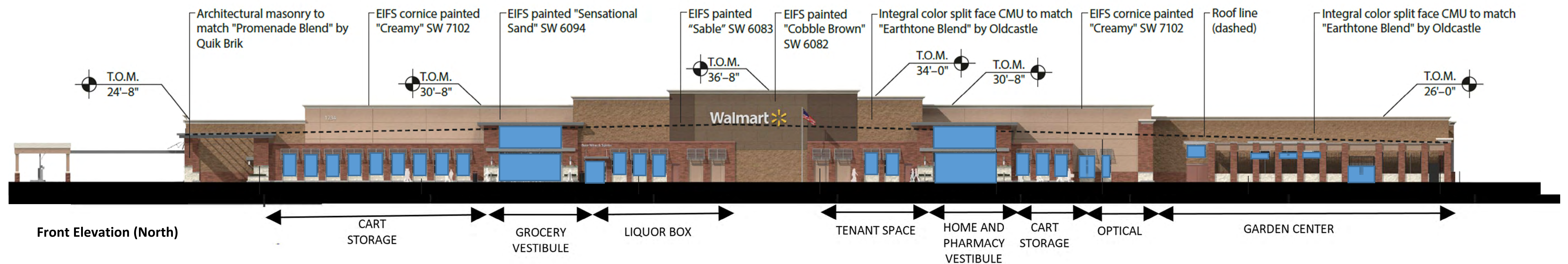


ELIGIBLE AREA UNDER ROOFLINE FOR WINDOWS INTO BUILDING = 10, 198 SF OF FRONT FAÇADE
 10, 198 SF X .20 = 2040 SF OF GLASS REQUIRED



GLASS CALCULATIONS: (LEFT TO RIGHT)

CART STORAGE: 9 – 6'-0" X 6'-8" WINDOWS = 362 SF

GROCERY VESTIBULE: 1 – 24'-0" X 7'-0" GLASS SLIDING DOOR + 1 – 24'-0" X 4'-0" TRANSOM + 1 – 24'-0" X 8'-8" CLERESTORY WINDOW = 168' + 96 + 208 = 472 SF

LIQUOR BOX: 1- 8'-0" X 9'-4" SLIDING GLASS DOOR + 3 – 6'-0" X 6'-8" WINDOWS = 195 SF

TENANT SPACE: 2 – 6'-0" X 6'-8" WINDOWS = 80 SF

HOME AND PHARMACY VESTIBULE: 1 – 24'-0" X 7'-0" GLASS SLIDING DOOR + 1 – 24'-0" X 4'-0" TRANSOM + 1- 24'-0" X 8'-8" CLERESTORY WINDOW = 168 + 96' + 208 = 472 SF

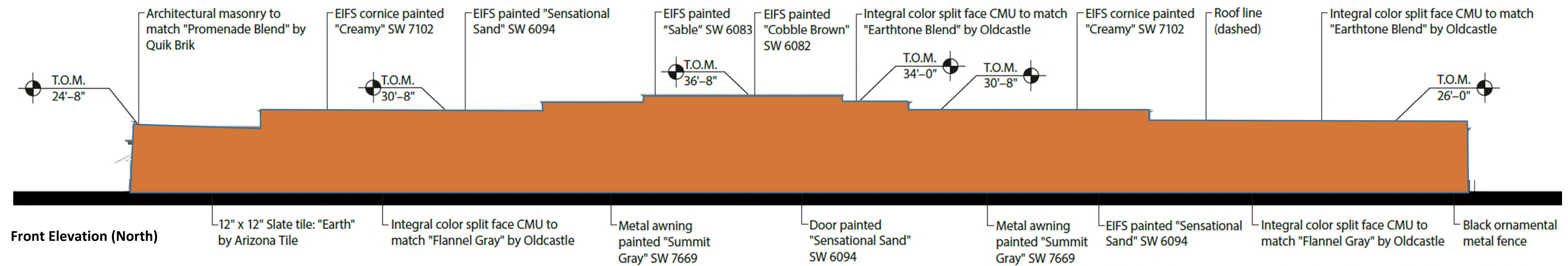
CART STORAGE: 3 -6'-0" X 6'-8" WINDOWS = 120 SF

OPTICAL DEPARTMENT – 1 – 4'-0" X 6'-8" AND 1 – 6'-0" X 6'-8" WINDOW = 67 SF

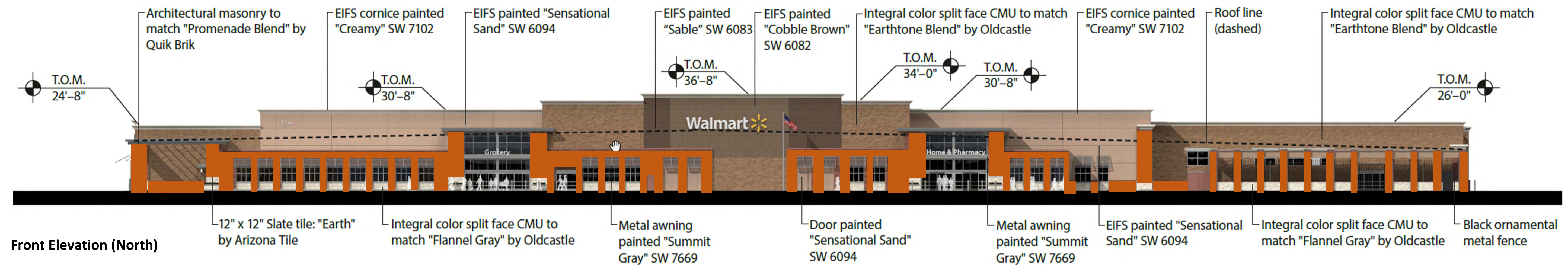
GARDEN CENTER – 1 – 12'-0" X 9'-4" SLIDING DOOR + 3 – 8'-0" X 5'-8" WINDOWS + 1 – 8'-0" x 8'-0" WINDOW = 331 SF

TOTALS = 362+422+195+80+472+120+67+294 = 2099 SF PROVIDED 2099 DIVIDED BY 10198 = 20.58%



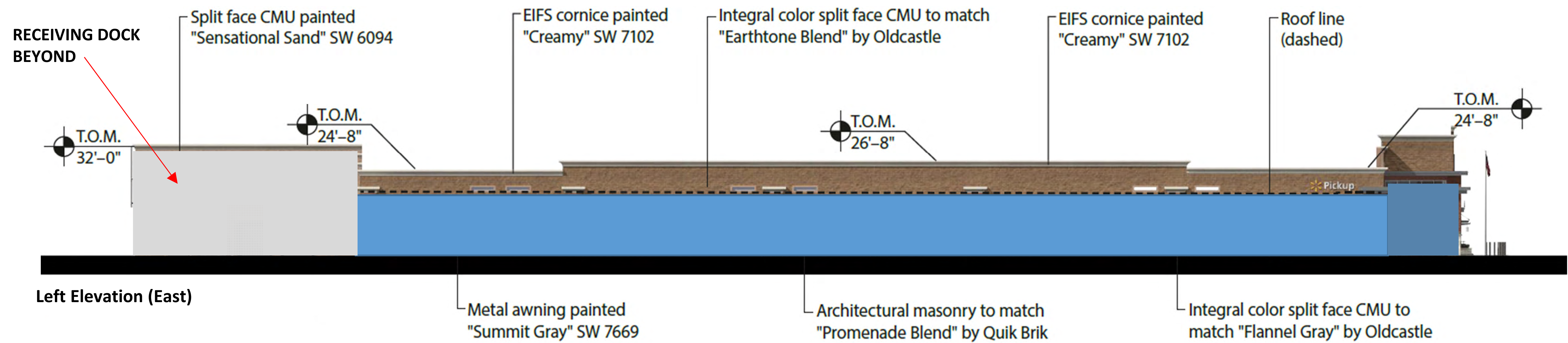


TOTAL FRONT FAÇADE AREA = 14,624 SF. 14,624 X .20 = 2,925 SF OF BRICK REQUIRED

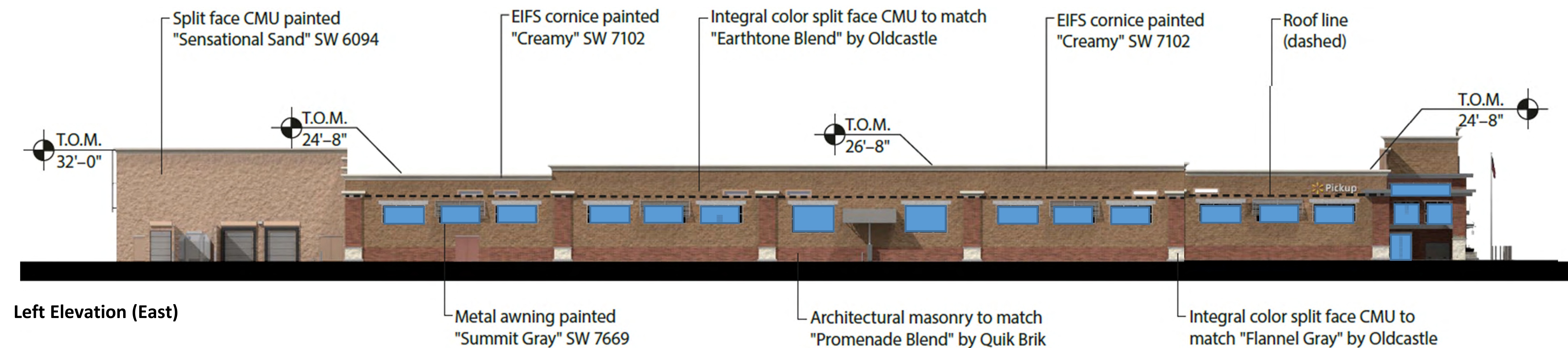


TOTAL SF OF BRICK PROVIDED = 3343.57 OR 22.86%





TOTAL AREA OF SIDE FAÇADE UNDER ROOF = 5,694 SF 5,694 SF X .20 = 1,139 SF OF GLASS REQUIRED



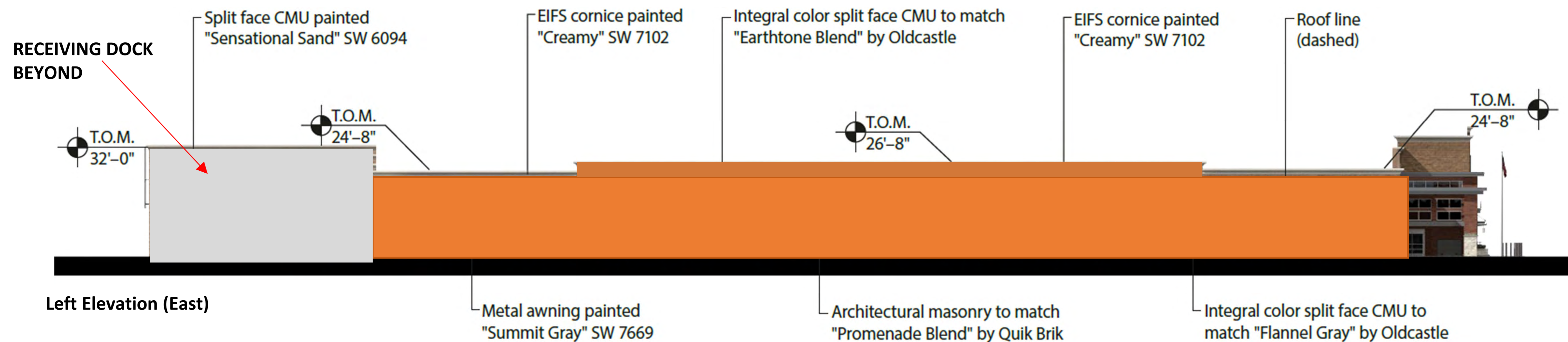
CLERESTORY WINDOWS 12 X 75 + 2 X 102 SF = 1104 SF

ENTRY SLIDING DOOR = 56.55 SF

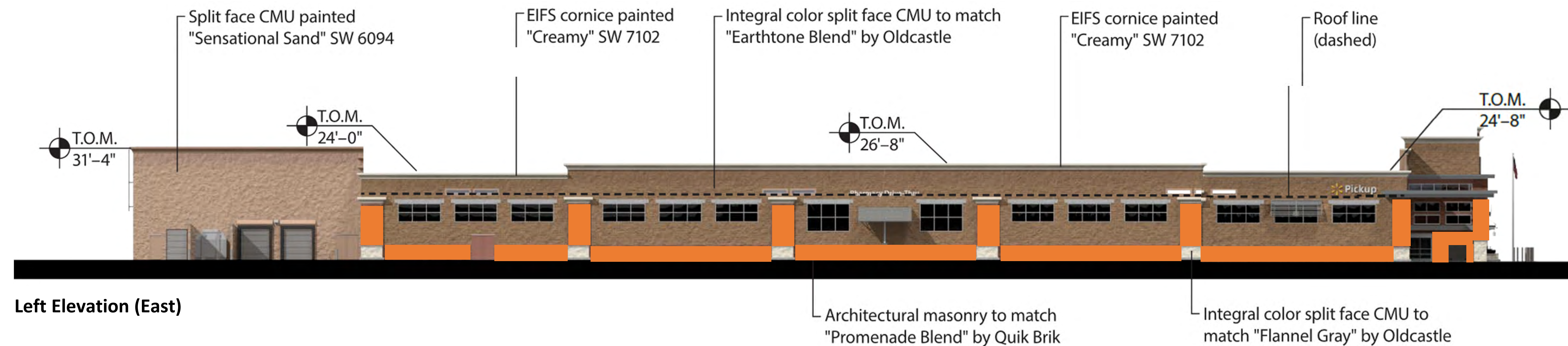
WINDOW GLASS ABOVE DOOR 4X 16 = 64 SF

TOTAL = 1224.55 SF 1224.55 DIVIDED BY 5694 SF = 21.5%





TOTAL AREA OF SIDE FAÇADE = 7,551.21SF 7,551.21 SF X .20 = 1,510.24 SF OF BRICK REQUIRED



TOTAL SF OF BRICK HIGHLIGHTED IN ORANGE ON THIS FAÇADE = 1,724 SF OR 22.83%



Product Specifications: Quik-Brik®

This is a sample specification. The actual project specifications must take into account specific requirements for the project and local construction practices. All the information contained in this sample specification is offered as guidance for proper construction of masonry assemblies and is intended to comply with appropriate industry standards and practices. Final selection or use of any or all of this information is the sole responsibility of the Owner and his/her agents.

PART I - GENERAL

1.01 - SUMMARY

A. Section Includes:

01. Custom concrete masonry units (CMU), Quik-Brik®.
02. Reinforcement, anchorages, and accessories
03. Masonry fill insulation

B. Work Installed But Not Furnished Under This Section:

01. Support plates and angles with anchor studs.
02. Sleeve anchors.
03. Expansion bolts.
04. Adhesive anchors.
05. Anchor bolts which are embedded in masonry for supporting structural members.

C. Related Sections:

01. Section 04060 - Masonry Mortar.
02. Section 04070 - Masonry Grout.
03. Section 04220 - Concrete Masonry Units.
04. Section 05120 - Structural Steel: Support plates and angles with anchor studs, expansion bolts, sleeve anchors, adhesive anchors, and anchor bolts embedded in masonry for supporting structural members.
05. Section 05500 - Metal Fabrications: Loose steel lintels and other metal components embedded in masonry.
06. Section 07900 - Joint Sealer: Rod and sealant at control joints.

1.02 - REFERENCES

A. American Concrete Institute (ACI):

01. ACI 117-90 - Standard Specifications for Tolerances for Concrete Construction and Materials.
02. ACI 530-99 - Building Code Requirements for Masonry Structures.
03. ACI 530.1-99 - Specification for Masonry Structures.

B. American Society for Testing and Materials (ASTM):

01. ASTM A 82 - Specification for Steel Wire, Plain, for Concrete Reinforcement.
02. ASTM A 153 - Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
03. ASTM A 307 - Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength.
04. ASTM A 615 - Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
05. ASTM A 951 - Specification for Masonry Joint Reinforcement.
06. ASTM C 90 - Specification for Loadbearing Concrete Masonry Units.
07. ASTM C 129 - Specification for Non-Load-Bearing Concrete Masonry Units.
08. ASTM C 140 - Methods of Sampling and Testing Concrete Masonry Units.
09. ASTM C 516 - Specification for Vermiculite Loose Fill Thermal Insulation.
10. ASTM C 549 - Specification for Perlite Loose Fill Insulation.
11. ASTM C 920 - Specification for Elastomeric Joint Sealants.
12. ASTM D 994 - Specification for Preformed Expansion Joint Filler for Concrete (Bituminous).
13. ASTM D 1056 - Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
14. ASTM D 2000 - Classification System for Rubber Products in Automotive Applications.
15. ASTM D 2287 - Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds.

C. Masonry Industry Council (MIC): Hot and Cold Weather Masonry Construction.

1.03 - SUBMITTALS

A. Section 01330 -Submittal Requirements: Procedures for submittals.

1.04 - QUALITY ASSURANCE

- A. Construction: Construct masonry in accordance with requirements of TMS 402-11/ACI 530-11/ASCE 5-11 and TMS 602-11/ACI 530.1-11/ASCE 6-11.
- B. Special Inspection and Testing: Provide inspection and testing in accordance with the Building Code and as noted on drawings and will be performed under provisions of Section 01450.
- C. Mock-up: Construct a masonry wall panel to represent the exterior masonry wall.
01. Construct wall at least 4 feet long by 4 feet high.
 02. Locate where directed by Architect/Owner's Representative.
 03. Include reinforcing and minimum of one control joint and one outside corner.
 04. Include joint profile and mortar color.
 05. Erect entire mock-up with methods representative of daily construction and in-progress cleaning practices.
 06. Clean one-half of mock-up to represent final clean down using methods and materials in accordance with the cleaning requirements herein and leave remainder without final cleaning for comparison purposes.
 07. Receive acceptance of mock-up by Architect/Owner's Representative before proceeding with masonry installation.
 08. When accepted, mock-up will be used as standard of quality for masonry work.
 09. Leave field sample in place until project completion.
 10. Mock-up may not remain as part of the work.
 11. Provide on-site inspection by Oldcastle Architectural Products Group (APG) representative of mock-up construction and cleaning and submit manufacturer's letter of approval of the work procedures and the completed mock-up.

1.05 - DELIVERY, STORAGE and HANDLING

- A. Damaged Components:
01. **DO NOT** use damaged masonry units.
 02. **DO NOT** use damaged components of structure.
 03. **DO NOT** use damaged packaged materials.
 04. **DO NOT** use masonry units that are contaminated.
- B. Storage:
01. Store different aggregates separately.
 02. Protect reinforcement, ties, and metal accessories from permanent distortions.
 03. Store reinforcement, ties, and metal accessories off the ground.
- C. Cleaning Reinforcement:
01. Before being placed, remove loose rust, ice, and other deleterious coatings from reinforcement.

1.06 - PROJECT CONDITIONS

- A. Environmental Requirements (Cold Weather): Follow the requirements of the TMS 602-11, Section 1.8 C - Cold Weather Construction. Include the following construction requirements for cold weather procedures:
01. When ambient air temperatures are above 40°F cover tops of walls and masonry elements with plastic or canvas at end of workday to prevent water from entering masonry.
 02. When ambient air temperatures are below 40°F and above 32°F or temperature of masonry units is below 40°F:
 - a. Remove visible ice on masonry units before units are placed in the wall.
 - b. **DO NOT** lay masonry units having a temperature below 20°F.
 - c. Heat sand and mixing water to produce mortar temperatures between 40°F and 120°F at the time of mixing.
 - d. Maintain mortar and grout temperatures above freezing until used in masonry.
 - e. Cover tops of walls and masonry elements with weather resistive membrane at end of workday to prevent water from entering masonry.
 03. When ambient air temperatures are below 32°F and above 25°F or temperature of masonry units is below 40°F:
 - a. Remove visible ice on masonry units before units are placed in the wall.
 - b. **DO NOT** lay masonry units having a temperature below 20°F.
 - c. Heat sand and mixing water to produce mortar temperatures between 40°F and 120°F at the time of mixing.
 - d. Maintain mortar and grout temperatures above freezing until used in masonry.
 - e. Completely cover walls and masonry elements with weather resistive membrane at end of work day and keep covers in place for 24 hours.
 04. When ambient air temperature is below 25°F and above 20°F:
 - a. Remove visible ice on masonry units before units are placed in the wall.
 - b. **DO NOT** lay masonry units having a temperature below 20°F.

- c. Heat sand and mixing water to produce mortar temperatures between 40°F and 120°F at the time of mixing.
- d. Maintain mortar and grout temperatures above freezing until used in masonry.
- e. Use heat source on both sides of masonry under construction.
- f. Install wind breaks when wind velocity is in excess of 15 mph.
- g. Completely cover walls and masonry elements with insulated blankets or equivalent protection at end of workday and keep covers in place for 24 hours.

05. When ambient temperature is below 20°F:

- a. Remove visible ice on masonry units before units are placed in the wall.
- b. **DO NOT** lay masonry units having a temperature below 20°F.
- c. Heat sand and mixing water to produce mortar temperatures between 40°F and 120°F at the time of mixing.
- d. Maintain mortar and grout temperatures above freezing until used in masonry.
- e. Provide an enclosure for the masonry under construction.
- f. Use heat sources to maintain temperatures above 32°F within the enclosure.
- g. Maintain masonry temperature above 32°F for 24 hours after construction by enclosure with supplementary heat, electric heating blankets, infrared heat lamps, or other acceptable methods.

B. Environmental Requirements (Hot Weather): Follow the requirements of the TMS 602-11, Section 1.8 D - Cold Weather Construction. Include the following construction requirements for hot weather procedures:

01. When ambient temperature is above 115°F or ambient air temperature is above 105°F and wind velocity exceeds 8 mph:

- a. Shade materials and mixing equipment from direct sunlight.
- b. Maintain sand piles in damp loose condition.
- c. Provide necessary conditions and equipment to produce mortar and grout having temperatures below 120°F.
- d. Use cool mixing water for mortar and grout.
- e. Maintain temperatures of mortar and grout below 120°F.
- f. Flush mixer, mortar and grout transport container, and mortarboards with cool water before they come in contact with mortar or grout.
- g. Maintain mortar consistency by re-tempering with cool water.
- h. Use mortar within 2 hours of initial mixing.
- i. Fog spray all newly constructed masonry until damp, at least three times a day until the masonry is 3-days old.

02. When ambient temperature is above 100°F or ambient air temperature is above 90°F and wind velocity exceeds 8 mph:

- a. Maintain sand piles in damp loose condition.
- b. Provide necessary conditions and equipment to produce and maintain mortar and grout having temperatures below 120°F.
- c. Maintain mortar and grout temperatures below 120°F.
- d. Flush mixer, mortar and grout transport container, and mortarboards with cool water before they come in contact with mortar or grout.
- e. Maintain mortar consistency by re-tempering with cool water.
- f. Use mortar within 2 hours of initial mixing.
- g. Fog spray all newly constructed masonry until damp, at least three times a day until the masonry is three days old.

PART II - PRODUCTS

2.01 - QUIK-BRIK (CONCRETE MASONRY UNITS)

A. Integrally Pigmented Loadbearing Units: ASTM C 90, most current revision.

01. Stretcher unit dimensions:

- a. Nominal 4 inch high.
- b. Nominal 16 inch long.

02. Normal weight

03. Integral metallic oxide pigments.

04. Integral polymer water repellent.

a. Manufacturers:

- i. Dry-Block by W.R. Grace and Company (800) 588-7066.
- ii. Substitution approval per the manufacturing location only.

05. Manufacturers and Suppliers:

- a. Manufactured by an Oldcastle Company; contact National Accounts at (877) 506-2745
- b. Colors:
 - i. Promenade Blend
 - ii. Earthtone Blend
 - iii. Sandlewood Blend

- iv. Marous Blend
- v. Richfield Blend
- vi. Autumn Blend
- vii. Heritage Blend
- viii. Wilkesboro Blend
- ix. Custom Color _____.

06. Substitutions: Not permitted.

B. Unit Design: Modular two core units sized as indicated and scheduled. Provide special units for bond beams, control and expansion joints, and lintels.

- 01. Provide units as required for indicated construction including sill units and solid cap units.
- 02. Provide units with exposed faces, which are uniform in appearance.

2.02 - REINFORCEMENT and ANCHORAGES

A. Horizontal Joint Reinforcement: ASTM A 951.

- 01. Minimum wire size W1.7 (9 gage) and maximum wire size W2.8 (3/16 inch wire).
- 02. Width 1 1/2 to 2 inches less than wall thickness.
- 03. Hot-dipped galvanized 1.5 oz. ASTM A 153, Class B2.
- 04. Contractor's option to use truss or ladder type.

B. Masonry Veneer Anchors: ASTM A 82.

- 01. Rectangular adjustable tie system with wall eyelet sections welded to horizontal joint reinforcement 16 inches on center maximum.
- 02. Minimum wire size W2.8 (3/16 inch wire).
- 03. Hot dipped galvanized 1.5 oz. ASTM A 153, Class B2.
- 04. Provide wall tie pintle sections, at least two, that fit into eyelet sections with maximum clearance of 1/16 inch.
- 05. Maximum offset for pintle anchors 1-1/4 inch.
- 06. Provide pintle anchors of sufficient length to extend a distance at least 1/2 inch onto the outer face shell of the masonry unit.

C. Deformed Bars: ASTM A 615, Grade 60.

- 01. Shop fabricate reinforcement shown as bent or hooked.
- 02. Field bending not allowed.

D. Anchor Bolts and Threaded Rods: ASTM A 307. Embed in masonry as shown in Structural Drawings.

E. Bar Positioners for Vertical Wall Reinforcing Bars:

- 01. Minimum W.17 (9 gage) galvanized wire.

2.03 - ACCESSORIES

A. Joint Filler: Closed cell foam, oversized 50 percent, self-expanding.

B. Preformed Control Joint Filler

- 01. Materials:
 - a. ASTM D2000 rubber.
 - b. ASTM D 2287 PVC.
- 02. Provide 2-5/8 inch by 1-1/2 inch for regular joint.
- 03. Provide 2-5/8 inch by 1 inch for tee joint.

C. Preformed Expansion Joint Filler: [Reference to appropriate ASTM specifications should be added per joint filler manufacturers' recommendations: ASTM C 920, ASTM D 994, or ASTM D 1056, Class 2A1].

- 01. One Inch Expansion Joint: Secondary compression seal.

02. Materials

- a. ASTM D 994 - Bituminous.
- b. ASTM D 1056 - Cellular.

D. Through Wall Flashing:

- 01. Sheet copper combined with lead, total weight 7 ounces per sq. ft., laminated with asphalt and bonded both sides with creped surfaces and reinforced with interspersing fiberglass strands.

E. Adhesive: As Recommended by flashing material manufacturer.

F. Weeps: Galvanized steel or plastic tubes

2.04 - MASONRY FILL INSULATION

A. Granular Insulation:

- 01. ASTM C 516 vermiculite.

02. ASTM C 549 perlite.

B. Foamed-In-Place: Subject to compliance with project requirements and local jurisdictional restrictions, manufacturers offering Foam-In-place Insulation tested and found compatible and non-detrimental within the indicated Underwriters Laboratory fire resistance assemblies which may be incorporated into the Work include:

01. Manufacturers

02. Manufacturers - as approved by the architect.

PART III - EXECUTION

3.01 - INSPECTION

A. Verification: Prior to the start of masonry construction the Contractor shall verify:

01. Foundations are constructed with tolerances conforming to ACI 117.

02. Reinforcing dowels are positioned in accordance with Project Drawings.

03. Verify items provided by other sections of the work are properly sized and located.

B. Notification: If conditions are not met notify the Architect/Owners Representative.

3.02 - PREPARATION

A. Establish Lines, Levels, and Coursing:

01. Protect lines from disturbance.

02. Use non-corrosive materials in contact with masonry.

B. Surface Preparation: Prior to placing Quik-Brik® remove laitance, loose aggregate or other materials that would prevent mortar from bonding to the foundation.

3.03 - COURSING

A. Placement: Place Quik-Brik® to lines and levels indicated.

B. Uniformity: Maintain masonry courses to uniform width. Make vertical and horizontal joints equal and of uniform thickness.

C. Bond Patterns: Place Quik-Brik® in 1/2 running bond unless otherwise noted.

D. Course Height: Course one Quik-Brik® and one mortar joint equal to 4 inches.

3.04 - PLACING and BONDING

A. Bed and Head Joints:

01. Joint Thickness:

a. Construct 3/8-inch bed and head joints unless otherwise indicated.

b. Construct bed joint at starting course on foundation not less than 1/4 inch and not more than 3/4 inch.

02. Fill holes not specified in exposed and below grade masonry with mortar.

03. Tool head and bed joints concave unless below grade or above ceiling height and to be concealed.

a. Use tool with large enough radius that joint is not raked free of mortar.

04. Remove masonry protrusions extending 1/2 inch or more into cells or cavities to be grouted.

B. Unit Placement:

01. Quik-Brik®: Lay units with bed and head joints filled from the faces of the units to a distance in not less than the thickness of the face shell.

a. Webs are fully mortared in all courses of piers, columns, pilasters, starting course on footings or foundations, and where adjacent to cells or cavities to be reinforced or filled with concrete or grout.

b. Spread out full mortar bed, including areas under cells, for starting course on footings where cells are not to be grouted.

c. Vertical cells to be grouted are aligned and unobstructed openings for grout are provided in accordance with drawings.

02. Keep cavity airspace and weep holes clean of mortar, clean out promptly if mortar falls into cavity airspace or plugs weep holes.

03. In-Progress Cleaning:

a. Remove excess mortar.

b. Dry brush exposed masonry prior to the end of each work day.

c. Protect wall from mud splatter and mortar droppings.

i. Set scaffolds and scaffold boards so that mortar is not deflected onto masonry.

ii. At end of each work day turn scaffold boards so that rainwater is not deflected onto masonry.

d. Place Quik-Brik® such that mortar does not run down the face of the wall or smear the masonry face.

04. Adjustments:

a. DO NOT shift or tap Quik-Brik® after mortar has taken initial set.

- b. Remove unit and mortar and replace.
- 05. After joints are tooled, cut off mortar tailings with trowel and dry brush excess mortar burrs and dust from the face of the masonry.
- 06. Fully bond external and internal corners and properly anchor intersecting walls.
- 07. Termination of Wall Height:
 - a. For fire-rated walls, construct walls to finish against bottom of roof or floor deck and fill voids with firestopping.
 - b. For other than fire-rated walls, cut units to match the slope of the roof deck and finish construction to within 2-inches of parallel to roof deck.
- 08. Isolate masonry partitions from vertical structural framing members with a control joint.

3.05 - TOLERANCES

Erect masonry within the following tolerances from specified dimensions:

A. Dimension of Elements:

- 01. In cross-section or elevation: -1/4 inch, +1/2 inch.
- 02. Mortar joint thickness:
 - a. Bed: plus or minus 1/8 inch or plus 1/8 inch.
 - b. Head: plus 3/8 inch or minus 1/4 inch.
 - c. Collar: plus 3/8 inch or minus 1/4 inch.
- 03. Grout space or cavity airspace except where passing framed construction: plus 3/8 inch or minus 1/4 inch.

B. Elements:

- 01. Variation from level:
 - a. Bed joints: plus or minus 1/4 inch in 10 feet; plus or minus 1/2 inch maximum.
 - b. Top of bearing walls: plus or minus 1/4 inch in 10 feet; plus or minus 1/2 inch maximum.
- 02. Variation from plumb: plus or minus 1/4 inch in 10 feet; plus or minus 3/8 inch in 20 feet; plus or minus 1/2 inch max.
- 03. True to line: plus or minus 1/4 inch in 10 feet; plus or minus 3/8 inch in 20 feet; plus or minus 1/2 inch maximum.
- 04. Alignment of columns and walls (bottom versus top):
 - a. Bearing: plus or minus 1/2 inch.
 - b. Non-bearing: plus or minus 3/4 inch.

C. Location of Elements:

- 01. Indicated in plan: plus or minus 1/2 inch in 20 feet; plus or minus 3/4 inch maximum.
- 02. Indicated in elevation: plus or minus 1/4 inch in story height; plus or minus 3/4 inch maximum.

D. Notification: If the above conditions cannot be met due to previous construction notify Architect/Owner's Representative.

3.06 - CUTTING and FITTING

A. Coordination: Cut and fit for bearing plates, chases, pipes, conduits, sleeves, and grounds. Coordinate with other sections of work to provide correct size and shape.

B. Notification: Prior to cutting and fitting any area not indicated or where appearance or strength of masonry work may be impaired, obtain approval from Architect/Owner's Representative.

C. Cutting Method: Perform jobsite cutting with proper tools to provide straight un-chipped edges and take care to prevent breaking masonry unit corners or edges.

3.07 - REINFORCEMENT and ANCHORAGES

A. Basic Requirements:

- 01. Place reinforcement and anchorages in accordance with the sizes, types, and locations indicated on the drawings, and as specified.
- 02. **DO NOT** Place dissimilar metals in contact with each other.

B. Details of Reinforcement:

- 01. Completely embed reinforcement in grout in accordance with Article 3.08.
- 02. Maintain clear distance between reinforcing bars and any face of masonry unit or formed surface:
 - a. Not less than 1/4 inch for fine grout.
 - b. Not less than 1/2 inch for coarse grout.
- 03. Splice only where indicated on Drawings, unless otherwise specified.
- 04. **DO NOT** bend reinforcing bars after embedded in grout.
- 05. Place vertical reinforcing bars supported and secured against displacement by means of bar positioners.
- 06. Support bars other than vertical bars and tie to prevent displacement.

07. Placement tolerances:

- a. Tolerances for the placement of reinforcing bars:
 - i. 1/2 inch when the distance from the centerline of the reinforcing bar to the opposite outside face of the masonry is 8 inches or less.
 - ii. 1 inch when the distance from the centerline of the reinforcing bar to the opposite outside face of the masonry is 24 inches or less but more than 8 inches.
 - iii. 1 1/4 inch when the distance from the centerline of the reinforcing bar to the opposite outside face of the masonry is more than 24 inches.

b. Place vertical reinforcing bars within 2 inches of required location along the length of the wall.

c. If it is necessary to move bars more than one bar diameter or a distance exceeding the tolerances provided in Section 3.06.C.7.a. to avoid interference with other reinforcing bars, conduit, or embedded items, notify the Architect/Owner's Representative for the acceptance of the resulting arrangement of bars.

C. Joint Reinforcement:

01. Placement:

a. Install joint reinforcement at 16 inches on center vertically, except space at 8 inches on center in parapet walls and below finished floor unless otherwise indicated on Drawings.

b. Place joint reinforcement continuous in first bed joints below top of masonry wall and bed joint 8 inches below first bed joint below top of wall.

c. Place joint reinforcement so that longitudinal wire are embedded in mortar:

- i. Minimum cover of 1/2 inch when not exposed to weather.
- ii. Minimum cover of 5/8 inch when exposed to weather or earth.

d. Lap joint reinforcement ends minimum 6 inches.

e. Do not extend joint reinforcement through control joints.

D. Wall Ties:

01. Embed ends of wall ties in mortar joints at least 1/2 inch into outer face shell of hollow masonry construction.

02. Unless otherwise required, install adjustable wall ties in accordance with the following:

- a. One tie for each 1.77 sq. ft. of wall area.
- b. **DO NOT** exceed 16 in. on center horizontally or vertically.

03. Install wire ties perpendicular to a vertical line on the face of the wythe from which they protrude.

04. Unless otherwise provided, install additional unit ties around all openings larger than 16 inches in either dimension. Space ties around the opening at a maximum of 3 feet on center and place ties within 12 inches of the opening.

3.08 - BUILT-IN and EMBEDDED ITEMS and ACCESSORIES

A. Incorporation: As work progresses build in metal doorframes, fabricated metal frames, window frames, anchor bolts, diaphragm anchors, embedded plates, and other items in the work supplied in other Sections.

B. Metal Door and Glazed Frames:

- 01. Embed anchors in mortar joints.
- 02. Fill frame void solid with grout.
- 03. Fill masonry cores with grout minimum 12 inches from framed openings.

C. Chases: Construct chases as masonry units are laid.

D. Pipes and Conduits: When required, place pipes and conduits passing horizontally through masonry beams or walls in steel sleeves or cored holes.

- 01. Place pipes and conduits passing horizontally through non-load-bearing partitions piers, pilasters, or columns.
- 02. When required, place horizontal pipes and conduits in and parallel to the plane of the masonry wall.

E. Accessories: Install and secure connectors, flashing, weep holes, nailing blocks, reglets and other accessories.

- 01. Install reglet level and parallel to building lines. Set reglet as indicated on Drawings to coordinate with sloped roof surface.

F. Organic Materials: Do not build in organic materials subject to deterioration.

3.09 - GROUT PLACEMENT

A. Placement:

- 01. Place grout within 1 1/2 hours of introducing mixing water and prior to initial set.
- 02. Prevent grout from flowing onto or otherwise staining faces of CMU intended to be exposed.

B. Confinement: Confine grout to the areas indicated on the Drawings.

C. Grout Pour Height: Use fine or coarse grout in accordance with requirements in Section 04070.

D. Grout Lift Height: Place grout in lifts not to exceed 5 feet.

E. Consolidation: Consolidate grout at the time of placement.

01. Consolidate grout pours 12 inches or less in height by mechanical vibration or puddling.
02. Consolidate grout pours exceeding 12 inches in height by mechanical vibration and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.

3.10 - BRACING

A. Design and Installation: Design, provide and install bracing for walls, lintels, and other masonry work that will assure stability of masonry during construction.

B. Duration: Maintain bracing in place until roof or other structural elements are complete and provide permanent support.

3.11 - MASONRY FILL INSULATION

A. Install insulation in masonry unit cells of exterior walls.

B. Granular Fill Insulation:

01. Verify that holes and openings have been sealed to prevent escape of insulation.
02. Place masonry fill insulation in accordance with manufacturer's instructions.
03. Ensure spaces are free of mortar to allow free flow of insulation.
04. Place as masonry is erected, completely filling spaces. Place in lifts and rod to eliminate air pockets. Place prior to covering cores with bond beams or lintels.
05. Place temporary signs on face of insulated walls warning workers to use caution to prevent loss of insulation if cutting into walls.

C. Foamed-In-place Insulation:

01. Confirm that selected foam insulation material is compatible and non-detrimental to referenced fire resistance assemblies before use.
02. Installer shall be certified and/or approved by manufacturer of insulation. Install foam insulation in strict accordance with manufacturer's published instructions.
03. Pump foam insulation bored into mortar joints around entire wall area 3 feet from floor level. Repeat at height no greater than 10 feet until completion of wall area.
04. Plug holes with mortar after completion.

D. Blown-In Expanded Polystyrene Bead Insulation:

01. Verify that holes and openings have been sealed to prevent escape of insulation.
02. Installer shall be certified or approved by manufacturer of insulation.
03. Install expanded polystyrene beads in accordance with manufacturer's published instructions.
04. Blow-in expanded polystyrene beads from top of wall prior to installation of bond beams.

3.12 - LINTELS

A. Steel Lintels:

01. Install loose steel lintels as scheduled.
02. Provide 9 gage Z-ties at each vertical joint of soap units covering steel lintels. Weld Z-ties to web of steel lintel.

B. Concrete Masonry Lintels:

01. Install reinforced unit masonry lintels over openings where steel lintels are not scheduled.
02. Construct lintels using grout fill and reinforcing.
 - a. Maintain minimum 8 inch bearing on each side of opening unless otherwise noted on Drawings.
 - b. Use reinforcing bars of one-piece lengths only.
 - c. Place and consolidate grout without disturbing reinforcing.
03. Allow lintels to reach strength before removing temporary supports.

3.13 - MOVEMENT JOINTS

A. Control Joints:

01. **DO NOT** continue bond beams or joint reinforcing across control joints.
02. Install preformed control joint filler at locations indicated on Drawings.
03. Use proper size material to create sealant joint space.
04. Backer rod and sealant installed in accordance with Section 07900.

B. Expansion Joints:

01. Install expansion joint filler material on centerline of wall at locations indicated on Drawings.
02. Backer rod and sealant installed in accordance with section 07900.

C. Seismic Joints:

01. Provide seal and cover at both faces of joint, as indicated on Drawings.
02. Secure seal to face of wall.
03. Provide un-faced batt insulation in cavity between exterior and interior seal.
04. Provide fire barrier blanket in cavity between exterior and interior seals of fire-rated separation wall.

3.14 - CLEANING

A. In-Progress Cleaning: Clean unit masonry as Work progresses by dry brushing to remove mortar fins and smears before tooling joints as described in Article 3.04.B.3.

B. Final Cleaning:

01. After mortar has set, reached initial curing; within 7 days of completion of work for custom masonry units, clean exposed masonry as follows:
 - a. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.
 - b. Cut out any defective mortar joints and holes and re-point with mortar.
 - c. Protect non-masonry surfaces from contact with cleaning solution by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
02. Clean Quik-Brik® with proprietary masonry cleaner.
 - a. Materials:
 - i. Custom Concrete Brick Cleaner, by Prosoco, Kansas City, Missouri (800) 255-4255, diluted one part cleaning solution to at least three parts water.
 - ii. NMD 80, by EaCo Chem Inc, New Castle, Pennsylvania (800) 313-8505, diluted one part cleaning solution to four parts water.
 - b. Thoroughly wet surface of masonry.
 - c. Scrub using non-metallic brushes
 - d. Immediately rinse with water.
 - e. Do small sections at a time.
 - f. Work from top to bottom.
03. **DO NOT** use high pressure cleaning methods.
 - a. **DO NOT** exceed nozzle pressure of 500 psi.
 - b. Use water flow of at least 4 gallons per minute.
 - c. Use at least 40° fan nozzle.
 - d. Keep nozzle at least 18-inches from face of Quik-Brik®.
04. Cleaned surfaces shall appear as represented by mockup wall panel.

3.15 - SEALING

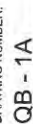
01. Seal Quik-Brik® with proprietary masonry cleaner
 - a. Materials
 - i. Customer Masonry Sealer, by Prosoco, Kansas City, Missouri (800) 255-4255, follow manufacturer's recommendations for applying

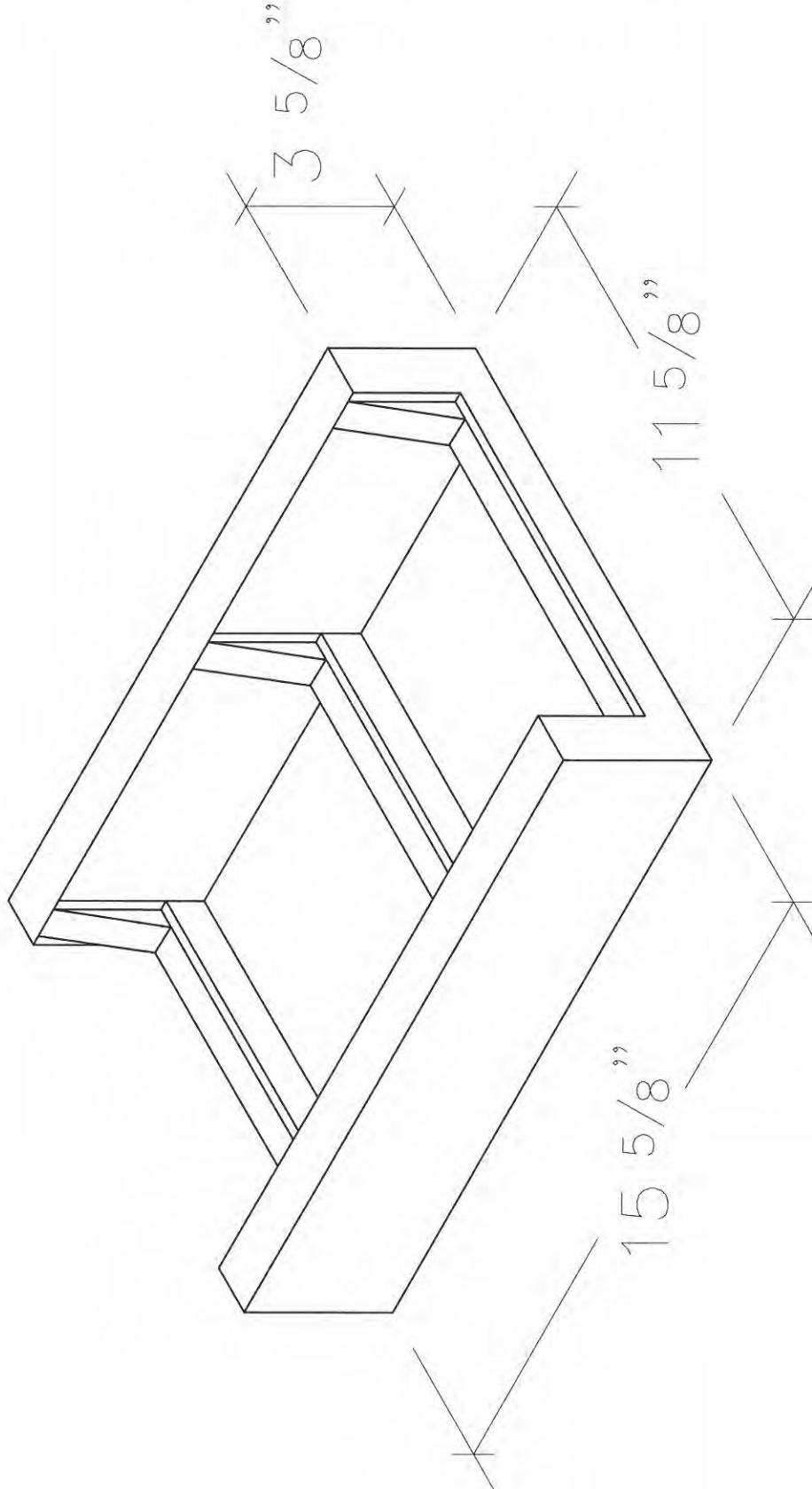
3.16 - PROTECTIONS


- A. External Corners: Maintain protective boards at exposed external corners that may be damaged by construction activities.
 01. Provide protection without damaging work.
- B. Base of Walls: Protect the base of walls from rain-splashed mud and mortar droppings.
- C. Environmental: At end of day, cover completed masonry to prevent moisture infiltration. Use the following provisions unless otherwise required for environmental conditions, Section 106:
- D. Load Application:
01. **DO NOT** apply uniform floor or roof loading for at least 12 hours after building masonry columns or walls
 02. **DO NOT** apply concentrated loads for at least three days after building masonry columns or walls

3.17 - FIELD QUALITY CONTROL

- A. Masonry: Required testing will be in accordance with Section 01450.







ECHELON™

DRAWING TITLE:
12X4X16 QUIK BRIK

DESCRIPTION:
OPEN BOTTOM BOND BEAM

PRODUCT:
QUIK BRIK

STRUCTURE SUBSTRATE:
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0 2/17/2016

REV DATE

ORIGINAL ISSUE

REVISION DESCRIPTION

JS

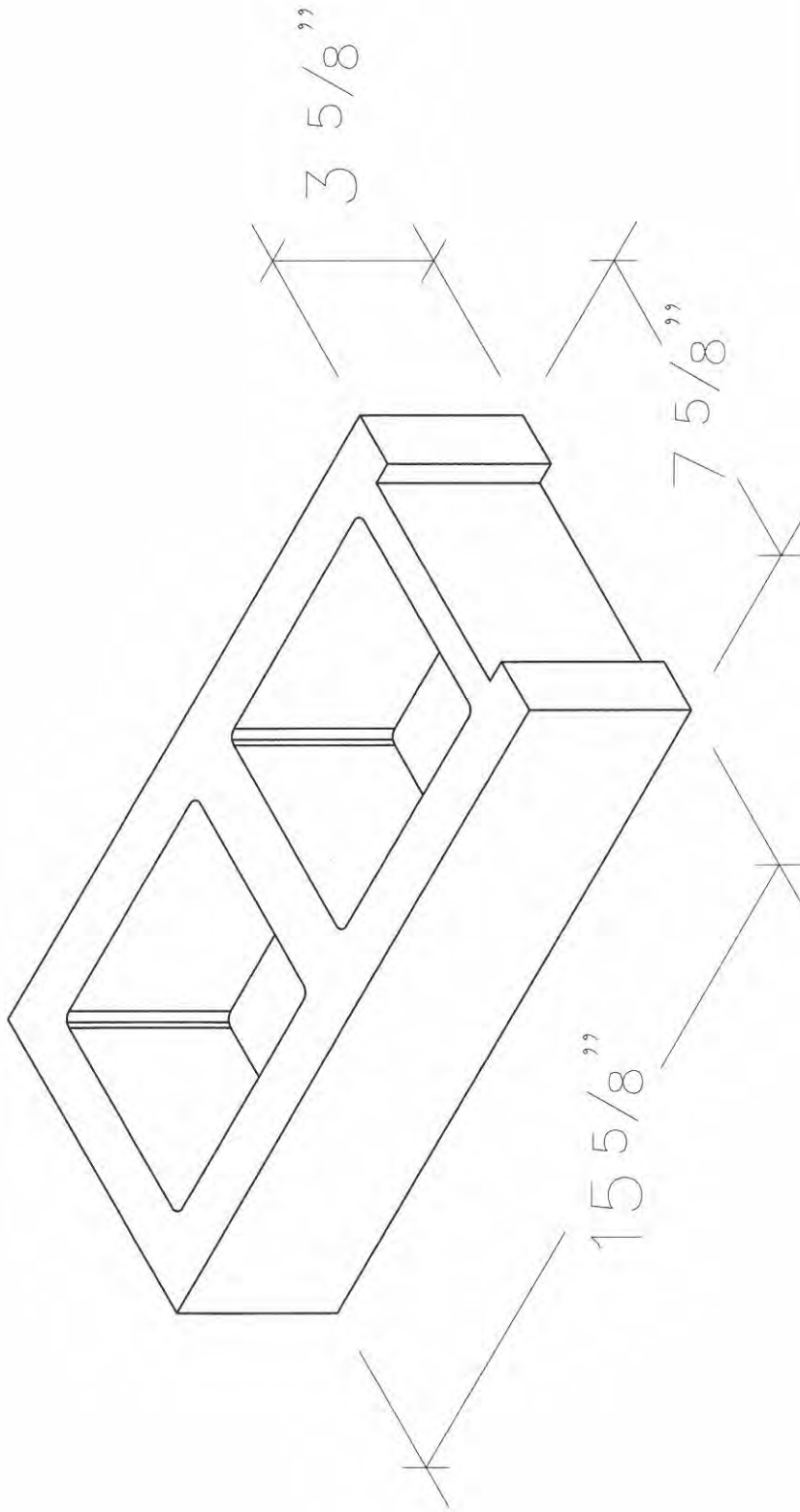
BY

SCALE: NOT TO SCALE

DRAWING NUMBER: QB - 2A

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DESCRIPTION: HALF HIGH UNIT									
PRODUCT: QUIK BRIK		2/17/2016		ORIGINAL ISSUE		JS		-	
STRUCTURE SUBSTRATE: --		REV		DATE		REVISION DESCRIPTION		BY	
		0						CHK	
SCALE: NOT TO SCALE				DRAWING NUMBER: QB - 3A					



ECHELONTM

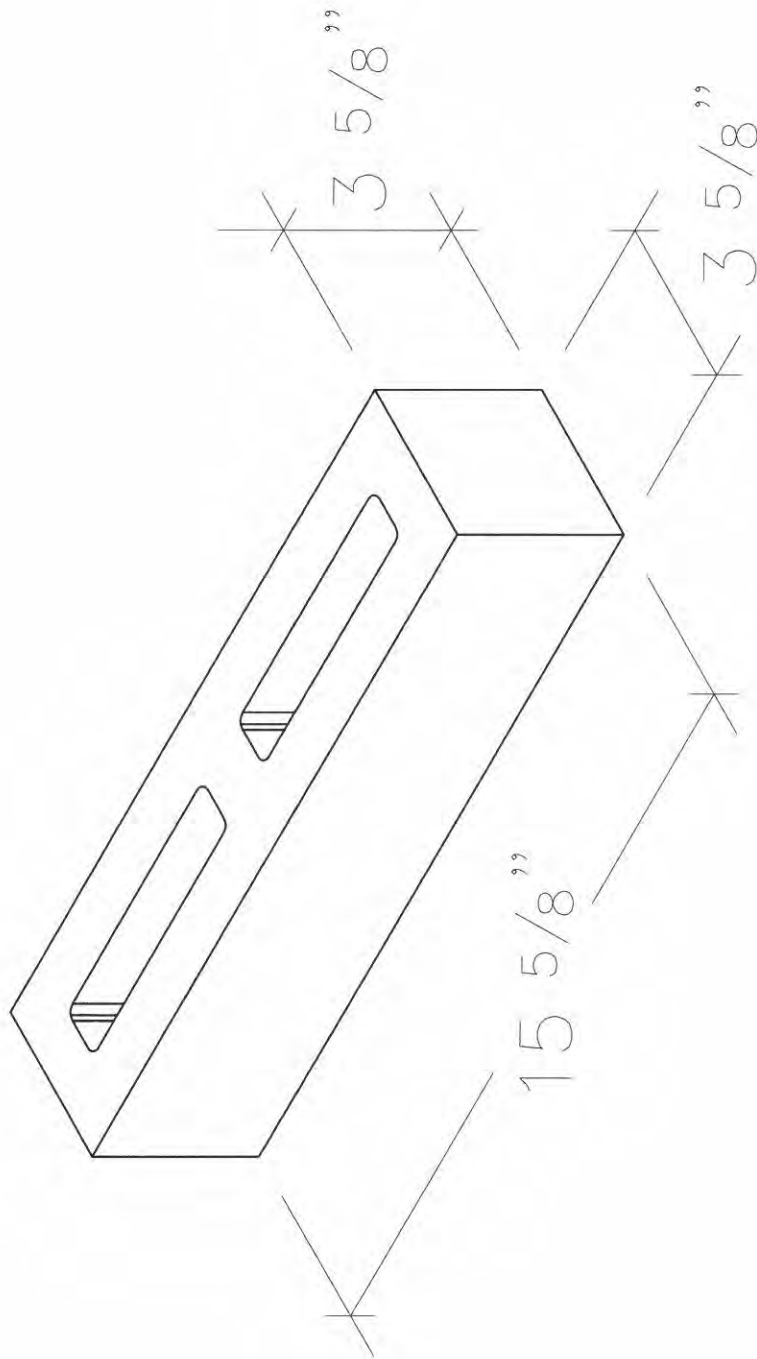
QB - 4A

QB - 4A



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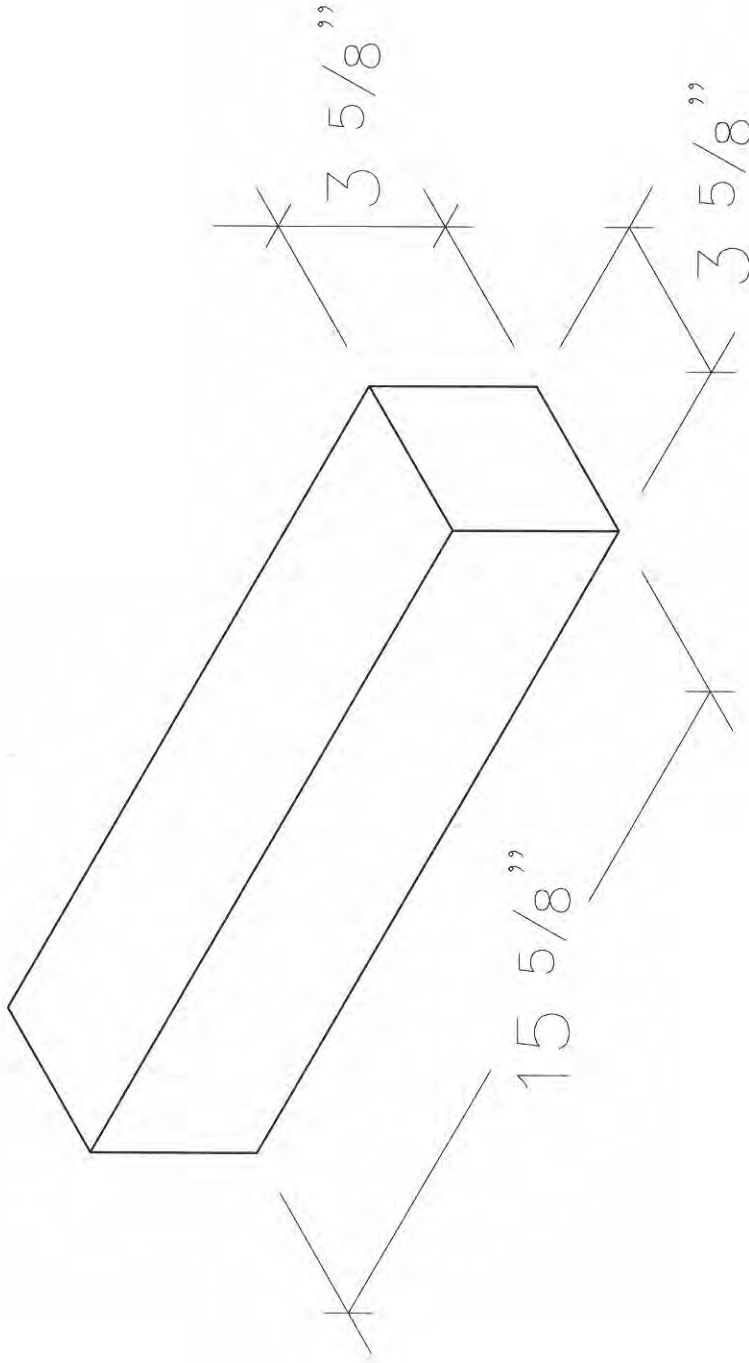
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DESCRIPTION: HALF HIGH UNIT									
PRODUCT: QUIK BRIK		REV: 0		DATE: 2/17/2016		ORIGINAL ISSUE		JS -	
STRUCTURE SUBSTRATE: --						REVISION DESCRIPTION		BY: CHK	
		SCALE: NOT TO SCALE		DRAWING NUMBER: QB - 5A					







ECHELON™

DRAWING TITLE:
4X4X16 QUIK BRIK

DESCRIPTION:
HALF HIGH SOLID UNIT

PRODUCT:
QUIK BRIK

STRUCTURE SUBSTRATE:
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REV 0 **DATE** 2/17/2016

ORIGINAL ISSUE

REVISION DESCRIPTION

BY JS **CHK**

DRAWING NUMBER:
QB - 6A

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The face of masonry.

eNewsletter

August 2012

Quik-Brik® Provides Quik-Solution



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[SmartBIM](#)

[Quik-Brik Brand](#)
[Refresh](#)

[Industry News](#)

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[Education](#)

Case Study: Walmart Supercenter - Louisville, KY

When Walmart chose to open a large-scale Supercenter in Louisville, KY, they were challenged to find a product that was strong, durable, stylish, welcoming to customers, and cost-effective. Their desire to provide customers with an overall pleasant shopping experience included the important component of an aesthetically appealing storefront. Quik-Brik helped meet Walmart's construction goals, timeline and budget by providing the look of brick in a mere twelve weeks. Unlike traditional brick, Quik-Brik is a one-piece structural masonry unit, so it saves installation time and conserves materials.

Architect:
Boice Raidl Rhea Architects
General Contractor:
Colcon Industries
Masonry Contractor:
Holland & Fox Masonry

Old Way
(multi-step process)



Quik-Brik Way
(single-step installation)



Quik-Brik Now Part of SmartBIM Library

BIM, which stands for "building information modeling," is revolutionizing the building industry, and Oldcastle is leading the way in helping designers and builders meet the growing demand for this innovative technology. Created for use with CAD design software programs such as Autodesk Revit Architecture®, BIM libraries provide specific product information to allow 3-D renderings of design projects that include spatial information, product specification, color palettes, blend patterns and

SMARTBIM





NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

INSTRUCTIONS: This notice shall be completed and submitted by persons proposing to construct projects permitted under the "General Permit for Construction of Water Main Extensions for Public Water Systems" in Rule 62-555.405, F.A.C. AT LEAST 30 DAYS BEFORE BEGINNING CONSTRUCTION OF A WATER MAIN EXTENSION PROJECT, complete and submit one copy of this notice to the appropriate Department of Environmental Protection (DEP) District Office or Approved County Health Department (ACHD) along with payment of the proper permit processing fee. (When completed, Part II of this notice serves as the preliminary design report for a water main extension project, and thus, it is unnecessary to submit a separate preliminary design report or drawings, specifications, and design data with this notice.) All information provided in this notice shall be typed or printed in ink. The DEP permit processing fee for projects requiring the services of a professional engineer during design is \$650, and the DEP permit processing fee for projects not requiring the services of a professional engineer during design is \$500.* Some ACHDs charge a county permit processing fee in addition to the DEP permit processing fee. Checks for permit processing fees shall be made payable to the Department of Environmental Protection or the appropriate ACHD. NOTE THAT A SEPARATE NOTIFICATION AND A SEPARATE PERMIT PROCESSING FEE ARE REQUIRED FOR EACH NON-CONTIGUOUS PROJECT.†

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.

† Non-contiguous projects are projects that are neither interconnected nor located nearby one another (i.e., on the same site, on adjacent streets, or in the same neighborhood).

I. General Project Information

A. Name of Project: **Walmart Supercenter Alachua**

B. Description of Project and Its Purpose:

The Walmart Supercenter Alachua is a commercial development that will consist of a 158,562 SF retail building along with land set aside for future outparcels. The development will look to obtain water from a connection to the water main located along US Highway 441. There will be total water main lengths of 90 LF PVC DR-18, 2,930 LF PVC DR-18, 3,158 LF PVC DR-18, and 2,084 LF of PVC DR-18.

C. Location of Project

1. County Where Project Located: **Alachua**

2. Description of Project Location:

The project is located at the southeast corner of the intersection of Interstate 75 and US Highway 441.

D. Estimate of Cost to Construct Project: **14,000,000**

E. Estimate of Dates for Starting and Completing Construction of Project:

March 2017 - March 2018

F. Permittee

PWS/Company Name: Walmart Stores East, LP		PWS Identification No.:	
PWS Type:*	<input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive		
Contact Person: Teresa Hibbard		Contact Person's Title: Director, Project Design & Management	
Contact Person's Mailing Address: 2001 SE 10th Street			
City: Bentonville		State: AR	Zip Code: 72716
Contact Person's Telephone Number: 479.204.2186		Contact Person's Fax Number: 479.273.8380	
Contact Person's E-Mail Address: Teresa.Hibbard@wal-mart.com			

* This information is required only if the permittee is a public water system (PWS).

G. Public Water System (PWS) Supplying Water to Project

PWS Name:		PWS Identification No.:	
PWS Type:	<input type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive		
PWS Owner:			
Contact Person:		Contact Person's Title:	
Contact Person's Mailing Address:			
City:		State:	Zip Code:
Contact Person's Telephone Number:		Contact Person's Fax Number:	
Contact Person's E-Mail Address:			

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua	Permittee: Walmart Stores East, LP
---	------------------------------------

H. Public Water System (PWS) that Will Own Project After It Is Placed into Permanent Operation

PWS Name: Walmart Supercenter Alachua		PWS Identification No.:*
PWS Type:*	<input checked="" type="checkbox"/> Community <input type="checkbox"/> Non-Transient Non-Community <input type="checkbox"/> Transient Non-Community <input type="checkbox"/> Consecutive	
PWS Owner: Walmart Stores East, LP		
Contact Person: Teresa Hibbard	Contact Person's Title: Director, Project Design & Management	
Contact Person's Mailing Address: 2001 SE 10th Street		
City: Bentonville	State: AR	Zip Code: 72716
Contact Person's Telephone Number: 479.204.2186	Contact Person's Fax Number: 479.273.8380	
Contact Person's E-Mail Address: Teresa.Hibbard@wal-mart.com		

* This information is required only if the owner/operator is an existing PWS.

I. Professional Engineer(s) or Other Person(s) in Responsible Charge of Designing Project*

Company Name: CPH, Inc.		
Designer(s): Brian Cassidy	Title(s) of Designer(s): Professional Engineer, Project Manager	
Qualifications of Designer(s):		
<input checked="" type="checkbox"/> Professional Engineer(s) Licensed in Florida – License Number(s): 67373		
<input type="checkbox"/> Public Officer(s) Employed by State, County, Municipal, or Other Governmental Unit of State†		
<input type="checkbox"/> Plumbing Contractor(s) Licensed in Florida – License Number(s):^		
Mailing Address of Designer(s): 5200 Belfort Road, Suite 220		
City: Jacksonville	State: FL	Zip Code: 32256
Telephone Number of Designer(s): 904-332-0999	Fax Number of Designer(s): 904-332-0997	
E-Mail Address(es) of Designer(s): 5200 Belfort Road, Suite 220, Jacksonville, FL 32256		

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers licensed in Florida.

† Attach a detailed construction cost estimate showing that the cost to construct this project is \$10,000 or less.

^ Attach documentation showing that this project will be installed by the plumbing contractor(s) designing this project, documentation showing that this project involves a public water system serving a single property and fewer than 250 fixture units, and a detailed construction cost estimate showing that the cost to construct this project is \$50,000 or less.

II. Preliminary Design Report for Project*

A. Service Area, Water Use, and Service Pressure Information

1. Design Type and Number of Service Connections, and Average Daily Water Demands and Maximum-Day Water Demands, in the Entire Area to Be Served by the Water Mains Being Constructed Under this Project:

A = Type of Service Connection	B = Number of Service Connections	C = Average Daily Water Demand Per Service Connection, gpd	D = Total Average Daily Water Demand ^a , gpd (Columns BxC for Residential Service Connections)	E = Total Maximum-Day Water Demand ^b , gpd
Single-Family Home			0	
Mobile Home			0	
Apartment			0	
Commercial, Institutional, or Industrial Facility ^a	1			3,347
Total	1		0	3,347

a. Description of Commercial, Institutional, or Industrial Facilities and Explanation of Method(s) Used to Estimate Average Daily Water Demand for These Facilities:

Computation for average flow based on prototypical demand for Walmart Supercenter 151.

b. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Maximum-Day Water Demand:

Apply a peak factor of 2.5 to average daily demand to determine an estimated demand of 8,368 gal/day.

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua

Permittee: Walmart Stores East, LP

2. Explanation of Peaking Factor(s) or Method(s) Used to Estimate Design Peak-Hour Water Demand and, for Small Water Systems that Use Hydropneumatic Tanks or that Are Not Designed to Provide Fire Protection, Peak Instantaneous Water Demand:

Apply a peak factor of 2.5 to average daily demand to get peak-hour water demand of 349 gal/hour

3. Design Fire-Flow Rate and Duration:
2000 gpm @ 20 psi for 4 hours

4. Design Service Pressure Range:
41.4 psi

B. Project Site Information

1. ATTACH A SITE PLAN OR SKETCH SHOWING THE SIZE AND APPROXIMATE LOCATION OF NEW OR ALTERED WATER MAINS, SHOWING THE APPROXIMATE LOCATION OF HYDRANTS, VALVES, METERS, AND BLOW-OFFS IN SAID MAINS, AND SHOWING HOW SAID MAINS CONNECT TO THE PUBLIC WATER SYSTEM SUPPLYING WATER FOR THE PROJECT.

2. Description of Any Areas Where New or Altered Water Mains Will Cross Above or Under Surface Water or Be Located in Soil that Is Known to Be Aggressive:

N/A

C. Information About Compliance with Design and Construction Requirements

1. If this project is being designed to comply with the following requirements, initial in ink before the requirements. If any of the following requirements do not apply to this project or if this project includes exceptions to any of the following requirements as allowed by rule, mark "X" before the requirements and complete Part II.C.2 below. *RSWW = Recommended Standards for Water Works* as incorporated into Rule 62-555.330, F.A.C.

BC

- a. This project is being designed to keep existing water mains and service lines in operation during construction or to minimize interruption of water service during construction. [RSWW 1.3.a; exceptions allowed under FAC 62-555.330]

BC

- b. All pipe, pipe fittings, pipe joint packing and jointing materials, valves, fire hydrants, and meters installed under this project will conform to applicable American Water Works Association (AWWA) standards. [FAC 62-555.320(21)(b), RSWW 8.0, and AWWA standards as incorporated into FAC 62-555.330; exceptions allowed under FAC 62-555.320(21)(c)]

BC

- c. All public water system components, excluding fire hydrants, that will be installed under this project and that will come into contact with drinking water will conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b), F.A.C. [FAC 62-555.320(3)(b); exceptions allowed under FAC 62-555.320(3)(d)]

BC

- d. All pipe and pipe fittings installed under this project will contain no more than 8.0% lead, and any solder or flux used in this project will contain no more than 0.2% lead. [FAC 62-555.322]

BC

- e. All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(21)(b)3, F.A.C., using blue as a predominant color. (Underground plastic pipe will be solid-wall blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe will have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipe with an internal diameter of 24 inches or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Aboveground pipe will be painted blue or will be color coded or marked like underground pipe.) [FAC 62-555.320(21)(b)3]

BC

- f. All new or altered water mains included in this project are sized after a hydraulic analysis based on flow demands and pressure requirements. ATTACH A HYDRAULIC ANALYSIS JUSTIFYING THE SIZE OF ANY NEW OR ALTERED WATER MAINS WITH AN INSIDE DIAMETER OF LESS THAN THREE INCHES. [FAC 62-555.320(21)(b) and RSWW 8.1]

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua

Permittee: Walmart Stores East, LP

- BC g. The inside diameter of new or altered water mains that are included in this project and that are being designed to provide fire protection and serve fire hydrants will be at least six inches. [FAC 62-555.320(21)(b) and *RSWW* 8.1.2]
- BC h. New or altered water mains that are included in this project and that are not being designed to carry fire flows do not have fire hydrants connected to them. [FAC 62-555.320(21)(b) and *RSWW* 8.1.5]
- BC i. This project is being designed to minimize dead-end water mains by making appropriate tie-ins where practical. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.a]
- BC j. New or altered dead-end water mains included in this project will be provided with a fire or flushing hydrant or blow-off for flushing purposes. [FAC 62-555.320(21)(b) and *RSWW* 8.1.6.b]
- BC k. Sufficient valves will be provided on new or altered water mains included in this project so that inconvenience and sanitary hazards will be minimized during repairs. [FAC 62-555.320(21)(b) and *RSWW* 8.2]
- BC l. New or altered fire hydrant leads included in this project will have an inside diameter of at least six inches and will include an auxiliary valve. [FAC 62-555.320(21)(b) and *RSWW* 8.3.3]
- BC m. All fire hydrants that will be installed under this project and that will have unplugged, underground drains will be located at least three feet from any existing or proposed storm sewer, stormwater force main, pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., or vacuum-type sanitary sewer; at least six feet from any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-10, F.A.C.; and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(4)]
- BC n. At high points where air can accumulate in new or altered water mains included in this project, provisions will be made to remove the air by means of air relief valves, and automatic air relief valves will not be used in situations where flooding of the valve manhole or chamber may occur. [FAC 62-555.320(21)(b) and *RSWW* 8.4.1]
- BC o. The open end of the air relief pipe from all automatic air relief valves installed under this project will be extended to at least one foot above grade and will be provided with a screened, downward-facing elbow. [FAC 62-555.320(21)(b) and *RSWW* 8.4.2]
- BC p. New or altered chambers, pits, or manholes that contain valves, blow-offs, meters, or other such water distribution system appurtenances and that are included in this project will not be connected directly to any sanitary or storm sewer, and blow-offs or air relief valves installed under this project will not be connected directly to any sanitary or storm sewer. [FAC 62-555.320(21)(b) and *RSWW* 8.4.3]
- BC q. New or altered water mains included in this project will be installed in accordance with applicable AWWA standards or in accordance with manufacturers' recommended procedures. [FAC 62-555.320(21)(b), *RSWW* 8.5.1, and AWWA standards as incorporated into FAC 62-555.330]
- BC r. A continuous and uniform bedding will be provided in trenches for underground pipe installed under this project; backfill material will be tamped in layers around underground pipe installed under this project and to a sufficient height above the pipe to adequately support and protect the pipe; and unsuitably sized stones (as described in applicable AWWA standards or manufacturers' recommended installation procedures) found in trenches will be removed for a depth of at least six inches below the bottom of underground pipe installed under this project. [FAC 62-555.320(21)(b), *RSWW* 8.5.2]
- BC s. All water main tees, bends, plugs, and hydrants installed under this project will be provided with thrust blocks or restrained joints to prevent movement. [FAC 62-555.320(21)(b) and *RSWW* 8.5.4]
- BC t. New or altered water mains that are included in this project and that will be constructed of asbestos-cement or polyvinyl chloride pipe will be pressure and leakage tested in accordance with AWWA Standard C603 or C605, respectively, as incorporated into Rule 62-555.330, F.A.C., and all other new or altered water mains included in this project will be pressure and leakage tested in accordance with AWWA Standard C600 as incorporated into Rule 62-555.330. [FAC 62-555.320(21)(b)1 and AWWA standards as incorporated into FAC 62-555.330]
- BC u. New or altered water mains, including fire hydrant leads and including service lines that will be under the control of a public water system and that have an inside diameter of three inches or greater, will be disinfected and bacteriologically evaluated in accordance with Rule 62-555.340, F.A.C. [FAC 62-555.320(21)(b)2 and FAC 62-555.340]
- x v. New or altered water mains that are included in this project and that will be installed in areas where there are known aggressive soil conditions will be protected through use of corrosion-resistant water main materials, through encasement of the water mains in polyethylene, or through provision of cathodic protection. [FAC 62-555.320(21)(b) and *RSWW* 8.5.7.d]

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua

Permittee: Walmart Stores East, LP

- BC w. New or relocated, underground water mains included in this project will be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer (or a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer if the bottom of the water main will be laid at least six inches above the top of the sewer); a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on-site sewage treatment and disposal system." [FAC 62-555.314(1); exceptions allowed under FAC 62-555.314(5)]
- BC x. New or relocated, underground water mains that are included in this project and that will cross any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer will be laid so the outside of the water main is at least six inches above the other pipeline or at least 12 inches below the other pipeline; and new or relocated, underground water mains that are included in this project and that will cross any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at least 12 inches above or below the other pipeline. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]
- BC y. At the utility crossings described in Part II.C.1.w above, one full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline or the pipes will be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]
- x z. New or altered water mains that are included in this project and that will cross above surface water will be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement. [FAC 62-555.320(21)(b) and RSWW 8.7.1]
- x aa. New or altered water mains that are included in this project and that will cross under surface water will have a minimum cover of two feet. [FAC 62-555.320(21)(b) and RSWW 8.7.2]
- x bb. New or altered water mains that are included in this project and that will cross under surface water courses greater than 15 feet in width will have flexible or restrained, watertight pipe joints and will include valves at both ends of the water crossing so the underwater main can be isolated for testing and repair; the aforementioned isolation valves will be easily accessible and will not be subject to flooding; the isolation valve closest to the water supply source will be in a manhole; and permanent taps will be provided on each side of the isolation valve within the manhole to allow for insertion of a small meter to determine leakage from the underwater main and to allow for sampling of water from the underwater main. [FAC 62-555.320(21)(b) and RSWW 8.7.2]
- BC cc. This project is being designed to include proper backflow protection at those new or altered service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in *Recommended Practice for Backflow Prevention and Cross-Connection Control*, AWWA Manual M14, as incorporated into Rule 62-555.330, F.A.C.; or the public water system that will own this project after it is placed into operation has a cross-connection control program requiring water customers to install proper backflow protection at those service connections where backflow protection is required or recommended under Rule 62-555.360, F.A.C., or in AWWA Manual M14. [FAC 62-555.360 and AWWA Manual M14 as incorporated into FAC 62-555.330]
- BC dd. Neither steam condensate, cooling water from engine jackets, nor water used in conjunction with heat exchangers will be returned to the new or altered water mains included in this project. [FAC 62-555.320(21)(b) and RSWW 8.8.2]

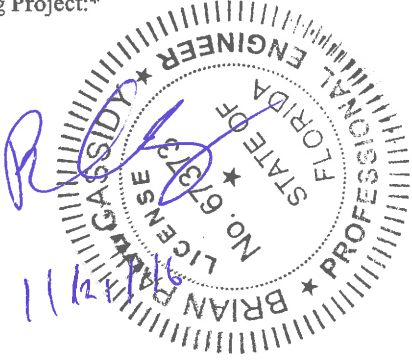
NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua	Permittee: Walmart Stores East, LP
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2. Explanation for Requirements Marked "X" in Part II.C.1 Above, Including Justification, Documentation, Assurances, and/or Alternatives as Required by Rule for Exceptions to Requirements in Part II.C.1:

v. No aggressive soil conditions on-site; z. No water mains will cross above surface waters; aa. No water mains will cross under surface waters; bb. No water mains will cross under surface waters

I completed Part II of this notice, and the information provided in Part II and on the attachment(s) to Part II is true and accurate to the best of my knowledge and belief.

<p>Signature, Seal, and Date of Professional Engineer (PE) <u>or</u> Signature and Date of Other Person in Responsible Charge of Designing Project:*</p> 	<p>Signature, Seal, and Date of Professional Engineer (PE) <u>or</u> Signature and Date of Other Person in Responsible Charge of Designing Project:*</p>
<p>Printed/Typed Name: Brian Cassidy, PE</p> <p>License Number of PE <u>or</u> License Number or Title of Other Person in Responsible Charge of Designing Project:*</p> <p>FL PE 67373</p> <p>Portion of Preliminary Design Report for Which Responsible: Design Plans</p>	<p>Printed/Typed Name:</p> <p>License Number of PE <u>or</u> License Number or Title of Other Person in Responsible Charge of Designing Project:*</p> <p>Portion of Preliminary Design Report for Which Responsible:</p>

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more PEs licensed in Florida. If this project is being designed under the responsible charge of one or more PEs licensed in Florida, Part II of this notice shall be completed, signed, sealed, and dated by the PE(s) in responsible charge. If this project is not being designed under the responsible charge of one or more PEs licensed in Florida, Part II shall be completed, signed, and dated by the person(s) in responsible charge of designing this project.

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua

Permittee: Walmart Stores East, LP

III. Certifications

A. Certification by Permittee

I am duly authorized to sign this notice on behalf of the permittee identified in Part I.F of this notice. I certify that, to the best of my knowledge and belief, this project complies with Chapter 62-555, F.A.C. I also certify that construction of this project has not begun yet and that, to the best of my knowledge and belief, this project does not include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that create a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

I understand that, if this project is designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida, the permittee must retain a Florida-licensed PE to take responsible charge of inspecting construction of this project for the purpose of determining in general if the construction proceeds in compliance with the Department of Environmental Protection construction permit, including the approved preliminary design report, for this project. I understand that the permittee must have complete record drawings prepared for this project. I also understand that the permittee must submit a certification of construction completion to the Department and obtain written approval, or clearance, from the Department before the permittee places this project into operation for any purpose other than disinfection or testing for leaks.


Signature and Date


Teresa Hibbard

Printed or Typed Name

Director, Project Design & Management

Title

B. Certification by PWS Supplying Water to Project

 I am duly authorized to sign this notice on behalf of the PWS identified in Part I.G of this notice. I certify that said PWS will supply the water necessary to meet the design water demands for this project. As indicated below, the water treatment plant(s) to which this project will be connected has(have) the capacity necessary to meet the design water demands for this project, and I certify that all other PWS components affected by this project also have the capacity necessary to meet the design water demands for this project. I certify that said PWS is in compliance with applicable planning requirements in Rule 62-555.348, F.A.C.; applicable cross-connection control requirements in Rule 62-555.360, F.A.C.; and to the best of my knowledge and belief, all other applicable rules in Chapters 62-550, 62-555, and 62-699, F.A.C.; furthermore, I certify that, to the best of my knowledge and belief, said PWS's connection to this project will not cause said PWS to be in noncompliance with Chapter 62-550 or 62-555, F.A.C. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers the connection(s) between this project and said PWS acceptable as designed.

- Name(s) of Water Treatment Plant(s) to Which this Project Will Be Connected:

- Total Permitted Maximum Day Operating Capacity of Plant(s), gpd: _____

- Total Maximum Day Flow at Plant(s) as Recorded on Monthly Operating Reports During Past 12 Months, gpd: _____

Signature and Date

Printed or Typed Name

Title

C. Certification by PWS that Will Own Project After It Is Placed into Permanent Operation

I am duly authorized to sign this notice on behalf of the PWS identified in Part I.H of this notice. I certify that said PWS will own this project after it is placed into permanent operation. I also certify that said PWS has reviewed the preliminary design report for this project and that said PWS considers this project acceptable as designed.


Signature and Date

Teresa Hibbard

Printed or Typed Name

Director, Project Design & Management

Title

NOTICE OF INTENT TO USE THE GENERAL PERMIT FOR CONSTRUCTION OF WATER MAIN EXTENSIONS FOR PWSs

Project Name: Walmart Supercenter Alachua

Permittee: Walmart Stores East LP

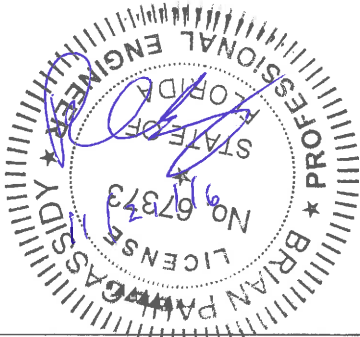
D. Certification by Professional Engineer(s) in Responsible Charge of Designing Project*

I, the undersigned professional engineer licensed in Florida, am in responsible charge of designing this project. I certify that, to the best of my knowledge and belief, the design of this project complies with Chapter 62-555, F.A.C. I also certify that, to the best of my knowledge and belief, this project is not being designed to include any of the following construction work:

- construction of water mains conveying raw or partially treated drinking water;
- construction of drinking water treatment, pumping, or storage facilities or conflict manholes;
- construction of water mains in areas contaminated by low-molecular-weight petroleum products or organic solvents;
- construction of an interconnection between previously separate public water systems or construction of water mains that create a "new system" as described under subsection 62-555.525(1), F.A.C.; or
- construction of water mains that will remain dry following completion of construction.

(A specific construction permit is required for each project involving any of the above listed construction work.)

Signature, Seal, and Date:



Printed/Typed Name: Brian Cassidy, PE

License Number: FL PE 67373

Portion of Preliminary Design Report for Which Responsible:
Design Plans

Signature, Seal, and Date:

Printed/Typed Name:

License Number:

Portion of Preliminary Design Report for Which Responsible:

* Except as noted in paragraphs 62-555.520(3)(a) and (b), F.A.C., projects shall be designed under the responsible charge of one or more professional engineers (PEs) licensed in Florida. If this project is being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D of this notice shall be completed by the PE(s) in responsible charge. If this project is not being designed under the responsible charge of one or more PEs licensed in Florida, Part III.D does not have to be completed.



Florida Department of Environmental Protection

NOTIFICATION/APPLICATION FOR CONSTRUCTING A DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEM

PART I - GENERAL

Subpart A: Permit Application Type

Permit Application Type (mark one only)	EDUs Served	Application Fee*	"X"
Are you applying for an individual permit for a domestic wastewater collection/transmission system? Note: an EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.	≥ 10	\$500	X
	< 10	\$300	
Is this a Notice of Intent to use the general permit for wastewater collection/transmission systems? Criteria for qualifying for a general permit are contained in Rule 62-604.600(6), F.A.C. Projects not meeting the criteria in Rule 62-604.600(6), F.A.C., must apply for an individual permit.	N/A	\$250	

*Note: Each non-contiguous project (i.e., projects that are not interconnected or are not located on adjacent streets or in the same neighborhood) requires a separate application and fee.

Subpart B: Instructions

- (1) This form shall be completed for all domestic wastewater collection/transmission system construction projects as follows:
 - If this is a Notice of Intent to use the general permit, this notification shall be submitted to the Department **at least 30 days prior to initiating construction.**
 - If this is an application for an individual permit, the permit must be obtained prior to initiating construction.
- (2) One copy of the completed form shall be submitted to the appropriate DEP district office or delegated local program along with the appropriate fee, and one copy of the following supporting documents. Checks should be made payable to the Florida Department of Environmental Protection, or the name of the appropriate delegated local program.
 - If this is a Notice of Intent to use the general permit, attach a site plan or sketch showing the size and approximate location of new or altered gravity sewers, pump stations and force mains; showing the approximate location of manholes and isolation valves; and showing how the proposed project ties into the existing or proposed wastewater facilities. The site plan or sketch shall be signed and sealed by a professional engineer registered in Florida.
 - If this is an application for an individual permit, one set of plans and specifications shall be submitted with this application, or alternatively, an engineering report shall be submitted. Plans and specifications and engineering reports shall be prepared in accordance with the applicable provisions of Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*. The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida.
- (3) All information shall be typed or printed in ink. Where attached sheets (or other technical documentation) are utilized in lieu of the blank spaces provided, indicate appropriate cross-references on the form. For Items (1) through (4) of Part II of this application form, if an item is not applicable to your project, indicate "NA" in the appropriate space provided.

PART II – PROJECT DOCUMENTATION

(1) Collection/Transmission System Permittee

Name Teresa Hibbard Title Director, Project Design & Management
 Company Name Walmart Stores East, LP
 Address 2001 SE 10th Street
 City Bentonville State Tennessee Zip 37216
 Telephone 479.204.2186 Fax 479.273.8380 Email Teresa.Hibbard@wal-mart.com

(2) General Project Information

Project Name #3873-00 Walmart Alachua Alachua 9,10,15,16 8 South 18 East
 Location: County Alachua City Alachua Section 9,10,15,16 Township 8 South Range 18 East
 Project Description and Purpose (including pipe length, range of pipe diameter, total number of manholes, and total number of pump stations):
 The Walmart Supercenter Alachua is a commercial development that will consist of a 158,562 SF retail building along with land set aside for future outparcels. The development will connect to a lift station that will be designed by others. The project will consist of the following: 140 LF of 6" PVC SDR 35 gravity sewer pipe, 4,261 LF of 8" PVC SDR 35 gravity sewer pipe, and 14 manholes.
 Estimated date for: Start of construction March 2017 Completion of construction March 2018
 Connections to existing system or treatment plant Connect to 16" force main along US Highway 441

(3) Project Capacity

A = Type of Unit	B = Number of Units	C = Population Per Unit	D = Total Population (Columns B x C)	E = Per Capita Flow	F = Total Average Daily Flow (Columns D x E)	G = Peak hour flow
Single-Family Home						
Mobile Home						
Apartment						
Commercial, Institutional, or Industrial Facility*					3,347 GPD	8,368 GPD
Total			1			

* Description of commercial, institutional, and industrial facilities and explanation of method used to estimate per capita flow for these facilities:

Computation for average flow based on prototypical demand for Walmart Supercenter 151. Apply a peak factor of 2.5 to average daily demand to determine an estimated demand of 349 gal/hour.

(4) Pump Station Data (attached additional sheets as necessary)

Location	Type	Estimated Flow to the Station (GPD)			Operating Conditions [GPM @ FT (TDH)]
		Maximum	Average	Minimum	
N/A					

(5) Collection/Transmission System Design Information

- A. This information must be completed for all projects by the applicant's professional engineer, and if applicable, those professional engineers in other disciplines who assisted with the design of the project.

If this project has been designed to comply with the standards and criteria listed below, the engineer shall initial in ink before the standards or criteria. If any of the standards or criteria do not apply to this project or if this project has not been designed to comply with the standards or criteria, mark "X" before the appropriate standard or criteria and provide an explanation, including any applicable rule references, in (5)B. below.

Note, if the project has not been designed in accordance with the standards and criteria set forth in Rules 62-604.400(1) and (2), F.A.C., an application for an individual permit shall be submitted. However, if Rules 62-604.400(1) and (2), F.A.C., specifically allow for another alternative that will result in an equivalent level of reliability and public health protection, the project can be constructed using the general permit.

General Requirements

- BC 1. The project is designed based on an average daily flow of 100 gallons per capita plus wastewater flow from industrial plants and major institutional and commercial facilities unless water use data or other justification is used to better estimate the flow. The design includes an appropriate peaking factor, which covers I/I contributions and non-wastewater connections to those service lines. [RSWF 11.243]
- BC 2. Procedures are specified for operation of the collection/transmission system during construction. [RSWF 20.15]
- BC 3. The project is designed to be located on public right-of-ways, land owned by the permittee, or easements and to be located no closer than 100 feet from a public drinking water supply well and no closer than 75 feet from a private drinking water supply well; or documentation is provided in Part II.(5)B., showing that another alternative will result in an equivalent level of reliability and public health protection. [62-604.400(1)(b) and (c), F.A.C.]
- BC 4. The project is designed with no physical connections between a public or private potable water supply system and a sewer or force main and with no water pipes passing through or coming into contact with any part of a sewer manhole. [RSFW 38.1 and 48.5]
- BC 5. The project is designed to preclude the deliberate introduction of storm water, surface water, groundwater, roof runoff, subsurface drainage, swimming pool drainage, air conditioning system condensate water, non-contact cooling water except as provided by Rule 62-610.668(1), F.A.C., and sources of uncontaminated wastewater, except to augment the supply of reclaimed water in accordance with Rule 62-610.472(3)(c), F.A.C. [62-604.400(1)(d), F.A.C.]
- BC 6. The project is designed so that all new or relocated, buried sewers and force mains, are located in accordance with the separation requirements from water mains and reclaimed water lines of Rules 62-604.400(2)(g)(h) and (i) and (3), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(i) 3., F.A.C., are used, describe in Part II.(5)B.C. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62-604.400(2)(g), (h), and (i) and (3), F.A.C.]

Gravity Sewers

- BC 7. The project is designed with no public gravity sewer conveying raw wastewater less than 8 inches in diameter. [RSWF 33.1]
- BC 8. The design considers buoyancy of sewers, and appropriate construction techniques are specified to prevent flotation of the pipe where high groundwater conditions are anticipated. [RSWF 33.3]
- BC 9. All sewers are designed with slopes to give mean velocities, when flowing full, of not less than 2.0 feet per second, based on Manning's formula using an "n" value of 0.013; or if it is not practicable to maintain these minimum slopes and the depth of flow will be 0.3 of the diameter or greater for design average flow, the owner of the system has been notified that additional sewer maintenance will be required. The pipe diameter and slope are selected to obtain the greatest practical velocities to minimize solids deposition problems. Oversized sewers are not specified to justify flatter slopes. [RSWF 33.41, 33.42, and 33.43]
- BC

 10. Sewers are designed with uniform slope between manholes. [RWSF 33.44]
- ✓

 11. Where velocities greater than 15 fps are designed, provisions to protect against displacement by erosion and impact are specified. [RSWF 33.45]
- ✓

 12. Sewers on 20% slopes or greater are designed to be anchored securely with concrete, or equal, anchors spaced as follows: not over 36 feet center to center on grades 20% and up to 35%; not over 24 feet center to center on grades 35% and up to 50%; and not over 16 feet center to center on grades 50% and over. [RSWF 33.46]

- BC 13. Sewers 24 inches or less are designed with straight alignment between manholes. Where curvilinear sewers are proposed for sewers greater than 24 inches, the design specifies compression joints; ASTM or specific pipe manufacturer's maximum allowable pipe joint deflection limits are not exceeded; and curvilinear sewers are limited to simple curves which start and end at manholes. [RSWF 33.5]
- BC 14. Suitable couplings complying with ASTM specifications are required for joining dissimilar materials. [RSWF 33.7]
- BC 15. Sewers are designed to prevent damage from superimposed loads. [RSWF 33.7]
- BC 16. Appropriate specifications for the pipe and methods of bedding and backfilling are provided so as not to damage the pipe or its joints, impede cleaning operations and future tapping, nor create excessive side fill pressures and ovalation of the pipe, nor seriously impair flow capacity. [RSWF 33.81]
- BC 17. Appropriate deflection tests are specified for all flexible pipe. Testing is required after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrel for the deflection test with a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]
- BC 18. Leakage tests are specified requiring that: 1) the leakage exfiltration or infiltration does not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration or infiltration tests be performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, conform to the test procedure described in ASTM C-828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94, and 33.95]
- X 19. If an inverted siphon is proposed, documentation of its need is provided in Part II.(5)BC. Inverted siphons are designed with: 1) at least two barrels; 2) a minimum pipe size of 6 inches; 3) necessary appurtenances for maintenance, convenient flushing, and cleaning equipment; and 4) inlet and discharge structures having adequate clearances for cleaning equipment, inspection, and flushing. Design provides sufficient head and appropriate pipe sizes to secure velocities of at least 3.0 fps for design average flows. The inlet and outlet are designed so that the design average flow may be diverted to one barrel, and that either barrel may be cut out of service for cleaning. [RSWF 35]

Manholes

- BC 20. The project is designed with manholes at the end of each line; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches to 30 inches, except in the case where adequate modern cleaning equipment is available at distances not greater than 600 feet. [RSWF 34.1]
- BC 21. Design requires drop pipes to be provided for sewers entering manholes at elevations of 24 inches or more above the manhole invert. Where the difference in elevation between the incoming sewer and the manhole invert is less than 24 inches, the invert is designed with a fillet to prevent solids deposition. Inside drop connections (when necessary) are designed to be secured to the interior wall of the manhole and provide access for cleaning. Design requires the entire outside drop connection be encased in concrete. [RSWF 34.2]
- BC 22. Manholes are designed with a minimum diameter of 48 inches and a minimum access diameter of 22 inches. [RSWF 34.3]
- BC 23. Design requires that a bench be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and that no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]
- BC 24. Design requires: 1) manhole lift holes and grade adjustment rings be sealed with non-shrinking mortar or other appropriate material; 2) inlet and outlet pipes be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and 3) watertight manhole covers be used wherever the manhole tops may be flooded by street runoff or high water. [RSWF 34.6]
- BC 25. Manhole inspection and testing for watertightness or damage prior to placing into service are specified. Air testing, if specified for concrete sewer manholes, conforms to the test procedures described in ASTM C-1244. [RSWF 34.7]
- X 26. Electrical equipment specified for use in manholes is consistent with Item 46 of this checklist. [RSWF 34.9]

Stream Crossings

- X 27. Sewers and force mains entering or crossing streams are designed to be constructed of ductile iron pipe with mechanical joints or so they will remain watertight and free from changes in alignment or grade. Appropriate materials which will not readily erode, cause siltation, damage pipe during placement, or corrode the pipe are specified to backfill the trench. [RSWF 36.21 and 48.5]
- X 28. Stream crossings are designed to incorporate valves or other flow regulating devices (which may include pump stations) on the shoreline or at such distances from ~~from~~ the shoreline to prevent discharge in the event the line is damaged. [62-604.400(2)(k)5., F.A.C.]
- X 29. Sewers and force mains entering or crossing streams are designed at a sufficient depth below the natural bottom of the stream bed to protect the line. At a minimum, the project is designed with subaqueous lines to be buried at least three feet below the design or actual bottom, whichever is deeper, of a canal and other dredged waterway or the natural bottom of streams, rivers, estuaries, bays, and other natural water bodies; or if it is not practicable to design the project with less than three-foot minimum cover, alternative construction features (e.g. a concrete cap, sleeve, or some other properly engineered device to insure adequate protection of the line) are described in Part II.C. [62-604.400(2)(k)1., F.A.C., and RSWF 36.11]
- X 30. Specifications require permanent warning signs be placed on the banks of canals, streams, and rivers clearly identifying the nature and location (including depths below design or natural bottom) of subaqueous crossings and suitably fixed signs be placed at the shore, for subaqueous crossings of lakes, bays, and other large bodies of water, and in any area where anchoring is normally expected. [62-604.400(2)(k)2., F.A.C.]
- X 31. Provisions for testing the integrity of subaqueous lines are specified. [62-604.400(2)(k)4., F.A.C.]
- X 32. Supports are designed for all joints in pipes utilized for aerial crossings and to prevent overturning and settlement. Expansion jointing is specified between above ground and below ground sewers and force mains. The design considers the impact of floodwaters and debris. [RSWF 37 and 48.5]
- X 33. Aerial crossings are designed to maintain existing or required navigational capabilities within the waterway and to reserve riparian rights of adjacent property owners. [62-604.400(2)(k)3., F.A.C.]

Pump Stations

- X 34. In areas with high water tables, pump stations are designed to withstand flotation forces when empty. When siting the pump station, the design considers the potential for damage or interruption of operation because of flooding. Pump station structures and electrical and mechanical equipment are designed to be protected from physical damage by the 100-year flood. Pump stations are designed to remain fully operational and accessible during the 25-year flood unless lesser flood levels are appropriate based on local considerations, but not less than the 10-year flood. [62-604.400(2)(e), F.A.C.]
- X 35. Pump stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF 41.2]
- X 36. Wet well and pump station piping is designed to avoid operational problems from the accumulation of grit. [RSWF 41.3]
- X 37. Dry wells, including their superstructure, are designed to be completely separated from the wet well. Common walls are designed to be gas tight. [RSWF 42.21]
- X 38. The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]

- X 39. The design includes provisions for: 1) suitable and safe means of access for persons wearing self-contained breathing apparatus are provided to dry wells, and to wet wells; 2) stairway access to wet wells more than 4 feet deep containing either bar screens or mechanical equipment requiring inspection or maintenance; 3) for built-in-place pump stations, a stairway to the dry well with rest landings at vertical intervals not to exceed 12 feet; 4) for factory-built pump stations over 15 feet deep, a rigidly fixed landing at vertical intervals not to exceed 10 feet unless a manlift or elevator is provided; and 5) where a landing is used, a suitable and rigidly fixed barrier to prevent an individual from falling past the intermediate landing to a lower level. If a manlift or elevator is provided, emergency access is included in the design. [RSWF 42.23]
- X 40. Specified construction materials are appropriate under conditions of exposure to hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in wastewater. [RSWF 42.25]
- X 41. Except for low-pressure grinder or STEP systems, multiple pumps are specified, and each pump has an individual intake. Where only two units are specified, they are of the same size. Specified units have capacity such that, with any unit out of service, the remaining units will have capacity to handle the design peak hourly flow. [RSWF 42.31 and 42.36]
- X 42. Bar racks are specified for pumps handling wastewater from 30 inch or larger diameter sewers. Where a bar rack is specified, a mechanical hoist is also provided. The design includes provisions for appropriate protection from clogging for small pump stations. [RSWF 42.322]
- X 43. Pumps handling raw wastewater are designed to pass spheres of at least 3 inches in diameter. Pump suction and discharge openings are designed to be at least 4 inches in diameter. [RSWF 42.33] (Note, this provision is not applicable to grinder pumps.)
- X 44. The design requires pumps be placed such that under normal operating conditions they will operate under a positive suction head, unless pumps are suction-lift pumps. [RSWF 42.34]
- X 45. The design requires: 1) pump stations be protected from lightning and transient voltage surges; and 2) pump stations be equipped with lightning arrestors, surge capacitors, or other similar protection devices and phase protection. Note, pump stations serving a single building are not required to provide surge protection devices if not necessary to protect the pump station. [62-604.400(2)(b), F.A.C.]
- X 46. The design requires 1) electrical systems and components (e.g., motors, lights, cables, conduits, switch boxes, control circuits, etc.) in raw wastewater wet wells, or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors may be present, comply with the National Electrical Code requirements for Class I Group D, Division 1 locations; 2) electrical equipment located in wet wells be suitable for use under corrosive conditions; 3) each flexible cable be provided with a watertight seal and separate strain relief; 4) a fused disconnect switch located above ground be provided for the main power feed for all pump stations; 5) electrical equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4; 6) a 110 volt power receptacle to facilitate maintenance be provided inside the control panel for pump stations that have control panels outdoors; and 7) ground fault interruption protection be provided for all outdoor outlets. [RSWF 42.35]
- X 47. The design requires a sump pump equipped with dual check valves be provided in dry wells to remove leakage or drainage with discharge above the maximum high water level of the wet well. [RSWF 42.37]
- X 48. Pump station design capacities are based on the peak hourly flow and are adequate to maintain a minimum velocity of 2 feet per second in the force main. [RSWF 42.38]
- X 49. The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
- X 50. The design requires: 1) suitable shutoff valves be placed on the suction line of dry pit pumps; 2) suitable shutoff and check valves be placed on the discharge line of each pump (except on screw pumps); 3) a check valve be located between the shutoff valve and the pump; 4) check valves be suitable for the material being handled; 5) check valves be placed on the horizontal portion of discharge piping (except for ball checks, which may be placed in the vertical run); 6) all valves be capable of withstanding normal pressure and water hammer; and 7) all shutoff and check valves be operable from the floor level and accessible for maintenance. [RSWF 42.5]
- X 51. The effective volume of wet wells is based on design average flows and a filling time not to exceed 30 minutes unless the facility is designed to provide flow equalization. The pump manufacturer's duty cycle recommendations were utilized in selecting the minimum cycle time. [RSWF 42.62]
- X 52. The design requires wet well floors have a minimum slope of 1 to 1 to the hopper bottom and the horizontal area of hopper bottoms be no greater than necessary for proper installation and function of the inlet. [RSWF 42.63]

- X
53. For covered wet wells, the design provides for air displacement to the atmosphere, such as an inverted "j" tube or other means. [RSWF 42.64]
- X
54. The design provides for adequate ventilation all pump stations; mechanical ventilation where the dry well is below the ground surface; permanently installed ventilation if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. Pump stations are designed with no interconnection between the wet well and dry well ventilation systems. [RSWF 42.71]
- X
55. The design requires all intermittently operated ventilation equipment to be interconnected with the respective pit lighting system and the manual lighting/ventilation switch to override the automatic controls. [RSWF 42.73]
- X
56. The design requires the fan wheels of ventilation systems be fabricated from non-sparking material and automatic heating and dehumidification equipment be provided in all dry wells. [RSWF 42.74]
- X
57. If wet well ventilation is continuous, design provides for at least 12 complete 100% fresh air changes per hour; if wet well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour; and design requires air to be forced into wet wells by mechanical means rather than solely exhausted from the wet well. [RSWF 42.75]
- X
58. If dry well ventilation is continuous, design provides at least 6 complete 100% fresh air changes per hour; and dry well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour, unless a system of two speed ventilation with an initial ventilation rate of 30 changes per hour for 10 minutes and automatic switch over to 6 changes per hour is used to conserve heat. [RSWF 42.76]
- X
59. Pump stations are designed and located on the site to minimize adverse effects from odors, noise, and lighting. [62-604.400(2)(c), F.A.C.]
- X
60. The design requires pump stations be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons. Posting of an unobstructed sign made of durable weather resistant material at a location visible to the public with a telephone number for a point of contact in case of emergency is specified. [62-604.400(2)(d), F.A.C.]
- X
61. The design requires suitable devices for measuring wastewater flow at all pump stations. Indicating, totalizing, and recording flow measurement are specified for pump stations with a 1200 gpm or greater design peak flow. [RSWF 42.8]
- X
62. The project is designed with no physical connections between any potable water supplies and pump stations. If a potable water supply is brought to a station, reduced-pressure principle backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.30(4), F.A.C.]

Additional Items to be Completed for Suction-Lift Pump Stations

- X
63. The design requires all suction-lift pumps to be either self-priming or vacuum-priming and the combined total of dynamic suction-lift at the "pump off" elevation and required net positive suction head at design operating conditions not to exceed 22 feet. For self-priming pumps, the design requires: 1) pumps be capable of rapid priming and repriming at the "lead pump on" elevation with self-priming and repriming accomplished automatically under design operating conditions; 2) suction piping not to exceed the size of the pump suction or 25 feet in total length; and 3) priming lift at the "lead pump on" elevation to include a safety factor of at least 4 feet from the maximum allowable priming lift for the specific equipment at design operating conditions. For vacuum-priming pump stations, the design requires dual vacuum pumps capable of automatically and completely removing air from the suction-lift pumps and the vacuum pumps be adequately protected from damage due to wastewater. [RSWF 43.1]
- X
64. The design requires: 1) suction-lift pump equipment compartments to be above grade or offset and to be effectively isolated from the wet well to prevent a hazardous and corrosive sewer atmosphere from entering the equipment compartment; 2) wet well access not to be through the equipment compartment and to be at least 24 inches in diameter; 3) gasketed replacement plates be provided to cover the opening to the wet well for pump units to be remove for service; and 4) no valving be located in the wet well. [RSWF 43.2]

Additional Items to be Completed for Submersible Pump Stations

- X
65. Submersible pumps and motors are designed specifically for raw wastewater use, including totally submerged operation during a portion of each pump cycle and to meet the requirements of the National Electrical Code for such units. Provisions for detecting shaft seal failure or potential seal failure are included in the design. [RSWF 44.1]
- X
66. The design requires submersible pumps be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well. [RSWF 44.2]
- X
67. In submersible pump stations, electrical supply, control, and alarm circuits are designed to provide strain relief; to allow disconnection from outside the wet well; and to protect terminals and connectors from corrosion by location outside the wet well or through use of watertight seals. [RSWF 44.31]
- X
68. In submersible pump stations, the design requires the motor control center to be located outside the wet well, readily accessible, and protected by a conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. If a seal is specified, the motor can be removed and electrically disconnected without disturbing the seal. The design requires control equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4. [RSWF 44.32]
- X
69. In submersible pump stations, the design requires: 1) pump motor power cords be flexible and serviceable under conditions of extra hard usage and to meet the requirements of the National Electrical Code standards for flexible cords in wastewater pump stations; 2) ground fault interruption protection be used to de-energize the circuit in the event of any failure in the electrical integrity of the cable; and 3) power cord terminal fittings be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, provided with strain relief appurtenances, and designed to facilitate field connecting. [RSWF 44.33]
- X
70. In submersible pump stations, the design requires all shut-off and check valves be located in a separate valve pit. Provisions to remove or drain accumulated water from the valve pit are included in the design. [RSWF 44.4]

Emergency Operations for Pump Stations

- X
71. Pump stations are designed with an alarm system which activates in cases of power failure, sump pump failure, pump failure, unauthorized entry, or any cause of pump station malfunction. Pump station alarms are designed to be telemetered to a facility that is manned 24 hours a day. If such a facility is not available and a 24-hour holding capacity is not provided, the alarm is designed to be telemetered to utility offices during normal working hours and to the home of the responsible person(s) in charge of the lift station during off-duty hours. Note, if an audio-visual alarm system with a self-contained power supply is provided in lieu of a telemetered system, documentation is provided in Part II.(5)BC, showing an equivalent level of reliability and public health protection. [RSWF 45]
- X
72. The design requires emergency pumping capability be provided for all pump stations. For pump stations that receive flow from one or more pump stations through a force main or pump stations discharging through pipes 12 inches or larger, the design requires uninterrupted pumping capability be provided, including an in-place emergency generator. Where portable pumping and/or generating equipment or manual transfer is used, the design includes sufficient storage capacity with an alarm system to allow time for detection of pump station failure and transportation and connection of emergency equipment. [62-604.400(2)(a)1. and 2., F.A.C., and RSWF 46.423 and 46.433]
- X
73. The design requires: 1) emergency standby systems to have sufficient capacity to start up and maintain the total rated running capacity of the station, including lighting, ventilation, and other auxiliary equipment necessary for safety and proper operation; 2) special sequencing controls be provided to start pump motors unless the generating equipment has capacity to start all pumps simultaneously with auxiliary equipment operating; 3) a riser from the force main with rapid connection capabilities and appropriate valving be provided for all pump stations to hook up portable pumps; and 4) all pump station reliability design features be compatible with the available temporary service power generating and pumping equipment of the authority responsible for operation and maintenance of the collection/transmission system. [62-604.400(2)(a)3., F.A.C., and RSWF 46.431]
- X
74. The design provides for emergency equipment to be protected from operation conditions that would result in damage to the equipment and from damage at the restoration of regular electrical power. [RSWF 46.411, 46.417, and 46.432]

- X 75. For permanently-installed internal combustion engines, underground fuel storage and piping facilities are designed in accordance with applicable state and federal regulations; and the design requires engines to be located above grade with adequate ventilation of fuel vapors and exhaust gases. [RSWF 46.414 and 46.415]
- X 76. For permanently-installed or portable engine-driven pumps are used, the design includes provisions for manual start-up. [RSWF 46.422]
- X 77. Where independent substations are used for emergency power, each separate substation and its associated transmission lines is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 46.44]

Force Mains

- X 78. Force mains are designed to maintain, at design pumping rates, a cleansing velocity of at least 2 feet per second. The minimum force main diameter specified for raw wastewater is not less than 4 inches. [RSWF 48.1]
- X 79. The design requires: 1) branches of intersecting force mains be provided with appropriate valves such that one branch may be shut down for maintenance and repair without interrupting the flow of other branches; and 2) stubouts on force mains, placed in anticipation of future connections, be equipped with a valve to allow such connection without interruption of service. [62-604.400(2)(f), F.A.C.]
- X 80. The design requires air relief valves be placed at high points in the force main to prevent air locking. [RSWF 48.2]
- X 81. Specified force main pipe and joints are equal to water main strength materials suitable for design conditions. The force main, reaction blocking, and station piping are designed to withstand water hammer pressures and stresses associated with the cycling of wastewater pump stations. [RSWF 48.4]
- X 82. When the Hazen and Williams formula is used to calculate friction losses through force mains, the value for "C" is 100 for unlined iron or steel pipe for design. For other smooth pipe materials, such as PVC, polyethylene, lined ductile iron, the value for C does not exceed 120 for design. [RSWF 48.61]
- X 83. Where force mains are constructed of material, which might cause the force main to be confused with potable water mains, specifications require the force main to be clearly identified. [RSWF 48.7]
- X 84. Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 48.8]

*RSWF = *Recommended Standards for Wastewater Facilities* (1997) as adopted by rule 62-604.300(5)(g), F.A.C.

B. Explanation for Requirements or Standards Marked "X" in II(5)A. Above (Attach additional sheets if necessary):

11. No expected velocities greater than 15 fps; 12. No expected slopes greater than 20%; 19. Inverted siphon is not proposed; 26. No electrical equipment in manholes; 27-33 No stream crossings; 34-62 No proposed pump stations; 63-64 No proposed Suction-Lift Pump Stations; 65-70 No proposed Submersible Pump Stations; 71-77 No proposed pump stations; 78-84 No proposed force mains.

PART III - CERTIFICATIONS

(1) Collection/Transmission System Permittee

Walmart Stores East, LP


I, the undersigned owner or authorized representative* of Walmart Stores East, LP am fully aware that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. I agree to retain the design engineer or another professional engineer registered in Florida, to conduct on-site observation of construction, to prepare a certification of completion of construction, and to review record drawings for adequacy. Further, I agree to provide an appropriate operation and maintenance manual for the facilities pursuant to Rule 62-604.500(4), F.A.C., and to retain a professional engineer registered in Florida to examine (or to prepare if desired) the manual. I am fully aware that Department approval must be obtained before this project is placed into service for any purpose other than testing for leaks and testing equipment operation.

Signed Teresa Hibbard 10-27-16 Date 10-27-16
Name Teresa Hibbard Title Director, Project Design & Management

*Attach a letter of authorization.

(2) Owner of Collection/Transmission System

I, the undersigned owner or authorized representative* of Walmart Stores East, LP certify that we will be the Owner of this project after it is placed into service. I agree that we will operate and maintain this project in a manner that will comply with applicable Department rules. Also I agree that we will promptly notify the Department if we sell or legally transfer ownership of this project.

Signed  Date 10-27-16
Name Teresa Hibbard Title Director, Project Design & Management
Company Name Walmart Stores East LP
Address 2001 SE 10th Street
City Bentonville State AR Zip 72716
Telephone 479.204.2186 Fax 479.273.8380 Email Teresa.Hibbard@wal-mart.com

* Attach a letter of authorization.

(3) Wastewater Facility Serving Collection/Transmission System**

If this is a Notice of Intent to use a general permit, check here:

☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility has the capacity to receive the wastewater generated by the proposed collection system; is in compliance with the capacity analysis report requirements of Rule 62-600.405, F.A.C.; is not under a Department order associated with effluent violations or the ability to treat wastewater adequately; and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

If this is an application for an individual permit, check one:

☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility has and will have adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility currently does not have, but will have prior to placing the proposed project into operation, adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

Name of Treatment Plant Serving Project _____

County _____	City _____
DEP permit number <u>FL</u>	Expiration Date _____
Maximum monthly average daily flow over the last 12 month period _____	MGD _____ Month(s) used _____
Maximum three-month average daily flow over the last 12 month period _____	MGD _____ Month(s) used _____
Current permitted capacity _____	MGD _____ AADF _____ MADF _____ TMADF _____

Signed _____ Date _____
Name _____ Title _____
Address _____
City _____ State _____ Zip _____
Telephone _____ Fax _____ Email _____

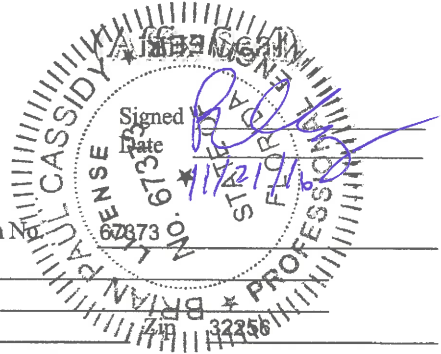
* Attach a letter of authorization.

** If there is an intermediate collection system, a letter shall be attached certifying that the intermediate downstream collection system has adequate reserve capacity to accept the flow from this project.

(4) Professional Engineer Registered in Florida

I, the undersigned professional engineer registered in Florida, certify that I am in responsible charge of the preparation and production of engineering documents for this project; that plans and specifications for this project have been completed; that I have expertise in the design of wastewater collection/transmission systems; and that, to the best of my knowledge and belief, the engineering design for this project complies with the requirements of Chapter 62-604, F.A.C.

Name Brian Cassidy Florida Registration No. 62873
Company Name CPH, Inc.
Address 5200 Belfort Road, Suite 220
City Jacksonville State FL
Telephone 904.332.0999 Fax 904.332.0997 Email bcassidy@cphcorp.com
Portion of Project for Which Responsible Civil Design Drawings - Sanitary Sewer Design



(Affix Seal)

Signed _____
Date _____

Name _____ Florida Registration No. _____
Company Name _____
Address _____
City _____ State _____ Zip _____
Telephone _____ Fax _____ Email _____
Portion of Project for Which Responsible _____

(Affix Seal)

Signed _____
Date _____

Name _____ Florida Registration No. _____
Company Name _____
Address _____
City _____ State _____ Zip _____
Telephone _____ Fax _____ Email _____
Portion of Project for Which Responsible _____