3.6. Concrete Placement

3.6.1 Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.

3.6.2 Cold Weather Placement:

3.6.2.1 Comply with ACI 306R as follows:

3.6.2.1.1 When the air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture of not less than 50 degrees F. Obtain Publix Engineer's approval if an accelerating admixture will be used.

3.6.2.1.2 Do not place concrete on frozen ground, ice or snow.

3.6.2.1.3 Provide means for maintaining concrete temperature above 50 degrees F and in a moist condition for 7 days after placement. If an accelerating mixture is used, maintain the concrete temperature above 50 degrees F and in a moist condition for 4 days. Obtain Publix Engineer's approval for the methods proposed for heating materials and protecting concrete. All heaters shall be vented to the outside of the building.

3.6.2.1.4 After the protection period, cooling of the concrete shall be not faster than 1 degree F per hour for the first day, and 2 degrees F per hour thereafter.

3.6.3 Hot Weather Placement:

3.6.3.1 Comply with ACI 305 when mean daily temperatures are expected to exceed 90 F. Concrete shall be delivered to the forms at the coolest practicable temperature. Concrete mixes shall be specifically designed (or re-designed) for hot weather conditions.

3.6.3.2 Concrete placement will not be permitted when weather conditions would prevent proper placement.

3.6.3.3 During hot weather, all slabs shall be cured by continuous sprinkling for a minimum of 24 hours in addition to other required curing methods.

3.6.3.4 Additional control joints may be required to control shrinkage cracking.

3.6.3.5 Cool ingredients before mixing to maintain concrete temp. at time of placement below 90 F (32 C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated in total amount of mixing water.

3.6.3.6 Do not add water to concrete at Job Site.

3.6.3.7 Cover reinforcing steel with water soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before concrete is placed.

3.6.3.8 Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.

3.6.3.9 Use water-reducing admixture when required by high temperatures, low humidity, or other adverse placing conditions, when acceptable to Engineer.

3.6.4 When concreting operations are inside enclosed space, space shall be adequately ventilated to prevent carbonation of surface of concrete. Ventilation shall be continuous until 24 hours after final pour in area.

3.6.5 Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete to avoid segregation at its final location; deposit concrete as near as practicable to its final position. There shall be no free vertical drop greater than 5 feet.

3.6.6 Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic, to avoid cold joints.

3.6.6.1 Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

3.6.6.2 Do not use vibrators to transport concrete inside forms.

3.6.6.3 Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

3.6.7 Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.

3.6.7.1 Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

3.6.7.2 Bring slab surfaces to correct level with straightedge and strike off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

3.6.7.3 Maintain reinforcing in proper position during concrete placement operations.

3.7. Tolerances and Alignment, General:

3.7.1 Conform to ACI 117 "Standard Specifications for Tolerances for Concrete Construction and Materials."

3.7.2 For all formed concrete work exposed to view, provide form and finish tolerances to ACI Class A requirements.

3.7.3 Floor finish tolerances as measured by placing a freestanding (unleveled) 10' straightedge anywhere on the slab and allowing it to rest upon two high spots within 72 hours after slab concrete placement. The gap at any point between the straightedge and the floor (and between the high spots) shall not exceed 3/16" (flat tolerance) but no more than 1/4" in any 30' length unless tighter tolerance is required below.

3.7.4 Variation of the linear building lines from established position in plan and related position of columns, walls and partitions:

| | |
|---|---|
| In any bay | 1/4" |
| In any 20' length | 1/4" |
| Maximum for entire length | 3/8" |

3.7.5 Variation in the sizes and location of sleeves, floor openings, and wall openings: 1/4"

3.7.6 Variation in the thickness of slabs: 1/4"

3.7.7 Variations in footings:

| | |
|---|---|
| In plan | 2" |
| Eccentric displacement | 2% of width but <2" |
| Thickness | 5% of depth but <2" |

3.7.8 Variations in steps:

| | | |
|---|---|---|
| Height | Rise | 1/8" |
| | Run | 1/8" |
| Adjacent steps | Rise | 3/16" |
| | Run | 3/16" |

3.8. Concrete Curing and Protection

3.8.1 General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

3.9. Procedures for curing of concrete surfaces include the following:

-See floor finishes below this section, for applicable locations.

3.9.1 Moisture curing procedures.

3.9.1.1 Initiate curing as soon as free water has disappeared from concrete surface after placing and finishing.

3.9.1.2 Keep concrete surface continuously moist for no less than 7 days. Temperature of water used in curing shall be within 20 F of the concrete temperature. Approved methods of wet curing include water fog spray, sprinkling and absorptive cover blankets. No plastic sheets allowed. Place absorptive cover to provide coverage of concrete surfaces and edges, after finishing operations are complete.

3.9.2 Curing and hardening compound procedure.

3.9.2.1 Apply specified curing and hardening compound to slab surfaces as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.9.2.2 If slabs are to be ..., verify that the curing compound not affect bonding properties of surfaces to be covered with finish materials applied directly to concrete.

3.9.3 Epoxy Aggregate Dry-Shake Hardener procedure:

3.9.3.1 Refer to manufacturer's recommendations.

3.9.3.2 Two applications to slab surfaces at a combined rate of 70 lbs. per 100 s.f., or per the manufactures recommendations. Acceptable bond and ... is achieved through absorption of water from fresh underlying concrete.

3.9.3.3 After bleed water of first floating operation has dissipated from surface of concrete, uniformly distribute approximately two-thirds of the required weight of the Dry-Shake material over the concrete surface. Embed by mechanical floating or by hand floating. Do not trowel first application.

3.9.3.4 Before bleed water dissipates entirely, uniformly apply most of the remaining Dry-Shake material over the concrete surface, using overlapping applications as required to achieve uniform color. Embed by floating and troweling. Minimize hard troweling to avoid burnishing the slab. Retain a small quantity of dry-shake material for touch-up work.

3.10. Interior Broom-Finished Slabs: All interior floor slabs which are depressed to receive Cement Terrazzo or Hard Tile (if using Epoxy Terrazzo, see spec 09 ...).

3.10.1 Heavy broom finish slabs to a surface which is level within a tolerance as described above.

3.10.2 Do not use any curing, sealing, or hardener compound on the slab.

3.10.3 Only use moist curing for slabs to receive terrazzo or hard tile.

3.11. Interior Trowel-Finished Slabs: All interior floor slabs. Where the concrete surface is the finished surface. (if using Polished Concrete Floor, see spec 03 35 00 for concrete mix design requirements AND spec 03 35 00 for the polished concrete finish).

3.11.1 Apply Emery-Aggregate Dry-Shake Hardener, per manufacturer's instructions.

3.11.2 Steel trowel slabs to a smooth, hard, dense, non-porous surface which is level within a tolerance as described above. Trowel slab down smooth with the tops of floor drains and even with clean-outs.

3.11.3 Apply Cure and Hardener compound, per manufacturer's instructions.

3.12. Interior Troweled-VCT Finish Slabs: All interior floor slabs, where the concrete surface is covered by vinyl tile.

3.12.1 Steel trowel slabs to a smooth, hard, dense, non-porous surface which is level within a tolerance as described above. Trowel slab down 1/8 inch below floor drains where vinyl tile occurs.

3.12.2 Only use moist curing for slabs to receive vinyl tile flooring (VCT).

3.13. Exterior Slabs:

3.13.1 Concrete sidewalks, ramps, docks, and pads shall have a cure and hardener compound. Slope sidewalks to drain away from building.

3.13.2 Ramps at front of store shall have a heavy broom finish. All other sidewalks and ramps shall have a medium broom finish. Verify sample of "heavy" and "medium" broom finishes with Publix' Representative.

3.13.3 Curbs: Poured concrete 6" x 18" with #4 bar top and bottom. Place tops of curbs exactly 8" above parking lot finished pavement. No pre-cast curbs shall be used.

3.13.4 Do not apply compound on curbs.

3.14. Exposed Concrete Formed Surfaces

3.14.1 Imperfect surfaces where strength is not impaired may be patched with the specified polymer patching mortar if approved by the Engineer and rubbed smooth with carborundum brick.

3.14.2 Fins shall be removed and the entire concrete surface shall receive a "smooth rubbed finish" as per ACI 301.

3.14.3 All finishing shall take place immediately upon removal of the forms. Defective appearance caused by a delay in the finishing procedure will not be accepted. Rubbing the surface to cover such imperfections will not be allowed.

3.14.4 Cure formed concrete surfaces, including underside of beams, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed.

3.15. Removal of Forms

3.15.1 Form-work not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 F (10 C) for 24 hours after placing concrete, provided concrete is sufficiently hard that no damage will result by form removal operations, and provided that curing and protection operations are continued.

3.15.2 Immediately after forms have been removed, all exposed tie wires and stapled nails shall be removed from the concrete surfaces to be exposed; cut ties flush with finished surfaces of all other concrete; rub smooth or cut off fins and rough places; remove all loose concrete and fill honeycombed surfaces, stone pockets; and other irregularities with cement mortar. Do not patch any surfaces until examination has been made by Publix Representative and permission given. Before Publix makes the next inspection for pouring concrete, all previously poured concrete must be pointed up.

3.16. Reuse of Forms

3.16.1 Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated, or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new form-work.

3.16.2 When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces.

**End of Section 03 30 00**

## Section 04 20 00

**Unit Masonry**

**V08302018**

### 1.General

1.1. Related Documents: Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2. Summary: This Section includes the following:

1.2.1 Concrete unit masonry.

1.2.2 Related Sections:

Section 03 30 00 Cast-in-Place Concrete

1.3. Submittals

1.3.1 Submit LOI in accordance with Section 01 33 00 Submittal Procedures.

1.3.2 Material certificates signed by manufacturer certifying that Concrete masonry units comply with UL classification requirement and block strength requirements.

1.3.3 Shop drawings for reinforcing, detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 "Details and Detailing of Concrete Reinforcing" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.

1.3.4 Comply with applicable provisions of Section 03 30 00 Cast-in-Place Concrete for submittals of grout mix design, etc.

1.4. Quality Assurance

1.4.1 Unit Masonry Standard: Comply with ACI 530.1/ASCE 6 "Specifications for Masonry Structures," except as otherwise indicated.

1.4.2 Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

1.4.3 Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

1.4.4 Insulation. Installation shall be performed by Insulation Manufacturer's authorized Applicator. Certificate of Authorization shall be supplied upon request.

1.4.5 Insulation. Publix may retain the services of a testing organization to perform testing necessary to confirm installation conformance to standards specified.

1.5. Delivery, Storage, and Handling

1.5.1 Deliver masonry materials to project in undamaged condition.

1.5.2 Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, or other causes. If units become wet, do not place until units are in an air-dried condition.

1.5.3 Store cementitious materials off the ground, under cover, and in dry location.

1.5.4 Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

1.5.5 Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

1.6. Project Conditions

1.6.1 Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1.6.2 Extend cover a minimum of 24 inches down both sides and hold cover securely in place. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

1.6.3 Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

1.6.4 Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately all grout, mortar, and soil that come in contact with such masonry.

1.6.5 Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface. Protect sills, ledges, and projections from mortar droppings. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.

1.6.6 Cold-Weather Construction:

1.6.6.1 Comply with referenced unit masonry standard for cold-weather construction and the following:

1.6.6.2 Do not lay masonry units that are wet or frozen. Remove masonry damaged by freezing conditions.

1.6.7 Hot-Weather Construction: Comply with referenced unit masonry standard.

### 2. Products

2.1. Concrete Masonry Units

2.1.1 General: Comply with requirements indicated below applicable to each form of concrete masonry unit required.

2.1.2 Exterior Exposed Faces: Provide a sand finish suitable for painting. Contractor shall also coordinate with canopy drawings to determine if CMUs are to be painted.

2.1.3 Size: Provide concrete masonry units manufactured within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.

2.1.3.1 Concrete Masonry Units:

Manufactured to specified dimensions of 3/8 inch less than nominal dimensions indicated on drawings.

2.1.3.2 Concrete Building Brick: As job conditions require.

2.1.4 Hollow Concrete Masonry Units: ASTM C 90, Grade N and as follows:

2.1.4.1 Unit Compressive Strength: Provide units with minimum average net area compressive strength of 1900 psi.

2.1.4.2 Weight Classification: As selected by Contractor unless otherwise indicated.

2.1.4.3 Masonry units must be minimum 2 hour rated, per equivalent thickness method.

2.2. Mortar Materials

2.2.1 General: Comply with ASTM C 270, Property Specification for job-mixed mortar and ASTM C 1142 for ready-mixed mortar.

2.2.1.1 Limit cementitious materials in mortar to portland cement-lime.

2.2.1.2 Use Type S for all applications.

2.2.2 Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color cement as required to produce required mortar color.

2.2.3 Ready-Mixed Mortar: Cementitious materials, water, and aggregate complying with requirements specified in this article, combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C 1142.

2.2.4 Hydrated Lime: ASTM C 207, Type S.

2.2.5 Aggregate for Mortar: ASTM C 144.

2.2.6 Water: Clean and potable.

2.3. Grout Materials for Reinforced Masonry

2.3.1 Comply with ASTM C476, "Standard Specifications for Grout for Masonry"

2.3.2 Provide coarse grout pump mix for filled cells as follows:

2.3.2.1 3000 psi 28 day design strength. Use 500 lbs. cement minimum.

2.3.2.2 No cement replacement allowed. (No fly ash, slag, silica fume).

2.3.2.3 Aggregate size: 3/8" pea gravel (ASTM gradation 8 or 89).

2.3.2.4 Slump Limits: 8" to 10" at point of placement.

2.3.2.5 Filled cell mix must be from a ready-mix supplier, not site mixed.

2.4. Reinforcing Steel

2.4.1 General: Provide reinforcing steel complying with requirements of referenced unit masonry standard, Section 03300 Cast-in-Place Concrete, and this article.

2.4.2 Steel Reinforcing Bars: Billet steel complying with ASTM A 615, Grade 60.

2.4.3 Deformed Reinforcing Wire: ASTM A 496.

2.4.4 Plain Welded Wire Fabric: ASTM A 185.

2.4.5 Deformed Welded Wire Fabric: ASTM A 497.

2.5. Joint Reinforcement

2.5.1 General: Provide joint reinforcement complying with requirements of referenced unit masonry standard and this article, fabricated from the following:

2.5.2 Galvanized carbon steel wire, coating class as required by referenced unit masonry standard for application indicated.

2.5.3 Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet with prefabricated corner and tee units, and complying with requirements indicated below:

2.5.3.1 Wire Diameter for Side Rods: 0.1483 inch (9 gage).

2.5.3.2 Wire Diameter for Cross Rods: 0.1483 inch (9 gage).

2.5.4 For single-wythe masonry provide continuous ladder type rods spaced not more than 16 inches o.c. and single pair of side rods.

2.5.5 Use rods with adjustable 2-piece rectangular ties where horizontal joints of facing wythe do not align with those of backing and where indicated.

2.5.6 Manufacturer: Subject to compliance with requirements, provide joint reinforcement by one of the following:

Hohmann & Barnard, Inc.
Masonry Reinforcing Corp. of America.

2.6. Ties and Anchors

2.6.1 General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.

2.6.2 Galvanized Carbon Steel Wire: ASTM A 82, coating class as required by referenced unit masonry standard for application indicated. Wire Diameter: As indicated.

2.6.3 Galvanized Steel Sheet: ASTM A 366 (commercial quality) cold-rolled carbon steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153, Class B2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), thickness as indicated.

2.6.4 Steel Plates and Bars: ASTM A 36, hot-dip galvanized to comply with ASTM A 123 or ASTM A 153, Class B1, as applicable to size and form indicated.

2.7. Cavity Caps: Plastic or scraped metal, galvanized.

2.8. Embedded Flashing: Provide where indicated.

2.9. Miscellaneous Masonry Accessories:

2.9.1 Preformed Control Joint Gaskets: Styrene-Butadiene Rubber Compound, ASTM D 2000, Designation 2AA-805.

2.9.2 Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

2.9.3 Geotextile Fabric for Weep Holes: TenCate Mirafi 140N

### 3. Execution

3.1. Examination

3.1.1 Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.

3.1.2 Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

3.1.3 Do not proceed until unsatisfactory conditions have been corrected.

3.2. Installation, General

3.2.1 Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in this Section.

3.2.2 Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

3.2.3 Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between chases and recesses unless otherwise indicated.

3.2.4 Leave openings for equipment to be installed before completion of masonry work. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.

3.2.5 Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.

3.2.6 Matching Existing Masonry: Match coursing, bonding, color, and texture of new masonry with existing masonry.

3.3. Construction Tolerances: Comply with construction tolerances of referenced unit masonry standard.

3.4. Laying Masonry Walls

3.4.1 Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate location of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.

3.4.2 Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

3.4.3 Bond Pattern for Masonry: Lay masonry in running bond pattern with vertical joint in each course centered on units in courses above and below.

3.4.4 Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

3.4.5 Stopping and Resuming Work: In each course, rack back 1/2-unit length, do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

3.4.6 Built-in Work: As construction progresses, build-in items required. Fill in solidly with masonry around built-in items.

3.4.7 Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

3.4.8 Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and place grout into core.

3.5. Mortar Bedding and Jointing:

3.5.1 provide full mortar coverage on horizontal and vertical face shells.

3.5.2 Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

3.5.3 Joints in masonry walls shall be 3/8" (nom.) thick.

3.5.4 As mortar takes its initial set, cut flush and rub smooth.

3.5.5 Tool all joints, both interior and exterior, with 5/8" dia. x 24" rod, compressing the mortar tightly against masonry units to produce a waterproof joint smooth and free of voids.

3.5.6 Tool head joints before tooling intersecting horizontal joints.

3.5.7 Intersecting and Abutting Walls: Unless vertical expansion or control joints are shown at junction, provide same type of bonding specified for structural bonding between wythes.

3.5.8 Keep collar joint spaces clear of mortar droppings and other materials during construction.

3.5.9 For two wythe work, tie exterior wythe to backup with continuous horizontal joint reinforcing.

3.6. Horizontal Joint Reinforcement

3.6.1 General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcing a minimum of 6 inches.

3.6.2 Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

3.6.3 Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7. Control (Movement) Joints

3.7.1 General: Install control joints in unit masonry where indicated. Build-in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

3.7.2 Build in joint fillers where indicated. Use sash block units at control joint locations.

3.7.3 Seal joints using foam backer rod pressed against joint filler flange, with sealant bead between masonry units. Tool sealant bead concave.

3.8. Lintels

3.8.1 Provide precast lintels as noted on drawings.

3.8.2 Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.9. Flashing

3.9.1 General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.

3.9.2 Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing manufacturer before covering with mortar.

3.10. Installation of Reinforced Unit Masonry

3.10.1 General: Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.

3.10.2 Construct formwork to conform to shape, line, and dimensions shown. Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.

3.10.3 Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

3.10.4 Reinforcing Steel:

3.10.4.1 Conform to applicable requirements of Section 03300 Cast-in-Place Concrete.

3.10.4.2 Shop form all reinforcing to fullest extent possible. Where not possible, field form before placement. Conform to requirements of ACI Standard referenced.

3.10.5 Grout Placement:

3.10.5.1 Conform to applicable requirements of Section 03300 Cast-in-Place Concrete for field quality control.

3.10.5.2 Place grout (pump mix concrete) as noted on plans.

3.11. Insulation Installation

3.11.1 Comply with manufacturer's installation instructions. Fill all cells full height of wall.

3.11.2 If required, punch through interior face shell of block to obtain access to cells. Patch holes to match surrounding face of block so that, when painted, the patch is as inconspicuous as possible.

3.11.3 Completed installation shall be at least 95% filled.

3.12. Repairing, Pointing, and Cleaning

3.12.1 Remove masonry units that are loose, chipped, broken, stained, or otherwise damaged. Install new units to match adjoining units in fresh mortar or grout, pointed to eliminate evidence of replacement.

3.12.2 Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.

3.12.3 Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

3.12.3.1 Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

3.12.3.2 Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3.12.3.3 Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

3.12.3.4 Wet wall surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.

3.12.3.5 Clean concrete masonry using dilute muriatic acid.

3.12.4 Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

**End of Section 04 20 00**

## Section 04 21 00

**Interlocking Brick Pavers**

**V07022019**

### 1.General

1.1. Related Documents: Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2. Summary: This Section includes the following:

1.2.1 Interlocking Brick Pavers.

1.2.2 Related Sections:

Section 03 30 00 Cast-in-Place Concrete
Section 04 20 00 Unit Masonry

1.3. Submittals:

1.3.1 Submit LOI in accordance with Section 01 33 00 Submittal Procedures.

1.3.2 Submit Product Literature to prove compliance with specified requirements.

1.4. Quality Assurance

1.4.1 Use adequate numbers of skilled laborers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4.2 Insulation: Publix may retain the services of a testing organization to perform testing necessary to confirm installation conformance to standards specified.

1.5. Delivery, Storage, and Handling

1.5.1 Deliver masonry materials to project in undamaged condition.

1.5.2 Store and handle Brick units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in air-dried condition.

### 1.6. Products

1.7. Interlocking Brick Paver Units

1.7.1 Provide interlocking Clay Pavers complying with ASTM C 902

1.7.2 2 3/4"x4"x8" Non-beveled, flat edge paver. Unit weight: 6.5 lbs., units/cube = 380, 84 square feet per package

1.8. Materials

1.8.1 Aggregates: Comply with ASTM C33, washed, graded sand and natural aggregate; no expanded shale or lightweight aggregate. Mason sand not acceptable.

1.8.2 Joint Filler/Sweeping Sand: ASTM C144, fine aggregate masonry sand.

1.8.3 Clay pavers shall have SandLOCK joint sand stabilizer mixed in the sand before it is swept into the paver joints.

1.8.4 Filter/Separator Fabric: a) Celanese Corp. "Mirafi"; b) E.I. DuPont de Nemours and Co. "Typar"; c) International Paper Co. "Confil"

1.8.5 Pedestrian Areas and Vehicular Traffic Areas: JDR Enterprises "J-Drain 1000" double sided drainage composite with filter fabric bonded to one side of the drainage core.

1.8.6 Expansion Joint Filler: Polyethylene closed-cell backing (min 1/4" thick) with Sonolastic joint Sealant, as manufactured by BASF

1.9. Bituminous Setting Bed for interlocking pavers shall be made from the following materials:

1.9.1 Technical Orbond: Advanced Dry Mortar for Concrete Overlays

1.9.1.1 Dry Application, Polymer-Modified

1.9.1.2 ASTM C579, Compressive Strength, 6,850psi

---------------------OR---------------------

1.9.2 Asphalt cement to be used on the bituminous setting bed shall conform to ASTM Designation D-3381 viscosity grade A.C. 10 or A.C. 20.

1.9.3 The fine aggregate to be used in the bituminous setting bed shall be clean, hard sand with durable particles and free from adherent coatings, lumps of clay, alkali salts and organic matter. It shall be uniformly graded from "coarse" to "fine" and all passing the No. 4 sieve and meet the gradation requirements when tested in accordance with the standard of test for sieve or screen analysis of fine and coarse aggregates ASTM Designation C-136-81.

1.9.4 The dried fine aggregate shall be combined with hot asphalt cement, and the mix shall be heated to approximately 300 degrees F at an asphalt plant. The approximate proportion of materials shall be seven (7) percent asphalt cement and ninety-three (93) percent fine sand. Each ton shall be apportioned by weight in the approximate ratio of 145 pounds asphalt to 1,855 pounds of sand. The contractor shall determine the exact proportions to produce the best possible mixture for construction of the bituminous setting bed to meet construction requirements.

1.9.5 Neoprene-Modified Asphalt Adhesive Under Interlocking pavers:

| | |
|---|---|
| Mastic (asphalt adhesive): | |
| Solids (base) | 75+1% |
| Pounds/Gallons | 8-8.5 pounds |
| Solvent | Varsol (over 100 F. Flash) |
| BASE (2% Neoprene, 10% Fibers, 88% Asphalt): | |
| Melting Point -- ASTM D-36 | 200 F.Min. |
| Penetration, 77 F. 100 Gram Load five Second (1/mm) | 23-27 |
| Ductility-ASTM D-113-44 at 25 C. 5cm/per minute | 125cm Min |

1.10. Joint filler for interlocking clay pavers: Sand and SandLOCK joint sand stabilizer should be used.

### 2. Execution

2.1. SURFACE CONDITIONS

2.1.1 Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

2.2 INSTALLATION

2.2.1 Concrete Base Slab. A minimum of four (4) inch deep concrete slab must be constructed in accordance with state and local road specifications. To aid drainage, provide 1/2 inch diameter drainage holes, through concrete slab, spaced not more than 24-inches on center at low points of slab while it is being poured. Fill holes with fine crushed gravel and cover with filter fabric. Provide weep holes 24-inches on center at all concrete curb and wall interfaces.

2.2.2 Vehicular Traffic: If there is to be vehicular traffic over the interlocking clay pavers, prime the concrete slab with emulsified asphalt (RS-1 or CRS-1) prior to the installation of the bituminous setting bed.

2.3. Placing bituminous setting bed for interlocking pavers

2.3.1 To install the setting bed over the concrete base, place 3/4" deep control bars directly over the base. Grade must be adjusted by placing plastic shims under depth control bars to proper grade. Set two bars parallel to each other approximately nine foot six inches (9'-6") apart to serve as guides for striking board (10'x2"x4"). The depth control bars must be set carefully to bring the pavers, when laid, to proper grade.

2.3.2 Place some bituminous bed between the parallel depth control bars. Pull this bed with the striking board over these bars several times. After each passage, low porous spots must be showered with fresh bituminous material to produce a smooth, firm and even setting bed. As soon as this initial panel is completed, advance the first bar to the next position, in readiness for striking the next panel. Joints in masonry walls shall be 3/8" (nom.) thick.

2.3.3 Carefully fill up any depressions that remain after removing the depth control bar and plastic shims while asphalt is still hot and before compaction.

2.3.4 The setting bed shall be rolled with a power roller to a nominal depth of 3/4" while still hot. Tool head joints before tooling intersecting horizontal joints.

2.3.5 Provide Neoprene-Modified Asphalt Adhesive top layer between bituminous setting bed and Interlocking pavers.

2.3.6 The composite thickness shall be adjusted so that when the interlocking pavers are placed, the top surface of the pavers will be at the required finished grade, approximately 3/16" above the adjacent surface.

2.3.7 Note: Do not roll the setting bed when installing concrete slabs (joints) over 12" apart.

2.3.8 After the neoprene modified asphalt adhesive is applied, carefully place the pavers by hand in straight courses with hand tight joints and uniform top surface with uniform 1/16-inch side joints and joints. Good alignment must be kept and pattern shall be that shown on plans.

2.3.9 Where required, cut pavers with an approved power driven cutter to accurately and without damaged edges.

2.3.10 Expansion Joints:

2.3.10.1 Expansion Joints are to be placed at all joints between dissimilar materials (paver / concrete curb, paver / wall, paver / concrete bands). Provide polyethylene closed cell backing (min 1/4" thick) with Sonolastic joint Sealant ...

2.3.10.2 Sweep fine sand into joints until joints are full. Sweep a dry mixture ... into interlocking clay paver joints. Vehicular areas installed with ... pavers shall have SandLOCK joint sand stabilizer mixed in the sand before it is swept into the paver joints. The SandLOCK and sand must then be wet down to properly activate the SandLOCK.

2.3.10.3 All areas within three feet of laying face must be left fully compacted with sand filled joints at completion of each day. Cover remaining uncompacted edge of laying face and sand with waterproof covering.

2.4. Allowable Installation Tolerance:

2.4.1 Maintain Line and Grades to the Following:

1. Lines and Levels: Within 1/8" in 10'
2. Maximum Height Variations Between Adjacent Pavers 1/16"
3. Maximum Variation in Aggregate base Specified Thickness +/- 1/4"

2.4.2 General: Cleaning, Sealing, and Protecting

2.4.2.1 Remove and replace all chipped, cracked, discolored or stained pavers.

2.4.2.2 Clean pavers with the soft bristle brushed and water

2.4.2.3 Apply sealer per manufacturer's printed specifications.

**End of Section 04 21 00**

## Section 05 12 00

**Structural Steel Framing**

**V02212011**

### 1. General

1.1. Scope of Work

1.1.1 Furnish all materials, labor, equipment and services necessary and incidental to complete installation of structural steel work indicated, implied on contract drawings, or as specified.

1.1.2 The Contractor shall cooperate with other trades regarding installation of associated work as needed to support HVAC units, fans, and other rooftop equipment, roof penetration frames for plumbing, and other items requiring support from the steel structure.

1.2. Qualifications:

1.2.1 Fabricator: Not less than 5 years experience in fabrication of structural steel for projects of similar scope.

1.2.2 Steel Erector: Not less than 5 years experience in the erection of structural steel structures of similar magnitude of the proposed structure.

1.3. References: The following specifications, codes and standards of current issue (hereafter referred to by acronym or alpha/numeric designation only) form a part of this specification:

1.3.1 The American Institute of Steel Construction:

1.3.1.1 AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings".

1.3.1.2 AISC "Code of Standard Practice".

1.3.1.3 "Structural Joints Using ASTM A325 or A490 Bolts", approved by the Research Council on Rivet and Bolted Structural Joints.

1.3.1.4 AISC "Code of Standard Practice for Steel Buildings and Bridges".

1.3.1.4.1 Paragraph 4.2.1 of the above code is hereby modified by the deletion of the following sentence: "This approval constitutes the Owner's acceptance of all responsibility for the design adequacy of any connections designed by the fabricator as part of his preparation of these shop drawings."

1.3.2 American Welding Society:

1.3.2.1 AWS, "Structural Welding Code"

1.3.2.2 AWS, "Welding Symbols"

1.3.2.3 AWS, "Gas Metal-Arc Welding with CO2 Shielding"

1.3.2.4 AWS, "Non-Destructive Testing Symbols"

1.3.3 American Society of Testing Materials (ASTM)

1.3.3.1 A6, "General Requirements of Delivery"

1.3.3.2 A325, H.S. Bolts

1.4. Submittals

1.4.1 Provide Submittals in accordance with Section 01 33 00 Submittal Procedures.

1.4.2 Shop Drawings and Steel Reports: At least two weeks prior to steel fabrication, submit Shop Drawings, prepared under the supervision of a Professional Engineer, together with copies of the metallurgical test reports (mill reports), purchase orders for all steel, and other data to show compliance with specifications.

1.4.3 Indicate all shop erection details, including cuts, copes connections, holes, bolts, welds, and preparation required, such as bevels, nesting and backing bars. Indicate all welds, both shop and field, by AWS "Welding Symbols", A2.0, latest edition.

### 2. Products

2.1. Materials

2.1.1 All material shall be new, clean, and free from scale or rust. Conform to applicable ASTM designations as described in the most current AISC specifications.

2.1.2 Steel Beams: ASTM A992, Fy=50 ksi.

2.1.3 Steel Tube Columns: HSS shall be ASTM A500, Grade B, Fy=46 ksi.

2.1.4 Round Pipe Columns: ASTM A53, Grade B, Fy=35 ksi.

2.1.5 Steel plates, channels, bars and angles: ASTM A36

2.1.6 Bolts

2.1.6.1 Structural Bolts: ASTM A325, Type 1

2.1.6.2 "Twist-Off" Type Tension Control Bolt Assemblies: ASTM F1852 Tension Control Bolts.

2.1.7 Arc Welding Electrodes: E70 Series

2.1.8 Grout: Non-metallic shrink-resistant, complying with U.S.A. Corps. of Engineers CRD-C 621 and CRD-C 588.

NS Grout, Euclid Chemical Company
Crystex, L&M Construction Chemicals
Masterflow 713, Master Builders
Five Star Grout, U.S. Grout Corp.
Propak, Protex Industries, Inc.
Construction Grout, BASF
Vibropruf No. 11, Lambert Corp.

2.1.9 Primer: Manufacturer's standard shop primer, unless otherwise noted.

### 3. Execution

3.1. Design and Fabrication of Structural and Miscellaneous Steel

3.1.1 In general, AISC Specification shall be followed.

3.1.2 In general, all shop and field connections shall be bolted in accordance with the specifications of the AISC, unless otherwise indicated.

3.1.3 All connections shall be designed to develop the full strength of the beam section shear. All erection bolts shall be set up-right and left in place. Bolted connections carrying stress shall have washers under all nuts, and full grip with nuts torqued tight as required, conforming to "Specification for Structural Joints using ASTM A325 Bolts."

3.1.4 Bolts shall have full shanks extended through connecting members.

3.1.5 Shearing and clipping shall be neatly and accurately done. No column splices are permitted. No splices are permitted in beams, except for field connections indicated.

3.1.6 All bolt holes are to be accurately drilled or punched perpendicular to metal surface. The pieces forming one built member shall be straight and fit closely together, especially where open to view. In compression joints, depending on contact bearing, the surfaces shall be truly faced, so as to have even bearing after adjoining members are aligned and ... complete. Contiguous members shall have positive, full contact.

3.1.7 Do not flame-cut or enlarge holes by burning.

3.1.8 Fabricate and assemble structural steel in shop to greatest extent possible.

3.2. All milled surfaces shall be protected with a coating of heavy oil or grease.

3.3. Provide all gusset, lugs and plates at all steel columns of a size as shown on or detailed on the structural drawings, or as required for maximum load conditions, per AISC.

3.4. Welding

3.4.1 In general, all welding shall conform to the requirements of the Code for Arc and Gas Welding in Building construction as prescribed by the American Welding Society as amended to date.

3.4.2 Welding shall be performed by operators currently qualified under AWS standard qualification procedures to perform the type of work required. Proof of current AWS certification of personnel shall be available in the fabrication shop and at the job site at all times.

3.5. Shop Painting. All steel work shall be thoroughly cleaned of all loose mill scale, rust, and foreign matter as directed in SSPC-SP #3 Specification for Power Tool Cleaning, and given one coat of primer. Primer shall be well worked into all joints. Prime only when surface metal is dry and grease free. Comply with Steel Structures Painting Council (SSPC)-3. Thickness of coatings shall be 1.5 mil.

3.6. Miscellaneous Steel

3.6.1 Pipe Railings: 1-1/2" diameter Standard Pipe; all welded connections. All pipe railing shall be galvanized after fabrication.

3.6.2 Furnish and install all hangers and channels for curtain walls.

3.7. Furnish the following items for installation by proper trades.

Channel door frames.
Corner guards.
6" pipe columns for door and downspout guards.
Traffic posts.

3.8. Installation

3.8.1 Steel Erection General: This shall include the erection of all structural steel, steel joist girders and joists, miscellaneous steel, etc. as called for on the drawings and as specified. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges".

3.8.2 Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

3.8.3 Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this section.

3.8.4 Base and Bearing Plates. Clean concrete and masonry bearing surfaces to remove deleterious materials and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.

3.8.4.1 Set base and bearing plates for structural members on wedges, shims, or setting bolts as required.

3.8.4.2 Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.

3.8.4.3 Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces. Protect installed materials and allow to cure.

3.8.4.4 Comply with manufacturer's instructions for proprietary grout materials.

3.8.5 Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, complete bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevation and alignment.

3.8.6 Level and plumb individual members of structure.

3.8.7 Install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A-325 or A-490 bolts.

3.8.8 Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting weld work.

3.8.9 Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.

3.8.10 Touch up weld spots and abrasions after erection with primer specified for shop priming. Surfaces shall be clean and dry before painting.

3.9. Field Quality Control

3.9.1 No field cutting or fabrication will be permitted without written approval of Publix' structural engineer.

3.9.2 Testing Agency: Contractor shall engage an independent testing and inspection agency to perform field inspections and tests and to prepare test reports.

3.9.3 Testing Agency will conduct and interpret test and state in each report whether tested work complies with or deviates from the requirements.

3.10. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.

3.11. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.12. Field bolted connections will be tested and inspected according to RCSC's "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts".

3.12.1 For bolts indicated as "snug tight", inspect to verify that connected elements are in direct contact.

3.12.2 Inspection will be required of a random selection of ten percent of all high strength shop and field bolting. To be acceptable 95 percent of all bolts tested shall meet design torsion. If the bolting fails to meet this requirement, bolts shall be reworked by the contractor and additional tests of 50 percent of all bolts shall be made until the above requirements are met.

3.12.3 Field-welded connections will be inspected by a testing laboratory who will perform visual inspections of a minimum of 100 percent of welds.

3.12.4 For field-welded connections that fail visual inspection, field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below:

3.12.4.1 Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T".

3.13. Contractor shall coordinate erection and inspections to facilitate construction.

3.14. Notify Publix three (3) days in advance of time structure will be ready for inspection.

**End of Section 05 12 00**

## Section 05 21 00

**Steel Joist Framing**

**V11282011**

### 1. General

1.1. Scope of Work:

1.1.1 Steel joists and related accessories for the Publix box shall be engineered and fabricated by Nucor/Vulcraft and will be provided by Publix. Joists provided do not include retail or facade structures, except when facade drawings are on Publix title block.

1.1.2 General Contractor and Steel Fabricator to coordinate with Vulcraft shop drawings for all connections. Shop drawings will be available from Vulcraft after the same has been awarded.

1.1.3 General Contractor will be responsible for coordinating the joist delivery date with Vulcraft (contact: see below). General Contractor is also responsible for unloading delivery and covering material at the job site. The General Contractor is responsible for all materials after delivery to the job site.

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1.1.4 The joists shall not sit on the site for more than 10 days before erection.

1.2. Submittals

1.2.1 Submit shop drawings in accordance with Section 01 33 00 Submittal Procedures. Shop drawings shall show layout, mark, number, type, location, and spacing of joists. Include joining and anchorage details, bracing, bridging, accessories, splice and connection details, and attachments to other units of work.

1.3. Quality Assurance

1.3.1 Manufacturer Qualifications: Engage a firm experienced in manufacturing joists similar to those indicated for this Project, and that have a record of successful in-service performance. The joist manufacturer must engage a qualified professional engineer to prepare design calculations, shop drawings and other structural data for steel joists.

1.3.2 SJI Design Standard: Comply with recommendations of SJI's "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders", applicable to types of joists indicated.

1.3.3 Welding Standards: Comply with applicable provisions of AWS D1.3 "Structural Welding Code – Sheet Steel"

1.3.3.1 Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.4. Delivery, Storage, and Handling

1.4.1 Deliver, store, and handle joists as recommended by SJI's "Specifications".

1.4.2 Protect joists from corrosion, deformation, and other damage during delivery, storage and handling.

### 2. Products

2.1. Materials

2.1.1 Steel: Comply with requirements of SJI's "Specifications" for chord and web section material.

2.1.2 Carbon-Steel Bolts and Threaded Fasteners: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6), carbon-steel, hex-headed bolts and threaded fasteners; carbon-steel nuts; and flat, unhardened steel washers.

2.1.2.1 Finish: Plain, uncoated.

2.1.3 High-Strength Bolts and Nuts: ASTM A 325, Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers.

2.1.3.1 Finish: Plain, uncoated.

2.1.4 Welding Electrodes: Comply with AWS standards.

2.1.5 Primer: Manufacturer's standard shop primer unless otherwise indicated.

2.2. Steel Joists

2.2.1 Manufacture joists according to SJI's "Specifications", with steel angle top and bottom chord members, of joist types, end arrangements, and top chord arrangements indicated.

2.2.2 Comply with AWS requirements and procedures for shop welding, appearance, quality welds, and methods used in correcting welding work.

2.2.3 Extend top chord of joists with SJI Type S top chord extensions where indicated, complying with SJI's "Specifications" and load tables.

2.2.4 Extend bearing ends of joists with SJI Type R extended ends where indicated, complying with SJI's "Specifications" and load tables.

2.2.5 Camber K-Series steel joists according to SJI's "Specifications".

2.2.6 Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes when joist slope exceeds 1/4 inch in 12 inches (1:48).

2.3. Joist Accessories

2.3.1 Bridging: Provide bridging anchors and number of rows of horizontal or diagonal bridging of material, size, and type required by SJI's "specifications" for type of joist, chord size, spacing, and span.

2.3.2 Steel Bearing Plates with integral anchorages are specified in the Structural Section of the Publix Construction Documents.

2.3.3 Supply miscellaneous accessories, including splice plates and bolts required by the joist manufacturer to complete the joist installation.

2.4. Shop Painting

2.4.1 Apply one shop coat of primer to joist and joist accessories to be primed to provide a continuous, dry paint film thickness of not less than 1 mil (0.025mm).

### 3. Execution

3.1 Inspection

3.1.1 Examine supporting substrates, embedded bearing plates, and abutting structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of joists. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2. Installation

3.2.1 Do not install joists until supporting construction is in place and secured.

3.2.2 Comply with OSHA requirements for steel joist erection.

3.2.3 Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications", joist manufacturer's recommendations, the requirements of this Section, and the Structural Section of Publix Construction Documents.

3.2.3.1 Space, adjust, and align joists accurately in location before permanently fastening.

3.2.3.2 Install temporary bracing and bridging, connections, and anchors to ensure joists are stabilized during construction.

3.2.4 Field weld joists to supporting steel framework and steel bearing plates. Coordinate welding sequence and procedure with placing of joists.

3.2.4.1 Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

3.2.5 Bolt joists, where indicated, to supporting steel framework using carbon-steel bolts, unless otherwise indicated.

3.2.6 Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords where terminating at walls or beams.

3.3. Field Quality Control

3.3.1 No field cutting or fabrication will be permitted without written approval of Publix' structural engineer.

3.3.2 Testing Agency: A qualified independent testing agency employed and paid by contractor shall perform field quality control testing.

3.3.3 Testing agency will report test results promptly and in writing to Owner and Engineer.

3.3.4 Testing and verification procedures will be required of high strength bolted connections and welds.

3.3.5 Bolted connections will be visually inspected.

3.3.6 High-strength, field-bolted connections will be tested and verified according to procedures in RCSC's "Specifications for Structural Joints Using ASTM A 325 or ASTM A 490 Bolts".

3.3.7 Field welds will be subject to inspection requirements of Section 05120 "Structural Steel".

3.4. Repairs and Protection

3.4.1 Correct deficiencies in work that inspection and test reports have indicated are not in compliance with specified requirements provided that the correction method does not conflict with other provisions of these specifications.

3.4.2 Additional testing will be performed to determine compliance of corrected work with specified requirements.

**End of Section 05 21 00**

## Section 05 30 00

**Metal Decking**

**V04122018**

### 1. General

1.1. Scope of Work:

1.1.1 Steel deck and related accessories for the Publix box shall be engineered and fabricated by Nucor/Vulcraft and will be provided by Publix. Decking provided does not include retail or facade structures, except when facade drawings are on Publix title block.

1.1.2 General Contractor and Steel Fabricator to coordinate with Vulcraft shop drawings which will be available from Vulcraft after the store has been awarded.

1.1.3 General Contractor will be responsible for coordinating the deck delivery date with Vulcraft (contact: see below). General Contractor is also responsible for unloading delivery and covering materials at the job site. The General Contractor is responsible for all materials after delivery to the job site.

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Publix

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10/08/19

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MECHANICAL ENGINEER OF RECORD:
JOHN PARKER
NORTH CAROLINA REGISTRATION # 27092
ELECTRICAL ENGINEER OF RECORD:
R. KNOX. STACY
NORTH CAROLINA REGISTRATION # 28549
REFRIGERATION ENGINEER OF RECORD:
ERIC KEVIN ICH
NORTH CAROLINA REGISTRATION # 040897

ISSUE FOR
100% FOR CONSTRUCTION

ISSUE DATE
10/08/2019

REVISIONS

| NO. | REASON | DATE |
|---|---|---|

PROJECT TEAM
PRINCIPAL IN CHARGE
Brian T. Morrison, AIA
PROJECT MANAGER
Miguel Vazquez/Heather Nifong
DESIGN TEAM
DD

PROJECT NAME
PUBLIX 1484 Remodel
MCKEE FARMS
3110 Fincher Farm Rd.
Matthews, NC 28105
(APP)

PROJECT NUMBER
122.11235.00

SHEET TITLE
PROJECT MANUAL

SHEET NUMBER
PM.3