G.U.S.C. OF THE CITY OF BESSEMER, ALABAMA
WATER TREATMENT PLANT IMPROVEMENTS
CHEMICAL/SHOP BUILDING MODIFICATIONS
AND NEW MAINTENANCE BUILDING

ADDENDUM TO THE PLANS AND SPECIFICATION-CONTRACTUAL DOCUMENTS

ADDENDUM NO. 1

TO: ALL PROSPECTIVE CONTRACTORS AND SUPPLIERS

The changes, modifications, clarifications and/or additions covered by and set forth in this **Addendum No. 1** shall become part of and be incorporated into the Specifications, Contract Documents, Bid Documents, and Plans for the above referenced project. The Contractor shall include this Addendum, as well as any previous and subsequent addenda that may be issued, with his proposal Bid Documents as indicating his receipt and acceptance of its terms, requirements and clarifications.

The Contractor shall also acknowledge receipt of this addendum on page **BD-13** of the Specifications-Contractual Documents.

DRAWINGS:

1. Re: Sheets 7 & 7A
   Revision: In the "West Elevation", revise the marker for the roll up door to be "D6" in lieu of "D5" and for the single door to be "D2" in lieu of "D1"

2. Re: Sheet 8 – Add the following Note:
   Contractor shall install a ¾" Type K hard drawn copper pipe (to serve as a compressed air line) from the approximate location of the air compressor electrical disconnect (see Electrical Drawings) to inside the Storage Room on the same wall as Door D5 and approximately 6 feet to the left of Door D5. Line and solder joints to be rated at 300 psi air minimum. The air line shall be installed above doorways and generally level along its entire route (slight slope back to compressor) with only vertical drops at each end. Anchor to wall with aluminum uni-strut, pipe clamps and stainless steel hardware to allow for level adjustment. Pipe clamps required each side of bends. Coordinate routing with engineer. Coordinate required fittings at each end of air line with owner supplied air compressor and equipment.

3. Re: Sheets 9 & 9A
   Revision: In Section "A", revise the marker for the door to be "D5" in lieu of "D1"

4. Re: Sheet 16
   Revision: Revise the "TYPICAL REINF. AT MASONRY WALL OPENING" detail so as to replace #5 reinforcing with #6 reinforcing at all locations on detail.

ADVERTISEMENT FOR BIDS:

1. The **Bid Date** has been changed to **July 12, 2018** at 2:00 PM, the prevailing time.

BID DOCUMENTS:

1. Re: Page BD-1: The **Bid Date** has been changed to **July 12, 2018** at 2:00 PM, the prevailing time.

2. Re: Page BD-7
   Revision: Replace Page BD-7 with the attached Page BD-7 (Addendum #1)

SPECIFICATIONS:

1. Re: Standard Specification for Masonry (Page S2-14 through Page S2-16):
   Revision: Replace the entire Standard Specification for MASONRY with the attached Specification for MASONRY (Single Wythe and Cavity Walls).

LIST OF MATERIAL SUPPLIERS AND EQUIPMENT MANUFACTURERS

The Bidder shall complete the form below in accordance with the instructions on the previous page.

	Material or Equipment		Name of Supplier or Manufacturer
1.	**Chemical Storage Tanks**	**Base:**	Snyder Industries, Inc.
a.	**Substitute** _____	**b. Deduct $**	_____
2.	**Chemical Feed Pumps**	**Base:**	Watson Marlow
a.	**Substitute** _____	**b. Deduct $**	_____

The Bidder further certifies that if his bid is accepted, the base Material Suppliers and Equipment Manufacturers he has indicated herein will be awarded contracts for supply of their products unless deductive substitutes are provided as specified herein and approved by the Owner. The Bidder further certifies that deductive substitute Material Suppliers and Equipment Manufacturers he has properly indicated that are approved by the Owner will be awarded contracts for supply of their products.

Contractor _____

By _____

Date _____

STANDARD SPECIFICATION
FOR
MASONRY
(Single Wythe and Cavity Walls)

SECTION 2-2

1.0 GENERAL

1.01 Section Includes

A. This specification shall include all interior and exterior masonry work

1.02 Reference Standards

A. ASTM A951 – Steel Wire for Masonry Joint Reinforcement

B. ASTM A153 – Zinc Coating (Hot-Dip) or Iron and Steel Hardware.

C. ASTM A615 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcing.

D. ASTM C90 – Hollow Load-Bearing Concrete Masonry Units.

E. ASTM C216 – Facing Brick

F. ASTM C62 – Building Brick

G. ASTM C652 – Hollow Brick

H. ASTM C126 - Ceramic Glazed Masonry

I. ASTM C144 – Aggregate for Masonry Mortars.

J. ASTM C150 – Portland Cement

K. ASTM C207 – Hydrated Lime for Masonry Purposes.

L. ASTM C404 – Aggregates for Masonry Cement.

M. ASTM C476 – Grout for Reinforced and Non-Reinforced Masonry.

N. ASTM C578 – Rigid, Cellular, Polystyrene Thermal Insulation

O. ASTM E514 – Water Penetration and Leakage Through Masonry

P. AWS D1.4 – Structural Welding Code

Q. NCMA TEK Bulletin #3

1.03 Quality Assurance

A. Concrete masonry units shall be obtained from one manufacturer. Brick shall be obtained from one manufacturer.

1.04 Sample Panel

A. A sample panel with minimum dimensions of 4'-0" horizontal by 5'-4" vertical shall be constructed at the job site for approval by the Owner and Engineer. Owner and Engineer will observe masonry units, mortar color, joint treatment and workmanship. The approved sample panel shall be protected and retained until instructed by the Engineer to remove, and shall be laid out of the manufacturer's latest color sample and same size as used in the construction job. This sample panel shall be cleaned in the same method that will be used on the completed building. After thoroughly cleaning the sample panel, the clear sealer (if required) shall be applied. Manufacturer shall furnish all materials required to construct sample panel free of charge. Contractor shall furnish all labor.

1.05 Face Brick and Architectural Block Color Samples

A. Due to variations in the manufacture of the brick and block, the brick and block manufacturer, through the contractor, shall submit to the Engineer the latest sample of the color selected to be sure it matches that as originally selected by the Engineer.

1.06 Submittals

A. Certification: From manufacturer certifying the units delivered to job-site meet the requirements of this section.

B. Manufacturer's Product Data: Indicating full compliance with requirements of this section, for each of the following:

1. Horizontal joint reinforcement.
2. Each type of masonry unit ties.
3. Premixed mortar (data is required if used).
4. Grout materials.
5. Sealers.

1.07 Delivery, Handling, Storage

A. Masonry units shall be delivered to job-site on pallets. Pallets of architectural blocks shall be capped and shrink wrapped to prevent moisture intrusion in accordance with manufacturer's recommendations.

1. Cracked, chipped and spalled masonry units shall be immediately removed from job-site.

B. Mortar materials shall be delivered to job-site in original unopened packages bearing manufacturer's labels.

C. Store and protect mortar materials in accordance with manufacturer's recommendations.

1. Maintain temperature and humidity within ranges required by manufacturer's instructions.
2. Maintain cementitious materials and aggregates clean, dry and protected against dampness, freezing and foreign matter.
3. Packages showing evidence of damage shall be rejected.

1.08 Protection

A. Protection During Erection:

1. Maintain protection at exposed external corners which may be damaged by construction activities. Provide such protection without damaging completed work.
2. At end of each days work or whenever rain or frost is imminent, cover top of walls with strong waterproof membranes. Extend sheets 24 inches minimum each side of walls. Secure in place.
3. Cover partially completed structures when work is not in place or ongoing.

B. Cold Weather Protection for Work in Progress:

1. Masonry shall not be erected when the temperature is below 45ºF except by permission of the Engineer. When masonry work is authorized during temperature below 45ºF, provisions for protecting the work shall conform to recommended requirements of the Brick Institute of America. Blocks, bricks and mortar shall be heated to 60ºF and maintained at not less than 60ºF until the mortar has set.

C. Cold Weather Protection for Completed Work:

1. Once the mortar has set, provide continued protection as required to maintain minimum 32º F for a minimum 24 hours. Protect from rain or snow.

D. Remove all masonry units determined to be frozen or damaged by freezing conditions.

E. During hot weather, blocks, bricks and mortar temperature shall not exceed 85º F.

1.09 Substitutions

A. To obtain approval to use unspecified products, prime bidders on the general construction contract shall submit written requests at least ten (10) days before the bid date. Requests received after this time will not be considered. Requests shall clearly describe the product for which approval is asked, including all data necessary to demonstrate acceptability. If the product is acceptable, the Engineer will approve it in an Addendum issued to all prime bidders of record.

B. In the event the requirements of an "Approved" material are different from that specified and/or as indicated on the drawings, any additional cost involved by using the material shall be the responsibility of the bidder and his bid shall include such cost. No extra cost to the Owner will be allowed because of the use of such material.

1.10 Stain Control

A. Staining below window sills, metal brackets, and vents that attach to the walls, etc., shall be avoided by having projections carried out at least one inch from the face of the wall with a drip notch or groove on the underside in order to keep water from running back under sill and down the face of the wall and onto metal devices or other stain producing items attached to the wall. These items shall be insulated from the visible portion of the wall by a non-staining durable gasket material having a drip to divert potential staining material away from the wall.

2.0 PRODUCTS

2.01 Concrete Masonry Units (CMU)

A. Standard gray concrete masonry units for the work of this section shall be block as manufactured by Block USA or Cemex USA. No cinder aggregates allowed.

B. Architectural colored/textured concrete masonry units for the work of this section shall be as selected by the Owner or as specified herein or on the Contract Drawings. Architectural colored/textured concrete masonry units shall be as provided by Block USA unless specified otherwise herein or on the Contract Drawings. No cinder aggregates allowed.

1. For architectural colored/textured concrete masonry units, the Owner shall be able to select from Block USA's standard color/texture collection (i.e. not the premium selection unless noted otherwise) and the Contractor shall include the appropriate block cost in his bid. The Contractor shall submit color/texture samples to the Owner/Engineer immediately after award of the project to allow sufficient time for production and delivery of block. The block manufacturer shall also provide all materials and components including sills, copings and other special components required for a complete and watertight installation to meet project requirements and conditions.

2. All materials and accessories used with a architectural colored/textured CMU wall system must be of types and quality approved by the Architectural Color Masonry Unit Manufacturer.

C. Load-bearing normal weight or heavier ASTM C90 (125 lb/cf minimum, 1900 psi minimum compressive strength) concrete masonry units shall be used in all single wythe and cavity wall applications. All exterior applications in single wythe walls shall employ the water repellent integral water proofing unless otherwise indicated on the Drawings.

D. Concrete masonry units shall include all special units as indicated and/or as required including sill units, coping units and specially designed flashing block for single wythe walls. The quantity and design of all special units shall be conveyed by the Contractor to the manufacturer at the earliest possible time so as not to delay the project.

E. Units shall have face details conforming to details shown on the drawings or to details of the approved by the Engineer or Owner.

F. All exterior applications shall employ the Integral Water Repellent Admixture DRY BLOCK® for block and mortar, as manufactured by W.R. Grace, to minimize the potential of efflorescence.

2.02 Brick

A. Brick shall be made from clay or shale and shall conform to the requirements of ASTM C216, Grade SW, Type FBS. Brick having cores in excess of ½" or totaling in excess of 20 percent of the bed area shall not be used. Face brick shall be selected so that the face side is free from any defects that would impair or detract from the finished appearance.

B. Brick Allowance: An allowance of $500 per 1000, including taxes and delivery to the jobsite unloaded (with color and texture to be selected by the Owner unless stated otherwise) is to be included in the Contract. Unless indicated otherwise or requested otherwise by the Owner, new brick shall match brick on nearby existing buildings located on the same site.

2.03 Architectural Block/Stone Veneer

A. Architectural Block/Stone veneer (e.g. split face CMU veneer) shall meet or exceed all requirements specified herein for architectural CMU. Dimensions shall be as required by the type wall construction as shown on the Contract Drawings and/or as selected by the Owner.

C. Architectural Block/Stone Veneer Allowance: An allowance of $14 per each, including taxes and delivery to the jobsite unloaded (with color and texture to be selected by the Owner unless stated otherwise) is to be included in the Contract. Unless indicated otherwise or requested otherwise by the Owner, new architectural block/stone veneer shall match the veneer on nearby existing buildings located on the same site.

2.04 Glazed Concrete Masonry

A. Glazed concrete masonry shall be hollow load bearing units meeting the requirements of ASTM Specification C90. Glazing shall return over ends and edges of block, forming a lip at least 1/16" thick. Facing material shall meet the requirements of ASTM Specification C126, Grade S. Finished facing of the units shall be free from imperfection and shall be single glazed or double glazed as required.

2.05 Flashing:

A. Single Wythe:

1. Flashing shall be installed at all isolation, termination, and transition locations. Unless indicated otherwise on the Drawings, flashing within single wythe construction shall be accomplished using a special designed "flashing block" which has a reglet cut into the bottom of the block at the inside face. Use only solid metal flashing (stainless steel, copper, or galvanized steel) with an upturned leg of 1" into the reglet. Place mortar along upturn leg when setting flashing block to prevent water from migrating behind flashing. Flashing details shall be approved by the block manufacturer.

2. Blok Flash – an embeddable flashing device to collect moisture that infiltrates the wall and flows down the vertical cores and diverts it to the exterior. Blok Flash shall only be considered when recommended by the block manufacturer.

B. Cavity Wall Flashing:

1. Flashing shall be installed at all isolation, termination, and transition locations. The type of flashing material to be used is contingent upon the specific condition as follows:

2. Where continuous backup support is provided for the flashing to adhere to (ie: lintels, slab, relief angles, filled block, etc): self-sealing, self-healing fully adhered composite flexible flashing. 40 mils.

3. Where continuous support is not provided for the flashing to adhere to (ie: open block cells, wall cavity, coping, etc): Solid metal flashing (stainless steel, copper or galvanized steel) or 5 oz. Copper Fabric Flashing.

4. See Contract Drawing for any special wall base flashing required.

2.06 Weeps

A. Cavity and single wythe walls: ¼" braided cotton rope unless indicated otherwise on the Drawings.

2.07 Insulation for Exterior Architectural Block

A. Insulation for exterior customized architectural block walls.

1. Masonry cells filled with reinforced concrete/grout: "KORFIL" U-Shaped (horseshoe) inserts (expanded polystyrene) by Concrete Block Insulating Systems (CBIS), West Brookfield, MA.

2. Foam Fill Insulation: Core Foam Masonry Foam Insulation by CFI Foam Inc. Knoxville, TN 37939 or equal.

The foam insulation shall be delivered, stored, handled, installed, and cured in strict accordance with the manufacturer's recommendations. The installer of the foam fill insulation shall be certified/approved by the foam manufacturer and have not less than three years experience. The installer shall provide references for similar projects utilizing the same type block. Complete submittals shall be provided to the Engineer.

Foam pressure injection shall be the installation technique and shall be accomplished through drilled holes per the manufacturer's recommendations in the masonry joints at discreet locations approved by the Engineer. No holes shall be drilled through the CMU surface. For exterior walls, all holes shall be drilled from the interior of the building. Patch holes with mortar (and score) to match existing surface/joint. All open cells and voids within each CMU shall be completely filled with foam insulation. Upon completion and request from the Engineer, the Contractor shall drill additional holes at locations determined by the Engineer to verify complete filling of voids. Any deficiencies discovered shall be corrected.

B. Insulation inserts shall be field installed per the manufacturer's recommendations in reinforced concrete filled cells only unless indicated otherwise on the Drawings

2.08 Coping

A. Do not use 4" split face for coping units, especially in a horizontal design.

B. A solid flashing member must be placed under the coping to completely seal off the top of all cell and wall cavities.

2.09 Grout/Concrete Mixes

A. Fine Grout for Reinforced Masonry:

1. Aggregate shall be sand.
2. Portland Cement: 1 part
   Hydrated Lime: 0 to 1/10 part
   Fine Aggregate: 2-1/4 to 3 parts

B. Pea Gravel Concrete Mix for reinforced Masonry
1. 4000 psi min. compressive strength required
2. Contractor to submit proposed mix design

C. When required, all grout and concrete mixes shall use a superplasticizer to allow the grout/concrete to become fluid using a much lower water content. Grout shall meet ASTM C-476.

2.10 Mortar Mixes

A. Mortar for Loadbearing and Non-Loadbearing Walls: Comply with ASTM C270 Proportion Specifications for following mortar type:

1. Type S/1800 psi at 28 days or M premix waterproof mortar.
2. Use a water repellant mortar additive from same manufacturer as water repellant in CMU.

2.11 Horizontal Joint Reinforcement and Wall Ties

A. General:

1. Horizontal joint reinforcement specified below shall be prefabricated reinforcement for embedment in horizontal mortar joints of masonry manufactured and welded in 10 foot lengths from cold-drawn steel wire conforming with ASTM A951 requirements of quality.

2. All horizontal masonry reinforcing and wall ties shall be equal to those manufactured by Hohmann & Barnard, Inc. (H&B) of Trussville, AL.

3. All horizontal masonry reinforcing and wall ties shall be steel and hot-dipped galvanized after fabrication unless indicated otherwise.

4. Prefabricated Corners and Tees: Required for each type of wall reinforcing.

B. For Single-Wythe, Non-Cavity Block Walls:

1. Non-Cavity, Non-Concrete filled block walls shall use 9 gauge truss type reinforcing equal to H&B Model 120 Truss-Mesh - Standard Duty.

2. Non-cavity, Concrete filled walls that have masonry openings with vertical reinforcement and concrete fill, shall use horizontal masonry reinforcing equal to H&B Model 220 Ladder Mesh - Extra Heavy Duty.

3. Finish: All components shall be hot-dipped galvanized after fabrication, ASTM A153/A152-B 2.

C. For Brick to Concrete Masonry Unit (CMU) Cavity Walls**:**

1. General: Brick to concrete masonry unit (CMU) cavity walls shall use a continuous outer wythe to inner wythe wall tie system consisting of horizontal CMU reinforcing (for the interior wythe) connected to rectangular or U-shaped pintles (at 16” O.C.) with continuous wire (for the outer brick wythe) by the use of a “double eye”, hook-and-eye, adjustable connection system.

2. For brick to vertically unreinforced, non-concrete filled CMU cavity walls, the wall tie system shall be truss style equal to H&B model 170-2X Adjustable Truss Lox – All Eye-Wire w/S.I.S.

3. For brick to vertically reinforced, concrete filled CMU (vertical rebar with concrete fill at specified spacing) cavity walls, the wall tie system shall be equal to H&B Model 270-2X Ladder Eye Wire w/S.I.S.

4. All components of cavity wall tie systems shall be 3/16" diameter and hot dipped galvanized (ASTM A153/A153-B2).

D. For Brick to Metal, Concrete, or Wood Stud Wall Construction**:**

1. Reinforcement shall utilize a heavy duty (3/16") continuous wire (for reinforcing the brick) that is connected to the supporting wall structure using a wire tie system equal to H&B Model 2-Seal Tie (polymer coated) with 2-Seal Byna-Lok wire tie.

2. Wire tie system shall have the appropriate dimensions, necessary fasteners, and necessary appurtenances required for the type/size of wall construction.

3. All required accessories and anchors shall be hot-dipped galvanized (ASTM A153/A153-B2) for corrosion resistance.

E. For Brick Passing by Intersecting Concrete Walls or Concrete Columns:

1. Reinforcement shall be heavy duty (3/16") continuous wire with dovetail anchors in continuous matching dovetail anchor slots as manufactured by H&B or equal. The dovetail anchors shall be H&B Model 315 – Flexible Dovetail Brick Tie (with matching continuous wire clip Model 187-2X) and the dovetail slot shall be H&B Model 305 Dovetail Slot (18 ga.).

2. All components and anchors shall be hot-dipped galvanized (ASTM A153/A153-B2) for corrosion resistance**.**

F. For Brick or Block Passing by Steel Columns:

1. The tie system shall be equal to H&B Model 359 - Weld-On Ties with H&B Model VBT- Vee Byna Tie. All welds to be painted after weld on.

2. Tie dimensions shall be as required by the type of wall system.

3. Provide H&B Model 187-2X continuous wire clip or equal for brick veneer applications.

4. Finish: Hot-dipped galvanized after fabrication, ASTM A153/A152 B-2**.**

G. At Intersection of Intersecting Masonry Walls

1. Equal to H&B Model MWT – Mesh Wall Tie

2. Mesh wall tie shall include ½" squares x 16 Gauge

2.12 Bond Beams

A. Type: Shall be formed-in-place U-shaped concrete masonry units of same quality as wall units, complete with reinforcing steel and grout.

1. Reinforcing Steel: Size as indicated on drawings.
2. Pea Gravel Concrete

2.13 Lintels

A. Masonry Lintels:

1. Type: Shall be formed U-shaped concrete masonry units of same quality as wall units, complete with reinforcing steel and grout.
2. Reinforcing Steel: Shall be of type and size as shown or scheduled on Structural Drawings.
3. Grout: Fine type or as specified in this section.
4. Provide shoring as required for temporary support during construction and curing.

B. Steel Lintels (if required)

1. Type: Shall be as specified on Contract Drawings.

C. Vertical rebar in CMU cells shall extend through lintels and reach the top of the masonry wall. Drill lintels as required to allow rebar to pass through lintels.

2.14 Expansion/Control Joint Filler

A. Material shall be a compressible polyurethane foam impregnated with polybutylene.

B. Caulking shall be as specified and shall match the masonry color

C. Custom color joint filler when required to match masonry color shall be provided. Color shall be approved by Owner and Engineer.

2.15 Other Materials

A. Portland Cement: Type 1, ASTM C 150 quality, gray color.

B. Hydrated Lime: ASTM C 207 quality, Type S.

C. Mortar Aggregate: ASTM C 144 quality, standard masonry type; clean dry and free of foreign matter. No cinder aggregate allowed

1. For color consistency in mortar, sand shall be from a single source. Do not change source during the course of the work.

D. Water: Shall meet Federal Government drinking/potable water standards

E. Calcium Chloride: is NOT permitted.

F. Cleaner: "Custom Masonry Cleaner" by ProSoCo or as recommended by the block manufacturer. Contact block manufacturer to determine cleaner required and the dilution rate based upon masonry color selected. DO NOT USE HIGH PRESSURE WASHER. Use a stiff bristle brush and a maximum of 50 lbs. water pressure.

G. Sealer: "Customer Masonry Sealer" by ProSoCo or as recommended by the block manufacturer. Coverage shall be as recommended by the block manufacturer.

3.0 EXECUTION

3.01 General

A. Layout all masonry work per the drawings. No work shall be laid unless the temperature is at least 45 degrees F. and on the rise.

B. Masonry shall be laid up so that brick and block joints are together and reinforcing can be properly laid in and coordinated with insulation.

C. All masonry work shall be laid straight, level, plumb, and true. Exterior walls shall be laid continuous around the entire structure and in no case racked up more than five feet. Use all inverted lintel CMU as base for flashing at sills, floor joints, and other details.

D. Build in all flashing, anchors, reinforcing, inserts, wall plugs, lintels, bearing plates, bond beams, weeps and items as required to accommodate the work of others.

E. All special details such as chases, openings, expansion joints projections, corbels, etc., shall be built as shown on the Drawings.

F. Lay all masonry in full bed of mortar with shove joint, completely filling all joints with mortar. For starting courses on footings where cells are not grouted, use a face shell mortar bed and coordinate placement of flexible wall flashing and weeps. Unless indicated otherwise, run weep cord up through the hollow block from each weep to assure proper weeping. Rake mortar joints at flashing and apply caulk to prevent mortar crack. Keep the CMU cells clean and free of excess mortar such that the cell is completely open to allow complete filling with insulation or reinforced concrete as required.

G. Masonry walls shall be reinforced every second horizontal block joint (16" O.C. max) and first horizontal joint over door and window heads with reinforcing as specified.

H. Vertical rebar in CMU cells shall extend through lintels and reach the top of the masonry wall. Drill lintels as required to allow rebar to pass through lintels.

I. Joints of all exposed masonry surfaces shall be finished after the mortar has taken its initial set. Set a straight edge for horizontal joints. Vertical joints shall be in alignment from top to bottom. All exposed joints shall be slightly concave. Jointing tools shall be approximately 1/8" greater than joint.

J. At the end of each day or when rain or frost is imminent, the tops of masonry walls shall be properly protected by covering top of wall with a strong waterproof membrane durably secured in place.

K. Consult all other trades in advance and make provisions for the installation of their work to avoid cutting and patching after wall is complete.

L. Unfinished work shall be stepped back to permit joining of new work. Masonry work shall be tooled only when approved. Before connecting new work with work previously built, sweep clean, remove loose mortar and thoroughly wet the old work. No brush cleaning should take place too soon that wold cause smearing of the mortar color on the blocks. Brush cleaning is best done at the end of each working day when scaffolding is still up and only the initial set of the color mortar has taken place.

M. Door frames shall be set before masonry walls are built. As the masonry walls are built around these frames, the inside of the frames shall be grouted solid with mortar. Cavity walls shall be flashed at this junction.

N. All architectural color masonry shall be sawn with a dry saw blade.

O. All premixed colored mortar shall be Type S or Type M.

P. All masonry units stacked upright shall be covered on the job site with plastic sheets. Colored units, 4x8x16 and 6x8x16 that are stacked flat shall be covered with a plastic bag.

3.02 Laying Customized Masonry

A. Lay masonry in bond as indicated, plumb and level and true dimensions. Generally, scored and ribbed block shall be stacked bond and split face shall be running bond.

B. Layout all work in such a manner as to avoid using pieces less than ½ block in length. Make all exposed cuts with a dry masonry saw. Cut accurately for all openings. Slush all voids full of mortar.

C. Cutting: Only a dry saw blade shall be used for cutting special units; as a wet blade will leave a heavy residue that is difficult to clean.

D. When laying different color bands of different colored customized masonry, always use the color mortar that matches the color block at the bed joints and head joints so the blocks can be fully mortared and laid at the same time. Allow the bottom band to set 24 hours before starting with a different color block because if this is not done

head and bed joints could leach out mortar below from the new colored block and be very noticeable and hard to clean off.

E. Split face blocks shall be laid in a running bond pattern. Horizontal joint reinforcing shall be used every other course to reduce cracking.

F. All scored, 8 rib, and 4 fluted blocks shall be laid in a stack bond pattern. The joint reinforcing wire used every other course to reduce cracking will also function to strengthen the wall in this pattern.

G. Customized masonry wall shall be reinforced every second horizontal joint and first horizontal joint over door and window heads with reinforcing as specified.

H. When laying double wythe walls the cavity space should be kept clear of excess mortar at all times. The mason should rake clean the extruded mortar from the back face of the exterior wythe with a narrow trowel or board the width of the cavity.

3.03 Joints

A. Only concave or vee joints shall be used in exterior applications for single wythe wall systems.

B. When scored blocks are being used with concave or vee joints, the false center score shall be filled with mortar and tooled to match the primary joints in single wythe walls. Cavity walls may use raked joints where desired.

C. Control Joints: All control joint locations shall be identified on the contract documents. Control joints shall be built into exterior walls and should be designed with height times three for spacing of the control joints not to exceed 50 feet with reinforcing every other course (16" o.c.); also required at intersecting walls and openings. NCMA Tek No. 3 shall be referenced for further information on control joints.

D. Mortar joints must be struck in a consistent manner. They must be struck when the mortar is thumbprint hard.

3.04 Weep Holes

A. Cotton rope (1/4") as specified shall be used for weep holes unless indicated otherwise by turning the cord up into the block cores from the exterior side of block every 16 inches on center for cavity walls and 8" O.C. at each cell for single wythe walls. The center webs should have the mortar left out so water can flow easily to weep holes. These cotton rope weep cords shall be used in the above manner on the first course above grade and first course above all lintels or flashing. These ¼" cotton rope weep cords shall be cut off flush to the wall once the masonry is completed.

3.05 Wall Flashing

A. Provide wall flashing as specified at locations for base course flashing, head, (lintel) flashing, sill flashing, spandrel flashing, coping flashing, and such other locations as specified or detailed on the drawings.

B. Flashing shall be used on solid window sill units, solid coping on top of building and solid coping on exterior walls.

3.06 Wall Reinforcement and Ties

A. Reinforcement shall be installed in alternate block courses in exterior walls. In no case shall reinforcement spacing exceed 16" O.C. overlap ends a minimum of 8".

B. Reinforcing at openings in exterior walls shall be in the first and second bed joints immediately above and below openings**.**

3.07 Pointing

A. Point up all exposed masonry, fill all holes and joints and leave the work in an acceptable condition.

B. Use spackling compound mixed with sand to make a gritty material to match the block texture. Apply with a putty knife. The customized unit masonry manufacturer shall provide the stain.

3.08 Expansion/Control Joints

A. These joints shall be in locations of exterior walls as indicated and as detailed on the drawings.

B. All control joint locations shall be identified on the contract documents. Control joints shall be built into exterior walls and should be designed with height times three for spacing of the control joints, not to exceed 50 feet with reinforcing every other course (16" O.C.) for Type I units; also required at intersecting walls and openings. NCMA Tek No. 10 shall be referenced for further information on control joints.

C. Expansion/Control joints in flat surface CMU walls shall have tape on each side of the joint before applying the caulking compound. If the walls are to be cleaned by sandblasting, this is not necessary.

3.09 Grouting

A. Grouting shall be a 4000 psi mix consisting of a fine pea gravel or sand, a super plasticizer and a minimum amount of water. Conform to ASTM C-476.

B. If in-core insulation required, provide as specified.

3.10 Wall Protection

A. Hollow core block walls in process are to be covered until coping is installed on building.

B. Coping with 4" split face is not allowed. Coping shall be a sill unit sloped back to back and shall be used on all parapet walls.

C. Hay or straw should be placed around the foundation of the building to prevent mud stains and should not be removed until the building is landscaped.

D. During construction, block/brick walls in the process of being laid are to be completely covered (including cavity) with a flashing waterproof membrane securely attached until work is completed and coping is installed on building. This is an on-going requirement and must be exercised daily, no exceptions. Lintel blocks at the top of the wall are to be laid as soon as possible to cover the hollow core in case coping is late arriving at job.

1. Cavities and open block cells can be adequately sealed off using heavy plastic sheeting mechanically attached with mason nails or by using the specified flashing membrane.

E. The cavity space should be kept clear of excess mortar at all times. The mason should rake clean the extruded mortar from the back face of the exterior wythe with a narrow trowel or board the width of the cavity.

F. Outdoor landscaping sprinklers must be place in such manner that they miss the walls.

3.11 Pointing and Cleaning

A. Remove excess mortar and smears upon completion of masonry work.

1. Clean blocks/bricks thoroughly with stiff bristle brush.
2. Do not use acids.
3. Follow the directions of Process Solvent Company, using "Custom Masonry Cleaner".

B. Point or replace defective mortar. Match adjacent work.

C. Leave block/brick walls clean and neat.

D. Properly clean joints scheduled for sealant.

E. The final appearance of all masonry work shall be uniform and pleasing.