing Clarification.

B. The Architect may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within 10 days.

C. Contractor may propose changes by submitting a request for change to Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Architect.

E. Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Architect will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

F. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

H. Correlation Of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
   2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
   3. Promptly enter changes in Project Record Documents.

1.5 ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.

B. Coordinate related work and modify surrounding work.

C. Schedule of Alternates:
   1. Alternate No. 1: Change woodgrain 2 x 5 ceiling to match the remaining 2 x 2 acoustical ceiling.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

C. Progress meetings.

D. Pre-installation meetings.

E. Cutting and patching.

F. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion, and for portions of Work designated for Owner's partial occupancy.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Architect will schedule meeting after Notice to Proceed.

B. Attendance Required: Owner, Architect, major subcontractors, Superintendent, and Contractor.

C. Agenda:
1. Bonds and insurance.
2. Documents
3. List of subcontractors.
4. Construction schedule.
5. Designation of personnel represented for contact on this job.
6. Procedure for processing field decisions as they relate to proposal requests and finally change orders.
   a. RFI's, PR's and Change Orders.
   b. Design questions.
7. Visits by Owner and contractor to project site.
8. Temporary utilities provided by the Owner.
9. Security on site.
10. Application of payment document preference, date, etc.
11. As built drawings schedule.
12. Protection of in-place equipment and use of before end of construction.
13. Owner furnished items – coordination and installation.

D. Record minutes and distribute copies within two days after meeting to participants, and those affected by decisions made.

1.4 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, and those affected by decisions made.

1.5 PRE-INSTALLATION MEETINGS

A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. Notify Architect/Engineer one week in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect/Engineer, and those affected by decisions made.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching to complete Work, and to:
   1. Fit the several parts together, to integrate with other Work.
   2. Uncover Work to install or correct ill-timed Work.
   3. Remove and replace defective and non-conforming Work.
   4. Remove samples of installed Work for testing.
   5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute work by methods to avoid damage to other Work, and to provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new products in accordance with requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of penetrated element.

J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

K. Identify hazardous substances or conditions exposed during the Work to Architect for decision or remedy.

3.2 SPECIAL PROCEDURES

A. Employ skilled and experienced installer to perform alteration work.

B. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

C. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

D. Remove debris and abandoned items from area and from concealed spaces.

E. Prepare surface and remove surface finishes to permit installation of new work and finishes.

F. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

G. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to specified condition.

H. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.

I. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

J. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect for review.

K. Where change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition; to Architect for review

L. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Samples.

G. Design data.

H. Test reports.

I. Certificates.

J. Manufacturer's instructions.

K. Manufacturer's field reports.

L. Construction photographs.

1.2 SUBMITTAL PROCEDURES

A. Transmit each submittal with AIA Form G810.

B. Send submittals electronically. Do not submit MSDS sheets or any unnecessary data. Clearly mark products proposed for use.

C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

D. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

F. Schedule submittals to expedite Project, and deliver to Architect. Coordinate submission of related items.

G. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.

H. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

I. Allow space on submittals for Contractor and Architect/Engineer review stamps.

J. When revised for resubmission, identify changes made since previous submission. The complete submittal will not be reviewed again, only the items marked. Architect/Engineer will not be responsible for any other changes to previously accepted items.

K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

L. Submittals not requested will not be recognized or processed.

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedules within 15 days after date of Owner-Contractor Agreement.

B. Submit revised Progress Schedules with each Application for Payment.

C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers, and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

E. Submit computer generated horizontal bar chart with separate line for each major portion of Work or operation, = identifying first work day of each week.

F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Submit separate schedule of submittal dates for shop drawings, product data, and samples, including Owner furnished products, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

I. Indicate delivery dates for Owner furnished products.

J. Revisions to Schedules:
   1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
   2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
   3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect including effect of changes on schedules of separate contractors.

1.4 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

A. Product Data: Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit electronically.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.6 SHOP DRAWINGS

A. Any drawings provided by the Architect or Engineer to be used in the preparation of shop drawings will be at the cost of $100 per sheet.

B. Shop Drawings: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

D. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

E. Submit one hard copy and one electronic copy of structural submittals that include drawings. All other submittals may be submitted electronically.

F. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 SAMPLES

A. Samples: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
1. Submit to Architect for aesthetic, color, or texture approval.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; Architect will retain one sample.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

G. Samples will not be used for testing purposes unless specifically stated in specification section.

H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01 70 00 - Execution and Closeout Requirements.

1.8 DESIGN DATA

A. Submit for Architect's knowledge as contract administrator or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

A. Submit for Architect's knowledge as contract administrator or for Owner.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Architect for delivery to Owner in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

A. Submit reports for Architect/Engineer's benefit as contract administrator or for Owner.

B. Submit report within 5 days of observation to Architect for information.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of site and construction throughout progress of Work.

B. Twice monthly submit photographs with Application for Payment.

C. Take photographs as evidence of existing project conditions.

D. Identify each print on back. Identify name of Project, orientation of view, date and time of view.

E. Deliver negatives to Owner with project record documents. Catalog and index negatives in chronological sequence; include typed table of contents.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Superintendent.

B. Quality control and control of installation.

C. Tolerances.

D. References.

E. Labeling.

F. Mock-up requirements.

G. Testing and inspection services.

H. Manufacturers' field services.

I. Examination.

J. Preparation.

1.2 SUPERINTENDENT

A. The Superintendent assigned to this project must be competent and satisfactory to the Architect.

B. Do not change superintendents except with the consent of the Architect, unless he proves to be unsatisfactory, or ceases to be in his employ.

1.3 QUALITY CONTROL AND CONTROL OF INSTALLATION

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

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. 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.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

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

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 REFERENCES

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

B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.6 LABELING

A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
   1. Model number.
   2. Serial number.
   3. Performance characteristics.

1.7 MOCK-UP REQUIREMENTS

A. Tests will be performed under provisions identified in this section and identified in respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be comparison standard for remaining Work.

D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Architect/Engineer.

1.8 TESTING AND INSPECTION SERVICES

A. Employ and pay for services of an independent testing agency or laboratory acceptable to Owner to perform specified testing.
   1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. The independent firm will perform tests, inspections and other services specified in individual specification sections and as required by Architect.
   1. Laboratory: Authorized to operate at Project location.
   2. Laboratory Staff: Maintain full time registered Engineer on staff to review services.
   3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

C. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by Architect or Owner.

D. Reports will be submitted by independent firm to Architect and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
   1. Submit final report indicating correction of Work previously reported as non-compliant.

E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Architect and independent firm 2 weeks prior to expected time for operations requiring services.
   2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

F. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

G. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Architect/Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

H. Agency Responsibilities:
   1. Test samples of mixes submitted by Contractor.

2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by Architect.
7. Attend preconstruction meetings and progress meetings.

I. Agency Reports: After each test, promptly submit four copies of report to Architect, Contractor, and authority having jurisdiction. When requested by Architect, provide interpretation of test results. Include the following:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

J. Limits on Testing Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency or laboratory may not approve or accept any portion of the Work.
3. Agency or laboratory may not assume duties of Contractor.
4. Agency or laboratory has no authority to stop the Work.

1.9 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, and test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect 2 weeks in advance of required observations.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, MANUFACTURERS' FIELD REPORTS article.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

D. Beginning of Work constitutes acceptance of substrate and conditions.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
   1. Temporary electricity.
   2. Temporary lighting for construction purposes.
   3. Temporary heating.
   4. Temporary cooling.
   5. Temporary ventilation.
   6. Telephone service.
   7. Temporary water service.
   8. Temporary sanitary facilities.

B. Construction Facilities:
   1. Parking.
   2. Progress cleaning and waste removal.
   3. Fire prevention facilities.

C. Temporary Controls:
   1. Barriers.
   2. Enclosures and fencing.
   3. Security.
   4. Noise control.
   5. Pollution control.

D. Removal of utilities, facilities, and controls.

1.2 TEMPORARY ELECTRICITY

A. Provide and pay for power service required from utility source as needed for construction operation. Refer to electrical specifications for additional requirements.

B. Provide power outlets, with branch wiring and distribution boxes located as required for construction operations. Provide flexible power cords as required for portable construction tools and equipment.

C. Permanent convenience receptacles may be utilized during construction.

1.3 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain lighting for construction operations and to exterior staging and storage areas after dark for security purposes.

B. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps for specified lighting levels.

C. Maintain lighting and provide routine repairs.

D. Permanent building lighting may be utilized during construction.

1.4 TEMPORARY HEATING

A. Provide and pay for heating devices and heat as needed to maintain specified conditions for construction operations.

B. Prior to operation of permanent equipment for temporary heating purposes, verify installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in product sections.

1.5 TEMPORARY COOLING

A. Provide and pay for cooling devices and cooling as needed to maintain specified conditions for construction operations.

B. Prior to operation of permanent equipment for temporary cooling purposes, verify installation is approved for operation, equipment is lubricated and filters are in place. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.

C. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.6 TEMPORARY VENTILATION

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.7 TELEPHONE SERVICE

A. Provide, maintain, and pay for telephone service to field office at time of project mobilization.

1.8 TEMPORARY WATER SERVICE

A. Provide and pay for suitable quality water service as needed to maintain specified conditions for construction operations.

B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.9 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of project mobilization.

1.10 PARKING

A. Do not allow heavy vehicles or construction equipment in parking areas.

B. Permanent Pavements and Parking Facilities:
   1. Prior to Substantial Completion, bases for permanent roads and parking areas may be used for construction traffic.
   2. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
   3. Use of permanent parking structures is permitted.

C. Maintenance:
   1. Maintain traffic and parking areas in sound condition, free of excavated material, construction equipment, products, mud, snow, and ice.
   2. Maintain paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

D. Removal, Repair:
   1. Remove temporary materials and construction at Substantial Completion.
   2. Remove underground work and compacted materials to depth of 2 feet; fill and grade site as specified.
   3. Repair facilities damaged by use, to specified condition.

1.11 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing spaces.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from site periodically and dispose off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.12 FIRE PREVENTION FACILITIES

A. Prohibit smoking with buildings under construction and demolition. Designate area on site where smoking is permitted. Provide approved ashtrays in designated smoking areas.

B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
   1. Provide one fire extinguisher at building under construction and demolition.

2. Provide minimum one fire extinguisher in every construction trailer and storage shed.
3. Provide minimum one fire extinguisher on roof during roofing operations using heat producing equipment.

1.13 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by authorities having jurisdiction for public rights-of-way.

C. Provide protection for plants designated to remain. Replace damaged plants.

1.14 ENCLOSURES AND FENCING

A. Construction: Contractor's option.

B. Exterior Enclosures: Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

C. Interior Enclosures: Provide temporary partitions as indicated on Drawings to prevent penetration of dust and moisture, and to prevent damage to existing materials and equipment.

1.15 SECURITY

A. Security Program: Protect operations from theft, vandalism, and unauthorized entry.

B. Entry Control:
1. Restrict entrance of persons and vehicles into Project site.
2. Allow entrance only to authorized persons with proper identification.
3. Maintain log of workers and visitors, make available to Owner on request.

1.16 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise from construction operations.

1.17 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Remove underground installations to minimum depth of 2 feet. Grade site as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Architect will consider requests for Substitutions only within 30 days after date of Owner-Contractor Agreement. Substitutions will only be allowed if proposed product matches or exceeds quality, and has same appearance as specified product.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension which may subsequently become apparent.
   5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:

1. Submit request for Substitution for consideration. Limit each request to one proposed Substitution.
2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
3. Architect will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Starting of systems.

D. Demonstration and instructions.

E. Testing, adjusting and balancing.

F. Protecting installed construction.

G. Substantial Completion.

H. Project record documents.

I. Operation and maintenance data.

J. Manual for materials and finishes.

K. Manual for equipment and systems.

L. Spare parts and maintenance products.

M. Product warranties and product bonds.

N. Maintenance service.

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's review.

B. Provide submittals to Architect required by authorities having jurisdiction.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site; sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect seven days prior to start-up of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractors' personnel in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 01 33 00 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of final inspection.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.

E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.6 TESTING, ADJUSTING AND BALANCING

A. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.7 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.8 SUBSTANTIAL COMPLETION

A. Notify the Architect when the Work is considered to be substantially complete. Within a reasonable time after such notification, the Architect will examine the Work to determine the status of completion.

B. When the Architect determines that the Work is substantially complete, he will conduct a punch list observation and prepare a certificate of substantial completion accompanied by a list of the items to be completed or corrected. Architect will submit the certificate to the Owner and Contractor for their signatures.

C. Should the Architect determine that the Work is not substantially complete, he will promptly notify the Contractor, giving reasons therefore. Contractor shall remedy the deficiencies in the Work and contact Architect to re-examine.

D. The Architect reserves the right to add items to the punch list found during punch list check-off.

1.9 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, Product Data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract drawings.

G. Submit three USBs to Architect with claim for final Application for Payment.

1.10 OPERATION AND MAINTENANCE DATA

A. Submit in USB format.

B. Prepare printed title sheet "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project.

C. Internally subdivide contents with dividers, logically organized as described below.

D. Drawings: Include in USB.

E. Contents: Prepare Table of Contents for each system, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Engineers, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:

a. Significant design criteria.
b. List of equipment.
c. Parts list for each component.
d. Operating instructions.
e. Maintenance instructions for equipment and systems.
f. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

3. Part 3: Project documents and certificates, including the following:
a. Shop drawings and product data.
b. Air and water balance reports.
c. Certificates.
d. Photocopies of warranties.

1.11 MANUAL FOR MATERIALS AND FINISHES

A. Submit two USB drives with completed data 15 days prior to final inspection.

B. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations.

C. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

D. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

E. Additional Requirements: As specified in individual product specification sections.

F. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.12 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit two copies of USB s 15 days prior to final inspection.

B. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Include servicing and lubrication schedule, and list of lubricants required.

H. Include manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by controls manufacturer.

J. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

K. Include control diagrams by controls manufacturer as installed.

L. Include Contractor's coordination drawings, with color coded piping diagrams as installed.

M. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

N. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

O. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.

P. Additional Requirements: As specified in individual product specification sections.

Q. Include listing in Table of Contents for design data.

1.13 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

1.14 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include Table of Contents on USBs.

F. Submit prior to final Application for Payment.

G. Time of Submittals:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
   2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.15 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification sections.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Preservative treatment of wood.
2. Concealed wood blocking for support of toilet and bath accessories and other wall hung items.

1.2 QUALITY ASSURANCE

A. Grading Marks: Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency identification; and submit mill certificate that material has been inspected and graded in accordance with requirements if it cannot be marked on a concealed surface.

B. Wood Preservative Treatment: Label each piece of pressure treated lumber with the Quality Control mark of the American Wood Preservers Bureau showing compliance with the appropriate standard.

C. Perform Work in accordance with the following:'
1. Lumber Grading Agency: Certified by SPIB (Southern Pine Inspection Bureau).
2. Lumber: DOC PS 20.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Keep carpentry materials dry during delivery, storage and handling. Store lumber in stacks for air circulation within stacks. Protect bottom of stacks against contact with damp surface. Protect exposed materials against weather. Do not store dressed or treated lumber or plywood outdoors.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: SPIB.
1. Structural Lumber 2" to 4" thick, 6" and wider: KD, S4S, Southern Pine No. 2.
2. Structural Light Framing, 2" to 4" thick, 2" to 4" wide, and Studs: KD, S4S, Southern Pine No. 2.
3. Light Framing 2" to 4" thick, 2" to 4" wide: KD, S4S, Southern Pine Construction Grade.

B. Provide single bottom plate and double-top plates 2" thick by width of studs, except where otherwise indicated.

2.2 ACCESSORIES

A. Fasteners and Anchors: Z-Mac coating on galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.

B. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

A. Pressure treat above-ground items with water-borne preservatives comply with AWPA U1. After treatment, kiln-dry to maximum moisture content, of 19 percent. Treat indicated items and the following:
   1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
   2. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with masonry and concrete.
   3. Wood framing members less than 18" above grade.
   4. Wood floor plates installed over concrete slabs directly in contact with earth.

B. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment and to comply with AWPA M4.

C. Wood Preservative (Pressure Treatment): AWPA Treatment U1 using water borne preservative with 0.25 percent retainage.

D. Provide fire treated wood for use in rated walls.

PART 3 EXECUTION

3.1 INSTALLATION

A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as indicated and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.

D. Use common wire nails, except as otherwise indicated or specified. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite

side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

E. Place horizontal members crown side up.

F. Provide wood grounds, strips, bucks, plates, backing, and blocking, of thickness and shape required to secure work and equipment in place, as indicated on drawings or required by conditions. Fasten with approve types and sizes of nails, ties, and inserts, spaced to provide rigid secure supports.

END OF SECTION

SECTION 06 20 00

FINISH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Finish carpentry items including laminate clad millwork.
2. Hardware and attachment accessories.

1.2 SUBMITTALS

A. Shop Drawings: Required.

B. Product Data: Required for all hardware.

1.3 QUALITY ASSURANCE

A. Perform work in accordance with AWI Quality Standards, Custom Grade.

B. Surface Burning Characteristics: Maximum 24/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.

PART 2 PRODUCTS

2.1 LAMINATE CLAD MILLWORK

A. Laminate: NEMA LD 3, GP50 for horizontal surfaces, GP28 for vertical surfaces, CL20 for cabinet liner surfaces.
1. Doors and Millwork Faces: Wilsonart, 8213K-28
a. Pattern/Color: Phantom Cocoa
b. Finish: Glossline finish, AEON scratch resistant
c. Contact: Jamie Borger, 972.266.4729, jamie.borger@wilsonart.com
2. Countertops: Wilsonart, Classic Linen, 4943.

B. Particle Board: Industrial Grade.

2.2 ACCESSORIES

A. Concealed Joint Fasteners: Threaded steel.

B. Wood Filler: Tinted to match surface finish color.

C. Hardware:
   1. Hinges: Concealed style, nickel-plated steel finish.
   2. Pulls: Hardware Resources, Elements, Naples, #154SS; satin nickel finish.
      a. Drawers: Install horizontally.
      b. Doors: Install vertically.
   3. Latches: Concealed style, nickel-plated steel finish.
   4. Shelf Supports: Hafele, 5 mm double pin shelf support.
   5. Drawer Glides: Heavy duty, steel ball bearing, 100 lb. minimum, full extension, soft closing, such as KV 8450 FM, or approved equal.

D. Adhesive for High Pressure Decorative Laminates: Type recommended by laminate manufacturer to suit application.

E. Plastic Edge Trim: Extruded, self locking serrated tongue; color as selected.

2.3 FABRICATION

A. Fabricate to AWI Custom standards, unless noted otherwise.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install work in accordance with AWI Custom quality standard, unless noted otherwise.

B. Set and secure materials and components in place, plumb and level.

C. Install hardware and adjust for smooth operation.

END OF SECTION

SECTION 06 62 16

QUARTZ SURFACING FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes horizontal countertops.

1.2 SUBMITTALS

A. Product Data: Required.

B. Shop Drawings:
1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.

C. Samples:
1. For each type of product indicated.
a. Submit minimum 6-inch by 6-inch sample in specified gloss.
b. Cut sample and seam together for representation of inconspicuous seam.
c. Indicate full range of color and pattern variation.
2. Approved samples will be retained as a standard for work.

D. Fabricator/Installer Qualifications:
1. Provide copy of certification number.

E. Maintenance Data:
1. Submit manufacturer’s care and maintenance data, including repair and cleaning instructions.
2. Include in project closeout documents.

1.3 QUALITY ASSURANCE

A. Qualifications:
1. Shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

B. Fabricator/installer Qualifications:
1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.

B. Store components indoors prior to installation.

C. Handle materials to prevent damage to finished surfaces.
   1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.5 WARRANTY

A. Provide manufacturer's warranty against defects in materials.
   1. Warranty shall provide material and labor to repair or replace defective materials.
   2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.
   3. Warranty shall be transferable to subsequent owner for remainder of warranty period.

B. Manufacturer's warranty period:
   1. Ten years from date of substantial completion.

1.6 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURER/COLOR

A. Manufacturer: Wilsonart.

B. Pattern/Color: Q4011, Arashi

C. Edge treatment: Ease edges at all 90 degree corners.

D. Contact: Jamie Borger, 972.266.4729, jamie.borger@wilsonart.com

2.2 ACCESSORIES

A. Mounting Adhesive: Structural grade "50 year" silicone or epoxy adhesive.

B. Surface Adhesive: Epoxy or polyester.

C. Adhesive Manufacturers:
   1. Cambria
   2. Akemi North America
   3. Bonstone Material Corp.
   4. Tenax USA
   5. Wilsonart

D. Joint Sealant: Clear sealant of type recommended by manufacturer for application and use.
   1. Manufacturers:
      a. Dow Corning

b. GE Sealants

E. Solvents: Denatured alcohol for cleaning to assure adhesion of adhesives and sealants.

2.3 FABRICATION

A. Layout surfaces to minimize joints and avoid L-shaped pieces of quartz surfacing. Layout and fabricate with hairline joints.

B. Inspect materials for defects prior to fabrication.

C. Cut and polish with water cooled powered tools.

D. Cutouts to have minimum of 3/8 inch radius.

E. Where edges of cutouts will be exposed in finished work, polish edges.

F. Laminate layers of quartz surfacing as required to create built up edges following procedures recommended by the manufacturer.

G. Fabrication must be by a certified fabricator, certified in writing by the manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Verify dimensions by field measurements prior to installation.

C. Verify that substrates supporting quartz surfaces are plumb, level and flat to within 1/8 inch in 10 feet and that all necessary supports and blocking are in place.

D. Clean surfaces prior to installation. Protect finished surfaces from scratches. Apply masking where necessary. Take necessary precautions to prevent dirt, grit, dust and debris from other trades from contacting the surface.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install materials in accordance with manufacturer's instructions and approved shop drawings.

B. Position materials to verify the correct size. If size adjustments or additional fabrication is necessary, use water cooled tools. Protect jobsite and surface from dust and water.

C. Allow gaps for expansion of not less than 1/8 inch per ten feet when installed between walls or other fixed structure.

D. Clean substrate. Remove loose and foreign matter which may interfere with adhesion. Clean backside and joints with denatured alcohol. Apply continuous bead of mounting adhesive around perimeter of structural substrate and supports on horizontal surface. Apply continuous bead of mounting adhesive around perimeter of vertical surfaces. In addition, apply ¼ inch mounting adhesive bead every 8 inches on vertical center.

E. Install quartz surfacing plumb, level, square and flat to within 1/8 inch in ten feet, non-cumulative. Align adjacent pieces in same plane.

F. Joints:
   1. Joints between Adjacent Pieces of Quartz Surfacing:
      a. Joints to be flush, tight fitting, level and neat.
      b. Securely join adjacent pieces with two part acrylic adhesive.
      c. Fill joints level to polished surface.
      d. Secure adjacent quartz surfaces with vacuum clamps until adhesive hardens.

3.3 REPAIR

A. Replace or repair damaged material to like new condition.

3.4 CLEANING AND PROTECTION

A. Remove masking, excessive adhesive and sealants. Clean exposed surfaces with denatured alcohol.

B. Protect installed fabrications with non-staining sheet coverings.

END OF SECTION

SECTION 07 84 00

FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Firestopping and through-penetration protection system materials and accessories.
2. Firestopping tops of fire rated walls.
3. Smoke sealing.

1.2 PERFORMANCE REQUIREMENTS

A. Conform to applicable code for fire resistance ratings and surface burning characteristics.

1.3 SUBMITTALS

A. Product Data: Submit data on product characteristics, performance and limitation criteria.

B. Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.

C. Manufacturer's Installation Instructions: Submit preparation and installation instructions.

D. Manufacturer's Certificate: Certify products and assemblies meet or exceed specified requirements and applicable code requirements.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F (15 degrees C).

C. Maintain this minimum temperature before, during, and for minimum 3 days after installation of materials.

D. Provide ventilation in areas to receive solvent cured materials.

PART 2 PRODUCTS

2.1 FIRESTOPPING

A. Manufacturers:
1. Hilti Corp.
2. 3M Fire Protection Products.
3. Specified Technologies.
4. Substitutions: Not Permitted.

B. Product Description: As determined by firestop specialist as required to firestop rated partitions and openings and penetrations through those partitions.

2.2 ACCESSORIES

A. Primer: Type recommended by firestopping manufacturer.

B. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify openings are ready to receive firestopping.

3.2 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.

B. Remove incompatible materials affecting bond.

3.3 APPLICATION

A. Install material at fire rated construction perimeters and openings.

B. Apply firestopping material in sufficient thickness to achieve required fire and smoke rating.

C. Label or stencil all firestops installed through penetration firestops. State that the fill material around the penetrating item is a firestop, and that it shall not be disturbed unless by an authorized contractor. Label to include the firestop brand name, and the classified system number for which it was installed.

D. Firestopping material to be flush on both sides of wall after application, neatly applied. Any firestopping surfaces not neat or too messy for painting will be required to be reinstalled.

3.4 FIELD QUALITY CONTROL

A. Keep all areas of work accessible until inspection by the applicable Code Authorities.

3.5 CLEANING

A. Remove spilled and excess materials adjacent to firestopping without damaging adjacent surfaces.

END OF SECTION

SECTION 08 11 13

HOLLOW METAL DOOR FRAMES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Steel door frames; non-rated and fire rated.
2. Interior borrowed light frames.

1.2 SUBMITTALS

A. Shop Drawings: Required.

B. Product Data: Required.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. ANSI 250.8 – Recommended Specifications for Standard Steel Doors and Frames.
2. DHI – Door Hardware Institute – The Installation of Commercial Steel doors and Steel Frames, Insulated Steel Doors in Wood Frames, and Builder's Hardware.

B. Conform to requirements of ANSI A250.8.

C. Fire Rated Door Frame Construction: Conform to NFPA 252.

D. Attach label from agency approved by authority having jurisdiction to identify each fire rated door frame.

PART 2 PRODUCTS

2.1 STEEL DOORS AND FRAMES

A. Manufacturers:
1. Amweld Building Products, Inc.
2. Ceco Door Products
3. Republic Doors
4. Steelcraft
5. Substitutions: Not Permitted.

2.2 COMPONENTS

A. Frames:
1. Level 2 for Door Models 1, 16 gage/0.053 inch thick.

2.3 ACCESSORIES

A. Silencers: Resilient type.

B. Removable Stops: Rolled steel channel shape.

C. Astragals for Double Doors: Steel, Z shaped.

D. Primer: ANSI A250.10 rust inhibitive type.

E. Weatherstripping: Specified in Section 08 71 00.

2.4 FABRICATION

A. Fabricate frames as face welded units.

B. Fabricate doors and frames with hardware reinforcement welded in place.

C. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

D. Attach fire rating label to each fire rated door and frame.

2.5 SHOP FINISHING

A. Primer: Baked.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install door frames in accordance with ANSI A250.8.

B. Install roll formed steel reinforcement channels between two abutting frames.

C. Install fire rated assemblies in accordance with NFPA 80.

D. Tolerances:
   1. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

END OF SECTION

SECTION 08 14 23

HIGH PRESSURE DECORATIVE LAMINATE FACED WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: High pressure decorative laminate faced solid core doors; flush and flush glazed configuration; fire rated and non-rated.

B. Related Sections:
1. Section 08 11 13 – Hollow Metal Door Frames
2. Section 08 71 00 – Door Hardware

1.2 SUBMITTALS

A. Shop Drawings: Required.

B. Product Data: Required.

C. Samples: Required.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with NWWDA I.S.1.

1.4 WARRANTY

A. Furnish manufacturer's "Life of Installation" warranty for interior doors.

PART 2 PRODUCTS

2.1 DOORS

A. Manufacturers:
1. Algoma Hardwoods Inc.
2. Eggers Industries.
3. Marshfield Door Systems.
4. Mohawk Flush Doors, Inc..
5. Graham.
6. Substitutions: Permitted.

B. Flush Interior Doors: 1-3/4 inches thick; solid core, fire rated as indicated on Drawings.

2.2 COMPONENTS

A. Solid Core, Non-Rated: AWI Section 1300, Type PC - Particleboard.

B. Solid Core, Fire Rated: AWI Section 1300.

C. Facing Adhesive: Type I - waterproof.

D. High-Pressure Decorative Laminates: NEMA LD3.
   1. Face laminate doors with high-pressure decorative laminates.
   2. Nominal Minimum Thickness for Faces and Vertical Edges: 0.048 inch.
   3. Wilsonart, 8213K-28
      a. Pattern/Color: Phantom Cocoa
      b. Finish: Glossline finish, AEON scratch resistant
      c. Contact: Jamie Borger, 972.266.4729, jamie.borger@wilsonart.com

2.3 FABRICATION

A. Fabricate doors in accordance with AWI Quality Standards requirements.

B. Furnish lock blocks at lock edge and top of door for closer for hardware reinforcement.

C. Factory machine doors for finish hardware.

PART 3 EXECUTION

3.1 PREPARATION

A. Allow doors to become acclimated to building temperature and relative humidity for a minimum of 24 hours before installation.

3.2 INSTALLATION

A. Install doors in accordance with AWI Quality Standards requirements.

B. Adjust door for smooth and balanced door movement.

C. Tolerances: Conform to NWWDA requirements for fit and clearance tolerances and maximum diagonal distortion.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 – GENERAL

1.01 SUMMARY

A. Section includes the supply and installation of the Finish Hardware.
   1. Include the termination of all Electrified Hardware.
   2. Include field verification of any existing doors, frames or hardware.

B. Related Sections
   1. Division 1
   2. Sealants – Division 7
   3. Openings – Division 8
   4. Finishes – Division 9
   5. Fire Alarm –Division 28
   6. Electrical –Division 26
   7. Security –Division 28

1.02 REFERENCES

A. Documents and Institutes that shall be used in estimating, detailing and installing the items specified.
   1. International Building Code – Current/Adopted Edition
   2. ICC/ANSI A117.1 – Accessible and Usable Building and Facilities -Current/Adopted Edition
   3. NFPA 70 – Current/Adopted Edition
   4. NFPA80 –Standards for Fire Doors and Fire Windows – Current/Adopted Edition
   5. NFPA101 – Life Safety Code – Current/Adopted Edition
   6. NFPA105 – Installation of Smoke-Control Door Assemblies – Current/Adopted Edition.
   7. ANSI - American National Standards Institute
   8. BHMA – Builders Hardware Manufacturers Association
   9. UL – Underwriters Laboratory
   10. DHI – Door and Hardware Institute
   11. Accessibility Standards – Current Adopted Edition
   12. Local Building Codes

1.03 SUBMITTALS

A. Comply with pertinent provisions of Division 01.

B. Finish Hardware Schedule to be in vertical format to include:
   1. Heading #/Hardware Set
   2. Door #, Location, Hand, Degree of Opening, Door Size and Type, Frame Size and Type, Fire Rating
   3. Quantity, type, style, function, product, product number, size, fasteners, finish and manufacturer of each hardware item.
   4. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.

5. Keying schedule
6. Title Sheet, Index, Abbreviations, Manufacturers List, Template List and Templates.
7. Mounting locations for hardware.
8. Explanation of abbreviations, symbols, and codes contained in schedule.
9. Date of the Finish Hardware Specification and Drawing / Door Schedule used in completing the Finish Hardware Schedule.
10. In Name, Company and Date of Field Verification if required.
11. Door Index; include door number, heading number, and hardware group.
12. Name and phone number for local manufacturer's representative for each product.
13. Submit in conjunction with Door and Frame Submittal.
14. Operation Description of openings with electrified hardware.

C. Product Data: Provide product data in the form of a binder, manufacturer's technical product fact sheets for each item of hardware. Include whatever information may be necessary to show compliance with requirements, including instructions for installation and for maintenance of operating parts and finish.

D. Wiring Diagrams: Provide Riser/Elevation and Point to Point Wiring Diagrams for all openings with electrified hardware. Include all information that is necessary for coordination with other trades.

E. Samples: Provide samples as requested by Owner or Architect with Heading # and Door# marked on boxes. All samples will be returned to the contractor and used on doors for which they were marked.

F. Templates: Provide templates of finish hardware items to each fabricator of doors, frames and other work to be factory or shop prepared for the installation of hardware.

G. Keying Schedule: After meeting with the Owner, a keying schedule shall be submitted using keyset symbols referenced in DHI manual "Keying Systems and Nomenclature." The keying schedule shall be indexed by door number, keyset, hardware heading number, cross keying instructions and special key stamping instructions.

H. Operations and Maintenance Data: At the completion of the job, provide to the Owner one hard copies or one electronic copy of an Owner's operation and maintenance manual. The manual shall consist of a labeled hardcover three ring binder with the following technical information:
1. Title page containing: Project name, address and phone numbers. Supplier's name, address and phone numbers.
2. Table of Contents.
3. Copy of final (file and field use/as-installed) Finish Hardware Schedule.
4. Final Keying Schedule.
5. Maintenance instruction, adjustment, and preservation of finishes for each item of hardware.
6. Catalog pages for each items of hardware.
7. Installation Instructions for each item of hardware
8. Parts List for each item of hardware.
9. As installed point to point wiring diagrams for electrified hardware.
10. Warranties include Order #.

1.04 QUALITY ASSURANCES

A. Substitutions: Request for substitutions shall not be accepted within this project. Architect, Owner and Finish Hardware Consultant have selected one (1) specified and two (2) equals listed hereinafter in the Hardware Schedule. By this selection process they have established three (3) equal products for competitive pricing, while insuring no unnecessary delays by a substitution process. If any specified product is listed as a "No Substitution" product, this product will be supplied as specified, with no alteration or request of substitution. The reason for this is to comply with the uniformity established at this project. Parts and supplies are inventoried for these products for ease and standardization of replacement.

B. Supplier Qualifications: Supplier shall be recognized architectural finish hardware supplier, with warehousing facilities, who have been furnishing hardware in the project vicinity for a period of not less than 2 year and who is or employs a DHI Certified AHC, DHC, DHSC or person with a minimum of 10 years of experience as a hardware supplier. This person shall be available at reasonable times during the work for consultation about products hardware requirements, to the Owner, Architect and General Contractor.

C. Installer Qualifications (Mechanical Hardware): All finish hardware shall be installed by the Finish Hardware Installer with a minimum of at least two (2) years documented experience. Installer shall attend a pre-installation meeting between the General Contractor, Finish Hardware Supplier/s, hardware manufacturer's representative for locks, closers and exit devices, and all door / frame suppliers. The Finish Hardware Installer shall be responsible for the proper installation and function of all doors and hardware.

D. Installer Qualifications (Electrified Hardware): All electrified finish hardware (power source, electrified locking or control device, switching device, through wire device and monitoring device) shall be installed by an Electronic Access Control Installer licensed by the Texas Department of Public Safety. The Electrified Finish Hardware Installer shall have a minimum of at least two (2) years of documented experience. Installer shall attend a pre-installation meeting between the General Contractor, Finish Hardware Supplier/s, Electrical Contractor, Fire Alarm Contractor, Security Contractor, hardware manufacturer's representative for electrified hardware, all door / frame suppliers. The Electrified Finish Hardware Installer shall be responsible for the proper installation, termination and function of all opening with electrified hardware. Installation shall include termination of all electrified products (including the required wire to the power supply and/or junction box).

1.05 DELIVERY, STORAGE AND HANDLING

A. Marking and Packaging: Mark each item or package separately, with identification related to hardware set number, door number and keyset symbol.

B. Delivery:
   1. Deliver individually packaged and properly marked finish hardware at the proper time and location to avoid any delays in construction or installation.
   2. At time of delivery, inventory hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

C. Storage: Store hardware in enclosed, dry and locked area.

1.06 WARRANTY

A. All finish hardware products shall be covered by a 1 year factory warranty from the date of substantial completion of the project.

B. Supply warranty verification to the owner for all products that provide factory warranty. Warranty should include Factory Order # and date.

1.07 MAINTENANCE/EXTRA MATERIALS

A. Extra Materials:
   1. All extra screws, fasteners, and all special installation tools furnished with the hardware shall be turned over to the owner at the completion of the job.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Screws and Fasteners:
   1. Coordinate with door supplier and manufacturer to ensure proper blocking and reinforcement is provided to support wood or machine screws when mounting panic hardware and door closers. If proper blocking and reinforcement is not included provide through bolts sized to the thickness of the door. All fasteners should be the proper type and length for the product being supplied.
   2. All finish hardware shall be installed to manufacturer's recommendations, using screws, attachments and installation tools provided with the hardware. No other screws or attachments are acceptable.
   3. All other products to meet door and frame conditions.

B. Hinges:
   1. Template: Provide templated units only.
   2. Exterior: All exterior hinges shall be stainless steel base with stainless steel pin and stainless steel finish.
   3. Interior: All interior hinges steel based.
   4. Interior corrosive: All interior hinges at corrosive areas shall be stainless steel base with stainless still pin and stainless steel finish.
   5. All hinges on doors over 36" wide, with exit devices, or with push/pull shall be heavy weight.
   6. Electric Hinge: Provide minimum 8 wire.
   7. Provide non-removable pins for out swinging doors that are locked or are lockable.
   8. All hinges on doors with door closers shall be ball bearing.
   9. All hinges shall be full mortise.
   10. Size: Provide 4 ½ x 4 ½ hinges on doors up to 3'0" in width. Provide 5 x 4 ½ hinges over 3'0" to 4'0" in width. Reference manufacturers catalog for all other sizes.
   11. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90" or less in height and one additional hinge for each 30" of additional height.
   12. Adjust hinge width as required for door, frame, trim and wall conditions to allow proper degree of opening.
   13. Provide hinges conforming to ANSI/BHMA A156.1.

14. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.
15. Supply from the following list of manufacturers:

Ives	IVE
Hager	HAG
Stanley	STA

C. Continuous Hinges:
1. Continuous hinges to be manufactured of 6063-T6 aluminum.
2. Continuous hinge shall be certified to ANSI 156.26, Grade 1
3. Continuous hinge should be tested an approved UL10C.
4. Electrified – Provide minimum 8 wire with removable panel.
5. Provide hinges 1 inch shorter in length than nominal height of door, unless otherwise noted.
6. Provide reinforcing for doors weighing over 450 pounds and up to 600 pounds.
7. Supply from the following list of manufacturers:

Ives	IVE
Select	SEL
Stanley	STA

D. Cylindrical Locks:
1. All locks on this project should be manufacturer by the same manufacturer.
2. All locks shall meet the new ANSI/BHMA A156.2, Series 4000, Grade 2.
3. All cylindrical locks shall be UL Listed for 3 hour fire door. Review lock for any height restriction.
4. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with a 1/2 inch (13 mm) latch throw. Provide proper latch throw for UL listing at pairs.
5. Provide standard ASA strikes unless extended lip strike is necessary for frame/trim or 7/8” lip strike is necessary at pair with overlapping astragal.
6. Provide dust box.
7. Lockset shall adjust to fit door thickness from 1 ¾” to 2 1/8”.
8. Supply from the following list of manufacturers:

Falcon	FAL

E. Exit Devices:
1. All exit device types on this project should be manufactured by the same manufacturer.
2. Exit devices are to be architectural grade touch bar type. Touchpad to extend one half of door width.
3. Mechanism case to be smooth.
4. Exit devices shall meet ANSI A156.3, Grade 1.
5. All exit devices are UL listed Panic Exit or Fire Exit Hardware.
6. All lever trim to match lock trim in design and finish.
7. Dogging: Non-rated devices are to be provided with dogging. Less dogging where shown in Hardware Sets (some exterior, electrical rooms, electrified) Cylinder dogging as shown in hardware sets.
8. Exit devices are to be supplied and installed with thru-bolts for exterior, hollow metal doors, or as required for application.
9. Provide proper power supply for exit devices as required. Coordinate with Fire Alarm, Electrical and Security Contractor.
10. Push pads shall be metal, no plastic inserts allowed.

11. Exit devices shall have a flush end cap.
12. Exit devices shall be ordered with the correct strike for application.
13. Exit devices shall be order in the proper length to meet door width.
14. Exit devices shall have dead latching.
15. Exit device shall be provided in width/height required based on door size.
16. Install exit devices with fasteners supplied by exit device manufacturer.
17. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits as required.
18. Provide proper concealed vertical rods for wood or hollow metal doors as required.
19. Factory or field drill weep holes for exit devices used in full exterior applications, highly corrosive areas, and where noted in the hardware sets.
20. Supply from the following list of manufacturers:
    Von Duprin VON

F. Flush Bolts:
1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.
2. Supply from the following list of manufacturers:
    Ives IVE
    Trimco TRI
    Rockwood ROC

G. Pull Plates/Pulls/Push Plate:
1. Pull and Push Plates to meet ANSI 156.6 for .050” thickness.
2. Pull and Push Plate size to 4” x 16”.
3. Pull Plate to have 10” center and 1” round on pull plate with concealed fasteners.
4. Provide straight and offset pulls with fasteners as required
5. Provide concealed fasteners for all applications.
6. Prep plate for cylinder/lock as required.
7. Supply from the following list of manufacturers
    Ives IVE
    Trimco TRI
    Rockwood ROC

H. Door Closers:
1. All door closers on this project should be manufactured by the same manufacturer.
2. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
3. Door closers shall be furnished with standard cover. Provide full cover as shown in hardware sets.
4. Size in accordance with the manufacturer’s recommendations for door size and condition.
5. Door closers shall be furnished with delayed action, hold-open as listed in the Hardware Sets.
6. Door closers shall be mounted out of the line of sight wherever possible (i.e., room side of corridor doors, etc.) with parallel arm mounting on out swinging doors.

7. All closer installation shall include thru bolts on exterior, hollow metal doors or where required for application.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
9. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
10. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
11. Supply from the following list of manufacturers

Falcon	FAL

I. Door Protection Plates:
1. Protective plates shall meet ANSI A156.6 requirements for .050 thickness.
2. Protection plates should be fabricated from stainless steel.
3. Protection plate shall be height as shown in Hardware Sets. Width shall be 10" by 2" less than door width on single door or pair with a mullion and 1" less than door width on pair of doors without a mullion.
4. Beveled 4 edges.
5. Provide kickplate on all doors with closers, unless not required for aesthetic reasons.
6. Prep protective plates for hardware as required.
7. Supply from the following list of manufacturers:

Ives	IVE
Rockwood	ROC
Trimco	TRI

J. Door Stops and Holders:
1. Supply wall stops at all openings to protect doors or door hardware. Install so lock does not lock unintentionally. Install blocking in wall where wall stop will be mounted.
2. When wall conditions do not permit use of wall stop provide floor stops with risers as needed to adjust for floor conditions.
3. When wall conditions do not permit use of wall stop provide overhead stops. Jamb mount where required to not be visible from Corridor.
4. Exterior Ground Level Doors: Provide security floor stop.
5. Exterior Roof Doors: Provide heavy duty overhead stop.
6. Supply from the following list of manufacturers:

Glynn Johnson	GLY
Rockwood	ROC
Trimco	TRI

K. Silencers:
1. Provide silencers on all doors without seal. 3 for single doors and 2 for pairs.
2. Provide silencers as required for frame conditions. SR64 for hollow metal frames. SR65/SR66 for wood frames.
3. At wood frames, insure height of stop is compatible with silencer.
4. Supply from the following list of manufacturer's

Ives	IVE
Rockwood	ROC
Trimco	TRI

L. Thresholds/Weatherstripping:

1. Thresholds on doors in the accessible path shall conform to accessibility codes.
2. Threshold should be based on sill detail.
3. Smoke seal shall be teardrop design bulb seal.
4. Exterior seal/thresholds shall be silicone or brush as shown in hardware sets.
5. Drip strips shall protrude 2 ½" and be 4" wider than opening.
6. At S Label single doors provide seals on frame to comply with UL1784
7. At S Label pair of doors provide seals on frame and as meeting stile to comply with UL1784.
8. Automatic Door Bottom shall be mortised to comply with accessibility codes.
9. Supply from the following list of manufacturer's

Zero	ZER
National Guard	NGP
Pemko	PEM

2.03 KEYING

A. General: Finish Hardware Supplier shall meet in person with owner to finalize keying requirements prior to the locks and exit devices being ordered and match existing or start a new Master Key System for the project. During keying meeting all hardware functions should be reviewed with the owner to finalize lock and exit device functions. During keying meeting determine all expansion required.

B. Cylinders: Provide the correct and quantity of cylinders for all applications.

C. Keys: Provide nickel silver keys only. Furnish 2 change keys for each lock and 10 master keys. Deliver all keys to Owners' Representative.

D. Cores and keys shall be provided with identification stamping.

E. Provide Bitting List to Owner.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine doors, frames and related items for conditions that would prevent the proper application of any finish hardware items. Do not proceed with installation until all defects are corrected.

B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Follow Door and Hardware Institute Publication:

Recommended Location for Architectural Hardware for Standard Steel Doors and Frames
Recommended Location for Builder's Hardware for Custom Steel Doors and Frames
Recommended Locations for Architectural Hardware for Wood Flush Door

B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

C. Follow ANSI A117.1-1998 Accessible and Usable Building and Facilities and Texas Accessibility Standards.

D. Review mounting locations with Architect where required.

E. Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers should not be visible in corridors, lobbies and other public spaces where possible.

F. Locate power supplies in accessible location and indicate in as-builts where located.

G. Set threshold in full bed of sealant complying with requirements specified in Division 07.

H. Pre Installation meeting required with attendees to include Architect, General Contractor, Mechanical Hardware Installer, Electrified Hardware Installer, Finish Hardware Supplier and Manufacturer's Representative for Exit Device, Locks and Closers and Door/Frame Suppliers before installation begins.

3.03 FIELD QUALITY CONTROL

A. After installation has been completed, obtain the services of an Architectural Hardware Consultant to check for proper installation of finish hardware, according to the finish hardware schedule and keying schedule. In addition, check all hardware for adjustments and proper operation.

3.04 ADJUST AND CLEAN

A. Adjust, clean and inspect all hardware, to ensure proper operation and function of every opening. Replace items, which cannot be adjusted to operate freely and smoothly as intended for the application made.

3.05 PROTECTION

A. The General Contractor shall use all means at his disposal to protect all finish hardware items from abuse, corrosion and other damage until the owner accepts the project as complete.

3.06 TRAINING

A. After installation has been completed, provide training to the Owner on the operation of the Finish Hardware and programming of any electrified hardware.

3.07 HARDWARE SCHEDULE

A. These hardware set shown below are for use as a guideline. Provide hardware as required to meet the requirements of the openings, security, and code requirements.

HARDWARE GROUP NO. 000
FOR USE ON DOOR #(S):
119A
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
-CASED OPENING. NO HARDWARE REQUIRED					

HARDWARE GROUP NO. 201C
FOR USE ON DOOR #(S):
105
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	B581P6 QUA	626	FAL
1	EA	SURFACE CLOSER	SC81A SS FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 341C
FOR USE ON DOOR #(S):
103 104 113 118 121
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S SPA OS-OCC	626	SCH
1	EA	SURFACE CLOSER	SC81A SS FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 401
FOR USE ON DOOR #(S):
112B 128
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	B101S QUA	626	FAL
1	EA	SURFACE CLOSER	SC81A REG OR PA AS REQ FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 401-EX
FOR USE ON DOOR #(S):
119B
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	B101S QUA	626	FAL
1	EA	SURFACE CLOSER	SC81A REG OR PA AS REQ FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

-EXISTING DOOR. HARDWARE SET IS A GUIDELINE FOR PRICING PURPOSES. EXISTING CONDITIONS WILL BE REQUIRED TO BE FIELD INSPECTED PRIOR TO SUBMITTALS AND ORDERING OF ANY HARDWARE TO INSURE HARDWARE WILL BE COMPATIBLE WITH EXISTING DOOR AND FRAME. ADVISE ARCHITECT IF ANY ADDITIONAL MATERIAL/WORK IS REQUIRED.

HARDWARE GROUP NO. 401C
FOR USE ON DOOR #(S):
112A
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	B101S QUA	626	FAL
1	EA	SURFACE CLOSER	SC81A SS FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 403
FOR USE ON DOOR #(S):
106 107 108 109 122 123
124 125 126 127
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	B101S QUA	626	FAL
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 403S
FOR USE ON DOOR #(S):
116
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	B101S QUA	626	FAL
1	EA	OH STOP & HOLDER	450H X SIZE AS REQ	689	GLY
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. 503
FOR USE ON DOOR #(S):
120
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	B561P QUA	626	FAL
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP NO. C201N
FOR USE ON DOOR #(S):
111 129
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	B581P6 QUA	626	FAL
1	EA	ELECTRIC STRIKE	4211 FSE	630	VON
1	EA	SURFACE CLOSER	SC81A REG OR PA AS REQ FC	689	FAL
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CREDENTIAL READER	BY SECURITY CONTRACTOR		
1	EA	POWER SUPPLY	BY SECURITY CONTRACTOR		

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Glass and glazing for metal frames, doors, and windows.
2. Glass and glazing materials and installation requirements are included in this section for other sections referencing this section.

1.2 PERFORMANCE REQUIREMENTS

A. Glass Thickness: Select minimum thickness in accordance with ASTM E1300 to resist specified design loads.

B. Structural Design: Design in accordance with applicable code for most critical combination of wind, snow, seismic, and dead loads.

C. Roof Loads: Design sloped glass to resist live and dead loads.

D. System Design: Design and size components to withstand dead loads and live loads caused by pressure and negative wind loads acting normal to plane of window.

1.3 SUBMITTALS

A. Shop Drawings: Required.

B. Product Data: Required. Submit solar heat gain coefficient, as well as thicknesses and tint for glass.

C. Samples: Required.

1.4 QUALITY ASSURANCE

A. Qualifications of Installers: Provide at least one person thoroughly trained and experienced in skills required, completely familiar with referenced standards and requirements of this work and to personally direct installation performed under this Section.

B. Applicable Standards for Glass and Glazing Work: Conform to the "Manual of Glazing" of the Flat Glass Marketing Association, requirements of Federal Specification DD-G-451c and Safety Standard 16 CFR 1201 of the U.S. Consumer Products Safety Commission.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery:
1. Deliver glass to site in accordance with manufacturer's instructions.

2. Deliver glass in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:
1. Store glass in accordance with manufacturer's instructions.
2. Store glass in clean, dry area indoors.
3. Protect from exposure to direct sunlight and freezing temperatures.
4. Apply temporary coverings loosely to allow adequate ventilation.
5. Protect from contact with corrosive chemicals.
6. Avoid placement of glass edge on concrete, metal, and other hard objects.
7. Rest glass on clean, cushioned pads at 1/4-points.

C. Handling:
1. Handle glass in accordance with manufacturer's instructions.
2. Protect glass from damage during handling and installation.
3. Do not slide 1 lite of glass against another.
4. Do not use sharp objects near unprotected glass.

PART 2 PRODUCTS

2.1 GLASS MATERIALS

A. Annealed Glass: ASTM C1036, Type 1 transparent flat, Quality Q3, float glass.

B. Tempered Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, uncoated.

C. Provide safety glazing as required by code. Provide heat strengthened glass where required by design pressures, anticipated thermal stress, or use in spandrel areas. Provide fully tempered glass only where safety glazing is mandatory or where pressures exceed capacity of heat strengthened glass.

2.2 FLOAT GLASS PRODUCTS

A. Clear Glass: Annealed, Heat strengthened, and Tempered float glass as specified; Class 1 clear.

B. Minimum Thickness: 1/4 inch unless otherwise indicated.

2.3 GLAZING ACCESSORIES

A. Provide glazing accessories required to complete glazing work, that are compatible with various components of the glazing system(s), and subject to approval of Architect.

B. Glazing Sealants, Gaskets and Tapes: Materials compatible with adjacent materials including glass and glazing channels; type recommended by manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings for glazing are correctly sized, within tolerance, and glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

B. Notify Architect of conditions that would adversely affect installation. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

A. Seal porous glazing channels or recessed with substrate compatible primer or sealer.

B. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual and ASTM C1193.

B. Install glass in accordance with manufacturer’s instructions.

3.4 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

D. Clean glass on both sides after painting operations are complete and dry. Do not use acid solutions or caustic soaps to clean glass.

E. Do not use razor blades to clean glass. Any scratches on the glass caused by the cleaning process will be cause for the removal and replacement of the damaged glass at the Contractor's expense.

3.5 PROTECTION

A. Protect installed glass from damage during construction.

B. Protect installed glass from contact with contaminating substances resulting from construction operations.

C. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in other ways during construction period, including natural causes, accidents, and vandalism.

END OF SECTION

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Metal stud wall framing.
2. Gypsum board and joint treatment.
3. Cementitious backer board.
4. Acoustic insulation.
5. Textured finish.

1.2 SUBMITTALS

A. Product Data: Required.

B. Samples: Submit sample of wall texture for approval, before proceeding.

1.3 PROJECT CONDITIONS

A. In cold weather, heat building to provide uniform temperature of 50 to 70 and provide ventilation to eliminate excess moisture.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturers:
1. BPB Americas Inc.
2. G-P Gypsum Corp.
3. National Gypsum Co.
4. United States Gypsum Co.
5. Substitutions: Permitted.

2.2 COMPONENTS

A. Framing Materials:
1. Furring, Framing, and Accessories: ASTM C645; GA-216 and GA-600; galvanized sheet steel, 20 gage (33 mils) thick unless noted otherwise.
2. Fasteners: ASTM C1002; Type S, GA-216.
3. Adhesive: ASTM C557, GA-216.

B. Gypsum Board Materials: ASTM C1396; Type X fire resistant where indicated on Drawings.
1. Standard Gypsum Board: 5/8 inch thick.
2. Moisture Resistant Gypsum Board: 5/8 inch thick.

C. Tile Backer Board:
   1. Cementitious Backing Board: High density, glass fiber reinforced, ½ inch thick.

2.3 ACCESSORIES

A. Acoustic Insulation: ASTM C553 and C665; preformed glass fiber, unfaced.

B. Casing Bead: "Goldbond" No.500 galvanized steel by National Gypsum Co., or approved equal. Furnish and install metal reveal strips where shown and detailed.

C. Corner Beads: 0.014 inch thick, hot dip galvanized steel with 1" flanges with 1/16" radius nose with large openings in flange similar to 5/8" diameter holes 7/8" on center.

D. Control and Expansion Joints: "Sheetrock" zinc control joint No.093 by USG, or approved equal. Provide safing and/or acoustical insulation behind control joints as required for adjacent partition construction. Use fire rated control joints in partitions requiring a fire rating.

E. Joint Materials: ASTM C475; GA-216; reinforcing tape, joint compound, adhesive, and water.

F. Drywall Screws: Self-drilling type, 1" long for single layer application of gypsum board to metal studs and furring channels and of longer length for multiple layer installation.

PART 3 EXECUTION

3.1 GENERAL

A. Comply with specified requirements, manufacturer's instructions and recommendations, and referenced standards.

B. Deliver materials to job in original unopened containers or bundles and store protected from damage and exposure to the elements.

C. Cooperate with carpenters in placing of backing and blocking required for millwork, fixtures, fittings, and accessories.

D. Make cut-outs in panels for pipes, fixtures and small openings. Make holes and cut-outs by method that will not fracture wallboard core or tear covering. Cut holes with accuracy so plates, escutcheons and trim cover edges.

E. At any change in direction of gypsum board, provide sufficient auxiliary framing, blocking or nailers to allow secure attachment along every edge of every individual piece of gypsum board. Do not leave any loose edges.

3.2 INSTALLATION – FRAMING

A. Metal Studs:
   1. Install studs in accordance with ASTM C754, GA-216, and GA-600.
   2. Metal Stud Spacing: 16 inches o.c.
   3. Partition Heights: Full height to structure above unless noted otherwise. Install

additional bracing for partitions extending above ceiling.

3.3 INSTALLATION - GYPSUM BOARD

A. Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions. Install acoustic sealant within partitions.

B. Install gypsum board in accordance with GA-216 and GA-600.

C. Fasten gypsum board to furring or framing with screws. Staples may only be used when securing first layer of double layer applications.

D. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 1'-0" in alternate course of board.

E. Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints at least 1'-0".

F. Install wall/partition boards vertically to avoid end-butt joints wherever possible. Do not butt boards to concrete floor. Maintain a minimum 1/4" to a maximum 3/8" space between bottom of board and concrete.

G. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

H. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

I. Attach gypsum board to framing and blocking as required for additional support at openings and cutouts. Space between recessed boxes and cut edges shall not exceed 1/8 inches.

J. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories described below.

K. Cover both faces of partition framing with gypsum board in concealed spaces (above ceilings, etc.) except in chase wall which are braced internally.

L. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

3.4 INSTALLATION - DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install trim in strict accordance with manufacturers' recommendations. Install trim plumb, level, and true to line with firm attachment to supporting members.

C. Install metal corner beads at external corners of drywall work. Corner beads are to be completely bedded and taped.

D. Provide casing beads where edges of gypsum board meet dissimilar materials.

E. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

F. Install metal control joints where indicated on drawings. If not indicated on drawings, install in accordance with the following:
   1. Interior Partitions: Maximum Single Dimension not to exceed 20 feet. Maximum Single Area not to exceed 400 sq. ft.

3.5 JOINT TREATMENT AND FINISHING

A. All joints in gypsum board construction are to be taped and floated.

B. Finish Levels:
   1. Level 1: At Ceiling plenum areas and concealed areas.
   2. Level 2: At surfaces that are substrate for tile.
   3. Level 4 (typical finish): At surfaces receiving light (Semi-Smooth) finishes before painting or standard wall coverings or satin/eggshell paint or flat paint.
   4. Level 5: At surfaces surfaces subject to severe lighting.

3.6 TOLERANCES

A. Tolerances: Maximum Variation from Flat Surface: 1/8 inch in 10 feet in any direction.

3.7 CLEANING UP

A. Do not allow accumulation of scraps and debris arising from work of this Section. Maintain premises in neat and orderly condition at all times. Immediately remove spilled or splashed compound material and all trace of residue from adjoining surfaces.

B. Add stenciling for fire walls or fire barriers above ceilings as follows: Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition; and include lettering not less than 3 inches (76 mm) in height with a minimum 3/8 inch (9.5 mm) stroke in a

contrasting color incorporating the suggested wording. “FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS” or other wording.

END OF SECTION

SECTION 09 30 00

TILING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Porcelain tile for floor and wall.
2. Thin-set application methods.
3. Accessories.

1.2 SUBMITTALS

A. Product Data: Required.

1.3 QUALITY ASSURANCE

A. Tile must be from the same die lot and caliber.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Required.

1.5 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Supply 20 sq. ft. of each size, color, and surface finish of tile specified.

PART 2 PRODUCTS

2.1 TILE PRODUCTS

A. Porcelain Floor Tile:
1. Manufacturer: Emser
2. Style: Potenza, F12POTEDO1224V2
3. Size: 12 x 24 x 5/16”
4. Color/Finish: Dove/matte.
5. Contact: Paula Greenroy, 489.265.6804, paulagreenroy@emser.com

B. Porcelain Wall Tile:
1. Manufacturer: Emser
2. Style: Potenza, F12POTEGR1224V2
3. Size: 12 x 24 x 5/16”
4. Color/Finish: Gray/matte.
Contact: Paula Greenroy, 489.265.6804, paulagreenroy@emser.com

C. Accent Wall Tile:
   1. Manufacturer: Crossville
   2. Style: Ebb & Flow Linear Mix Mosaic EF04/1MIXMOS
   3. Size: 12 x 12 x 1/4” mesh
   4. Color/Finish: Sand and surf/glass, natural finish.
   5. Contact: Emily Nolan, 817.773.5957, enolan@crossvillestudios.com

2.2 ACCESSORIES

A. Mortar Materials: Latex-Portland Cement type: ANSI A118.4.

B. Grout Materials: Bostik Tru-color rapid-cure urethane grout with blockade antimicrobial protection.
   1. Color: H 160, Delorean Gray
   2. Grout Joint Size: 1/8”

C. Cementitious Backer Board: As specified in Section 09 21 16.

D. Metal Finishing Trim (inside corners): Schluter, Dilex, cove shape, with matching connector and end caps.
   1. Finish: Satin anodized aluminum.
   2. Contact: Mark Brooks 972.400.1412, mbrooks@schluter.com

E. Floor Transition: Schluter Deco.
   1. Finish: Satin anodized aluminum
   2. Contact: Mark Brooks 972.400.1412, mbrooks@schluter.com

F. Grout Sealer: Aqua Mix Sealer’s Choice Gold, or approved equal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, and TCA Handbook recommendations.

B. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners neatly. Align floor and wall joints.

C. Place edge strips at locations indicated.

D. Grout tile joints.

E. Apply grout sealer after fully cleaned.

F. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

END OF SECTION

SECTION 09 51 13

ACOUSTICAL PANEL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Suspended metal grid ceiling system and perimeter trim.
2. Acoustic panels.

B. Alternate No. 1: Change woodgrain 2 x 5 ceiling to match the remaining 2 x 2 acoustical ceiling.

1.2 PERFORMANCE REQUIREMENTS

A. Design and install suspended ceilings in accordance with requirements listed in the 2021 edition of the IBC and ASTM E580.

B. Cross tees supporting light fixtures must have the same load-carrying capacity as the main beams, or be fitted with supplemental hangers.

C. Hanger Wire Attachment Devices: Capable of supporting minimum 100 pounds.

1.3 SUBMITTALS

A. Product Data: Required.

B. Samples: Not required unless substitution.

1.4 QUALITY ASSURANCE

A. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40% during and after acoustic unit installation.

1.6 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:
1. Acoustical Panels: Sagging and warping as a result of defects in materials or factory workmanship.
2. Grid System: Rusting and manufacturer's defects
3. Acoustical Panels with BioBlock Plus or designated as inherently resistive to the growth of micro-organisms installed with Armstrong suspension

systems: Visible sag and will resist the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

B. Warranty Period Humiguard:
1. Acoustical panels: Ten (10) years from date of substantial completion.
2. Grid: Ten (10) years from date of substantial completion.
3. Acoustical panels and grid systems with HumiGuard Plus or HumiGuard Max performance supplied by one source manufacturer is thirty (30) years from date of substantial completion.

1.7 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout: Spare parts and maintenance products.

B. Furnish 40 sq ft of extra panels to Owner.

PART 2 PRODUCTS

2.1 SUSPENDED ACOUSTICAL CEILING COMPONENTS

A. Manufacturer: Armstrong.
1. Contact: Grace Jacob, 214.531.8907, gmjacob@armstrongceilings.com

B. Acoustic Panels #1: ASTM E1264.
1. Size: 24 x 24 inches.
2. Thickness: 5/8 inches.
3. Edge: Square.
4. Style: Armstrong Dune #1772.

C. Acoustic Panels #2 (Alternate #1): ASTM E1264.
1. Size: 24 x 60 inches.
2. Thickness: 1 inch.
3. Edge: Square.
4. Style: Armstrong, Lyra PB #8365.
5. Color: Toffee Chestnut with SW7519 edge color

D. Grid #1:
1. Non-fire Rated Grid: ASTM C635, intermediate duty; exposed T, tegular configuration.
2. Grid Materials: Cold rolled steel with galvanized coating.
3. Exposed Grid Surface Width: 15/16 inch with reveal.
4. Grid Finish: White.
5. Support Channels and Hangers: Galvanized steel, minimum 12 gage.

E. Grid #2 (Alternate #1):
1. Non-fire Rated Grid: ASTM C635, intermediate duty; exposed T, tegular configuration; Suprafine XL.
2. Grid Materials: Cold rolled steel with galvanized coating.
3. Exposed Grid Surface Width: 9/16 inch.
4. Grid Finish: Oat.

5. Support Channels and Hangers: Galvanized steel, minimum 12 gage.

PART 3 EXECUTION

3.1 INSTALLATION

A. Suspension Systems:
   1. Install suspension system in accordance with ASTM C636 and ASTM E580.
   2. Coordinate location of hangers with other work. Where components prevent regular spacing of hangers, reinforce system to span extra distance. Suspension wires to have maximum 4’ spacing.
   3. Locate system on room axis according to reflected plan. Hang system independent of wall molding, ducts, pipes and conduit.

B. Acoustic Units:
   1. Fit acoustic units in place.
   2. Install hold-down clips to retain panels tight to grid system within 20 ft. of exterior door and at restrooms.

END OF SECTION

SECTION 09 65 00

RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Resilient plank flooring.
   2. Resilient base.

1.2 SUBMITTALS

A. Product Data: Required.

B. Samples: Required.

1.3 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Required.

1.4 ATTIC STOCK

A. Provide one unopened carton of plank flooring and molded rubber base for attic stock.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (32 degrees C).

B. Store materials for not less than 48 hours prior to installation in area of installation at temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.1 PLANK FLOORING

A. Manufacturer/Style: EF Contract, Woodlands EFCWL
   1. Color: 008 Acacia
   2. Size: 7” x 48”
   3. Contact: Matthew Shumway, 469.450.8439, Matthew.Shumway@EFContractFlooring.com

2.2 RESILIENT BASE

A. Molded Rubber Base:
   1. Manufacturer/Style: Tarkett, MW-29F.
   2. Color: 29 Moonrock.

3. Size: 4-1/4”.
4. Contact: Shawn Summey, 469.559.0803, shawn.summey@tarkett.com

B. Rubber Cove Base:
1. Manufacturer/Style: Tarkett, DC-29.
2. Colors: 29 Moonrock.
3. Size: 4”, 120’ continuous roll. 4’ sections are NOT acceptable.
4. Contact: Shawn Summey, 469.559.0803, shawn.summey@tarkett.com

2.3 ACCESSORIES

A. Resilient Reducer Strip:
1. Manufacturer/Style: Tarkett CTA-29J
2. Color: 29 Moonrock.
3. Contact: Shawn Summey, 469.559.0803, shawn.summey@tarkett.com

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify concrete floors are dry to maximum moisture content as recommended by flooring manufacturers, and exhibit negative alkalinity, carbonization, and dusting.

3.2 PREPARATION

A. Clean substrate.

B. Fill minor low spots and other defects with sub-floor filler.

C. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances that cannot be removed.

3.3 INSTALLATION - PLANK FLOORING

A. Install luxury vinyl flooring in accordance with manufacturers’ instructions. Install with adhesive recommended by flooring manufacturer.

B. Install edge strips where flooring terminates. Float up as required to provide smooth transition at tile junctures.

3.4 INSTALLATION - BASE

A. Fit joints tightly and make vertical.

B. Miter internal and external corners.

3.5 CLEANING

A. Remove excess adhesive from surfaces without damage.

B. Do not wash the floor for at least four to five days after installation. Scrub the floor with a neutral detergent solution using a single disc floor machine (170 to 250 rpm capacity)

equipped with a scrub brush or a scrubbing pad (3M blue or equal). Thoroughly rinse and allow to dry.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints, and other coatings.

1.2 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures.

B. Product Data: Submit data on products.

1.3 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Operation and Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

C. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

D. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer.

C. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candle measured mid-height at substrate surface.

1.6 SEQUENCING

A. Section 01 10 00 - Summary: Work sequence.

B. Sequence application to the following:
   1. Do not apply finish coats until paintable sealant is applied.
   2. Back prime wood trim before installation of trim.

1.7 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Supply 1 gallon of each color, type, and surface texture; store where directed.

C. Label each container with color, type, texture, room locations, in addition to manufacturer's label.

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturer: Sherwin Williams.

B. Contact: Brett Huckelbury- 214.728.6696, bchuckelbury@sherwin.com

2.2 COMPONENTS

A. Coatings: Ready mixed, except field catalyzed coatings. Prepare coatings:
   1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
   2. For good flow and brushing properties.
   3. Capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.

C. Patching Materials: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify surfaces are ready to receive Work as instructed by product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report conditions capable of affecting proper application.

D. Test shop applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.

3.2 PREPARATION

A. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

B. Surfaces: Correct defects and clean surfaces capable of affecting work of this section.

C. Remove or repair existing coatings exhibiting surface defects.

D. Marks: Seal with shellac those which may bleed through surface finishes.

E. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

G. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

H. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by [hand] [power tool] wire brushing or sandblasting; clean by washing with solvent. Apply treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.

J. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

K. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.

L. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

3.3 EXISTING WORK

A. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

3.4 APPLICATION

A. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

B. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.

C. Sand wood and metal surfaces lightly between coats to achieve required finish.

D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

E. Where clear finishes are required, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.

F. Prime concealed surfaces of woodwork with primer paint.

G. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

H. Finishing Mechanical and Electrical Equipment:
1. Refer to appropriate specification sections for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.
2. Paint shop primed equipment.
3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
4. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are shop finished.
5. Paint interior surfaces of air ducts visible through grilles and louvers with one coat of flat black paint to visible surfaces. Paint dampers exposed behind louvers, grilles, to match face panels.
6. Paint exposed conduit and electrical equipment occurring in finished areas.
7. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
8. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated..
9. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Collect waste material which may constitute fire hazard, place in closed metal containers, and remove daily from site.

3.6 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

A. Paint exposed lintels, gas piping, and any other exposed metals on the exterior.

3.7 SCHEDULE - INTERIOR SURFACES

A. Metal Doors and Frames:
1. One coat primer.
2. Two coats SW Promar 200 Interior Alkyd, semi-gloss.
3. Color: SW7019 Gauntlet Gray

B. Gyp. Bd. – Typical Walls:
   1. One coat primer.
   2. Two coats SW Promar 200 Low VOC, eggshell.
   3. Color: SW9165 Gossamer Veil

C. Gyp. Bd. – Accent Walls:
   1. One coat primer.
   2. Two coats SW Promar 200 Low VOC, eggshell.
   3. Color: SW9134 Delft.

END OF SECTION

SECTION 10 14 00

SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes: Interior restroom signs.

1.2 REFERENCES

A. Conform to the following:
1. Department of Justice, Office of the Attorney General, "Americans with Disabilities Act", Public Law 101-336, (ADA).
2. ANSI A117.1: Providing Accessibility and Useability for Physically Handicap People, 1986 edition.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures.

B. Shop Drawings: Indicate sign styles, lettering font, foreground and background colors, locations, overall dimensions of each sign.

C. Samples: Submit color chips (photos of colors are not acceptable) for selection by Architect.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Package signs, labeled in name groups.

C. Store adhesive attachment tape at ambient room temperatures.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not install signs when ambient temperature is lower than recommended by manufacturer.

C. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.1 INTERIOR SIGNS

A. Manufacturers:

1. ASI Sign Systems.
2. DFI
3. Archway Graphics
4. Mohawk
5. Substitutions: Section 01 60 00 - Product Requirements.

B. Signs: Clear Acrylic Face, in matte (non-glare) finish.
1. Backing Plate: Acrylic.
2. Sign Color: Color as selected.
3. Character Color: Contrasting color as selected.
4. Height: As required to fit on sign.
5. Edges: Radiused.
6. Character Font: Helvetica.
7. Provide braille to meet ADA.

2.2 ACCESSORIES

A. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

3.2 INSTALLATION

A. Install signs after surfaces are finished, in locations as directed by Architect/Engineer.

B. Position sign on strike side of door. Position sign 60 inches maximum above the finished floor to the top of the wording.

C. Locate sign on wall surface, level.

3.3 SCHEDULES

A. Restroom:
1. Description: HC symbol, message with Braille.
2. Approximate Size: 8" x 8"
3. Quantity: At each public restroom.

END OF SECTION

SECTION 10 26 00

WALL PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Corner guards.

1.2 SUBMITTALS

A. Product Data: Required.

B. Samples: Required.

PART 2 PRODUCTS

2.1 WALL PROTECTION

A. Corner Guards: CS 4000 Series; surface mounted, high impact vinyl with extruded aluminum full height retainer.
   1. Model: SSM-20AN
   2. Color: #262 Driftwood, suede texture.
   3. Height: Top of base to 4’ high.

B. Mounting Brackets and Attachment Hardware: Appropriate to component and substrate.

PART 3 EXECUTION

3.1 INSTALLATION

A. Position corner guard at top of base.

END OF SECTION

SECTION 10 28 00

TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Toilet accessories.

1.2 DESIGN REQUIREMENTS

A. Design grab bars, and attachments to resist forces as required by applicable code.

1.3 SUBMITTALS

A. Product Data: Required.

PART 2 PRODUCTS

2.1 TOILET ACCESSORIES

A. Manufacturers:
1. A & J Washroom Accessories.
2. American Specialties, Inc.
3. Bobrick.
4. Bradley Corp.
5. Substitutions: Not Permitted.

2.2 COMPONENTS

A. Keys: Furnish 3 keys for each accessory to Owner; master key accessories.

B. Stainless Steel Sheet: ASTM A666, Type 304.

C. Stainless Steel Tubing: ASTM A269, stainless steel.

D. Mirror Glass: Float glass, with silvering, copper coating, and suitable protective organic coating.

E. Adhesive: As recommended by manufacturer.

2.3 TOILET ROOM ACCESSORIES

A. Refer to Schedule at end of this Section.

2.4 FACTORY FINISHING

A. Stainless Steel: No. 4 satin brushed.

B. Chrome/Nickel Plating: ASTM B456, satin finish.

C. Galvanizing: ASTM A123/A123M.

D. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install plumb and level, securely and rigidly anchored to substrate.

B. Mounting Heights and Locations: As required by accessibility regulations and as follows:
1. Bottom of Mirrors: 40” to bottom of reflective surface.
2. Horizontal Grab Bars: Centerline 36" AFF.
3. Vertical Grab Bar: Bottom mounted at 40" AFF, centerline 40" from back wall.
4. Toilet Paper Dispenser: Centerline 24" AFF, 30" from back wall.
5. Paper Towel Dispenser: Bottom at 48" AFF max.

3.2 SCHEDULES

A. Grab Bars: 1-1/2" clearance, concealed mounting, one 42" and one 36" horizontal, and one 18” vertical at each handicapped water closet.
1. ASI 3800 Series
2. Bobrick B-6206
3. Bradley 812 Series

B. Toilet Paper Dispensers: Bobrick B-2840-SS or approved equal. Provide one at each new water closet.

C. Paper Towel Dispensers: Georgia Pacific #54518 GP Pro Pacific Blue Ultra 9” mini automated, touchless. Install at all sinks.
1. Color: Black / automated with battery.

D. Soap / Sanitizers: Lite N’ Foamy #977300, touch free dispenser, battery operated, complete with soap. Install with soap at all sinks. Install with sanitizer at each Consult Room.

E. Mirrors: Polished plate glass, No. 1 silvering quality with electrolytic copper backs; 1/4 inch thick. Refer to Drawings for wood frame.

F. Feminine Disposal: Bobrick #B-270 – SS or approved equal. Provide one at each new restroom.

G. Toilet Seat Cover: Bobrick #B-211-SS or approved equal. Provide one at each new restroom.

H. Baby Changing Station: Koala Corp. KB310-SSRE, recessed. Provide one at each new restroom off the Waiting Room.
1. Finish: Stainless steel.

END OF SECTION

SECTION 10 44 00

FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes fire extinguishers and fire extinguisher cabinets; and brackets for wall mounting.

1.2 REFERENCES

A. National Fire Protection Association:
   1. NFPA 10 - Standard for Portable Fire Extinguishers.

B. Underwriters Laboratories Inc.:
   1. UL - Fire Protection Equipment Directory.

1.3 PERFORMANCE REQUIREMENTS

A. Conform to NFPA 10 code.

B. Provide extinguishers and cabinets classified and labeled by testing firm acceptable to authority having jurisdiction for purpose specified and indicated.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures.

B. Shop Drawings: Indicate cabinet physical dimensions, rough-in measurements for recessed cabinets, and fire ratings where applicable.

C. Product Data: Submit extinguisher operational features, color and finish, anchorage details size.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements.

B. Operation and Maintenance Data: Submit test, refill or recharge schedules and re-certification requirements.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not install extinguishers when ambient temperature is capable of freezing extinguisher ingredients.

PART 2 PRODUCTS

2.1 FIRE EXTINGUISHERS

A. Manufacturers:
   1. JL Industries.
   2. Larsen's Manufacturing Co.
   3. Potter Roemer.
   4. Substitutions: Section 01 60 00 - Product Requirements.

B. Type: Cast steel tank, with pressure gage.

2.2 FIRE EXTINGUISHER CABINETS

A. Manufacturers:
   1. Larsen's
   2. J. L. Industries
   3. Substitutions: Section 01 60 00 - Product Requirements .

B. Finish: Formed stainless steel. Provide fire rated cabinets where located in fire rated partitions.

C. Configuration: Semi-recessed type, sized to accommodate extinguisher.

D. Trim Type: Returned to wall surface, with 2-1/2 inch projection.

E. Door: Full glass.

F. Door Glazing: Glass, clear, 1/8 inch thick tempered.

G. Cabinet Mounting Hardware: Appropriate to cabinet.

H. Form cabinet enclosure with right angle inside corners and seams.

I. Weld, fill, and grind components smooth.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify rough openings for cabinet are correctly sized and located.

3.2 INSTALLATION

A. Install cabinets plumb and level in wall openings, maximum 48 inches from finished floor to top of extinguisher handle.

B. Install wall brackets, maximum 48 inches from finished floor to top of extinguisher handle.

C. Secure rigidly in place.

D. Place extinguishers in cabinets.

END OF SECTION

SECTION 12 20 00

WINDOW SHADES

PART 1 GENERAL

1.1 SUMMARY

A. Provide window shades and accessories as follows:
   1. Shade Fabric: Fire resistant, openness factor as required by orientation and glazing; single sunscreen shadeband with specified weave.
   2. Operation / Manual: Offset side-mounted chain operator for manual operation as either single-band or multi-band shades.
   3. Mounting: Ceiling mounted to structure or brackets mounted to structure in gypsum wallboard coves; provide closure trim.
   4. Shade Orientation: Regular roll, shade cloth falls at window side of roller.
   5. Configuration: Single band per windows opening.
   6. Accessories without exposed fastening: Snap-on facia.

1.2 SUBMITTALS

A. Shop Drawings: Include typical elevation layout, shade fabrication, fasteners, installation methods and clearance for mounting condition.

B. Samples: Submit minimum 5” x 6” fabric samples in full color range for selection by Architect, and samples of exposed metal finishes.

1.3 QUALITY ASSURANCE

A. Provide shade system as a complete unit produced by one manufacturer, including hardware, accessory items, mounting brackets and fastening.

B. Provide products of acceptable manufacturers with satisfactory use in similar service for three years. Use experienced installers.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver, handle and store materials in accordance with manufacturer’s instructions.

1.5 WARRANTY

A. Five year warranty on manually operated components, except bead chain which is a maintenance / service item.

B. Five year warranty on shade cloth with provision that it will not deteriorate, sag or warp and will remain fit for use for the full warranty period when used as an interior rollershade.

C. Provide five year warranty for hardware components to be free from defects in material and workmanship under the normal and proper use.

PART 2 PRODUCTS

2.1 MATERIALS

A. Manufacturer: Mechoshade or Pfiefer.
   1. Contact: Patrick Herron- 972.632.8159, pat.herron@draperinc.com

B. Shade Cloth: Match existing on 2nd floor.

C. Manual Shade System: Pre-engineered unit with one-piece molded sprockets and a linear disc brake opposed to a flat steel backing plate and concealed variable-adjustment mechanism. Shade mechanism shall be adjustable from 100% friction (static mode) with infinite positions to 15% friction (dynamic mode) with only pre-selected positions. The operator shall be a side-mounted gear and sprocket mechanism located within the drive-end bracket. The shade cloth shall be removable with a snap-on and snap-off mounting (Snap-Loc™) spline without having to remove the shade tube.

D. SnapLoc™ Fascia:
   1. Extruded aluminum pocket with exposed tile support and pocket closure with baked-enamel finish.
   2. Accessibility by removing closure. No exposed screws or mounting means. Pocket shall be sized for single shadeband.
   3. Finish: Clear anodized.

E. Provide child safety compliance with WMCA/ANSI Standard A100.1-2022 with sill or jamb mounted cord tension device.

F. Location: Each exterior window, and interior sidelites (Doors/transoms are not to be included).

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify mounting surface acceptability, installation conditions, and field measurements.

B. Take field measurements prior to the fabrication to ensure fit.

3.2 INSTALLATION

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

B. Install level and plumb.

END OF SECTION

SECTION 14 25 00

DUMBWAITER

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Furnish and provide all materials and labor necessary for the complete installation of dumbwaiter.

1.2 QUALITY ASSURANCE

A. Design and installation shall be in compliance with regulations and all governing agencies. Lift shall be subject to local, city and state approval prior to installation, along with city and state inspection after installation. Special local requirements shall be determined and handled locally by distributor with manufacturer=s agreement.

B. All equipment shall be manufactured in accordance with the latest edition of the ANSI 17.1 code for elevators, escalators, and dumbwaiters.

1.3 SUBMITTALS

A. Submit drawings or manufacturer's literature for approval. Drawings shall show rough-in requirements and wiring materials.

1.4 TESTING

A. The dumbwaiter shall be tested after installation to demonstrate:
   1. Accuracy of stops
   2. Operation of hoistway door locks and car gate switch (es).
   3. Operation of final terminal switches
   4. Operation of push-button and key switches
   5. Capacity load test. Operate dumbwaiter for a period of twenty (20) minutes with a capacity load. Run dumbwaiter from top terminal floor to bottom floor with one minute between starts after each stop.

PART 2 - PRODUCTS

2.1 DUMBWAITER

A. Manufacturer: Elevation Innovation, Inc. or approved equal.

B. Contact: alex@arkansaselevator.com

2.2 PRODUCT

A. Model: Iteli-Lift CPLD 75

B. Car Size: Clear inside dimensions of 18 inches x 18 inches x 24 inches, with one removable shelf.

C. Capacity: 75 lbs.

D. Speed: 30 fpm.

E. Power: 115v x 20 AMP.

F. Winding Drum: High torque, electric motor and completely enclosed worm gear, drums threaded to accommodate a single 1/8” x 7 x 19 improved plow stainless steel cable.

G. Controls: Fully automatic allowing car to be sent or called rom any floor. Terinal limit switch provided for finals. Car stops automatically at landing levels. Door interlocks for hoistway doors to prevent operation of the dumbwaiter unless doors are closed and to prevent opening of any door except when the car is at the landing; manually resettable slack cable switch.

H. Fire Rating: “B” label.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Coordinate work with General Contractor.

B. Coordinate with electrical contractor to make final electrical connection. Wiring within unit shall be done as part of work of this section.

C. Install in accordance with the approved plans and specifications and manufacture=s installation instructions.

END OF SECTION

SPECIFICATIONS: DIVISION 21, 22 and 23

PROJECT: Optimal Outcomes Phase 2 – Little Rock, AR

DATE: May 6, 2025

BATSON INC. PROJECT NO.: 6100

Milton Canizares, P.E.

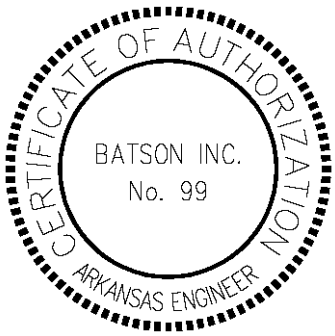

TABLE OF CONTENTS
FOR
Optimal Outcomes Phase 2
Little Rock, AR

SECTION 21 00 00

FIRE SUPRESSION

PART 1 - GENERAL

1.01 CONTRACT DOCUMENTS

A. Refer to and comply with other sections of specifications in the installation of all work.

B. Drawings are diagrammatic; therefore, all offsets, fittings, valves and accessories are not shown. Plan work around building details and other crafts.

C. Refer to additional notes on drawings.

1.02 CODES, ORDINANCES, INSPECTIONS AND PERMITS

A. Work is to be executed and inspected in accordance with local and state codes, laws, ordinances, rules and regulations applicable to particular class of work, and any fees in connection therewith are to be paid by the contractor.

B. Arrange with City, or State if City has no ordinances covering work, for complete inspection, paying all charges pertaining thereto.

1.03 SHOP DRAWINGS, SUBMITTALS AND SUBSTITUTIONS

A. Submit manufacturer's catalog sheets and/or shop drawings covering all phases of work included in this contract.

B. Arrange submittals in sets and bind entire submittal in folder. Loose sheets are not acceptable.

C. Submittals are required even though equipment being furnished is exactly as specified.

D. Final decision as to whether or not a specific piece of equipment meets specifications shall rest with Architect/Engineer.

E. Make submittals to state and local authorities and pay all fees.

F. Shop drawing submittal shall include proposed head layouts for approval of architect prior to beginning fabrication.

1.04 WARRANTY AND OPERATION INSTRUCTIONS

A. All materials and equipment shall carry a full year's warranty from time Owner accepts building or the date of substantial completion, whichever is earlier, regardless of start-up date of equipment.

B. Turn over to Owner all operation instructions and warranties furnished with equipment.

1.05 CLOSE OUT

A. Provide warranties, copies of final test reports, operation and maintenance materials, record (as built) drawings and training of owner's operation.

1.06 TESTING AND ADJUSTING

A. Test all piping systems. Test buried pipe before backfilling.

1.07 Any damage to existing buildings, equipment, grounds, or product which is the result of the contractor's operations shall be repaired or replaced to the owner's satisfaction without additional cost to the owner.

PART 2 - PRODUCTS

2.01 SUPPORTS AND FOUNDATIONS

A. The Contractor shall be responsible for the miscellaneous supporting systems.

B. Provide adequate pipe, equipment foundation and suspension systems in accordance with recognized engineering practices.

C. Pipe hangers shall be equal to those manufactured by Grinnell.

2.02 EQUIPMENT

A. Equipment shall be equal to those scheduled on drawings, or in other sections of the specifications.

B. Provide all necessary support, trim and accessories required.

C. All materials and equipment shall comply with NFPA and UL requirements.

D. Furnish and install all electrical interlock and control wiring for proper operation and control of all equipment.

E. Supervise and coordinate all electrical work in connection with the system.

F. Furnish all motor controllers or contactors for proper operation of all motors.

G. All equipment shall be new and undamaged.

2.03 PIPE AND EQUIPMENT I.D.

A. Provide system identification per NFPA and local authorities.

PART 3 - EXECUTION

3.01 EQUIPMENT CONNECTIONS

A. Each equipment item with drain connections, shall be provided with a properly sized drain.

B. Rough-in and make final connection to all equipment under other Divisions of these specifications or by the Owner.

C. Contractor shall install rough-ins only after he has received approved shop drawings or has obtained drawings and/or specifications for equipment provided by others.

3.02 CUTTING AND PATCHING

A. Provide all cutting and patching required to perform the work.

B. All patching will be done by workmen skilled in the trade required.

3.03 EXCAVATION, TRENCHING AND BACKFILLING

A. All excavation, trenching and backfilling in connection with the mechanical system is included as part of this Division.

B. All excavation required shall be done as part of the contract price regardless of any implied conditions on the drawings or in these specifications.

C. Before bidding visit the site to determine existing conditions.

3.04 Install equipment as indicated by the manufacturer unless indicated otherwise in the drawings.

3.05 Install all piping per code requirements and manufacturer's recommendations.

3.06 Remove all waste and rubbish from the job.

3.07 Install pipe ID markers on all piping.

3.08 FIRE PROTECTION, GENERAL

A. System shall be designed by the contractor and installed per the NFPA requirements for the facility.

B. Provide seismic protection where required.

C. Provide fire and smoke stopping at penetration of rated assemblies.

D. Provide backflow prevention.

3.09 VIRBRATION AND SEISMIC CONTROLS

A. Provide seismic restraints as indicated in NFPA and STATE CODE for seismic design category ‘C’.

3.10 EXTERIOR FIRE PROTECTION SYSTEMS

A. System shall comply with NFPA.

B. Hydrants, backflow preventers, PIV’s, and hose stations shall comply with NFPA and local fire department requirements.

3.11 WET PIPE SPRINKLER SYSTEMS

A. Systems shall comply with NFPA.

B. Heads shall be chrome plated with chrome plated escutcheons.

C. Provide fire department connections and other apparatus as required by the local fire department.

D. Provide supervisory switches at all valves.

E. Provide test drains in non-conspicuous areas and so not to interfere with the building operations in use.

F. Provide identification signs to equipment.

G. System design shall be based on actual flow test data from the site. Verify or perform tests as necessary.

END OF SECTION

SECTION 22 00 00

PLUMBING - GENERAL

PART 1 - GENERAL

1.01 CONTRACT DOCUMENTS

A. Refer to and comply with other sections of these specifications in the installation of all plumbing work.

B. Drawings are diagrammatic; therefore, all offsets, fittings, valves and accessories are not shown. Plan work around building details and other crafts.

C. Refer to additional notes on drawings.

1.02 CODES, ORDINANCES, INSPECTIONS AND PERMITS

A. Work is to be executed and inspected in accordance with local and state codes, laws, ordinances, rules and regulations applicable to particular class of work, and any fees in connection therewith are to be paid by the contractor.

B. Arrange with City, or State if City has no ordinances covering work, for complete inspection, paying all charges pertaining thereto.

1.03 SHOP DRAWINGS, SUBMITTALS AND SUBSTITUTIONS

A. Submit manufacturer's catalog sheets and/or shop drawings covering all phases of work included in this contract.

B. Arrange submittals in sets and bind entire submittal in folder. Loose sheets are not acceptable. Electronic submittals are acceptable.

C. Submittals are required even though equipment being furnished is exactly as specified.

D. Final decision as to whether or not a specific piece of equipment meets specifications shall rest with Architect/Engineer.

1.04 WARRANTY AND OPERATION INSTRUCTIONS

A. All materials and equipment shall carry a full year's warranty from time Owner accepts building or the date of substantial completion, whichever is earlier, regardless of start-up date of equipment.

B. Turn over to Owner all operation instructions and warranties furnished with equipment.

1.05 EQUIPMENT

A. Furnish and install all electrical interlock and control wiring for proper operation and control of all plumbing equipment.

B. Supervise and coordinate all electrical work in connection with plumbing system.

C. Furnish all motor controllers or contactors for proper operation of all motors.

1.06 CLOSE OUT

A. Provide warranties, copies of final test and balance reports, operation and maintenance materials, record (as built) drawings and training of owner's operation.

1.07 TESTING AND ADJUSTING

A. Test all piping systems. Test buried pipe before backfilling.

B. Contractor will be required to make adjustment as necessary during the first year.

PART 2 - PRODUCTS

2.01 FLASHINGS: Roof flashings are to be furnished and installed under the roofing division of these specifications.

2.02 SUPPORTS AND FOUNDATIONS

A. The Contractor shall be responsible for the miscellaneous supporting systems.

B. Provide adequate pipe, equipment foundation and suspension systems in accordance with recognized engineering practices.

C. Pipe hangers shall be equal to those manufactured by Grinnell.

2.03 FIXTURES AND TRIM

A. Fixtures shall be equal to those scheduled on drawings, or in other sections of the specifications.

B. Provide all necessary support, trim and accessories required.

C. All exposed finished metal parts shall be chromium-plated.

D. All fixtures shall be provided with some form of supply stop.

2.04 PLUMBING PIPING

A. Water: Type "L" copper, above-grade; Type "K" copper below grade.

B. Sanitary Waste and Vent: Indoors: service weight cast iron.

2.05 VALVES:

A. Gate Valves: Nibco Scott T-113 or F-619.

B. Globe Valves: Nibco Scott T-211 or F-718 (S) or (W).

C. Check Valves: Nibco Scott T-413 or F-918 (S) or (W).

2.06 INSULATION

A. Plumbing:

1. Domestic Cold Water (Above-Grade): Owens-Corning 1/2" thick fiberglass, one-piece, pipe insulation with factory-applied White All-Service (ASJ) Vapor Barrier Jacket. Fittings shall be molded or mitered fiberglass for sizes under 3" and molded fiberglass for sizes 3" and larger.

2. Domestic Hot Water (Above-Grade): Owens-Corning 1/2" thick fiberglass, one-piece, pipe insulation with factory-applied White All-Service (ASJ) Vapor Barrier Jacket. Fittings shall be OC-110 cement for sizes under 3" and molded fiberglass for sizes 3" and larger.

PART 3 - EXECUTION

3.01 EQUIPMENT CONNECTIONS

A. Each equipment item with drain connections, shall be provided with a properly sized drain run to the nearest floor drain or as directed.

B. Rough-in and make final connection to all equipment under other Divisions of these specifications or by the Owner.

C. Contractor shall install rough-ins only after he has received approved shop drawings or has obtained drawings and/or specifications for equipment provided by others.

3.02 CUTTING AND PATCHING

A. Provide all cutting and patching required to perform the plumbing work.

B. All patching will be done by workmen skilled in the trade required.

3.03 EXCAVATION, TRENCHING AND BACKFILLING

A. All excavation, trenching and backfilling in connection with the plumbing system is included as part of this Division.

B. All excavation required shall be done as part of the contract price regardless of any implied conditions on the drawings or in these specifications.

C. Before bidding visit the site to determine existing conditions.

3.04 Install equipment as indicated by the manufacturer unless indicated otherwise in the drawings.

3.05 Install all plumbing fixtures and equipment in accordance with local, state and federal codes and regulations.

3.06 Install all piping per code requirements and manufacturer's recommendations.

3.07 Install all insulation as indicated in the insulation manufacturer's instructions.

END OF SECTION

SECTION 23 00 00

HVAC - GENERAL

PART 1 - GENERAL

1.01 CONTRACT DOCUMENTS

A. Refer to and comply with other sections of these specifications in the installation of all mechanical work.

B. Drawings are diagrammatic; therefore, all offsets, fittings, valves and accessories are not shown. Plan work around building details and other crafts.

C. Refer to additional notes on drawings.

1.02 CODES, ORDINANCES, INSPECTIONS AND PERMITS

A. Work is to be executed and inspected in accordance with local and state codes, laws, ordinances, rules and regulations applicable to particular class of work, and any fees in connection therewith are to be paid by the contractor.

B. Arrange with City, or State if City has no ordinances covering work, for complete inspection, paying all charges pertaining thereto.

1.03 SHOP DRAWINGS, SUBMITTALS AND SUBSTITUTIONS

A. Submit manufacturer's catalog sheets and/or shop drawings covering all phases of work included in this contract.

B. Arrange submittals in sets and bind entire submittal in folder. Loose sheets are not acceptable.

C. Submittals are required even though equipment being furnished is exactly as specified.

D. Final decision as to whether or not a specific piece of equipment meets specifications shall rest with Architect/Engineer.

1.04 WARRANTY AND OPERATION INSTRUCTIONS

A. All materials and equipment shall carry a full year's warranty from time Owner accepts building or the date of substantial completion, whichever is earlier, regardless of start-up date of equipment.

B. Turn over to Owner all operation instructions and warranties furnished with equipment.

1.05 EQUIPMENT

A. Furnish and install all electrical interlock and control wiring for proper operation and control of all mechanical equipment.

B. Supervise and coordinate all electrical work in connection with mechanical system.

C. Furnish all motor controllers or contactors for proper operation of all motors.

1.06 CLOSE OUT

A. Provide warranties, copies of final test and balance reports, operation and maintenance materials, record (as built) drawings and training of owner's operation.

1.07 TESTING AND ADJUSTING

A. Operate all HVAC equipment for a sufficient period of time to demonstrate that it is operating properly.

B. Contractor will be required to make adjustment as necessary during the first year.

PART 2 - PRODUCTS

2.01 FLASHINGS: Roof flashings are to be furnished and installed under the roofing division of these specifications.

2.02 SUPPORTS AND FOUNDATIONS

A. The Contractor shall be responsible for the miscellaneous supporting systems.

B. Provide adequate pipe, equipment foundation and suspension systems in accordance with recognized engineering practices.

C. Pipe hangers shall be equal to those manufactured by Grinnell.

2.03 INSULATION

A. HVAC Insulation

1. Condensate Drain (Overhead Horizontal): Armstrong's "Armflex 22" pipe insulation, 1/2" thick.

2. Refrigerant Suction: Armstrong's Armflex 22", 3/4" thick.

3. Ductwork: Owens-Corning, 2” type 75, 75 pcf thick fiberglass duct wrap with factory-applied flame retardant foil-reinforced Kraft facing. (Ductwork shall be wrapped unless indicated otherwise.)

4. Duct liner shall be equal to Owens-Corning Fiberglas Aeroflex Type 150B, 1" thick. (Duct sizes indicated are clear inside dimensions required.)

5. Ductwork insulation in unconditioned attic shall be one thickness greater than for indoor duct.

2.04 HVAC EQUIPMENT

A. All equipment shall be equal to that scheduled on the drawings.

B. All exposed rotating machinery shall be equipped with guards.

C. All refrigeration compressors shall carry an additional 4-year warranty.

2.05 HVAC PIPING

A. Refrigerant**:** Pre-charged linesets of proper lengths.

B. Condensate Drain: Type "L" copper.

2.06 SHEET METAL

A. Sheet metal ductwork shall be installed in accordance with ASHRAE "Guide" and SMACNA "Low Velocity Duct Manual".

B. Ductwork shall be galvanized.

C. Provide flexible connections at each air-handling device with fan.

D. Grilles, diffusers and registers shall be equal to those indicated on drawings.

E. Provide and install flexible metal insulated round ductwork, factory fabricated, listed under U.L. #181, Class 1 and NFPA 90A. Insulation shall be 1-1/2" thick, 3/4 lb. density fiberglass blanket, maximum "K" value of 0.25 btu-in/hr-ft5-EF., and vapor barrier shall be neoprene coated fiberglass fabric laminated to aluminized polyester film.

F. Seal ductwork in accordance with SMACNA low press standards and ASHRAE 2001 Fundamentals, Chapter 34.

2.07 CONTROLS

A. Provide all temperature controls in accordance with recommendations of the equipment manufacturer.

B. Controls shall be electric type.

C. Provide all wiring, etc., required for complete and operating system. Route wiring in conduit.

2.08 Provide Technician and equipment to test and balance air systems. Submit a report indicating design flows and final balanced flows prior to final punch for engineers review and approval.

PART 3 - EXECUTION

3.01 EQUIPMENT CONNECTIONS

A. Each equipment item with drain connections, shall be provided with a properly sized drain run to the nearest floor drain or as directed.

B. Rough-in and make final connection to all equipment under other Divisions of these specifications or by the Owner.

C. Contractor shall install rough-ins only after he has received approved shop drawings or has obtained drawings and/or specifications for equipment provided by others.

3.02 CUTTING AND PATCHING

A. Provide all cutting and patching required to perform the mechanical work.

B. All patching will be done by workmen skilled in the trade required.

3.03 Install equipment as indicated by the manufacturer unless indicated otherwise in the drawings.

3.04 Install all piping per code requirements and manufacturer's recommendations.

3.05 Install all insulation as indicated in the insulation manufacturer's instructions.

3.06 DUCTWORK

A. Install sheet metal in accordance with SMACNA Standards and State Codes.

B. Flex Duct:

1. Maximum runout shall not exceed lengths indicated on drawings.
2. Ducts shall not be laid on top of ceiling.
3. Minimum bend radius shall be as recommended by manufacturer. Ducts shall be run straight and true with minimum offsets and with excess duct lengths removed.
4. Connections to ducts and air devices shall be with minimum of one duct diameter straight into connection (kinked or pinched installations restricting flows are not acceptable).

3.07 Install controls as recommended by manufacturer and as required to provide the control sequences and operations indicated on the drawings. Route control wiring located in walls and mechanical rooms in conduit. Secure control wiring above ceiling with straps (do not lay on ceiling). Provide plenum rated control cable in return air plenums.

3.08 Provide TBA report for project. Project will not receive final punch or be accepted by Engineer until report is submitted and approved by Engineer.

END OF SECTION

SECTION 26 00 00

BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Basic electrical requirements specifically applicable to Divisions 26, 27, 28 sections in addition to applicable Division 01 sections of the Specifications. The Engineer (or Architect) shall herein be the A/E.

1.2 COORDINATION

A. The electrical work shall be installed in cooperation with other trades installing inter-related work. Coordinate all conduit runs to miss mechanical ducts as shown on mechanical sheets and at building.

B. Anchor bolts, sleeves, inserts, and supports shall be installed by this subcontractor.

1.3 SUBMITTALS

A. Deviation from the Drawings and Specifications shall be called to the attention of the Architect in writing at the time of submission of the Shop Drawings. The Engineer's checking of any drawing shall not release the subcontractor from responsibility for such deviations.

B. The Contractor shall furnish complete sets of certified Shop Drawings. Provide submittals for Lighting, Switchgear, electronic systems, wiring devices and other items as noted in other sections of the specification.

C. Where equipment requiring different arrangement of connections from those shown is approved, it shall be the responsibility of the subcontractor to install the equipment to operate properly and in harmony with the intent of the Contract Documents, and to make all changes in the work required by the different arrangement of connections and pay all charges resulting from changes.

D. Submittals shall include physical dimensions of electrical equipment.

1.4 CODES, ORDINANCES, INSPECTIONS AND PERMITS

A. Obtain and pay for required fees, permits, and inspections for electrical work.

B. Perform Work in accordance with N.E.C., N.F.P.A., U.L.,local codes and N.E.C.A.(latest version).

1.5 DELIVERY, STORAGE AND HANDLING

A. Place stored materials on clean, hard surfaces above ground and keep covered at all times to ensure protection from paint, plaster, dust, water and other construction debris or operations.

B. Keep conduit ends plugged or capped, and all covers closed on boxes, panels, switches, fixtures, etc., until installation of each item.

C. Stored materials and equipment shall be located to facilitate prompt inspection.

1.6 ACCURACY OF DATA

A. The data given herein and on the Drawings are as exact as could be secured, but their absolute accuracy is not guaranteed. Exact locations, distances, levels, etc., will be governed by the building, and the Contractor shall use the data contained herein with this understanding.

B. The Contractor shall verify all measurements at the building and shall be responsible for the correctness of same. No extra compensation will be allowed because of differences between work on the Drawings and measurements of the building.

1.7 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The intent of the Electrical Drawings and Specifications is that the subcontractor shall furnish all labor and materials, equipment and transportation necessary for the proper execution of the work. This subcontractor shall thoroughly examine the Drawings and Specifications relating to other trades in order to include all necessary work in his bid. No additional payments shall be considered for failure to properly interpret the responsibilities to other trades. The subcontractor shall do all the work shown on the Drawings and described in the Specifications and all incidental work necessary to complete the Project in a substantial and acceptable manner, and to fully complete the work ready for use, occupancy, and operation by the Owner. The A\E reserves the right to make any reasonable changes up to six feet (6') in the locations indicated without additional cost to Owner.

1.8 OBSERVATION OF WORK

A. The A/E will make final onsite review of the Work of this division, prepare punch list, and visit the job site to check the punch list.

B. The Contractor shall allow the Engineer access to all parts of the Work and shall furnish assistance and information as required by the Engineer.

1.9 PROJECT RECORD DRAWINGS

A. The Contractor shall provide as-built drawings. Record all deviations from plans, actual locations of underground utilities etc.

1.10 INSPECTION OF SITES

A. Inspect the site and become thoroughly familiar with conditions to be met and the work to be accomplished. At existing building sites verify prior to bid all conditions shown affecting work.

1.11 SAFETY AND WORK METHODS

A. Refer to General Conditions.

B. The Electrical Subcontractor is completely responsible for how all of his work is performed; safety, in, on, or about the job site; methods of performance; and timeliness in such performance. In the event he is unsatisfied with the performance of other trades, he shall set forth such complaints in writing for the Owner's review. In no event shall this subcontractor expect to be specifically directed in the protection of personnel or material by the Owner, Architect, or Engineer.

1.12 NOISE AND VIBRATION CONTROL

A. Isolate noise generating equipment and all equipment mounted to building including A/C units, ballast, etc., with flexible conduit to prevent transmission of noise through conduit system.

1.13 PAINTING

A. Repair finish surfaces damaged by Work of this section.

B. Paint equipment and material furnished and installed under this section that has only a prime coat of paint. Use color and brand of paint selected by Architect.

C. All “exposed to view” conduit, boxes, panels, etc. to be primed and painted with color selected by Architect. Verify prior to painting.

1.14 TEMPORARY CONSTRUCTION POWER

A. This Contractor shall furnish and install temporary construction power wiring as required. Temporary electrical service shall be obtained in the name of the General Contractor, and it will be the General Contractor's responsibility to pay all power company charges. The temporary service shall be obtained from the local utility company. Provide temporary lighting as required for adequate illumination for construction and safety purpose.

1.15 LICENSING REQUIREMENT

A. No person shall perform electrical work on the contract without possessing an Arkansas State Master or Journeyman License from the Arkansas State Electrical Examiners Board. All electrical work and apprentice electricians shall be supervised as required by State law.

B. All electricians shall have a copy of their license with them and shall be required to show it to an appropriate inspector upon request.

PART 2 - PRODUCTS

2.1 MATERIAL AND EQUIPMENT

A. In order to establish standards of quality, the Engineer has referred to certain products by name and catalog number. This procedure is not to construed as eliminating from competition other products of equivalent or better design. Where multiple manufacturing sources are shown on the Drawings or herein specified, the subcontractor shall limit his bid to one of those manufacturers.

B. Electrical fixtures, appliances, hardware, switch gear, panel boards, boxes and other items related in any manner to electrical work shall be considered; however, it will be at the discretion of the Architect and the electrical engineer to evaluate “equal” as a substitution to that as specified. It will be the responsibility of the bidder for the substituted item’s approval. Should item be deemed “not equal” by the Architect and electrical engineer, then the bidder must supply the item as specified without additional cost to the Owner or any design team member.

C. The subcontractor shall abide by the Engineer's judgment when proposed substitute materials or items of equipment are judged to be unacceptable and shall furnish the specified material or item of equipment in such case. All proposals for substitution shall be submitted in writing by the General Contractor and not by the Electrical Subcontractor or material suppliers. The Engineer will approve or disapprove proposed substitutions in writing. If any request for a substitution is rejected, the Contractor shall automatically furnish material specified. All materials shall be new and shall bear the manufacturer's name and the Underwriters Laboratory label. Materials of the same general type shall be the same throughout the job to provide uniform appearance, operation, and maintenance.

D. Delivery and Storage: Equipment and materials shall be delivered to the site and stored in original containers. All items subject to moisture damage (such as coils of dry transformers) shall be stored in dry, heated space. At the completion of the work, fixtures, equipment, and materials shall be cleaned and polished thoroughly and turned over to the Owner in a condition satisfactory to the Architect. Damage or defects developing before acceptance of the work shall be made good at no expense to the Owner.

2.2 LABELING

A. Each major component of equipment shall have a nameplate listing the manufacturer's name, address, catalog and serial number. The nameplate shall be brass, aluminum or other durable material attached to the equipment in a conspicuous location. Nonferrous identifying tags or pressure-sensitive labels shall be provided for all cables, feeders, and power circuits in vaults, pull boxes, manholes and switchboard rooms at cable termination and in other locations.

B. Tags or labels shall be stamped or printed to correspond with markings on the as-built drawings so that feeder or cable may be readily identified. Electrical equipment, safety switches, time clock, starters, panels and transformers shall have black and white laminated bakelite nameplates securely fastened to device with screws and be exposed. Edge of plates shall be beveled. Letters shall be white with black field. Letters shall be 3/8-inch upper case. Nameplate shall state its purpose and the voltage of the equipment. 120 or 240 volt equipment shall have black; 480 volts red.

C. Provide “Flash Protection” label as per NEC.

2.3 FLASHING

A. For roof penetrations, furnish penetration as approved by roofing company.

2.4 ACCESS PANELS

A. Furnish access panels as required to service electrical devices.

B. Furnish size and type as required for proper service or as shown on Drawings for specific locations.

2.5 WIRING NOT IN RACEWAY

A. Where the Drawings or Specifications allow communication system wiring to be run without raceways, the Contractor shall supply plenum-rated wire where wiring penetrates air plenums, whether indicated or not.

2.6 ARRESTORS

A. Where a data, telephone, fire alarm, intercom or similar cable is specified for the project; provide arrestors at all cable entrances as per code.

PART 3 - EXECUTION

3.1 CUTTING AND PATCHING

A. Provide cutting and patching required to perform the electrical work. Do not cut structural members except through explicit instructions of the Architect/Engineer. Accomplish patching with workmen skilled in the trade required. Perform cutting and fitting in rough construction phases of the work.

3.2 FIRE STOPPING

A. When wiring or conduit penetrates a rated wall this contractor shall provide a fire rated sealant or system equal or great than the fire rating of the wall. This includes sealing sleeves that are used for low voltage cables. Seal after cable installation. This includes cables installed by owner if installed prior to completion of the project. If the owner has not installed cables by end of project provide proper capping methods.

3.3 ACCESSIBILITY

A. Install in an accessible location, all junction boxes, starters, relays, light fixtures, and other items that may require servicing or repairing.

3.4 CLEARANCES

A. Maintain clearances in front of electrical equipment as required by code. Report discrepancies to A/E PRIOR TO ROUGH-IN.

B. Submit ½" = 1'-0" scale plan showing layout of electrical equipment.

3.5 WIRING

A. Electrical wiring for mechanical equipment or equipment furnished by others is separated into two main wiring divisions: (1) Power wiring by Electrical Contractor and (2) Control wiring by Mechanical Contractor.

B. Power wiring shall be the energy source and shall include installation of circuit protective devices, controller, conduit, wiring, and safety disconnects from power supply, and terminating at the motor or appropriate terminals on equipment. Install starters as required.

C. Control wiring shall comprise conduit and wiring not included in power wiring or noted above. This wiring shall include low voltage automatic temperature control wiring, safety and interlocking wiring, push button starting, pilot light, and signal wiring, etc., that is not included as part of safety equipment.

D. The Electrical Contractor shall install all wiring and equipment specifically shown on the Electrical Drawings.

E. All telephone, data and similar wiring shall be permanently marked. In addition a wiring schedule shall be placed on the as-builts.

3.6 CONNECTION OF EQUIPMENT NOT SPECIFIED IN THIS DIVISION

A. Provide necessary materials and make connections to equipment requiring electrical power.

B. Rough-in for connection of this equipment according to shop drawings furnished with the equipment or by actual measurements taken from equipment on site. Provide junction boxes, disconnect switches, etc., required to properly connect each piece of equipment unless specifically stated otherwise.

3.7 UTILITIES LOCATIONS, METERS, AND CONNECTIONS

A. Arrange with proper authorities and utility companies for service connections, verifying locations and arrangements. Pay all costs of service as shown and

provide all required conduits,meter bases wiring for indicated service. Contact the serving utility prior to bid and include all cost of utility services in bid.

B. When connections to existing lines, rerouting of utility lines, modifications to services, etc., would interrupt service or interfere with normal use of the buildings, arrange work such that outages are minimized and schedule outages to occur at times satisfactory to the Owner.

C. Before ordering equipment and proceeding with Work, verify with the utility company existing or available voltages shown on Drawings. If voltage differs from that noted on the Drawings and in the Specifications; notify the Engineer immediately.

3.8 APPEARANCE OF WORK

A. Arrange and install exposed portions on Work specified under this division such as devices, fixtures, panels, and safety switches to fit in and harmonize with Work specified in other divisions.

B. Run conduits concealed in chases, attics or cable trenches unless indicated otherwise. Run conduit exposed to view in mechanical rooms and electrical equipment rooms.

C. Run conduit parallel or perpendicular to building lines.

3.9 GUARANTY PERIOD

A. Electrical Contractor shall warrant equipment furnished and work performed for a period of one year from date of written acceptance of work. This guarantee shall cover patching, refinishing, etc., required to restore faulty condition at no additional expense to Owner.

3.10 CLEANING

A. At completion of work, clean and polish fixtures, equipment, and materials.

3.11 CONFLICT

A. If there is a conflict between Drawings and Specifications, provisions of the most stringent shall control. Drawings and Specifications are complementary; work required by one, but not required by the other, shall be performed as though required by both.

3.12 MOTOR CONNECTIONS

A. Wherever equipment requiring electrical connection is specified, power wiring shall be furnished and installed under applicable sections of Electrical Division of Specifications. Starting switches, protective devices, and other means for operation and control of equipment shall be furnished under applicable equipment sections but shall be installed under applicable electrical section, unless specifically noted otherwise on Drawings. Additional disconnects required by National Electrical Code shall be furnished, installed, and connected by Electrical Contractor. Motor terminals or equipment connections shall terminate in a junction box or disconnect adjacent to equipment. See Mechanical Plan for exact location of motors.

B. Install conduit and boxes for thermostats. Obtain count and location from mechanical Drawings. Extend conduit from thermostat box to equipment. If thermostat conduits are shown to be included under the mechanical section then that section shall take precedence.

END OF SECTION

PRE-FINAL PROJECT OBSERVATION
CHECK LIST

Complete this form and forward to the Engineer's office three business days prior to the requested Final Project Observation date.

Forward this form to: Lucas, Merriott & Associates
rdmerriott@merriotteng.com

	ITEM	YES	NO
1.	Polarity of all receptacles shall be tested. GFI receptacles shall be tested. *		
2.	Test all emergency lighting by turning circuit breakers off.		
3.	Provide typed panel directories.		
4.	Obtain certification letter from Fire Alarm Vendor indicating the system has been tested and is fully operational.		
5.	Clean fixture lenses and reflectors.		
6.	Provide Owner with spare lamps, parts, keys, etc. as specified for this project.		
7.	All junction boxes shall have covers and shall be labeled with the circuit number(s).		
8.	Clean all switchgear and provide designation label.		
9.	Remove paint from all devices and device plates.		
10.	Replace all burned out lamps.		
11.	Megger test reports (attach with this form)		
12.	Ground and bonding connections to cold water pipe, building steel, ground rods, etc.		

*test with ECOS #1019 or similar tester

All of the items must be met prior to the Final Project Observation.

Requested Final Project Observation date: _____

Signature of Electrical Contractor: _____

SECTION 26 05 19

WIRE AND CABLE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Building wire and cable.

PART 2 - PRODUCTS

2.1 BUILDING WIRE

A. Feeders and branch circuits larger than 10 AWG: stranded conductor, 600 volt insulation, THW or THHN/THWN. Conduit sizes are based on THWN. Wiring shall have UL listing and markings on insulation. Use THHN where fluorescent fixture channel is used as wireway. Wire sizes shown are based upon copper conductors unless noted as “AL”.

B. Stabiloy may be used for feeders and services that exceed 800 amps. Adjust wire size to match copper rating. Aluminum is not permitted except as noted here or specifically on the plans.

C. Feeders and branch circuits 10 AWG and smaller: Solid conductor, 600 volt insulation THHN/THWN.

D. In general armored cable is not permitted. Where wiring is run in wood studs the contractor may use armored cable for 20 amp branch circuits with the permission of the engineer.

2.2 COMMUNICATION SYSTEM WIRING

A. Wiring type and size for communication (nurse call, intercom, bell systems) and fire alarm systems shall be as recommended by equipment manufacturer. In no case shall any circuit carrying a load have less more than 3% voltage drop. Contractor shall check Drawings and provide plenum-rated wiring where wiring penetrates air plenums and is allowed by the Drawings or Specifications to not be run in raceway.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

A. Use no wire smaller than 12 AWG for power and lighting circuits, no smaller than 14 AWG for control wiring other than that listed above. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 75 feet and for 20 ampere, 277 volt branch circuit home runs longer than 200 feet. For longer runs consult Engineer for required sizes.

B. **EACH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL (NO SHARING).**

C. For parallel feeders; place an equal number of conductors for each phase of a circuit in same raceway or cable and make conductor lengths the same.

3.2 WIRING INSTALLATION IN RACEWAYS

A. Pull all conductors into a raceway at the same time. Use UL listed wire pulling lubricant for pulling 4 AWG and larger wires. Completely and thoroughly swab raceway system before installing conductors.

B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.

3.3 COLOR CODING

A. Color code wiring as per code.

3.4 CIRCUITING

A. **Circuit as shown on Drawings.** Failure to properly circuit according to Drawings shall result in rewiring as directed at no increase in Contract Sum. Contact Engineer for resolutions of circuiting conflicts. If duplicate circuit numbers are found on the plans contact the Engineer prior to rough in. Allow for spare room in all conduits by not filling to more than 60% of that allowed by NEC.

END OF SECTION

SECTION 26 05 26

SECONDARY GROUNDING

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION

A. Do not connect neutral and ground anywhere except at service entrance.

B. Do not use conduit as the sole grounding method.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide ground wire in all conduits.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide a separate, insulated equipment grounding conductor in feeder and branch circuits. Terminate each end on a grounding lug, bus, or bushing.

END OF SECTION

SECTION 26 05 33a

CONDUIT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Raceways

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND FITTINGS

A. Allied, Triangle or approved equal.

B. Quick connect type rigid steel couplings not permitted.

2.2 FLEXIBLE METAL CONDUIT AND FITTINGS

A. Conduit: FS WW-C-566; steel or aluminum.

B. Fittings and Conduit Bodies: Use clamp or compression type ANSI/NEMA FB 1. Screw in type not allowed.

2.3 LIQUIDTIGHT FLEXIBLE CONDUIT AND FITTINGS

A. Conduit: Flexible metal conduit with PVC jacket.

B. Fittings and Conduit Bodies: Use compression type connectors; screw in type not allowed. ANSI/NEMA FB 1.

2.4 PLASTIC CONDUIT AND FITTINGS

A. Conduit: Carlon or equal.

2.5 ARMORED CABLE may be used in remodel area where fishing is required in existing walls – provide proper support.

PART 3 - EXECUTION

3.1 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

A. Size conduit for conductor type installed, minimum size 3/4-inch. Conduit sizes shown on Drawings are based on THWN. Provide spare capacity in all branch circuits by not filling to more than 60% of the NEC allowed conduit fill.

B. Arrange conduit supports to prevent distortion of alignment by wire pulling operations. Fasten conduit using galvanized straps, lay-in adjustable hangers, clevis hangers, or bolted split stamped galvanized hangers. Arrange conduit to maintain headroom and present a neat appearance.

C. Group conduit in parallel runs where practical.

D. Do not fasten conduit with wire or perforated pipe straps or piggy back type clamps. Remove all wire used for temporary conduit support during construction before conductors are pulled.

E. Conduit and conduit bodies including, FS & FD or larger cast or sheet metal boxes, are not permitted to be supported by either a ceiling grid wire and/or the ceiling grid itself, via any conduit or conduit body clips which may include but would not be limited to: t-bar and/or ceiling wire conduit clips.

3.2 CONDUIT INSTALLATION

A. Cut conduit square using saw; de-burr cut ends and bring conduit to the shoulder of fittings and couplings and fasten securely.

B. Use conduit hubs or sealing locknuts for fastening conduit to cast boxes, and for fastening conduit to sheet metal boxes in damp or wet locations.

C. Use hydraulic one-shot conduit bender or factory elbows for bends in conduit larger than 2-inch size.

D. Avoid moisture traps where possible; where unavoidable, provide junction box with drain fitting at conduit low point.

E. Use suitable conduit caps to protect installed conduit against entrance of dirt and moisture.

F. Provide pull strings in all empty conduits.

G. Install expansion joints where conduit crosses building expansion joints and every 75 feet.

H. Where conduit penetrates fire-rated walls and floors, provide fire-stop fittings with UL listed fire rating equal to wall or floor rating.

I. Install four spare 3/4-inch conduits from each flush mounted power panel to an accessible point above ceiling and cap off.

J. Use long radius elbows on telephone conduit over 1-inch size.

K. Where installed on top of a roof do NOT use wood supports. Provide a UV protected high density polypropylene base UL listed for the purpose. Use a section of roof membrane below the support to protect the roof. Use stainless steel vertical supports and unistrut to create a trapeze. Use a galvanized roller hanger or band for the pipe. Optionally use Cooper Industries “Dura-Blok” systems with a protective membrane between the roof and the blocks.

3.3 CONDUIT INSTALLATION SCHEDULE

A. Galvanized rigid steel: Minimum 3/4-inch size may be used in all areas.

B. Electrical Metallic Tubing: Minimum 3/4-inch size may be used in indoor dry locations where it is:

1. Not subject to damage, not in contact with earth, not in concrete slabs on grade and in compliance with other qualifications in this section.

C. Schedule 40 PVC may be run for underground branch circuits and feeders.

D. Flexible steel conduit: 1/2-inch minimum; use for final connection to recessed fluorescent light fixtures and mechanical equipment; length not to exceed four feet. Support independently of the box.

E. Liquid-tight flexible steel conduit:

1. Use for outdoor final connections to mechanical equipment, length not to exceed four feet.

END OF SECTION

SECTION 26 05 33b

BOXES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Pull, junction, and outlet boxes.

PART 2 - PRODUCTS

2.1 OUTLET BOXES

A. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1; galvanized steel, with 1/2-inch male fixture studs where required. Use 4x4 deep type box with single gang mud ring for telephone and data outlets.

B. Cast Boxes: Cast feralloy, deep type, gasketed cover, threaded hubs.

2.2 FLOOR BOXES AND WALL BOXES

A. On grade floor boxes shall be Wiremold Evolution Series EFB45S-OG multiservice box unless noted otherwise. Provide a complete assembly matching box to floor type and trip to floor covering type. Include all internal components for wiring to be installed. Unless noted otherwise include ports for data, HDMI, duplex receptacle and telephone.

B. Provide Wiremold: EFSB4 for wall mounted TV’s and for connections to Lecturn. Include cover in bid price unless noted otherwise. Each box shall have a duplex receptacle, data port, HDMI and coax. Where used as a lecturn box extend a 2” conduit to above ceiling for low voltage cables.

C. For boxes on floors above ground level where the slab does not permit the box noted above use the Wiremold Evolution Series Poke through multi service box. Unless stated otherwise bid the 6” as a minimum but insure it is large enough for all requirements indicated on the plans.

D. Obtain exact mounting location for these boxes from Architect.

2.3 PULL AND JUNCTION BOXES

A. Sheet Metal Boxes: ANSI/NEMA OS 1; galvanized steel.

B. Cast Metal Boxes for Outdoor and Wet Locations Installations: NEMA 250; Type 4 and Type 6, flat-flanged, surface-mounted junction box, UL listed as raintight. Galvanized cast iron box and cover with ground flange, neoprene gasket, and stainless steel cover screws.

C. Cast Metal Boxes for Underground Installations: NEMA 250; Type r, outside flanged, recessed cover box for flush mounting, UL listed as raintight. Galvanized cast iron box and plain cover with neoprene gasket and stainless steel cover screws.

PART 3 - EXECUTION

3.1 COORDINATION OF BOX LOCATIONS

A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance. Electrical box locations shown on Drawings are approximate unless dimensioned.

B. Mount switches and pull stations 48 in (center of box) above finish floor and receptacles 16 inches (center of box) above finish floor. Mount clock outlets 12 inches below ceiling. Strobes 80” AFF.

C. Refer to architectural plans prior to rough in. Coordinate the architectural plans with that shown on the electrical plans. If there are discrepancies, obtain correct rough in locations prior to work. Verify with the architect the exact locations of all wall mounted devices. If this is not done the contractor shall move them as directed by the architect for no additional cost. In general light switches shall always be located near the door strike side jam unless there are sidelight. Where there are sidelights – confirm the location.

3.2 OUTLET BOX INSTALLATION

A. Do not install boxes back-to-back in walls. Provide minimum 6 inch separation, except provide minimum 24-inch separation in acoustic and fire rated walls. Separate phone/data and power by 12 inches.

B. Provide knockout closures for unused openings.

C. Support boxes independently of conduit except for cast boxes that is connected to two rigid metal conduits, both supported within 12 inches of box.

D. Use multiple-gang boxes where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

E. Install outlets mounted above counters, benches, and backsplashes according to millwork plans.

F. Position lighting outlets as per reflected ceiling plans.

G. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening. NO boxes shall be installed in inaccessible areas.

H. Secure boxes to interior wall and partition studs with 8-32 bolts or weld. Use stamped steel stud bridges for flush outlets in hollow stud wall, and adjustable steel channel fasteners for flush ceiling outlet boxes.

I. Align wall-mounted outlet boxes for switches, thermostats, and similar devices. Set switch boxes within 6 inches of door jamb where applicable.

J. Provide cast outlet boxes in exterior locations exposed to the weather and wet locations.

3.3 FLOOR BOX INSTALLATION

A. Set boxes level and flush with finish flooring material. Install floor boxes as directed by Arch. **Obtain exact dimensions from Architect prior to rough in.**

END OF SECTION

SECTION 26 05 48

SEISMIC PROTECTION

PART 1 - GENERAL

1.1 GENERAL

A. The requirements for seismic protection measures to be applied to electrical equipment and systems specified herein are in addition to any other items called for in other sections of these specifications. Electrical equipment shall include the following items to the extent required on plans or in other sections of these specifications:

1. Light fixtures

1.2 CONDUIT NOT REQUIRING SPECIAL SEISMIC RESTRAINTS

A. Seismic restraints may be omitted from the following installations:

B. All electrical conduit less than 2 1/2" inside diameter

C. All conduit suspended by individual hangers 12" or less in length from the top of pipe to the bottom of the support for the hanger.

1.3 SHOP DRAWINGS

A. Shop drawings along with catalog cuts, template, and erection and installation details, as appropriate, for the items listed below shall be submitted. Submittals shall be complete in detail; shall indicate thickness, type, grade, class of metal, and dimensions; and shall show construction details, reinforcement, anchorage, and installation with relation to the building construction.

PART 2 - PRODUCTS

2.1 BOLTS AND NUTS

A. Squarehead bolts and heavy hexagon nuts: ANSI B1 8.2.1 and B1 8.2.2, and ASTM A307 or A576.

B. Bolts, underground: ASTM A325

2.2 SWAY BRACE

A. Materials used for member listed in Table I of this specification shall be structural steel conforming with ASTM A36.

PART 3 - EXECUTION

3.1 SWAY BRACE

A. Sway brace shall be installed on conduit not otherwise rigidly anchored to preclude damage during seismic activity. Bracing shall conform to approved arrangements. Provisions of this paragraph apply to all conduit within a 5'-0" line around outside of building unless buried in the ground. Hanger rods shall be increased in cross sectional area proportionate to the increased weight per linear foot of pipe and contents supported at each trapeze hanger. No trapeze-type hanger shall be secured with less than two 1/2" bolts.

B. TRANSVERSE SWAY BRACING: Transverse sway bracing shall be provided at intervals NOT TO EXCEED 30'-0".

C. LONGITUDINAL SWAY BRACING: Longitudinal sway bracing shall be provided at 40'-0" intervals.

D. VERTICAL RUNS: Vertical runs of conduit shall be braced at not more that 10'-0" vertical intervals.

E. ANCHOR RODS, ANGLES, AND BARS: Anchor rods, angles, and bars shall be bolted to either conduit clamps at one end and cast-in-place concrete or masonry insert or clip angles bolted to the steel structure on the other end. Rods shall be solid metal or pipe as specified hereinafter. Anchor rods, angles, and bars shall not exceed lengths given in Table I.

F. BOLTS: Bolts used for attachment of anchors to pipe and structure shall be not less that 1/2" diameter.

TABLE I
MAXIMUM LENGTH FOR BRACING MEMBERS

TYPE	SIZE	MAXIMUM LENGTH*	ALLOWABLE LOADS* (Kips)
ANGLES	1-1/2” x 1-1/2” x 1/4”	4’-10”	5.7
	2” x 2” x 1/4”	6’-6”	7.8
	2-1/2” x 1-1/2” x 1/4”	8’-0”	9.8

	3” x 2-1/2” x 1/4”	8’-10”	10.8
	3” x 3” x 1/4”	9’-10”	11.9
RODS	3-4”	3’-1”	3.7
	7-8”	3’-8”	5.0
FLAT BARS	1-1/2” x 1/4”	1’-2”	3.1
	2” x 1/4”	1’-2”	4.1
	2” x 3/8”	1’-9”	6.2
PIPES (40S)	1”	7’-0”	4.1
	1-1/4”	9’-0”	5.5
	1-1/2”	10’-4”	6.6
	2”	13’-1”	8.9

* Based on the slenderness of 1/r = 200 and ASTM A36 steel.

3.2 SPREADERS

A. Spreaders shall be provided between racked or adjacent conduit runs to prevent contact during seismic activity whenever surfaces are less than 4" apart or four times the maximum displacement due to seismic force. Spreaders to be applied at same interval as sway braces.

3.3 ANCHOR BOLTS

A. All floor or pad mounted equipment will have a minimum of four anchor bolts securely fastened through base. Two nuts shall be provided on each bolt. Anchor bolts shall have an embedded straight length equal to at least 10 times the nominal diameter of the bolt and shall conform to the following Tables of sizes for various equipment weights, in accordance with ASTM A325 and A576.

MAXIMUM EQUIPMENT WEIGHT (POUNDS)	MINIMUM BOLT SIZES* (INCHES)
500	3/8
1.000	1/2
5.000	5/8
10,000	3/4
20,000	7/8
30,000	1
50,000	1-1/4
100,000	1-1/2

* Based on four bolts per item, use equivalent total cross sectional areas when more than four bolts per item are provided. Anchor bolts that exceed normal depth of equipment foundation piers or pads shall either extend into concrete floor or the foundation shall be increased in depth to accommodate bolt lengths.

B. When height-to-width ratio of the equipment exceeds 8.9, overturning must be investigated.

3.4 EQUIPMENT SWAY BRACING

A. Equipment sway bracing shall be provided for all items supported from overhead floor or roof structures. Braces shall consist of angles, rods, bars, or pipes run at a 45° angles.

3.5 LIGHTING FIXTURES IN BUILDING

A. In addition to the requirements of the preceding paragraphs, lighting fixtures and supports will conform to the following:

3.6 MATERIALS AND CONSTRUCTION

A. Fixture supports shall be malleable iron.

B. Loop and hook or swivel hanger assemblies for pendant fixtures shall be fitted with a restraining device to hold the stem in the support position during earthquake motions. Pendant supported fluorescent fixtures shall also be provided with a flexible hanger device at the attachment to the fixture channel to preclude breaking of the support. The motion of swivels or hinged joints shall not cause sharp bends in conductors or damage to insulation.

C. Recessed fluorescent individual or continuous row fixtures shall be supported by a seismic resistant suspended ceiling support system and shall be bolted thereto at each corner of the fixture; or shall be provided with fixture support wires attached to the building structural members using 2 wires for individual fixtures and 1 wire per unit of continuous row fixtures.

D. A supporting assembly that is intended to be mounted on an outlet box shall be designed to accommodate mounting features on 4" boxes, 3" plaster rings, and fixture studs.

E. Surface mounted fluorescent individual or continuous row fixtures shall be attached to a seismic resistant ceiling support system. Fixture support devices for attaching to suspended ceilings shall be a locking-type scissor clamp or full loop band that will securely attach to the ceiling support. Fixtures attached to underside of a structural slab shall be properly anchored to the slab at each corner or the fixture.

F. Each wall mounted emergency light unit shall be secured in a manner to hold the unit in place during a seismic disturbance.

G. TESTS: In lieu of the requirements for equipment supports, lighting fixtures and the complete fixture supporting assembly may be tested as specified hereinafter. Such tests shall be conducted by an approved and independent testing laboratory, and the results of such tests shall specifically state whether or not the lighting fixture supports satisfy the requirements given herein.

1. TEST EQUIPMENT: To simulate earthquake motion, fixtures and supports shall be attached to a carriage suspended on rollers from an overhead track. A gear motor and crank assembly shall be used to provide oscillatory motion of approximately 1 cycle per second. The exact number of cycles per second and the actual dimension of the crank apparatus shall be adjusted to produce a minimum carriage acceleration of 0.28 g. The actual fixture mounting surface shall be on the underside of the carriage and shall provide capacity for orienting the fixture in a horizontal plane in various positions ranging from parallel to perpendicular to the line of traverse.

2. TEST REQUIREMENTS: All tests shall be conducted with the maximum fixture weight so as to produce the most severe loading conditions. Fixtures having stems shall be tested with the actual stem lengths to be used. Tests shall be of 1 minute duration with the mounting surface in the line of traverse, at 45° to the line of traverse, and at 90° to the line of traverse. A total of 2 fixtures shall be tested in each of the above positions. After each of the 6 tests, the complete stem assemblies from fixtures having stem assemblies shall be subjected to a tensile strength test. The sample shall withstand, without failure, a force of not less than 4 times the weight it is intended to support.

3. ACCEPTANCE: No component of a fixture nor its supports shall be accepted individually. For acceptance, the fixture and its supports shall exhibit no undue damage, and no component of the fixture shall fail or fall from the fixture during testing.

3.7 RECESSED LIGHTING FIXTURES

A. Recessed lighting fixtures not over 56 pounds in, weight and suspended and pendant hung fixtures not over 70 pounds in weight may be supported and attached directly to the ceiling system runners by a positive attachment such as screws or bolts.

END OF SECTION

SECTION 26 24 00

PANELBOARDS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Panelboards and switchboards.

1.2 SPARE PARTS

A. Keys: Furnish two for each panel to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Square 'D', Siemens, Eaton/Cutler Hammer. Use bolted circuit breakers – match existing if possible .

2.2 MAIN AND DISTRIBUTION PANELBOARDS

A. Enclosure: NEMA 1 indoors; NEMA 3R outdoors. Provide doors with cylinder locks on all panels.

B. Panel short circuit rating (unless shown otherwise on Drawings):

1. 208/240 volts: for 100 amp through 300 amp, 22,000 RMS; for 301 amp through 800 amp, 42,000 RMS.

2. 277/480 volts: For 100 amp through 300 amp, 14,000 RMS; for 301 amp through 800 amp, 25,000 RMS.

C. Molded Case Circuit Breakers: NEMA AB 1; provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits and HID/SWD for all breakers used to switch lighting circuits. Verify breakers for A/C equipment prior to rough-in. Provide G.F.I. type circuit breakers for all heating cable and immersion heaters.

D. All main disconnect devices located inside shall have shunt trip operators.

E. All flush mounted panelboards shall fit in 6" nominal stud wall.

F. Where buildings are sprinklered furnish shunt trip breakers for elevator drives and control power (connected via the fire alarm to shut off power prior to sprinkler activation. Provide one auxilliary contact to shut off car emergency battery power as well. Coordinate with the fire alarm vendor and elevator supplier.

G. ALL KITCHEN RECEPTACLES SINGLE AND THREE PHASE SHALL HAVE GFI PROTECTION AT EITHER THE RECEPTACLE IF IT REMAINS ACCESSIBLE OR AT THE BREAKER. RECEPTACLES UNDER KITCHEN HOODS WITH FIRE PROTECTION SHALL BE SHUNT TRIP AND CONNECTED TO SUPPRESSION SYSTEM. GFI PROTECTION SHALL CONFORM TO THE LATEST NEC.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards plumb and flush with wall finishes in conformance with NEMA PB 1.1 unless noted as surface-mounted. Provide filler plates for unused spaces in panelboards.

B. Provide typed circuit directory under plastic for each branch circuit panelboard. The circuit directory shall indicate the load served. Circuits feeding lighting and receptacles shall be labled as per which room is served (use owner's room naming system).

C. Stub four empty 3/4-inch conduits to accessible location above ceiling out of each recessed panelboard.

END OF SECTION

SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Wall switches, receptacles and plates.

1.2 SUBMITTALS

A. Submit product data showing configurations, finishes, dimensions, and manufacturer's instructions. **Note if contractor does not request color selection from Architect he shall change all devices and plates as directed by Architect.**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Hubbell, Leviton unless shown otherwise.

2.2 WALL SWITCHES

A. Wall switches shall be commercial grade.

B. Wall Switches for Lighting Circuits and Motor Loads Under 1/2 HP: NEMA WD 1; AC general use snap switch with toggle handle, rated 20 amperes and 120-277 volts AC-**Color as selected by Architect.**

C. Pilot Light Type: (light on with load on) used to indicate a load is on (e.g. remote exhaust fan).

D. Lighted Toggle Type: (light on with load off) used to locate switch where it may be difficult to find in the dark.

2.3 RECEPTACLES

A. Receptacles shall be commercial grade heavy unless otherwise shown on the drawings. **RECEPTACLES DESIGNATED AS USB SHALL HAVE BOTH STANDARD USB AND USB-C PORTS**

B. Convenience and Straight-blade Receptacles: NEMA WD 1 - 20 Amp: 5-20R, one piece ground strap construction - **Color as selected by Architect.**

C. GFI Receptacles: 20 Amp duplex convenience receptacle with integral ground fault current interrupter. Slaving of GFI's not permitted unless shown otherwise. Provide GFI protection for all receptacles in kitchens. In addition provide GFI receptacles at all locations within 6' of a water outlet.

D. Tamper Resistant. Install commercial grade tamper resistant devices as defined and as required by code. VERIFY LATEST CODE REQUIREMENTS.

2.4 WALL DIMMERS

A. Wall Dimmers: Dimmers shall be compatible with the LED (or other) fixtures specified. **Color as selected by Architect. Note; all devices on a project shall be from one vendor if possible so that color etc matches.**

2.5 WALL PLATES

A. Cover plates – **Nylon**. Color as selected by Architect. Submit stainless plates unless directed otherwise in writing by the architect. If plastic plates are substituted without specific change proposal request the contactor shall replace with stainless steel.

B. Weatherproof Cover Plate: Thomas & Betts, "In use" Red-Dot "Code Keeper". Complete unit shall be made of die cast copper-free* aluminum alloy including flip cover. Plastic units are not acceptable. (*less than .004 copper content). Flip lid types are permitted only where allowed by code.

C. Furnish blank plates for openings without a device.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install receptacle behind E.W.C. so cord will not show. Provide GFI protection for all water cooler outlets. This can be a GFI breaker or slaved and properly labeled from a bathroom GFI receptacle.

END OF SECTION

SECTION 26 28 00

DISCONNECT SWITCHES

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 MANUFACTURERS - DISCONNECT SWITCHES

A. Square D, Eaton, Siemens

2.2 DISCONNECT SWITCHES

A. Fusible Switch Assemblies: NEMA KS 1; Heavy duty, quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle. Handle lockable in OFF position. Fuse Clips: FS W-F-870, designed to accommodate Class R fuses with solid neutral. General duty may be used for A/C disconnects under 100 amps.

B. Nonfusible Switch Assemblies: NEMA KS1; Type HD; FS W-S-865; quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle. Handle lockable in OFF position. General duty may be used for disconnects under 100 amps.

C. Enclosures:
   1. NEMA 1: Indoors.
   2. NEMA 3R: Outdoors.
   3. As indicated on Drawings.

2.3 MANUFACTURERS - FUSES

Bussman: Fusetrons for motors, Low Peak or Hi-Cap elsewhere and at service.

2.4 FUSES

A. Fuses 600 Amperes and Less: ANSI/UL 198E, Class Low Peak. as indicated on Drawings; dual element, current limiting, time delay, 200 or 600 volt as required.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install disconnect switches where indicated on Drawings and as required by code. Install a disconnecting means within sight of all motors (whether shown or not).

B. Install heavy duty switches for service entrances and 100 amps and above.

C. If switches are mounted on equipment, provide 12 inches of flexible conduit next to switch between switch and panel.

D. In locating disconnects for mechanical and other equipment the electrical contractor shall coordinate carefully with the other trades and insure that disconects do not get mounted behind mechanical or other equipment. Insure Code required clearances are maintained.

END OF SECTION

SECTION 26 50 00

LIGHTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Luminaires and accessories.

1.2 SUBMITTALS

A. Submit product data including **color chips**, support points, weights, and accessory information for each luminaire type.

1.3 QUALITY ASSURANCE

A. Furnish interior ceiling fixtures compatible with ceiling system. Coordinate with ceiling system installer. Verify prior to ordering.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - LUMINAIRES AND ACCESSORIES

A. See Fixture Schedule on Drawings.

B. All request for substitutions shall be accompanied by factory certified computer printouts of performance of substituted fixture showing foot candles on Floor Plan.

C. All LED color temperatures shall be the same for all fixtures on the project. Verify color prior to bidding if it affects pricing. Verify prior to ordering.

D. INCLUDE AN EMERGENCY LIGHT IN ALL ELECTRICAL ROOMS

PART 3 - EXECUTION

3.1 INSTALLATION

A. Connection to light fixtures shall be from j-box directly to fixture (fixture to fixture wiring not permitted except where fixtures are run in continuous runs such as lighting coves).

B. Support surface-mounted luminaires directly from building structure. Support lay in fixtures according to Code.

C. Layout work to ensure that ceiling outlets are located symmetrically in area.

D. Arrange fixtures to miss ducts and equipment in Mechanical Room and to miss air ducts in other areas.

3.2 ADJUSTING AND CLEANING

A. Align luminaires and clean lenses and diffusers at completion of Work. Clean paint splatters, dirt, and debris from installed luminaires.

END OF SECTION

SECTION 28 31 00

FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. At the time of bid, all exceptions taken to these Specifications, all variances from these Specifications and all substitutions of operating capabilities or equipment called for in these Specifications shall be listed in writing and forwarded to the consulting engineer. Any such exceptions, variances, or substitutions which were not listed at the time of bid and are identified in the submittal shall be grounds for immediate disapproval without comment.

B. Installation company shall be licensed by the State of Arkansas in accordance with ACA 17-33-101 et.seq., and shall have been in business minimum 5 years installing fire alarm systems. In addition the equipment and materials shall be provided by a franchised distributor. Technicians must be factory trained. Submit copy of training certificate with submittals.

1.2 SYSTEM DESCRIPTION

A. System is existing. Add devices, provide all required programming power supplies etc

1.3 APPLICABLE CODES AND STANDARDS

A. All equipment shall be U.L. and FM listed for its intended use.

B. IBC Section 907 Fire Alarm and Detection Systems and NFPA.

C. All raceways and wiring shall be installed in compliance with NFPA Standard 70 (National Electrical Code - Article 760).

D. The system equipment and its installation shall comply with all other local codes and authorities having jurisdiction.

E. to the emergency let down circuit if supplied in the shunt trip arrangement if emergency power is supplied.

1.4 ADA AUDIBLE/VISUAL SYSTEMS

A. Refer to the Architectural plans and provide an ADA type system for all areas of rescue as required by ADA. Not all areas may be defined as such.

1.5 SUBMITTALS

A. Provide list of all types of equipment and components provided.

B. Provide description of operation of the system, similar to that provided in Part 2 of this section, to include any and all exceptions, variances, or substitutions listed at the time of bid.

1.6 WARRANTY

A. The equipment manufacturer shall guarantee the system equipment to the Owner for a period of one year from the date of final acceptance of the system.

B. The Contractor shall guarantee all wiring and raceways to be free from inherent mechanical or electrical defects for one year from the date of final acceptance of the system.

1.7 ACCESS CONTROL SYSTEMS.

A. Where there is any sort of door access system this contractor shall provide a relay and connection to directly interupt power to the locks (as per NFPA).

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. As shown on Drawings (all systems shall have spare capacity in the control panel).

B. All lines exiting the building shall have surge suppression.

C. **All cable shall be plenum rated.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install entire system in accordance with approved manufacturer's wiring diagrams. Furnish all conduit, wiring, outlet boxes, junction boxes, cabinets, and similar devices necessary for the complete installation. All wiring shall be of the type and size recommended by the manufacturer and shall be approved by the local fire department. Install wiring in dedicated conduit throughout.

B. Install smoke detectors in all mechanical closets and a duct detector in the supply plenum (and a firestat in the return) **of all** HVAC units (supply and return smoke detectors if over 15000 CFM) - see Mechanical Drawings for ratings.

C. Install horn with strobe in each corridor, stairwell and as shown on Drawings and install strobes in public toilets. Strobe location shall comply with ADA.

D. Extend phone lines to the main phone board for connection to the phone system. Provide all required fire alarm components for this connection.

3.2 TESTS

A. Each individual system operation, on an address by address and circuit by circuit basis, shall be tested for its complete operation. Procedure for testing the entire fire alarm system shall be set forth with the consent of the code enforcement official, the Engineer, and the manufacturer.

3.3 DOCUMENTATION AND TRAINING

A. The Contractor shall compile and provide to the Owner four complete manuals on the finished system. Each manual shall include operating and maintenance instructions, catalog cuts of all equipment and components, all as-built wiring diagrams (both floor plan and riser types) and a manufacturer's spare parts list.

B. In addition to the above manuals, the Contractor shall provide the service of a trained manufacturer's employee for not less than a four hour session, during normal business hours, to instruct the Owner's designated personnel on the operation and maintenance of the entire system.

END OF SECTION