shown or specified.
B. Build chases and recesses as shown and as required for the work of other trades. Provide not less than 8" of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
C. Cut masonry units with motor-driven saw designed to cut masonry with clean sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible.
D. Do not wet concrete masonry units.
E. Frozen materials and work: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen work. Remove and replace masonry work damaged by frost or freezing.
F. Layout walls in advance for accurate spacing of surface bond patterns, with uniform joint widths and to properly locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half size units at corners, jambs and wherever possible at other locations.
G. Lay-up walls plumb and true and with courses level, accurately spaced and coordinated with other work.

3.03 COURSING:
A. One concrete masonry unit plus one joint shall equal 8".
B. All joints shall be 3/8", unless indicated otherwise.
C. Pattern bond: Running bond.

3.04 LAYING MASONRY - GENERAL:
A. Lay masonry plumb, true, and level.
B. Lay masonry with full head and bed joints on surfaces joined, unless indicated otherwise.
C. Where vertical cells are filled with grout and reinforced, cells shall be aligned to provide clear openings. Cross webs adjacent to vertical cores which are to be filled with grout shall be fully bedded in mortar to prevent leakage of grout. Cut off face of blocks wherever splices occur to provide cleanout and inspection ports. When reinforcing bars have been installed, mortar in the new faces on cut block to match other block.
D. Where thickness of concrete block diminishes, (e.g.: 8" block is set on 12" block) use solid top FHA blocks in top course of thicker portion of wall.
E. Realignment of masonry shall not be permitted after a higher or following course has been laid. Any masonry which is disturbed after the mortar has stiffened shall be removed and relaid with fresh mortar.
F. When work has been stopped and about to resume again, rack back 1/2-masonry unit length in each course. Do not tooth. Clean exposed surfaces of set masonry and remove loose masonry units and mortar prior to laying fresh masonry.
G. Do not lay masonry when air temperature is below 40 degrees F, forecasted to go below 40 degrees F within 24 hours, or when it is raining.

3.05 BUILT-IN WORK:
A. As the work progresses, build-in items specified under this and other sections of these Specifications. Fill in solidly with masonry around built-in items.
B. Fill space between hollow metal frames and masonry solidly with mortar.
C. 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 rod mortar or grout into core.

3.06 INTERSECTING LOAD-BEARING WALLS:
A. If carried up separately, block vertical joint with 8" maximum offsets and provide rigid steel anchors spaced not more than 4'-0" o.c. vertically, or omit blocking and provide rigid steel anchors at not more than 2'-0" o.c. vertically. If used with hollow masonry units, embed ends in mortar filled cores.

3.07 NON-BEARING INTERIOR PARTITION WALLS:
A. Build full height of story to underside of solid structure above, unless otherwise indicated.

3.08 MORTAR BEDDING AND JOINTING:
A. Mix in accordance with ASTM C270.
B. Measure and batch materials either by volume or weight, such that the required proportions for mortar can be accurately controlled and maintained. Measurement of sand exclusively by shovel will not be permitted.
C. Mixing:
1. Mix mortars with the maximum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.
2. Mix mortar ingredients for a minimum of 5 minutes in a mechanical batch mixer. Use water clean and free of deleterious materials which would impair the work. Do not use mortar which has begun to set, or if more than 2-1/2 hours has elapsed since initial mixing. Keep mortar tempered on the board. Retempering in mixer or in mortar box shall not be allowed.
D. Laying masonry units:
1. With completely filled bed, head and collar joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.
2. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells; also bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or to be filled with concrete or grout.
E. Joints: Maintain joint widths except for minor variations required to maintain bond alignment. If not otherwise indicated, lay walls with 3/8" joints. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials. Tool exposed joints slightly concave. Rake out mortar in preparation for application of caulking or sealants where shown.
F. Remove masonry units disturbed above laying; clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.

3.09 CAVITY WALLS:
A. Keep cavity clean of mortar droppings and other materials during construction. Strike joints facing cavity, flush.
B. Tie exterior wythe to back-up with continuous horizontal joint reinforcing embedded in mortar joints at not more than 16" o.c. vertically.

3.10 CONTINUOUS HORIZONTAL JOINT REINFORCING - SINGLE WYTHE AND MULTI-WYTHE WALLS:
A. Provide continuous horizontal joint reinforcing. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls and 1/2" at other locations. Lap reinforcements a minimum of 6" at ends of units. Do not bridge control and expansion joints with reinforcing, unless otherwise indicated. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.
B. Space continuous horizontal reinforcing as follows:
1. For multi-wythe walls (solid or cavity) where continuous horizontal reinforcing also acts as structural bond or tie between wythes, space reinforcing as required by code but not less than 16" o.c. vertically.
3. For single-wythe walls, space reinforcing at 16" o.c. vertically unless, otherwise indicated.
4. For parapets, space reinforcing at 8" o.c. vertically, unless otherwise indicated.
C. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcing placed in 2 horizontal joints approximately 8" apart, both immediately above the lintel and below the sill. Extend reinforcing a minimum of 2'-0" beyond jambs of the opening, bridging control joints where provided.

3.11 LINTELS:
A. Install loose lintels of steel and other materials where shown.
B. Provide masonry lintels where shown and wherever openings of more than 1'-0" are shown without structural steel or other supporting lintels. Provide precast or cast-in-place masonry lintels. Thoroughly cure precast lintels before handling and installation. Temporarily support formed-in-place lintels.
C. For hollow concrete masonry unit walls, use specially formed U-shaped lintel units with reinforcing bars placed as shown and filled with grout.
D. Provide minimum bearing at each jamb, of 8" for openings less than 6'-0" wide, and 8" for wider openings. E. Openings in 6" through 8" thick walls: Provide adequate work to support masonry over openings. Keep in place until grout in bond beam and lintels has set sufficiently to support the load. Set concrete masonry units in mortar. Lay so that all concrete lintels may be poured in one operation.
F. Lay regular course of masonry overhead and reinforce next joint with joint reinforcing equal in length to rods specified above.

3.12 CONTROL AND EXPANSION JOINTS:
A. Provide vertical expansion, control and isolation joints in masonry where shown. Build-in related masonry accessory items as the masonry work progresses.
B. See Division 7 for sealants.
C. Build-in joint fillers where shown, specified in a Division 7 Section.
D. Control joints:
1. Provide vertical control joints in all masonry walls that exceed 40'-0" in length and/or exceed a ratio of panel length to height (L/H) of 3. These joints shall be placed at the following locations:
a. Changes in wall height or thickness.
b. At construction joints in foundation, in roof, and in floors.
c. At chases and recesses for piping, columns, fixtures, etc.
d. At abutment of wall and columns.
e. At return angles in "L", "T", and "U" shaped structures.
f. At other locations designated on the Drawings.
2. All joint locations must be verified and approved by the Architect.
3. Create control joints with the use of the control joint gasket, backer rod and sealant. The gasket shall run continuous throughout the full height of the wall.
E. Build flanges of metal expansion strips into masonry. Lap each joint 4" in direction of flow. Seal joints below grade and at junctures with horizontal expansion joints, if any.
F. Build-in flanges of factory-fabricated expansion joint units, specified in a Division 7.

3.13 FLASHING:
A. Exposed metal flashing:
1. Metal flashings shall be installed in strict accordance with the Architectural Sheet Metal Manual of the Sheet Metal and Air Conditioning Contractors National Association, Inc.
2. Interlock end joints of deformed metal flashings by overlapping deformations not less than 1-1/2" and seal lap with elastic sealant.
B. Concealed flashing:
1. Provide concealed flashings in masonry work at, or above, all shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall so as to divert such water to the exterior. Prepare masonry surfaces smooth and free from projections which could puncture flashing. Place through-wall flashing on bed of mortar and cover with mortar. Seal penetrations, laps, and edges in flashing with mastic before covering the mortar.
2. Extend flashings the full length of lintels and shelf angles and minimum of 4" into masonry each end. Extend flashing from a line 1/2" in from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4", and through the inner wythe to within 1/2" of the interior face of the wall in exposed work. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2".
3. Install flashings in accordance with manufacturer's instructions.
C. Install reglets and nailers for flashing and other related work where shown to be built into masonry work.

3.14 REPAIR, POINTING AND CLEANING - GENERAL:
A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
B. Pointing: During the tooling of joints, enlarge any voids or holes, except weepholes, and completely fill with mortar. Point-up all joints at corners, openings and adjacent work to provide a neat, uniform appearance, properly prepared for application of caulking or sealant compounds.
C. Clean exposed CMU masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings.

04852 - THIN VENEER STONE

PART 1 - General

1.01 System Description

A. System includes thin cut veneer masonry construction of synthetic stone set in cement mortar over a structural wall backing of concrete masonry units.

B. Related Sections
1. Section 04220 - Block Masonry
2. Section 07600 - Sheet Metal Flashing and Trim.
3. Section 07900 - Joint Sealers: Sealant for perimeter and control joints.

C. References
1. ASTM C 91 - Standard Specification for Masonry Cement.
2. ASTM C 97 - Standard Specification for Absorption and Bulk Specific Gravity of Dimension Stone.
3. ASTM C 150 - Standard Specification for Portland Cement.
4. ASTM C 270 - Mortar for Unit Masonry.
5. ASTM C 847 - Standard Specification for Metal Lath.
6. ASTM D 227 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
7. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures.

1.02 Submittals
A. Submit under provisions of Section 01300.
1. Manufacturer's data sheets on each product to be used, including:
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
a. Installation methods.
b. Cleaning methods.
B. Design Data: Submit design mix when Property specification of ASTM C270 is to be used, required environmental conditions, and admixture limitations.
C. Selection Samples: For each stone product specified, submit two samples, min. size 12 inches representing actual product, color, and texture.
1. Samples: Submit samples of mortar representing actual mortar color and color range.
2. Quarrier's Certificate: Certify stone properties and mortar mix will conform to specified requirements.
D. Construct sample panel at Site indicated or directed, and as follows:
1. Recommended Size: 8 feet by 8 feet (2.4 m by 2.4 m) or a size that satisfies the Owner. This size should be no less than 4 feet by 4 feet (1.2 m by 1.2 m).
2. Include all stone unit types and sizes to be used, including a typical corner condition, special shapes and mortar joint treatment. Clean the sample panel using the same materials and tools as planned for the final stone masonry construction.
3. Obtain architect's acceptance of sample panel before beginning construction activities of this section.
4. Do not remove sample panel until completion activities of this section have been accepted by the Owner.

1.04 Qualifications
A. Stone Quarrier: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
B. Stone Masonry Contractor: Company specializing in performing Work of this section with minimum five years documented experience.

1.05 Quality Assurance
A. Preconstruction Meetings: Conduct preconstruction meetings including the Architect, Contractor, stone masonry subcontractor, and the finishing subcontractor to verify project requirements, substrate conditions, manufacturer's installation instructions and other requirements. Comply with Division 1 requirements.

1.06 Delivery, Storage, and Handling
A. Store products on pallets, under cover and in manufacturer's unopened packaging until ready for installation.
B. Store stone materials on pallets on a dry level surface. Pallets shall not be stacked and shall be covered with tarps.
C. Store mortar under cover and in an area where temperature is maintained between 4 degrees C (40 degrees F) to 43 degrees C (110 degrees F).

1.07 Project Conditions
A. Hot and Cold Weather Requirements: In accordance with ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures.
B. Ambient temperature shall be 40 degrees F (4.4 degrees C) or above during erection of stone masonry. When ambient temperature falls below 50 degrees F, mortar mixing water shall be heated.

PART 2 Products

2.01 Manufacturers
A. As submitted by the General Contractor

2.02 synthetic Stone
A. General: Stone shall vary in depth 3/4 to 1-1/2 inches plus or minus 1/2 inch, heights of 3 to 8 inches, or higher where indicated and is furnished in random lengths from 6 inches to 30 inches.

2.03 Depth: 3/4 to 1 inches plus or minus 1/2 inch.

2.04 Special Shapes

Provide special shapes as indicated on the Drawings and as follows:
A. Cornerstones.

2.05 Color shall be as selected by Architect from Manufacturer's standard ranges.

2.07 Mortar

A. Masonry Cement: Complying with ASTM C91:
1. Type N.
B. Color, off-white. (to be approved by Owner)
C. Portland Cement: Complying with ASTM C150:
2. Type I.
D. Color, off-white. (to be approved by Owner)
E. Mortar Aggregate: Complying with ASTM C144, standard masonry type.
F. Hydrated Lime: Complying with ASTM C207:
1. Type S.
G. Water: Clean and potable.

2.08 Mixes
A. Mortar Mixes:
1. Mortar for Structural Masonry: Complying with ASTM C270, using Proportion Specification.
a. Type N.
B. Mortar Mixing:
1. Mix mortar ingredients in accordance with ASTM C270. Mix only in quantities needed for immediate use.
2. Do not use anti-freeze compounds to lower freezing point of mortar.

PART 3 EXECUTION

3.01 Examination
A. Do not begin installation until backing structure is plumb, bearing surfaces are level and substrates are clean and properly prepared.
B. Verify that built-in items are in proper location, and ready for roughing into stone masonry.
C. Notify Owner of unsatisfactory preparation before proceeding.

3.02 Preparation for installation over concrete or concrete masonry
A. Clean or sandblast concrete masonry to assure a proper mortar bond. Verify no bituminous, water repellent, or form release agents exist on concrete surface that are detrimental to mortar bond.
B. Apply bonding agent in accordance with the manufacturers printed instructions.
C. Install metal lath in accordance with ASTM C1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.
D. Attach metal lath to concrete using galvanized concrete nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. Stop lath 1 inch (25 mm) from inished edges.
E. Continuously reinforce internal angles with corner mesh.

3.03 Preparation for installation of thin veneer stone

A. Stone must be water saturated, surface-dry when placed. Water down the stone 24 hours prior to placement until saturated. Reapply water to keep stone saturated as required by weather conditions.
B. Coordinate placement of reinforcement, anchors and accessories, flashings and other moisture control products supplied by other sections.
C. Clean all built-in items of loose rust, ice, mud, or other foreign matter before incorporating into the wall. All ferrous metal built into the wall shall be primed or galvanized.
D. If required, provide temporary bracing during installation of masonry work. Maintain bracing in place until building structure provides permanent support.

3.04 Installation of thin veneer stone
A. Install thin veneer stone and mortar in accordance with ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures.
B. Maintain masonry courses to uniform dimension(s) form vertical and horizontal joints of uniform thickness.
1. Lay stone with the bedface, spurface or weather face exposed. Take care to avoid a concentration of any one color to any one wall surface.
2. Maintain an approximate 1/2 inch (12.5 mm) joint, as stone allows.
3. Do not use chipped veneer units.
4. Lay out work in advance to distribute color range of stone uniformly over total work area.
C. Placing and Bonding:
1. Dampen substrate as required to reduce excessive suction.
2. Apply mortar in accordance with PCA Plaster (Stucco) Manual to a thickness of 1/2 to 1 inch. Do not spread more than a workable area of 5 to 10 SF so that mortar will not skin before stone is applied.
3. Lay veneer stone in a full bed of mortar with full head joints.
Work from the bottom up laying corner pieces first.
4. Remove excessive mortar as work progresses.
6. Do not shift or tap veneer stone after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
7. Isolate top of veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant in accordance with Section 07900.
D. Joining Work: Where fresh masonry joints partially set masonry.
1. Remove loose stone and mortar.
2. Clean and lightly wet surface of set masonry.
3. To avoid a horizontal run of masonry rack back 1/2 (12.5 mm) the length of stone in each course.
4. Toothing is not permitted.
E. Joints:
1. Lay stone with an approximate 1/2 inch (12.5 mm) mortar joint, as stone allows.
2. Tool joints when "thumb-print" hard with a round jointer slightly larger than the width of the joint.
3. Trowel-point or concave tool exterior joints below grade.
4. Flush cut joints to be finished with a soft brush only.
5. Retempering of mortar is not permitted.
6. Use non-corrosive stone shims as required to maintain uniform joint thickness.
F. Flashing:
1. Clean surface of masonry smooth and remove any projections, which could damage flashings.
2. Place flashing on a bed of mortar.
3. Cover flashing with mortar.
4. Provide weep vents at head joints placed every 16 inches along the first course immediately above flashing or as recommended by weep vent manufacturer.
G. Control and Expansion Joints: Keep joints open and free of debris. Coordinate control joint in accordance with Section 07900 for sealant performance.
1. Sealant Recesses: Provide open joint 3/4 inch deep and 1/4 inch wide, where masonry meets doors, windows and other exterior openings. Coordinate sealant joints in accordance with Section 07900 for sealant performance.
H. Cutting And Fitting: Cut and fit for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials. Coordinate with other sections of work to provide correct size, shape, and location.

3.05 Field Quality Control

A. Test mortar and grout in accordance with Section 01110.
1. Testing of Mortar Mix: In accordance with ASTM C780, Annex A4, for mortar aggregate ratio and ASTM C 780, Annex A5, for mortar water content.

3.06 Protection
A. Protect installed products until completion of project.
B. Cover the top of unfinished stone masonry work to protect it from the weather.
C. Touch-up, repair or replace damaged products before Substantial Completion.

3.07 Cleaning
A. Promptly remove excess wet mortar from the face of the stone as work progresses.
B. Clean stone masonry with a stiff nylon brush and clean water only.

05500 - MISCELLANEOUS METAL

PART 1 - GENERAL

1.01 SCOPE:
A. Provide all of the labor, materials, equipment and services required to furnish and install the miscellaneous metal items.
B. All items of miscellaneous metal work and related parts are not necessarily described. The most important and those requiring detailed description are usually mentioned. Provide all other work as indicated on the Drawings and/or necessary to complete the Contract, except for items which may be specifically excluded from the work of this Section.

1.02 QUALITY ASSURANCE:
A. In addition to complying with all pertinent codes and regulations, comply with:
1. "Specification for Design, Fabrication, and Erection of Structural Steel for Building" of the American Institute of Steel Construction.
2. "Code for Welding in Building Construction" of the American Welding Society.
3. Manual of Steel Construction, 9th edition, Part 1 for types of steel required.
B. Conflicting requirements: In the event of conflict between pertinent codes and regulations and the requirements of the referenced standards of these Specifications, the provisions of the more stringent shall govern.
C. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.03 SUBMITTALS:
A. Prior to installation, submit to the Architect for review the following:
1. Shop drawings showing all locations, markings, quantities, materials, sizes, and shapes and indicate all methods of connecting, anchoring, fastening, bracing, and attaching to the work of other Trades.
2. Prequalified welding procedures, prepared by the steel fabricator and erector, as a written procedure specification to the Architect. Prepare these procedures in accordance with Appendix E of the AWS Structural Welding Code.
3. Written erection sequence and procedure to be used by steel erector.
4. Mill certification that steel supplied meets requirements of specifications.
5. Electrode manufacturer's certification that the electrode and flux combination meets the requirements of the particular classification or grade of electrodes.
6. Certification that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
7. Certification that surface preparation has been completed in accordance with the instructions and recommendations of the paint or coating manufacturer.
8. Shop primer: Complete manufacturer s literature fully describing the product, mill thickness and application.

1.04 PRODUCT HANDLING:
A. Stack and store steel above ground on platforms, skids or other supports. Protect steel from corrosion and damage. Keep materials clean.
B. Store other materials in a weathertight, dry place until ready for use.
C. Store packaged materials in their original unbroken package or container.

1.05 PROJECT CONDITIONS:
A. Field measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

PART 2 - PRODUCTS

2.01 MISCELLANEOUS METAL SHAPES:
A. ASTM A 36.
B. For exposed fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with excessive pitting, seam marks, roller marks, rolled trade names, or roughness.

2.02 WELDING ELECTRODES:
A. Electrodes having low hydrogen covering shall be purchased in hermetically sealed containers.
B. For fabricating plant use: E-70 electrodes, AWS A5.5, A5.17, and A5.20.
C. For field use: E-70 electrodes, AWS A5.5, A5.17, and A5.20.

2.03 FASTENERS:
A. Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electro-deposited zinc coating, for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.B. Bolts and nuts: Regular hexagon-head bolts, ASTM A307, Grade A (ASTM F568, Property Class 4.6), with hex nuts, ASTM A563 (ASTM A563M), and, where indicated, flat washers.
C. Machine screws: ANSI B18.6.3.
D. Lag screws: ANSI BH18.2.1 (ANSI B18.2.3.8M).
E. Wood screws: Flat head, carbon steel, ANSI B18.6.1.
F. Plain washers: Round, carbon steel, ANSI B18.22.1 (ANSI B18.22M0).
G. Lock Washers: Helical, spring type, carbon steel, ANSI B18.21.1.
H. Expansion anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E488 conducted by a qualified independent testing agency.
1. Carbon steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.
2. Group 1 alloy 304 or 316 stainless-steel bolts and nuts comply with ASTM F593 (ASTM F738M) and ASTM F594 (ASTM F836M).
I. Toggle bolts: FS FF-B-588, tumble-wing type, class and style as required.
J. Concrete anchors: Phillips Red Head, self-drilling anchors. Catalog No. S-38 with machine bolts and washers.

2.04 GROUT:
A. Nonshrink, metallic grout: Factory-packaged, ferrous-aggregate grout comply with ASTM C1107, specifically recommended by manufacturer for heavy-duty loading applications.
B. Nonshrink, nonmetallic grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior application.

2.05 FABRICATION:
A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
B. Form exposed work true to line and level with accurate angles an surfaces and straight sharp edge.C. Exterior work: Allow for thermal movement resulting from change in ambient temperature in the design, fabrication, and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.
C. Shear and punch metals cleanly and accurately. Remove burrs.
D. Ease exposed edges to a radius of approximately 1/32", unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
E. Remove sharp or rough areas on exposed traffic surfaces.
F. Weld corners and seams continuously to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
H. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
I. Shop assembly. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
J. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
K. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.06 ROUGH HARDWARE:
A. Furnish bent, or otherwise custom-fabricated, bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes as required.
B. Fabricate items to sizes, shapes, and dimensions required. Furnish malleable-iron washers for heads and nuts that bear on wood structural connections, and furnish steel washers elsewhere.

2.07 MISCELLANEOUS FRAMING AND SUPPORTS:
A. Provide steel framing and supports for applications indicated that are not a part of structural steel framework as required to complete the Work.
B. Fabricate units to sizes, shapes, and profiles indicated and required to receive other adjacent construction retained by framing and supports. Fabricate from structural steel shapes, plates, and steel bars of welded construction using mitered joints for field connection. Cut, drill, and tap units to receive hardware, hangers, and similar items.
1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

2.08 MISCELLANEOUS STEEL TRIM:
A. Unless otherwise indicated, fabricate units from structural steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible.
B. Provide cutouts, fittings, and anchorages as required to coordinate assembly and installation with other work.

2.09 SHOP COAT:

CONSULTANT:
WILKUS ARCHITECTS
15 Ninth Avenue North, Hopkins, MN 55343
Phone: 952.941.8860/ www.wilkusarch.com
FLORIDA BOARD OF ARCHITECTS
CERTIFICATE OF AUTHORIZATION
#AA26003630 EXPIRES 02/28/21

CLIENT:
TBC CORPORATION
4300 TBC WAY
PALM BEACH GARDENS, FL 33410

PROTOTYPE TEMPLATE:
"NORTHLAKE" 8 BAY INLINE
v.2019.1.08
EXTERIOR MODIFIED FOR AHJ

PROJECT INFORMATION:
TIRE KINGDOM
STORE 937
SEC OF TAMIAMI TRAIL & SUMTER CROSSING DRIVE
NORTH PORT, FLORIDA 34287

BID SET
01/10/2020

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DRAWN BY:	CJB
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SPECIFICATIONS

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