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PROJECT MANUAL

Project:

UNIVERSITY OF COLORADO COLORADO SPRINGS
UNIVERSITY HALL REMODEL
ACCESSIBILITY UPGRADES

LKA PROJECT NO. 12-012

Client:

University of Colorado
Colorado Springs

Date:
October 25, 2012

LKA PARTNERS
INCORPORATED

LKA PARTNERS, INC.
A Professional Corporation
for Architecture/Planning

430 North Tejon Street, Suite 208
Colorado Springs, CO 80903
719 / 473-8446

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PROJECT DIRECTORY

UCCS
UNIVERSITY HALL REMODEL
ACCESIBILITY UPGRADES

THE LKA PARTNERS, INC. — ARCHITECTS
430 North Tejon Street, Suite 208
Colorado Springs, CO 80903
719/ 473-8446
719/ 473-8448 (FAX)

HCDA, INC. — STRUCTURAL ENGINEERS
545 East Pikes Peak Avenue
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CONSULTING ENGINEERS, INC. — ELECTRICAL ENGINEERS
1710 Chapel Hills Drive
Colorado Springs, CO 80920
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ADDRESS ALL QUESTIONS DURING BIDDING PERIOD TO THE ARCHITECT.

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PROJECT MANUAL

FOR

UCCS
UNIVERSITY HALL REMODEL
ACCESSIBILITY UPGRADES

UNIVERSITY OF COLORADO AT COLORADO SPRINGS
COLORADO SPRINGS, CO

PROJECT NO. 12-012

ARCHITECTS

THE LKA PARTNERS, INC.
430 NORTH TEJON STREET, SUITE 208
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October 25, 2012

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TABLE OF CONTENTS

FOR

PROJECT MANUAL

UNIVERSITY OF COLORADO COLORADO SPRINGS
UNIVERSITY HALL REMODEL
ACCESSIBILITY UPGRADES

UNIVERSITY OF COLORADO AT COLORADO SPRINGS
COLORADO SPRINGS, COLORADO

LKA PROJECT NO. 12-012

October 25, 2012

THE PAGES IN EACH SECTION ARE NUMBERED. THE LAST PAGE OF EACH SECTION CONTAINS THE WORDS "END OF SECTION". NOTIFY ARCHITECT IF ANY PAGE IS MISSING IN A SECTION OF YOUR PROJECT MANUAL.

PROCUREMENT AND CONTRACTING REQUIREMENTS SUBGROUP
DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Refer to UCCS Website for Division 00 Documents

GENERAL REQUIREMENTS SUBGROUP
DIVISION 01 - GENERAL REQUIREMENTS

01 00 00	General Requirements
01 01 00	Summary of Work
01 02 00	Administration and Supervision
01 03 00	Alternates
01 04 10	Project Coordination
01 04 50	Cutting and Patching
01 06 00	Regulatory Requirements
01 07 50	Specification System
01 10 00	Special Project Procedures
01 12 10	Hazardous Material Procedures
01 20 00	Project Meetings
01 30 00	Submittals, Shop Drawings, Product Data, and Samples
01 40 00	Quality Control
01 50 00	Temporary Controls
01 60 00	Material and Equipment
01 70 00	Contract Closeout
01 71 00	Cleaning

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01 72 00 Project Record Document
01 73 00 Operation and Maintenance

FACILITY AND CONSTRUCTION SUBGROUP

DIVISION 2 EXISTING CONDITIONS

02 41 00 Selective Demolition

DIVISION 3 CONCRETE

03 30 00 Cast-In-Place Concrete
03 39 00 Moisture Vapor & Alkalinity Control System

DIVISION 4 MASONRY
NOT USED

DIVISION 5 METALS

05 50 00 Metal Fabrications

DIVISION 6 WOOD AND PLASTICS

06 10 00 Rough Carpentry
06 20 00 Finish Carpentry

DIVISION 7 THERMAL AND MOISTURE PROTECTION

07 92 00 Joint Sealants

DIVISION 8 OPENINGS

08 11 13 Hollow Metal Doors and Frames
08 14 29 Prefinished Wood Doors
08 71 00 Door Hardware
08 81 00 Glazing

DIVISION 9 FINISHES

09 21 00 Gypsum Board Partitions and Walls
09 21 10 Gypsum Board Ceilings
09 51 00 Suspended Ceiling Systems
09 65 00 Resilient Flooring
09 68 00 Carpeting
09 91 00 Painting

DIVISION 10 SPECIALTIES
10 26 13 Corner Guards
10 60 80 Chain Link Partitions

DIVISION 11 EQUIPMENT
NOT USED

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DIVISION 12 FURNISHINGS
12 24 00 Sun Control Shades

DIVISION 13 SPECIAL CONSTRUCTION
NOT USED

DIVISION 14 CONVEYING SYSTEMS
NOT USED

DIVISION 15 THROUGH DIVISION 19
NOT USED

FACILITY SERVICES SUBGROUP

DIVISION 20
NOT USED

DIVISION 21 FIRE SUPPRESSION

NOT USED

DIVISION 22 PLUMBING

NOT USED

DIVISION 23 HEATING, VENTILATING AND AIR CONDITIONING

NOT USED

DIVISION 24 THROUGH 25
NOT USED

DIVISION 26 ELECTRICAL

NOT USED

DIVISION 27 COMMUNICATIONS

NOT USED

DIVISION 28 ELECTRONIC SAFETY AND SECURITY

NOT USED

DIVISION 29
NOT USED

SITE AND INFRASTRUCTURE SUBGROUP

DIVISION 30 THROUGH 33
NOT USED

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END TABLE OF CONTENTS

Not for Construction
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DIVISION 1 GENERAL REQUIREMENTS
SECTION 01 00 00 GENERAL

1.01 CONDITIONS AND REQUIREMENTS
Division 1 - General Requirements shall govern work under all Divisions of the Specifications.

1.02 SPECIFICATION LANGUAGE EXPLANATION

A. Specifications are of abbreviated, simplified or streamlined type and include incomplete sentences. Omissions of words or phrases such as "the Contractor shall," "in conformity therewith," "shall be," "as noted on the Drawings," "a," "the" are intentional. Supply omitted words or phrases by inference in same manner as they are when "NOTE" occurs on Drawings. Supply words "shall be" or "shall" by inference when colon is used within sentences or phrases. Supply words "on the Drawings" by inference when "as indicated" is used with sentences or phrases.

B. Where reference is made to specifications, societies, institutes, or associations or manufacturer's directions, they are, except as may be inconsistent herewith, made part of specifications, to same extent as if written out in full herein. Use latest edition, at time of bidding, if a date is not given.

1.03 ABBREVIATIONS

A. References in Contract Documents to trade associations, technical societies, recognized authorities and other institutions include following organizations, which are sometimes referred to only by corresponding abbreviations:

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Association
ACI	American Concrete Institute
AIMA	Acoustical and Insulating Materials Association (successor to AMA)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMA	Acoustical Materials Association
ANSI	American National Standards Institute (successor to USASI and ASA)
APA	American Plywood Association
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASTM	American Society for Testing Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWS	American Welding Society
CDA	Copper Development Associations, Inc.
CM/GC	Construction Manager/General Contractor
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard (U.S. Department of Commerce)
DFPA	Douglas Fir Plywood Association
EPA	Environmental Protection Agency
FGMA	Flat Glass Marketing Association
FIA	Factory Insurance Association
FM	Factory Mutual Engineering Division
FS	Federal Specification
MIA	Marble Institute of America

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MIL	Military Specification
MILMA	Metal Lath Manufacturer's Association
NAAMM	The National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEC	National Electric Code (of NBFU)
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
NIOSH	National Institute of Occupational Safety and Health
NMWIA	National Mineral Wool Insulation Association
NPVLMA	National Paint, Varnish and Lacquer Manufacturers' Association
NTMA	The National Terrazzo and Mosaic Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PEI	Porcelain Enamel Institute
PS	Product Standard (U.S. Department of Commerce)
SCPI	Structural Clay Products Institute
SDI	Steel Deck Institute
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association
SPA	Southern Pine Association
SPI	The Society of Plastic Industry, Inc.
SPR	Simplified Practice Recommendation (U.S. Department of Commerce)
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCA	Tile Council of America
UL	Underwriters' Laboratories, Inc.
WCLA	West Coat Lumbermen's Association
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

1.04 LAYING OUT WORK

A. The Contractor will furnish reference bench mark and maintain bench mark and all other grades, lines, and levels and dimensions as indicated in the Contract Documents. Report any errors or inconsistencies in above to Owner before commencing work.

B. Except as delegated by subcontract or normal trade practice, the Contractor will be responsible for all lines, elevations, and measurements of work indicated.

1.05 EXAMINATION OF SITE

Failure to visit the site will in no way relieve any Contractor from the necessity of furnishing materials or performing work that may be required to complete work in accordance with the Contract Documents without additional cost to Owner.

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SECTION 01 01 00 SUMMARY OF WORK

PART 1 - GENERAL

1.01 SCHEDULE OF DRAWINGS, SPECIFICATIONS AND ADDENDA

A. The following Drawings, Project Manual, and Addenda from the Contract Documents. Set(s) of Drawings & project manuals dated November 09, 2011. Drawing list is as follows:

Sheet No.	Titled
TS1.1	TITLE SHEET
ARCHITECTURAL	
AD2.1	PARTIAL DEMOLITION FLOOR PLAN
A1.1	OVERALL FLOOR PLAN
A2.1	PARTIAL BUILDING FLOOR PLAN
A3.1	REFLECTED CEILING PLAN
A8.1	INTERIOR ELEVATIONS AND ENLARGED PLANS

B. Project Manual titled: UNIVERSITY OF COLORADO COLORADO SPRINGS
UNIVERSITY HALL
ACCESSIBILITY UPGRADES

C. Addenda: All Addenda issued prior to bidding.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

Work covered: Work under this contract includes all materials, equipment and labor necessary to complete the work indicated on the drawings, described in specifications, addenda or reasonably inferred.

1.03 CONTRACTORS

A. All work will be executed under one prime construction contract between the Owner and the Contractor.

B. Except as indicated otherwise, all work under this contract will be under the direction of the prime contractor.

1.04 JOB CONDITIONS

A. Areas of the building immediately adjacent to areas under construction will be occupied by the public during the work of this project. Limit construction operations to those methods and procedures which will not adversely and unduly affect the Owner's occupied spaces inclusive of parking facilities.

B. Do not interrupt building access and use, except as permitted by the Owner. Provide **eight (8)** work days notice to the Owner of construction activities which will severely impact the occupancy and use of adjacent areas.

C. Provide temporary barriers and/or partitions as required to protect the occupants of the building and the general public from injury due to the work of this project; and/or to protect adjacent areas of the building from the spread of dust and dirt caused by the work or this project. Remove temporary barriers and partitions upon completion of the Project.

1. Temporary partitions shall be constructed of 1/2" plywood on the construction face nominal 2" X 4" wood studs and 1/2" gypsum wallboard on the public occupied face.

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D. Do not interrupt power, lighting, plumbing, telephone and HVAC services to occupied areas without Owner's approval. Such interruptions must be scheduled at least **eight (8)** work days in advance and have Owner's approval.

E. Coordination with Owner: There are no specific restrictions on the Contractor as to hours of operation or limitations on days of work etc. However, the Contractor shall schedule all work performed in the building and on the site with the Owner's Project Manager to minimize disruption and allow the Owner to operate programs during construction. Work which may negatively impact ongoing operations (including noisy activities) must be scheduled outside of Contractor's regular business hours, (weekends, after hours or holidays). For bidding purposes, Contractor shall assume that these after hours activities will account for approximately 5% of all construction time.

1.05 PROTECTION OF WORK AND ADJACENT PROPERTY

A. Buildings and property adjacent to work included in this project may be subject to damage due to construction operations. Prior to the start of the work included in this Contract engage the services of a photographer to record the existing condition of adjacent structures and property. Contractor shall provide one set of 3" X 5" prints or **a set on disk** to the Owner and retain negatives and one set of prints for their records. Sufficient photos with adequate detail to thoroughly document the conditions surrounding the work shall be provided.

B. At the completion of the project, Contractor shall restore existing buildings, landscaping, parking facilities and property to same condition as prior to the start of the work.

C. In addition to the requirements of the General Conditions of the Contract for Construction, the Contractor shall:

1. Notify, in writing, the Owner of University or private property which interferes with the work and arrange with them for disposition of such property.
2. Provide and maintain proper shoring and bracing to prevent earth from caving or washing into excavation. Provide temporary protection around openings through and at floors, roofs, and other openings.
3. Provide and maintain proper shoring and bracing for existing underground utilities, sewers, etc., encountered during excavation work, to protect them from collapse or other type of damage until such time as they are to be removed, incorporated into the work of this project, or can be properly back-filled upon completion of new work.
4. Weather Protection: Provide protection against rain, snow, wind, ice, storms, or heat so as to maintain work, materials, apparatus, and fixtures free from injury or damage. At the end of each day's work, cover new work likely to be damaged.
5. Provide and maintain adequate protection of the work from damage due to freezing, especially freezing earth and soils. Risk of proceeding with the work on or with freezing or frozen materials will be the sole responsibility of the Contractor.
6. Water Protection: Provide protection from damage at all times from rain water, ground water, backing up of drains or sewers, and other water. Provide pumps and equipment enclosures to provide this protection.
7. The Contractor will maintain free of obstructions and debris, all designated corridors and emergency exits, handicap access ramps and sidewalks to building. Provide temporary directional handicapped signage for routing to the nearest accessible facilities.

1.06 EXISTING FURNITURE AND EQUIPMENT

The Owner will remove or relocate existing movable furniture and equipment from the areas in which the Contractor is working. Notify the Owner not less than three days prior to starting work in areas where furniture and equipment require moving.

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1.07 CONTRACTOR'S ACCESS PARKING AND STAGING AREAS

A. Work included in this project will need to be performed within the limitations of available access at the site. The University shall limit the area available for staging and parking due to the parking shortage at the building. Contractor shall adjust the means and methods of construction to allow for the restrictions surrounding the site.

B. All parking on campus is under control and authority of the Department of Public Safety(DPS) of the University.
   1. Types of parking and staging are defined as follows:
      a. Restricted Staging Areas are approved areas near the building for the construction dumpster, off-loading of equipment, contractor's work trailer, and materials that are soon to be incorporated into the work. No vehicles shall park in a restricted staging area for more than 20 minutes between the hours of 8:00 a.m. and 5:00 p.m. weekdays.

      b. Contractor Employee Parking areas for workers needing parking on campus. 10 spaces shall be made available to the Contractor in front of University Hall in Parking Lot N during the winter break (12/16/2012 – 01/04/2013). After the Winter Break these spaces will be located in the lower portion of Lot N. Parking shall be free over the Winter Break period and $0.25 per space per day during the rest of the construction period. Refer to the Drawings for exact parking locations.

      c. Prohibited Parking are areas designated in the Contract Documents as No Parking areas. The contractor shall not allow any parking in areas so designated under any circumstance.

C. The restrictions in this Section are in addition to any other restrictions or rules provided by DPS.
   1. Fees shall be assessed for the use of any PTS facility for staging and construction activities.

D. The designated staging area for this project shall be in the upper portion of Parking Lot N, north of University Hall. Exact location and size of the staging area shall be as noted on the Drawings.
   1. Vehicles parked on sidewalks or in landscape areas outside the designated staging areas cause damage to University property. The contractor shall reimburse the University $25.00 per vehicle per occurrence for vehicles parked outside the designated staging areas. This amount shall be in addition to any fines which might be levied by DPS.

1.08 OCCUPANCY REQUIREMENTS

A. Owner may occupy designated areas for the purpose of storage of furnishings and equipment and installation of equipment.

B. Execute Certificate of Substantial Completion for each designated portion of work prior to Owner occupancy. Contractor shall allow:
   1. Access for Owner personnel.
   2. Use of parking facilities.
   3. Operation of HVAC and electrical systems.

C. On occupancy, Owner will provide, for occupied areas:
   1. Operation of HVAC and electrical systems.
   2. Maintenance.
   3. Security.

1.09 CONSTRUCTION AND SEQUENCE SCHEDULE:

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A. In order to accommodate the uninterrupted operation of the existing building during the various phases of construction, the sequence of construction operations shall be as follows:
   1. The sequence concept is to: (1) prepare the existing facility to function during renovation through completion; and (2) upon completion, finally reoccupy the remodeled portions.
   2. Utilizing this concept break down the Schedule into broad scope categories augmented by "Owner Action" and "Contractor action" columns that indicate coordination tasks which define the various phases of the work.
   3. The intent of the categorization is to generally summarize the nature and extent of work to be performed without in any way limiting specific requirements of the Contract Documents.
   4. Some overlapping between the several construction operations will occur, and where possible, permission may be granted to start certain portions of the work before the previous operations were completed in their entirety. Such detail scheduling shall be done as the work in progresses, provided that the Owner's operations remain uninterrupted, but in all cases must receive Owner approval.
   5. Where it may not be possible to complete certain mechanical and electrical services in connection with making the work complete and ready for occupancy, temporary services as directed and as approved shall be installed to permit occupancy by the Owner at the earliest possible date.
   6. The construction sequence schedule and related drawings are intended to aid the Contractor in bidding and in the preparation of a specific construction schedule. Deviations of sequence may be made upon approval of the Owner and the Architect. The preparation of a specific construction schedule remains the responsibility of the Contractor

B. Demolition shall commence at the beginning of Winter Break, 12/16/2012. Construction work for the New Passage shall be substantially complete no later than 01/7/2013. Construction work for Ramps 1, 2 & 3 shall be substantially complete nor later than 1/18/2013.

1.10 TEMPORARY ELECTRIC SERVICE

A. Connect to existing power service. Power consumption shall not disrupt owners need for continuous service. Owner shall pay for power consumed. Provide power outlets for construction operations, branch wiring, distribution boxes, and flexible power cords as required.

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SECTION 01 02 00 ADMINISTRATION AND SUPERVISION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS
Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.

1.02 SURVEYS, LAYOUTS, AND LEVELS
General: Working from lines and levels established by the existing building, and as shown in relation to the work, establish and maintain bench marks and other dependable markers to set the lines and levels for the work of construction as needed to properly locate every element of the work of the entire project. Calculate and measure required dimensions as shown (within recognized tolerances if not otherwise indicated); do not scale the drawings to determine dimensions. Continuously advise tradesmen performing the work of the marked lines and levels provided for use in the layout of work.

1.03 PROJECT RECORD DOCUMENTS
A. Maintain at job site, one copy of:
1. Contract Drawings
2. Specifications
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Other Modifications to Contract
7. Field Test Records
8. As-Built Drawings

B. Maintain documents in clean, dry, legible condition and do not use record documents for construction purposes. Make documents available at all times for inspection by the Consultant and Owner.

C. Label each document "Project Record" in 1" or larger printed letters.

D. Record drawing information in colored pencil with different colors for the various systems and defined by color legend.

E. Record drawings and specifications shall include the following:
1. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure. Location of concealed valves, dampers, controls, balancing devices, junction boxes, clean-outs, and other items requiring access or maintenance.
2. Field changes of dimension and detail, changes made by Change Order or Field Order and details not on original contract drawings.
3. Fire protection and alarm systems shop drawings.

F. Submit all record drawings to the Consultant at the completion of the project.

1.04 CLEANING
A. Cleaning and Protection Work: At the time each unit of work or element of the construction is completed (substantially) in each area of the Project, clean the unit or element to a condition suitable for occupancy and use (as intended), and restore minor or superficial damage. Replace units and elements which are damaged beyond successful restoration. Clean and restore

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adjoining surfaces and other work which was soiled or damaged (superficially) during the installation; replace other work damaged beyond successful restoration. Where the performance of subsequent work could possibly result in damage to the complete unit or element, provide protective covering or other provisions to minimize possible damage. Repeat cleaning and protection operations during remainder of construction period, wherever work might otherwise be damaged by sustained soiling or exposure.

B. During Construction: Oversee cleaning and ensure that building, grounds, and public properties are maintained free from accumulation of waste materials and rubbish. At reasonable intervals during daily progress of work, clean up site and access and dispose of waste materials, rubbish, and debris. Vacuum clean interior building areas when ready and continue vacuum cleaning on an as-needed basis until building is ready for acceptance or occupancy.

1.05 PROJECT SIGN

Erect no project sign or job-site sign of any kind, except warning signs as specified in Section 01500, without written authorization of the Owner.

1.06 COORDINATION

A. The Contractor shall coordinate the work so as not to interfere with the building custodian's normal cleanup activities.

B. The Contractor shall be responsible for coordinating all the work of the project. The Contractor shall coordinate the efforts of all subcontractor(s) and the deliveries of suppliers so that the work progresses in an orderly fashion without delay towards timely completion of a complete project in accordance with the drawings and specifications.

C. The Contractor shall note that concurrent with his work, other contractors, suppliers, and the Owner's facilities and maintenance personnel may be working in relatively close proximity. The Contractor will be solely responsible for coordinating his work with that of other contractors and will make no claims for failure to do so.

1.07 METHODS OF CONSTRUCTION

The procedure and method of construction is the prerogative and the responsibility of the Contractor. If professional assistance is required to safely implement method of construction, the Contractor shall, on his own, employ professional help.

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SECTION 01 03 00 ALTERNATES

PART 1 - GENERAL

1.01 GENERAL ALTERNATE REQUIREMENTS

General: The description for each alternate is recognized to be incomplete and abbreviated but implies that each change must be complete for the scope of work affected. Refer to applicable sections and to applicable drawings for the specific requirements of the owner, whether or not references are so noted in the description of each alternate. Modify surrounding work as required to integrate with the work of each alternate.

1.02 SPECIFIC ALTERNATES

A. ALTERNATE NO. 1 IMPROVEMENTS TO RAMP 2

Bidders shall indicate on their Bid Forms the amount to be ADDED to their base bids to provide the improvements to Ramp 2.

B. ALTERNATE NO. 2 IMPROVEMENTS TO RAMP 3

Bidders shall indicate on their Bid Forms the amount to be ADDED to their base bids to provide the improvements to Ramp 3.

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SECTION 01 04 10 PROJECT COORDINATION

PART 1 - GENERAL

1.01 SUMMARY

A. General Contractor is responsible for all of the work of this contract.
   1. Assign and subcontract portions of the work as required to assure that all work is constructed in compliance with these documents.
   2. Coordinate the work of the several subcontractors for the project.
   3. Coordinate work of this contract with work by separate contractors.

B. Each subcontractor shall:
   1. Coordinate work of his own employees and subcontractors.
   2. Expedite his work to assure compliance with schedules.
   3. Coordinate his work with that of other subcontractors and work by separate contractor.
   4. Comply with orders and instructions of owner.

C. Related Requirements
   1. All Division 01 Sections.

1.02 CONSTRUCTION ORGANIZATION AND START-UP

A. Establish on-site lines of authority and communications.
   1. Attend pre-construction meeting with subcontractors upon commencement of the project.
      a. Prepare minutes of all meetings
   2. Establish procedures for intra-project communications.
      a. Submittals.
      b. Reports and records.
      c. Recommendations.
      d. Coordination Drawings.
      e. Schedules.
      f. Resolution of conflicts.
   3. Interpret Contract Documents.
      a. Consult with Architect to obtain interpretation.
      b. Assist in resolution of questions or conflicts which may arise.
      c. Transmit written interpretations to subcontractors, and to other concerned parties.
   4. Assist in obtaining permits and approvals.
      a. Obtain building permits and special permits required for work or for temporary facilities.
      b. Verify that subcontractors have obtained inspections for work and for temporary facilities.
   5. Control the use of site.
      a. Supervise field engineering and site layout.
      b. Allocate space for each subcontractor's use for field offices, sheds, work and storage areas.
      c. Establish access, traffic and parking allocations and regulations.
      d. Monitor use of site during construction.

1.03 CONTRACTOR DUTIES

A. Construction Schedules.
   1. Coordinate schedules with several subcontractors.
   2. Monitor schedules as work progresses.
      a. Identify potential variances between schedules and probable completion dates for Alternates.

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b. Recommend adjustments in schedule to meet required completion dates.
c. Adjust schedules of subcontractors as required.
d. Document changes in schedule.

3. Observe work of each subcontractor to monitor compliance with schedule.
   a. Verify that labor and equipment are adequate for the work and the schedule.
   b. Verify that product procurement schedules are adequate.
   c. Verify that product deliveries are adequate to maintain schedule.

B. Process Shop Drawings, Product Data and Samples.
   1. Review for compliance with Contract Documents.
      a. Field dimensions and clearance dimensions.
      b. Relation to available space.
      c. Relation to other trades, equipment and systems.
      d. Submit to Architect.

C. Monitor the use of temporary utilities.
   1. Verify that adequate services are provided and maintained.

D. Inspection and Testing.
   1. Inspection work to assure performance in accord with requirements of Contract Documents.
   2. Administer special testing and inspections of suspected work.
   3. Reject work which does not comply with requirements of Contract Documents.
   4. Coordinate testing laboratory services.
      a. Verify that required laboratory personnel are present.
      b. Verify that tests are made in accordance with specified standards.
      c. Review test reports for compliance with specified criteria.
      d. Recommend and administer required retesting.

E. Monitor contractor's periodic cleaning.
   1. Enforce compliance with specifications.
   2. Resolve any conflicts.

F. Coordinate changes.
   1. Recommend necessary or desirable changes.
   2. Assist owner in negotiating change orders.
   3. Promptly notify all subcontractors of pending changes.

G. Maintain Reports and Records at Job Site available to Architect and Subcontractors.
   1. Log progress of work of each subcontractor.
   2. Records
      a. Contracts.
      b. Purchase orders.
      c. Materials and equipment records.
      d. Applicable handbooks, codes and standards.
   3. Obtain information from subcontractors and maintain file of Project Record Documents.
   4. Assemble documentation for handling of claims and disputes.

H. Coordinate work of this Contract and requirements of this section with work by Separate Contract including but not limited to:
   1. Removal of asbestos containing materials by separate contract.

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1.04 CONTRACT CLOSEOUT

A. Coordinate equipment start-up.
   1. Provide written notice of beginning of warranty period.

B. Demonstration and Instructions
   1. Demonstrate operation and maintenance of products to Owner's personnel.

C. At completion of work of each Section, conduct an inspection to assure that
   1. Specified cleaning has been accomplished.
   2. Temporary facilities have been removed from site.

D. At completion
   1. Conduct an inspection to list work to be completed or corrected.
   2. Supervise correction and completion of work as established in Certificate of Completion.

E. When a portion of the Project is occupied prior to final completion, coordinate established responsibilities of each subcontractor.

F. Final completion.
   1. When each Subcontractor determines that work is finally complete, conduct an inspection to verify completion of work.
   2. Assist owner and architect in inspection.

G. Administer contract closeout.
   1. Receive and review Subcontractor's final submittals.
   2. Transmit to architect with recommendation for action.

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SECTION 01 04 50 CUTTING AND PATCHING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: This section establishes general requirements in addition to those indicated in the General Conditions of the Contract for Construction pertaining to cutting, fitting, and patching of the work required to:
   1. Make the several parts fit properly.
   2. Uncover work to provide for installation, inspection, or both, of ill-timed work.
   3. Remove and replace work not conforming to requirements of Contract Documents.
   4. Patch new construction into existing construction.

B. Related Work:
   1. In addition to requirements specified, upon the Consultant's request, uncover work to provide for inspection of covered work, and remove samples of installed materials for testing.
   2. Do not cut or alter work performed under separate contract without the Consultant's written permission.

1.02 QUALITY ASSURANCE

A. Perform all cutting and patching in strict accordance with pertinent requirements of the Specifications and, in the event no such requirements are determined, in conformance with the Consultant's written direction.
   1. Use skilled workmen to perform all cutting and patching work.
   2. Use methods least likely to damage existing surfaces and materials to remain, while providing proper surfaces to receive installation of repair, patching, and/or new work.

B. Notification of Architect: Notify Architect well in advance of executing any cutting or alteration which affects:
   1. The work of the Owner or any separate contractor.
   2. The structural value or integrity of any element to the Project.
   3. The integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
   4. The efficiency, operational life, maintenance or safety of operational elements.
   5. The visual qualities of sight-exposed elements.

C. Visual Quality:
   1. Do not cut and patch work exposed to public view, and the exterior and/or interior of the building in a manner that will result in an unacceptable appearance as determined by the Consultant.
   2. Do not cut and patch work in a manner that will result in obvious appearance that cutting and patching work was done.
   3. When cutting existing structural concrete, do not extend saw cuts beyond the corners of the required opening on either side of the opening.

1.03 EXISTING CONSTRUCTION

A. Where cutting and patching of existing construction is required; prior to start of work, inform Owner of existing construction to be disturbed. Owner will determine if elements of existing construction contain asbestos. Do not proceed with work until after Owner has examined areas to be disturbed.

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1.04 SUBMITTALS

A. Submit proposed cutting and patching procedures in writing for the following categories of work prior to proceeding with this work.

B. Submittals shall comply with Section 01 30 00.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Except as otherwise indicated in pertinent sections of these specifications, or as directed by the Consultant, use materials which are identical to existing materials in workmanship, appearance, and performance.

B. If identical materials are not available, match existing as closely as possible, especially existing visual characteristics.

PART 3 - EXECUTION

3.01 INSPECTION

A. Before proceeding, inspect existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching.

B. After uncovering the work, inspect conditions affecting installation of new work.

C. If uncovered conditions are not as anticipated or if existing construction is not as indicated on the Drawings, immediately notify the Consultant for further instructions.

3.02 PREPARATION

A. Provide shoring, bracing, and support as required to maintain structured integrity of the project.

B. Take all necessary action required to protect adjacent existing surfaces from damage due to the work of this section.

C. Take all precautions necessary to protect existing surfaces and materials, new work, and the work of this section from damage due to adverse weather conditions.

D. Provide temporary support of work to cut and adjacent work to prevent failure or damage due to the work of this section.

E. Properly prepare substrate surfaces exposed during cutting as required to receive the work of this or other sections of these specifications in strict compliance with manufacturer's recommendations and these specifications.

3.03 EXECUTION

A. Perform all required cutting and patching as required or reasonably implied under pertinent sections of these specifications.

B. Perform cutting and demolition by methods which will prevent damage to other portions of the work and will provide proper finished installation complying with the specified tolerances and finishes.

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3.04 PERFORMANCE

A. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work. Saw-cut and otherwise isolate areas to be demolished.

B. Repair or otherwise rebuild and/or construct all surfaces affected by cutting and demolition. Execute fitting and adjustment of products to provide totally finished installation to comply with tolerances, finishes, and profiles of adjacent surfaces, whether new or existing.

C. Restore work which has been cut or exposed by demolition; install new construction in compliance with specifications for type of new work to be done or as required to match existing adjacent surfaces. In no case shall any exposed existing surface be left in a raw, marred, or unfinished surface.

D. Refinish entire surfaces as necessary to provide an even finish.
   1. Continuous Surfaces: To nearest intersections.
   2. Assembly: Entire refinishing.

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SECTION 01 06 00 REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:
A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 - Specification sections, apply to work of this section.

1.02 SUMMARY:
A. Section Includes:
1. General administrative requirements and procedures and related applicable codes.

1.03 APPROVAL AND RECOMMENDATION AGENCIES:
The University of Colorado Colorado Springs has jurisdiction for the interpretation and enforcement of code requirements for construction of projects.

1.04 CODES:
All Contractors shall comply with all applicable codes, ordinances and regulations in effect at the time of bid openings.

APPROVED STATE BUILDING CODES

The following approved building codes and standards have been adopted by State Buildings Programs (SBP) as the minimum requirements to be applied to all state-owned buildings and physical facilities including capital construction and controlled maintenance construction projects.

The 2009 edition of the International Building Code (IBC)
(as adopted by the Colorado State Buildings Program as follows: Chapters 2-35 and Appendices C and I)

The 2009 edition of the International Mechanical Code (IMC)
(as adopted by the Colorado State Buildings Program as follows: Chapters 2-15 and Appendix A)

The 2009 edition of the International Energy Conservation Code (IECC)
(as adopted by the Colorado State Buildings Program)

The 2011 edition of the National Electrical Code (NEC)
(National Fire Protection Association Standard 70) (as adopted by the Colorado State Electrical Board)

The 2009 edition of the International Plumbing Code (IPC)
(as adopted by the Colorado Examining Board of Plumbers as follows: Chapter 1 Section 101.2,102, Chapters 2-13 and Appendices B, D, E, F and G)

The 2009 edition of the International Fuel Gas Code (IFGC)
(as adopted by the Colorado Examining Board of Plumbers as follows: Chapter 1 Section 101,102, Chapters 2-8 and Appendices A, B, C and D)

The National Fire Protection Association Standards (NFPA)
(as adopted by the Department of Public Safety/Division of Fire Safety as follows with editions shown in parentheses: NFPA-1 (2006), 11 (2005), 12 (2005), 12A (2004), 13 (2002), 13D (2002), 13R (2002), 14 (2003), 15 (2001), 16 (2003), 17 (2002), 17A (2002), 20 (2003), 22 (2003), 24 (2002), 25 (2002), 72 (2002), 409 (2004), 423 (2004), 750 (2003) and 2001 (2004))

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The 2007 edition of the ASME Boiler and Pressure Vessel Code
(as adopted by the Department of Labor and Employment/Boiler Inspection Section as follows: sections I, IV, VIII-Divisions 1 and 2 and 3, X and B31.1)

The 2007 edition of the National Boiler Inspection Code (NBIC)
(as adopted by the Department of Labor and Employment/Boiler Inspection Section)

The 2006 edition of the Controls and Safety Devices for Automatically Fired Boilers CSD-1
(as adopted by the Department of Labor and Employment/Boiler Inspection Section)

The 2007 edition of the Boiler and Combustion Systems Hazards Code, NFPA 85
(as adopted by the Department of Labor and Employment/Boiler Inspection Section)

The 2007 edition of ASME A17.1 Safety Code for Elevators and Escalators
(as adopted by the Department of Labor and Employment/Conveyance Section)

The 2005 edition of ASME A17.3 Safety Code for Existing Elevators and Escalators
(as adopted by the Department of Labor and Employment/Conveyance Section)

The 2005 edition of ASME A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts
(as adopted by the Department of Labor and Employment/Conveyance Section)

The current edition of the Rules and Regulations Governing the Sanitation of Food Service Establishments
(as adopted by the Department of Public Health and Environment/Colorado State Board of Health)

The 2003 edition of ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities
(as adopted by the Colorado General Assembly as follows: CRS 9-5-101, as amended, for accessible housing)

2010 ADA Standards for Accessible Design / Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).

In case of a conflict between references applicable codes, the one having the more stringent requirements shall govern. Where governing codes indicate that the drawings or specifications do not comply with the minimum requirements of the codes, the Contractor shall be responsible for providing an installation, which will comply with code requirements. Drawings and specifications shall be followed where they are superior to code requirements.

Note: Additional codes, standards and appendices may be adopted by the state agencies and institutions in addition to the minimum codes and standards herein adopted by State Buildings Programs.

1. The 2009 edition of the IBC became effective on July 1 of 2010. Consult the state electrical and plumbing boards and the state boiler inspector and conveyance administrator and the Division of Fire Safety for adoption of current editions and amendments to their codes.

2. Projects should be designed and plans and specifications should be reviewed based upon the approved codes at the time of A/E contract execution. If an agency prefers to design to a different code such as a newer edition of a code that State Buildings Programs has not yet adopted, the agency must contact SBP for approval and then amend the A/E contract with a revised Exhibit D, Approved State Building Codes. Please note that the state plumbing and electrical boards enforce the editions of their codes that are in effect at the time of permitting not design.

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3. The state's code review agents, or the State Buildings Programs approved agency building official, shall review all documents for compliance with the codes stipulated herein. Note: The Department of Public Health and Environment, Division of Consumer Protection will review drawings for food service related projects.

4. This policy does not prohibit the application of various life safety codes as established by each agency for specific building types and funding requirements. NFPA 101 and other standards notwithstanding, approved codes will supersede where their minimum requirements are the most restrictive in specific situations. If a conflict arises, contact State Buildings Programs for resolution.

5. It is anticipated that compliance with the federal Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) and Colorado Revised Statutes Section 9-5-101 will be met by compliance with the 2009 International Building Code and ICC/ANSI A117.1. However, each project may have unique aspects that may require individual attention to these legislated mandates.

6. The 2006 edition of the International Building Code (IBC) is to be applied to factory-built nonresidential structures as established by the Division of Housing within the Department of Local Affairs.

A. **Appendices**

Appendices are provided to supplement the basic provisions of the codes. Approved IBC Appendices are as follows:

1. Mandatory
   IBC Appendix Chapter C - Agricultural Buildings
   IBC Appendix Chapter I - Patio Covers

2. Optional
   Any non-mandatory appendix published in the International Building Code may be utilized at the discretion of the agency. Use of an appendix shall be indicated in the project code approach.

B. **Amendments**

International Building Code, Chapter 1 as amended.

C. **Referenced Codes**

1. While not adopted in entirety, portions of the following codes are referenced in the International Building Code (IBC), the International Mechanical Code (IMC), the International Energy Conservation Code (IECC) the International Plumbing Code (IPC), and the International Fuel Gas Code (IFGC). These following codes would be applied as reference standards.

   2009 International Fire Code (IFC)
   2009 International Existing Building Code (IEBC)

D. **Referenced Standards**

The IBC, IMC, IECC, IPC and IFGC standards shall be utilized to provide specific, or prescriptive, requirements on how to achieve the requirements established in the code. These standards may be unique to the code or may be derived from other established industry standards. Recognized standards may also be used to show compliance with the standard of duty established by the code.

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Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).

In case of a conflict between references applicable codes, the one having the more stringent requirements shall govern. Where governing codes indicate that the drawings or specifications do not comply with the minimum requirements of the codes, the Contractor shall be responsible for providing an installation, which will comply with code requirements. Drawings and specifications shall be followed where they are superior to code requirements.

1.05 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA):

A. The Contractor shall have sole responsibility for compliance on the job site to all applicable portions of the Occupational Safety and Health Act. The Contractor is responsible for other regulatory requirements as they relate to occupational Health and Safety requirements. For example, NIOSH, ANSI, and MSA.

B. Protection of life, health and public welfare as it relates to the execution of the construction contract is the responsibility of the Contractor. The Owner's Representative may, at their discretion, observe, inspect, or comment on plans, procedures, or actions employed at the project as they relate to safety of life, health or public welfare. If conditions are imposed by the Owner which interfere with, or imply actions detrimental to safety, written notice shall be returned to the Owner for action prior to affecting any unsafe conditions.

C. Contractors shall use OSHA Lock Out / Tag Out procedures when working with energized equipment.

D. All contractors entering confined spaces owned by UCCS or while conducting work under contract with CU shall develop a written program and utilize procedures that, at a minimum, comply with all federal, state and local confined space standards and all applicable regulatory requirements. Contractors shall, independent of the University, monitor the space to obtain their own data to ensure a safe entry and exit. Any data generated by a contractor's confined space entry, should be provided to the Facilities Management confined Space Program Manager.

E. When contractors perform work that may involve Facilities Management controlled permit required confined spaces, Facilities Management will:
   1. Inform contractors of permit required confined spaces and that entry is allowed only after compliance with the confined space entry standard;
   2. Require contractors planning to enter a confined space to provide the Facilities Management Confined Space Program Manager in charge of that space, 48-hour advance notice of such planned entry. The contractors entry will be in accordance with the current Occupational Safety and Health Administration confined space entry standard and a signed document stating such, shall be provided to the FM Confined Space Program Manager prior to entry.

F. The FM Confined Space Program Manager, following receipt of notice of contractor planned entry, will:
   1. Apprise contractor of the hazards identified in the confined space and of any prior experience that is documented on the space;
   2. Appraise the contractor of any precautions or procedures that UCCS has implemented for the protection of workers in or near the confined space;
   3. Coordinate entry operations with the contractor when both Facilities Management and contractor personnel are working in or around the confined space;
   4. Debrief the contractor at the end of the entry operations regarding hazards confronted or created.

1.06 HOT WORK PERMITS

A. All contractors shall be required to obtained a Hot Work Permit, three (3) working days in advance, for work that involves welding, heat treating, grinding, thawing pipe, hot riveting, soldering and brazing, power driven fasteners and similar activities involving spark, flame or

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heat. Compliance with the requirements of the applicable fire code, the International Building Code, and NFPA Standard 51B are mandatory and all contractors performing hot work activities shall read and understand these code requirements. To obtain a current Hot Work Permit, go to website:

http://fm.colorado.edu/firesafety/hotwork.html

B. Contractors shall read and comply with the procedures and requirements for Fire Watch, Fire Alarm Interruption and Fire Suppression Interruption as found on the following websites:

Fire Watch Procedures:
http://fm.colorado.edu/firesafety/firewatch.html

Fire Alarm and Detection System Interruption/Outage:
http://fm.colorado.edu/firesafety/firealarmdetectsys.html

Fire Suppression System Interruption/Outage:
http://fm.colorado.edu/firesafety/firesupressionsystems.html

C. No hot work shall be conducted in any campus facility without a hot work permit. Any person or firm who conducts hot work without a permit shall be fined one thousand dollars ($1,000) for each occurrence and their non-permitted activities shall be stopped immediately until they obtain a hot work permit. Contractor shall be responsible for any damages caused as a result of improper hot work activities or the work stoppage.

D. Individuals or firms who obtain a permit shall fully read, understand and implement the requirements of the permit. Any person or firm who conducts hot work without the full implementation of the permit requirements shall be fined five hundred dollars ($500) the first time and one thousand dollars ($1,000) for subsequent occurrences. When the requirements of the hot work permit are not being implemented, the improper activities shall be stopped immediately until a hot work permit is obtained. Contractor shall be responsible for any damages caused as a result of improper hot work activities or the work stoppage. Any contractor who is found to be in non-compliance a third time, will not be allowed to work on campus until further notice by Facilities Management.

E. The campus inspectors, project managers and fire marshal shall have the authority to stop improper or non-permitted hot work activities.

F. The Contractor shall notify the UCCS Fire Alarm Supervisor to deactivate all smoke alarms in the vicinity of the work prior to any demolition and construction work activity. Failure of the Contractor to comply with the smoke alarm deactivation requirement and cause a false alarm and arrival of the Colorado Springs Fire Department shall be a $400 fine per occurrence.

1.07 PERMITS

A. The contractor must post permit(s) in a prominent location at the jobsite including all inspection reports. The contractor shall have an updated set of contract documents available at the jobsite for all inspections.

1.08 INSPECTIONS

A. The Contractor must schedule all required inspections 48 hours in advance by calling UCCS Project Manager or directly contacting their designated inspectors. Inspectors will complete these inspections within 48 hours with the exception of weekends and state holidays.

B. The contractor is required to arrange for the all inspections as required by the Building Inspection Record and CRS 24-30-1303 including but limited to Footings/Foundations, Concrete, Framing, Lath and Gypsum Board, Fire Resistant Penetrations, Mechanical/Energy Efficiency and Roofing.

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C. Re-inspections: A re-inspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when corrections called for are not made.

D. The Contractor will be responsible for all cost related to re-inspections and will be billed at the testing agency bill-out rate for re-inspections.

1.09 UNIVERSITY OF COLORADO SEXUAL HARASSMENT POLICY

A. Contractors should be aware of and review the University of Colorado at Colorado Springs policies that prohibit discrimination and harassment on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation or veteran status. These policies are located on the web at: **http://www.uccs.edu/hr.** Contractor personnel must adhere to these policies and conduct themselves in a manner that does not discriminate or harass as a result of interacting with an around the University of Colorado faculty, staff and students and visitors.

1.10 FIRE ALARM INTERRUPTION

A. Contractor shall contact UCCS Fire Alarm Systems Supervisor at 719-262-3201 prior to all interruptions or shutdowns of fire alarm systems. Interruptions or shutdowns shall be scheduled three (3) working days in advance with UCCS Department of Public Safety and UCCS Project Manager. Contractor shall provide a fire watch as directed by UCCS Fire Alarm Systems Shop during interruption or shutdown.

B. The Contractor shall be responsible for preventing nuisance alarm due to activities at their work site. Common sources of nuisance alarms are:
   1. Smoke (soldering, welding, cooking, etc.)
   2. Grinding
   3. Dust (drilling, sweeping, canister vacuums, sand blasting, etc.)
   4. Water leaking (plumbing leaks, overflows)
   5. Water sprayed on or near detectors (pressure washing or cleaning with water)
   6. Popcorn or other food burning in microwaves
   7. Static electricity (covering or uncovering detectors)
   8. Changing filters on air handling units (dust)
   9. Steam (leaks, pressure pop-offs)
   10. Broken or frozen sprinkler heads
   11. Sprinkler drain valves turned by mistake
   12. Vandalism

   Precautions to prevent nuisance alarms are:
   1. During construction projects, treat all buildings, except totally new construction, as though they were occupied buildings with live systems.
   2. Do not assume that all detectors are in plain sight. Contact University personnel for verification.
   3. Maintain dust control measures per UCCS Standards:
      a. Maintaining barriers
      b. Covering air returns
      c. Asking UCCS personnel to cap or disable smoke detectors (Note any capping or disabling of fire safety devices is to be done ONLY by UCCS personnel, not contractors.)
      d. Avoiding recirculation of dust or smoke through the building air handling system.
   4. Follow campus hot work procedures. Refer to specification Section 01060, paragraph 1.06.
   3. Do not expose fire alarm devices to water or extreme temperatures.
   4. Contact Alarm Systems Supervisor for any actions that affect fire detection, alarm, and suppression systems.

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SECTION 01 07 50 SPECIFICATION SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included:
   1. Specification system format.
   2. Grammar (syntax) description.

1.02 DESCRIPTION

A. These specifications have been derived from automated specification systems, and include minor deviations from format and traditional writing forms. Such deviations must be recognized as a normal result of this production technique, and no other meaning will be implied or permitted.

B. Imperative language of the technical sections is directed to the Contractor. The term "provide" used repeatedly in the text is defined to mean..."furnish and install, complete, in place and ready for operation and use unless specifically indicated otherwise."

C. Specifications are of abbreviated, simplified or streamlined type and include incomplete sentences. Omissions of words or phrases such as "the Contractor shall" "in conformity therewith," "shall be," "as noted on the Drawings", "A", "The", are intentional. Supply omitted words or phrases by inference in same manner as they are when "Note" occurs on Drawings. Supply words "on the Drawings" by inference when "as indicated" is used with sentences or phrases.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

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SECTION 01 10 00 SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Remodel Work scheduling.
   2. Construction sequence scheduling.

B. Related Sections:
   1. Section 01 50 00 - Temporary Facilities and Controls.
   2. Section 01 01 00 - Summary Of Work

1.02 SYSTEM DESCRIPTION

A. An essential condition of this Contract shall be the scheduling and conduct of all phases of construction operations in such a manner that the Owner's operations and use of the existing building and campus shall be uninterrupted at all times, except for such limited interruption as is required and approved by the owner.
   1. Reference Section 01 01 00 for further definition of the restrictions on Contractor's activities.

B. Contractor shall repair at his own expense all damage done to Owner's property, unknown utilities and adjoining public property as a result of Contractor's construction activities.

1.03 PROJECT/SITE CONDITIONS

A. Access and use of site:
   1. Contractor shall use the designated site access for construction offices and material storage in such a manner that access to existing buildings and campus remain accessible at all times for use.
   2. Confine operations to as limited a use of the existing building and campus as possible. A route of access to and from the work for employees shall be agreed upon and it shall be the Contractor's responsibility to see that the agreed route is maintained in order to prevent unwarranted or unnecessary traffic through the existing buildings or site.

B. Owner notice and approval:
   1. All arrangements and scheduling in connection with the work of this Contract shall be made with and subject to the approval of the Consultant and the Owner.
   2. All work under this Contract which will require interruption of service of the existing building shall be scheduled to suit the need and convenience of the Owner's operation, and arrangements shall be made with the Owner and the Architect at least eight (8) working days in advance of the start of such work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 REMODELING

A. Construction activities of all areas to be constructed in existing facilities shall be completely separated from the rest of the building by dust-proof enclosures erected by Contractor.

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B. All surfaces in existing facilities not indicated to be remodeled, or removal of existing items by any Contractor, shall be repaired by the responsible Contractor to match existing adjoining similar surfaces.

3.02 CLEAN-UP

A. All areas within existing facilities, which are not within enclosed areas to be constructed used for access to work areas shall be completely cleaned of all debris and made "broom-clean" at the end of each day's work.

B. Dust, which permeates areas of existing facilities because of improperly constructed dust-proof barriers, shall be the responsibility of the Contractor. The Contractor shall employ the services of a professional cleaning company to clean any area outside of the designated construction dust barriers that are contaminated by Contractor's operations. Completely clean all such areas to the satisfaction of the Owner at no additional cost.

END OF SECTION

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SECTION 01 12 10 HAZARDOUS MATERIAL PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 - Specification sections, apply to work of this section.

1.02 SUMMARY:
A. Section Includes:
1. General administrative requirements and procedures for Hazardous Communication Program.

B. Related Sections:
1. Summary of Work: Section 01 01 00.

1.03 WORK BY OWNER:
A. Asbestos:
1. Where asbestos materials or other hazardous conditions are known to exist in locations affected by this project, remediation measures will be taken by the Owner under separate contract. The Contractor shall coordinate his sequence and schedule with that of the environmental remediation work.
2. In the event that the Contractor encounters any material on the site which is reasonably believed hazardous, which has not been rendered harmless, the Contractor shall:
a. Stop work immediately in affected areas.
b. Report the condition in writing to the Department of Facilities Services Project Manager.
c. Report the condition in writing to the Architect.
d. Resume work only under the provisions of this section.

1.04 SUBMITTALS:
A. Material Safety Data Sheets (MSDS):
1. Copies of all material safety data sheets for all applicable products, including but not limited to; paint, adhesives, mastics, solvents, and finishes, etc., shall be retained on site by the Contractor for all applicable products used during the construction and/or remodeling work. Furnish copies of all MSDS's to the Owner and Architect and include in the Project Record Document submittal.

1.05 QUALITY ASSURANCE:
Asbestos containing materials may exist within the general project area where such materials are not expected to be disturbed during the work. The Contractor shall review the Environmental Health and Safety Environmental Site Assessment Form at the project site and become familiar with known asbestos and hazardous containing materials in the work areas.

1.06 PROJECT/SITE CONDITIONS:
A. Hazard Communication Requirements:
1. All Contractors are responsible for compliance with mandatory federal rules and regulations concerning Hazard Communication, including, but not limited to those regulations contained in 29 CFR 1910.1200 Hazard Communication, 1910.146 Confined Space, 1910.147 Lock-out Tag-out, 1910.1101 Asbestos, and 1926.62 Lead. Contractor and all subcontractors working at sites under the control of the Owner shall make available to the Architect, upon request, copies of the Hazard Communication Program used by their firm. In addition to this requirement, all regulations related to Multi-employer workplaces shall be adhered to. These regulations are found in 29 CFR 1910.1200, (e) (2) (I) through (e) (4) specifically:
a. (e) (2) Multi-employer workplaces. Employers who produce, use, or store hazardous chemicals at workplace in such a way that employees of other employer(s) may be exposed (for example, employees of a construction contractor working on site) shall

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additionally ensure that the hazard communication programs developed and implemented under paragraph (e) include the following:

b. (e) (2) (i) The methods the employer will use to provide the other employer(s) with a copy of the material safety data sheet, or to make it available at a central location in the workplace, for each hazardous chemical the other employer(s)' employees may be exposed to while working;

c. (e) (2) (ii) The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,

d. (e) (2) (iii) The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace

e. (e) (3) The employer may rely on an existing hazard communication program to comply with these requirements, provided that it meets the criteria established in this paragraph (e).

f. (e) (4) The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director, in accordance with requirements of 29 CFR 1910.20 (e).

2. The referenced regulations were excerpted from 29 CFR 1910.1200. This excerpt shall not be relied upon for compliance with mandatory federal, state and local regulations. The Contractor shall comply with all such regulations and shall be solely liable for insuring that all requirements under applicable regulations are met.

PART 2 - PRODUCTS
Not Used

PART 3 - EXECUTION

3.01 EXAMINATION:
A. Asbestos and Hazardous Materials Discovery:
1. The Contractor is cautioned to be alert to the possibility that his work may uncover asbestos- containing or hazardous materials. If suspected materials are found, the Contractor shall notify the Owner and stop all work in the area immediately. If the suspected materials prove to contain asbestos or hazardous materials, the Owner will arrange to have the materials abated in a timely manner.

3.02 HAZARDOUS MATERIALS/EQUIPMENT REMOVAL:
A. Definition:
1. Removal of hazardous materials/equipment is extremely dangerous. Hazardous materials/equipment is defined to include, but not limited to the following:
a. Fume hoods
b. Hood exhaust duct work
c. Exhaust fans
d. Laboratory casework and equipment
e. PCB ballast's
f. Mercury and Sodium Vapor Lights
g. Adjacent material that could come in contact with workers or public.

B. Protection:
1. Hazardous materials/equipment removal shall include the protection of personnel, material, environment and safe legal disposal of the equipment; and further includes the following:
a. Notification of Project Administrator and appropriate Environmental Health and Safety Unit
b. Proper protective clothing for personnel involved in the removal.

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c. Appropriate emergency and first aid facilities.
d. Removal procedures shall be accomplished during minimal occupancy of the remainder of the building on the weekends or at night.

C. Disposal:
1. All equipment related to the use, storage or processing of hazardous materials/equipment shall be removed and properly disposed of under the direct, full-time supervision of a qualified Laboratory Specialist fully conversant with the chemistry and properties of the material/equipment involved. Certification is required. Contractors are responsible for the removal of all hazardous materials/equipment and chemicals from the work site as well as proper disposal of all hazardous waste generated by their project.

2. Hazardous chemicals, waste, and other pollutants may not be discharged to the sanitary or storm sewer systems at anytime. Releases to the environment must be reported to CUPD/EH&S immediately.

3.03 ENVIRONMENTAL RESPONSIBILITIES
A. Environmental and Safety Issues and Practices.
1. Contractors working on the UCCS campus are required to comply with all applicable University, City, State and Federal environmental regulations and safety standards. Hazardous and regulated materials must be managed and disposed of properly. Work sites must control dust, debris and run-off, and pay special attention to preventing any pollutants from entering the storm sewer or surface water collection systems. These systems ultimately drain into our creeks and waterways.

B. Contractor will be required to sign an Environmental Responsibilities form. The contractor is responsible for notifying all subcontractors of the responsibilities identified on the form. A copy of this form must be posted, throughout the duration of the project, in a visible area for all workers to see.

END OF SECTION

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SECTION 01 20 00 PROJECT MEETINGS

PART 1 - GENERAL

1.01 REQUIREMENTS

A. The types and minimum requirements for project meetings are included but are not necessarily limited to the following categories:
   1. Pre-construction meeting
   2. Progress and Coordination meetings
   3. Specially called meetings

B. The pre-construction meeting will be scheduled within fifteen days after date of Notice to Proceed, at a central site location designated by the Owner and convenient for all parties.
   1. Attendance:
      a. Owner's Representative
      b. Consultant
      c. Contractor's Superintendent
      d. Major Subcontractor(s)
      e. Others as appropriate
   2. Suggested Agenda:
      a. Distribution and discussion of:
         1. List of major subcontractors and suppliers
         2. Projected construction schedules
         3. Critical work sequencing
         4. Equipment deliveries and priorities
         5. Project Coordination
         6. Designation of responsible personnel
      b. Procedures and processing of:
         1. Field decisions
         2. Proposal requests
         3. Submittals
         4. Change Orders
         5. Applications for Payment
      c. Adequacy of Distribution of Contract Documents
      d. Procedure for Maintaining Record Documents
      e. Inspections

C. The Contractor will: Record the minutes; including significant proceedings and decisions.

D. The Contractor shall schedule and administer subcontractor and vendor pre-construction meetings throughout progress of the work. He will:
   1. Prepare agenda for meetings.
   2. Distribute written notice of each meeting four days in advance of meeting date.
   3. Make physical arrangements for meetings.
   4. Preside at meeting.
   5. Record the minutes; including significant proceedings and decisions.
   6. Representatives of Contractors, Subcontractors, and Suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
   7. Use of Premises:
      a. Office, work, staging and storage areas
      b. Owner's requirements
   8. Temporary construction Facilities, Utilities, Controls and Construction Aids
   9. Safety, First-aid, Security and Housekeeping Procedures
   10. Administrative Procedures and Documents as Required by Owner

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1.02 PROGRESS AND COORDINATION MEETING

A. The Contractor will schedule and administer job progress and coordination meeting at the site.
   1. Attendance:
      a. Owner as needed
      b. Consultant and his sub-consultants as needed
      c. Subcontractor as appropriate to the agenda
      d. Suppliers as appropriate to the agenda
      e. Others

B. Suggested Agenda:
   1. Review of work progress since previous meeting.
   2. Field observations, problems and conflicts.
   3. Problems which impede Construction Schedule.
   4. Review of off-site fabrication and delivery schedules.
   5. Corrective measures and procedures to regain projected schedule.
   6. Revisions to Construction Schedule.
   7. Coordination of schedules.
   8. Progress and schedule during succeeding work period.
   9. Review submittal schedules and expedite as required.
   10. Maintenance of quality standards.
   11. Pending changes and substitutions.
   12. Review proposed changes for:
      a. Effect on Construction Schedule and on completion date.
      b. Effect on other contracts of the Project.
   13. Coordination of Owner's Separate Contracts
   14. Other Business as Required

C. The Contractor shall record and distribute the minutes of all progress meetings throughout the construction period.

D. The Architect/Engineer shall visit the site a minimum of once every two weeks. The Architect/Engineer shall average one site visit per week during construction.

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SECTION 01 30 00 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Submit shop drawings, product data and samples as required by various sections of the specifications.

1.02 QUALITY ASSURANCE

A. Shop Drawings:
   1. Drawings shall be presented in a clear and thorough manner.
   2. Details shall be identified by reference to sheet, detail, schedule, or room numbers shown on drawings.

B. Product Data:
   1. Preparation:
      a. Clearly mark each copy to identify pertinent products or models.
      b. Show performance characteristics and capabilities.
      c. Show dimensions and clearances required.
   2. Manufacturer's standard schematic drawings and diagrams:
      a. Modify drawings and diagrams to delete information that is not applicable to the work.
      b. Supplement Standard information to provide information specifically applicable to the work.

C. Samples:
   1. Office samples shall be of sufficient size and quantity to clearly illustrate:
      a. Functional characteristics of the product with integrally related parts and attachment devices.
      b. Confirmation of color selected.

D. Responsibilities of the Contractor:
   1. Review shop drawings, product data, samples and project record drawings for specification performance prior to submission.
   2. Determine and Verify:
      a. Field measurements
      b. Field construction criteria
      c. Catalog numbers and similar data
      d. Conformance with specifications
   3. Coordinate each submittal with requirements of the work and of the Contract Documents.
   4. Notify the Consultant in writing, at the time of submission, of any deviations in the submittals for requirements of the Contract Documents.
   5. Begin no fabrication or work that requires submittals until return of submittals with Consultant's acceptance.
   6. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Consultant's review of submittals.
   7. Contractor shall stamp, sign or initial, and date each submittal to show compliance with the Contract Documents prior to submittal to the Consultant.

1.03 SUBMITTALS

A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the work.

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B. Number of Submittals Required:
   1. Shop Drawings: Submit three opaque reproductions.
   2. Product Data: Submit three copies, one of which will be retained by the Consultant.
   3. Samples: Submit one (1) complete collection of all samples (of sufficient size to establish general visual effect) required by individual Sections for a color, texture, pattern, or other finish (collectively, "color") selection by the Architect, as well as one (1) sample of any item which has been specified in individual Sections with color selection already made.

C. Submittals shall contain:
   1. Date of the submission and dates of any previous submissions.
   2. Project title and number.
   3. Contract identifications.
   4. Names of:
      a. Contractor and Subcontractor(s), if applicable.
      b. Supplier
      c. Manufacturer
   5. Identification of product with the specification section number.
   6. Field dimensions, clearly identified as such.
   7. Relation to adjacent or critical features of the work or materials.
   8. Applicable standards, such as ASTM or Federal specification numbers.
   9. Identification of deviations from Contract Documents.
   10. Identification of revisions on resubmittals.
   11. An 8"x3" blank space in lower right-hand corner for review stamps.

D. Resubmission Requirements:
   1. Make any corrections or changes in the submittals required by the Consultant and resubmit until accepted.
   2. Shop drawings and product data:
      a. Revise initial drawings or data and resubmit as specified for initial submittal.
      b. Indicate any changes that have been made, other than those requested by the Consultant.
   3. Samples: Submit new samples as required for initial submittal.

E. Distribution:
   1. Distribute reproductions of approved shop drawings and copies of product data to affected subcontractors and retain one copy for use at the job-site.
   2. Distribute approved samples as directed.

F. Consultant's Duties:
   1. Review submittals with reasonable promptness and in accordance with schedule.
   2. Review of separate item does not constitute review of an assembly in which item functions.
   3. Affix stamp and initials or signature, and indicate requirements for resubmittal or acceptance of submittal.
   4. Return submittals to the Contractor for distribution or for resubmission.

G. Schedule of Values and pay applications:
   1. Submit typed schedule on State Form SC7.2; Contractor's standard form or media-driven printout will be considered on request.
   2. Format: Table of Contents of this Project Manual.
   3. Include in each line item a directly proportional amount of Contractor's overhead and profit.

H. Schedule of Submittals: The Contractor shall submit the submittals required by the specifications. The Contractor shall develop a submittal schedule that confirms the submittals and the time frame for review by the consultants.

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I. Construction Schedule:
   1. The Contractor shall submit a critical-path method (CPM) construction schedule prior to start of construction activities. The CPM schedule shall include notice to proceed, submittal activities, construction activities, change order work (when applicable), close-out, testing, demonstration, and acceptance. The CPM shall correlate specifically to the schedule of values line items and be cost loaded.
   2. Float, slack time, or contingency within the schedule (i.e., the difference in time between the project's early completion date and the required contract completion date), and total float within the overall schedule, is not for the exclusive use of either the principal representative or the Contractor, but is jointly owned by both and is a resource available to and shared by both parties as needed to meet contract milestones and the contract completion date.
   3. The Contractor will be required to submit an as-built progress CPM schedule with each progress billing. This CPM schedule will be the basis for making progress payments. The level of detail and quantity of work activities in the CPM schedule should be negotiated with the principal representative prior to starting construction.

J. Progress Photos
   1. The Contractor shall submit up to 12 - 3x4 inch progress photos with each progress payment. The photos should demonstrate the work in place and be dated with a short description of the photographed item.

K. Coordination Drawings:
   1. Approval of required shops and submittals must be obtained prior to starting work, and must be obtained prior to approval of pay applications of the work. Identify conflicts between the systems or between the systems and architectural elements such as ceiling heights, ceiling types, or walls. Conduit routing for electrical, mechanical, energy management system, and security trades shall be included. Identify potential solutions to the conflicts for the Consultant and Owner to review during the submittal process. Revise the coordination drawings to show any comments made during the submittal review process, and reissue for use by all affected trades, Owner and Consultant.
   2. The Coordination drawings shall include sectional coordination documents. Identify elevations of systems A.F.F. (above finish floor) and component dimensions. Show elevations whenever component changes height.

L. Request for Information (RFI):
   1. The Contractor will be responsible for submitting RFIs on the RFI form attached to this Section. The RFI should identify in writing any unclear, inconsistent, or conflicting item in the documents that could not be answered by thorough review by the Contractor or subcontractors. The RFI should include a description of the item and a proposed solution. The RFI should indicate schedule or cost impact, if any. Contractor shall be required to submit cost or schedule impact within seven days of receipt of the RFI response. Each RFI shall be numbered in sequence.

M. Weekly Logs:
   1. The Contractor shall provide an updated RFI, change request, and submittal logs at weekly construction meetings. Contractor shall provide a 2-week detailed construction schedule at the weekly construction meeting.

PART 2 - MATERIALS
Not used.
PART 3 - EXECUTION
Not used.

END OF SECTION

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SECTION 01 40 00 QUALITY CONTROL

PART 1 - GENERAL

1.01 SUPPLEMENTAL TESTING

A. If required, the following testing shall be performed at the expense of the contractor installing the material being tested:
   1. Material Substitution: Any tests of basic material or fabrication equipment offered as a substitute for specified item on which a test may be required in order to prove its compliance with the specifications.
   2. Any test that fails shall be paid for by the installing contractor subject to the following conditions:
      a. Quantity and nature of tests will be determined by the Consultant.
      b. All tests shall be done in the presence of the Owner or his representative.
      c. Proof of noncompliance will make the installing contractor liable for any corrective action which the Owner feels is prudent including complete removal and replacement of defective material.

B. Nothing contained herein is intended to imply that the installing contractor does not have the right to have tests performed on any material at any time for his own information and job control so long as the Consultant or Owner does not assume responsibility for costs or for giving them consideration when appraising quality of materials.

C. The Consultant shall determine the type and number of tests to be performed on the project.

1.02 TEST REPORTS

A. Reports of all tests made by testing laboratories shall distributed by the testing laboratory as follows:
   1. 1 copy - Contractor
   2. 1 copy - Applicable supplier or subcontractor
   3. 1 copy - Owner
   4. 1 copy - Consultant
   5. Other copies - as directed

1.03 QUALITY CONTROL SYSTEM

A. General: The contractor shall establish a quality control system to perform sufficient inspection and tests of all items of work, including that of all subcontractors, to ensure conformance to the Contract Documents for materials, workmanship, construction, finish, functional performance and identification. This control shall be established for all construction except where the Contract Documents provide for specific compliance tests by testing laboratories or Consultants employed by the Owner.

B. The quality control system is the means by which the Contractor assures that construction complies with the requirements of the Contract Documents. Controls shall be adequate to cover all construction operations and should be keyed to the proposed construction schedule.

C. The Contractor shall designate a quality control representative on staff to review the work to insure compliance with the contract documents by weekly jobsite visits for observation. The designated employee shall not be involved in the performance of the work. The quality control representative shall review the work and make necessary corrections to bring the work into compliance prior to scheduling the Architect for the final punchlist review.

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D. Records: The Contractor shall maintain correct records on an appropriate form for all inspections and tests performed, instruction received from the Owner and actions taken as a result of those instructions. These records shall include evidence that the required inspections or tests have been performed (including type and number of inspections or tests, nature of defects, causes for rejection, etc.) proposed or directed remedial action, and corrective action taken. The Contractor shall document inspections and tests as required by each Section of the Specifications.

1.04 QUALITY CONTROL PLAN SUBMITTAL

Within twenty (20) days after Notice of Award, the Contractor shall furnish quality control plan to Architect which shall include the personnel, procedures, instructions, and records to be used. The plan shall specifically include the following:

1. A list of control tests which the Contractor understands Contractor or subcontractors are to perform.
2. Procedures for reviewing shop drawings, product data, samples or other submittals before submission to Architect. Include procedures for obtaining required field measurements.
3. Method of documenting quality control operation, inspection and testing including samples of proposed forms.

1.05 INDEPENDENT TESTING AGENCY SERVICES

A. The Owner will employ and pay for the services of an independent Testing Agency to perform the Inspections, special inspections, tests and other services when required by sections of the specification. Services shall be performed in accordance with requirements of governing authorities and with specified standards.

1. Contractor shall cooperate with Testing Agency personnel and shall furnish tools, sample of materials, design mixes, equipment and assistance as requested.
2. Contractor shall provide and maintain, for the sole use of the Testing Agency, adequate facilities for the safe storage and proper curing of concrete testing cylinders on the project site for the first 24 hours after casting as required by ASTM C 31, Method of Making and Curing Concrete Test Specimens in the field.
3. Contractor shall notify Testing Agency sufficiently in advance of operations to allow for completion of initial tests and proper assignment of inspection personnel.
4. Contractor shall notify the testing agency sufficiently in advance of cancellation of required testing operations. The Contractor shall assume responsibility for costs incurred due to the failure to provide such notice.

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SECTION 01 50 00 TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

This section of the General Requirements outlines the basic requirements for temporary services, utilities, and facilities which will indirectly enable adequate construction progress and processes, and will accommodate other necessary activities at the project site except as otherwise indicated, the costs of providing and using temporary services are included in the Contract Sum.

1.03 QUALITY ASSURANCE

Comply with governing regulations and utility company regulations and recommendations for the construction of temporary facilities, including but not necessarily limited to, code compliance, permits, inspections, testing, and health and safety compliance.

1.04 SITE CONDITIONS

Provide Temporary facilities and services at the time first needed at the site and maintain, expand, and modify the facilities as needed throughout the construction period and do not remove until no longer needed.

PART 2 - EXECUTION

2.01 GENERAL

Use qualified tradesmen for the installation of temporary facilities. Locate facilities where they will serve the total project construction work adequately and result in minimum interference with performance of the work. Relocate, modify, and extend facilities as required during the course of the work to properly accommodate the entire work of the project.

2.02 TEMPORARY FACILITIES

A. Temporary Electricity and Lighting - Service and Distribution:

1. Contractor shall provide temporary electrical service up to point of delivery (temporary meter) and installation of temporary meter at job site. In addition, from the load side of the meter, provide temporary wiring, outlets, lights, etc., as required for construction power and lighting during construction period. Remove all temporary wiring upon completion of work.
2. Contractor shall provide, install, and maintain necessary temporary overhead wiring to the building providing temporary power and lighting service. Service shall be 120/240 volt, 1 phase, 3 wire. Temporary service and distribution system shall be properly grounded in accordance with the NEC. Provide ground fault interrupters as required by Code. Distribution equipment and wiring devices for temporary power and lighting need not be new, however, the installation shall conform to good safe general practice as required by the Occupational Safety and Health Administration.
3. Owner shall pay for all electricity used through either the temporary or permanent systems up to the date of Substantial Completion.

B. Temporary Power:

1. Contractor shall provide double duplex 120V outlets. Each subcontractor shall furnish extension cords necessary to convey electricity from double duplex outlets to portions of the building in which their work is in progress.

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2. Special power required for welders or the trade requiring such power shall provide other special equipment.

C. Temporary Lighting:
1. If required, Contractor shall provide one (1) light for every 750 square feet or major portion thereof. Each trade shall provide working lights (plug-in portable lights) as required to complete their portion of the work.
2. Contractor shall be responsible for seeing that temporary lighting is turned off at times when no work is in progress, unless required for security.

D. Use of Permanent Systems:
1. After the work is completed to the extent that new permanent electric service is available, Contractor may use same as necessary for power and light. The Contractor shall then remove temporary facilities.
2. Contractor shall be responsible for any damage done to the permanent wiring or fixtures as a result of use of same.
3. Permanent branch circuit wiring may be used to supply pigtail lights if protected by properly sized circuit breaker or fuse.
4. Permanently installed light fixtures shall be cleaned using method and materials recommended by the manufacturer.

E. Temporary Water: Connect to existing water source as designated by the Owner for construction operations.

F. Temporary Telephone: Provide, maintain and pay for telephone service to field office at time of project mobilization. If a mobile phone is designated as the field office phone then it shall be a local number.

G. Temporary Heat and Ventilation: Provide such OSHA approved heat and fuel, heating units, equipment as necessary to provide the required environmental conditions and to protect the work from damage due to cold. Maintain equipment in a clean, safe condition.

H. Sanitary Facilities: Comply with governing regulations, including safety and health codes for the type, number location, operation, and maintenance of fixtures and facilities. Install sanitary facilities in available locations which will best serve the needs of personnel at the project site. Toilet rooms in existing buildings or in new construction may not be used.

I. Fire Extinguisher:
1. Except as otherwise indicated or required, comply with the applicable recommendations of NFPA No. 10 "Portable Fire Extinguisher" for each area of each construction activity whenever combustible materials, flammable liquids, and similar exposures to possible fires are present.
2. Locate extinguisher where most convenient and effective for the intended purposes. Store combustible materials in recognized fire-safe locations and containers.

J. Protection
1. Barricades, Walkways, Warning Signs, and lights: Comply with recognized standards and code requirements for the erection of substantial and structurally adequate barricades wherever needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs to inform personnel at the site and the general public where exposure exists of the hazard being protected. Provide lighting where appropriate and needed for the recognition of the facility, safe public passage and include flashing red lights where appropriate.

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K. Temporary Enclosure: Wherever required, provide temporary enclosure of materials, equipment, work in progress, and completed portions of work, so as to afford protection for both the work and employees.

L. Miscellaneous Facilities:
   1. Provide ladders, ramps, and temporary stairs for access to all levels of the construction for general access by all trades, Individual contractors and subcontractors shall furnish their own stepladders, scaffolds, staging, work platforms, and other facilities for use of their workmen and as necessary for safety of all personnel.

M. Field Office:
   1. It shall be the Contractor option on whether or not to provide a field office. If the Contractor chooses not to have a field office, the Owner will make available meeting space for required job progress and coordination meetings. However, office space will not be available for the Contractor's day to day office needs. Offices and all other temporary structures shall be removed from the site upon completion of the work.
   2. Temporary structures or storage used for storage and offices for contractors shall be located on the site in an orderly manner, in a location as determined by the Owner.

2.03 OPERATIONS AND TERMINATIONS

A. Supervision: Enforce strict discipline in the use of temporary facilities at the project site. Limit availability of facilities to essential and intended uses, so as to minimize waste and possibility of abuses and the resulting unsanitary and hazardous or dangerous conditions.

B. Maintenance: Operate and maintain temporary facilities in good operating condition through the time of use and until removal is authorized. Protect from damage by freezing temperatures and similar elements at the site.

C. Termination and removal: At the time the need has ended for each temporary facility, or when it has been replaced by authorized use of a permanent facility, or at the time of Substantial completion, promptly remove the facility unless requested by the Consultant to be retained for a longer period of time. Complete or restore permanent work which may have been delayed or otherwise affected by the temporary facility. Replace work which cannot be satisfactorily restored. Except as otherwise indicated, the materials and equipment of temporary facilities remain the property of the contractors.

2.04 PROTECTION FOR WORK IN PLACE

Work in place that is subject to injury because of adjacent operations shall be covered, boarded up, or substantially enclosed with adequate protection. Permanent openings used as thoroughfares for the introduction of work and materials to the structure shall have heads, jambs, and sills well blocked and boarded. All forms of protection shall be constructed in a manner such that, upon completion, the entire work will be delivered to the Owner in undamaged condition.

END OF SECTION

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SECTION 01 60 00 MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Products.
2. Transportation and Handling.
3. Storage and Protection.
4. Manufacturer's Instructions.
5. Product Options.
6. Products List.
7. Substitutions.
8. Systems Demonstration.

B. Related Sections:
1. Section 01 40 00 - Quality Control.
2. Section 01 73 00 - Operation and Maintenance Data.

1.02 QUALITY ASSURANCE

A. Conform to applicable specifications and standards.
1. Manufacturers and systems listed within a specification section are acceptable subject to their fully meeting the detail requirements of that particular section.

B. Comply with size, make, type and quality specified, or as specifically approved in writing by the Consultant.

C. Manufactured and Fabricated Products:
1. Two or more items of the same kind shall be identical, by the same manufacturer.
2. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

B. Comply with Specifications and referenced standards as minimum requirements.

1.03 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.

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

1.04 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer' instruction, with seals and labels intact and legible.

B. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged, and are maintained under required conditions.

1.05 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including one copy to the Consultant and one copy to the Contractor.

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B. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.06 PRODUCT LIST

A. Within 15 days after signing of agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

1.07 PRODUCT OPTIONS

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

B. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not specifically named.

1.08 SUBSTITUTIONS – PRIOR TO THE BID

A. There will be no substitutions prior to the bid.

1.09 SUBSTITUTIONS – AFTER THE AWARD OF CONTRACT

A. Substitutions after Award of Contract will only be considered 1) due to unavailability of specified product for reasons beyond the Contractor's control; 2) which result in a better job; 3) which improve lead time; and 4) which result in a savings to the Owner.

B. Substitutions will not be considered when indicated on Shop Drawings or Product Data submittals 1) without a prior formal request; 2) when requested directly by subcontractor or supplier; 3) or when acceptance will require substantial revision of Contract Documents.

C. Requests for substitution shall be accompanied by a written comparison between the specified item and the substitute item. Request submittals shall be accompanied by complete technical data, including laboratory reports, if applicable, on the proposed product. Each item proposed for substitution shall be clearly identified. Submit listing of local installations where proposed products have been provided, include names and phone number of references familiar with installation and proposed product's performance. Explain fully the differences, if any, between the proposed product and the products named in the Specifications, i.e., delivery time.

D. Substitute products shall not be ordered or installed without written acceptance.

E. Only one (1) request for substitution for each product will be considered. When substitution is not accepted, provide specified product.

F. Owner will determine acceptability of substitutions.

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SECTION 01 70 00 CONTRACT CLOSE-OUT

PART 1 - GENERAL

1.01 SUBSTANTIAL COMPLETION AND FINAL INSPECTION

A. The Contractor shall comply with procedures stated in the General Conditions of the Contract for Notice of Completion, Final Inspection, Notice of Substantial Completion and Notice of Acceptance.

B. Should the Architect/Engineer or the Principle Representative determine that the work is not substantially complete, or the punch list items exceed 25, he will immediately notify the Contractor, in writing, stating reasons. After Contractor completes work, he shall resubmit certification and request for final inspection. The Contractor will be responsible for all costs beyond two Architect/Engineer walk-throughs.

C. Owner may occupy designated portions of the Project under provisions stated in the General Conditions of the Contract.

1.02 CLOSE-OUT FORMS

The Architect/Engineer will complete the Notice of Approval of Beneficial Occupancy, Closing-out Checklist and Contract Close-out forms and forward them to the Contractor. Comply with procedures stated in General Conditions of the Contract.

1.03 FINAL SETTLEMENT AND PAYMENT

A. Contractor shall comply with procedures stated in the General Conditions of the Contract before final settlement and payment are made.

B. The Contractor shall also submit the following prior to the final application for payment:
   1. Contractor's Affidavit of Payment of Debit and Claims: AIA G706.
   2. Contractor's Affidavit of Release of Liens (claims): AIA G706A, with:
      a. Consent of Surety to final payment: AIA G707
      b. Contractor's release of waivers of claims.
      c. Separate release of waivers of claims for subcontractors, suppliers and others with claim rights, against property of owner, together with list of those parties.

1.04 GUARANTEE INSPECTION

The Contractor shall comply with procedures stated in the General Conditions of the Contract for Guarantee Inspections after completion of the work.

1.05 WARRANTIES AND SPECIAL GUARANTEES

The Contractor shall comply with procedures and criteria outlined in the General Conditions of the Contract for all warranties and special guarantees of the work.

1.06 OPERATING AND MAINTENANCE DATA

A. Refer to Section 01 73 00 - Operating and Maintenance.

1.08 MAINTENANCE MATERIALS

A. Provide products and maintenance materials in quantities specified in each Section, in addition to that used for construction of work. Coordinate with Owner, deliver to Project site and obtain receipt prior to final payment.

END OF SECTION

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SECTION 01 71 00 CLEANING

PART 1 - GENERAL

1.01 CLEANING

A. Clean-up During Construction: Each contractor shall keep the building and premises free from all surplus material, waste material, dirt and rubbish caused by his employees or work, and at the completion of his work he shall remove all such surplus material, waste material, dirt and rubbish, as well as his tools, equipment and scaffolding, and shall leave his work clean and spotless, unless more exact requirements are specified. In case of dispute, the owner may remove all such items and charge the cost of such removal to the contractor.

1. Each sub-contractor shall perform his clean-up daily and shall transport his rubbish to an on-site location designated by the Contractor who will arrange for its removal.

B. Cleaners: With the exception of clean-up of the site and cleaning specifically assigned to Contractors under various sections of the specifications, all final clean-up of exterior and interior of the building shall be done by professional cleaners.

C. Final Clean-up:

1. Glass: Both sides of all glass in work areas shall be carefully and thoroughly cleaned by professional window cleaners and left absolutely clean and free from paint, grease, dirt, etc.
2. Hardware: Clean and polish all hardware and leave clean and free from paint, grease, dirt, etc.
3. Electrical: Clean and polish all electric fixtures, including glassware, switch plates, etc. and leave clean and free from paint, grease, dirt, etc.
4. Floors: Thoroughly clean all floors. Vacuum and clean carpeting. Shampooing of pre-existing carpet affected by the work is required once project is complete. Contractor is responsible for this.

D. Completion: The entire work shall be in first-class, clean condition upon completion before being accepted by the Owner.

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SECTION 01 72 00 PROJECT RECORD DOCUMENT

PART 1 - GENERAL

1.01 SUMMARY

This section describes the definitions, recording and maintenance requirements and the submittal requirements for record documents.

1.02 DEFINITIONS

The Project Record Documents are intended to indicate all changes and deviations from the original contract documents and permanently record the "as-built" condition of material, equipment and structure. The project record documents shall include the contract drawings, project manual, addenda, change orders, modifications and clarifications, field directives, approved shop drawings, approved product data, manufacturer's certificates and project test results.

1.03 SUBMITTALS

Submit the project record documents in conformance with Section 01 70 00 and prior to the final applications for payment. The final application for payment will not be approved prior to the submittal of record documents.

1.04 QUALITY ASSURANCE

A. The project record documents shall be updated at a minimum on a weekly basis and shall be readily available for inspection by the owner and consultants. Maintain a separate set of complete documents for exclusive use of record documents and protect the documents from damage in a clean, dry location. Note: Progress applications for payment <u>will not</u> be approved if record documents are not current.

B. The record documents shall contain a clear, legible record of all detail and dimensional changes and locate all concealed work including, but not limited to:
   1. Interior Utilities

C. The project manual (specifications) shall indicate all manufacturers' products complete with catalogue number and trade name of products installed. All changes and corrections to the project manual shall be clearly indicated.

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SECTION 01 73 00 OPERATING AND MAINTENANCE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Compile product data and related information appropriate for the University of Colorado's maintenance and operation of products furnished.

B. Prepare operating and maintenance data as specified in this section and as referenced in other pertinent sections of specifications.

C. Instruct the UCCS, Facilities Services personnel in the maintenance of PRODUCTS and in the operation of equipment and systems.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:
   1. Trained and experienced in maintenance and operation of the described products.
   2. Completely familiar with requirements of this section.
   3. Skilled as a technical writer to the extent required to communicate essential data.
   4. Skilled as a draftsman competent to prepare required drawings.

1.03 SUBMITTALS

A. Prepare data in the form of an instructional manual for use by the University of Colorado, Facilities Services personnel. Quantities are listed in Part 1.07.

B. Format:
   1. Submit electronically in PDF format as one document, bookmarked according to CSI standards.
   2. Title shall be "MAINTENANCE INSTRUCTIONS", and shall include:.
      a. Name of project and date of completion (month and year).
      b. Project number.

1.04 CONTENT OF MANUAL

A. An electronically-written table of contents shall be provided for each volume, arranged according to CSI standards. Include the following:
   1. Name of responsible installing principal contractor, address, and telephone number.
   2. A list of each product being included, indexed to the content of the volume.
   3. List with each product, the name, address, and telephone number of:
      a. Maintenance contractor, as appropriate.
      b. Identity of the area of responsibility of each.
   4. Identify each product by product name and other identifying symbols.

B. Product Data:
   1. Local source of supply for parts and replacement.
   2. Include only those sheets that are pertinent to the specific product, with the following information.
      a. Clearly identify the specific product or part installed.
      b. Clearly identify the data applicable to the installation.
      c. Delete references to inapplicable information.

C. Provide written text, as required, to supplement product data for the particular installation:
   1. Organize in a consistent format under separate headings for different procedures.
   2. Provide a logical sequence of instructions for each procedure.

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D. Provide a copy of each warranty, bond, and service contract issued. Provide information sheets for the University of Colorado, Facilities Services personnel and give:
   1. Proper procedures in the event of failure.
   2. Instances that might affect the validity of warranties or bonds.

1.05 MANUALS FOR ARCHITECTURAL MATERIAL AND FINISHES

A. Submit copies (per schedule) of complete manual in final form.

B. Content for architectural products including applied materials and finishes.
   1. Manufacturer's data, giving full information on products.
      a. Catalog number, size, and composition.
      b. Color and texture designations.
      c. Information required for reordering special manufactured products.
   2. Instructions for care and maintenance:
      a. Manufacturer's recommendation for types of cleaning agents and methods.
      b. Cautions against cleaning agents and methods that are detrimental to the product.
      c. Recommended schedule for cleaning and maintenance.

1.07 OPERATION & MAINTENANCE MANUAL QUANTITIES / SCHEDULE

A. If not compiled into two CD's or DVD's, provide two.
   1. Architectural

1.08 SUBMITTAL SCHEDULE

A. Submit one electronic copy to the Consultant and one to the University of draft of proposed formats and outlines of contents upon completion of the submittal process. The Consultant and the University staff will review the draft and will submit comments through the consultants.

B. Submit electronic copies of complete manual(s) in final form 15 days prior to final inspection or acceptance. Comments will be submitted after final inspection.

C. Submit specified number of CDs or DVDs of approved data in final form prior to acceptance.

1.09 INSTRUCTION OF UNIVERSITY OF COLORADO, FACILITIES SERVICES PERSONNEL

A. Fully instruct the University of Colorado, Facilities Management personnel's designated maintenance personnel in the maintenance of all products as required elsewhere in the specification.

B. Maintenance manual may be required as the basis of instruction.

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DIVISION 2 EXISTING CONDITIONS
SECTION 02 41 00 SELECTIVE DEMOLITION

Not for Construction

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Demolition and removal of selected portions of building or structure.
3. Salvage of existing items to be reused or recycled.
4. Disposal of items not noted to be saved or reinstalled.
5. Securing exposed utilities.
6. Shoring and bracing.
7. Clean up.

B. Related Work: Construction Facilities and Temporary Controls: Section 01 50 00.

C. Referenced Standards/Minimum Criteria:
1. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this project.
2. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
3. Standards: Comply with ANSI A10.6 and NFPA 241.
4. Pre-demolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:
   a. Inspect and discuss condition of construction to be selectively demolished.
   b. Review structural load limitations of existing structure.
   c. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   d. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   e. Review areas where existing construction is to remain and requires protection.

D. Submittals Required:
1. Schedule of Selective Demolition Activities: Indicate the following:
   a. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   b. Interruption of utility services. Indicate how long utility services will be interrupted.
   c. Coordination for shutoff, capping, and continuation of utility services.
   d. Locations of proposed dust-and-noise control temporary partitions and means of egress.
   e. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed work.
   f. Means of protection for items to remain and items on path of waste removal from building.
2. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
3. Pre-demolition Photographs/Video: Show existing conditions of adjoining construction and site improvements including finish surfaces that might be misconstrued as damaged caused by selective demolition operations.

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E. Restrictions/Critical Criteria:
   a. Owner may occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
   b. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
   c. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished. Contractor shall arrange and pay for disconnections, removal and capping of utility services within areas of demolition.
      a. Arrange to shut off indicated utilities with utility companies.
      b. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
      c. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
      d. Identify service lines and capping locations on project record documents.

1.02 PROJECT CONDITIONS

Asbestos Containing Materials: No asbestos containing materials are known to exist in the areas to be demolished. If the Contractor discovers materials which he suspects to contain asbestos, he shall cease work in the area and notify the Architect, who will issue further instructions.

PART 2 - PRODUCTS

2.01 ITEMS TO BE REMOVED AND REINSTALLED

A. Materials, specialty items, equipment, casework, systems, doors, frames, hardware and other components scheduled or noted to be reused on other portions of the work, shall be carefully removed and stored at the site for later reinstallation. Damage caused during removal, storage, or reinstallation shall be repaired to the satisfaction of the Architect, at no cost to the Owner.
   1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

2.02 ITEMS TO BE REMOVED AND SALVAGED FOR THE OWNER

A. The following items shall be removed and salvaged for the Owner's use:
   1. Door hardware.
   2. Doors

B. After salvage and removal the following procedures shall be utilized:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents or containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designed by Owner or as indicated on Drawings.
   5. Protect items from damage during transport and storage.

C. The Owner reserves the right to reject items which are designated to be salvaged and turned over to the Owner. In that event, Contractor shall dispose of items rejected by Owner at no additional cost.

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2.03 ITEMS TO BE REMOVED BY OWNER
Items that are removed prior to the start of demolition will remain the property of the Owner.

2.04 DISPOSITION OF REMOVED ITEMS
Items indicated to be removed and not indicated to be salvaged or reinstalled shall become the property of the Contractor.

2.05 EXISTING ITEMS TO REMAIN:
Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

PART 3 - EXECUTION

3.01 PREPARATION

A. Protection: Erect weatherproof enclosures over new exterior openings in existing building to protect building interior until new finish materials are installed.

B. Shoring and Bracing: Provide necessary temporary shoring and bracing to support and protect portions of existing building during demolition operations. Such shoring shall be left in place until permanent supports have been installed. The Contractor shall be solely responsible for the design, safety, and adequacy of temporary shoring and bracing and its ability to carry the load for which intended.

C. Cease operations and notify Architect immediately if safety of structure appears to be endangered. Take precautions to properly support structure. Do not remove supports until safety is restored.

D. Repair demolition performed in excess of that required at no cost to the Owner.

3.02 DISPOSITION OF REMOVED ITEMS
Items and materials indicated to be removed and not indicated to be salvaged or reused shall become the property of the Contractor. Items and materials indicated as such shall be removed by the Contractor to an approved licensed landfill, to a facility designated for acceptance of the specific material, or to the Contractor's own storage facility.

3.03 CLEANING
The Contractor shall at all times during the demolition keep the premises free from accumulations of waste material or rubbish caused by his employees or work. At the completion of the work, Contractor shall remove rubbish, tools, and surplus materials. Leave the premises clean and ready for subsequent work.

END OF SECTION

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SECTION 03 30 00 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Cast-in-Place Concrete at slab on grade floor patch areas and turned down concrete slab.

B. Related Sections:

1.02 REFERENCES

Reference Standards: Follow American Concrete Institute (ACI) Standards 301, 305R, 306R, 308R and 309, latest edition, except as modified by these specifications.

1.03 SUBMITTALS

A. Quality Control Submittals - Mix Designs: Prior to placing concrete, the Contractor shall submit concrete mixes to the Architect for approval. Submittals shall include all information used in designing the mixes. See Article 2.02 for design procedures.

1.04 DELIVERY, STORAGE AND HANDLING

A. Hauling Time: Discharge concrete transmitted in a truck mixer, agitator or other transportation device within 1-1/2 hours after the mixing water has been added to the cement and aggregate.

B. Additional Water: Deliver concrete to the job in exact quantities required by the design mix. Should additional water be required before placing the concrete, the Contractor shall have sole authority to authorize the addition of water. Any added water shall not exceed the maximum water / cement ratio or maximum slump of the approved mix design and, under no circumstance shall more than one half gallon per yard be added. Any additional water added to the mix after leaving the batch plant shall be indicated on the truck ticket and signed by the Contractor. Where extra water is added to the concrete it shall be mixed thoroughly for 40 revolutions of the drum or 3-1/2 minutes at mixing speed, whichever is greater.

1.05 ENVIRONMENTAL REQUIREMENTS

Contractor shall take special precautions to protect and keep finished concrete slab dry in areas to receive resilient flooring and carpeting.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Concrete Materials:
   1. General: Use ready-mixed concrete conforming with ASTM C94. No on-job mixed concrete will be allowed.
   2. Cement: Conform to ASTM C150, Type I / II Cement.
   3. Aggregates: Fine aggregate (natural sand) and coarse aggregate (gravel or crushed stone), shall conform to ASTM C33. Maximum coarse aggregate size shall be as indicated in mix design.
   4. Air Entraining Agent: Conform to ASTM C260.
   5. Chemical Admixtures: Conform to ASTM C494.
   6. Mineral Admixtures: Conform to ASTM C618.

B. Miscellaneous Materials:
   1. Curing Compound: Conform to ASTM C309, Type 1. Ensure compatibility of proposed curing compound with any finish or treatment to be applied to concrete surface.

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2.02 MIXES

A. Design: Proportion ingredients for mixes in accordance with ACI 301, Section 4.2.3. Obtain this information in accordance with the latest ASTM Specifications.

B. Admixtures:

1. General: No admixtures will be allowed except as specified herein, unless authorized by the Architect. All requests for approval or substitution must be made by the Contractor and be accompanied by sufficient information and test data for evaluation.
1. Fly ash as a substitute for cement will be permitted in mix designs, unless otherwise noted. Fly ash shall conform to ASTM C618, Class C or F. Substitution of fly ash for cement shall not exceed twenty (20) percent of total cementitious materials by weight where permitted in mix design. Minimum replacement factor shall be 1 to 1.
2. Fibrous Reinforcing: Virgin fibrillated polypropylene fibers containing no reprocessed olefin materials and having tensile strength of not less than 70,000 psi. Materials shall meet specifications of ASTM C-1116, Type III.
   a. Fiber Length and Diameter: Per manufacturer's recommendation for placement application.
   b. Acceptable Manufacturer and Products:
      1) Fibermesh Company – Fibermesh
      2) Euclid Chemical Co. - Fiberstrand
      3) Grace – Grace Fibers
      4) or approved substitute

C. Chloride Ion Content: The maximum water soluble chloride ion concentration in the concrete mix shall not exceed 0.15 percent by weight of cement.

D. Slump: Design mix to provide slumps indicated under mix type at placement. Concrete to be placed by pumping shall have a maximum slump as specified at the end of the hose.

E. Mixing: Ready-mixed concrete shall conform to provisions of ASTM C94.

2.03 CONCRETE MIX TYPES

General: Water reducing admixtures shall be used in mix designs as indicated and shall be optional for mixes not specifically noted. Mix designs shall be identified by the mix identification letter indicated below. Concrete shall have a minimum cementitious material content of 470 lbs. per cubic yard unless noted otherwise.

B. Mix A - For Interior Slabs on Grade.
3500 psi (minimum)
Type I or Type I / II Cement
3/4" maximum aggregate size
3% maximum entrained air
4" maximum slump
Minimum of 540 lbs. of cementitious material per cubic yard
Use water reducing admixture per manufacturer's recommendations
Fly Ash may be substituted in specified amounts in this mix.
Maximum Water / Cement Ratio of 0.41 in this mix.
Use Fibrous reinforcing at minimum dosage of 1.5 lbs per cubic yard.

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PART 3 - EXECUTION

3.01 PREPARATION

Do not begin concrete work until operations are complete enough to allow placement to be carried on as a continuous operation for the entire section that is to be placed. Clean equipment for mixing and transporting the concrete.

3.02 CONCRETE PLACEMENT

A. Placement: Place concrete in approximately uniform horizontal layers not over two (2) feet in height. Piling up of the concrete in the forms or chuting in such a manner to separate the aggregates will not be permitted.

B. The recommendations of ACI 301, Section 5, shall be followed for placing concrete into forms. No concrete shall be dropped over four (4) feet. Accumulations of water on the surface of the concrete due to water gain, segregation, or other causes, during placement or consolidation, shall be prevented as far as possible by adjustments in the mixture. Provision shall be made for removal of such water as may accumulate.

C. Consolidation: Consolidate concrete during and immediately after placement by means of mechanical vibrators. Supplement by hand spading at corners and angles of the forms, around embedded fixtures, and in other difficult areas. Mechanical vibrator to cycle at 10,000 cycles per minute or more. Use and type of vibrators shall conform to ACI 309, "Recommended Practice for Consolidation of Concrete".

3.03 FLATWORK

A. Tolerances:
1. Concrete floors shall meet flatness surface tolerance of 1/4" in 10' except as otherwise noted.

B. Finishes:
1. The selection of finishes shall be in accordance with Section 5.3.4.2.c of ACI Standard 301. Finish surfaces sparingly with special tools, such as roller bugs, to force the coarse aggregate slightly below the surface. No jitterbug tampers are to be used. Dusting of wearing surfaces with dry materials will not be permitted.
2. Unless otherwise noted, interior concrete slab finish, on grade or on deck, shall be troweled.

C. Corrective Measures: Upon completion of specified finish and cure, and before placement of finish flooring, Contractor shall verify that tolerances specified in 3.04 A above have in fact been met. If due to issues such as, (but not limited to) slab curling, improper placement, and improper finishing, etc. tolerances specified herein are not met, then the Contractor shall take whatever corrective measures that are necessary to achieve specified flatness, surface tolerance, and finish. Corrective measures shall include (but are not limited to) slab grinding, filling and replacement.

3.04 CURING AND PROTECTION

General: Protect exposed surfaces of concrete from premature drying.

3.10 MISCELLANEOUS CONCRETE REQUIREMENTS

Other concrete work indicated on the drawings shall be provided, even though not specifically mentioned herein, as necessary, to complete the work.

END OF SECTION

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SECTION 03 39 00 MOISTURE VAPOR AND ALKALINITY CONTROL SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Application of Moisture Vapor and Alkalinity Control System at all new interior concrete slab areas.

B. Related Sections:
1. Poured in Place concrete: Section 03 30 00

1.02 SUBMITTALS

A. Submit the following in accordance with Sections 01 33 00:
1. Product Data: Submit copies of manufacturer's current catalog literature for the following:
   a. Moisture Vapor And Alkalinity Control System. Include test results documenting product meets performance requirements specified.
2. Shop Drawings: Submit construction and control joint locations for acceptance.
3. Manufacturer's Installation/Application Instructions before beginning concrete floor slab system installation:
   a. Submit one copy for Architect's information.
   b. Maintain one copy on site until completion of product application.

B. Closeout Submittals: Submit the following in accordance with Section 01 70 00:
1. Warranty: Submit Manufacturer's warranty for Moisture Vapor and Alkalinity Control System.

1.03 QUALITY ASSURANCE

A. Installer Qualifications:
1. Moisture Vapor And Alkalinity Control System Installer: Manufacturer’s employee shall be on site for all concrete slab pours to install or train in application, document and return on every application thereafter to verify that proper procedures are followed.

B. Regulatory Requirements: Moisture Vapor and Alkalinity Control System products shall be certified to be VOC compliant with all applicable federal, state and local regulations.

C. Pre-Installation Conference: Hold conference with General Contractor's superintendent, independent testing laboratory, concrete formwork installer, reinforcement installer, concrete supplier, concrete flatwork contractor, pumping equipment operator, finish flooring installer(s) and manufacturer(s) representative(s) in accordance with Section 01 31 19.
1. Notify Architect and Structural Engineer of meeting at least 10 days in advance.
2. Discuss all matters pertaining to vapor retarder installation, proper forming, reinforcement placement, concrete supply, concrete placement, concrete testing, concrete curing, vapor emission control and preparation of slabs to receive finish flooring.
3. Take minutes and distribute to attending parties.

1.04 DELIVERY, STORAGE AND HANDLING

A. General: Comply with Section 01 60 00.

B. Delivery: Deliver products in original unopened manufacturer's containers with labels intact.

C. Storage: Comply with Manufacturer's printed instructions.
1. Moisture Vapor and Alkalinity Control System: Store in an interior, cool, dry place at above 45 degrees F.
   a. Material temperature shall be at least 50 degrees F before use.

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1.05 WARRANTY

Moisture Vapor and Alkalinity Control System Warranty: Manufacturer shall warrant floor covering systems against failure due to moisture vapor migration or moisture-born contaminates for a period of fifteen (15) years from the date of original installations. The warranty shall cover all labor and materials needed to replace all floor coverings that fail due to moisture migration, moisture vapor emission, and moisture-born contaminates. Warranty shall not have exclusions due to vapor emission increase after system installation.

PART 2 - PRODUCTS

2.01 MOISTURE VAPOR AND ALKALINITY CONTROL SYSTEM

A. Acceptable Manufacturer: Creteseal, CS 2000, 800/278-4273; www.creteseal.com.
   1. Or approved substitute.

B. Performance Requirements: Treatment shall be certified by independent testing agency to meet the following:
   1. ASTM C1315 and ASTM C309. Penetrating product to have no less than 34% solids content, leaving no sheen, volatile compound (VOC) content rating as required to suit regulatory requirements.
   2. Product shall have at least a ten (10) year history in controlling moisture vapor emission from damaging floor covering, compatible with all floor finish materials.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Application of product by manufacturer signifies acceptance of substrate.

B. All floor slabs-on-grade, elevated floor slabs and topping slabs shall receive specified Moisture Vapor and Alkalinity Control System treatment by single source manufacturer/installer.

C. Apply product to concrete slabs as soon as final finishing operations are complete and the concrete has hardened sufficiently to sustain foot traffic without damage.

D. Apply at the rate of 200 square feet per gallon. If puddling or bird bathing occurs, lightly broom product evenly over the substrate until product has completely penetrated the surface.

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SECTION 05 50 00 METAL FABRICATIONS

PART 1 – GENERAL

1.01 SUMMARY
A. Section Includes:
1. Handrail Brackets
2. All other miscellaneous angles, channels, tubes, and plates as indicated.

1.02 REFERENCES
A. Steel: Conform to AISC "Specifications for Architecturally Exposed Structural Steel", latest edition.

B. Welding: Conform to "AWS Structural Welding Code".

1.03 DEFINITIONS
The term "metal fabrications" is synonymous with the term "miscellaneous metals".

1.04 SUBMITTALS
A. Product Data: Submit product data for manufactured items in accordance with Section 01 30 00.

B. Shop Drawings: Submit shop drawings in accordance with Section 01 30 00.

1.05 QUALITY ASSURANCE
Welder Qualifications: Welding shall be performed by AWS certified welding operators.

1.06 DELIVERY, STORAGE AND HANDLING
Storage of Metals: Metals which are stored at the project site shall be above ground on platforms, skids, or other supports. Protect steel from corrosion. Store other materials in a weather tight and dry place until ready for use. Store packaged materials in their original unbroken package or container.

PART 2 - PRODUCTS

2.01 MATERIALS
A. Steel, Shapes, Bars, and Plates: Conform to ASTM A36, A572 or A992.

B. Steel Pipe and Tubing: Conform to ASTM A53, A501, or A500, minimum wall thickness 11 gauge.

C. Shop Paint:
1. Materials: Tnemec 10-99 primer.
2. Preparation: Steel Structures Painting Council SSPC-SP3 Power Tool Cleaning.
3. Application:
a. Interior Fabrications: Spray apply to uniform dry film thickness of 2.5 mils, free of runs, sags or other defects. Omit shop primer within 2” of field welded connections.

2.02 FABRICATION
A. General: Fabricate in accordance with details and approved shop drawings all miscellaneous items of metal work indicated or as necessary to complete the work. Materials shall be new stock of types and sizes indicated.

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B. Make cuts clean and sharp with edges ground smooth. On completion, the work shall be straight, rigid and tight, and free from defects. Close exposed ends of steel pipe, channel, or tubing with welded steel plate caps.

C. Welding: Comply with latest American Welding Society Standards. Miter and cope intersections and weld all around. Remove splatter and grind exposed welds to blend and contour surfaces to match those adjacent.

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PART 3 - EXECUTION

3.01 INSTALLATION

Weld or bolt items securely in place or otherwise fasten as indicated on the drawings or approved shop drawings. Grind field welds smooth and touch-up with the appropriate primer to match the shop primer.

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DIVISION 6 WOOD AND PLASTICS
SECTION 06 10 00 ROUGH CARPENTRY

Not for Construction

PART 1 - GENERAL

1.01 SUMMARY
A. Section Includes:
1. Rough Hardware
2. Framing Lumber

B. Related Sections:
1. Finish Carpentry: Section 06 20 00
2. Gypsum Board Ceilings: Section 09 21 10

1.02 QUALITY ASSURANCE
A. Reference Standards:
1. Wood Framing: Comply with requirements of International Building Code and "National Design Specification for Wood Construction", latest edition, as published by American Forest and Paper Association.
2. Lumber: Comply with Standard Grading Rules for Western Lumber, latest edition, published by Western Wood Products Association. Each piece of lumber shall be grade stamped.
3. Plywood: Comply with U.S. Product Standard PS 1-07 for Construction and Industrial Plywood. Each panel shall be identified with the grade trademark of the APA- Engineered Plywood Association.
4. Treated Wood: Comply with the Standards of the American Wood Preservers Association (AWPA) as referenced herein.

1.02 DELIVERY, STORAGE AND HANDLING
Store material off the ground and cover with waterproof covering.

1.03 SUBMITTALS
Material Certification:
1. Contractor shall submit certification that at least 50% of all wood based materials and products from this Section of the Specifications are certified in accordance with the Forest Stewardship Council Guidelines for wood building components.
2. Contractor shall submit certification that products or adhesives from this Section of the Specifications contain no added urea-formaldehyde resins.

PART 2 - PRODUCTS

2.01 ROUGH HARDWARE
A. Provide necessary bolts, screws, nails, clips, plates, straps, hangers, etc., required for the completion of rough carpentry. Hardware shall be correct material of proper size and strength for the purpose intended and shall conform to the requirements of this Specification, the notes on the drawings, and all applicable building codes. .

B. Anchor bolts indicated to be built into concrete or masonry for support of wood framing shall be provided under this Section.

2.02 FRAMING LUMBER
A. Studs:
1. Hem-Fir, or Spruce Pine-Fir
2. Stud Grade or Construction Grade.

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B. Plates:
   1. Hem-Fir, Spruce Pine-Fir
   2. Standard Grade or Better.

C. Joists and Headers:
   1. Hem-Fir, Spruce Pine-Fir
   2. No. 2 Grade or Better.

D. Blocking and Furring:
   1. Hem-Fir, Spruce Pine-Fir
   2. Standard Grade or Better.

2.03 PLYWOOD

A. Floor Sheathing:
   1. C-D Grade
   2. Exposure 1
   3. APA rated sheathing
   4. Tongue & groove
   4. Thickness as shown on the drawings.

2.04 FIRE RETARDANT TREATMENT

A. All framing lumber and plywood sheathing shall be fire retardant treated wood. It shall be Class A rated and shall have a flamespread of 25 or less when tested in accordance with ASTM E84. Fire retardant treated wood shall be kiln-dried after treatment to a maximum of 19% moisture content for lumber, and 15% for plywood..

B. Acceptable Manufacturers and Products - Lumber and Plywood Wall Sheathing:
   1. D-Blaze by Chemical Specialties Inc.
   2. Dricon by Hickson or Koppers
   3. Interior Pyro-Guard by Hoover Treated Wood Products, Inc.
   4. or approved substitute

2.05 ADHESIVES

APA approved adhesives.

PART 3 - EXECUTION

3.01 EXAMINATION

Verify that surfaces to receive rough carpentry are prepared to required grades and dimensions.

3.02 INSTALLATION

A. Framing: Framing for all portions of the work shall be performed in substantial manner consistent with accepted standards of the carpentry trade. Erect framing plumb, level and true, and rigidly anchor in place. Locate studs 16" on center except where indicated otherwise.

B. Plywood Sheathing/ Underlayment: Install sheathing panels with face grain across supports. Nailing guns will not be allowed, fasten with # 8 x 2 ¼ screws. Secure plywood sheathing to substrate with screws 10” on center in the field of the board and 10” on center along abutting edges. End joints shall occur over supports with end joints staggered. Properly support plywood sheathing panels around cutouts and openings. Offset fasteners at panel end edges from fasteners in adjacent panels. Maintain 1/8” joint spacing between subfloor panels and 1/32” on underlayment panels, unless otherwise recommended by sheathing manufacturer. Plywood floor sheathing shall be glued to floor joists.

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B. Minimum nailing for all wood framing shall conform to Table No.2304.9.1, International Building Code, 2009 edition, unless noted otherwise.

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SECTION 06 20 00 FINISH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Interior Trim

B. Related Sections:
   1. Alternates: Section 01 03 00
   2. Rough Carpentry: Section 06 10 00
   3. Prefinished Wood Doors: Section 08 14 29
   4. Painting: Section 09 91 00

1.02 QUALITY ASSURANCE

A. Reference Standards:
   1. Conform to the Custom Grade and Installation requirements of the "Architectural Woodwork Quality Standards and Guide Specifications", current edition, as published by the Architectural Woodwork Institute.
   2. Conform to the Grading Standards of the National Hardwood Lumber Association.

1.03 DEFINITIONS

Finish carpentry is generally defined as woodwork requiring a smooth finish and exposed to view but not considered as shelving, cabinets, counters, or casework.

1.04 SUBMITTALS

A. Submit shop drawings for all items under this Section in accordance with Sections 01 30 00.

1.05 DELIVERY, STORAGE AND HANDLING

Do not deliver material until the building or storage area is enclosed and sufficiently dry to prevent damage from excessive changes in moisture content.

PART 2 - PRODUCTS

2.01 INTERIOR TRIM MATERIAL

All trim material shall be one of the following, as indicated on the drawings:

A. Interior Trim – Transparent Finished (Stained): Red Oak, Select Grade, Plain Sawn.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install all work required in this section per AWI Quality Standards, current edition.

B. Interior Finish: Wherever possible, each length of finish shall be in single piece. No butt joints will be allowed except for long pieces or room molds which may be in two or more sections, when necessary, with beveled joints.

C. Install interior finish level, plumb and true and tightly secure to backing with nails, screws, glue, etc. Blind nail wherever possible. Where surface nailing is necessary, use finish nails carefully set with nail punch. Finish bearing hammer marks, splits, cracks, mars or defects of any nature will be ordered replaced.

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D. Trim finishing against walls or ceiling shall be milled with extra width to permit scribing to wall or ceiling at job.

E. Except where molded, all trim shall be milled with perfectly square edges. After erection the exposed edges shall be slightly rounded by sanding as directed.

F. All finish shall be hand smoothed, ready for finish and absolutely free from machine or tool marks or any roughness whatever.

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SECTION 07 92 00 JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Provide sealant shown on the drawings, specified herein, and where specified under other sections. Where referenced as “caulk” or “caulking”, the material shall be joint sealant as specified in this Section.

B. In general, seal openings shown on the drawings and at other locations requiring joint sealant to seal visually and against infiltration from air and water, including, but not limited to, the following:
1. Isolation joints, between structure and other elements
2. Joints at penetrations through walls, decks, and floors by piping, and other service and equipment
3. Joints between items of equipment and other construction
4. Open joints between dissimilar materials as required to close and conceal jointing of the work
5. Construction and expansion joints, joints between dissimilar materials; joints around door frames, and other penetrations and openings in the exterior wall; interior walls as detailed or specified.
6. Other joints as detailed.

1.02 Not Used

1.03 SUBMITTALS

A. Product Data: Submit product data of each material intended for use. Indicate location of application. Submit UL listing data for joint sealant assemblies in fire-resistive construction.

B. Color Samples: Submit color chart for each type of sealant in accordance with Section 01 30 00.

C. Contract Closeout Submittals: Submit warranty specified under Article 1.07.

D. Material Certification:
1. Contractor shall submit certification that all adhesives and sealants used on the interior of the building (defined as inside of the weatherproofing system and applied on site) shall comply with the requirements of the following reference standards:
   a. Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management District (SCAQMD) Rule #1168.
   b. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Application by qualified sealant contractor in business for at least five (5) years prior to this installation, employing skilled tradesmen for the work.

B. Manufacturer's Technical Representative: Obtain materials from manufacturers who will, if required, send a qualified technical representative to project site, for the purpose of advising the installer of proper procedures and precautions for the use of the materials.

1.05 DELIVERY, STORAGE AND HANDLING

Deliver in original, unopened containers and store in an area not subject to extreme heat or cold.

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1.06 JOB CONDITIONS

Environmental Requirements: Do not apply interior sealants when the inside temperature is below 60 degrees F.

1.07 WARRANTY

Furnish a two (2) year warranty in writing to replace joint sealant that fails during the warranty period at no cost to the Owner. Submit two (2) copies of written warranty agreeing to repair or replace sealants which fail to perform as air-tight joints; or which fail in joint adhesion, cohesion, abrasion resistance, extrusion resistance, migration resistance, stain resistance, or general durability; or which appear to deteriorate in any other manner not clearly specified as an inherent quality of the material by submitted manufacturer's data.

PART 2 - PRODUCTS

2.01 NON-RATED JOINT BACKING MATERIAL

A. Non-Fire Rated: Size joint backing material for minimum 30% compression when inserted in the joint. Material shall be round rod or semi-circular type.

B. Acceptable Manufacturers and Type:
1. Dow Chemical Company, Ethafoam
2. Sonneborn, Sonofoam
3. Backer Rod Manufacturing, Inc., Denver Foam
4. or approved substitute

2.02 Not Used

2.03 JOINT SEALANTS

A. Acceptable Manufacturers:
1. DAP Incorporated
2. Parr, Inc.
3. Pecora Corporation
4. Sonneborn Building Products
5. Tremco Manufacturing Company
6. W. R. Grace and Company
7. Mameco International
8. Sika Corporation
9. Bostick
10. or approved substitute

B. Acceptable Materials:
1. Primer: As recommended by the sealant manufacturer.
2. Interior Sealants: Latex acrylic.
3. Control Joints and Expansion Joints in Interior Floor Slabs and Slabs on Grade: Two component pourable self-leveling polyurethane.
4. All Remaining Joint Sealants: Two-component polyurethane, Type II, Class A, nonsag

2.04 BOND BREAKER TAPE

Polyethylene tape or other plastic tape as recommended by the sealant manufacturer to be applied to sealant-contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.

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PART 3 - EXECUTION

3.01 EXAMINATION

Verification of Conditions: Applicator shall be responsible for inspecting work prior to application of work under this Section. If joint or space to receive work is not according to detail and cannot be put into proper condition to receive the work by specified methods, notify the Contractor in writing, or assume responsibility for and correct any unsatisfactory caulking and sealing resulting.

3.02 PREPARATION

A. Preparation of Surfaces: Clean surfaces in accordance with joint sealant manufacturer's recommendations. Remove dirt, incompatible coatings, moisture, and other substances that would interfere with bond of sealant. Mask edges, if required, to protect adjoining surfaces and produce a straight finish line.

B. Do not proceed with installation of sealant over joint surfaces which have been painted, lacquered, waterproofed, or treated with water repellent or other treatment or coating. Remove coating or treatment joint surfaces before installing sealant.

C. Priming: If required, prime surfaces that are to be sealed with manufacturer's recommended or standard primer, after the surfaces have been prepared as specified. Before use, check primers for discoloration and dirt pick-up on adjacent surfaces. If staining occurs, after exposure, take adequate measures to prevent the primer from being applied over the face of adjacent porous materials by masking or other suitable measures.

D. Joint Backing: Joints which are to be sealed shall be of depth necessary to provide for the specified allowable thickness of sealant and the required backing where indicated and required by sealant manufacturer for fire-rated joint assemblies. Backing shall be type as specified and recognized for the allowable depth of the sealant. Size and shape of the backing shall be as required by the width of the joint and/or specified.

E. Compress non-rated joint backing material a minimum of 30% when inserted in the joint. Backing material for the upper portion of joints shall be a round rod or semi-circular in cross-section with the arc in contact with the sealant. Insert fire-rated joint backing material in accordance with UL listed system description.

F. Install bond breaker tape wherever required by joint sealant manufacturer's recommendations to ensure that elastomeric sealants will perform properly.

3.03 APPLICATION

A. Sealant Joints: Apply sealants in continuous beads without open joints, voids, or air pockets, using a ratchet hand gun or mechanical powered gun. Confine sealants to joint areas with masking tapes or other precautions. Apply compounds in concealed compression joints accurately so that excess compound will not extrude from joints. Remove excess compound or sealant promptly as work progresses, and clean adjoining surfaces.

B. In rough surfaces or joints of uneven widths, install sealant well back into joint. Recess equal to width of joint, or 3/8" minimum at non-rated joints in masonry. Use anti-tack agent where necessary to protect freshly-applied sealant from public traffic and dirt.

C. Joints shall be slightly recessed as to facilitate a painter's line. Joints throughout construction shall be handtooled and finished. Work shall be done according to joint sealant manufacturer's printed instructions and specifications.

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D. Interior Floor Slabs: Apply sealant at joints between interior floor slab and foundation. Pour joints full but do not over fill.

E. Joints at Penetrations Through Walls and Floors: Apply bead of sealant around piping, conduit, sleeving, and other penetrations through walls and floors. Install backing material as required to fully pack opening around penetration and apply sealant to specified thickness. Completely seal all joints of any penetration through sound isolation walls. Include perimeter joints and elements penetrating only one face of the sound wall.

F. Workmanship: Employ only proven installation techniques, which will ensure that sealants will be deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of the joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

G. Joint Sizes: Install sealants to depths as recommended by the sealant manufacturer and within the following general limitations:
   1. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but not more than 1/2" deep or less than 1/4" deep.

H. Spillage: Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces. Use masking tape or other precautionary devices to prevent staining of adjoining surfaces, by either the primer/sealer or the sealant/caulking compound.

I. Remove excess and spillage of compounds promptly as the work progresses. Clean the adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage. Do not damage the adjoining surfaces or finishes.

3.04 FIELD QUALITY CONTROL

Tests: If directed by the Architect, cut out and remove a total of three samples consisting of the undisturbed sealant and back-up material from the joint. Samples shall be 6" in length. Reseal cut-out areas with the same materials.

3.05 CURING, PROTECTING AND CLEANING

A. Cure sealants in compliance with joint sealant manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength, and surface durability.

B. The applicator shall advise the Contractor of procedures required for the protection of sealants and caulking compounds during the construction period, so sealants shall be without deterioration or damage (other than normal weathering) at the time of the acceptance.

C. Protect surfaces from damage. Clean soiled surfaces immediately. Replace with new material any damaged material that cannot be cleaned.

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DIVISION 8 DOOR AND WINDOWS
SECTION 08 11 13 HOLLOW METAL DOORS AND FRAMES

Not for Construction

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes Items Shown on the Drawings and as Specified Including, But Not Limited to, the Following:
   1. Prime Coated Steel Frames

B. Related Sections:
   1. Metal Fabrications: Section 05 50 00
   2. Joint Sealants: Section 07 92 00
   3. Prefinished Wood Doors: Section 08 14 29
   4. Door Hardware: Section 08 71 00
   5. Glazing: Section 08 81 00
   6. Painting: Section 09 91 00

1.02 SUBMITTALS

A. Shop Drawings: Submit shop drawings for items under this section in accordance with Section 01 30 00. Include complete details of each frame type, frame elevations, installation requirements, door hardware preparation and reinforcement requirements, anchorage, and all accessory items.

B. Product Data: Submit complete product data for each type of door and frame specified. Include all detail relating to construction, materials, core, and label compliance.

C. Templates: Hardware templates for hardware mounted on hollow metal work shall be submitted by the hardware supplier directly to the hollow metal manufacturer immediately after approval of the hardware schedule. Failure to receive templates with reasonable promptness shall be reported to the Contractor.

1.03 QUALITY ASSURANCE

A. Steel Frames Must Meet Standards as Established by the Following References:
   1. Door and Hardware Preparation ANSI 115
   2. Life Safety Codes NFPA-1 (Latest Edition)
   3. Fire Doors and Windows NFPA-80 (Latest Edition)
   4. Steel Door Institute ANSI/SDI-100 (Latest Edition)
   5. Steel Door Institute SDI-117 “Manufacturing tolerances standard Steel Doors and Frames”

1.04 DELIVERY, STORAGE AND HANDLING

A. Frames: Frames shall be properly marked.

B. Deliver frames cardboard-wrapped or crated to provide protection during transit and job storage.

C. Inspect frames on delivery for damage. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect; otherwise, remove and replace damaged items as directed.

D. Storage and Protection: Store frames on edge, undercover protected from elements. Store frames in such a position as to prevent twisting. Place units on 4” high wood blocking. Avoid using nonvented plastic or canvas shelters that could contain humidity.

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1.05 JOB CONDITIONS

Installer must examine the conditions under which frames will be installed and notify the Contractor in writing of any condition detrimental to the proper and timely completion of the work.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Acceptable Manufacturers:

1. Amweld Building Products, Inc.
2. Gateway Metal Products
3. Curries Company
4. Pioneer Industries, Inc.
5. North Central Supply, Inc.
6. CECO Door Products
7. Elco Manufacturing, Inc.
8. Rocky Mountain Metals, Inc.
9. Southwestern Hollow Metal
10. Steelcraft Manufacturing Co.
11. or approved substitute

2.02 HOLLOW METAL MATERIALS

A. Materials utilized for hollow metal frames to be painted shall be commercial quality, level, cold-rolled steel conforming to ASTM A366 or hot-rolled, pickled, and oiled steel conforming to ASTM A569. Materials shall be free of scale, pitting, or surface defects. Gauge of steel as indicated in following articles.

2.03 HOLLOW METAL FRAMES

A. Frames for wood doors, borrowed lights and steel window walls, etc., indicated on the schedule or drawings to be steel shall be of design sections as detailed and assembled as specified below. Frames shall be pre-assembled in factory to the greatest extent possible allowing for shipping limitations.

B. Frames in interior walls shall be 16 gauge steel, unless otherwise noted. Interior frames over 48” wide shall be fabricated from 14 gauge steel.

C. Construction:

1. Construct frames encompassing one or more doors with sidelights or transoms, and steel window walls, etc., in rigid units of a large size as practical to reduce to a minimum the number of joints. Corners shall be mitered and continuously welded. All horizontal and vertical intersections, corners, joints, and connections which are exposed to weather shall be fully (continuously) welded, ground and finished smooth for the entire length of weather-exposed joint. Face only welds are only acceptable at interior conditions. The entire assembly shall be reinforced and braced as required to ensure absolute rigidity. Provide channel stiffening within and securely welded to frame member.
2. Provide thermal expansion joints as indicated or as required for specific assemblies.

D. Joints and intersections exposed to weather shall be watertight. Caulk or fillers will not be accepted. Conceal welded joints in two-sided mullions or similar sections behind glazing stops.

E. Machine frames for attachment of hardware, including mortising, reinforcing, drilling and tapping for hinges. Top hinge shall have 7 gauge, full throat reinforcement.

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F. Furnish anchors of type and number required for anchoring frames to structure, partitions, etc., as follows (wire anchors will not be allowed):
   3 jamb anchors, plus one floor anchor, on jambs up to and including 7'-0" high
   1 floor anchor on each jamb at metal stud partitions

G. Provide such installation instructions as are necessary to ensure proper installation of anchors.

H. Drill stop of lock jamb of each interior frame for installation of rubber door silencers where required under Section 08 71 00.

I. Provide removable metal glazing stops, screwed to frame, at borrowed lights and window walls as described in Article 2.05. Unless otherwise indicated, glazing stops shall be located on the ramp side of interior frames. See Section 08 81 00 for glazing clearance requirements.

J. Reinforce frames to receive surface mounted hardware. Provide top hinge, 7 gauge full width reinforcement, for doors up to 36" in width.

2.04 GLAZING STOPS

A. Glazing stops for hollow metal frames shall be 5/8" x 5/8" or 3/4" x 3/4" 20 gauge, cold-rolled channel, shaped as required or detailed and hand fitted to each opening. Removable stop shall be tightly fitted with butt joints secured with screws, 1'-6" on center, oval head, countersunk; provide zinc-plated screws at exterior frames.

2.05 MISCELLANEOUS ITEMS

Provide closures, sub-sills, transom panels, fillers, etc., indicated on drawings. Gauges, materials, and construction shall match door and frame.

2.06 HOLLOW METAL FINISH

Thoroughly clean hollow metal surfaces to be painted of grease, rust and scale. Chemically treat surfaces to ensure paint adherence. Apply filler to doors and frames where required to produce a smooth surface prior to application of primer. Apply one coat of manufacturer's standard rust-inhibitive primer. Allow primer to fully cure prior to shipment.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Frames:
   1. Set steel frames accurately in accordance with details, straight and free of twist with head level and jambs plumb. Rigidly anchor to walls and partitions and securely brace until surrounding work is completed. Provide deflection clearances at frame heads where indicated.
   2. Wherever possible leave spreader bars in place until frames are securely anchored.
   3. Weld all field joints and intersections at jobsite as described in Article 2.03.

B. Miscellaneous Items: Install closures, fillers, etc., as indicated.

C. Sand smooth and repair any rusted or damaged paint prime coat areas. Apply compatible air drying paint primer to affected area.

3.02 ADJUSTING

At completion of job adjust as required and leave in proper operating condition.

3.03 JOB FINISH

Paint hollow metal frames and glazing stops in accordance with Section 09 91 00.

END OF SECTION

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SECTION 08 14 29 PREFINISHED WOOD DOORS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Factory Finished Non-Rated Wood Doors
2. Factory Glazed Vision Lights in Doors

B. Related Sections:
1. Glazing: Section 08 81 00
2. Hardware: Section 08 71 00
3. Steel Doors and Frames: Section 08 11 13

1.02 REFERENCES

A. Architectural Woodwork Quality Standards, latest Edition, as published by the Architectural Woodwork Institute (AWI).

B. ANSI / WDMA I.S.1A-97 standard for Architectural Wood Flush Doors.

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings and product data for wood doors in accordance with Section 01 30 00.

B. Quality Control Submittals: Hardware templates for hardware mounted on wood doors shall be submitted by the hardware supplier directly to the wood door manufacturer immediately after approval of the hardware schedule. Failure to receive templates with reasonable promptness shall be reported to the Contractor. Wood doors shall be pre-fit and pre-machined for hardware.

C. Samples: Submit actual samples of available colors of factory finished wood doors for selection by Architect.

D. Contract Closeout Submittals: Submit door warranty as specified in Article 1.06.

1.04 QUALITY ASSURANCE

A. Reference Standards: Wood doors shall comply with AWI Quality Standard Section 1300, Custom Grade. Factory finish of wood doors shall meet the performance standards of AWI Quality Standard Section 1500, Custom Grade.

1.05 DELIVERY, STORAGE AND HANDLING

A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's written instructions.
1. Doors shall be delivered in manufacturer's standard packaging. Inspect for damage upon receipt.
2. Comply with manufacturers requirements for delivery, storage, and handling of doors.

B. Mark each door with individual opening numbers used on Shop Drawings. Use removeable tags or concealed markings.

C. Storage: Stack doors flat and off the floor. Do not drag doors across one another.

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1.06 WARRANTY

A. General Warranty: Door manufacturer's warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Prefinished wood doors shall be warranted for the life of the installation to include reasonable cost of rehanging. Doors that are replaced during the one (1) year warranty period shall be rehung by the Contractor. After the building warranty has expired, replacement doors shall be furnished and installed by the door manufacturer. Submitt warranty on door manufacturer's standard form signed by the Manufacturer, Installer and Contractor.

C. Doors shall be repaired or replaced which have warped (bow, cup, or twist) more than ¼" in a 36" x 84" section or that show telegraphing of core construction in the face veneers exdeeding 0.01" in a 3" span or do not comply with tolerances in referenced quality standard.

PART 2 - PRODUCTS

2.01 DOOR MANUFACTURERS

Acceptable Manufacturers:

1. Algoma Hardwoods, Inc.
2. Marshfield Door Systems, Inc.
3. Eggers Industries
4. V.T. Industries, Inc.
5. Oshkosh Architectural Door Co,
6. or approved substitute

2.02 NON-RATED SOLID CORE WOOD DOORS

A. Manufacturer and Type:
   1. Marshfield Signature Series DPC-1 with Particle Board Core
   2. or equivalent of other acceptable manufacturer

B. General: Non-rated wood doors shall be 1-3/4" thick, solid core construction with rails and stiles bonded to the core. Width and height as indicated in the Door Schedule. Doors shall be 5 ply construction conforming to AWI Section 1300 with cross banding and solid particleboard core (PC-5 ME). Manufacture doors with 3/4" undercut to preserve full bottom rail. Doors shall be factory pre-machined for hardware including drilled pilot holes for screws.

C. Veneers and Edge Strips: Door type shall be as indicated on the drawings:
   1. Red Oak: Custom grade, book-matched face veneers of plain sliced Grade A Red Oak with running match assembly both sides. Provide 1-3/8" matching vertical hardwood edges. Veneer to be laminated to core in a hot-press method after core (with bonded rails and stiles) has been planed as a unit.

D. Submit one 8" x 10" sample of veneer-on-substrate illustrating expected range of component finish color and/or grain.

E. General: Provide solid blocking or wide rails at all surface applied hardware, regardless of type of core required.

2.03 Not Used

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2.04 VISION LIGHT GLAZING FRAMES

A. Non-rated Glazing Frames: Marshfield Type W-6 prefinished low-profile (3/8" high) flush style wood frame to match door veneer and color, or equivalent of other acceptable manufacturer. See Door Elevation drawings for sizes.

2.05 FACTORY GLAZING

Glass vision lights and glazing frames shall be factory glazed by the door manufacturer. See Door Elevation drawings for sizes and types of glazing required. Vision lights shall be complete with glazing compound and / or caulking.

2.07 FACTORY FINISH

Wood doors shall receive factory finish of water base stain and ultraviolet (UV) cured polyurethane sealer. Finish shall meet or exceed performance standards of AWI TR-6 catalyzed polyurethane finish system, custom grade. System shall include initial wash coat of reduced sealer, transparent stain (color as selected by Architect), vinyl sealer, sanding, and topcoat (satin gloss).

PART 3 - EXECUTION

3.01 EXAMINATION

Before installation, verify that frames are proper size and type for the door and are installed as required for proper installation of doors.

3.02 INSTALLATION

A. Installation shall be by skilled finish carpenters or factory authorized installers in accordance with AWI Quality Standards and NFPA 80 Standards. Tolerances shall meet requirements of AWI Section 1300. Installation of factory finished wood doors shall not occur until just prior to substantial completion to avoid damage to door panels by adjacent construction operations.

B. Hang doors to be free of binding with all hardware functioning properly.

C. Installer shall be thoroughly familiar with the door manufacturer's warranty requirements and assure compliance with all provisions.

D. Touch up and repair factory finishes in accordance with door manufacturer's recommendations using approved materials and methods.

END OF SECTION

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SECTION 08 71 00 DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same sections as the doors and door frames on which they are installed.

B. Hardware specified herein is to cover all necessary material required to fully complete the hardware requirements of specified openings. It is the intention that the hardware specified shall be of sufficient quantities necessary to complete the Work. Notify the Architect of omissions or discrepancies prior to bid date for clarifications or instructions. Adjustments to the Contract Sum will not be allowed for omissions not clarified prior to bid opening.

C. Section Includes:
1. Hinges
2. Key control system
3. Lock cylinders and keys
4. Lock and latch sets
5. Closers
6. Miscellaneous door control devices
7. Door trim units
8. Protection Plates

D. Related Sections:
1. Glazing: Section 08 81 00
2. Prefinshed Wood Doors: Section 08 14 29
3. Steel Doors and Frames: Section 08 11 13

1.02 SUBMITTALS

A. Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.

B. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:
   a) Vertical format, horizontal format will not be reviewed and will be returned marked "not approved".
   b) Type, style, function, size, and finish of each hardware item.
   c) Maximum allowable degree of swing and door handing.
   d) Fire rating.
   e) Name and manufacturer of each item with catalog data sheets.
   f) Fastenings and other pertinent information.
   g) Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
   h) Explanation of all abbreviations, symbols, and codes contained in schedule.
   i) Mounting locations for hardware.
   j) Door and frame sizes and materials.
2. Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

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C. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

D. Furnish three, (3), copies of maintenance manuals for each different hardware item, including operation and maintenance instructions, parts listing with sources indicated; recommended parts inventory listing, emergency instructions, and similar information. Include all diagnostic and repair information available to manufactures and installers maintenance personnel. Submit for Owners information at Project closeout as specified in Division 1.

1.03 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer.

B. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced architectural hardware consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

C. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

1.04 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware schedule, and include basic installation instructions with each item or package.

B. Packaging of door hardware is responsibility of supplier. As hardware supplier from various manufacturers receives material, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

C. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.

D. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

E. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.05 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware. Present special tools and maintenance instructions to Owner at time of testing and demonstration interval.

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B. Manufacturers' representatives of lock, cylinders, exit devices and door closers shall conduct two 8 hour training sessions for Owner personnel in the servicing and maintenance of hardware items.

C. General Warranty: Warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

D. Provide the following special hardware warranty for the following items:
   1. Locksets 7 years.
   2. Door Closers 10 years.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include the following:
   1. Butts and Hinges:
      a) Ives Hinge: 5BB1 5BB1HW.
      b) Stanley Hinge: FBB179 FBB168.
      c) McKinney Hinge: TA2714 T4A3786.
   2. Key Control System:
      a) Incorporate with existing Schlage Lock keying system.
   3. Door Closers and Magnetic Holders:
      a) LCN: 4040XP EDA Series.
   4. Door Trim Units:
      a) Ives: WS407CVX FS436/FS438 FS441/442.

2.02 SCHEDULED HARDWARE

A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the "Hardware Schedule" at the end of this Section. Products are identified by using hardware designation numbers of the following:
   1. Manufacturer's Product Designations: The product designation and name of one manufacturer are listed for each hardware type required for the purpose of establishing minimum requirements. Provide either the product designated or, where more than one manufacturer is specified under the Article "Manufacturers" in Part 2 for each hardware type, the comparable product of one of the other manufacturers that complies with requirements.

2.03 MATERIALS AND FABRICATION

A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.
   1. Manufacturer's identification will be permitted on rim of lock cylinders only.

B. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

C. Base Metals: Produce hardware units of basic metal and forming method indicated using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of

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lesser (commercially recognized) quality than specified for applicable hardware units for finish designations indicated.

D. Fasteners: Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

E. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.

F. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.04 HINGES, BUTTS, AND PIVOTS

A. Hinges shall be certified to exceed two million, five hundred thousand, 2,500,000, full load-operating cycles by a recognized independent testing laboratory. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames provide only template-produced units.

B. Screws: Provide Phillips flat-head screws complying with the following requirements:
   1. For metal doors and frames install machine screws into drilled and tapped holes.
   2. For wood doors and frames install wood screws.
   3. For fire-rated wood doors install #12 x 1-1/4-inch, threaded-to-the-head steel wood screws.
   4. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   1. Out-Swing Doors with Locks: Nonremovable pins.
   2. Interior Doors: Nonrising pins.
   3. Tips: Flat button and matching plug, finished to match leaves.
   4. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges for door leaf for doors 90 inches or less in height and one additional hinge for each 30 inches of additional height. Unless otherwise specified, hinge size for doors through 3'-0" shall be 4-1/2 inches x 4-1/2 inches.
   5. Hinges for doors over 3'-0" wide shall be four ball bearing, heavy weight, 0.190 gage.
   6. Fire-Rated Doors: Not less than 3 hinges per door leaf for doors 86 inches or less in height with same rule for additional hinges.

D. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include:

1.	Ives Hinge:	5BB1	5BB1HW.
2.	McKinney Hinge:	TA2714	T4A3786.
3.	Stanley Hinge:	FBB179	FBB168.

2.05 KEYING SYSTEMS

A. Meet with the Architect and Owner to finalize keying requirements and obtain keying instructions in writing. Incorporate new keying system with Schlage Lock keying system.

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B. Furnish temporary interchangeable core construction keying system during construction period.
   1. Owner shall install permanent keyed cores and return temporary interchangeable construction cores to hardware supplier.
   2. Owner shall provide master keying pin combinations.
   3. Permanent Cores: Keying shall be performed by Lock manufacturer. Finish face to match lockset; small format interchangeable cores

C. Cylinders shall be keyed and combinated in sets or subsets, masterkeyed or great grandmaster keyed as directed by Owner. Keys and cylinders shall be stamped with the applicable key mark for identification. Permanent keys will also be embossed "Do Not Duplicate". Stamp permanent keys in sequence. Key identification stamping to be approved by Architect and Owner. Stamp keys with serialized numbering; numbering to be approved by Architect and Owner. Failure to comply with these requirements may be cause to require replacement of all or any part of the cylinders and keys involved as deemed necessary at no additional cost to the Owner.

D. Key Material: Furnish keys of nickel silver, to maintain security and safety of keying system and accuracy in keys and extended cylinder wear.

E. Do not package permanent keys with locks. Package keys separately from locksets and cores. Deliver all permanent keys, key blanks and other security items direct to Owner from lock manufacturer by secure courier, return receipt requested. Failure to properly comply with these requirements may be cause to require replacement of all or any part of the cylinders and keys involved as deemed necessary at no additional cost to the Owner.

F. Key Quantity: Furnish keys in the following quantities:
   1. 2 each Temporary construction keys to General Contractor.
   2. 2 each Construction control keys to General Contractor.
   3. 2 each Grand Master keys for each grand master used, to Owner.
   4. 2 each Master Keys for each master used, to Owner.
   5. 2 each Permanent Control keys, to Owner.
   6. 3 each Change keys per cylinder to Owner.
   7. 50 Key blanks to Owner.
   8. 1 each Bitting list to Owner.

G. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include:
   1. Incorporate with Schlage Lock Everest Patented/Restricted keying system.

2.06 CLOSERS AND DOOR CONTROL DEVICES

A. Where manual closers are indicated for doors required to be accessible to the physically challenged, provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing. Except as specifically indicated, comply with manufacturer's recommendations for size of door control units, depending upon size of door, exposure to weather, and anticipated frequency of use.

B. Closers shall be cast iron or aluminum construction with forged lever arms, independent adjusting valves for closing, latching and back check. Hydraulic regulation controlled by tamper-proof, non-critical screw valves. All closer adjustments shall be shielded by high impact plastic, cover plate after installation.

C. Furnish extra duty arms, EDA, to protect against excessive force. Provide special templated arms to allow clearance and applications of overhead stops and holders.

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1. Install closers to allow maximum degree of opening, position back check to activate well in advance of the stop position to cushion the opening swing and prevent door and frame damage.

D. Furnish TBWMS fasteners; drill and tap for machine screw/through bolt applications.

E. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include:
   1. LCN: 4040XP EDA Series.

2.07 DOOR STOPS

A. Furnish heavy duty brass, bronze or stainless steel base material, concave or convex wall stops, coincide with lock function, wherever door strikes wall; fasteners to be with machine screws and lead anchors.
   1. Do not mount floor stops where they will impede traffic or present tripping hazard. Install at maximum door swing and out of traffic flow.

B. Provide gray resilient rubber bumpers.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include:
   1. Ives: WS406 FS436/FS438 FS18S.

2.08 HARDWARE FINISHES

A. Match items to the manufacturer's standard color and texture finish for the latch and locksets (or push-pull units if no latch or locksets).

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

D. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.
   1. Oiled Rubbed Bronze: US10B/ANSI 613.
   2. Powder coated bronze finish: ANSI 690.
   3. Thresholds and Weatherseal: Thresholds, mill aluminum finish. Weatherseal, dark anodized bronze finish.

PART 3 - EXECUTION

3.01 EXAMINATION

Examine substrates to which hardware assemblies attach to hollow metal frames, doors and walls, with installer present, for compliance with requirements for installation tolerances, blocking and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Preinstallation conference shall be conducted prior to installation of hardware at Project site. Meet with the, Owner, Contractor, installer, and hardware supplier and manufacturers representatives. Review catalogs, brochures, templates, installation instructions, and the approved hardware schedule. Survey installation procedures and workmanship, with special

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emphasis on unusual conditions, as to ensure correct technique of installation, and coordination with other work. Notify participants at least 10 working days before conference.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations, except as otherwise directed by Architect.
   1. Exit device touch bar height, center line to finished floor 39-13/16-inches at center.
      a) Center exit devices on mid-rail of doors.
   2. Lever locksets height to, centerline to finished floor: 38-inches at center.
   3. Americans with Disabilities Act, ANSI A117.1 Guidelines.

C. Install each hardware item in compliance with the manufacturers written instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

D. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers."

G. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.03 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Manufacturer’s representatives for, locksets, cylinders, exit devices and door closers shall instruct Owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

3.04 HARDWARE SCHEDULE

A. General: Provide hardware for each door to comply with requirements of Section "Door Hardware," hardware set numbers indicated in door schedule, and in the following schedule of hardware sets.

B. Hardware sets indicate quantity, item, manufacturer and product designation, size, and finish or color, as applicable. Notify the Architect of omissions or discrepancies prior to bid date for clarifications or instructions. Adjustments to the Contract Sum will not be allowed for omissions not clarified prior to bid opening.

SPEXTRA: 22030

HW SET: 500
DOOR NUMBER(S): *132A*

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EACH TO HAVE:

3	EA	HW HINGE	5BB1HW 4.5 X 4.5	613	IVE
1	EA	PASSAGE SET	ND10S RHO	613	SCH
1	EA	SURFACE CLOSER	4040XP H	690	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	613	IVE
1	EA	WALL STOP	WS407CVX	613	IVE
3	EA	SILENCER	SR64-1	GRY	IVE

HW SET: 505
DOOR NUMBER(S): *139B*
EACH TO HAVE:

3	EA	HINGE	5BB1 4.5 X 4.5	640	IVE
1	EA	PANIC HARDWARE	98-L-996-17-SNB	313	VON
1	EA	CYLINDER	1E72	613	BES
1	EA	SURFACE CLOSER	4040XP H	690	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW	613	IVE
1	EA	WALL STOP	WS407CVX	613	IVE
1	SET	SEALS	5020B	BRN	NGP
1	EA	DOOR SWEEP	96V	AL	NGP
1	EA	THRESHOLD	896V MS/LA	AL	NGP

HW SET: 900
DOOR NUMBER(S): *115AE*
EACH TO HAVE:

1	EA	STOREROOM LOCK	ND80TD RHO	613	SCH
1	EA	NOTE	REUSE BALANCE OF HARDWARE		B/O

NOTE:
1) OWNER TO RE-KEY EXISTING CORE.

HW SET: 905
DOOR NUMBER(S): *139A*
EACH TO HAVE:

3	EA	GATE HINGE	GATE HINGE BY GATE MFG		B/O
1	EA	LOCK MOUNT	LOCK MOUNTING SHROUD *BY GATE MFG*		B/O
1	EA	STORE RM LOCK	93K7R15D	626	BES
1	EA	LOCK PROTECTOR	LATCH GUARD *BY GATE MFG*		B/O

END OF SECTION

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SECTION 08 81 00 GLAZING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Glass and Glazing
   2. Glazing Materials

B. Products installed but not furnished under this section:
   1. Hollow Metal Window Glazing Stops: Section 08 11 13

C. Related Sections:
   1. Steel Doors and Frames: Section 08 11 13
   2. Prefinished Wood Doors: Section 08 14 29

1.02 REFERENCE STANDARDS

Comply with published standards of Glass Association of North America – Glazing Manual, latest edition, and all applicable manufacturer's recommendations.

1.03 SUBMITTALS

A. Samples: Submit one 12” x 12” sample of each type of glass to Architect with label indicating name of glass manufacturer / supplier.

B. Product Data: Submit product data as specified in Sections 01 30 00, establish specified design and performance characteristics for each type of glass.

C. Contract Closeout Submittals: Submit written warranty specified under Article 1.07.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: UL or Warnock-Hersey Classification is required for fire-rated impact safety glass. In addition, fire-rated impact safety glazing material shall comply with safety glazing requirements of CPSC 16 CFR Part 1201 and be permanently marked as required by local jurisdictions. Impact safety rated glass shall meet CPSC Category II criteria of 400 ft/lbs.

1.05 DELIVERY, STORAGE AND HANDLING

A. Delivery: Schedule delivery to coincide with glazing schedules so minimal handling of glazing is required.

B. Storage: Store glazing according to manufacturer's / supplier's printed instructions. Store in areas least subject to traffic or falling objects. Keep storage area clean and dry. Stack individual glazing panels on edge, leaned slightly against upright supports with separators between each panel.

1.06 PROJECT CONDITIONS

A. Protection: Glass shall be completely covered during spray painting, plastering, or other construction operations that might cause damage to glass.

B. Breakage: Contractor shall be responsible for all glass broken during shipment, storage and installation.

PART 2 - PRODUCTS

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2.01 MATERIALS

A. Manufacturers or Suppliers - Glass:
   1. PPG Industries, Inc.
   2. Viracon, Inc.
   3. Oldcastle Glass
   4. AGC Flat Glass North America
   5. Pilkington North America
   6. Guardian Industries
   7. Northwestern Industries, Inc.
   8. approved substitute

B. Suppliers - Tempered Glass:
   1. PPG Industries, Inc.
   2. Viracon, Inc.
   3. Oldcastle Glass
   4. AGC Flat Glass North, Inc
   5. Pilkington North America
   6. Guardian Industries
   7. Northwestern Industries, Inc.
   8. approved substitute

C. Labels: Every individual piece of glass shall bear a label designating type, thickness and quality. Do not remove labels until observed by Architect.

2.02 GLASS TYPES

Glass types indicated on the drawings shall be one of the following types of glass. Glass thickness indicated below is nominal, performance requirements are minimal.

TYPE	DESCRIPTION
A	1/4" clear.
AT	1/4" clear tempered.

2.03 GLAZING

A. Glazing Tape System: Closed cell, flexible, self-adhered, non-extruding polyvinyl chloride (PVC) foam as recommended by glass manufacturer.

B. Setting Blocks, Shims, and Glazing Clips: Size and type as recommended by glass manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

Before glazing, verify that frames are plumb and square with metal stops set for proper glass-to-stop face clearance. Report frame defects or unsuitable conditions to Contractor before proceeding.

3.02 PREPARATION

Openings shall be field measured before ordering neoprene gaskets or tempered glass products. Contractor shall bear sole responsibility for proper fit of field measured products.

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3.03 INSTALLATION

A. Stops: Glass is to be held in place with metal stops as detailed. Glazing frames or stops will be furnished under other sections of these Specifications. Carefully remove factory set stops already in place as necessary to permit the glazing. Stops shall be handled carefully and properly installed without damage to same.

B. Glazing In Hollow Metal Frames: The opening to be glazed must first be taped to prevent the glass from touching the metal in any direction. Center glass in glazing rabbet to maintain recommended clearances at perimeter on all four sides, inside and out. Rest glass panes on setting blocks as recommended by the glass manufacturer. Install shims or use shim tape as recommended to maintain clearance between stops and face of glass. Install glazing tape. Stop in with metal stops as specified above. Leave sealant smooth and clean. Remove sealant from adjoining surfaces without damaging the finish.

C. Cut glass with smooth, straight edges of full size required by the openings. Edge clearances shall comply with Flat Glass Marketing Association Standards.

D. Allowable Tolerances: Maintain minimum glazing tolerance between glass faces and frame or metal stops as recommended by the Flat Glass Marketing Association. For 1/4" thickness glass, maintain 1/8" clearance between glass face and metal stops.

3.04 CLEANING

Leave glazing in a job-clean condition. Final cleaning shall be done under Section 01 71 00.

END OF SECTION

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SECTION 09 21 00 GYPSUM BOARD PARTITIONS AND WALLS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Gypsum Board
2. Water-Resistant Gypsum Board
3. Partition Framing
4. Acoustical Insulation
5. Abuse-Resistant Gypsum Board
6. Joint Treatment System, Trim, and Accessories

B. Related Sections:
1. Gypsum Board Ceilings: Section 09 21 10
2. Painting: Section 09 91 00
3. Joint Sealants: Section 07 92 00

1.02 REFERENCE STANDARDS

A. Comply with Gypsum Association Documents GA-216 "Recommended Specifications for Application and Finishing of Gypsum Board" and GA-214 “Levels of Gypsum Board Finish”, latest editions.

B. Comply with ASTM Standards referenced within the text of this specification.

1.03 SUBMITTALS

A. Submit copies of manufacturer's product data and specifications with each material component and accessory plainly identified in accordance with Section 01 30 00.

B. Material Certification:
Contractor shall submit certification that materials and products used from this Section have a recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% of the total value (based upon cost).

1.04 QUALITY ASSURANCE

A. Gypsum board partitions and walls shall be identified in the product data submittal as complying with a fire-rated and listed wall assembly system as classified by Underwriters Laboratories, Inc. (UL) or other accredited independent testing laboratory for required fire-rated construction where indicated on drawings.

B. Gypsum Board shall not contain elemental sulfur, and shall have no detectable emissions of hydrogen sulfide.

1.05 DELIVERY, STORAGE AND HANDLING

Store materials in a clean, dry area until ready for use. Store gypsum panels in horizontal (flat) position. Steel framing and related accessories shall be stored and handled in accordance with the AISI “Code of Standard Practice”.

1.06 PROJECT CONDITIONS

During gypsum panel finishing, maintain temperatures within the building within the range of 55 degrees to 70 degrees F. Provide adequate ventilation to carry off excess moisture.

PART 2 - PRODUCTS

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2.01 MATERIALS

A. Acceptable Manufacturers - Gypsum Board:
1. Georgia-Pacific Corporation
2. National Gypsum Company
3. United States Gypsum Company
4. Pabco Gypsum Co.
5. Domitar Gypsum Inc.
6. Eagle Gypsum Products
7. Lousiana-Pacific Corporation
8. American Gypsum
9. or approved substitute

B. Acceptable Manufacturers - Abuse-Resistant Gypsum Board:
1. United States Gypsum Company
2. National Gypsum Company
3. American Gypsum
4. or approved substitute

C. Acceptable Manufacturers - Joint Treatment System, Trim, and Accessories:
1. Any acceptable manufacturer listed above
2. Hamilton Materials, Inc.
3. Clinch-On Products
4. Murco Wall Products
5. or approved substitute

D. Acceptable Manufacturers - Drywall Studs:
1. Any acceptable manufacturer listed above
2. Allied Studco, Inc.
3. CEMCO
4. Dietrich
5. Clark Western Steel Framing
6. or approved substitute

E. Acceptable Systems and Manufacturers - Slip-Track Systems:
1. Shadowline, Fire Trak Corp.
2. No substitutions

2.02 DRYWALL STUDS AND RELATED COMPONENTS

A. Studs:
1. 3-5/8" Studs: In conformance with ASTM C645, 3-5/8" depth, F_y = 33 ksi or greater, M_{xa} = 1.36 in-k or greater.
   a. Where partition height or member span exceeds 11'-0", provide studs with M_{xa} = 2.841 in-k or greater.
   b. Provide double studs (M_{xa} = 2.841 in-k or greater) at both jambs of all partition openings (doors, sidelights, windows, pass-through, etc.) behind wall mounted shelving or cabinets, and behind wall mounted T.V. monitor brackets.
   c. Provide other stud depths where indicated on drawings.
2. 2-1/2" Studs: In conformance with ASTM C645, 3-5/8" depth, F_y = 33 ksi or greater, M_{xa} = 1.087 in-k or greater.
   a. Where partition height or member span exceeds 8'-0", provide studs with M_{xa} = 2.05 in-k or greater.
   b. Provide double studs (M_{xa} = 2.05 in-k or greater) at both jambs of all partition openings (doors, sidelights, windows, pass-through, etc.) behind wall mounted shelving or cabinets,and handrail brackets.
   c. Provide other stud depths where indicated on drawings.

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B. Stud Runners:
   1. 3-5/8": In conformance with ASTM C645, 3-5/8" depth, F_y = 33 ksi or greater and M_{xa} = 1.920 in-k or greater.
   2. 2-1/2": In conformance with ASTM C645, 3-5/8" depth, F_y = 33 ksi or greater and M_{xa} = 0.627 in-k or greater.
      a. Where member span exceeds 8'-0", provide runners with M_{xa} = 1.330 in-k or greater.
   3. Provide runners to accommodate other stud depths where indicated on drawings.

C. Not Used.

D. Cold-Rolled Channels: 1-1/2" depth, steel channels, black asphaltum painted; F_y = 33 ksi or greater and M_{xa} = 1.22 in-k.

E. Furring Channels: In conformance with ASTM C645, 7/8", 25 gauge (0.0188 design thickness), F_y = 33 ksi or greater.

F. Resilient Channels: In conformance with ASTM C645, 1-1/2" depth, 25 gauge (0.0188 design thickness), F_y = 33 ksi or greater resilient furring channels.

G. Stud Fasteners: Type S, #12 pan head screws.

H. Stud Joists: Refer to Section 05400 Cold-Formed Metal Framing.

I. Beam and Column Furring Clips: The Claw as manufactured by Natoma Technologies or approved substitute.

2.03 GYPSUM BOARD AND RELATED MATERIALS

A. Gypsum Board: USG Sheetrock Firecode (Type X) 5/8" thick, 48" wide, tapered edge, 1 hour fire-rated boards; or equivalent of other acceptable manufacturer conforming to ASTM C1396.

B. Water-Resistant Gypsum Board: USG Sheetrock Firecode (Type X) "Mold Tough" Water Resistant (W/R) 5/8" thick, 48" wide, tapered edge, 1 hour fire-rated boards; or equivalent of other acceptable manufacturer conforming to ASTM C1396 and ASTM C473.

C. Drywall Screws: USG Type S or Type S-12 (minimum 1" long) bugle head drywall screws or equivalent of other acceptable manufacturer. Use proper type for gauge of stud or framing. Provide USG Durock steel screw (1-1/4" long) with anti-corrosive coating for cement board applications; or equivalent of other acceptable manufacturer.

D. Edge Trim: USG Beadex Brand No. B4 paper faced metal L -shaped angle edge trim without back flange; or equivalent of other acceptable manufacturer.

E. Joint Treatment System: USG Sheetrock Joint Tape, cross-fiber paper reinforcing tape, with USG Sheetrock All Purpose Joint Compound Ready Mixed; or equivalent of other acceptable manufacturer conforming to ASTM C475.

F. Adhesive: Ohio Sealants, Inc. Formula #38 Adhesive; or equivalent of other acceptable manufacturer.

G. Acoustical Insulation: 3" thickness, unfaced fiberglass batts, widths to fit stud spacing.

H. Control Joints: USG Sheetrock Brand No. 093 roll-formed zinc with tape-protected ¼" joint opening; or equivalent of other acceptable manufacturer.

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I. Corner Bead: USG Beadex Brand Micro Bead paper faced metal outside corner bead; or equivalent of other acceptable manufacturer.

2.04 ABUSE-RESISTANT / MOLD RESISTANT GYPSUM BOARD

National Gypsum Hi-Abuse Brand XP Fire-Shield gypsum board or equivalent of other acceptable manufacturer conforming to the following criteria:

1. 5/8" thick x 48" wide boards with tapered edges.
2. Boards shall have gypsum core wall panel with additives to enhance fire resistance, surface indentation resistance, and impact resistance of the core and surface.
3. Abrasion / moisture / mold / mildew resistant paper on front, back and long edges.
4. Comply with ASTM C1396, Type X.
5. Surface Abrasion Resistance: Not greater than 0.015” depth when tested at 50 cycles in accordance with ASTM D4977, Modified.
6. Indentation Resistance: Not greater than 0.132” depth when tested at an impact load of 72 in.-lbs. in accordance with ASTM D5420.
7. Impact/Penetration Resistance: Not less than 210 ft.-lbs. when tested in accordance with ASTM E695, Modified.
8. Mold and Mildew Resistance: Panel score of 8, when tested in accordance with ASTM D3273.

2.05 COMPRESSIBLE GASKETS

Norton #V-780 1/8” Foam Tape or equivalent of other acceptable manufacturer.

PART 3 - EXECUTION

3.01 ERECTION OF DRYWALL STUD PARTITIONS

A. Align partitions accurately according to partition layout. Anchor runner channels to concrete slabs with concrete stub nails or powder-activated anchors at 24" on center. Anchor runner channels to ceiling where occurs with stove bolts. Install headers where required to receive runners where studs extend above ceiling system.

B. Position studs vertically in runners, spacing studs 16" on center, maximum. Anchor studs to top and bottom runners with stud fasteners. Locate studs no more than 2" from frame jambs, abutting partitions, corners, etc. Anchor studs to frame anchor clips by bolt or screw attachment. Install headers over openings as recommended by the manufacturer.

C. Provide diagonal bracing at head of stud walls that terminate above the ceiling. Bracing shall consist of 1-1/2" cold-rolled channels bent to V shape or studs extending at 45 degrees from partition head to structure above. Locate bracing 4'-0" on center, maximum.

3.02 MISCELLANEOUS FRAMING AND FURRING

A. Provide necessary framing and furring for special framing at recesses, specialty items, etc.

B. Install furring channels over back-up material. Position channels 16" on center vertically or horizontally as indicated. Use powder-activated fasteners or stub nails at 24" on center along alternating flanges. Shim channels plumb as required.

C. Install resilient channels horizontally at 16" on center and screw attach to each support. Provide channel at top and bottom of wall and around all openings.

3.03 INSTALLATION OF GYPSUM BOARD

A. Apply gypsum board panels according to manufacturer's recommendations for fire-resistive construction, if required. Abutting ends and edges of panels shall occur over stud flanges or

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furring. Joints on opposite sides of partitions shall not occur over the same stud. Install bottom of gypsum board panels 5/8" above concrete floors.

B. Apply board to studs or furring with drywall screws spaced 12" on center in the field of the board and 8" on center staggered along abutting edges.

C. Where indicated, apply gypsum board directly to masonry or concrete substrate using adhesive according to manufacturer's instructions.

D. Apply metal edge trim and corner bead according to manufacturer's recommendations at gypsum board edges that are exposed or abut other materials.

E. Finish joints, trim, and fastener dimples as recommended by manufacturer of joint treatment system and sand smooth to provide level of finish as follows:

1. "Level 4" finish surface at all exposed gypsum board partitions and walls. Match texture of adjacent, existing wall surfaces.

F. Install control joints in gypsum board partitions and walls in accordance with referenced Gypsum Association Document GA-216. Runs between control joints shall not exceed 30'-0" on center.

3.04 INSTALLATION OF ABUSE-RESISTANT GYPSUM BOARD
Install boards on the lower 4 feet of all new partitions and stem walls. Install on studs and finish boards in accordance with Article 3.03, and as recommended by manufacturer.

END OF SECTION

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SECTION 09 21 10 GYPSUM BOARD CEILINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Gypsum Board Ceilings

B. Related Sections:
   1. Gypsum Board Partitions and Walls: Section 09 21 00
   2. Acoustical Ceilings: Section 09 51 00
   3. Painting: Section 09 91 00

1.02 REFERENCE STANDARDS

A. Comply with Gypsum Association Documents GA-216 "Recommended Specifications for Application and Finishing of Gypsum Board" and GA-214 “Levels of Gypsum Board Finish”, latest editions.

B. Comply with ASTM Standards referenced within the text of this specification, ASTM C754 for installation of steel framing members and ASTM C840 for the application and finishing of gypsum board.

1.03 SUBMITTALS

A. Submit copies of manufacturer's product data and specifications with each material component and accessory plainly identified in accordance with Section 01 30 00.

B. Material Certification:
Contractor shall submit certification that materials and products used from this Section have a recycled content such that the sum of post-consumer recycled content plus one-half of the pre-consumer content constitutes at least 10% of the total value (based upon cost).

1.04 QUALITY ASSURANCE

A. Gypsum board ceilings shall be identified in the product data submittal as complying with a fire-rated and listed ceiling assembly system as classified by Underwriters Laboratories, Inc. (UL) or other accredited independent testing laboratory for required 1 hour fire-rated construction.

B. Gypsum Board shall not contain elemental sulfur, and shall have no detectable emissions of hydrogen sulfide.

1.05 DELIVERY, STORAGE AND HANDLING

Store materials in a clean, dry area until ready to use. Store gypsum panels in horizontal (flat) position. Steel framing and related accessories shall be stored and handled in accordance with the AISI “Code of Standard Practice”.

1.06 PROJECT CONDITIONS

During gypsum panel finishing maintain temperatures within the building in the range of 55 degrees to 70 degrees F. Provide adequate ventilation to carry off excess moisture.

PART 2 - PRODUCTS

2.01 GYPSUM BOARD AND ACCESSORIES

A. Acceptable Manufacturers:
   1. United States Gypsum Company
   2. National Gypsum Company - Gold Bond
   3. American Gypsum

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4. Georgia-Pacific Corporation
5. James Hardie Gypsum
6. Pabco Gypsum Co.
7. CertainTeed
8. Temple-Inland Gypsum
9. or approved substitute

B Acceptable Manufacturers - Joint Treatment System, Trim, and Accessories:
1. Any acceptable manufacturer listed above
2. Hamilton Materials, Inc.
3. ClarkDietrich building Systems
4. Murco Wall Products
5. or approved substitute

C. Gypsum Board: USG Sheetrock Firecode (Type X) 5/8" thick, 48" wide, tapered edge, 1 hour fire-rated boards; or equivalent of other acceptable manufacturer conforming to ASTM C1396.

D. Fasteners: USG Type S bugle head drywall screws (minimum 1" long) or equivalent of other acceptable manufacturer. Provide USG Durock steel screws (1-1/4" long) with anti-corrosive coating; or equivalent of other acceptable manufacturer at cement board applications.

E. Metal Trim: USG No. 200-B steel L-shaped angle edge trim without back flange; or equivalent of other acceptable manufacturer.

F. Control Joints: USG No. 093 roll-formed zinc with tape-protected 1/4" joint opening or equivalent of other acceptable manufacturer.

G. Joint Treatment: USG Sheetrock Joint Tape, cross-fibered paper reinforcing tape, with USG Sheetrock All Purpose Joint Compound Ready Mixed; or equivalent products of other acceptable manufacturer.

2.02 METAL SUSPENSION SYSTEM AND ACCESSORIES
A. Acceptable Manufacturers and Systems:
1. Chicago Metallic Corporation, Fire Front 670-C System
2. United States Gypsum Company, Rigid X System
3. Armstrong World Industries
4. or approved substitute

B. Suspension System: 24" x 48" grid constructed of twelve (12) foot long heavy-duty galvanized main tee runners with nominal 1 3/8" wide face and 1-1/2" web height and four (4) foot long heavy-duty galvanized cross tees with nominal 1-3/8" wide knurled face and 1-1/2" web height. Edge angles shall be 26 gauge galvanized steel angle with 1-1/8" legs.

C. Hanger Wire: No 9 gauge galvanized wire.

D. Tie Wire: No. 16 gauge galvanized wire.

E. Cold Rolled Channels: 12 gauge painted steel channels, 2" deep with 1-1/8" flanges.

PART 3 - EXECUTION

3.01 SUSPENSION SYSTEM ERECTION
A. Tie two (2) cold rolled channels together and to bottom chord of joist with tie wire at 4'-0" on center in direction of main tee runners.

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B. Suspend main tee runners from cold rolled channels using hanger wires. Locate hanger wires at 4'-0" on center in the direction of main teen runners and at ends of runners, walls, covers, and mid-span of four (4) foot long light fixtures.

C. Main tee runners shall be spaced 4'-0" on center.

D. Install cross tees 2'-0" o.c. at right angles to main tee runners. Lock cross tees into sides of main tee runners. Main tee runners and cross tees shall be straight in alignment and flush at intersections. Install edge angles where grid abuts walls, columns, and other vertical surfaces.

E. Provide additional cross tees at each side of gypsum board end joints and at 8" from end of recessed light fixtures, openings, or cut outs.

3.02 INSTALLATION OF GYPSUM BOARD

A. Install gypsum board board with long dimension parallel and centered on main tee runners. Fasten board to cross tees with screws spaced at 1-1/2" from side joints and 12" on center within field of board. Screws at end joints shall be spaced 1/2" from end of board. Screws in field shall be staggered on alternating sides of cross tee flanges. Fasten board to wall support angle at 12" on center. Stagger ends of boards minimum of 4'-0".

B. Finish joints, trim, and fastener dimples as recommended by manufacturer of tape-joint and finishing system and sand smooth to provide "Level 5" finish surface for ceilings. Match texture of the adjacent gyp bd ceilings and soffits.

C. Control Joints: Install control joints in gypsum board partitions and walls in accordance with referenced Gypsum Association Document GA-216 or as indicated.

D. Perimeter / Edge Detail: Provide specified metal edge trim and caulk joint all around perimeter of suspended ceiling where it abuts wall of differing material.

END OF SECTION

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SECTION 09 51 00 SUSPENDED CEILING SYSTEMS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes: Suspended Ceiling Systems with Lay-in Panels

B. Related Work: Gypsum Board Ceilings: Section 09 21 10

1.02 REFERENCE STANDARDS

Install acoustical materials in accordance with the requirements listed for job conditions in the current Acoustical Materials Association Bulletin. Comply with ASTM Standards referenced within the text of this specification.

1.03 SYSTEM PERFORMANCE REQUIREMENTS

A. Acoustical: 3/4" mineral fiber tapered lay-in panels panels shall have a minimum noise reduction coefficient (NRC) rating of 0.55 in accordance with ASTM C423.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's catalog data indicating systems proposed for installation.

B. Samples: Submit of lay-in panel and ceiling grid meeting the requirements of this Specification.

1.05 DELIVERY, STORAGE AND HANDLING

Deliver in manufacturer's original, unopened packaging and store in a clean, dry area until ready for use.

1.06 MAINTENANCE

Extra Materials: Provide the Owner with a minimum of 10% of lay-in ceiling panel used on the project at the completion of the job.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers - Lay-in Ceiling Panels:
   1. USG

B. Acceptable Manufacturers - Suspended Grid Systems:
   1. USG

2.02 SUSPENDED CEILING SYSTEMS

Suspended Ceiling Systems listed in the finish schedule will be as listed below. Refer to specific paragraphs of this Section for component specifications.

A. SCS-1:
   1. Suspension System: T & T suspension system
   2. Module: 24" x 48"
   3. Fire Rating: None
   4. Lay-In Panels: ¾" USG 651 Shadowline Tapered Edge, White, Aspen.

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2.03 SUSPENSION SYSTEM

A. Commercial quality cold-rolled steel T & T system consisting of the following:
   1. Main tee runners and cross tees shall be nominal 15/16" wide exposed face and 1-1/2" web height. Finish exposed surfaces with factory applied baked enamel, white color. Provide cross tees to form 24" x 48" grid.
   2. Edge molding shall be channel or angle shaped section fabricated of 0.25" thick electro-galvanized cold-rolled steel with factory applied baked enamel, white color.

B. Hanger Wires: No. 12 galvanized steel wire.

C. Tie Wires: No. 18 galvanized steel wire.

D. Cold-Rolled Channels: 16 gauge galvanized steel channels, 1-1/2" deep with 9/16" flanges.

PART 3 - EXECUTION

3.01 INSTALLATION OF SUSPENSION SYSTEM

A. 2' x 4' Grid Suspension System:
   1. Twist-tie and suspend hanger wires from bottom chord of steel joists or cold-rolled channel supports at joist spacing or maximum of 48" on center, whichever is less. Install hanger wires as required to provide a maximum deflection of 1/360 of the span and provide level ceiling within 1/8" in 12'-0". Hanger wires shall be no more than one in six out of plumb unless countersloping wires or horizontal bracing is provided. Suspension hanger wires shall not press against ductwork or piping. Attach main runners to hanger wires. Install main tee runners at 48" on center.
   2. Install additional hanger wires to main runner and cross tees at intersections adjacent to light fixtures or combination damper / diffusers and in acceptance with manufacturer's installation criteria. Coordinate with mechanical subcontractor for specific number of hanger wires required. Suspension system construction shall comply with UL listing for fire-rated assembly provided. Suspension system shall also conform to the installation requirements of ASTM C636.
   3. To complete a 24" x 48" grid, install cross tees 24" on center at right angles to main tee runners. Lock cross tees into sides of main tee runners. Main tee runners and cross tees shall be straight in alignment and flush at intersections. Install metal edge molding wherever the grid abuts walls, columns, and other vertical surfaces. Frame around openings. Main tee runner and metal edge molding pieces shall not be less than 24" long when spliced in a straight run.

B. Reflected Ceiling Plan: Attention is directed to the reflected ceiling plan drawings which shall be followed for the layout of the suspension grid. Any deviation from this drawing must be approved by the Architect.

3.02 INSTALLATION OF LAY-IN PANELS

Install panels in accordance with manufacturer's instructions. Where required, cut units to fit. Install lay-in panels flush in grid. Panels shall be lying flat within grid system.

3.03 FINAL APPEARANCE

On completion, panels and grid shall be clean and free from defects. Remove and replace dirty, defaced, scarred, or otherwise defective panels and grid. Touch up of scarred panels will not be acceptable.

END OF SECTION

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SECTION 09 65 00 RESILIENT FLOORING

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Rubber Base
   2. Vinyl Stair Nosing

B. Related Sections:
   1. Carpeting: Section 09 68 00

1.02 SUBMITTALS

A. Samples: Submit to the Architect a Base and Nosing sample scheduled to be used for the project.

B. Contract Closeout Submittals: Submit in accordance with Section 01 73 00. Submit specified warranties and manufacturer's maintenance instructions for each type of resilient flooring specified. Include recommended cleaning methods, materials, and frequency.

C. Material Certification:
   1. Contractor shall submit certification that all adhesives and sealants used on the interior of the building (defined as inside of the weatherproofing system and applied on site) shall comply with the requirements of the following reference standards:
      a. Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management District (SCAQMD) Rule #1168.
      b. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000.

1.03 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the site in unopened containers and store protected in accordance with the manufacturer's directions and recommendations. Unless otherwise directed, store materials in original containers at not less than 70 degrees F. for not less than 24 hours immediately before installation.

1.04 PROJECT CONDITIONS

A. Maintain temperature in space to receive resilient flooring between 70 degrees F. and 90 degrees F. for not less than 24 hours before and 48 hours after installation. Following 48 hour period, maintain minimum temperature of 55 degrees F. until completion of project.

B. Verification of Conditions: Examine and test substrate for excessive moisture content (using Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride - ASTM F1869) and unevenness which would prevent execution and quality of flooring installation as specified. Submit copies of moisture test results conducted on concrete floor slabs to Architect.

1.05 WARRANTY

A. Resilient flooring installer shall provide a written statement, in accordance with Section 01 73 00, that the installation is warranted for one (1) year and that he will, upon demand, repair or replace any resilient flooring that does not adhere properly and will correct any condition due to faulty installation during the warranty period. The warranty period shall commence at the Date of Substantial Completion.

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B. Provide one (1) year warranty from each flooring product manufacturer, commencing from the Date of Substantial Completion, agreeing to repair or replace the resilient flooring systems used on the project (including finish materials and adhesives) if system fails to perform (i.e., loss of adhesion, cupping, cracking, separation of joints, displacement, etc.) due to failure of materials, including without limitation, failure of adhesives.

1.06 MAINTENANCE

A. Extra Materials: Provide the Owner, at the completion of the project, the following items:
   1. Rubber base and nosing in the amount of 10% of each color and type used
   2. One gallon of each type of adhesive used

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers - Rubber Base and Vinyl Stair Nosing:
   1. Johnsonite
   2. or approved substitute

2.02 RUBBER BASE

1/8" thick rubber base, 4" high. # 40 Black as Manufacturered by Johnsonite. Roll Goods. Provide base with top and toe cove at resilient flooring; provide top cove straight base at carpeting. Factory-formed external and internal corners are not allowed.

2.03 VIINYL STAIR NOSING

Style VIRCN-XX-A Visually Impaired Recessed Vinyl Stair Nosing As manufacturered by Johnsonite. Black. 2” square nose configuration, 3 1/8” tread depth withy 2” wide contrasting color strip undercut for carpet.

2.04 ADHESIVE

Provide adhesives required by the manufacturer of the material being installed to achieve specified warranty requirements. Adhesive for vinyl stair nosing and rubber base shall be a type not affected by heat. Clear spread adhesives are not permitted.

PART 3 - EXECUTION

3.01 EXAMINATION

Do not proceed with installation until unacceptable conditions have been corrected. Commencement of installation by the Contractor indicates acceptance of the moisture content and finish.

3.02 PREPARATION

A. Surface Preparation: Level uneven irregularities by filling with latex compound. Sand leveled areas to provide a completely level surface.

3.03 APPLICATION OF ADHESIVES

A. Mix and apply adhesives in accordance with manufacturer's instructions. Provide safety precautions during mixing and applications as recommended by adhesive manufacturer. Apply uniformly over surfaces.

B. Cover only that amount of area that can be covered within the recommended working time of the adhesive.

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C. Remove any adhesive that dries or films over. Do not soil walls, bases, or adjacent areas with adhesives. Promptly remove any spillage.

D. Apply adhesives with notched trowel or other suitable tool. Clean trowel and rework notches as necessary to ensure proper application of adhesive.

3.05 INSTALLATION

A. Complete installation of materials in strict accordance with the recommendations and specifications of the manufacturer. Make joints straight, tight and flush.

B. Rubber base shall be tightly cemented to wall with butt joints 1/16" or less in width. Install continuously around outside and inside corners with joints a minimum of 24" away from corners on both sides. Preformed corners are not allowed.

C. Install vinyl stair nosing per manufacturers instructions for the specified substrate.

3.06 CLEANING

A. Upon completion, remove loose, cracked, chipped, stained, or otherwise defective base and replace in a satisfactory manner. Clean surfaces using only cleaners approved by the product manufacturer. Remove mastic cement from adjoining work with particular care to not damage such work.

3.07 PROTECTION

Protect finished work from damage by subsequent construction operations.

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SECTION 09 68 00 CARPETING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Modular Carpet - Purchased and Installed by the Contractor.
2. Carpet Accessories

1.02 CARPET PROCUREMENT

Contractor shall purchase carpet using the contract pricing already established through the University of Colorado Procurement Service Center (PSC) Educational & Institutional Cooperative Purchasing (E&I) system. Contract numbers are noted in Article 2.01

1.03 SYSTEM DESCRIPTION

Performance Requirements: Carpeting shall meet the minimum requirements of the following Flame Retardant Tests. Test results shall be provided for each type carpeting provided.

Flame Resistance (Pill Test):	Passes (CPSC FF-1-70 - ASTM D2859)
Smoke Density:	Less than 450 (ASTM E662)
Flooring Radiant Panel:	Class 1 (ASTM E648)

1.04 SUBMITTALS

A. Product Data: Submit complete specifications for carpet. Submit manufacturer's written recommended installation procedures for carpet. Include product data of manufacturer recommended adhesives.

B. Samples: Submit 18" x 18" size sample of carpet type specified for Architect's selection.

C. Quality Control Submittals: Submit test results in accordance with Articles 1.02 and 3.01.

D. Contract Closeout Submittals:
1. Maintenance Data: Submit carpet manufacturer's recommended maintenance program written specifically for this project in accordance with Section 01 73 00.
2. Warranty: Submit manufacturer and installation warranties specified in Article 1.07.

1.05 QUALITY ASSURANCE

A. Carpet installer must have a minimum of five (5) years experience on installations of similar size and complexity. The installation crew must be fully qualified to install the type of carpet to be furnished.

B. Carpet materials shall be from a single dye lot. Variations in color or texture shall be grounds for rejection and replacement with new acceptable material at no cost to the Owner.

1.06 DELIVERY, STORAGE AND HANDLING

Deliver carpet in original cartons with each carton having register number tags attached or register number stenciled on bale and intact. Store under cover in well-ventilated spaces as soon as delivered. Protect from damage, dirt, stains, and moisture. Protect adhesive and accessories in original unopened containers. Protect adhesives from freezing.

1.07 PROJECT CONDITIONS

A. Existing Conditions: Carefully check dimensions and other conditions and be responsible for proper fitting of carpet in areas designated.

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B. Verification of Conditions: Examine and test substrate for excessive moisture content (using Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride - ASTM F1869) and unevenness which would prevent execution and quality of carpet installation as specified. Submit copies of moisture test results conducted on concrete floor slabs to Architect.

1.08 WARRANTY

A. Provide Manufacturer's lifetime warranty against flaws in material or manufacture. Warranty shall provide for carpet replacement if excessive wear occurs within the ten year period. Excessive wear is defined as greater than 10% loss of face weight.

B. Contractor shall provide written warranty which agrees to repair or replace defective materials and workmanship of carpeting work, including specified tuft bind, any loss of adhesion to the sub-floor, and any frayed, open, or raveled seams. In addition, to replace and reinstall any carpet which does not provide an acceptable, wrinkle-free appearance, and to correct any condition due to faulty installation which may appear within two years of the date of final acceptance of the project.

1.09 MAINTENANCE

Extra Materials: Provide the Owner with a minimum of 10% of carpet tile used on the project at the completion of the job.

PART 2 – PRODUCTS

2.01 CARPET (CPT-1)

A. Acceptable Carpets:
   1. a. Manufacturer: Interface
      a. Style: 1380102500 CUBIC 18Z
      b. Color: 4292 * AREA
      c. E&I Contract #CNR01308
      d. Factory applied pressure sensitive peel and stick releasable adhesive system.
   2. No Substitutes

2.02 INSTALLATION

Carpet manufacturer's factory applied adhesive system shall be capable of withstanding three (3) pounds of moisture emanating from concrete slab per thousand square feet area during a 24-hour period.

2.03 RUBBER BASE and VINYL STAIR NOSING

As specified in Section 09 65 00.

2.04 LATEX UNDERLAYMENT COMPOUND

As approved by carpet manufacturer, compatible with adhesive to be used for installation of carpet.

2.05 CONCRETE SLAB-ON-GRADE SEALER

A. Refer to Section 03 39 00.

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PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Examine substrate for excessive moisture content and unevenness that would prevent execution and quality of carpet installation as specified. Submit copies of moisture test results conducted on concrete floor slabs to Architect.

B. Do not proceed with installation of carpet until unacceptable conditions have been corrected. Commencement of installation of the carpet by the Contractor incicates acceptance of the moisture content and finish of the concrete floor.

3.02 APPLICATION OF CONCRETE SEALER

A. Refer to Section 03 39 00.

3.03 PREPARATION

A. Level uneven floor joints or other irregularities in substrate by filling with latex underlayment compound. Sand leveled areas to provide a completely level surface. Any required grinding or chipping of concrete shall be at the expense of the Contractor. Remove rough spots and foreign matter which may be evident through the carpet.

B. Thoroughly clean and damp mop concrete floor slabs and allow to dry before installing carpet

3.04 INSTALLATION

A. The modular carpet shall be laid out in a “quarter turn” pattern. Verify with architect prior to installation.

B. Follow recommended procedures for installation furnished by the manufacturer. Unsatisfactory installation resulting from work performed shall be rejected and shall result in the removal and reinstallation of carpet at the expense of the installer.

3.05 CLEANING

A. After installation is complete, clean up dirt and debris, remove spots, and clean carpet with cleaning agents recommended by the manufacturer. Remove loose threads with sharp scissors. Clean carpet with vacuum cleaner.

B. Remove rubbish, wrapping paper, and scrap material from the job site. Leave excess pieces of usable carpet with the Owner for future use.

3.06 PROTECTION

Following cleaning of carpet, completely cover carpet with heavy protective paper or polyethylene sheeting. Leave protective covering in place until work in area is completed and permission for removal is granted by Architect.

END OF SECTION

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SECTION 09 91 00 PAINTING

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Exterior surfaces of metal not specifically excluded shall be painted. Interior surfaces not specifically excluded shall be painted or natural finished. Refer to Room Finish Schedule.

B. Work Not Requiring Painting or Finishing: In addition to material obviously not requiring paint such as glass, flooring, etc., the following surfaces shall not be painted:
1. Surfaces indicated by the finish schedule to remain unfinished
2. Factory finished surfaces except those indicated in Article 3.07.

C. Related Sections:
1. Metal Fabrications: Section 05 50 00
2. Finish Carpentry: Section 06 20 00
3. Steel Doors and Frames: Section 08 11 13
4. Prefinished Wood Doors: Section 08 14 29

1.02 SUBMITTALS

A. Samples: Make paint and stain samples as requested by the Architect. Remake samples as necessary until all color samples are approved. Approval is for color only.

B. Color Schedule: For this project the paint colors shall match the adjacent field or accent wall/ ceiling /soffit colors. Hollowmetal and metal fabrications shall match adjacent paint colors for hollow metal / metal fabrications. Paint colors may be subject to minor alterations prior to application of final coat; no final coat shall be applied until authorized by the Architect. Stain colors shall match adjacent exisiting stained wood colors.

C. Quality Control Submittals:
1. Submit a letter to the Architect listing the brand ,quality and technical specification of each different material intended for use on the project. Materials shall be cross referenced to coating systems specified in Articles 3.04 and 3.05. Materials shall be approved by the Architect before ordering.

D. Material Certification:
Contractor shall submit certification that paints and coatings used on the interior of the building (defined as inside of the weatherproofing system and applied on site) shall comply with the following criteria:
1. Architectural paints, coatings and primers applied to interior walls and ceilings: Do not exceed the VOC content limits established in Green Seal Standard GS-11, Paints, First Edition, May 20, 1993.
2. Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates: Do not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, “Anti-Corrosive Paints, Second Edition, January 7, 1997.
3. Clear wood finishes, stains, and shellacs applied to interior elements: Do not exceeed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 113, Architectural coatings, rules in effect on January 1, 2004.

1.03 DELIVERY, STORAGE AND HANDLING

A. Deliver materials required for painting in unbroken packages bearing the brand and name of manufacturer. Order materials sufficiently in advance to be on the job when needed and deliver at the building in sufficient quantities so the work will not be delayed. No claim by the Contractor concerning unsuitability of any material specified or his inability to produce first-class work with the same, will be entertained.

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B. Storage and Mixing: A room or space will be assigned in which to mix or store painting materials. No empty containers of any sort or description bearing the name or brand of any manufacturer shall be brought upon the premises for mixing of paint unless labels are canceled and containers are closely marked as to contents. The paint storage area shall be open for periodic observation by the Architect to verify only approved materials are being used.

1.04 PROJECT CONDITIONS

A. Environmental Requirements: Ensure that all surfaces to be painted are absolutely dry. In no case will exterior painting be allowed while dust is blowing.

B. Existing Conditions: Spaces must be clean before interior painting is started. Do not paint in rooms or spaces where rubbish has accumulated or while rubbish is being removed. Painting shall not be allowed in dusty rooms. Do not remove rubbish while finish is fresh. Surfaces to which finish is to be applied shall be dry and clean. The space in which paint is being applied must be maintained at a constant temperature and humidity, as required by the manufacturer of the product being utilized.

1.05 MAINTENANCE

At the completion of project, turn over to the Owner one (1) full quart of each paint and stain color and type used, along with the color number or formula for each type.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:
1. Products not specified by name shall be "professional best grade" products of acceptable manufacturers.
2. Provide primers and undercoat paint produced by the same manufacturer of the finish coats.

B. Acceptable Manufacturers: The following manufacturers will be acceptable for use on the work:
1. For Paint, Stain, and Varnish:
   a. Sherwin-Williams
   b. Benjamin Moore
   c. Approved Substitute

PART 3 - EXECUTION

3.01 EXAMINATION

Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence, or quality of work. Surfaces shall be put into an acceptable condition through preparatory work as specified in Article 3.02. Do not proceed with surface preparation or coating application until conditions are suitable.

3.02 PREPARATION

A. Protection: Furnish and lay drop cloths or mask off areas where painting is being done to protect floors and adjacent work from damage during painting and finish operation. Where it becomes necessary to remove temporary coverings placed by other trades, replace same in proper manner. Remove soiled rags and waste from the building every night. Do not allow to accumulate.
1. Be responsible for damage caused by painting to work of other trades, repairing same to the satisfaction of the Architect. Replace materials damaged to such an extent that they cannot be restored to their original condition.

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B. Surface Preparation:
1. General: Sand finishes on wood and metal surfaces between coats to assure smoothness and adhesion of subsequent coats. Use extra fine sandpaper to avoid cutting the edges when sanding. Apply putty or spackling compound after surfaces are primed and primer is dry. Bring filler material flush with adjoining surfaces. Surfaces shall be dry, clean and smooth before starting work. Fill cracks, holes or checks full and make smooth before finish is applied to surfaces. Fill cracks that occur after walls are sized.
2. Interior Wood Surfaces to be Painted: Touch-up sap and knots with an approved sealer or primer. Fill voids with putty after primer is dry.
3. Interior Ferrous Metal: Remove foreign material from unprimed metal with wire brush and dust clean.
4. Shop Primed Metals: Touch-up shop primed metals with material similar to the original shop-applied primer. Sand and dust primer on hollow metal work before finish painting to remove grease and dirt film from surfaces. Shop primer must be compatible with finish coats described herein.
5. Interior Wood to be Clear Finished: Sand as required. Fill voids and nail holes after first coat is dry using a filler compatible with the finish system and matching color.
6. At all other surfaces not covered in the items listed above, make all necessary surface preparation, testing, and sample preparation to insure successful coverage and performance.

3.03 WORKMANSHIP

A. Substrate Surface: The application of the first coat by Contractor does not relieve him of the responsibility for the base. If the surfaces are not in proper shape for painting; repair, rebuild, or refinish before proceeding with the work. Do not apply coats on damp or wet surfaces. Contractor will be held responsible for poor work caused by improper surface finish or condition.

B. Application: Spread materials evenly without runs, excessive brush marks, or sagging of materials.

C, Roller Application: Where paint is rolled on, use a fine nap roller so a nearly flat or orange peel texture is obtained.

D, "Mirror" Finish: Where latex coatings are applied to primed metal, spray application or special application techniques may be required to obtain acceptable smooth finish. Review application procedure with Architect and obtain approval before proceeding.

3.04 COATING SYSTEM - INTERIOR

The products specified for each of the following systems are manufactured by Sherwin-Williams (unless otherwise noted). Products of other acceptable manufacturers listed under Article 2.01, Paragraph B, may be utilized if they match or exceed the Technical Specification of the listed product, and gain the approval of the Architect.

A. **Woodwork - Painted:**

First coat	Latex primer, PrepRite Classic Interior Latex Primer
Second coat	Latex enamel, matte finish, Pro-Green 200
Third coat	Latex enamel, matte finish, Pro-Green 200

B. **Ferrous, Zinc Coated or Factory-Primed Metals - Painted:**

First coat	Suitable primer (or factory-prime coat), DTM Acrylic Primer / Finish (prepare zinc coated metal as recommended by manufacturer).
Second coat	Latex enamel, matte finish, Metalatex
Third coat	Latex enamel, matte finish, Metalatex

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C. **Gypsum Board - Painted:**

First coat	Suitable latex primer, Pro-Green 200 Interior Latex Primer
Second coat	Latex enamel, matte finish (field verify), Pro-Green 200
Third coat	Latex enamel, matte finish, (field verify)Pro-Green 200

D. **Woodwork – Stained:**

First Coat	Transparent wood stain, Sher-Wood Water Reducible Wiping Stain
Second Coat	Clear Finish, Sher-Wood Kem Aqua Lacquer MRE
Third Coat	Clear Finish, Sher-Wood Kem Aqua Lacquer MRE

3.05 MISCELLANEOUS REQUIREMENTS

A. Mechanical Piping and Ductwork: Wherever exposed insulated pipe or ductwork occurs in rooms where walls or ceilings are finished, cover insulation jacket with one coat sealer and two coats flat paint.

1. Wherever exposed uninsulated piping or ductwork occurs in rooms where walls or ceilings are finished, piping or ductwork shall be painted as called for under ferrous, zinc coated, or factory-primed metals.

B. Grilles, Registers and Louvers: Grilles, registers, and louvers shall be painted, colors as selected by Architect, thoroughly covering surfaces that are visible after installation. After installation, touch up screws and scuffed spots or repaint as required to achieve a uniform paint job.

C. Job Finished Woodwork: Spread finish evenly and thoroughly brush out. Sand work between coats with 150 grit or finer sandpaper.

D. Electrical Wiremold, Plugmold, and Exposed Conduit: Paint to match surface on which installed.

3.07 CLEANING

At the completion of work, remove surplus materials, staging, and rubbish. Clean paint, clear finish, and stains from floors, glass, walls, and hardware. Leave the premises in clean condition.

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SECTION 10 26 13 CORNER GUARDS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
   1. High Impact Solid Color PVC Corner Guard System.

B. Related Sections:
   1. Gypsum Board Partitions and Walls: Section 09 21 00

1.02 SUBMITTALS

A. Product Data: Submit in accordance with Section 01 30 00.

B. Samples: Submit full range of manufacturer's standard colors, minimum of twelve (12) colors of the specified product for selection by Architect.

PART 2 - PRODUCTS

2.01 CORNER GUARDS

A. Acceptable Manufacturers:
   1. Institutional Products Corporation (IPC)
   2. Koroseal Surface Mounted Cornerguards
   3. Pawling Corporation
   4. Tepromark International Inc.
   5. Balco Inc.
   6. or approved substitute

B. Description: IPC 150BN BluNose High Impact Corner Guard or equivalent of approved manufacturer.
   1. Material: 0.080 inch thick scratch and stain resistant rigid vinyl cover.
   2. Size: 3” x 3” minimum x 4'-0", except as noted otherwise on the Drawings.
   3. Configuration: 90 degree angle and other angles as indicated on drawings.
   4. Mounting: 0.070 inch thick pre-slotted continuous aluminum retainer.
   5. Fire Rating: Class A (ASTM E84).
   6. Color: As selected by Architect.
   7.

C. Accessories:
   1. Top caps and inside corners shall be made of extruded PVC.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Corner Guards: Install as indicated on the Drawings, over wall corners using mounting techniques in accordance with manufacturer's instructions. Butt bottom edge of corner guard to top of resilient base and top edge with wood trim cap (as occurs).

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SECTION 10608 CHAIN LINK FENCE PARTITIONS

PART 1 - GENERAL

1.01 SUMMARY
Section Includes: Interior Chain Link Fence Partitions and Doors

1.02 REFERENCES
Reference Standards: Comply with published standards of the Woven Wire Products Association.

1.03 SUBMITTALS
Submit shop drawings in accordance with Sections 01330.

1.04 DELIVERY, STORAGE AND HANDLING
Comply with Section 01600. Deliver and store in original crates under cover.

PART 2 - PRODUCTS

2.01 MATERIALS
Quality: All steel, including fabric, pipe and fittings shall be first quality, full weight, "hot dip" galvanized material. All weights and dimensions are nominal.

2.02 CHAIN LINK FENCING AND ACCESSORIES

A. Fabric: No. 11 gauge wire, woven in to a 1" chain link mesh galvanized after fabrication with minimum of 1.2 oz. / sq. ft. Wire used in fabric shall be open hearth steel, containing not less than 0.20% copper with a tensile strength of not less than 85,000 lbs. per square inch. Top and bottom selvage of the fabric shall be knuckled.

B. Posts: 2-1/2" o.d., standard pipe weighing 3.65 lbs. per foot, threaded at one end.

C. Top, Bottom, and Intermediate Rails: Standard, galvanized steel pipe, 1-5/8" o.d. weighing 2.28 lbs. per foot, provided with 7" long expansion sleeve couplings.
   1. Prove top, bottom, and intermediate rails at chain link partitions

D. Fabric Ties: No. 11 gauge galvanized steel tie wire shall be used to tie fabric to framework. Ties to tension wire shall be made with heavy galvanized hog rings or wire.

E. Not Used

F. Brace Panel Assembly: All end and gate posts shall be braced with 1-5/8" o.d. standard steel pipe weighting 2.28 lbs. per foot, and adjustable 3/8" galvanized truss rod with malleable iron truss tighteners.

G. Tension Bands: Beveled edge type with either nuts and bolts or special lockpin type.

H. Doors: Doors shall be constructed of 1-5/8" o.d. pipe, weighing 2.28 lbs. per foot, frames with welded corners. Fabric filler to be same as used in fence. All hardware to be heavy duty, galvanized. Provide three hinges per door, welded in place.
   1. Door 139A shall be modified to receive door hardware per hardware schedule.

I. Provide pipe floor flanges for end and line posts.

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PART 3 - EXECUTION

3.01 INSTALLATION OF CHAIN LINK FENCE PARTITIONS

A. Workmanship: The completed partition shall be plumb, both in line and transverse, straight and rigid, with fabric tightly stretched and held firmly in place. Gate shall swing easily and hang true. Details of construction, not specified, shall be performed in keeping with good standard fencing practice.

B. End and Line Posts: Space posts as indicated on Drawings. Anchor floor flanges to concrete slab with two expansion bolts. Secure posts to adjacent walls for a secure installation.

C. Top, Bottom, and Intermediate Rails: Top and bottom rails shall be set parallel to the floor and ceiling. Intermediate rail shall be set parallel to the top rail and at the center vertically in the partition not more than 5'-0" o.c. vertically.

D. Braces and Brackets at End Posts: Posts shall be securely anchored to perpendicular wall with braces or brackets to eliminate lateral movement of posts. Provide anchoring at distance no more than 4'-0" o.c. vertically.

END OF SECTION

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SECTION 12 24 00 SUN CONTROL SHADES

PART 1 - GENERAL

1.01 SUMMARY

A Section Includes: Manually Operated Sun Control Shades. Provide all shades, tracks, fascias, accessories and equipment necessary for complete system..

1.02 SUBMITTALS

A. Submit shop drawings and product data in accordance with Sections 01330.

B. Samples: Submit complete set of fabric color samples for Architect's selection.

1.03 DELIVERY, STORAGE AND HANDLING

Deliver and store in original crates under cover.

1.04 WARRANTY

Provide manufacturer's standard five (5) year warranty against defects in materials and workmanship, beginning at Date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUAL HORIZONTAL SUN CONTROL SHADES

A. Acceptable Manufacturers:
1. Mechoshade Systems, Inc.
2. or approved substitute

B. Description of System: MechoShade manual operating chain drive roller shade system or acceptable equivalent of other manufacturer as detailed on the drawings. Surface mount to suspended acoustical grid ceiling. One section of shade w/ operator to cover windows in HM frame 3. One section of shade w/ operator to cover windows in HM frame 2 and transom window in HM frame 1. One section of shade w/ operator to cover window in door type A.

C. Roller tube shall be extruded aluminum of diameter and wall thickness to prevent excessive deflection along the length. A minimum of one turn of fabric will be placed on the roller before the working section of fabric starts.

D. Drive Chain: #10 qualified stainless steel chain rated to 90 lb. minimum breaking strength.

E. Provide necessary hardware for surface mounting on suspended acoustical ceiling, include snap lock fascia.

F. Location: Where indicated on the drawings.

2.03 SHADE CLOTH:

A. Visually Transparent Single-Fabric Shadecloth:
1. MechoShade Systems, "Thermoveil" Dense Vertical Weave 1000 Series, or acceptable equivalent of other manufacturer.
2. 2-3% openess factor.
3. Color :1004 Black/Brown
4. Fire –Test – Response Characteristics: Passes NFPA-701-99 small and large-scale vertical burn. Materials tested shall be identical to products for use.

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B. Hem Pockests and Hem Weights:
   1. Fabric hem pocket with RF-welded seams, included welded ends, and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continous inside a sealed hem pocket. Hem pocket construction and hem weights shall be similar for all shades within one room.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install roller shades level. Plumb, square and true according to manufacturer's written instructions.

B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

C. Clean roller shade surfaces after installation, according to manufacturer's written instructions.

END OF SECTION

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