

Bid/Construction Set Specifications

Westland Middle School
Chairlift Modernization

5511 Massachusetts Ave
Bethesda, MD 20816

Montgomery County Public Schools



BID SPECIFICATIONS

02.11.2025

**Westland Middle School
Chairlift Modernization
Montgomery County Public Schools**
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Bethesda, Maryland 20816

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**SECTION 01 10 00
SUMMARY OF WORK**

PART 1 - GENERAL

1.1. SUMMARY

- A. Unless otherwise noted, Contractor shall provide and pay for labor, materials, equipment, tools, construction machinery, transportation, and other facilities and services necessary for proper execution and completion of Work required by Contract Documents.
- B. Work of Contract can be summarized by reference to Contract, General Conditions, specification sections as listed in "Table of Contents" bound herewith, drawings as listed in "Schedule of Drawings" bound herewith, addenda and modifications to Contract Documents issued subsequent to initial printing of project specifications and including but not necessarily limited to printed matter referenced by any of these. It is recognized that Work of Contract may be affected or influenced by governing regulations, natural phenomenon including weather conditions, and other forces outside Contract Documents. General contractor will be responsible for supervising and coordinating work that has to be performed by Contractor or Subcontractors.
- C. General Contractor shall include all costs to perform and document inspections, observations, surveys, and measurements required to prepare complete and accurate As-Built Plans, provide required certifications, and obtain approval thereof from Montgomery County Department of Permitting Services in its bid.
- D. This project includes removal and replacement of chairlift components to modernize an existing chairlift installation at Westland Middle School. Furnish all labor, materials, equipment, and services necessary for and incidental to the chairlift modernization scope of work described in spec section 14 42 00 including selective demolition of existing chairlift components, general building components, and replacement as further specified herein. All work shall be bid as lump sum as indicated on the drawings and specifications. Work shall be coordinated with the Owner and completed in the time frame dictated by the Owner. Work is further described as follows:
 - 1. Site Summary: The existing site is home to Westland Middle School. The building will remain operational during construction of this project and will continue to operate in the same capacity after this project is complete. There is no sitework included in this project.
 - 2. The Owner will be occupying the entire existing school building, following a normal summer schedule for the 2024-2025 school year. All work of this project is to be complete prior to the start of the 2025-2026 school year. It is imperative that the Contractor understand the access, operational, safety and utility requirements of the Owner during the occupied periods. All work located on the interior and exterior of the building, and/or affecting occupied areas shall be completed at no disturbance to students or MCPS staff and teachers. Work at the existing building shall be completed during non-school hours – primarily over summer vacation, or as directed by the Owner. All utility outages shall be coordinated with the Owner and occur during unoccupied periods.
 - 3. During the construction period, all deliveries and construction traffic must be coordinated with school activities and use.
 - 4. New Work: is indicated on the contract documents and includes architectural and electrical work.
 - a. Architectural work includes, but is not limited to, replacement of chairlift components and chairlift operating equipment, and repair and patching of any existing finishes or systems

damaged as a result of the work being performed. It specifically includes removal and reconfiguration of an existing masonry wall, and patch and repair of gyp. bd. ceilings, CMU masonry, VCT flooring finish, base, and painting.

- b. Select electrical upgrades are provided as required for connection and function of the new chairlift system.

1.2. WORK BY OWNER OF SEPARATE CONTRACTOR

- A. Not Applicable

1.3. HOUSEKEEPING

- A. Fire protection during construction

1. Provide and maintain hand fire extinguishers suitable for fire hazard involved at convenient accessible locations during construction.
 - a. Provide each storage location with at least one approved portable fire extinguisher having a rating of not less than 20 - B: C.
 - b. Place portable extinguishers rated not less than 2A so that maximum travel distance to the nearest exit shall not exceed 100 feet.
2. Avoid accumulation of flammable debris and waste within the building and vicinity. Avoid large and unnecessary accumulations of combustible forms and form lumber. Keep lumber stacked in an orderly manner.
3. Store flammable or volatile liquids in the open or in small, detached structures or trailers. Handle liquids with low flash points to be used within the building in approved safety cans. Supervise closely the storage of paint materials and other combustible finishing and cleaning products. Do not permit oily rags to be stored in closets or other tight permanent spaces.
4. Prohibit smoking on school property.
5. Closely supervise welding and torch cutting operations near combustible materials.
6. Supervise locations and operation of temporary portable heating units and fuel.
7. Use only fire-resistant building paper, plastic sheet, and tarpaulins for temporary protection.
8. Do not store combustible material outdoors within 10 feet of a building or structure.
9. Do not use gasoline for cleaning within the building under any circumstances.
10. Take other precautions suitable for hazardous conditions at the site to prevent fire.

- B. Burning

1. Do not burn any trash or other material onsite.

- C. Clean Up

1. The contractor is responsible for cleanup of the adjacent rooms and areas used for next day's normal school activities that occur inside and outside the construction containment spaces. All cleaning is to be provided by a professional cleaning services contractor and OWNER only acceptable standard is "White Glove Clean."

1.4. SALVAGE RIGHTS

- A. The contractor shall coordinate with the Owner on the disposal of salvageable items. The Owner has first rights to all salvageable materials. In order to avoid Owner induced delays, a duration limit of up to 5-7 working days for Owner's reclamation of salvage items shall

apply unless written extension is submitted.

- B. All items not claimed by the Owner for salvage shall become the responsibility of the Contractor for removal.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - SCHEDULE OF DRAWINGS

4.1 Drawings indicating Work to be performed under this Contract include:

GENERAL

A0.1 COVER SHEET

ARCHITECTURAL

CA1.0 OVERALL EXISTING EGRESS FLOOR PLANS

A1.1 EXISTING/DEMOLITION & PROPOSED FLOOR PLANS

A5.1 INTERIOR ELEVATION AND SECTION

ELECTRICAL

E0.1 ELECTRICAL LEGEND, ABBREVIATIONS, & CONVENTIONS

E1.1 DEMOLITION & PROPOSED FLOOR PLANS

- END OF SECTION 01 10 00 -

**SECTION 01 33 00
SUBMITTALS**

PART 1 - GENERAL

1.1 Summary:

- A. Make submittals required by Contract Documents to Architect, and revise and resubmit as necessary to establish compliance with the specified requirements.

1.2 Related Sections:

- A. Individual requirements for submittals may be described in Divisions 2 through 26 of these Specifications.
- B. Maintain a record document set of approved submittal documents. See Section 01 78 10.
- D. Submittals not required will not be reviewed by Architect.
- E. Contractor may require Subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and Subcontractors and will not be reviewed by Architect.

1.3 Quality Assurance:

- A. Certifications: Provide such certification as is required per pertinent sections of these specifications. A minimum of two originals and one copy of Certification shall be forwarded.

1.4 Coordination of Submittals:

- A. Prior to each submittal, carefully review and coordinate aspects of each item being submitted.
- B. Verify that each item and submittal for it conform with the specified requirements.
- C. Verify field measurements and conditions prior to submission.
- D. By affixing Contractor's signature to each submittal, certify that coordination has been performed.
- E. Each drawing submittal shall be certified by Contractor with the following stamp:
 - 1. "This is to certify that specification requirements have been met and dimensions, conditions and quantities are verified as shown and/or corrected on these drawings."

Signed _____
Contractor

1.5 Submittals:

- A. Make submittals of Product Data, Shop Drawings, Samples, and other items in accordance with the provisions of this Section.

PART 2 - PRODUCTS

2.1 Shop Drawings:

- A. Upon signed release from the Contractor, Architect will make electronic copies of construction documents available for use as base sheet for providing coordinated Shop Drawings.
- B. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show pertinent aspects of the item and its method of incorporation into Work.
- C. Types of media required:
 - 1. Submit Shop Drawings in the form of one original reproducible electronic copy of each drawing.
 - 2. Unless absolutely necessary, the size of Shop Drawings shall not exceed 42" x 30". Provide space on Drawings for approval stamps and brief review comments.
 - 3. Copies of architectural/engineering blueprints will not be accepted.
- D. Review comments of the Architect will be shown on the reproducible drawing when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purpose.

2.2 Product Data:

- A. Manufacturers' data include catalogue cuts, technical descriptive brochures, performance charts, test reports, wiring diagrams, details, specifications, and other printed information issued or provided by manufacturers. Data shall be submitted in electronic copies with physical plus 6 physical samples. Upon receipt, the Architect will review, stamp copies, and return to the Contractor. If resubmittal is necessary, repeat process until approval has been obtained.
- B. Manufacturers' data for equipment includes materials, type, performance, characteristics, voltage, phase, capacity, and similar data. Provide wiring diagrams when applicable. Submittals shall indicate catalogue, model, and serial numbers representing specified equipment.
- C. Where contents of submitted literature from manufacturers include data not pertinent to submittal, clearly show which portions of the contents is being submitted for review.
- D. Provide material safety sheets to Owner for approval prior to releasing product for manufacture.

2.3 Samples:

- A. Provide physical Samples of precise items proposed to be provided. Identify as described under "Identification of Submittals" below.
- B. Number of Samples required:
 - 1. Submit Samples in quantity, which is required to be returned, plus one which will be retained by Architect.
 - 2. By prearrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in Work at a location agreed upon by Architect.

- C. Colors and Patterns: Unless the precise color and pattern is specifically called out in Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit samples of accurate color and pattern, to Architect for selection.

2.4 Equipment Operating and Maintenance Data:

- A. Provide Operating, Maintenance and Product data manuals as described in Section 01 78 20 of these Specifications.

2.5 Utility Approvals:

- A. Approval of utilities or other public authorities having jurisdiction shall be obtained and reflected on affected submittals.

PART 3 - EXECUTION

3.1 Deviations from Contract Documents:

- A. Clearly mark deviations in a conspicuous manner indicating component and system variations, additions and deletions, revised equipment locations, construction detail variations, substitutions, and similar changes or deviations. Indicate headroom heights, ceiling heights, clearances, and other dimensions affected by proposed deviations. Variations from Contract Documents not brought to the attention of Architect shall be the sole responsibility of Contractor even though such submittal has been accepted.

3.2 Identification of Submittals:

- A. Submittals shall be numbered using the specification section number, followed by a dash, plus a sequential numerical identifier.
 - 1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with original transmittal number and letter designation beginning with "A".
 - 2. Changes should be clearly designated as to revisions made. No consideration will be allowed for submittal revision labor made to coordinate revised, changed, adjusted details or extent.
- B. Accompany each submittal and resubmittal with a letter of transmittal showing information required for identification and checking. Letter of transmittal should refer to applicable drawing numbers, specification sections and submittal schedule item number to which each submittal applies.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show submittal number in which item was included.
- D. Each submittal should indicate supplier/installer's name, phone number and specific location(s) of submitted product in project.
- E. Maintain an accurate submittal log for duration of Work, showing current status of submittals at all times. Make submittal log available to Architect for review upon request. List submittals and resubmittals together.

3.3 Grouping of Submittals:

- A. Unless otherwise specified, make submittals in groups containing associated items to ensure that information is available for checking each item when it is received.

1. Partial submittals unless approved in advance by Architect may be rejected as not complying with provisions of Contract.
2. Contractor may be held liable for delays so occasioned.

3.4 Timing of Submittals:

- A. Contractor shall submit within fifteen (15) calendar days of Contract award a submittal schedule listing items by number and dates of submittal, and lead time for each item with particular note of priority items to be reviewed. Submittals shall be submitted in an orderly sequence with priority items clearly identified.
- B. A complete list of material and other required information in connection with electrical Work of project (plumbing, heating, ventilating, air conditioning, electrical), as listed under respective electrical Specification Sections, must be submitted within fifteen (15) calendar days after date of Notice to Proceed; no consideration will be given to partial lists submitted from time to time.
- C. Other submittals by Contractor should be made within thirty (30) calendar days of Notice to Proceed and far enough in advance of scheduled dates for installation to provide time required for reviews.
- D. Where Contractor has neglected to submit shop drawings on a timely basis or to place orders for materials and labor early enough to conform to materials and labor requirements, color schemes, etc., such failure shall not be deemed as legitimate cause for delay.
- E. In scheduling, allow at least fourteen (14) working days for review by Architect following receipt of the submittal. The following submittals will, by their nature, require additional time for review which should be factored into the schedule.
 1. Chairlift

3.5 Architect's Review:

- A. Review by Architect does not relieve the Contractor from responsibility for errors which may exist in submitted data.
- B. Revisions:
 1. Make revisions required by Architect.
 2. If Contractor considers required revisions to be a change, notification shall be given to Architect as provided for in General Conditions.
 3. Make only those revisions required to obtain approval by Architect.
- C. Architect's approval:
 1. Until approval has been given by Architect, materials or items shall not be fabricated or incorporated in Work. Architect's approval will be only general in nature and shall not be construed as permitting departure from Contract requirements, or as relieving Contractor of responsibility for any errors concerning details, dimensions, materials, etc. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, Contractor shall describe such variation in letter of transmittal. If acceptable, Architect may approve variations, subject to proper adjustment in Contract price. If Contractor fails to describe such variation, Contractor

shall not be relieved of responsibility for executing Work in accordance with Contract, even though such drawings have been approved.

2. Acceptance shall not be construed as a complete check but will indicate only that design, fabrication, and detailing is consistent with design intent and that errors and discrepancies observed when reviewed have been noted. Acceptance of a separate item shall not be interpreted as an approval of an assembly in which the item functions. The Owner or Architect reserves the right to require submission of additional detail, shop, erection or setting drawings and of any schedules for any part of Work, whether or not specifically mentioned in Project Specifications, where substitutions or modifications are proposed by Contractor, or where such information is essential to proper assembly, coordination, or execution of Work under Contract.
3. Review and acceptance shall not relieve the Contractor from responsibility for errors in shop drawings or for proper coordination assembly of materials and equipment with other Work, nor from responsibility of furnishing materials and labor not indicated on approved shop drawings but required by Contract Documents for completion of Work.

- END OF SECTION 01 33 00 -

**SECTION 01 78 10
PROJECT RECORD DOCUMENTS**

PART 1 - GENERAL

1.1 Summary:

- A. Throughout progress of Work, maintain an accurate record of changes in Contract Documents.
- B. Upon completion of Work, transfer recorded changes to a set of Final Project Record Documents.

1.2 Related Sections:

- A. Documents affecting Work of this Section include General Conditions and Sections in Division 1 of these Specifications.
- B. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.3 Quality Assurance:

- A. Delegate responsibility for maintenance of Record Documents to one person on Contractor's staff as approved by the Architect.
- B. Accuracy of records:
 - 1. Thoroughly coordinate changes within Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show change properly.
 - 2. Accuracy of records shall be such that a future search for items shown in Contract Documents may rely reasonably on information obtained from Project Record Documents.
 - 3. Make entries within 72 hours after receipt of information that change has occurred.
- C. Product Handling:
 - 1. Maintain Job Set of Record Documents completely protected from deterioration and from loss and damage until completion of Work and transfer of recorded data to final Project Record Documents.
 - 2. In event of loss of recorded data, use means necessary to again secure data to the Architect's approval.
 - 3. Such means shall include, if necessary, in opinion of the Architect, removal and replacement of concealing materials.
 - 4. In such case, provide replacements to standards originally required by Contract Documents.

1.4 Submittals:

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Architect's approval of current status of Project Record Documents will be a prerequisite to the Architect's approval of requests for progress payment and request for final payment under Contract.
- C. Prior to submitting each request for progress payment, secure the Architect's approval of current status of Project Record Documents.
- D. Prior to submitting request for final payment, submit final Project Record Documents to the Architect and secure approval.

PART 2 - PRODUCTS

2.1 Job Set:

- A. Promptly following receipt of Owner's Notice to Proceed, secure from Architect at no charge to Contractor one complete conforming set of Documents comprising Contract.

2.2 Final Project Record Documents:

- A. The purpose of Final Project Record Documents is to provide factual information regarding aspects of Work, both concealed and visible, to enable future modifications of Work to proceed without lengthy and expensive site measurement, investigation, and examination. The document set shall include:
 - 1. Final Record Drawings: At a time nearing completion of Work, transfer information from Job Set to Final Record Drawings.
 - 2. Specifications: At a time nearing completion of Work prepare Specification Sections received from Architect with revisions and addenda added.
 - 3. Submittal Set: At a time nearing completion of Work, as per Section 01 33 00, prepare approved submittal documents for review including revisions if any.
 - a. Collect approved submittal documents and prepare an index including following information:
 - 1) Specification Section
 - 2) Date approved
 - 3) Submittal number
 - 4) Brief description
 - b. Index shall be organized per Specification Section.

PART 3 - EXECUTION

3.1 Job Set:

- A. Immediately upon receipt of conforming set described above, identify each Document with title, "RECORD DOCUMENTS - JOB SET."
- B. Preservation:
 - 1. Consider number of occasions upon which Job Set must be taken out for new entries and for examination, and conditions under which these activities will be performed, devise a suitable method for protecting Job Set for approval of the Architect.
 - 2. Do not use Job Set for any purpose except entry of new data and for review by the Architect, until start of transfer of data to Final Project Record Documents.
 - 3. Maintain Job Set at site of Work as that site is designated by the Architect.
- C. Making entries on ~~drawings~~
 - 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
 - 2. Date entries.
 - 3. Call attention to entry by a "cloud" drawn around area or areas affected.

4. In event of overlapping changes, use different colors for overlapping changes.
- D. Make entries in pertinent other Documents as approved by the Architect.
- E. Conversion of schematic layouts:
 1. In some cases, on Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
 - a. Contractor determines final physical arrangement, subject to the Architect's approval.
 - b. However, design of future modifications of facility may require accurate information as to final physical layout of items which are shown only schematically on Drawings.
 2. Show on Job Set of Record Drawings, by dimension accurate to within one inch, the centerline of each run of items such as are described in subparagraph 3.1-E-1 above.
 - a. Clearly identify item by accurate note such as "cast iron drain," "galv. water," etc.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," etc.).
 - c. Make identification sufficiently descriptive that it may be related reliably to Specifications.
 3. Architect may waive requirements for conversion of schematic layouts where, in Architect's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by Architect.

3.2 Final Project Record Documents:

- A. Approval of recorded data prior to transfer:
 1. Following receipt of transparencies described above, and prior to start of transfer of recorded data thereto, secure the Architect's approval of recorded data.
 2. Make required revisions.
- B. Transfer of data to Drawings:
 1. Carefully transfer change data shown on Job Set of Record Drawings to corresponding final record drawings, coordinating changes as required.
 2. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and actual location of items described above.
 3. Call attention to each entry by drawing a "cloud" around area or areas affected.
 4. Make changes neatly, consistently, and with proper media to assure longevity and clear reproduction.
- C. Transfer of data to other Documents:
 1. If Documents other than Drawings have been kept clean during progress of Work, and if entries thereon have been orderly to approval of the Architect, Job Set of those Documents other than Drawings will be accepted as final Record Documents.
 2. If any such Document is not approved by the Architect, secure a new copy of that Document from Architect at Architect's usual charge for reproduction and handling, and carefully transfer change data to new copy for approval of the

Architect.

D. Review and submittal:

1. Submit completed set of Final Project Record Documents to the Architect as described above.
2. Participate in review meetings as required.
3. Make required changes and deliver Final Project Record Documents to the Architect within 30 calendar days of substantial completion.
4. Submittal of Final Project Record Documents shall be in following formats:
 - a. Final record drawings: One copy final record drawings in bond paper, and two in scanned digital format. The original pre-scanned documents shall be black print on bond paper.
 - b. Specifications: One copy 20 lb. bond white paper and scanned digital format.
 - c. Submittal documents: Scanned digital format.
 - d. O & M manual – Two copies 2016. bond white paper and two copies in scanned digital format.
 - e. Mechanical video demonstration: three copies in DVD format.
5. Scanned digital formats shall comply with following:
 - a. For drawings:
 - 1) File type: TIFF Version 6.0 with LZW Compression
 - 2) Automatic despeckling at 7-pixel settings, unless other settings provide better legibility with prior approval by MCPS.
 - 3) Deskewing, cropping and rotation (landscape view optimum right angles)
 - 4) Attended scanning with maximized readability adjustments performed per sheet.
 - b. For specifications, submittals, and operating, maintenance and product data:
 - 1) File type: PDF version 1.7 (ISO 32000-1:2008) compatible with Adobe Acrobat 8.0 or higher
 - 2) Invert to be upright.
 - c. Scanned images are to be stored in CD ROM disk (ISO 9660). Provide two copies.
 - d. Prior to scanning, provide sample image of a typical sheet for approval by MCPS. Scanning service shall notify MCPS, Division of Maintenance of any probable illegible scans. Final file name format to be approved by MCPS, Division of Maintenance. For quantity, Contractor shall assume total number of Contract Drawings plus 10%. The final acceptable quality of scans shall be at the discretion of MCPS. It is intended that information on scans be legible.

- e. Electronic directory structure shall include root directory with school name and subdirectories as follows:
 - 1) school name\drawings\ (each drawing shall be a separate file and file name shall be named to match sheet number -with sheet title - i.e., C1 Site Plan.)
 - 2) school name\specifications\ (entire specification shall be a single PDF file with a table of contents included with bookmarks to each specification section)
 - 3) school name\submittals\ (all submittals shall be a single PDF file with a table of contents included with bookmarks to each specification section and individual submittal)
 - 4) school name\om_manual\ (entire O&M manual shall be a single PDF file with a table of contents included with bookmarks to each specification section)
- f. Organize specifications, submittals, and O&M manual documents as follows:
 - 1) Specifications - set up with a table of contents in same order as CSI master format using specification section number and name in table of contents. (i.e., Section 14 20 20 – Elevators and Lifts).
 - 2) Submittals - set up with a table of contents in same order as CSI master format using specification section number, title of submittal, and submittal number in table of contents. (i.e., Section 14 42 00 – Wheelchair Lifts - Submittal No. 1).
 - 3) O&M Manuals - set up with a table of contents in same order as CSI master format using specification section number and title of item described in table of contents. Also, list name of subcontractor (i.e., Section 14 42 00 – Wheelchair Lifts)
- 6. Retention reduction from 5 percent will not be made until all of Record Documents have been received.

E. Changes Subsequent to Acceptance:

- 1. Changes to the Record Documents, including those resulting from Work performed under Warranty shall be provided in a Supplemental Submission. Contractor has no responsibility for recording changes in Work subsequent to Final Completion.

- END OF SECTION 01 78 10 -

SECTION 01 78 20
OPERATING, MAINTENANCE AND PRODUCT DATA

PART 1 - GENERAL

1.1 Summary:

- A. To aid continued instruction of operation and maintenance personnel, and to provide a positive source of information regarding the products incorporated into Work, furnish, and deliver the described in this Section and in pertinent other Sections of these Specifications.
- B. General Contractor shall organize all submissions into one organized set of Operations and Maintenance manuals in CSI format.

1.2 Related Sections:

- A. Documents affecting Work of this Section include General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
- B. Required contents of submittals also may be amplified in pertinent other Sections of these Specifications.

1.3 Quality Assurance:

- A. In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of described items, completely familiar with requirements of this Section, and skilled in technical writing to extent needed for communicating essential data.

1.4 Submittals:

- A. Comply with pertinent provisions of Section 01 33 00 "Submittals".
- B. Submit one copy of completed data in final form at time of Substantial Completion inspection.

Copy will be returned after final inspection or acceptance, with comments.
- C. Submit three (3) copies of approved data in final form ten (10) working days before Final Application for Payment.

PART 2 - PRODUCTS

2.1 Where instruction Manuals are required to be submitted under other Sections of Specifications, prepare in accordance with provisions of this Section.

2.2 Format:

- A. Size: 8-1/2 inches x 11 inches
- B. Paper: White bond, at least 20 lb. weight
- C. Text: Neatly written or printed at maximum of 12 cpi
- D. Drawings: 11 inches in height preferable; bind in with text; foldout acceptable but fold to fit within Manual and provide a drawing pocket inside rear cover or bind in with text.
- E. Flysheets: Separate each portion of Manual with neatly prepared flysheets briefly describing contents of ensuing portion; flysheets may be in color.

PART 3 - EXECUTION

3.1 Preliminary:

- A. Prepare a preliminary draft of each proposed Manual.
- B. Show general arrangement, nature of contents in each portion, probable number and size of drawings, and proposed method of binding, covering and digital format.
- C. Secure Architect's approval prior to proceeding.

3.2 Final:

- A. Complete Manuals in strict accordance with approved preliminary drafts and Architect's review comments.

3.3 Revisions

- A. Following indoctrination and instruction of operation and maintenance personnel, review proposed revisions of the Architect.
- B. If Contractor is required by the Architect to revise previously approved Manuals, compensation will be made as provided for under "Changes" in General Conditions.

- END OF SECTION 01 78 20 -

**SECTION 01 78 60
WARRANTIES AND BONDS**

PART 1 – GENERAL:

1.1 Summary:

- A. Compile specified warranties, bonds, and maintenance contracts and submit to the Architect. Warranties will commence no earlier than date of Substantial Completion.

1.2 Related Sections:

- A. Documents affecting Work of this Section include General Conditions, other Sections of Division 1 and detailed requirements documented in each respective section of Divisions 2 through 26 of Specifications.
- B. Certifications and other commitments and other agreements for continuing services to Owner as specified elsewhere in Contract Documents.

1.3 Definitions:

- A. Standard project warranties are preprinted written warranties published by individual manufactures for particular products and are product and are specifically endorsed by manufacturer to Owner.
- B. Special warranties are written warranties required by or incorporated in Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for Owner

1.4 Quality Assurance:

- A. Use adequate care and diligence to thoroughly review Contract Documents to identify detailed requirements relating to warranties and bonds.
- B. Verify that each item required for this submittal conforms with specified requirements.

1.5 Submittals:

- A. Comply with pertinent provisions of Section 01 33 00 “Submittals” and part 3 below.

PART 2 - PRODUCTS:

2.1 Description of Warranty Requirements:

- A. In addition to standard and special warranties described in Divisions 2 through 26, Contractor shall warrant Work included in this project, for a minimum period of two (2) year following acceptance of a Certificate of Substantial Completion by Owner, to cover performance, material, workmanship, and compliance with Contract Documents.
- B. Manufacturer’s disclaimers and limitations on product warranties do not relieve Contractor of warranty on Work that incorporates products, nor do they relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with Contractor.

- C. Related Damages and losses: When correcting warranted work that has failed, remove, and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of Warranted Work.
- D. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate warranty by written endorsement. Reinstated warranty shall be equal to original warranty with an equitable adjustment for depreciation.
- E. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. Contractor is responsible for cost of replacing or rebuilding defective Work regardless of whether Owner has benefited from use of Work through a portion of its anticipated useful service life.
- F. Owner's Recourse: Written warranties made to Owner are in addition to implied warranties, and shall not be limit duties, obligations, rights, and remedies otherwise available under law, nor shall warranty periods be interpreted as limitations on time in which Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: Owner reserves right to reject warranties and to limit selections of products with warranties not in conflict with requirements of contract Documents.
- G. Owner reserves right to refuse to accept Work for project where a special warranty, certification, of similar commitment is required on such Work or part of Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

PART 3 – EXECUTION:

3.1 Warranties and Bonds:

- A. Assemble warranties bonds and service and maintenance contracts, executed by each respective manufacturer, supplier, and contractor.
- B. Submit written warranties to the Architect prior to date established for Substantial Completion. If Certificate of Substantial Completion designates a commencement date for warranties other than date of Substantial Completion, or a designated portion of Work, submit written warranties upon request of the Architect.
- C. When a designated portion of Work is completed and occupied or used by Owner, by separate agreement with Contractor during construction period, submit properly executed warranties to Architect within fifteen days of completion of that designated portion of Work.
- D. When a special warranty is required to be executed by Contractor, or Contractor and a subcontractor, supplier, or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by required parties. Submit a draft to Owner to the Architect for approval prior to final execution.

3.2 Form of Submittals:

- A. At Final Completion compile two copies of each required warranty and bond properly executed by Contractor, subcontractor, supplier, or manufacturer. Organize warranty documents into an orderly sequence based on table of contents of Project Manual.
- B. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 1/2" by 11" paper.
- C. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark tab to identify product or installation. Provide a typed description of product or installation, including name of product, and name, address, and telephone number of installer.
- D. Identify each binder on the front and the spine with typed or printed title "WARRANTIES AND BONDS," Project title or name, and name of Contractor.
- E. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
- F. Digital Media: Provide one copy scanned digital format as specified in Section 01 78 10 "Project Record Documents".

3.3 End of Warranty Inspection:

- A. Each warranty shall include a provision to allow for extension at Contractor's expense if end of warranty inspection is not scheduled before end of warranty period.

- END OF SECTION 01 78 60 -

**SECTION 02 41 19
SELECTIVE DEMOLITION**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Demolition and disposal of existing site and building elements as specified in the Contract Documents.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.3 DEFINITIONS

- A. Remove & Dispose: Remove to and approved off site facility and legally dispose of any items noted as such in the contract documents, except those items indicated otherwise.
- B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area.
- C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
- D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.4 SUBMITTALS FOR REVIEW

- A. Proposed dust-control measures.
- B. Proposed noise-control measures.
- C. Schedule of selective demolition activities indicating the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
- D. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.
- E. Landfill records indicating receipt and acceptance of all wastes by a landfill facility licensed to accept such wastes.

1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition work and dust control.

- B. Obtain required permits from authorities.
- C. Do not close or obstruct egress width to any building or site exit. Do not close or obstruct roadways.
- D. Conform to procedures applicable when hazardous or contaminated materials are discovered.
- E. Conform to applicable code for demolition of structures, safety of adjacent structures, dust control, runoff control, and disposal.

1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Pre-demolition Conference: Conduct conference with Owner at Project site prior to beginning demolition work.

1.7 PROJECT CONDITIONS

- A. Owner assumes no responsibility for actual condition of buildings to be selectively demolished.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Storage or sale of removed items or materials on-site will not be permitted unless agreed upon in advance by the Owner.
- D. Conduct demolition to minimize interference with adjacent and occupied building areas.
- E. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.
- F. Existing Utilities: Locations of existing utilities are approximate. Locations have been determined from field survey, public utility records and Owner records.
 - 1. Contractor shall be responsible for contacting "Miss Utility", Owner or controlling agencies of existing utilities within construction area for verification of locations and marking of utilities, prior to beginning of work.
 - 2. Contractor shall be responsible for coordination of utility relocation or removal by others with phases of construction activities.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate, and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
- D. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 PREPARATION

- A. Provide, erect, and maintain temporary barriers as required for phasing and to maintain occupancy of building during construction.
- B. Erect and maintain weatherproof closures for exterior openings.
- C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise.
- D. Protect existing materials and which are not to be demolished.
- E. Prevent movement of structure; provide bracing and shoring.
- F. Provide appropriate temporary signage including signage for exit or building egress.
- G. Protect existing landscaping materials which are not to be demolished.
- H. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- I. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Install temporary barriers between work areas and occupied areas of the building to prevent the spread of dust.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.

3. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
4. Cover and protect equipment that has not been removed.

3.3 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent structures.
- B. Cease operations immediately if adjacent structures appear to be in danger. Notify Architect/Engineer. Do not resume operations until directed.
- C. Conduct operations with minimum interference to public or private access points. Maintain egress and access at all times.
- D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- E. Sprinkle Work with water to minimize dust as appropriate. Provide hoses and water for this purpose.
- F. Demolish in an orderly and careful manner. Protect existing supporting structural members and utilities to remain. Maintain weathertight and secure enclosure of existing building at all times.
- G. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option. Do not burn or bury materials on site. Leave site in clean condition.
- H. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition, and in original configuration unless directed otherwise by the owner.
- I. Remove temporary Work and restore existing building to its original condition unless directed otherwise by the owner.

3.4 POLLUTION CONTROLS

- A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
- B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.5 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
 - 1. Dispose of demolished items and materials promptly.
 - 2. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Sweep the building broom clean on completion of selective demolition operation.

- END OF SECTION 02 41 19 -

**SECTION 04 20 00
UNIT MASONRY**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Concrete masonry units.
- B. Reinforcement, anchorage, and accessories.

1.2 RELATED SECTIONS

- A. Section 09 90 00 – Painting and Coating.

1.3 REFERENCES

- A. ACI 530 - Building Code Requirements for Masonry Structures.
- B. ACI 530.1 - Specifications for Masonry Structures.
- C. ASTM C144 - Aggregate for Masonry Mortar.
- D. ASTM C150 - Portland Cement.
- E. ASTM C207 - Hydrated Lime for Masonry Purposes.
- F. ASTM C270 - Mortar for Unit Masonry.
- G. ASTM C404 - Aggregates for Masonry Grout.
- H. ASTM C476 - Grout for Masonry.

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide data for concrete masonry units and fabricated wire reinforcement.
- C. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- D. Design Data: Indicate required mortar strength, masonry unit assembly strength in all planes, and supportive test data. Include fire resistance data for block to be used in fire rated assemblies.
- E. Include design for mortar mix, indicate whether the Proportion or Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations. Submit grout mix design in accordance with ASTM C1019.
- F. Reports: Submit reports on mortar indicating conformance of mortar to property requirements of ASTM C270 component mortar materials to requirements of ASTM C270 and test and evaluation reports to ASTM C780.

- G. Reports: Submit reports on grout indicating conformance of component grout materials to requirements of ASTM C476 and test and evaluation reports to ASTM C1019.
- H. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- I. Submit premix mortar manufacturer's installation instructions under provisions of Division 1.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 530 and ACI 530.1 and applicable portions of NCMA publications and standards.
- B. Specified work is to be installed only by a qualified masonry contracting firm which has been in business a minimum of five (5) years.
- C. Maintain one copy of each reference document on site.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

- A. Conform to applicable code for UL Assembly No. U-901 requirements for fire rated masonry construction.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 28 degrees F and rising with a minimum of 40 degrees F as a high temperature for the day for commencement of masonry work. When temperature is at 35 degrees F and falling, masonry work shall stop and be appropriately covered for protection of work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Division 1.
- B. Accept concrete masonry units on site. Inspect for damage.
- C. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.10 COORDINATION

- A. Coordinate work under provisions of Division 1.
- B. Coordinate the masonry work with all work of other trades.
- C. Coordinate the masonry work with brick veneer, installation of masonry anchors and ties.

PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. Hollow Load-Bearing Block Units (CMU): ASTM C90, Type I - Moisture Controlled light weight.
- B. Solid Load-Bearing Block Units (CMU): ASTM C90, Type I - Moisture Controlled light weight.
- C. Concrete Brick Units: ASTM C55, Type I - Moisture Controlled normal weight of same Grade, Type, and Weight as block units.
- D. Size and Shape: Nominal modular size of 6"w, 8"w, or 12"w x 8"h x 16"l or as indicated on the drawings. Provide special units for 45 and 90 degree corners, bond beams, lintels and bullnosed corners or sills.

2.2 REINFORCEMENT AND ANCHORAGE

- A. Single Wythe Joint Reinforcement: Ladder type; steel wire per ASTM A82, hot dip galvanized to ASTM A153 Class B-2 after fabrication, two No. 9 gauge deformed longitudinal wires, welded to No. 9 cross wires spaced at 16" O/C. Provide L-shaped corner units and T-shaped wall intersection units.

2.3 MORTAR AND GROUT

A. Mortar Materials –

- 1. Prepackaged Mortar Cement (for use with CMU): ASTM C1329, comprised of:
 - a. Portland Cement: ASTM C150, Type I, gray color.
 - b. Hydrated Lime: ASTM C207, Type S.
- 2. Mortar Aggregate (Sand): ASTM C144, standard masonry type.
- 3. Water: Clean and potable.
- 4. Admixtures: None Permitted.

B. Grout –

- 1. Portland Cement: ASTM C150, Type 1
- 2. Hydrated Lime: ASTM C207, Type S
- 3. Course Aggregate: ASTM C404, Maximum 3/8 inch size, 2 parts maximum by volume.
- 4. Fine Aggregate: ASTM C404, sand; 2 1/4 to 3 parts by volume.
- 5. Water: Clean and potable.
- 6. Admixtures: None Permitted.

2.4 MORTAR MIXES

- A. Mortar for above grade Load and Non-Load Bearing CMU Walls and Partitions: ASTM C270, Type S, 1900 psi compressive strength in 28 days.

2.5 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use, as recommended by the material manufacturer.
- B. Maintain sand uniformly damp immediately before the mixing process.
- C. Do not use anti-freeze compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, re-temper only within two hours of mixing.
- E. Use mortar within two hours after mixing at temperatures of 90 degrees F, or two-and-one-half hours at temperatures under 40 degrees F.
- F. Do not add Calcium Chloride to Mortar or Grout.

2.6 GROUT MIXES

- A. Grout: 2,500 psi strength at 28 days; 8-10 inches slump; mixed in accordance with ASTM C476.

2.7 GROUT MIXING

- A. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476.
- B. Do not use anti-freeze compounds to lower the freezing point of grout.

2.8 MIX TESTS

- A. Test mortar and grout in accordance with applicable Division 1 sections and Structural Notes.
- B. Testing of Mortar Mix: In accordance with ASTM C270.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin work until masonry sample panel has been reviewed and approved.
- B. Verify that field conditions are acceptable and are ready to receive work.
- C. Verify items provided by other sections of work are properly sized and located.
- D. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other sections.

- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- C. Provide an attendant if propane heaters are used.

3.3 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Bond: General use - Running. (Provide soldier course accents in locations indicated on the drawings).
- D. Coursing: One unit and one mortar joint to equal 8 inches (CMU) unless otherwise indicated on the drawings. Three units and three mortar joints equal 8 inches (face brick) unless otherwise indicated on the drawings.
- E. Mortar Joints: Concave, except as indicated in 3.4, G. below.

3.4 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted. Remove excess mortar as work progresses.
- D. Interlock intersections and external corners.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Cut mortar joints flush where resilient base is scheduled and where wall tile is scheduled.
- H. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.5 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

- A. Install horizontal joint reinforcement 16 inches o/c.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.

- D. Lap joint reinforcement ends minimum 6 inches.
- E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- F. Embed anchors into concrete, to existing masonry, and attach to structural steel members. Embed anchorages in every second block joint.

3.6 TOLERANCES

- A. Maximum Variation From Alignment of Columns: Pilasters: 1/4 inch.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.7 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves, and grounds. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.8 INSTALLATION OF MORTAR AND GROUT

- A. Install mortar and grout in accordance with manufacturer's instructions.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not install grout in lifts greater than 16 inches, two CMU courses without consolidating grout using mechanical vibration.
- D. Do not displace reinforcement while placing grout. Remove excess mortar from grout spaces.
- E. Grout all hollow metal frames solid.

3.9 CLEANING

- A. Clean work under provisions of Division 1.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Replace defective mortar. Match adjacent work.

- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

3.10 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Division 1.
- B. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

- END OF SECTION 04 20 00 -

SECTION 05 50 00 METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Shop fabricated ferrous metal items.

1.2 RELATED SECTIONS

- A. Section 09 90 00 – Painting: Painted finish.

1.3 REFERENCES

- A. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
- B. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A283 - Carbon Steel Plates, Shapes, and Bars.
- D. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
- E. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- F. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- G. AWS D1.1 - Structural Welding Code.

1.4 SUBMITTALS FOR REVIEW

- A. Submit under provisions of Division 1.
- B. Shop Drawings: Submit shop drawings indicating profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Include calculations for design of railings. Shop drawings and calculations shall be completed under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of Maryland.
- C. Indicate welded connections using standard AWS 2.0 welding symbols. Indicate net weld lengths.

1.5 DESIGN/PERFORMANCE REQUIREMENTS

- A. Handrails Not Serving as Top Rails: Shall withstand the following loads:
 - 1. Concentrated load of 200 lbf (0.89 kN) applied at any point and in any direction.
 - 2. Uniform load of 50 lbf-ft (0.07kN-m) applied in any direction
 - 3. Concentrated and uniform loads above need not be assumed to act concurrently.

1.6 QUALIFICATIONS

- A. Prepare Shop Drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed at the place where the Project is located in the State of Maryland.
- B. Welders Certificates: Submit under provisions of Section 01 33 00, certifying welders employed on the Work, verifying AWS qualification within the previous 12 months.

PART 2 - PRODUCTS

2.1 MATERIALS - STEEL

- A. Recycled content of steel members - Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than the following:
 - 1. W-Shapes, Channels and Angles: 60 percent.
 - 2. Plate, Bar, Cold-Formed Hollow Structural Sections, and Steel Pipe: 25 percent.
 - 3. All Other Steel Materials: 25 percent.
- B. Steel Sections: ASTM A992.
- C. Steel Tubing: ASTM A500, Grade B.
- D. Plates: ASTM A283.
- E. Pipe: ASTM A53, Grade A or B as noted below, Schedule 40.
- F. Bolts, Nuts, and Washers: ASTM A325 galvanized to ASTM A153 for galvanized components.
- G. Welding Materials: AWS D1.1; type required for materials being welded.
- H. Ladders: ANSI A14.3.
- I. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.
- J. Wire Cloth: 1" square, #8-gauge wires, powder coat, color as selected by Architect.

2.2 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by continuous welds.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Railings: Provide stainless steel pipe railings as indicated on the drawings.
 - 1. Railings may be bent at corners instead of joining, provided the bends are uniformly formed in jigs, with cylindrical cross section of pipe maintained throughout the entire bend. Joints

in railings and between railings and fittings are to be welded and carefully ground smooth. The finish of handrail welds must be completely seamless and invisible.

2. Secure handrails to walls by means of wall brackets, and wall return fitting at handrail ends, as detailed. Finished railings shall clear wall finishes by a minimum of 2 ¼" to provide hand room. Wall brackets shall be fitted with fully concealed fasteners. All surfaces shall be smooth to the touch. All wall rails shall return to walls at ends with a snap-on flange at the wall.

2.3 FABRICATION TOLERANCES

- A. Squareness: 1/8-inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation from Plane: 1/16 inch in 48 inches.

2.4 FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with one coat.
- D. After fabrication, galvanize all members to be exposed to the elements or called out on the drawings as galvanized to ASTM A123. Provide minimum 1.25 oz/sq ft galvanized coating.
- E. Powder coat fabricated elements as indicated on the drawings; color as selected by the Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Do not begin installation until substrates have been properly prepared.
- C. Examine system components, substrate, and condition where railing systems are to be installed.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

- C. Clean surfaces thoroughly prior to installation.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on shop drawings.
- D. Perform field welding in accordance with AWS D1.1.
- E. Obtain approval prior to site cutting or making adjustments not scheduled.
- F. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.
- G. Secure railing to masonry wall with 3/8" double expansion bolts into solid CMU or completely thru-bolts.

3.4 ERECTION TOLERANCES

- A. Maximum Variation from Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset from True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

3.5 FIELD QUALITY CONTROL/TESTING

- A. Field inspection and testing will be performed under provisions of Division 1. The Contractor shall retain a third-party testing agency to perform all testing and inspections required. See listing of acceptable testing agencies in Section 01 45 00.

3.6 CLEANING

- A. Remove temporary coverings and protection of adjacent work areas.
- B. Clean railing system promptly after installation in accordance with manufacturer's instructions.
- C. Do not use harsh cleaning materials or methods that would damage finish. Do not use abrasive cleaners.

3.7 PROTECTION

- A. Protect installed products until completion of project. Provide plastic sheet protection for all surfaces of completed installations to prevent damage during remainder of construction activities.
- B. Replace defective or damaged components as directed by Architect.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

3.8 SCHEDULE

A. The following Schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.

1. Metal guardrails and handrails.

- END OF SECTION 05 50 00 -

SECTION 06 10 00 ROUGH CARPENTRY

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Requirements of the General Conditions, Supplementary Conditions, and Division 1 of these specifications apply to this Section.
- B. Include all labor, materials, appliances, and services necessary to complete all rough carpentry and related work required by the drawings and/or described in this specification.
- C. Generally: Concealed or temporary woodwork; rough and general carpentry duties; necessary wood framing, blocking, sheathing, finishing, trimming, and working of wood or wood fibered materials; all rough carpentry, preparatory work, bracing, propping, protection and boxing, all wood framing, grounds, bucks, wood blocking, furring, and all other general carpentry work. All wood plates as shown on the drawings. All wood blocking required by job conditions.

1.2 RELATED SECTIONS

- A. Section 06 20 23: Interior Finish Carpentry

1.3 REFERENCES

- A. ALSC: American Lumber Standards Committee - Softwood Lumber Standards.
- B. APA: American Plywood Association.
- C. AWPA (American Wood Protection Association): C1 – All Timber Products Preservative Treatment by Pressure Process.
- D. NFPA: National Forest Products Association.
- E. SPID Southern Pine Inspection Bureau.
- F. ASTM D 2898 - Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing.
- G. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- H. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Protection Association.
- I. AWPA C27 - Plywood -- Fire-Retardant Treatment by Pressure Processes; American Wood-Protection Association.
- J. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Protection Association.
- K. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce).

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.

- B. Product Data: Provide list of lumber grades and sizes proposed for use and technical data on panel products.
- C. Product Data: Provide technical data on wood preservative materials and application instructions.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following agencies:
 - 1. Lumber Grading Agency: Certified by ALSC.
 - 2. Plywood Grading Agency: Certified by APA.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Lumber:
 - 1. Non-Load Bearing Members: Standard Grade Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLA) or #2 Dimension Southern Pine (SPIB).
 - 2. Blocking: No. 2 Common Grade of any WWPA or WCLA species or No. 2 Southern Pine Boards (SPIB). Blocking shall include any wood material, without regard to size or length, which is required for the secure fastening, stiffening, anchoring, or hanging of any cornice, soffit, eaves, water table, cabinet, counter, or attainment of any profile shall be provided of proper strength to fully secure or support as if fully detailed or specified.
 - 3. Wood blocking or nailers on steel framing shall be bolted thereto. Wood grounds shall also be provided for securing equipment furnished under other Sections of these specifications. Provide block nailers as required for sheet metal work. Blocking adjacent to roof insulation shall be full thickness of insulation and shall finish flush with top surface.
 - 4. Size and Shapes: Nominal sizes shown and specified refer to undressed lumber dimensions. Dress lumber 4 sides (S4S) unless otherwise shown or specified, in accordance with the requirements of the West Coast Lumber Inspection Bureau, Grading and Dressing Rules, worked to shapes and patterns shown. All lumber shall be kiln-dried to a moisture content not to exceed 19 percent.
 - 5. All wood blocking shall be fire retardant treated.
 - 6. Plywood Sheathing: thickness as indicated on the drawings, fire retardant treated as indicated on the drawings and/or as required by local Codes.

2.2 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: Hot-dipped galvanized steel for high humidity, exterior or exposed to weather, and treated wood locations, unfinished steel elsewhere.
 - 2. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt for anchorages to steel.

3. Furnish all rough hardware, nails, spikes, bolts, screws, staples, straps, etc., that are required for proper assembly of building components and materials.

2.3 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 2. Basis-of-Design: Hoover-X by Hoover Treated Wood Products, Inc.: www.frtw.com.
- B. Fire Retardant Treatment (FRT):
 1. Exterior Type: AWPA Use Category UCFB, Commodity Specification H (Treatment C20 for lumber and C27 for plywood), chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D 2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat all exterior rough carpentry items.
 - c. Do not use treated wood in direct contact with the ground.
 - d. Treat wood blocking installed in built-up thickness for roofing terminations except top layer in direct contact with roofing membrane.
 2. Interior Type A: AWPA Use Category UCFA, Commodity Specification H (Treatment C20 for lumber and C27 for plywood), low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated.
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Inspect all wood and other materials.
- B. Sort out and discard damp, warped or damaged material which would not provide consistent substrates or Underwriters Label Construction as herein specified.

3.2 INSTALLATION

- A. Wood blocking shall be installed as indicated on the drawings to provide an integral component for adjacent structural or architectural materials.
 1. Blocking shall be erected true and with tight joints to provide a consistent substrate for surface materials, framing or roof framing. Use the longest lengths practical to minimize jointing.

- B. Install wood framing as indicated on the drawings. Wood framing shall be erected plumb and true and firmly anchored to supporting structures, as indicated on the drawings, to provide a consistently secure strong substrate for covering work. Install blocking, nailers and bridging as required for secure fastening of surface materials and to minimize the flexibility of framing components. Blocking shall be placed four (4) feet on center maximum. All framing and blocking shall be built so that sheathing or finish work joints shall fall on the center of framing or blocking.
1. Set members level and plumb, in correct position.
 2. Place horizontal members flat, crown side up.
 3. Construct curb members of single pieces.
 4. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.
 5. Coordinate curb installation with installation of work of other trades.
- C. All wood bucks, blocks, bolts, anchors, etc., shall be furnished and set for building into masonry walls and partitions. All temporary and permanent wood bucks and sub-bucks shall be erected, and all plates, blocking, grounds, furring, stripping, screeds, nailers, etc., shall be securely installed at proper times to suit progress of construction.
- D. Fit carpentry work to other work. Scribe and cope as required for accurate fit. Set carpentry work accurately to required levels and lines with members plumb and true and accurately cut and fitted. Shim with metal or slate for full bearing on concrete or masonry substrates. Set true to line and level, plumb, with intersections true to required angle. Build into masonry as work progresses, cutting to fit masonry unit size involved. Anchor to formwork before concrete placement.
- E. Wood Grounds: Provide wood grounds and blocking of size and shape required for securing trim and attaching other work in place. Set grounds true to line, level or plumb and secure firmly in place. Grounds generally will be dressed square edged, pressure treated and of a thickness required for substantial anchorage and fastening to substrate and remaining flush with adjacent finish surfaces.

- END OF SECTION 06 10 00 -

SECTION 09 90 00
PAINTING AND COATING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Paint or natural finish all interior surfaces not specifically excluded. Includes:
 - a. All areas indicated on the drawings and included in the schedule noted to be painted.
 - b. Areas damaged as part of demolition and construction.
 - c. Exposed mechanical and electrical items in areas to be painted.
2. Paint exposed surfaces not factory finished on exterior and interior materials as determined necessary by project Architect to achieve required material protection and desired project aesthetics.

B. Exclusions: In addition to material obviously not requiring paint such as stainless steel, plastic laminate, glass, flooring, tile, etc. Do not paint or finish:

1. Surfaces indicated by finish schedule to remain unfinished.
2. Factory finished surfaces indicated to be factory finished.
 - a. Aluminum with anodized or baked-on finish.
 - b. Finish hardware, except hardware with USP finish.
 - c. Electrical devices, fixtures, and trim.
3. Equipment such as mechanical and electrical equipment located inside equipment rooms.

1.2 REFERENCES

- A. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
- B. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements: Indoor Air Quality: Provide products which will not adversely affect indoor air quality through emission of toxic gasses or vapors. If possible, do not use materials with residual of formaldehyde, epoxy resin, or urea-based materials.
- B. Existing oil base surfaces that are to be painted with latex paint shall first be primed with a primer recommended by paint manufacturer to ensure 100 percent bonding of the new paint.
- C. Where existing areas with lead-based paints are disturbed, air borne particle, water shall be avoided. Paint containing lead shall be wet scraped (No sanding) and shall comply with COMAR

09.12.32 and 26.02.07 Occupational Exposure to Lead in Construction publications, as administered by Maryland Occupational Safety and Health (MOSH) Public Sector and OSHA.

- D. In renovation projects, proper procedures per paint manufacturer's recommendations shall be exercised to ensure 100 percent bonding of paint to surfaces that have weathered a season or more without heat or in adverse environmental conditions.

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data: Provide data on all finishing products and special coatings.
- C. Samples: Submit two samples, 6 x 6 inch in size illustrating selected colors and textures for each color selected.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures, and substrate conditions requiring special attention.
- E. Verify in writing that the products specified will be used as directed or submit for approval a list of comparable materials of another listed approved manufacturer, including full identification of all products by name, color, and catalogue number adjacent to those specified, with a statement of equality by the proposed manufacturer.
- F. Submit Manufacturer's certification (MSDS Sheet) for each paint and coating.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five (5) years' experience.
- B. Applicator: Company specializing in performing the work of this section with minimum five (5) years' experience and approved by manufacturer.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for finishes.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, VOC content, and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions. Storage space shall be designated by the Contractor and approved by the Architect.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

- C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior, unless required otherwise by manufacturer's instructions.

1.9 EXTRA MATERIALS

- A. Provide 1 gallon of each color and surface texture used in the facility to the Owner at the completion of the project.
- B. Contractor shall label each container with color, type, texture, and room locations in addition to the manufacturer's label.

1.10 MAINTENANCE

- A. Provide under the provisions of Division 1.
- B. Provide maintenance data including information regarding cleaning instructions.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Best quality materials as manufactured by one of following manufacturers will be acceptable:
 - 1. For Brush, Roller (no spraying is permitted):
 - a. Sherwin Williams (basis-of-design, unless otherwise noted)
 - b. Duron
 - c. McCormick
 - d. Benjamin Moore
- B. Quality: All products not specified by name shall be "best grade" or "first line" products of acceptable manufacturers. See Part 3 - Execution for materials required for this project. Where possible, provide materials of single manufacturer.

2.2 MATERIALS

- A. Coatings: Ready mixed. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.3 FINISHES

- A. See finish drawings for quantity of colors and accent paint locations.
 - 1. Interior Surfaces:
 - a. Interior Wall Paint (CMU):
 - 1) 2 coats latex block filler – S-W PreRite Block Filler, B25W25

- 2) 2 coats interior latex semi-gloss – S-W ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31 Series
- b. Interior Wall Paint (Gypsum Board):
- 1) 1 coat primer – S-W ProMar 200 Zero VOC Interior Latex Primer, B28 Series
 - 2) 2 coats interior latex eg-shel – S-W ProMar 200 Zero VOC Interior Latex Eg-Shel, B20 Series
- c. Interior Ceiling Paint (Gypsum Board):
- 1) 1 coat primer – S-W ProMar 200 Zero VOC Interior Latex Primer, B28 Series
 - 2) 2 coats interior latex flat – S-W ProMar Ceiling Paint Flat, A27 Series
- d. Interior Paint (Ferrous Metal):
- 1) 1 coat primer - Pro Industrial Pro-Cryl Universal Acrylic Primer Off White
 - 2) 2 coats semi-gloss epoxy - Pro Industrial PreCatalyzed Waterbased Semi-Gloss Epoxy, K46 Series

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that substrate conditions are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application to the Architect and General Contractor.
- C. Test shop applied primer for compatibility with subsequent cover materials.
- D. Allow masonry work to cure for at least 30 days before coating. Gypsum board shall be allowed to dry for 15 days before coating.

3.2 PREPARATION

- A. Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Correct defects and clean surfaces which affect work of this section. Remove existing coatings that exhibit loose surface defects.
- C. Seal with shellac and seal marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Galvanized Surfaces: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.

- G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- H. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Prime metal items including shop primed items.
- J. Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.
- K. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried, sand between coats.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Painting shall be in accordance with industry standards in reference to preparation of surfaces, environmental conditions, and applications.
- C. Scheduling of painting shall be coordinated to precede installation of finished materials such as flooring, casework, etc. Any finished material installed prior to painting shall be properly protected.
- D. Do not apply finishes to surfaces that are not dry.
- E. Apply each coat to uniform finish to eliminate possibility of laps, skips and brush marks.
- F. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- G. Sand surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- I. Allow applied coat to dry before next coat is applied.
- J. Prime concealed surfaces of interior woodwork with primer paint.
- K. Full wall shall be painted where paint is scheduled, including but not limited to portions of wall concealed by casework.
- L. Finished work is to be adequately covered with uniform color and finish. The number of coats herein specified being a minimum, this contract shall provide any additional coats to produce a first-class job. Architect may select accent colors or deeptone colors (contrasting bright colors) for interior painted walls or ceilings. Where bright colors are selected, apply extra coats of paint where required to obtain completely opaque surface. Make allowances for 10 percent deep tones in bid. Additional labor or materials used for this purpose not allowable as extra cost.
- M. Allow the following minimum drying time between coats:

1. Interior work-24 hours.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to Mechanical, Plumbing, and Electrical specifications for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.
- B. Paint shop primed equipment.
- C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished.
- E. Paint interior surfaces of air ducts, and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to visible surfaces. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
- F. Paint exposed conduit and electrical equipment occurring in finished areas.
- G. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- H. Color code equipment, piping, conduit, and exposed duct work in accordance with requirements indicated. Color band and identify with flow arrows, names, and numbering.
- I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 PROTECTION AND CLEANING

- A. Protection: Protect floors and adjacent surfaces from paint smears, spatters, and droppings.
 1. Cover fixtures not to be painted. Mask off areas as required.
 2. Finish Hardware: Ensure hardware is removed prior to starting painting operations and that it is replaced only after painting operations have been completed.
 - a. Hardware Removal and Replacement: Section 08 71 00.
- B. Damage to Other Work: Be responsible for damage done to adjacent work. Repair damaged work to satisfaction of Architect. Replace materials damaged to extent that they cannot be restored to their original condition.
- C. Cleaning: Daily clean-up of empty cans, rags, rubbish, and other discarded paint materials shall be removed from site by Contractor, in accordance with Federal, State and Local regulations.
- D. Upon completion, clean glass and paint spattered surfaces.

- END OF SECTION 09 90 00 -

**SECTION 14 42 00
VERTICAL PLATFORM LIFTS**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Commercial hydraulic vertical platform wheelchair lift with full enclosure.

1.2 RELATED SECTIONS

- A. Division 26 Sections for electrical service for lifts to and including disconnect and fused switches at machine room.

1.3 REFERENCES

- A. American National Standards Institute (ANSI) B-29.2 - Chain Standards for Inverted Tooth (Silent) Chains and Sprockets.
- B. American Society of Mechanical Engineers (ASME) A18.1 - Safety Standard for Platform and Stairway Chair Lifts.
- C. U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)".
- D. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- E. NFPA 70 - National Electric Code.

1.4 REQUIREMENTS OF REGULATORY AGENCIES:

- A. Fabricate and install work in compliance with applicable jurisdictional authorities.
- B. File shop drawings and submissions with local authorities as the information is made available. Company pre-inspection and jurisdictional authority inspections and permits are to be made on timely basis as required.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Construction details, material descriptions, dimensions of individual components, and finishes for lifts.
 - 2. Rated capacities, operating characteristics, electrical characteristics, safety features, controls, finishes, and accessories.
 - 3. Preparation instructions and recommendations.
 - 4. Storage and handling requirements and recommendations.
 - 5. Installation methods.
- C. Shop Drawings: Provide a complete layout of lift equipment detailing dimensions and clearances as required.
 - 1. Include plans, elevations, sections, details, attachments to other work, and required clearances.

2. Indicate dimensions, weights, loads, and points of load to building structure.
 3. Include details of equipment assemblies, method of field assembly, components, and location and size of each field connection.
 4. Include diagrams for power, signal, and control wiring.
- D. Selection Samples: For each finish product specified requiring selection of color or finish, two complete sets of color charts representing manufacturer's full range of available colors and patterns.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Certificates: For each type of lift. Include statement that runway, ramp or pit, dimensions as shown on Drawings, and electrical service as shown and specified are adequate for lift being provided.
- C. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each type of lift to include in operation and maintenance manuals.
 1. In addition to items specified in Section 01 78 20 "Operation and Maintenance Data," include the following:
 - a. Parts list with sources indicated.
 - b. Recommended parts inventory list.
- B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted use of lifts.
- C. Continuing Maintenance Proposal: Submit a continuing maintenance proposal from Installer to Owner, in the form of a standard two-year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications:
 1. Skilled tradesmen shall be employees of the installing contractor approved by the manufacturer, with demonstrated ability to perform the work on a timely basis.
 2. Execute work of this section only by a company that has adequate product liability insurance.
 3. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install systems

under environmental conditions outside manufacturer's absolute limits.

1.11 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of lifts that fail in materials or workmanship within specified warranty period.
 - 1. Special Warranty Period: Two years from date of Substantial Completion.
 - 2. The manufacturer shall offer a 36-month limited warranty on parts from date of shipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Savaria
 - 1. Premier Lifts, a division of Savaria USA; Brandon Thompson, 410-561-7006 x 206, brandon.thompson@premierlifts.com
- B. Additional Acceptable Manufacturers:
 - 1. Ascension, Clarity
 - 2. Bruno
- C. Substitutions: Not permitted.

2.2 COMMERCIAL WHEELCHAIR LIFT

- A. Hydraulic Vertical Platform Lifts: Savaria:
 - 1. Model: Multilift Enclosure, model Vertical Platform Lift
- B. Hydraulic Vertical Platform Lift: The lift described here, manufactured by Savaria UDA Inc, is a vertical platform lift consisting of a hydraulic tower with a lifting platform. The platform is made to accommodate a wheelchair user or a person with impaired mobility. The lift can be used indoors in commercial applications.
- C. Work described in this section includes providing equipment, incidental material and labor required for complete, operable roped hydraulic wheelchair lift installation. Lifts shall be erected, installed, adjusted, tested and placed in operation by lift system manufacturer, or manufacturer's authorized installer.
 - 1. Lifts shall be in accordance:
 - a. ASME A18.1
 - b. ASME A17.5
 - c. ADAAG
 - d. ANSI A117.1
 - e. NFPA 70 (NEC)
- D. The following preparatory work to receive the lifts specified in this section is part of the work of other sections:
 - 1. Permanent 120 VAC, 20-amp single phase power to operate lift to be provided from a lockable fused/cartridge type disconnect switch with auxiliary contacts for battery operation. Refer to drawings for permanent power specifications and location of disconnects. Temporary power may be provided

- to expedite installation of lift.
- 2. Provide rough openings per lift contractor's shop drawings.
- 3. Provide substantial, level floor slab as indicated on the lift contractor's shop drawings.

E. Characteristics:

- 1. Rated Load: 750 lb (340 kg).
- 2. Rated Speed: 8 fpm (0.04 m/s).
- 3. Car Dimensions:
 - a. Platform Clear space: 36" x 60"
 - b. Levels Serviced: 2.
- 4. Car Configuration:
 - a. Front/rear exit.
- 5. Travel: 34" to 168" Allowable
 - a. Verify existing conditions in the field, approximately 61.5"
- 6. Pit Depth:
 - a. 3" (Existing)
- 7. Installation Environment
 - a. Indoor (interior install)
- 8. Powder Coat Finish
 - a. Almond beige
- 9. Operation: Three (3) Constant pressure operating switches, two (2) for remote mounting outside of the platform and one (1) located inside the platform.
 - a. Provide a separate "PUSH TO STOP" emergency button on the passenger control station.
- 10. Power Supply: 24-volt, 15 amp, 1 phase, 60 Hz.
- 11. Drive System: 2:1 chain hydraulic.
- 12. Emergency Power:
 - a. Full-time battery power supplied by 24VDC SLA battery bank.
- 13. Controller: Relay logic-based controller.
- 14. Motor: 1HP, 24 volts
- 15. Manual Lowering: Outside the hoistway at lower landing with keyed box.

F. Car Enclosure: Side Guards of platform shall have a steel frame with a powder coat finish and panel inserts to a minimum of 42 inches high. Car floor to have anti-skid painted finish in manufacturer's standard color.

G. Doors and Gates:

- 1. First landing door:
 - a. Door type: Enclosure door
 - b. Flush closing operation with enclosure side.
 - c. Operation
 - 1) Self-closing.
 - 2) Automatic - Surface 24-volt door opener with battery back-up for low profile aluminum door.
 - d. Door Width
 - 1) 36 inches (889 mm)
- 2. Upper landing door/gate:
 - a. Door type:
 - 1) Enclosure door
 - b. Flush closing operation with enclosure side.
 - c. Operation
 - 1) Self-closing.
 - 2) Manual
 - d. Door Width

1) 36 inches (889 mm)

- H. Lift Enclosure:
1. The enclosure will be made entirely of aluminum for durability against corrosion.
 2. The enclosure frames and panels shall be fully assembled and screwed together from inside the enclosure for ease of assembling and quick installation time.
 3. All enclosure inserts shall be replaceable from the inside of the enclosure for ease of service.
 4. Provide closure panels to match lift enclosure material and finish to close off gaps between lift system and hoistway surfaces.
- I. Call Stations: Provide flush, surface or door frame mounted landing call/send stations.
1. Call stations will be:
 - a. Keyed (removable in off position)
- J. Car Operation:
1. Car Operating Panel shall consist of constant pressure buttons, emergency stop/alarm button, and emergency LED light mounted on a removable stainless-steel panel (Type 304 #4 Stainless Steel Finish).
- K. Pumping Unit and Control:
1. The pumping unit and control shall be enclosed in the tower. The controller and pump unit shall be pre-wired and tested prior to shipment. The controller is to be relay logic-based operation for ease of maintenance and service. Pump unit shall incorporate the following features:
 - a. Adjustable pressure relief valve.
 - b. Manually operable down valve to lower lift in the event of an emergency. This valve shall be activated from outside of the hoistway through a keyed box.
 2. Pressure gauge isolating valve, manually operable.
 3. Gate valve to isolate cylinder from pump unit.
 4. Electrical solenoid for down direction control.
 5. Emergency Operation - A manual lowering device shall be located outside the hoistway in a lockable box positioned at a lower landing.
- L. Cylinder and Plunger:
1. The cylinder shall be constructed of steel pipe of sufficient thickness and suitable safety margin. The top of the cylinder shall be equipped with a cylinder head with an internal guide ring and self-adjusting packing.
 2. The plunger shall be constructed of a steel shaft of proper diameter machined true and smooth. The plunger shall be provided with a stop electrically welded to the bottom to prevent the plunger from leaving the cylinder.
- M. Roller Chains: Two No.50 roller chains with 5/8-inch (16 mm) pitch. Minimum breaking strength 6100 lb (2773 kg) each.
- N. Leveling Device:
1. The lift shall be provided with an anti-creep device which will maintain the carriage level within 1/2 inch (12 mm) of each landing.
 2. All limit switch and leveling device switches shall be located in a position to be inaccessible to unauthorized persons. They shall be located behind the mast wall and be accessible through removable panels.
- O. Guide Yoke: The 2:1 guide yoke/sprocket assembly shall be supplied with idler

sheaves, roller guide shoes, bearings, and guards.

- P. Terminal Stopping Devices: Normal terminal stopping devices shall be provided at top and bottom of runway to stop the car positively and automatically.
- Q. Guide Rails and Brackets: Steel "C" guide rails and brackets shall be used to guide the platform and sling. Guide rails shall form part of the structural integrity of the unit and be integral to the mast enclosure, ensuring stability and minimum platform deflection when loaded.
- R. Car Sling: Car sling shall be fabricated from steel tubing 44 inches (1116 mm) high with adequate bracing to support the platform and car enclosure. Roller guide shoes shall be mounted on the top and bottom of the car sling to engage the guide rails. Guide shoes shall be roller type with 3 inches (76 mm) diameter wheels. Nylon guide shoes shall not be used for better ride quality and durability.
- S. Wiring: All wiring and electrical connections shall comply with applicable codes. Insulated wiring shall have flame-retardant and moisture-proof outer covering and shall be run in conduit or electrical wire ways if located outside the unit enclosure. Quick disconnect harnesses shall be used when possible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until hoistway has been properly prepared. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, critical dimensions, and other conditions affecting performance of the Work.
- B. Site dimensions shall be taken to verify that tolerances and clearances have been maintained and meet local regulations. Verify that installed lift will have a minimum headroom of 80 inches (2032 mm) above any point on platform floor at any point of travel.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 LIFT INSTALLATION

- A. General: Comply with ASME A18.1 and manufacturer's written instructions for installation of lifts unless otherwise indicated. Install all the components of the lift system that are specified in this section to be provided, and that are required by jurisdictional authorities to license the lift.
- B. Trained employees of the lift contractor shall perform all installation work of this section.

- C. Wiring Method: Conceal conductors and cables within housings of units or building construction. Do not install conduit exposed to view in finished spaces. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.
- D. Adjust lift for proper operation and clean unit thoroughly.
- E. Coordinate runway doors with platform travel and positioning, for accurate alignment and minimum clearance between platforms, runway doors, sills, and door frames.
- F. Position sills accurately and fill space under sills solidly with nonshrink, nonmetallic grout.
- G. Coordinate platform doors with platform travel and positioning.
- H. Adjust stops for accurate stopping and leveling at each landing, within required tolerances.
 - 1. Leveling Tolerance: 1/4 inch (6 mm) up or down, regardless of load and direction of travel.
- I. Lubricate operating parts of lift, including drive mechanism, guide rails, hinges, safety devices, and hardware.
- J. Test safety devices and verify smoothness of required protective enclosures and other surfaces.

3.4 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of lift installation and before permitting use of lifts, perform acceptance tests as required and recommended by ASME A18.1 and authorities having jurisdiction.
- B. Operating Test: In addition to acceptance testing, load lifts to rated capacity and operate continuously for 30 minutes between lowest and highest landings served. Readjust stops, signal equipment, and other devices for accurate stopping and operation of system.
- C. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times tests are to be performed on lifts.

3.5 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 24 months' full maintenance by skilled employees of lift Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper lift operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
 - 1. Perform maintenance during normal working hours.
 - 2. Perform emergency callback service during normal working hours with response time of two hours or less.
 - 3. Include 24-hour-per-day, 7-day-per-week emergency callback service with response time of two hours or less.

- B. Maintenance contract is to be executed independently from modernization contract. Within the elevator modernization bid, include a line item for maintenance costs. Maintenance contract will be executed based off cost submitted within Modernization bid.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain lifts. Include a review of emergency systems and emergency procedures to be followed at time of operational failure and other building emergencies.
- B. Check operation of lifts with Owner's personnel present and before date of Substantial Completion. Determine that operating systems and devices are functioning properly.
- C. Check operation of lifts with Owner's personnel present not more than one month before end of warranty period. Determine that operating systems and devices are functioning properly.

3.7 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

- END OF SECTION 14 42 00 -