

PART 1 - GENERAL	SECTION 042200 STRUCTURAL CONCRETE MASONRY	1.1 SECTION INCLUDES A. Section includes structural concrete masonry shown on the Structural Drawings.	1.2 RELATED SECTIONS A. Section 01330 - Structural Submittals. B. Section 01425 - Structural Testing/Inspection Agency Services. C. Section 02000 - Concrete Reinforcement. D. Section 03000 - Cast-in-Place Concrete. E. Section 04200 - Unit Masonry.	1.3 REFERENCES A. TMS 602 - Specification for Masonry Structures. B. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware. C. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete. D. ASTM C90 - Standard Specification for Load-Bearing Concrete Units. E. ASTM C109 - Standard Specification for Mortar for Unit Masonry. F. ASTM C140 - Standard Methods of Sampling and Testing Concrete Masonry Units. G. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar. H. ASTM C270 - Standard Specification for Mortar for Unit Masonry. I. ASTM C404 - Standard Specification for Aggregate for Masonry Grout. K. ASTM C476 - Standard Specification for Grout for Masonry. L. ASTM C1010 - Standard Method of Sampling and Testing Grout. M. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications. N. ASTM E447 - Standard Test Methods for Compressive Strength of Masonry Prisms. O. TMS 402 - Building Code for Masonry Structures.	1.4 SUBMITTALS A. Submit material certificates signed by the material supplier for the following: 1. Masonry unit material properties and test reports showing compliance with requirements. Include data and calculations establishing average net-area compressive strength of units. 2. Integral water repellent used in CMUs. 3. Cementitious materials. Include name of manufacturer, brand name, and type. 4. Mortar admixtures. 5. Prebanded, dry mortar mixes. Include description of type and proportions of ingredients. 6. Grout mixes. Include description of type and proportions of ingredients. 7. Reinforcing bars. 8. Joint reinforcement. 9. Anchors, ties, and metal accessories. B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients. 1. Include test reports for mortar mixes required to comply with Specification TMS 602-16. Test according to ASTM C109 for compressive strength, ASTM C1506 for water retention, and ASTM C91 for air content. 2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirements. C. Submit shop drawings for masonry reinforcement in accordance with Section 03200. D. Submit procedures for construction of masonry walls to be filled with concrete pour. Procedures should include high lift lifting procedures as applicable to project. E. Manufacturer's Qualifications: Manufacturer shall have on file current certified test reports defined as those reports performed and dated within twelve months of the bid due date of the project. Manufacturer shall certify that the product shall be a minimum of 30 days of age at time of shipment from manufacturer and shall be sole sourced from one plant. F. Installer Qualifications: Certify a minimum of 2 years experience with similar masonry installations.	1.5 QUALITY ASSURANCE A. Structural Testing/Inspection Agency shall perform the following quality related items: 1. Verify reinforcing steel for quantity, size, and location. 2. Verify manufacturer's and installer's qualifications. 3. Verify placement of coarse grout as indicated in high or low lift procedure. 4. Verify compressive strength of concrete masonry units, mortar, coarse grout, or masonry prisms for each 5,000 sq. ft. of surface area as follows: a. Three (3) concrete masonry units shall be tested in accordance with ASTM C140. b. Six (6) mortar cube specimens shall be tested, three (3) at 7-days and three (3) at 28-days, in accordance with ASTM C109. c. Four (4) coarse grout specimens shall be tested, two (2) at 7-days and two (2) at 28-days, in accordance with ASTM C1019. d. In lieu of individual tests of masonry units, mortar, and grout, if directed by the Design Professional, perform one (1) prism test (which consists of three prisms) in accordance with ASTM E447. B. The Structural Testing/Inspection Agency shall provide special inspections as required by Chapter 17 of the building code as required by Specification 01 4525.	1.6 HANDLING OF MATERIALS A. Package, handle, and store materials to protect from elements and prevent contamination.	PART 2 - PRODUCTS	2.1 CONCRETE MASONRY A. Concrete masonry shall have the minimum compressive strength (f'm) specified on the Drawings. B. Concrete masonry shall have a minimum density of 125 pcf. C. Concrete masonry units shall conform to ASTM C90. D. Provide normal weight concrete masonry units. E. Concrete masonry units shall have, as a minimum, the net area compressive strength listed in Table 1 of TMS 602 required for the specified f'm. F. Provide standard units with face dimensions of 16" long x 8" high nominal, unless indicated otherwise. G. Provide special shapes where indicated on the Drawings.	2.2 CONCRETE MASONRY UNITS A. Concrete masonry units shall conform to ASTM C90. B. Provide normal weight concrete masonry units. C. Concrete masonry units shall have, as a minimum, the net area compressive strength listed in Table 1 of TMS 602 required for the specified f'm. D. Provide standard units with face dimensions of 16" long x 8" high nominal, unless indicated otherwise. E. Provide special shapes where indicated on the Drawings.	2.3 MORTAR A. Mortar shall be Type M or Type S Masonry cement in accordance with ASTM C270. Refer to Drawings for locations. For SDC or greater. B. Mortar shall be composed of one part Portland Cement or Mortar Cement or Mortar Cement and one part fine aggregate. Do not use admixtures that contain chlorides.	2.4 COARSE GROUT A. Coarse grout shall conform to ASTM C1064. B. Coarse grout shall have the minimum compressive strength specified on the Drawings. C. Grout shall be consistency which has a slump between 6 and 10 inches. D. Do not use admixtures that contain chlorides.	2.5 WATER A. Provide clean potable water free of deleterious substances.	2.6 REINFORCEMENT A. Horizontal and vertical reinforcing bars shall comply with Section 03200.00. B. HORIZONTAL JOINT REINFORCEMENT A. Horizontal joint reinforcement shall be manufactured with longitudinal parallel, deformed side wires in accordance with ASTM A951 and of the size specified on the Drawings. Cross wires shall be No. 9 gauge spaced not more than 16" on center. B. Provide as a minimum, one side wire for each face shell of hollow masonry units. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction. C. Provide lap splice reinforcement. D. Horizontal joint reinforcement shall be hot-dipped galvanized in accordance with ASTM A153, Class B-2. E. Provide in lengths of not less than 10 feet. Provide prefabricated corner and tee shape corner accessories.	2.7 CONSTRUCTION A. Construction joint material shall comply with ASTM D2200, M2A-805 with rubber shear keys with a minimum durometer hardness of 80.	PART 3 - EXECUTION	3.1 MIXING A. Except as otherwise approved for small batches, mix in mechanically operated batch mixers of drum type in which water can be accurately and uniformly controlled. Allow five minutes maximum mixing time, two minutes for dry mixing and three minutes for continued mixing after water has been added. Do not permit volume of batch to exceed manufacturer's rated capacity of mixer drum. Empty drum completely before placing next batch. Keep mixers and wheelbarrows clean. Do not deposit mortar upon or permit contact with ground. B. Do not use anti-freeze compounds.	3.2 CONSTRUCTION A. Use dry masonry units. No frozen or wet units shall be used. B. Discard cracked, chipped, or spalled masonry units. C. Deliver mortar to mason's board at point of use within 15 minutes after mixing. Do not retempering. Use no admixtures. Use pre-hydrated mortar for touch points. Prepare pointing mortar with as dry consistency as will produce mortar sufficiently plastic to be worked into joints. D. During erection cover top of wall with strong waterproof membrane at end of each day when shutdown. Cover partially completed walls when work is not in progress. Extend and secure cover a minimum of 24 in. down both sides. Do not allow uniform floor or roof loading for at least 12 hours after building masonry columns or walls. Do not apply concentrated loads for at least 3 days after building masonry columns or walls. E. Provide temporary bracing during erection as required to stabilize erected masonry. F. Except where otherwise indicated, lay block in running bond.	3.3 PLACING AND BONDING A. Lay masonry in full beds of mortar on mating surfaces, and properly jointed with other work. Buttering corners of joints, deep or excess flowing from mortar joints is not permitted. B. Fully bond external corners of concrete block. Where interior block partitions intersect other block walls or partitions, provide control joints with mortar raked back 1/4 inch. C. Isolate masonry partitions from vertical structural framing members with control joints, with mortar raked back 1/4 inch. D. Where non-bearing masonry partitions extend to underside of floor, roof deck or structural system, stop masonry short 3/8 to 1/2 inch to allow for live load deflection. Fill gap with soft joint filler. E. Where masonry chase walls are constructed, one wall can be stopped above ceiling to provide access space.	3.4 CONTRACTION JOINTS A. Install contraction joints at locations indicated on the Drawings in all masonry walls. Do not run masonry reinforcement through contraction joints.	3.5 TOLERANCES A. Variation from Unit to Adjacent Unit: 1/32 inch maximum. B. Variation from Plan of Wall: Maximum 1/4 inch in 10 feet, and 1/2 inch in 20 feet or more. C. Variation from Plumb +/- 1/4 inch in 10 feet, +/- 3/8 inch in 20 feet, +/- 1/2 inch maximum. D. Variation in Level Coursing: +/- 1/4 inch in 10 feet, +/- 1/2 inch maximum. E. Variation in Joint Thickness: +/- 1/8 inch Maximum.	3.6 HORIZONTAL JOINT REINFORCEMENT A. Place horizontal joint reinforcement in the horizontal mortar beds at spacings as noted in the Drawings, except as specified herein. B. For masonry below grade, space horizontal joint reinforcing at 8 inches vertically. C. Above lintels and below sills at openings, place a continuous run of horizontal joint reinforcement in the first two bed joints, 8 inches apart. Extend joint reinforcement two feet beyond opening. D. Joint reinforcement shall be continuous, except it shall not pass through vertical masonry contraction joints. Lap joint reinforcement a minimum of 6 inches.	3.7 ENVIRONMENTAL PROVISIONS A. Cold weather masonry construction shall comply with TMS 602-16 per the following: 1. When ambient temperature is below 40 degrees F, implement cold weather procedures per the following: a. Do not lay masonry units having either a temperature below 20 degrees F or containing frozen moisture, visible ice or snow on their surface. b. Remove visible ice and snow from the top surface of existing foundations and masonry to receive new construction and heat these surfaces above freezing using methods that do not result in damage. c. Do not heat water or aggregates used in mortar or grout above 140 degrees F. Comply with the following: i. Between 40 degrees F and 32 degrees F: 1. Heat sand or mixing water to produce mortar temperature between 40 degrees F and 120 degrees F at time of mixing. 2. Heat grout materials when the temperature of the materials is below 32 degrees F. ii. Between 32 degrees F and 25 degrees F: 1. Heat sand or mixing water to produce mortar temperature between 40 degrees F and 120 degrees F at time of mixing. 2. Heat grout materials and mixing water to produce grout temperature between 70 degrees F and 120 degrees F at the time of mixing. Maintain grout temperature above 70 degrees F at the time of grout placement. 3. Between 25 degrees F and 20 degrees F —	SECTION 051000 STRUCTURAL STEEL	1.1 SECTION INCLUDES A. Section includes fabrication and erection of structural steel indicated in the Contract Documents or otherwise required for proper completion of the work.	1.2 RELATED SECTIONS A. Section 01330 - Structural Submittals. B. Section 01425 - Structural Testing/Inspection Agency Services. C. Section 053000 - Metal Decking.	1.3 REFERENCES A. AISI - Code of Standard Practice for Steel Buildings and Bridges. B. AISI 300-16 - Standard Specification for Structural Steel Buildings. 10th Edition. C. RCSC - Specification for Structural Joints Using High-Strength Bolts. D. AWS D1.1 - Specification for Structural Steel Welding. E. AWS A5.5 - Specification for Low-Alloy Steel Covered Arc Welding Electrodes. F. AWS A5.17 - Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding. G. AWS A5.20 - Specification for Carbon Steel Electrodes for Shield Metal Arc Welding. H. AWS D1.1 - Structural Welding Code. I. ASTM A36 - Standard Specification for Structural Steel. J. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products. K. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware. L. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength. M. ASTM A325 - Standard Specification for High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch and Metric Dimensions. N. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Tubing in Rounds and Shapes. O. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing. P. ASTM A563 - Standard Specifications for Carbon and Alloy Steel Nuts. Q. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings. R. ASTM A992 - Standard Specification for Steel for Structural Shapes For Use in Building Framing. S. ASTM F436 - Standard Specification for Hardened Steel Washers. T. ASTM F864 - Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use. U. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts. V. SSPC - Steel Structures Painting Manual.	1.4 SUBMITTALS A. Contact Design Professional prior to detailing structural steel shop drawings. B. Reproduction of Structural Drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor. C. Submit shop drawings for review. D. Steel shop drawings shall indicate the profiles, sizes, ASTM Grade, spacings and locations of all structural steel members, including connections, attachments, anchorages, frame openings, sizes and types of fasteners, method of tightening fasteners, cambers, and the number, type and spacing of the stiffeners. E. For connections and elements designed by the contractor, submit shop drawings and calculations sealed by an engineer licensed in the project state. F. For record only, submit written lifting and lowering procedures for each type of welded joint in accordance with Appendix E of the AWS Structural Welding Code. Submit manufacturer certifications for welding consumables/materials. G. Submit shop drawings for review. H. Maintain at construction office mill certification that the steel supplied meets the specifications. Submit certification that the fabricator meets the required qualifications. If fabricator must have an independent testing agency to inspect fabrication as required by these specifications, submit the name and qualifications of the independent testing agency. I. For each approved fabricator that is exempt from Special Inspections of shop fabrications and implementation procedures in Section 1704.2 of the Building Code, submit "Fabricator's Certificate of Compliance". Provide copies of fabricator's certification or building code evaluation services report and fabricator's quality control manual. J. Submit certification that the erector meets the required qualifications. K. Upon request, submit the erection sequence and procedures to be used by the steel erector. L. Manufacturer's recommendations for expansion anchor installation. M. Manufacturer's recommendations for adhesive anchor installation. N. Qualification Data: For Erector, manufacturer, professional engineer, land surveyor and testing agency.	1.5 QUALITY ASSURANCE A. Structural Testing/Inspection Agency shall perform the following quality related items: 1. Anchor Bolts a. Anchor bolt size, configuration, and embedment shall be verified prior to placement of concrete. 2. Welded Connections a. Inspection shall be in accordance with AWS Structural Welding Code. b. Visually inspect field welded connections. Visual inspection of welded joints includes periodic examination of flup. c. Ultrasonically inspect 100% of the complete penetration welds. d. Review approved welding procedures. Verify that welding procedures are being adhered to during field welding. e. Verify welder qualifications. f. Welded Connections: Visually inspect field welds in accordance with AWS D1.1. a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1 and the following inspection procedures, at testing agency's option: 1. Liquid Penetrant Inspection: ASTM E165. 2. Magnetic Particle Inspection: ASTM E709; performed on roof pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted. 3. Ultrasonic Inspection: ASTM E164. 4. Radiographic Inspection: ASTM E94.	1.6 FABRICATOR'S QUALIFICATIONS A. Steel fabricator shall be certified by the American Institute of Steel Construction (AISC) Quality Certification Program for Conventional Steel Buildings (CB). B. Fabricator not certified by the AISC Quality Certification Program shall have fabrication procedures and fabricated steel tested and inspected by the Materials Testing and Special Inspection Agency contracted by the Owner. Payment of these tests and inspections shall be by the fabricator. Tests and inspections shall be performed by AWS Certified Welding Inspectors. Prior to delivery of structural steel to the project, submit copies of the inspection reports to the Design Professional. The purpose of this inspection is to enable the testing/inspection agency to verify that, in general, the steel is being fabricated in accordance with the Contract Documents. A minimum of one trip per week is recommended. The first trip should be scheduled at the first requirement for inspections as required by IBC Chapter 17. Contact Design Professional prior to initial inspection. Tests and inspections shall include the following: 1. Examine mill test reports and verify that material being used is the same as the mill test reports. 2. Review the fabricator's written welding procedures. Verify that the fabricator's welding procedures are being followed. Verify that welders are certified with current papers and that they demonstrate proper techniques. 3. Observe high strength bolting procedures. Verify that shop installation of high strength bolts conform to AISC specifications. 4. Examine joint preparation for complete penetration joints. Ultrasonically inspect 100% of the complete penetration welds. 5. Examine fillet welds for proper size, profile, throat, porosity and end returns. 6. Examine steel members for lamellar tearing. Spot check dimensions and hole sizes. 7. Examine bolted areas for burrs.	1.7 ERECTOR'S QUALIFICATION A. Erector shall be experienced in erecting structural systems similar in complexity to this project as evidenced by 10 completed projects. B. Erector shall have a minimum of 5 years' experience in the erection of structural steel or is an AISC Certified Advanced Steel Erector.	1.8 WELDER'S QUALIFICATIONS: Qualify procedures and personnel in accordance with AWS D1.1.	1.9 STORAGE A. Store materials off ground to permit easy access for inspection and identification. Store steel members and packaged items in a manner that provides protection against contact with deleterious materials.	PART 2 - PRODUCTS	2.1 ANCHOR ROD A. Anchor rods shall conform to ASTM F1554, Grade 36 (unless noted otherwise on drawings) and shall be a headed rod or threaded rod with a minimum of one threaded end. The threaded end shall be of the Grade A563A, unless noted otherwise. B. Provide two heavy hexagonal nuts at the base of the anchor rod conforming to ASTM A563 Grade C with one plain steel washer between the anchor rod and the nut. Provide one hexagonal nut at the top with plate washer listed below. C. Provide 3/8-inch thick plate washers (3-inch x 3-inch) in lieu of top steel washer on base plates with oversized holes conforming to ASTM A506, unless noted otherwise on drawings. 2.2 ROLLED STEEL WIDE FLANGE, CHANNEL AND WT SHAPES A. Rolled steel wide flange, channels and WT shapes shall conform to ASTM A992. B. PLATES, ANGLES AND BOLTS A. Plates, angles and bars shall conform to ASTM A36. 2.3 ROUND STRUCTURAL STEEL TUBING A. Round structural steel tubing shall conform to ASTM 500, Grade C, 46 ksi minimum yield strength. 2.4 RECTANGULAR STRUCTURAL STEEL TUBING A. Rectangular structural steel tubing shall conform to ASTM A500, Grade C, 50 ksi minimum yield strength. 2.5 HIGH-STRENGTH FASTENERS A. High-strength bolts shall conform to ASTM F3125 Type 1, 120 ksi as noted on the Structural Drawings. B. Provide 3/4-inch minimum diameter bolts, unless noted otherwise. C. Hardened steel washers shall conform to ASTM F436. D. Splice-type tension control bolts, plain hardened washers and suitable nuts are an acceptable alternate design bolt assembly. E. Do not use load indicating washers.	2.6 HEADED STUDS A. Headed steel studs shall conform to the requirements of AWS D1.1. B. Provide 3/4-inch diameter headed steel studs, unless noted otherwise. C. Provide heat-resistant ceramic arc shields with studs.	2.7 MECHANICAL ANCHORS A. Mechanical anchors shall have been evaluated by the ICC Evaluation Services, Inc. (ICC-ES) or IAPMO Uniform E8 (UES) with a published evaluation report. Anchors shall be evaluated by ICC-ES. Acceptance Criteria 193 and be specifically approved for use in cracked concrete. All anchors shall be approved for resisting wind and seismic loads.	2.8 ADHESIVE ANCHORS A. Adhesive anchors shall consist of: 1. An all-thread steel anchor conforming to ASTM A307, Grade A or ASTM A36, zinc plated in accordance with ASTM B633, unless noted otherwise on the Structural Drawings, and 2. An adhesive conforming to ASTM C881-02, Type IV, Grade 3, CLASS A, B, & C accept gap times and epoxy content. Adhesive shall consist of a two-component adhesive system contained in side-by-side packaging connected to a mixing nozzle which thoroughly mixes the components as it is injected into the hole. Adhesive shall have passed ICC Evaluation Services, Inc. Acceptance Criteria 308 for long term creep and be specifically approved for use in cracked concrete.	2.9 WELD ELECTRODES A. E-70 series low hydrogen electrodes shall conform to AWS A5.1, A5.5, A5.17, or A5.20. B. Properly store electrodes to maintain flux quality.	2.10 PAINT A. Oxide primer shall conform to AISC Specifications, Code of Standard Practice, and SSPC Steel Structure Painting Manual, unless indicated otherwise. B. Paint primer shall be free of lead and chromate and shall comply with State and Federal volatile organic compound (VOC) requirements. C. Paint primer shall be compatible with finish coating.	2.11 GALVANIZING A. Galvanized coating shall conform to ASTM A123. B. Galvanize bolts, nuts, and washers in accordance with ASTM A153 when used to connect steel members that are specified to be galvanized. C. Expansion anchors or adhesive anchors specified to be galvanized shall be mechanically galvanized in accordance with ASTM B695, Class 65, Type I.	PART 3 - EXECUTION	3.1 GENERAL A. Fabricate and erect structural steel in accordance with AISC Specifications and Code of Standard Practice.	SECTION 053000 METAL DECKING	1.1 SECTION INCLUDES A. Section includes metal decking as indicated on Drawings, specified herein, and needed for a concrete slab and proper installation.	1.2 RELATED SECTIONS A. Section 01330 - Structural Submittals. B. Section 01425 - Structural Testing/Inspection Agency Services. C. Section 051000 - Structural Steel.	1.3 REFERENCES A. AISI - Specifications for the Design of Cold-Formed Steel Structural Members. B. AWS D1.1 - Structural Welding Code. C. AWS A5.5 - Specifications For Low Alloy Steel Covered Arc-Welding. D. AISI S100 - Specification for Design of Cold-Formed Steel Members. E. SDI - Steel Roof Deck Design Manual. F. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvalume) by the Hot-Dip Process. G. AWS D1.3 - Specification for Welding Steel Sheet in Structures.	1.4 SUBMITTALS A. Notify the Design Professional prior to detailing shop drawings. B. Submit detailed shop drawings showing layout and types of deck panels, weld sizes, weld patterns and conditions requiring closure panels, finishes, supplemental framing, sump pans, cant strips, cut openings, special jointing or other accessories. Include calculations and required information if not completely covered by load tables and products data. C. Submit mill certification that the steel supplied meets the required specifications. D. Submit written welding procedures. E. Submit manufacturer's specifications, section properties, load tables, diaphragm shear tables, noise reduction coefficients (if applicable) and installation instructions for each type of decking and accessories. Include manufacturer's certifications to show compliance with supplementary framing, sump pans, cant strips, curb openings, special jointing and other accessories.	1.5 QUALITY ASSURANCE A. Structural Testing/Inspection Agency shall perform the following quality related items: 1. Verify placement of deck for alignment and proper lap. 2. Verify deck panel size and pattern.	1.6 DELIVERY, STORAGE AND HANDLING A. Protect steel deck from corrosion, deformation and other damage during delivery, storage and handling. Store materials off ground to permit easy access for inspection and identification. Store steel members and packaged items in a manner that provides protection against contact with deleterious materials. Protect with a waterproof covering and ventilate to avoid condensation.	PART 2 - PRODUCTS	2.1 GENERAL A. Provide metal deck sheets of three spans minimum wherever possible. B. Provide Specificatoin for Cold-Formed Steel Decking in accordance with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members". C. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of approval. 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.	2.2 DECK ATTACHMENT A. Use E-60 series electrodes conforming to AWS A5.5. B. Provide weld washers for material thicker than 22 gauge. C. Provide deck fasteners.	2.3 COMPOSITE DECK A. Composite deck formed from steel sheets having a minimum yield strength of 50,000 pounds per square inch shall conform to ASTM A653 or A1008. Provide roof deck types and gauges as indicated on the Drawings. B. Provide phosphatized/painted finish on the exposed side of the deck. The side to be in contact with the concrete may be uncoated unless galvanized deck is indicated on the Drawings. C. Provide galvanized closures, clips, and other items as required. Provide panels change direction, and end closures for panels not closed by bent plates or other means.	2.4 ROOF DECK A. Provide roof deck formed from steel sheets shall conform to ASTM A653 structural quality (SQ). B. Provide roof deck types, minimum gauges and gauges as indicated on Drawings. C. Before forming, the steel sheets shall receive a hot-dip protective coating of zinc conforming to ASTM A653 or A1008, unless otherwise specified. The following coating classes, as defined in ASTM A653: 1. Aggressive Environment G90 2. All other locations G60 3. Provide accessories, clips, and other items as required.	2.5 ROOF SUMP PANS A. When required by Design Professional fabricate from single piece of 14-gauge galvanized steel with level bottoms and sloping sides to direct water flow to drain, unless otherwise shown. Provide sump pans of adequate size to receive roof drains and with bearing flanges not less than 3 inches wide. Slopes pans not less than 1-1/2 inches below roof deck surface, unless otherwise shown or required by deck configuration. Holes for drains will be cut in the field.	2.6 CANT STRIPS A. Cant strips required by Design Professional fabricate cant strips of 20 gauge steel sheet. Bend to form a 45-degree cant not less than 5 inches wide with top and bottom flanges not less than 2 inches wide, unless otherwise shown.	2.7 GALVANIZING REPAIR PAINT A. ASTM A780 - SSPC Paint 20 or MIL-P-21035B, with dry film containing a minimum of 94 percent zinc dust by weight.	2.8 REPAIR PAINT A. Manufacturer's standard rust-inhibitive primer of same color as primer. Coordinate with Architect.	PART 3 - EXECUTION	3.1 GENERAL A. Load conditions shall be in accordance with Steel Deck Institute sequential loading formulas. B. Installer must examine the areas and conditions under metal decking is to be installed 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 installer. C. Locate deck bundles to prevent overloading of supporting members.	3.2 PLACEMENT A. Place steel deck units on supporting steel framework and adjust to final position before permanently fastening. Install deck units and accessories in accordance with manufacturer's recommendations and the Drawings, and as specified herein.	3.3 CUTTING A. Cut holes in deck indicated by the Drawings. Other holes required shall be supplied by those requiring them. Obtain written authorization for additional holes and cutting not indicated on erection drawings.	3.4 WELDING A. Perform welding in accordance with AWS Structural Welding Code. B. Provide weld washers for deck thinner than 22 gauge.	3.5 CONCENTRATED LOADS A. Do not hang concentrated loads exceeding 50 pounds from the deck. Only one such load is allowed per span of the deck. Must be spaced minimum 4'-0" from next concentrated load.	3.6 DECK SUPPORTS A. Fasten deck to steel framework at ends and at each intermediate support by welding according to manufacturer's specifications unless indicated otherwise on structural drawings or otherwise specified herein. Do not weld deck in place until all bolted and welded connections of the structural frame are complete. A minimum of one floor over the area to be decked is to be bolted and welded prior to welding deck in place.	3.7 COMPOSITE DECK A. Place steel floor units in straight alignment. Maintain a maximum space of 1/4 inch between ends of abutting units. In no case shall the ridges of the composite deck be located over beams or girders running parallel to the span of the deck. B. Unless shown otherwise on the Drawings, weld panels in place with 3/4-inch puddle welds or shear connectors spaced at not more than twelve inches on center at each support. Fasten side laps with stitch welds 1-1/2 inches long not exceeding a spacing of two feet on center. Where two panels butt, fasten each unit with separate welds. Lapping ends of panels is not acceptable. Side laps may be fastened by screws or button punching if approved by the Design Professional. C. Fasten closures securely in place with welds or screws at two feet on center.	3.8 ROOF DECK A. Place roof deck in straight alignment. Lap ends of sheets two inches. B. Attach side laps of roof deck with as shown on the Drawings. Fasteners for side laps and overlying roofing material in dovetail deck shall be concealed within the depth of the dovetail shaped ribs. Within aggressive environments, fasteners shall be stainless steel. C. Fasten roof deck in place as shown on the Drawings.	3.9 REPAIR A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A780 and manufacturer's written instructions. Puddle welds to be painted only if deck is exposed in final condition. B. Repair Painting: 1. Wire brush and clean rust spots, welds, and abraded areas on surface of prime-painted deck immediately after installation and apply repair paint. Coordinate with manufacturer's specifications. 2. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.	3.10 FIELD QUALITY CONTROL A. Testing Agency: Owner shall engage a qualified testing agency to perform tests and inspections. B. Field welds will be subject to inspection. C. Prepare test and inspection reports.	END OF SECTION	FIRE STATION #23	City of Covington	HIGHWAY 36 COVINGTON, GA 30014	PRINT RECORD No. DATE DESCRIPTION 07/22/2026 ISSUED FOR PERMIT	Drawn By Checked By BS & SRC HU	Date Job No. 07/02/2026 25933	Sheet Title SPECIFICATIONS	Sheet No. S-0.06	RELEASED FOR CONSTRUCTION
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