



**SPECIAL PROVISIONS
FOR
Clear Creek Trail Restroom**

Johnson County
EDP-1557(628)--7Y-52

Effective Date
July 19, 2011

THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

SECTION 00800 SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.01 ARTICLE 1: CONTRACT DOCUMENTS

- A. Add new subparagraph, "1.1.5 PRODUCTS: The term product as used in these Supplementary Conditions includes materials, systems and equipment."

1.02 ARTICLE 3: CONTRACTOR

- A. Add the following sentence to subparagraph 3.9.1, "The superintendent shall be considered to be a project foreman who is at the site and involved in the project whenever work by any of the trades is being pursued."

1.03 ARTICLE 4: ENGINEER

- A. Add the following sentence to subparagraph, 4.1.1: "The term ENGINEER as used in the Contract Documents shall refer to Martin Design, P.C., David F. Martin, A.I.A., President, 700 11th St., Suite 200, Marion, Iowa 52302, or his authorized representative."

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 SUMMARY OF WORK

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.
- 1.02 DESCRIPTION OF WORK:
- A. The work consists of the following:
New construction of a trailhead building containing two restrooms, a mechanical room and a covered picnic area which this special provision pertains to. Also included in the project are trail and parking amenities as described in the drawings.
 - B. ALTERNATES: See proposal form.
- 1.03 LOCATION: Clear Creek Trail (City of Coralville Parks Department)
1506 8th Street
Coralville, Iowa 52241
- 1.04 CONTRACTING AUTHORITY:
City of Coralville Parks and Recreation Department
1506 8th Street
Coralville, Iowa 52241
- 1.05 WORK BY OTHER FORCES:
- A Work to be performed by Contracting Authority's forces. See drawings.
- 1.06 WORK SEQUENCE AND SPECIAL PROJECT PROCEDURES:
- A. The park area surrounding the construction site should not be used for construction storage and construction activities shall be limited to the immediate areas around the new building. As much as possible storage and vehicle storage should be limited to the paved areas of the site.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01051 GRADES, LINES AND LEVELS

PART 1 - GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.
- 1.02 The Contractor and subcontractors are responsible for verifying all locations, elevations, and dimensions and are responsible for correction of same.
- A. No extra compensation will be allowed for difference between actual dimensions and measurements indicated on drawings. Material differences in previously installed work or in current work shall be called to the ENGINEER's attention for consideration before beginning work."

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01060 REGULATORY REQUIREMENTS

PART 1 - GENERAL

- 1.01 GENERAL: See General Conditions of the Contract and Supplementary General Conditions for requirements.
- A. All work shall conform to the latest edition of the regulations and requirements of the following publications:
1. "2009 International Building Code" and associated Fire, Mechanical, and Electrical Codes most current edition published by the International Code Council.
 2. "National Electrical Safety Code" of the National Bureau of Standard's Handbook H-30.
 3. Local and State electric code and ordinances.
 4. Utility company requirements.
 5. Telephone company requirements.
 6. Local and State Fire Marshall's regulations.
 7. "State Plumbing Code," published by Department of Health, State of Iowa.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01070 ABBREVIATIONS AND SYMBOLS

PART 1 – GENERAL

- 1.01 REFERENCE STANDARDS: All references to codes, specifications and standards referred to in these specifications or shown on the drawings shall mean and intend to be the latest edition, amendment and revision of such reference standard in effect as of the date of these specifications and drawings.
- 1.02 STANDARD ABBREVIATIONS: Reference to a technical society, institution, association or governmental authority is made in the specifications in accordance with the following abbreviations.

AAMA	Architectural Aluminum Manufacturers Association
AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
AIA	American Institute of Engineers
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALS	American Lumber Standards
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ATI	Asphalt Tile Institute
ASHRAE	American Society of Heating, Refrigerating & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association
CS	Commercial Standard, U.S. Dept. of Commerce
FGJA	Flat Glass Jobbers Association
FM	Factory Mutual Underwriters
FSS	Federal Specifications Standards
GA	Gypsum Association
HI	Hydraulics Institute
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
MIA	Marble Institute of America
MLMA	Metal Lath Manufacturers Association
MS	Military Specification
MSTD	Military Standard

DIVISION 1 - GENERAL REQUIREMENTS**SECTION 01070 ABBREVIATIONS AND SYMBOLS****CONT'D**

NAAMM	The National Association of Architectural Metal Manufacturers
NHLA	National Hardwood Lumber Association
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NEC	National Electric Code of NBFU
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NLMA	National Lumber Manufacturers Association
NTMA	The National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
OITC	Outdoor-Indoor Transmission Class
SDI	Steel Deck Institute
SSPC	Steel Structures Painting Council
SCPI	Structural Clay Products Institute
SPR	Simplified Practice Recommendation, U.S Dept. of Commerce
TCA	Tile Council of America
UL	Underwriters' Laboratories, Inc.
UPC	Uniform Plumbing Code
USA	United States of American Standards Association

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01200 PROJECT MEETING

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- A. Project meetings will be held the first week of each month and as requested by the Contracting Authority or ENGINEER.
- 1.02 ATTENDANCE: Construction site meetings will be held the first week of each month at a date and time to be established by the General Contractor. Mechanical and Electrical Contractors shall attend all site meetings without exception. Other subcontractors, who will be working at the jobsite in the subsequent time periods, shall attend these meetings whether requested or not. If a principal of the firm does not attend meetings, he shall send a representative that has full responsibility to bind Contractor to any decisions reached. Repeated failure to attend project meetings will be grounds for the Contracting Authority to request removal of subcontractors from the project. Additional costs to the project caused by the failure of attendance may be recovered from the Contractor at fault.

END OF SECTION

01200-1

DIVISION 1 - GENERAL REQUIREMENTS**SECTION 01340 SHOP DRAWINGS, PRODUCT DATA & SAMPLES****PART 1 – GENERAL**

- 1.01 **COORDINATION:** Coordinate preparation and processing of submittals with performance of the work so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination with another.
- 1.02 **PREPARATION OF SUBMITTALS:** Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Show Contractor's executed review and approval marking and provide space for Engineer's "Action" marking. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than the Contractor's office will be returned "without action". Submittals not reviewed by the Contractor will be returned "without action". Submittals other than samples are preferred to be electronically transmitted. All required samples listed must be actual samples.
- 1.03 **QUANTITY:** Submit the following number of shop drawings/samples with each submission:
- A. Samples: 1 set with duplicates of selected items upon request.
 - B. General Contract Shop Drawings: 7 copies. - electronic copy preferred.
- 1.04 **SHOP DRAWINGS REQUIRED:** Shop drawings shall be submitted for at least the following materials:
- POURED CONCRETE FOR SLABS, COLUMNS, AND FOUNDATIONS
 - CONCRETE FLOOR SEALER/CURING AGENT
 - CONCRETE BLOCK AND ACCESSORIES
 - GLASS BLOCK AND ACCESSORIES
 - DECORATIVE ARTISAN MASONRY BLOCK
 - STRUCTURAL STEEL
 - MISC. METALS AND FABRICATIONS
 - METAL GRILLS/VENTS
 - STEEL REINFORCEMENT BARS
 - OTHER STEEL REINFORCING
 - TREATED WOOD
 - PRE-ENGINEERED ROOF TRUSSES AND ACCESSORIES
 - ENGINEERED LUMBER
 - SYNTHETIC WOOD PRODUCTS (AZEK)
 - FIBER CEMENT SIDING PANELS
 - FIBER CEMENT TRIM
 - FINISH HARDWARE
 - ICE AND WATER SHIELD
 - VAPOR BARRIER
 - WEATHER/AIR BARRIER
 - SEALANTS/CAULKING
 - METAL ROOFING
 - METAL SOFFIT
 - PREFINISHED STEEL COIL FLASHING
 - LOUVERS AND VENTS

01340-1

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01340 SHOP DRAWINGS, PRODUCT DATA & SAMPLES CONT'D

RIDGE VENT, DRIP EDGE, FASCIA, AND ACCESSORIES
HOLLOW METAL DOORS
HOLLOW METAL FRAMES
HARDWARE
ALUMINUM WINDOWS
GLAZING
GYPSUM DRYWALL AND ACCESSORIES
PAINT
FLOOR FINISH
MIRRORS
SIGNAGE
RESTROOM TOILET ACCESSORIES
EXHAUST FAN
ELECTRICAL LIGHTING
ELECTRICAL DEVICES AND TRIM
PLUMBING FIXTURES, FITTINGS, PIPING, AND ACCESSORIES
ELECTRIC HAND DRYERS

- 1.05 SAMPLES REQUIRED: Sample materials shall be submitted for Contracting Authority's approval for at least the following materials:

CONCRETE BLOCK
GLASS BLOCK
DECORATIVE ARTISAN MASONRY BLOCK
METAL GRILLS/VENTS
SYNTHETIC WOOD PRODUCTS (AZEK)
FIBER CEMENT SIDING PANELS
FIBER CEMENT TRIM
FINISH HARDWARE
METAL ROOFING
PREFINISHED STEEL COIL
RIDGE VENT, DRIP EDGE, FASCIA, AND ACCESSORIES
DOOR HARDWARE FINISH
ALUMINUM WINDOW FINISH
PAINT
FLOOR FINISH

END OF SECTION

1340-02

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01500 CONSTRUCTION FACILITIES

PART 1 - GENERAL

- 1.01 TEMPORARY ELECTRICITY: Contractor shall provide for temporary electrical as required by the needs of various trades on the site and may be required to meet applicable safety standards. Minimum service to be 100 amp 220 volt or equivalent. Cords provided by Contractor . Cost of electricity to be paid for by the Contractor.
- 1.02 TEMPORARY TOILET FACILITIES: Contractor to provide toilets for use of the workers during construction. Contractor shall maintain toilets, used by workmen, in clean condition.
- 1.03 TOOL SHED, AND STORAGE FACILITIES: Contractor shall provide tool and storage facilities, if required, at the site for large items. All tool and storage facilities should be located on the property as coordinated with the ENGINEER in a location not to hamper the overall construction project.
- 1.04 TEMPORARY ENCLOSURES: The Contractor shall provide all temporary enclosures and barricades needed to protect the building, excavations, and work area at the close of each day or during inclement weather. The Contractor shall provide to the Contracting Authority and ENGINEER the telephone number of person or persons available to call in case of damage or leakage during non-business hours. Contractor shall make all repairs to damaged portions of the building promptly.
- 1.05 BUILDING SECURITY: The contractor shall be responsible for building security during the construction period. He shall erect all required enclosures or barriers to secure the building and site whenever construction personnel are not present. See drawings for additional notes.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01700 CONTRACT CLOSEOUT

PART 1 – GENERAL

1.01 CLEANUP:

- A. Just prior to completion, Contractor shall remove all debris, repair all damaged lawn areas, and rake clean areas adjacent to building. Take special care to remove all nails and similar debris from the area.
- B. Contractor shall broom clean the entire building, remove labels, clean and polish all glass, remove paint drippings, spots, stains and dirt from all finished surfaces.
- C. Contractor shall final adjust all operable devices for optimum use, and consistency.
- D. No dumping or burning will be allowed on the job site.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01800 RECORD DRAWINGS

PART 1 – GENERAL

- 1.01 Contractor and each of his subcontractors shall record all material changes made during construction.
- 1.02 At the end of construction and prior to final payment, the General Contractor shall compile all such changes onto two sets of copies supplied by the ENGINEER.
- 1.03 Contractor shall transmit these drawings to the ENGINEER.

END OF SECTION

DIVISION 2 - SITE WORK

SECTION 02200 BUILDING EXCAVATING, FILLING AND GRADING

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 EXTENT OF WORK:
- A. The extent of the Excavating, Filling and Grading work is shown on the drawings.
 - B. Preparation of sub grade for building slabs, is included as part of this work.
 - C. Drainage fill course for support of building slabs is included as part of this work.
 - D. Final rough grade around building to within 6 inches of finish grade.
 - E. Coordinate grading activities with overall site preparation of the park area.
 - F. Final grading, including placement of black dirt in all disturbed areas of the site. See drawings for extent of seeding, plantings, ground cover and sodding.
- 1.03 CODES AND STANDARDS: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
- 1.04 JOB CONDITIONS:
- A. Provide barricades, covering or other types of protection necessary to prevent damage to existing improvements.
 - B. Restore any improvements damaged by this work to their original condition, as acceptable to the Contracting Authority .
 - C. Existing Utilities
 - 1. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
 - 2. Should uncharted or incorrectly charted piping or other utilities be encountered during excavations, consult the ENGINEER immediately for directions as to procedure. Cooperate with ENGINEER and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility Contracting Authority.
 - D. Do not interrupt existing utilities serving facilities occupied and used by Contracting Authority or others, except when permitted in writing by Contracting Authority and then only after acceptable temporary utility services have been provided. Coordinate disruption of storm sewer.
 - E. Barricade open excavations occurring as part of this work and post warning lights. Operate warning lights as recommended by authorities having jurisdiction.
 - F. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, wash-out and other hazards created by earthwork operations.
- 1.05 REMEDIAL SITE WORK:
- A. If site conditions indicate the presence of unsuitable soil conditions, Contractor shall immediately notify the ENGINEER and take remedial action as directed by him or Soils Consultant retained by the Contracting Authority . All such work shall be charged to the Contracting Authority at cost plus 10 percent profit and overhead and documented as requested by the Contracting Authority, unless unsuitable conditions are found to be directly the result of Contractors failure to conduct operations properly or to arrange for timely testing of soil operations. See construction contract for any modification of change order procedure.

DIVISION 2 - SITE WORK**SECTION 02200 BUILDING EXCAVATING, FILLING AND GRADING****CONT'D**

- B. If underground obstructions, such as foundations or boulders or unsatisfactory soil conditions are encountered during construction, the Contractor shall immediately notify ENGINEER. The ENGINEER will determine the extent of the condition and, if required, consult with the Contracting Authority to determine if the Contracting Authority wants to correct the condition with their own forces. If the Contracting Authority elects not to remove the obstruction or repair the condition using his own forces, the Contractor shall charge the cost of the work to the Contracting Authority at cost plus 10 percent profit and overhead.

PART 2 – PRODUCTS

- 2.01 SOIL MATERIALS: All satisfactory soil materials shall be free of organic and debris and approved by the ENGINEER.
- A. Satisfactory soil materials are defined as those complying with the Unified Soil Classification System, group symbols SP, SW, SC, ML, and CL. The soil material for the group symbol CL shall have a liquid limit less than 45 percent and a plasticity index less than 20 percent.
- B. Unsatisfactory soil materials are those defined by the Unified Soil Classification System as OL, CH, MH, and OH; also peat (PT) and other highly organic soils.
- C. Sub-base Materials, naturally or artificially graded mixture of natural or crushed gravel, crushed stone, natural, or crushed sand, as acceptable to the ENGINEER.
- D. Backfill and Fill Materials: Satisfactory soil materials free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetable, and other deleterious matter as acceptable to the ENGINEER.

PART 3 – EXECUTION

- 3.01 INSPECTION: Examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the Contracting Authority in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- 3.02 EXCAVATION: Excavation consists of removal and disposal of material encountered when establishing required grade elevations.
- A. Unauthorized excavation consists of removal of material beyond indicated subgrade elevations or dimensions. Unauthorized excavation, as well as work found to be directly or indirectly the result of Contractor's failure to conduct operations properly or arrange for timely testing of soil materials shall be at the Contractor's expense.
1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classifications, unless otherwise directed by ENGINEER.
- B. Additional Excavation: When excavation has reached required subgrade elevations, notify the ENGINEER who will make an inspection of conditions. If unsuitable bearing conditions are encountered, follow recommendations of ENGINEER for remedial actions.

02200-02

DIVISION 2 - SITE WORK**SECTION 02200 BUILDING EXCAVATING, FILLING AND GRADING****CONT'D**

- C. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
 - 1. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.
 - D. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition.
 - 1. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
 - 2. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
 - E. Dewatering: Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.
 - 1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundations bottoms, undercutting footings and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and other discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - 2. Convey water removed from excavations and rainwater to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.
 - F. Material Storage: Stockpile satisfactory excavated materials needed for reuse on the site in areas indicated by the site plan. Place, grade, and shape stockpiles for proper drainage. If no location is indicated, locate as directed by the General Contractor.
 - 1. Locate and retain soil materials away from edge of excavations.
 - 2. Dispose of excess soil material and waste materials as herein specified.
 - G. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, other construction and for inspection.
 - 1. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive concrete.
 - 2. Where trench footing or walls are noted on the drawings, the top eight inches of the footing or wall and all areas exposed to view shall be board formed.
 - 3. Where trench footings or wall are noted on the drawings and soil conditions do not provide stable trench conditions or trenches are not stable in vertical position, Contractor shall provide formed wall at no additional cost.
- 3.03 **COMPACTION:** Control soil compaction during construction providing minimum percentage of density specified for each area classification.
- A. percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum dry density for soils which exhibit a well defined moisture density relationship determined in accordance with ASTM Standard D-698; and not less than the following percentages of relative density:
 - 1. Structures: Compact top 12 inches of subgrade and each layer of backfill or fill material at 98 percent maximum dry density.
 - 2. Building Slabs: Compact top 12 inches of subgrade and each layer of backfill or fill material at 95 percent maximum dry density.

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DIVISION 2 - SITE WORK**SECTION 02200 BUILDING EXCAVATING, FILLING AND GRADING****CONT'D**

3. Walkways: Compact top 6 inches of subgrade and each layer of backfill and fill material at 95 percent maximum dry density.
 4. Pavements: Compact top 12 inches of subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
- 3.04 **BACKFILL AND FILL:** Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
- A. In excavations, use satisfactory excavated or borrow material.
 - B. Under grassed areas, use satisfactory excavated or borrow material.
 - C. Under walks and pavements, use sub-base material, or satisfactory excavated or borrow material, or combination of both.
 - D. Under building slabs, use clean compacted gravel for drainage fill material.
 - E. Backfill excavations as promptly as work permits, but not until completion of the following:
 1. Inspection, testing, approval and recording locations of underground utilities.
 2. Removal of concrete formwork.
 3. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 4. Removal of trash and debris.
 5. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
 - F. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions and deleterious materials from ground surface prior to placement of fills. Plow strip or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface. When existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density. A minimum of 12 inches of topsoil shall be removed prior to the start of construction.
 - G. Placement and Compaction: Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
 1. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift.
- 3.05 **GRADING:** Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
- A. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:
 1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations.
 2. Walks: Shape surfaces of areas under walks to line, grade and cross-section, with finish surface not more than 0.10 feet above or below the required subgrade elevation.

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DIVISION 2 - SITE WORK

SECTION 02200 BUILDING EXCAVATING, FILLING AND GRADING

CONT'D

- B. Grading Surface of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation.
 - C. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.
- 3.06 **BUILDING SLAB DRAINAGE COURSE:** Drainage course consists of placement of drainage fill material, in layers of indicated thickness, over subgrade surface to support concrete building slabs.
- A. Placing: Place drainage fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations. When a compacted drainage course is shown to be 6 inches thick or less, place material in equal layers, except no single layer more than 6 inches or less than 3 inches in thickness when compacted.
- 3.07 **MAINTENANCE:**
- A. Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.
 - B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape and compact to required density prior to further construction.
- 3.08 **DISPOSAL OF EXCESS AND WASTE MATERIALS:** Material containing waste and debris shall be disposed of off site in suitable location.

END OF SECTION

DIVISION 3 - CONCRETE

SECTION 03300 BUILDING CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 EXTENT OF WORK: The extent of the cast-in-place concrete work is shown on the drawings.
- 1.03 QUALITY ASSURANCE:
- A. Codes and Standards: Comply with the provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified.
 - 1. ACI 301, " Specifications for Structural Concrete for Building."
 - 2. ACI 311, "Recommended Practice for Concrete Inspection."
 - 3. ACI 318, "Building Code Requirements for Reinforced Concrete."
 - 4. ACI 347, "Recommended Practice for Concrete Formwork."
 - 5. ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."
 - 6. Concrete Reinforcing Steel Institute, "Manual of Standard Practice."
 - B. Where provisions of the above codes and standards are in conflict with the building code in force for this project, the building code shall govern.
- 1.04 WORKMANSHIP: The Contractor is responsible for correction of concrete work which does not conform to the specified requirements, including strength, tolerances and finishes. Correct deficient concrete as directed by the ENGINEER.

PART 2 – PRODUCTS

- 2.01 CONCRETE MATERIALS:
- A. Portland Cement: ASTM C150, Type as required.
 - B. Sand: Clean, hard, natural, conforming to ASTM C33.
 - C. Coarse Aggregates: Hard, durable, uncoated, crushed stone or gravel conforming to ASTM C33. Maximum size aggregate - 3/4 inch.
 - D. Mixing Water: Clean, potable, free from oil, acid, alkalines, vegetable matter, and other impurities.
 - E. Air-Entraining Admixture: ASTM C260.
 - 1. Concrete foundation walls: 3 percent to 5 percent.
 - 2. Exterior concrete walls, exterior sidewalks: 5 percent to 7 percent.
 - 3. Interior concrete slabs: 5 percent to 7 percent.
 - F. Water-Reducing Admixture: ASTM C474, Type A.
 - G. Compressive Strength: Concrete shall be proportioned and mixed to obtain the following minimum compressive strength at the age of 28 days for each type of concrete, based upon the results of tests as herein specified:
 - 1. Concrete for footings - 3000 psi.
 - 2. Concrete for foundation walls - 3500 psi.
 - 3. Concrete for slabs and all other concrete - 4000 psi.
 - H. Slump Limits: Proportion and design mixes to result in concrete slump at the point of placement as follows:
 - 1. Ramps and Sloping Surfaces: Not more than 3 inches.
 - 2. Reinforced Foundation Systems: Not less than 1 inch and not more than 3 inches.
 - 3. All other Concrete: Not less than 1 inch and not more than 4 inches.
 - I. Curing Compound: "Kure n Seal by Sonneborn".

DIVISION 3 - CONCRETE**SECTION 03300 BUILDING CAST-IN-PLACE CONCRETE CONT'D**

- 2.02 FORM MATERIAL:
- A. Exposed Concrete Surfaces: Acceptable panel-type to provide continuous straight, smooth finish. Use largest practical sizes to minimize form joints.
 - B. Unexposed Concrete Surfaces: Suitable material, dressed on at least 2 edges and one side for a tight fit.
 - C. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.
- 2.03 REINFORCING MATERIALS:
- A. Reinforcing Steel: ASTM A615, Grade 60. #4 reinforcing bars and smaller shall be Grade 40.
 - B. Fiberglass Reinforcing Mesh.
- 2.04 CONCRETE ACCESSORIES:
- A. Expansion Joint Material: Closed cell polyethylene foam expansion joint material equal to "Sonoflex F" as manufactured by Sonneborn Building Products Division of Contech, Inc., 1/2 inch thick unless otherwise noted. Extend the full depth of slab or joint. Required wherever concrete slabs abut a masonry/concrete wall and where indicated.
 - B. Inserts and Fastening Devices for Other Work: Provide for installation of inserts, conduit, pipe, sleeves, hangers and any other fastening device required for attachment of other work. Properly locate in cooperation with other trades before concrete is poured. Give sufficient time between erection of forms and placing of concrete to the various trades to permit the installation of their work.
 - C. Vapor Barrier: Polyethylene film, .006 inch thick minimum, lap joints 6 inches, turn film up walls 2 inches, similar to "Visqueen".
- 2.05 PROPORTIONING AND DESIGN OF MIXES:
- A. Prepare design mixes for each type and strength of concrete in accordance with applicable provisions of ASTM C94.
 - B. 3000 PSI 28-day compressive strength concrete shall contain a minimum of 5 bags of cement per cu. yd. minimum.
 - C. 4000 PSI 28-day compressive strength concrete shall contain a minimum of 6 bags of cement per cu. yd. minimum.

PART 3 – EXECUTION

- 3.01 FORMING AND PLACING CONCRETE:
- A. Ready Mixed Concrete: ASTM C94.
 - B. Formwork: Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position, complying with ACI 347.
 - C. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items built into forms.
 - D. Clean and adjust forms prior to concrete placement. Apply form release agents or wet forms, as required. Retighten forms after concrete placement, if required to eliminate mortar leaks.

DIVISION 3 - CONCRETE

SECTION 03300 BUILDING CAST-IN-PLACE CONCRETE CONT'D

- 3.02 REINFORCEMENT:
- A. Comply with the specified codes and standards and Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement, placement and supports, and as herein specified.
 - B. Accurately position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
 - C. Install welded wire fabric in as long lengths as practicable, lapping at least one mesh.
 - D. Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.
 - E. Place reinforcement to obtain at least the minimum coverage for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations.
 - F. Do not place reinforcing bars more than 2 inches beyond the last leg of continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- 3.03 JOINTS: Provide construction, isolation and control joints as indicated or required. Locate construction joints so as to not impair the strength and appearance of the structure. Place isolation and control joints in slabs-on ground to stabilize differential settlement and random cracking. All sawed joints shall be completed within 24 hours of time of initial pouring. All joints to be sealed as specified in Division 7.
- 3.04 INSTALLATION OF EMBEDDED ITEMS: Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete.
- 3.05 CONCRETE PLACEMENT: Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.
- A. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of forms.
 - B. Protect concrete from physical damage or reduced strength due to weather extremes.
 - 1. In cold weather comply with ACI 306.
 - 2. In hot weather comply with ACI 305.
- 3.06 CONCRETE FLOOR SLABS:
- A. Curing: Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover. Cure formed surfaces by moisture curing until forms are removed. Provide protection as required to prevent damage to exposed concrete surfaces.
 - B. Concrete Finishes: Lightly broom finish interior concrete slabs in restroom. Smooth finish in concession stand areas. Broom finish exterior concrete stoops, walkways and entrances.
- 3.07 JOINTS:
- A. Locate and install construction joints, which are not shown on the drawings, so as not to impair the strength and appearance of the structure, as acceptable to the ENGINEER.

03300-03

DIVISION 3 - CONCRETE

SECTION 03300 BUILDING CAST-IN-PLACE CONCRETE CONT'D

- B. Provide keyways at least 1 1/2 inches deep in all construction joints in walls, slabs and between walls and footings; accepted bulkheads designed for this purpose may be used in slabs.
 - C. Place construction joints perpendicular to the main reinforcement. Continue all reinforcement across construction joints.
- 3.08 REPAIR OF FORMED SURFACES: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of ENGINEER. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or pre-cast cement cone plugs secured in place with bonding agent.
- 3.09 FINAL SEALING OF INTERIOR CONCRETE FLOORS: Thoroughly clean floors with mechanical scrubbers to remove all construction dirt and foreign materials. Apply three coats of concrete curing compound according to manufacturer's instructions for method and rate of application.

END OF SECTION

03300-4

DIVISION 4 - MASONRY

SECTION 04200 MASONRY

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: The extent of the unit masonry work is shown on the drawings, and includes all decorative and standard concrete block.
- 1.03 STANDARDS: Comply with recommendations of the National Concrete Masonry Association and Brick Institute.
- 1.04 WORK OF OTHER SECTIONS:
 - A. Flashings, Section 07600.
- 1.05 SAMPLES: Required.

PART 2 – PRODUCT

- 2.01 MASONRY:
 - A. Decorative Concrete Masonry Units: Standard Portland cement concrete unit with split face typically referred to as rock faced. Units are to be pre-colored from manufacturer's standard colors. Preliminary color selection for pricing is King's Materials "Kingston". Submit final samples for final selection.
 - 1. Acceptable Manufacturers
 - a. Kings Material, Inc. - King's Block - 650 12th Ave SW Cedar Rapids, Iowa 53406
 - b. Anchor Block Company- Break off Unbroken - 6101 Baker Road, Suite 205 Minnetonka, MN 55345
 - c. Trenwyth - Splitface Trendstone Plus - One Connelly Road • P.O. Box 438 Emigsville, PA 17318
 - B. Decorative Artisan Masonry Unit
 - 1. Acceptable Manufacturer
 - a. Echo-Block® – Dahlquist Studios RDG Dahlquist Art Studio 316 SW 5th Street, Des Moines, Iowa 50309
 - 1) Style as selected by Engineer
 - B. Concrete masonry unit: Standard Portland cement concrete block. Sizes see plans.
 - C. Glass Block: 8 inches x 8 inches glass block in mortar set.
 - 1. Acceptable Manufacturers
 - a. Weck "Spray" Horizontal lines on exterior. Vertical lines on interior.
 - b. Pittsburgh Corning
 - c. Seattle Glass Block
 - D. Portland Cement: ASTM C150, Type 1, non-staining, no air entrainment.
 - E. Lime Hydrated lime, ASTM C207, Type S.
 - F. Sand: ASTM C144.
 - G. Wall ties and reinforcement: Galvanized "Dur-O-Wall" as manufactured by Dur-O-Wall Inc., Baltimore, MD. or equal approved by ENGINEER.

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DIVISION 4 - MASONRY**SECTION 04200 MASONRY CON'D**

- 2.02 MORTAR FOR UNIT MASONRY: ASTM C270, Proportioned Specification for types of mortar required. Limit cementitious materials to Portland Cement-lime. ENGINEER may select maximum of 2 mortar colors. Note colored mortar on
- A. Use Type M mortar for masonry below grade and in contact with earth, and where indicated.
 - B. Use Type S mortar for reinforced masonry and where indicated.
 - C. Use Type N mortar for exterior above-grade load bearing and non-load bearing walls; for interior load bearing walls and for other applications where another type is not indicated.
 - D. Follow glass block manufacturer's recommendations for mortar for glass block.

PART 3 – EXECUTION

- 3.01 INSPECTION: Masonry Installer must examine the areas and conditions under which masonry is to be installed and notify the ENGINEER in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to Masonry Installer.
- 3.02 INSTALLATION:
- A. Build masonry construction to the full thickness shown except, build single-wythe walls, if any, to the actual thickness of the masonry units, using units of nominal thickness shown or specified.
 - B. Cut masonry units with motor-driven saw designed to cut masonry with sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible.
 - C. Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen work. Remove and replace masonry work damaged by frost or freezing.
 - D. Do not lower the freezing point of mortar by use of admixtures or anti-freeze agents. Do not use calcium chloride in mortar or grout.
 - E. No masonry will be laid when the temperature is below 35°F or expected to fall below 35°F within twelve hours, unless arrangements for heating materials and protecting materials from frost are as approved by the ENGINEER.
 - F. Bed through wall flashing in mortar. Hold outer edge back 1/2 inch from the face of the outer masonry unit. Continue flashing up inner wythe of masonry to at least 8 inches above outer edge.
 - G. Layout walls in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.
 - H. Lay-up walls plumb and true and with courses level, accurately spaced and coordinated with other work.
 - I. As the work progresses, build-in items specified under this and other sections of these specifications. Fill in solidly with masonry around build-in items. Fill space between hollow metal frames and masonry solidly with mortar.
 - J. Strike all exposed joints with tool.
 - K. Protect newly laid masonry from exposure to precipitation, excessive drying, freezing, soiling, backfill and other harmful elements.
 - L. Lay brick in a half bond pattern.
- 3.03 CLEANING
- A. Dry brush masonry work at the end of each day's work.

- B. The use of cleaning solutions on brick should be minimized. Verify acceptable cleaning products and procedures with brick supplier.

END OF SECTION
04200-2

DIVISION 5 - METALS**SECTION 05100 STRUCTURAL STEEL****PART 1 – GENERAL**

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 EXTENT OF WORK: The extent of structural steel work is shown on the drawings, including notes and details to show size and location of members and typical connections.
- 1.03 CODES AND STANDARDS: Comply with the latest provisions of the following except as otherwise indicated.
- A. AISC "Code of Standard Practice for Steel Buildings and Bridges."
 - 1. Paragraph 4.2.1. of the above code is hereby modified by deletion of the following sentence: "This approval constitutes the Contracting Authority 's acceptance of all responsibility for the design adequacy of any connections designed by the fabricator as a part of his preparation of these shop drawings".
 - B. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings" including the "Commentary" and all Supplements thereto issued.
 - C. AISC "Specifications for Structural Joints using ASTM A325 or A490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundations.
 - D. AWS D1.1 "Structural Welding Code."
 - E. ASTM A36 "Structural Steel".
 - F. ASTM A500 Grade "B" "Hot Formed Welded and Seamless Carbon Steel Structural Tubing".
 - G. ANSI B27.2 (type B) plain washers.
 - H. ANSI B18.2 square and hexagon bolts and nuts.
 - I. Structural Steel Painting Council (SSPC): Standards indicated.
 - J. Federal Specifications (F.S.): Standards indicated.
- 1.04 SHOP DRAWINGS: Submit shop drawings and erection drawings for approval. Show all shop and erection details including cuts, copes, connections, holes and welds. Indicate all shop and field welds using AWS symbols. Indicate connections where high strength bolts are required. ENGINEER's review of shop drawings will be performed only after the Contractor's review has been made and will constitute an examination for general compliance only. Compliance with requirements for materials, fabrication, and erection of structural steel is the Contractor's responsibility.
- 1.05.1 STORAGE: Handle and store steel members above ground on platforms, skids, or other supports. Keep members free of dirt, grease, and other foreign material and protect from corrosion. Store other materials in watertight, dry place until ready for use. Store packaged materials in their original unbroken package or containers.

DIVISION 5 - METALS

SECTION 05100 STRUCTURAL STEEL

CONT'D

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Rolled Steel Plates, Shapes and Bars: ASTM A36 unless otherwise noted.
- B. Steel Tubing: ASTM 500 Grade B.
- C. Fasteners: High-strength bolts and nuts, ASTM A325. Unfinished bolts and nuts, ASTM A307, Grade A. See drawings for locations. If type of bolt is not indicated, use high strength bolts and nuts.
- D. Plain washers: ANSI B27.2, Type B.
- E. Anchor bolts: ASTM A36 Rod.
- F. Welding Electrodes: AWS A5.1 or A5.5, E70XX (Shielded Metals Arc).
- G. Shop Paint: FS TT-P-86, Type II or SSPC-Paint 14.

- 2.02 FABRICATION: Comply with the requirements of AISC Specification with modifications and additional requirements specified herein. Fabricate and assemble material in shop to greatest extent possible. Contractor and his fabricator are responsible for correctness of fit in shop and field.

PART 3 - EXECUTION

- 3.01 SHOP PAINTING: Paint structural steel work, except members or portions of members embedded in concrete or mortar and contact areas to be welded or friction bolted. Clean steel free of loose mill scale, rust, oil and grease in accordance with SSPC-2 "Hand Tool Cleaning" or SSPC SP-3 "Power Tool Cleaning" or SSPC SP-6 "Commercial Blast Cleaning". Apply prime paint in accordance with SSPC-PA-1-64 providing a minimum 2.0 mil. minimum dry film thickness when applied in a one coat operation or provide a minimum 1.5 mil. min. dry film first coat and a 1.0 mil min. dry film second coat thickness when applied in a topcoat operation.
- 3.02 FIELD PAINTING: After installation, touch up all damaged or abraded areas using same materials and techniques as for shop painting.
- 3.03 ERECTION: Erect structural steel in accordance with AISC Specification. Use erection equipment suitable and safe for workmen.
- A. Furnish and install temporary bracing to take care of all loads to which the structure may be subjected including erection equipment and its operation. Keep bracing in place as long as required for safety. As erection progresses, securely fasten work to take care of all dead, wind, and erection loads. Remove temporary bracing after completion of work.
 - B. Tighten A325 bolts in accordance with Section 5 of the Specification for Structural Joints.
 - C. Field weld as specified herein.
 - D. Do not use gas cutting to correct fabrication errors on major members. Gas cutting on minor members may be permitted when members are not loaded provided prior approval has been granted by the ENGINEER.
 - E. Tighten and leave in place all erection bolts used in welded connections.
 - F. After bolts are tightened, upset threads of A307 bolts to prevent nuts from backing off.
 - G. Fully bed column base plates and bearing plates for beams and similar structural members on wedges, shims, or leveling screws and solidly pack open spaces with non-shrink grout, Embeco or an approved substitute.

END OF SECTION

DIVISION 5 - METALS**SECTION 05500 METAL FABRICATIONS****PART 1 – GENERAL**

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: The extent of metal fabrications work is shown on the drawings and includes items fabricated from metal shapes, plates, bars, strips, tubes, pipes and castings which are not a part of the structural steel or other metal systems in other Sections of these specifications.
- 1.03 QUALITY ASSURANCE:
- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting wherever taking field measurements before fabrication might delay work.
 - B. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of miscellaneous metal work. Provide setting drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.
- 1.04 CODES AND STANDARDS: Comply with the provisions of the following codes, standards, and specifications, except as otherwise shown and specified.
- A. AISC "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings, including "Commentary of the AISC Specification."
 - B. AWS "Code for Welding in Building Construction".
- 1.05 SHOP DRAWINGS AND DATA: Show complete details and instructions for fabrication, assembly and installation. Locate anchor bolts required for installation in other work, furnish templates for bolt installation by others.

PART 2 - PRODUCTS

- 2.01 MATERIALS AND PRODUCTS:
- A. Steel Plates, Shapes, Bars: ASTM A36.
 - B. Steel Pipe: ASTM A53, Type E or S, Grade B.
 - C. Concrete Inserts: Malleable iron (ASTM A47) or cast steel (ASTM A27) inserts, with steel bolts, washers and shims; hot dip galvanized.
 - D. Shop Paint: FS TT-P-86, Type II, or SSPC-Paint 14. Apply to prepared steel surfaces at rate to provide a 2.0 mil dry film thickness.
 - E. Galvanizing: ASTM A386 for assembled products: A153 for iron and steel hardware.
- 2.02 FABRICATION:
- A. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in finished product.
 - B. Weld corners and seams continuously; grind exposed welds smooth and flush.
 - C. Form exposed connections with hairline, flush joints; use concealed fasteners where possible.

DIVISION 5 - METALS

SECTION 05500 METAL FABRICATIONS

CONT'D

2.03 MISCELLANEOUS METAL FABRICATIONS:

- A. Rough Hardware: Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete of other structures. Straight bolts and other stock rough hardware items are specified in Section 06100.
 - 1. Manufacturer of fabricated items of sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts that bear on wood structural connections; elsewhere, furnish steel washers.
- B. Loose Steel Lintels: Fabricate to sizes shown. All 6 inches bearing at each end unless otherwise indicated. Provide lintels for openings through masonry walls required by electrical and mechanical trades.
- C. Loose Bearing and Leveling Plates: Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, make flat, free from warps or twists and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required.
- D. Miscellaneous Framing and Supports: Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.
 - 1. Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
 - 2. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed. Except as otherwise shown, space anchors 24 inches on center and provide minimum anchor units of 1 1/4 inches x 1/4 inches x 8 inches steel straps.

PART 3 - EXECUTION

3.01 FABRICATION:

- A. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in finished product.
- B. Weld corners and seams continuously; grind exposed welds smooth and flush.
- C. Form exposed connections with hairline, flush joints; use concealed fasteners where possible.

3.02 INSTALLATION:

- A. Perform cuttings, drilling and fitting required for installation; set work accurately in location, alignment and elevation, measured from established lines and levels. Provide anchorage devices and fasteners where necessary for installation to other work.
- B. Set loose items on cleaned bearing surfaces, using wedges or other adjustments as required. Solidly pack open spaces with bedding mortar, consisting of 1 part portland cement to 3 parts sand and only enough water for packing and hydration, or use commercial non-shrink grout material.
- C. Touch-up shop paint after installation. Clean field welds, bolted connections and abraded areas. Apply same type paint as used in shop.
- D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in connecting welding work.

END OF SECTION
05500-2

DIVISION 6 - WOOD AND PLASTICS**SECTION 06100 CARPENTRY****PART 1 - GENERAL**

- 1.01 RELATED DOCUMENTS: General provisions of Contract including General and Supplementary Conditions and General Requirements, apply to work specified in this section.
- 1.02 DESCRIPTION OF WORK:
- A. Extent of carpentry work is shown on drawings.
 - B. Work is defined to include all wood members commonly known as Rough Carpentry and Finish Carpentry unless such items are specified under another section of these specifications.
 - C. Carpentry work includes, but is not necessarily limited to following:
 - 1. Nailers, blocking and cleats as detailed and as required.
 - 2. Studs, plates and sills.
 - 3. Wood framing members.
 - 4. Plywood and OSB sheathing
 - 5. Exterior and interior wood trim.
 - 6. Furnish all necessary clip angles, bolts, screws, etc., for attachment of wood items to masonry or concrete and all other rough hardware items not covered elsewhere.
 - 7. Temporary enclosures and barricades.
 - 8. Fit and apply all hardware.
 - 9. Synthetic Fascia.
 - 10. Structural wood beams.
 - 11. Blocking for bathroom accessories.
 - 12. Synthetic interior trim.
 - 13. Cabinets and Shelving.
 - 14. Countertops.
 - 15. Cabinet hardware.
 - 16. Exterior trim.
 - 17. Interior and exterior wood Blocking
- 1.03 QUALITY ASSURANCE: Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency identification; except omit marking from surfaces to receive transparent finish.
- A. Trusses: Shall bear Iowa Registered Engineer's Seal.
- 1.04 JOB CONDITIONS:
- A. Do not install any permanent carpentry items under adverse weather conditions.
 - B. Verify that surfaces to receive trusses are free of irregularities and debris.
- 1.05 SHOP DRAWINGS: Submit 7 copies of roof framing, millwork, and non-standard interior and exterior trim to ENGINEER for review. Submit 7 copies of manufacturer's product literature for all products. Submit 3 samples of interior and exterior trim, siding, soffit, plastic laminates and other finish materials.

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DIVISION 6 - WOOD AND PLASTICS

SECTION 06100 CARPENTRY

CONT'D

PART 2 - PRODUCTS

2.01 STANDARDS

- A. Softwood Lumber Standards: Comply with PS 20 and with applicable grading rules of the respective grading and inspecting agency for the species and product indicated. 19 percent moisture content at time of dressing.
- B. Plywood Standard: Comply with PSI
- C. Hardwood Lumber Standard: Comply with National Hardwood Lumber Association (NHLA) rules.

2.02 STUDS, PLATES, SILLS, NAILERS, BLOCKING AND CLEATS: Douglas Fir-Larch Standard Grade or Stud Grade.

2.03 WOOD SILLS AND WOOD IN CONTACT WITH MASONRY OR CONCRETE: Preservative pressure treated Douglas Fir, AWPI LP-2, pressure treated with water-borne preservatives.

2.04 FRAMING MEMBERS 2 x 6 to 4 x 14: No. 2 grade, Douglas Fir-Larch.

2.05 ROOF AND MISCELLANEOUS SHEATHING: C-D interior with exterior glue, 5/8 inch thick minimum with span index to meet spacing conditions, with plywood clips. Oriented Strain Board is acceptable.

2.06 WALL SHEATHING: C-D with exterior glue, 1/2 inch thick minimum with span index to meet spacing index to meet spacing conditions. Oriented Strain Board is acceptable.

2.07 INTERIOR WOOD TRIM:

- A. Window Sills, Jambs, and Heads— 3/4 inch pine apron to match jamb and head trim at wood framed walls. See drawings.

2.09 MATERIALS OTHER THAN LUMBER:

- A. Joist Hangers and Metal Connectors: International building code approved. Select for design loads.
 - 1. Each roof truss to be fastened to beam plate with Simpson Anchor of appropriate size and type as specified by Structural Engineer.
- B. Bolts, Nuts, Expansion Shields, Lag Screws, Toggle Bolts and Other Fastening Devices: Shall conform to current Federal Specifications for the service intended.
- C. Adhesives: Applies in accordance with manufacturer's instructions.

2.10 STRUCTURAL WOOD BEAMS: Built up members No. 2 grade Douglas Fir-Larch. Micro-Lam Lumber or Parallam as manufactured by iLevel Corporation. Glue Laminated Structural members are acceptable when accompanied by structural loading calculations and structural engineer's seal. Material must be approved for exterior location by the manufacturer and may be treated if required.

- A. Acceptable Manufacturer's
 - 1. iLevel by Wyerhaeuser
 - 2. Boise Cascade, LLC
 - 3. Louisiana Pacific Building Products

2.11 INTERIOR TRIM IN RESTROOM BUILDING: 1 x 4 nominal or 3/4 inch x 3 1/2 inch actual size poplar trim. Material shall be paint grade with no open knots.

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DIVISION 6 - WOOD AND PLASTICS

SECTION 06100 CARPENTRY CONT'D

PART 3 - EXECUTION

3.01 PREPARATION:

- A. Protect all materials from weather with plastic, canvas or other enclosures.
- B. Reject and replace any trusses damaged during delivery or erection. Field repairs must be approved by the Engineer.
- C. Reject discolored or damaged wood siding and fascia before installation.

3.02 INSTALLATION:

- A. Install work plumb, level, true and straight with no distortions.
- B. Scribe and cutwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- C. Miter exterior corners of wood trim and fascia where no trim is shown on the drawings.
- D. Install composite trim and decking materials in accordance with the written installation instructions of the manufacturer. Utilize all fasteners, glues and adhesives as recommended or required for the given installation.

3.03 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION

- A. Truss Installation
 - 1. Deliver, handle and erect wood trusses in accordance with "Quality Control Manual for Light Metal Plate Connected Wood Trusses" by Truss Plate Institute, and in accord with all materials provided by the truss manufacturer.
 - 2. Install temporary horizontal and cross bracing to hold trusses plumb and in safe condition until permanent bracing is installed.
 - 3. Set trusses according to erection shop drawings provided by truss manufacturer, use metal strap anchors at truss bearing similar to Simpson "Strong-Tie" H5 unless drawings indicate different anchor.
 - 4. Do not cut or remove truss members.
- B. Repair damaged and defective woodwork wherever possible to eliminate defects functionally and visually.

END OF SECTION

DIVISION 7 - THERMAL AND MOISTURE PROTECTION**07456 FIBER CEMENT SIDING PANEL****PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Artisan Matrix Panel, a cementitious express/reveal jointed panel with accessories.

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Wood framing and bracing.
- B. Section 06100 - Rough Carpentry: Sheathing.

1.3 REFERENCES

- A. ASTM International (ASTM):
- B. ASTM C834 - Standard Specification for Latex Sealants.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- D. ASTM C1186 - Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets
- E. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- F. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- G. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
- H. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure.
- I. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Best Practices Building Guide.
 - 4. Technical data sheet.
- B. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- C. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches, representing actual product, color, and patterns.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07456 FIBER CEMENT SIDING PANEL CONT'D

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Artisan Matrix Panel Limited Product Warranty: 30-year limited product warranty against manufacturing defects.

PART 2 PRODUCTS

1.9 MANUFACTURERS

- A. Acceptable Manufacturer:
 - 1. James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com
 - 2. Certainteed Corporation
 - 3. Louisiana Pacific Building Products
- B. Code Compliance Requirement for Siding Materials:
 - Non-asbestos fiber-cement manufactured in accordance with ASTM C1186.
 - Tested in accordance with ASTM E330 and E331.
 - Tested in accordance with ASTM E84.
 - Non-asbestos fiber-cement where required to be fire rated shall be tested in accordance with ASTM E119.
 - Non-asbestos fiber-cement siding where required to be non-combustible shall be tested in accordance with ASTM E136.
- C. Cementitious Panels: Artisan Matrix Panel as manufactured by James Hardie Building Products, Inc; 3 feet 11.5 inches wide by 7 feet 11.5 inches long.

1.10 ACCESSORIES

- A. Horizontal "T" Backing Strip: Fry Reglet Inc. FCP-T Piece where indicated
- B. Furring Strips: James Hardie Batten Boards, Smooth where indicated
- C. Cavity vent Strip: As recommended by manufacturer (Tamlyn, PVC Vent Strip) where indicated
- D. Sealant: Joint Sealant complying with ASTM C920 Grade NS, Class 25 or higher or a Latex Joint Sealant complying with ASTM C834.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION**07456 FIBER CEMENT SIDING PANEL CONT'D****1.11 FASTENERS**

- A. Fasteners for Attaching James Hardie Batten Boards:
 - 1. Wood Framing: Siding nail, 0.092 inch shank by 0.222 inch HD by 2.5 inches long.

1.12 FINISHES

- A. Factory Primer: Provide factory applied universal primer.
Primer: Factory applied sealer/primer by James Hardie.
Topcoat: Field Finished 2 coats per Section 09900 Painting

PART 3 EXECUTION**1.13 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify ENGINEER of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches face and straight, true, of uniform dimensions and properly aligned.
- D. Install water-resistive barriers and claddings to dry surfaces.
- E. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
- F. Protect siding from other trades.

1.14 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.

1.15 INSTALLATION

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Place fasteners no closer than 3/8 inch from panel edges and 2 inches from panel corners.
- C. Apply caulking over furring. Only apply enough caulking for one panel at a time.
- D. Install first panel at the bottom corner working across and up. Ensure panels are square and level. Fasten bottom half of panel.
- E. Apply caulking to horizontal "T" backing strip and insert over top of panel just installed.
- F. Install second panel using 1/2 inch spacers at vertical joints. Fasten bottom half of second panel and finish attaching first panel.
- G. Install a kickout flashing to deflect water away from the siding at the roof intersection.
- H. Install a self-adhering membrane on the wall before the subfascia and trim boards are nailed in place, and then install the kickout.
- I. Allow minimum vertical clearance between the bottom edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- J. Maintain clearance between siding and adjacent finished grade.
- K. All field cut edges shall be primed or sealed during the installation process using an exterior grade primer or sealer which is compatible with the type of paint to be used.
- L. Specific framing and fastener requirements refer to the applicable building code compliance reports.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07456 FIBER CEMENT SIDING PANEL CONT'D

1.16 FINISHING

- A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of 100 percent acrylic, exterior grade topcoats within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

1.17 PROTECTION

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

END OF SECTION

07456-4

DIVISION 7 – THERMAL AND MOISTURE PROTECTION**SECTION 07600 FLASHING, SHEET METAL, AND ROOFING****PART 1 – GENERAL**

- 1.01 RELATED DOCUMENTS: General provisions of Contract including General Supplementary Conditions and General Requirements, apply to work specified in this section.

PART 2 – PRODUCTS

- 2.01 EXPOSED FLASHING NOT NOTED BELOW AND FLASHING RELATED TO ROOFING: Sheet metal copings, Z-siding flashing all "Color Klad" as manufactured by Vincent Brass & Aluminum Co., Building Products Division, Minneapolis, Minnesota or coil stock provided by roofing manufacturer. Material shall consist of Armco Zincgrip Steel (Commercial Quality, Extra Smooth) primed and finished on one side with PPG Industries, Inc., Duranar 200 fluoropolymer coating system of 1.0 + 0.1 mil dry film thickness.
- 2.02 SHEET METAL: By Rolex, Cheney Flashing, B&B Sheet Metal. All prefinished aluminum in color selected from the manufacturer's Designer Collection or premium color selection of the approved manufacturers. Provide by Metal Roofing Manufacturers if available.
- A. Roof Edges: Aluminum drip edge on all exposed edges.
 - B. Coil Stock: .024 inch nominal thickness. Misc. locations as shown on drawings.
- 2.03 ATTIC VENTILATION FLASHING: V600T ridge vent with high ridge dome cap as manufactured by Cor-A-Vent P.O. Box 428 Mishawaka, IN. 46546-0428 1-800-837-8368. Color to match roof color. Continue vents completely to the ends of the ridge and wall. Verify final height of standing seam roof and coordinate with ridge flashing. Provide by Metal Roofing manufacturer if available.
- 2.04 METAL ROOFING: Base specification on Firestone Building Products Unaclad UC-4 standing seam metal roofing. Color as selected from manufacturer's standard colors. Roofing to be installed over Ice and Water Shield. Roofing to be 24 Gauge minimum. Include pencil rib to prevent oil-canning.
- A. Acceptable Manufacturers
 - 1. Firestone Building Products - UC-4
 - 2. Metal Sales - Medallion Loc
 - 3. Summit Pacific Metal Sales - Snap Loc Standing Seam with Miami Dade rating
- 2.05 VENTED SHEET METAL SOFFIT: Provide by Metal Roofing Manufacturer.

PART 3 – EXECUTION

- 3.01 GENERAL: Comply with manufacturer's instructions and recommendations for handling and installation of flashing and sheet metal work.
- 3.02 COORDINATION: Coordinate with other work. It is required that flashing and sheet metal work be permanently watertight, and not deteriorate in excess of manufacturer's published limitations.
- 3.03 INSTALLATION:
- A. Comply with details and profiles as shown, and comply with SMACNA "Architectural Sheet Metal Manual" recommendations for installation of the work.
 - B. Conceal fasteners wherever possible. Fold back edges on concealed side of exposed edges, to form a hem.

07600-01

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07600 FLASHING, SHEET METAL, AND ROOFING CONT'D

- C. Install all products and materials straight and free from irregularities or flaws.
- D. INSPECTION: Installer of siding and flashing products must examine substrate and conditions under which siding work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with siding work until unsatisfactory conditions have been corrected in manner acceptable to installer.
Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- E. Provide for thermal expansion of running trim, flashing, valleys, gutters, expansion joints and other items exposed for more than 15 feet continuous length. Maintain a water-tight installation at expansion seams. Locate expansion seams as shown or, if not shown, at the following maximum spacing for each general flashing use:
 - 1. Flashing and trim - At 10 feet intervals, and 2 feet each side of corners and intersections.
- F. Fabricate and install work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves and avoidable tool marks, considering the temper and reflectivity of the metal. Provide uniform, neat seams with minimum exposure of solder, welds and sealant. Except as otherwise shown, fold back the sheet metal to form a hem on the concealed side of exposed edges.
- G. Bed flanges of work in thick coat of bituminous roofing cement where required for waterproof performance.
- H. Lay Nervestral through walls and across wall tops as shown. Where used to bridge a cavity, the flashing shall extend at least 8 inch higher onto interior wall. Nail Continuous wood batten along top edge of flashing and seal edge with caulking. Insert weep holes from cavity through brick veneer to exterior 2 feet on center.

END OF SECTION

07600-2

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07900 SEALANTS AND CAULKING

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: The extent of each type of sealant and caulking work is indicated on the drawings and by provisions of this section.
- A. The required applications of sealants and caulking include, but are not necessarily limited to the following general locations:
1. Floor Slab, Paving and sidewalk joints.
 2. Joints at penetrations of walls, decks and floors by piping and other services and equipment.
 3. Perimeters of door frames and window frames.
 4. Perimeter of toilet fixtures.
 5. Joints between dissimilar materials.
- 1.03 SUBMITTALS: Submit color samples to ENGINEER for final selection.
- 1.04 JOB CONDITIONS: The installer must examine joint surfaces, backing and anchorage of units forming sealant rabbet, and conditions under which sealant work is to be performed, and notify the ENGINEER in writing of conditions detrimental to proper completion of work and performance by sealants. Do not proceed with sealant work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.
- A. Do not proceed with installation of sealants under adverse weather conditions, or when temperatures are below or above manufacturer's recommended temperature range for installation. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength. Where joint width is affected by ambient temperature variations, install elastomeric sealants only when temperatures are in lower third of manufacturer's recommended installation temperature range, so that sealant will not be subjected to excessive elongation and bond stress at subsequent low temperatures.

PART 2 – PRODUCTS

- 2.01 MISCELLANEOUS MATERIALS:
- A. Joint Cleaner: Provide type of joint cleaning compound recommended by sealant or caulking compound manufacturer, for joint surfaces to be cleaned.
- B. Joint Primer/Sealer: Provide type of joint primer/sealer recommended by sealant manufacturer, for joint surfaces to be primed or sealed.
- C. Backer Rod: Sonofoam Backer Rod by Sonneborn. Compressible rod stock polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable non absorptive material as recommended for compatibility with sealant by the sealant manufacturer. Provide size and shape for rod which will control joint depth for sealant placement, break bond of sealant at bottom of joint, form optimum shape of sealant bead on back side, and provide a highly compressible backer to minimize possibility of sealant extrusion when joint is compressed.
- D. Exterior Sealant: Provide NP-1 by Sonneborn (single component), for joints between brick and adjoining dissimilar materials, exterior expansion and control joints, exterior perimeter joints of doors and sash and coping and flashing joints, and below grade expansion joints. Prime anodized aluminum finishes with special primer recommended by manufacturer.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION**SECTION 07900 SEALANTS AND CAULKING****CONT'D**

- E. Interior Caulking: Sonolac by Sonneborn. General purpose acrylic latex for perimeter of door and window frames and miscellaneous interior conditions.
- F. Pavement Sealant: Sonolastic SL 1 Paving Joint Sealant as manufactured by Sonneborn Building Products Division, Contech, Inc.
- G. Countertops and toilet fixtures: G.E. Silicone. Color to match countertop or plumbing fixture.

PART 3 – EXECUTION

3.01 PREPARATION:

- A. Remove moisture, oil, grease, dirt, paint, rust, waterproofing, wax, form release agents and other foreign materials.
- B. Primer: Prime or seal joint surfaces where shown or recommended by sealant manufacturer.
- C. Comply with sealant manufacturer's printed instructions except where more stringent requirements are shown or specified and except where manufacturer's technical representative directs otherwise.
- D. Employ only proven techniques, which will ensure that sealants will be deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.
- E. Install sealants to depths as shown or, if not shown, as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of bead.
 - 1. For sidewalks, pavement and similar joints sealed with elastomeric sealants and subject to traffic, fill joints to a depth equal to 75 percent of joint width and neither more than 5/8 inch deep nor less than 3/8 inch deep.
 - 2. For normal moving joints sealed with elastomeric sealants, but not subject to traffic, fill joints to a depth equal to 50 percent of joint width, but neither more than 1/2 inch deep nor less than 1/4 inch deep.
 - 3. For joints sealed with non-elastomeric sealants and caulking compounds, fill joints to a depth in the range of 75 percent to 125 percent of joint width.
- F. Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into voids of adjoining surfaces. Use masking tape or precautionary devices to prevent staining of adjoining surfaces, by either primer/sealer or the sealant/caulking compound.
- G. Remove excess and spillage of compounds promptly as the work progresses. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage, without damage to adjoining surfaces or finishes.

END OF SECTION

DIVISION 8 – DOORS AND WINDOWS

SECTION 08100 STEEL DOORS AND FRAMES

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK:
- A. Extent of standard steel doors and frames is shown and scheduled on drawings.
 - B. Extent of overhead door is shown and scheduled on drawings
 - C. Finish hardware is specified under Section 08710.
- 1.03 QUALITY ASSURANCE:
- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications; Standard Steel Doors & Frames" (SDI-100) and as herein specified.
 - B. Manufacturer: Provide standard steel doors and frames by a single firm specializing in production of this type of work.
 - 1. Provide steel doors and frames by Curries, Ceco, Steelcraft or equal approved by ENGINEER.
- 1.04 SUBMITTALS:
- A. Product Data: Submit manufacturer's specifications for fabrication and installation, including data substantiating that products comply with requirements.
 - B. Shop Drawings: Submit for fabrication and installation of doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finished hardware and reinforcements and details of joints and connections. Show anchorage and accessory items.
 - 1. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
- 1.05 DELIVERY, STORAGE AND HANDLING:
- A. Deliver hollow metal work in cartons or crated to provide protection during transit and job storage. Provide additional sealed plastic wrap for factory finished doors.
 - B. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided finished items are equal in all respects to new work and acceptable to Contracting Authority ; otherwise remove and replace damaged items as directed.
 - C. Store doors and frames at building site under cover. Place units on wood sills at least 4 inches high or otherwise store on floors in manner that will prevent rust and damage. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4 inch spaces between stacked doors to promote air circulation.

PART 2 – PRODUCTS

- 2.01 MATERIALS:
- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A569 and ASTM A568.
 - B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A366 and ASTM A568.
 - C. Galvanized Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A526, with ASTM A525 G60 zinc-coating, mil phosphatized.
 - D. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.

DIVISION 8 - DOORS AND WINDOWS**SECTION 08100 STEEL DOORS AND FRAMES CONT'D**

- E. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanized items to be built into exterior walls, complying with ASTM A153, Class C or D as applicable.
 - F. Shop Applied Paint: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.
- 2.02 FABRICATION:
- A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practical, fit and assemble units in manufacturers plant. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site.
 - B. Fabricate exposed faces of doors and panels, including stiles and rails of non flush units, from only cold-rolled steel.
 - C. Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).
 - D. Fabricate all exterior door panels and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of inverted steel channels.
 - E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts. No exposed frame anchors will be allowed on this project.
 - F. Door fabrication: See door specifications below for construction of the various types of doors.
 - G. Finish Hardware Preparation: Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A115 series specifications for Door & Frame Preparation for Hardware.
 - 1. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.
 - 2. Locate finish hardware as shown on final shop drawing or, if not shown, in accordance with "Recommended Locations for Builder's Hardware," published by Door & Hardware Institute.
 - H. Shop Painting
 - 1. Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
 - 2. Clean steel surfaces of mill scale, rust, oil, grease, and other foreign materials before application of paint.
 - 3. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finished paint.
 - 4. Apply finish coat to doors indicated as prefinished by electrostatically spraying and baking, to produce a paint thickness of 1.25 mils.
- 2.03 STANDARD STEEL DOORS:
- A. Exterior Door: Curries 707 full flush door.
 - 1. 16 gage closer reinforcement.
 - 2. 16 gage top end channel
 - 3. 18 gage face skins welded to steel reinforcement channels.
 - 4. 16 gage standard hinge channel.
 - 5. 14 gage lock channel
 - 6. 16 gage bottom end channel.
 - 7. Standard Fiberglass Core.

DIVISION 8 - DOORS AND WINDOWS

SECTION 08100 STEEL DOORS AND FRAMES

CONT'D

2.04 STANDARD STEEL FRAMES:

- A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated.
 - 1. Frames shall be equal to Curries 16 gage welded frames as indicated.
 - 2. Fabricate frames with mitered, full-welded unit construction, reinforced and continuously welded full depth and width of frame and ground smooth.
 - 3. Form all exterior frames of hot-dipped galvanized steel.
 - 4. Door Silencers: Except on weatherstripped frames, drill stops to receive two silencers on strike jambs of single-swing frames and two silencers on heads of double-swing frames. Manufacturer's "stick-on" silencers will be acceptable in lieu of drilled type.
 - 5. Nonlabeled doors or labeled doors, polystyrene foam core, self-extinguishing, non-toxic in case of fire.

2.05 ACCEPTABLE MANUFACTURERS:

- A. Curries
- B. Steelcraft
- C. Ceco

PART 3 – EXECUTION

3.01 INSTALLATION:

- A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings and manufacturer's data, and as herein specified.
- B. Placing Frames
 - 1. Comply with provisions of SDI-105 "Recommend Erection Instructions for Steel Frames", unless otherwise indicated.
 - 2. Except for frames located at in-place concrete or masonry, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
 - 3. In masonry construction, locate three wall anchors per jamb at hinged and strike levels. Building-in of anchors and grouting of frames is specified in Section 04200.
 - 4. Install fire-rated frames in accordance with NFPA Standard No. 80.
 - 5. In metal stud partitions, install at least three wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.
- C. Door Installation
 - 1. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.
 - 2. Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

3.02 ADJUST AND CLEAN:

- A. Prime coat Touch-up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying prime.
- B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and operating condition.

END OF SECTION
08100-3

DIVISION 9 - FINISHES**SECTION 09900 PAINTING****PART 1 – GENERAL**

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: The extent of the painting work is indicated on the drawings and as noted below.
- 1.03 COLORS: Selected by ENGINEER from manufacturer's standard colors. Color selections may include different colors for door versus door frame in each building and up to three colors may be selected for the exterior with different colors for the interior of restrooms and ceilings.
- 1.04 PAINTING SCHEDULE: Submit complete specification of paints to be used on the project listing paint manufacturer and products to be used. Color schedule will be provided to the Contractor outlining the paint colors to be used on various surfaces.

PART 2 - PRODUCTS

- 2.01 ACCEPTABLE MANUFACTURERS: Sherwin Williams products are listed below unless otherwise noted. Pratt and Lambert, Iowa Paint, and Benjamin-Moore products of grades equal to those specified in this section are acceptable.
- 2.02 FINISHES: Number and type of finishes specified below are in accordance with this manufacturer's recommendations. The number of coats of paint materials may be different for other manufacturers. Contractor is to provide consistent finish with even coverage throughout. If additional coats are required to achieve this result, such coats shall be provided at no additional cost.
- A. Drywall: Storage Room- 1 coat PrepRite Classic Latex Primer B28W101. 2 coats ProClassic Waterborne Acrylic Semi-Gloss B31 Series.
 - B. Drywall Epoxy Paint- Restrooms: 1 coat PrepRite Classic Wall Primer B28W101. 2 coats Water Based Catalyzed Epoxy B70/B60V25.
 - C. Interior Primed Metal: Touch-up primer using same product as fabricator. 1 coat DTM Acrylic Primer/Finisher, B66W1. 2 coats DTM Acrylic Semi-Gloss Coating B66 Series.
 - D. Exterior Cementitious Siding: Loxon Exterior Acrylic Masonry Primer A24W300. 2 coats A-100 Exterior Latex Flat, A6 Series.
 - E. Galvanized hollow metal doors and frames: 1 coat Galvite HS B50Z30. 2coats Industrial Enamel B54Z Series.
 - F. Exterior and Interior exposed wood: 1 coat A-100 Exterior Latex Wood Primer B42W41. (If tannin staining becomes apparent, use A-100 Exterior Oil Wood Primer.) 2 coats A-100 Exterior Latex Flat, A6 Series.

DIVISION 9 – FINISHES

SECTION 09900 PAINTING CONT'D

PART 3 – EXECUTION

3.01 INSPECTION:

- A. Applicator must examine the areas and conditions under which painting work is to be applied and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.
- B. Starting of painting work will be construed as the Applicator's acceptance of the surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film.

3.02 SURFACE PREPARATION:

- A. General: Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions and as herein specified, for each particular substrate condition.
 - 1. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.
 - 2. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program the cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly-painted surfaces.

3.03 MATERIAL PREPARATION:

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during the application of the materials. Do not stir surface film into the material. Remove the film and if necessary strain the material before using.

3.04 APPLICATION:

- A. General
 - 1. Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the substrate and type of materials being applied.
 - 2. Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 - 3. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 - 4. Paint the back sides of access panels and removable or hinged covers to match the exposed surfaces.

DIVISION 9 - FINISHES**SECTION 09900 PAINTING CONT.**

5. Sand lightly between each succeeding enamel or varnish coat.
 6. Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated
- B. Scheduling Painting
1. Apply the first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 2. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness
1. Apply each material at not less than the manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- D. Prime Coats: Apply a prime coat of materials which is required to be painted or finished and which has not been prime coated by others.
1. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- E. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable. All voids and holes in concrete block must be filled.

3.05 CLEAN-UP AND PROTECTION

- A. Clean-up: During the progress of the work, remove from the site all discarded paint materials, rubbish, cans and rags at the end of each work day.
1. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- B. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing and repainting, as acceptable to the ENGINEER.
1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
 2. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION

DIVISION 10 - SPECIALTIES

SECTION 10426 SIGNAGE

PART 1 – GENERAL

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: Provide and install the Signage specified.

PART 2 – PRODUCTS

- 2.01 MANUFACTURER: Signs shall be the products of one of the following manufacturers:
- A. Best Manufacturing, Architectural Signage Innovations (ASI), or Howard Industries
 - B. All signs to be “fiberglass” in standard colors with raised letters typestyle selected from standard fonts.
 - C. All signs to be ADA compliant.
- 2.02 SIGNS REQUIRED (RESTROOM BUILDING)
- A. Restroom- Type A: Restroom Door Signs- All HC300A 6 inchx8 inch Pictogram (Door number provided for reference only and not to be included on the sign.)
 - 1. Restroom Building - Restroom Door 101 international symbol for women's restroom and wheelchair and the word “WOMEN”. Restroom Door 103 international symbol for men's restroom and wheelchair and the word “MEN”.
 - B. Type B: Identification Signs- HC300E 10 inchx3 inch Room Name
 - 1. Door 102 with copy, “MECHANICAL”.

PART 3 – EXECUTION

- 3.01 INSTALLATION:
- A. Use double stick tape provided by manufacturer to mount signs at height and location on hollow metal. Mount to painted fiber cement on concrete block with exposed screws and expansion anchors.

END OF SECTION

DIVISION 10 – SPECIALTIES**SECTION 10800 COMMERCIAL TOILET ACCESSORIES & FIRE EXTINGUISHER****PART 1 – GENERAL**

- 1.01 RELATED DOCUMENTS: The general provisions of the Contract including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- 1.02 DESCRIPTION OF WORK: Provide and install the Toilet Accessories specified.

PART 2 – PRODUCTS

- 2.01 MANUFACTURER: Toilet accessories shall be the products of one of the following manufacturers:
- A. Bobrick Washroom Equipment, Inc.
 - B. The Charles Parker Company
 - C. Bradley Corporation
- 2.02 TOILET ACCESSORIES (Bobrick catalogue numbers are indicated) American Specialties Inc (ASI) is NOT acceptable for any toilet accessories on this project:
- A. Toilet Tissue Dispensers: Bobrick B-686 surface mounted toilet paper holder for two rolls, satin finish stainless steel. Provide one for each toilet.
 - B. Sanitary Napkin Disposal: Bobrick B-270 at each toilet in each women's restroom and each unisex restroom.
 - C. Mirror: Provide one above each lavatory. Bobrick B-1556-2436 frameless stainless steel.
 - D. Hand Dryer: See electrical drawings
 - E. Grab bars: Bobrick B-550 18 gauge type 304 stainless steel, satin finish and concealed mounting.
 - 1. 42 inch mounted horizontally on close side of each toilet at 34 inch above finished floor.
 - 2. 36 inches mounted horizontally behind each toilet at 34 inches above finished floor.
 - 3. 18 inches mounted vertically on close side of toilet with bottom 40 inches from the floor and 40 inches from the back wall.
 - F. Mirror: Provide one above each lavatory. Bobrick B-1556 frameless stainless steel. Size indicated on plan
 - G. Shelf: Provide one as shown on drawings: Bobrick B-683x24
 - H. Hooks: Provide one set as shown on drawings: Bobrick B-232x24
- 2.03 FIRE EXTINGUISHER: 3-A; 40B: C General Fire Extinguisher Model TCP-5LH or as required by local fire department with wall bracket. Locate where noted on plans and where required by local fire department.

PART 3 – EXECUTION

- 3.01 INSTALLATION:
- A. Provide anchors, bolts and other necessary fasteners and attach units securely to walls and partitions in locations shown or as directed. Comply with manufacturer's instructions for each type of substrate construction.
 - B. Use concealed fasteners wherever possible.
 - C. Install concealed mounting devices and fasteners fabricated of the same material as the accessories or of galvanized steel.
 - D. Install exposed mounting devices and fasteners finished to match the accessories.
 - E. Provide theft-resistant fasteners for all accessory mountings.
 - F. Mount all items at locations shown or if not shown at heights necessary to meet applicable handicapped access standards.

END OF SECTION

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