

1) CONCRETE SALES FLOOR PRE-INSTALLATION CONFERENCE

A. At least 30 days prior to the start of the concrete slab construction, the general contractor shall conduct a meeting to review the proposed concrete mix designs and to discuss the required methods and procedures to achieve the requirements of this specification. The general contractor shall send a pre-concrete conference agenda to all attendees scheduled date of the conference.

B. The general contractor shall require responsible representatives of every party concerned with the concrete work to attend the conference, including, but not limited to, the following: General contractor's superintendent

- 1. Laboratory responsible for concrete mixes, field quality control and floor tolerance testing
2. Ready-mix concrete producer
3. Concrete contractor
4. Chemical admixture manufacturer
5. Liquid densifier and sealer manufacturer
6. Liquid densifier and sealer applicator
7. Joint filling manufacturer
8. Joint filling applicator

C. Minutes of the meeting shall be recorded, typed and printed by the general contractor and distributed to all concerned parties, including the owner's representative, the architect and the structural engineer, within five days of the meeting.

D. The minutes shall include a statement by the concrete supplier stating that the proposed concrete mix design will produce the concrete quality required by these specifications.

E. The minutes shall include a statement by the concrete contractor that the proposed concrete mix design will provide appropriate workability and setting times, to ensure that the concrete contractor can achieve the requirements of this specification.

CONCRETE CONTRACTOR QUALIFICATION

A. The concrete contractor shall include in their bid package to the general contractor, sufficient data, including a minimum of three similar and successful projects that clearly indicates the concrete contractor's ability to successfully perform the work and to achieve the interior sales floor slab tolerances required in this specification. The concrete contractor's team shall have participated in the majority of these projects, and that team shall remain the same through the duration of this project.

CONCRETE MATERIALS

A. Portland Cement ASTM C 150, Type I. Use one brand of cement throughout the project.

B. Coarse and fine aggregates: ASTM C 33. Combined aggregate gradation for slabs on grade and other designated concrete shall be 8% - 18% for large top size aggregates (1 1/2") or 8% - 22% for smaller top size aggregates (1" or 3/4") retained on each sieve below the top size and above the no. 100 sieve. Slabs on grade shall have a maximum aggregate size of 1 1/2" footings and piers 1" and beams 3/4".

C. Water: complying with ASTM C 94.

D. Air-entraining admixtures: Shall conform to ASTM C-260. Admixture manufacturer shall provide written certification that the air-entraining admixture is compatible with other required admixtures. All exterior slabs shall be air-entrained (4% - 6%). Acceptable products: Euclid Chemical AEA-92 or Air 40; BASF Micro Air W.R. Grace Daravair 1000 or Darax-1. Note: Air-entraining admixture shall not be used on interior concrete.

E. Water-reducing admixture: Shall conform to ASTM C494, Type A and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Eucon series; BASF Pozzolith series; W.R. Grace WRDA or Daracem series.

F. Water-reducing, retarding admixture: Shall conform to ASTM C494, Type D, and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Retarder 75; BASF Pozzolith series; W.R. Grace Daratard 17.

G. High range water-reducing admixture (superplasticizer): Shall conform to ASTM C494, Type F or Type G and contain no more than 0.05% chloride ions. Acceptable products: Euclid Chemical Eucon 37; BASF Rheobuild 1000; W.R. Grace daracem-100.

H. Water-reducing, non-corrosive accelerating admixture: Shall conform to ASTM C494, Type C or E, and contain no more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term, non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Acceptable products: Euclid Chemical Aceelguard 80/90 or Aceelguard NGA; BASF NC534 or Pozzitec 20, W.R. Grace Polarset.

- I. Prohibited admixtures:
1. Calcium chloride or admixtures containing more than 0.05% chloride ions are not permitted.
2. Flyash is not permitted.

EVAPORATION RETARDER

A. Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

- 1. Acceptable products:
a. "Eucoabar" by Euclid Chemical - Phil Brandt 877-438-3826

CURING MATERIALS

A. Exterior curing: All exterior concrete slabs shall be cured using a liquid membrane-forming curing compound. The liquid membrane-forming curing compound shall meet the requirements of ASTM C1315 with a maximum V.O.C. Content of 700 g/l.

- 1. Acceptable products:
a. "Super Rez Seal" or "Super Aqua Cure" by Euclid Chemical - Phil Brandt 877-438- 3826

B. Interior curing (building not enclosed/sales floor slab is placed first): The interior sales floor slab shall be cured using a reduced odor, dissipating liquid membrane forming curing compound that is formulated from hydrocarbon resins. The dissipating liquid membrane forming curing compound shall meet the requirements of ASTM C309 and V.O.C. contents in accordance to EPA 40 CFR, part 59, table 1, subpart D for concrete curing compounds with a maximum V.O.C. content of 350g/l.

- 1. Acceptable product:
a. "Kurez DR VOX" by Euclid Chemical - Phil Brandt 877-438-3826

C. Interior curing (building enclosed/sales floor slab is placed last): The interior sales floor slab shall be cured using a removable, low odor, fast drying liquid membrane forming curing compound. The removable liquid membrane forming curing compound shall meet the requirements of ASTM C309, AASHTO M 148, USDA compliance and V.O.C. contents in accordance to EPA 40 CFR, part 59, Table 1, subpart D for concrete curing compounds with a maximum V.O.C. Content of 350g/l.

- 1. Acceptable product:
a. "Kurez RC" by Euclid Chemical - Phil Brandt 877-438-3826

LIQUID DENSIFIER / SEALER FOR INTERIOR SALES FLOOR

A. Liquid densifier / sealer shall be a sodium silicate / silicate blend. Manufacturer of liquid densifier and sealer must be contacted prior to bidding for pricing and application requirements.

- 1. Acceptable manufacturer:
a. "Euco Diamond Hard" by Euclid Chemical - Phil Brandt 877-438-3826
b. "RetroPlate 99" by RetroPlate Systems - Curtis Turnbull 888-942-3144

B. Approval: All general contractors bidding or negotiating a Dollar General project shall contact Euclid Chemical or RetroPlate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer and polishing process. Within ten days after completion of work, the approved applicator shall furnish Euclid Chemical or RetroPlate a copy of the invoice, as well as a cure footage application rate sheet confirming that the specified application rates were achieved.

C. Project service: at least 10 days prior to application of liquid densifier / sealer, the general contractor shall notify the Euclid Chemical or RetroPlate representative for pre-bid service. The representative will be on the project site during the first application of liquid densifier / sealer and will remain on the project through to 20 days to the completion.

SEMI-RIGID POLYUREA JOINT FILLER

A. UV Resistant, semi-rigid polyurea joint filler shall be a two (2) component, 100% solids compound, with minimum Shore "A" hardness of 80. Joint filler color shall match the adjacent concrete surface.

- 1. Acceptable semi-rigid polyurea joint filler manufacturer:
a. "Euco QWIKJoint UVR" by Euclid Chemical - Phil Brandt 877-438-3826

B. Non-UV Resistant, semi-rigid polyurea joint filler shall be a two (2) component, 100% solids compound, with a minimum Shore "A" hardness of 75. Joint filler color shall match the adjacent concrete surface.

- 1. Acceptable semi-rigid polyurea joint filler:
a. "CreteFill Pro 75" by CureCrete - Curtis Turnbull 888-942-3144

C. Approval: All general contractors bidding or negotiating a Dollar General project shall contact the Euclid Chemical company or RetroPlate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer and polishing process.

CONCRETE MIXES

A. Comply with ACI 301 requirements for concrete mixtures.

B. Concrete mix design(s) shall be proportioned according to ACI 301, for normal-weight concrete determined by either laboratory trial mix or field test data as follows:

- 1. Compressive strength (28 days): 4000psi (27.6mpa), with a maximum water/cement ratio of .53, unless otherwise indicated on the drawings. Concrete materials included in the mix design shall be the same materials provided to the project, and shall be prepared by an independent testing laboratory approved by the owner. If sufficient backup data is not available, the laboratory mix design shall exceed the desired job strength of concrete by 1,200psi. Four copies of the mix design shall be submitted to the owner before concrete work begins.

2. Slump: Concrete containing mid or high range water reducer shall have a maximum slump of 5 1/2" for the interior sales floor slab and 6" (200 mm) for other areas. All other concrete shall not exceed 4 inches (100 mm) unless otherwise indicated on the drawings.

3. Adjustment to concrete mixes: Mix design adjustments may be requested by General Contractor when characteristics of materials, job conditions, weather, test results or other circumstances warrant, at no additional cost to owner and as accepted by owner. Laboratory test data for revised mix design and strength results must be submitted to and accepted by owner before using in work. Both the concrete testing and inspection agency and the concrete contractor shall satisfy themselves that the concrete mix design will produce a concrete which will meet the specifications for this project. In addition, the General Contractor and Concrete Contractor shall verify that the workability, finishability and setting times are appropriate for slab installations. Placement shall be made directly from concrete trucks by chute. If pumping of the concrete is contemplated for any special locations, the proportions established above shall not be altered to suit the capabilities of the pumping equipment. For concrete containing macro-synthetic fibers, adjustments required to provide required placement conditions may warrant use of additional water reducer. No additional water is permitted into concrete mixture after addition of macro-synthetic fibers.

4. Interior concrete sales floor: Concrete shall be designed to meet 4000 psi compressive strength @ 28 days and exhibit <0.04% shrinkage @ 28 days. The mix shall contain approximately 12 cubic feet of #467 aggregate (1-1/2" top size), the specified water reducing admixture and achieve a w/cm ratio of 0.53 (max.). Concrete shall be non air-entrained and in no case shall the concrete be designed for less than 4000 psi (27.6mpa) @ 28 days. Proposed mix design shall be similar to the following

Table with 2 columns: Material and Prototype mix. Includes Cement, Fly ash/slag, Coarse aggregate, Fine aggregate, Water content, Air content, Water Reducer, W/cm, Initial slump, Final Slump, and Shrinkage.

FLOOR SLAB FINISH AND TOLERANCES

A. General: Unless otherwise noted by owner, concrete sales floor slab shall be cast in one continuous placement. Concrete shall be placed, screeded, re-straightened, and finished as necessary to meet the FF and FL tolerances requirements. Do not wet concrete surfaces during finishing operations.

B. Trowel finish (sales floor): Apply a hard trowel finish to surfaces as follows:

1. Laser screeds, vibratory screeds, highway straightedges and wood bull floats shall be used to initiate screeding and floating process to form a uniform and open-textured surface plane free of excess moisture or bleed water appears on the surface. A back-up laser screed is required during concrete placement of the interior sales floor slab. Remove excess water before starting floating operations. Do not further disturb surfaces before starting finishing operations.

2. Highway straightedge operations shall continue before during and after troweling operations until specified floor tolerances are achieved.

3. Trowel finish with gas operated troweling machine with available back on all finishing equipment. Use steel-reinforced blades on ride-on trowels. Trowel the surface sufficiently to produce a smooth, tight, abrasion resistant surface. Care shall be taken not to overwork or burn the surface. 6" wide finish style steel-reinforced blades on final passes. Finishing blades shall be in good condition and completely clean of any deleterious materials prior to use. Finish shall be achieved within a 3" tolerance of all walls, columns and part.

4. Protection shall be taken to protect interior sales floor. Entrances shall include clean floor mats to prevent mud, oil and all other contaminants from being tracked onto the floor. Spills, cutting oils, etc. are not allowed on the interior sales floor at any time during the construction process.

C. Comply with ACI 308 "Specifications For Tolerances For Concrete Construction and Materials." Interior sales floor shall meet the requirements of a Type 5, single course, hard steel-troweled finish as described in ACI 302.

All perimeter areas and edges of the concrete floor shall exhibit the same finish as the sales floor, including but not limited to, hallways, offices, restrooms, etc.

2. The general contractor is responsible for contracting with the testing laboratory for all costs associated with floor tolerance testing. A copy of the final floor tolerance report shall be provided by the general contractor to the owner within 24 hours of receiving the report from the testing laboratory. The sales floor slab shall conform to the following flatness and levelness criteria:

Table with 2 columns: Flatness and Levelness. Overall Floor Flatness rating of at least 35. Overall Floor Levelness rating of at least 30. Tolerance Band for Entire Floor +/- 0.375 inch.

D. Failure to achieve the above criteria shall be cause for replacement of the offending segments or grinding/polishing at no cost to the Owner or Tenant.

E. Trowel finish (other than sales floor): Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.

F. Heavy broom finish: As noted on drawings.

CONCRETE PROTECTION AND CURING

A. General: Normalize concrete set time and protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 305 for hot-weather protection and ACI 306 for cold-weather protection during curing. During concrete placement operations, ventilate and exhaust all fumes from construction equipment and heaters to avoid potential early concrete carbonation. Apply the specified curing compound as quickly as possible for maximum protection. For concrete placement during hot, dry and windy conditions, concrete contractor shall use evaporation retarder as per manufacturer's instructions to maintain a moist condition and to minimize plastic drying shrinkage cracking at the surface of the freshly placed concrete.

1. Curing - Exterior Slabs: All exterior concrete slabs shall be cured using the specified liquid membrane-forming curing compound. Per manufacturer's instructions, application shall be applied evenly and uniformly as soon as possible after final finishing. Surface shall be clean and damp, but not wet and can no longer be marred by walking workmen. All applications shall be made by an approved applicator of the manufacturer, and when surface and air temperature is above 50°F. Apply "Super Rez Seal" or "Super Aqua Cure" at an application rate of 400sf/gallon. Begin curing immediately after finishing concrete, but not before free water has disappeared from concrete surface.

2. Curing - Interior slabs: The interior sales floor slab shall be cured using the specified dissipating or removable liquid membrane-forming curing compound. Per manufacturer's instructions, application shall be applied evenly and uniformly as soon as possible after final finishing. Surface shall be damp, but not wet and can no longer be marred by walking workmen. All applications shall be made by an approved applicator of the manufacturer, and when surface and air temperature is above 50°F. Apply "Kurez DR VOX" (slab first) or "Kurez RC" (slab last) at an application rate of 350sf/gallon. Begin curing immediately after finishing concrete, but not before free water has disappeared from concrete surface.

CONTRACTION JOINTS IN SLABS ON-GRADE

A. Form weakened-plane contraction joints, sectioning concrete into areas as indicated on drawings. Contraction joints shall be sawn to a depth equal to at least one-fourth of the concrete thickness, as follows:

B. Sawed joints: All saw cutting shall be accomplished with a "Soft-Cut" saw and vacuum system equipped with a new blade and plate, as soon as the slab will support the weight of the saw and operator. Concrete dust shall be removed completely and immediately. If chalk lines are used for sawcuts, all chalk remaining on the slab shall be removed completely and immediately after sawing.

INTERIOR SALES FLOOR SLAB PROTECTION

A. Take the following measures to protect the interior sales floor slab:
1. Wrap or "diaper" all motorized and hydraulic equipment to prevent fluid leaks
2. Provide non-marking tires on rubber tired vehicles or equip rubber tires with tire boots made of nylon fabric
3. Provide mats at all entrances to prevent mud stains

TIMING OF JOINT FILLER, LIQUID DENSIFIER AND POLISHING PROCESS

A. Do not commence installation of semi-rigid polyurea joint filler, liquid densifier and sealer or polishing process until the building is completely enclosed, permanent power and lighting is operating and the building is thermostatically controlled. Installation of these materials shall commence approximately two weeks prior to "fixture out date."

INSTALLATION OF SEMI-RIGID POLYUREA JOINT FILLER

A. All General Contractors bidding or negotiating a Dollar General project shall contact Euclid Chemical or RetroPlate to obtain a list of approved applicators located within the geographic region of the project. General contractors shall solicit and accept pricing only from those applicators as provided by Euclid Chemical or RetroPlate. The approved applicator selected for the initial application of liquid densifier / sealer shall be the same as for the joint filling and additional application of liquid densifier / sealer.

B. Joint filler installation: Comply with recommendations of ACI 302.2 for use of joint filler as applicable to materials, applications, and conditions as noted.

C. Surface cleaning of joints: Clean out joints immediately before installing joint filler. Remove foreign material from joint substrates that could interfere with adhesion of joint filler by brushing, grinding, blast cleaning, mechanical sanding, or a combination of these methods. Produce a clean, sound substrate capable of developing optimum bond with joint filler. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with free compressed air. Also remove all talc and form-release agents from concrete surfaces. Clean non-porous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues that could interfere with the adhesion of joint sealants. All surfaces to be filled shall be clean and dry.

D. For proper bond, joints must be filled full depth, but in no case should the joint filler be any less than 1" deep in the joint.

E. Mixing: Joint filler is a two part product requiring machine mixing and placing. Premix part b separately before using. Follow pump manufacturer's equipment instructions.

F. Placement: Joint filler shall be filled full depth. No backer rod is allowed. Joints should be verified and shaved even with the surrounding joint edge giving the floor joints a flat, smooth appearance. Shaving of excess joint filler can be approximately 30 minutes after placement, and up to 24 hours later, depending on jobsite conditions such as concrete and ambient temperatures.

G. Joint filler separation: The approved joint filling applicator shall include in their bid a cost per linear foot to make one return trip to refill joints if joint filler sidewall separation or spilling exceeds 1/16" or if surface profile is concave, chattered or if voids occur. This shall take place one week prior to grand opening.

INITIAL CLEANING FOR LIQUID DENSIFIER AND SEALER APPLICATION

A. Interior sales floor slab: Thoroughly clean the interior sales floor slab prior to initial application of liquid densifier and sealer by completely removing the specified dissipating or removable curing compound from the floor surface. The following floor stripper or removal solution shall be applied to the floor to thoroughly strip, clean and remove all curing compound residue:

1. If Kurez DR VOX (slab first) was used to cure the slab, use "Euco Clean & Strip" by Euclid Chemical, applied at the proper water to floor stripper ratio and coverage rate that will completely remove the Kurez DR VOX. Contact: Phil Brandt (877) 438-3826

2. If Kurez RC (slab last) was used to cure the slab, use "Kurez OFF" by Euclid Chemical, applied at the proper water to floor cleaner ratio and coverage rate that will completely remove the Kurez RC. Contact: Phil Brandt (877) 438-3826

POLISHING PROCESS AND APPLICATION OF LIQUID DENSIFIER / SEALER

A. All Applicators must be certified by Euclid Chemical or Retro-Plate.

B. The revised process can be used in both "Wet" and "Dry" applications.

C. This process assumes a quality concrete finish meets and/or exceeds the specified floor tolerances) by the floor finisher. Failure to achieve the above criteria shall be cause for replacement of the offending segments or grinding/polishing at no cost to the Owner or Tenant.

D. Only the Sales Floor will receive the full 8 step process outlined below under item K.

E. All other areas will only receive steps 1 through 3, no additional work is necessary. The yellow safety striping will remain.

F. The Black painted border will not be required in areas behind fixtures, etc...it will only be installed at the main entry door, office doors, egress doors and doorways into the receiving area and transitions that can be seen by the customers.

G. Steps 2 & 4 are combo steps using different grits of resin bond diamonds on each pass.

H. This is a "Resin" only grind that does not tear away as much of the surface area. The Resin grind will remove a minimal top layer of the concrete surface and should greatly reduce the amount of Waste Product created when compared to the old Metal process.

I. If a Cure-N-Seal product is required at the time of slab placement, only Water Based Dissipating Sealers are allowed. NO Acrylic Cure-N-Seals are allowed.

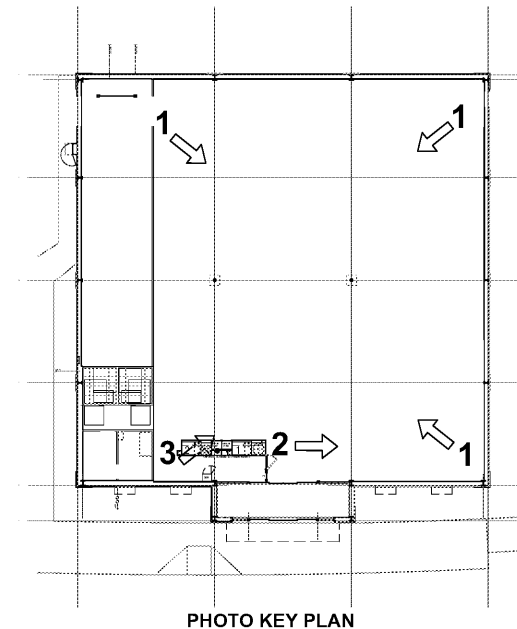
J. Prior to application, inspect interior sales floor to ensure that slab is clean and free of dust, grease, oils, or other contaminants that may prohibit proper adhesion and penetration of the liquid densifier and sealer.

K. Nine Step Process:

- 1. Cut, clean out, prep and fill the concrete floor joints with the Euclid QWIKJoint UVR polyurea joint filler.
2. Grind concrete floor with a combo set of 10/50 grit resin bond diamonds.
3. Grind concrete floor with a combo set of 100/100 grit resin bond diamonds. Thoroughly clean concrete floor and apply Diamond Hard densifier at 225 square feet per gallon. Polish concrete floor with a combo set 100/200 grit resin bond diamonds.
6. Polish concrete floor with 400 grit resin bond diamonds.
7. Thoroughly clean concrete floor and then apply Diamond Hard densifier at 700 square feet per gallon.
8. Burnish / Polish concrete floor with 800 grit diamond impregnated pads.
9. Burnish / Polish concrete floor with 1500 grit diamond impregnated pads.

L. All edges must be polished to match concrete floor with coinciding SASE 5" resin Polishing pads or HTC EZ Grind polishing 5" diamond tools.

M. Polish results: Perform polishing process to attain an overall gloss reading of >35 specified overall gloss value (SOGV) as measured using a Horiba IG-320, and a specified minimum gloss reading of >30 minimum local gloss value (MGLV). A minimum of 75 readings shall be taken throughout the interior sales floor. The approved applicator shall take four gloss measurement readings at 90° from each other, and then averaged for one reading at each location. The overall measurement shall be reported to Dollar General within 24 hours of the polishing process. Gloss shall be considered as a quantitative value that expresses the degree of reflection when light hits the concrete floor surface. Gloss measurements will be taken independent of ambient lighting and will be taken within a sealed measurement window located beneath the test unit.



REQUIRED PHOTOS: The following layout shows the required photos to be taken at completion. (Make sure the overhead lights are on for your photos.)
1. From each corner of the receiving area, facing the opposite corner.
2. Hall (inside entrance stores, one picture from each end of the hall).
3. Standing 10' from the entrance facing the entrance.



SEAL: GARY MAEDA, PE 68724

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL THE SEAL AND SIGNATURE OF THE RESPONSIBLE REGISTRANT APPEARS ON THE DRAWING, AND PROPER PERMIT FORMS AND RELATED FEES ARE TRANSMITTED BY THE OWNER, OWNER'S AGENT OR CONTRACTOR TO THE AUTHORITY HAVING JURISDICTION.

Table with 3 columns: DATE, ISSUED FOR, REV. Includes entries for 10/12/2017 PLANNING SUBMITTAL, 10/27/2017 PEMB COORDINATION, 12/15/2017 PLANNING RE-SUBMITTAL, and 12/15/2017 PERMIT.

Table with 2 columns: Project Manager (B.COLBURN) and Drawn (DG). Project Leader (B.COLBURN) and Checked (G.MAEDA).

Date 10/01/2017 Dept Mgr Approval G.MAEDA
Client Palmetto NFM - Hancock Bridge PKWY, LLC.
P.O. BOX 1615 THOMASVILLE, GA 31792 Office: (863) 808-1320 Contact: Jeff Lazenby

Project DOLLAR GENERAL
4055 Hancock Bridge Parkway North Fort Myers (Lee County), FL Section 9, Township 44S., Range 24E.

Drawing Title CONCRETE SUMMARY

DO NOT SCALE DRAWING

Table with 2 columns: Project No. (JCDT17.0313.00) and Drawing No. (S5)