

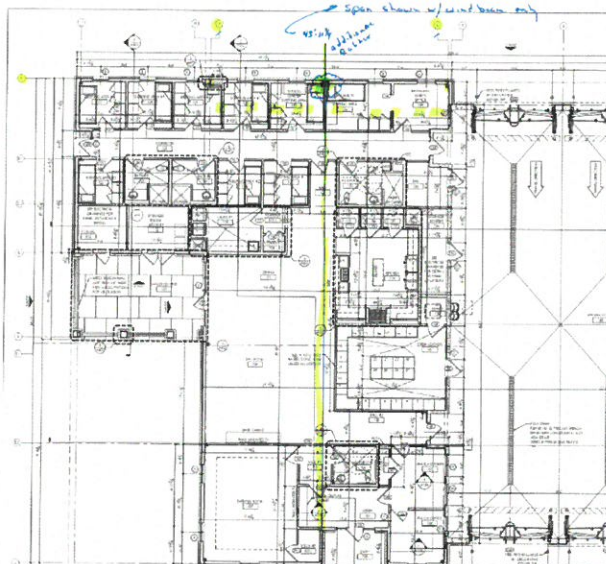
February 4, 2019

**Subject: ITB #1583-B: Fire Stations 2 & 4 Construction - Addendum #3**

Gentlemen/Ladies:

Below, please find responses to questions, clarification, or additional information for the above referenced invitation to bid. You will need to consider this information when preparing your bid.

1. **In Addendum #1, the answer to Question #2 is rescinded in its entirety. That question, plus a related follow-up question, are addressed in #2 below.**
2. **The PEMB purlin span shown for the living quarters is approximately 46lf. There needs to be another frame in this space as the purlins cannot span the 46ft. Would it be possible to have another column and frame at Frame line 7? (Additional Question received & addressed: Will an additional column be acceptable at A-8 to support rafter? This will require boxing around the column between rooms 131 and 134 along column line A? See attached sketch. Sketch was provided with the question.)**



There is a column missing at CL 8 – CL A at the exterior wall. Approximately halfway between CL6 and CL9.

Need to provide footing structural footing type F7 at the CL 8/A for the additional column. The PEMB package per the general contractor that are based on the bid documents will be required to support the building as drawn and meet specifications provided. The PEMB package approved will be designed by the PEMB provider.

- 3. Station 4 - In regards to the gravel base, it is my understanding that the base will be provided at the building slab. Will the gravel base be provided for the concrete drives or does the contractor need to provide?**  
See project manual SUMMARY 01 10 00 STATION NO.4 SUBPART E
- 4. Station 2 – Can you clarify the Hushair Connect 7500, 4 bank storage and charging station is all new equipment to be provided by the GC for Station 4 and will not be required at Station 2?**  
Correct. This equipment will only be required at Station #4.
- 5. There does not seem to be any drawings or specifications for the building fire sprinklers systems on both fire stations. Can you provide these?**  
As per Georgia State ordinance, the installer is required to engineer the system. See P202 (for both stations #2 and #4) for given minimum standards.
- 6. Please provide additional information for the generator enclose shown on sheet E-11 and E-12.**  
Provide a 6'-0" high chain link fence with access gates as indicated. A 6'-0" wide 2-Leaf gate on one end and an additional 3'-0" personnel gate on the opposite end.  
**\*\*\*See attached specification Section 02 82 10 Chain Link Fences and Gates – Attachment #1**
- 7. Are there any tap fees, impact fees, building permit fees, etc., for either FS #2 or FS# 4?**  
Tap fees: Fees already paid for Station #4, Fayette County Fire will pay any fees for Station #2.  
Building Permit fees: No Fees.  
Impact fees: No
- 8. FS# 4 shows a Decel Lane but there is no paving section provided. Please provide this paving section.**  
On Sheet C-700 it is indicated that all paving is concrete.  
The details and paving section for the concrete is on sheet C-1001.
- 9. Can American Buildings be added as an approved manufacturer for the PEMB?**  
As is customary with "or equal" specifications when they are listed as such, bidders may base these portions of their bids on equal options at their own risk. The architect will verify the suitability of the proposed equal options at the time of shop drawing review and base the decision on the contracted specifications and construction documents.
- 10. Can additional manufacturers be added for the four-fold doors, or is Door Engineering and Manufacturing the only supplier that is wanted?**  
No alternate for the bi-fold manufacturer Door Engineering. The bi-fold doors and its surrounding structural support has been designed for these specific doors.  
**\*\*\*See specifications attached for Door engineering attached – Attachment #2**
- 11. The alternates call for the four-fold doors to be removed and an overhead door used instead. However, there is no specification for the alternate overhead door. Please provide this spec.**  
**\*\*\*See specification attached – Attachment #3**



12. Please confirm that the “Cementous Panel” noted on the front of the building, on the elevations, is a Hardi Panel and not a Stucco or EIFS system. Please provide spec is the panel is to be Stucco or EIFS.

Correct. The entry way over the front door and the insets above the bay doors are as indicated – CEMENTITIOUS PANELS, PAINTED. No EIFS or Stucco.

13. What is the duration of the project?

Indeterminable.

14. Would you accept a substitution for 105100 Lockers? The specs call for Penco manufactured lockers but would you accept List Industries Lockers?

This is addressed in the Terms and Conditions:

**14. Bidder Substitutions:** Bidders offering substitutions or deviations from specifications stated in the invitation to bid, shall list such substitutions or deviations on the “Exceptions to Specifications” sheet provided, or on a separate sheet to be submitted with the bid. The absence of such list shall indicate that the bidder has taken no exception to the specifications. The evaluation of bids and the determination as to equality and acceptability of products or services offered shall be the responsibility of the county.

15. On the PEMB insulation, should we use R-19 in the walls and R-26 in the roof?

R-19 in the walls and R-30 at the roof per the 2009 IECC and GA amendments

16. For the Durabrac Vinyl/PVC please provide illustrations of the brackets in the plans as well as the bracket SKU numbers for the sizes listed:

DURABRAC # BUILD\_0532 (SKU 0532A41)

<u>STATION</u>	<u>SIZE</u>
4	24x36x4.5
	36x24x4.5
2	24x36x4.5
	36x24x4.5

DURABRAC #BUILD\_0530 (SKU 0532A1)

<u>STATION</u>	<u>SIZE</u>
4	31.5x31.5x5
2	31.5x31.5x5

**\*\*\* See specifications attached – Attachment #4**

17. Stations 4 – The existing compressor will be moved from existing Station 4 to the new station on McElroy Road. Contractors will NOT need to purchase a new compressor, but will have to install the old compressor at the new location. Fayette County will move the compressor. The contractor will be responsible for the electrical connection.

18. Will Davis Bacon Wage Scale and/or Certified Payroll requirements be applied to this project?

No.

- 19. Will the General Contractor be responsible for the costs of any tap fees, meter fees, impact fees, permit fees, etc....? If so please specify which fees the general contractor will be responsible for.**

Tap fees: Fees already paid for Station #4, Fayette County Fire will pay any fees for Station #2.

Building Permit fees: No Fees.

Meter fees: The meters have been installed at Station #4. The meters have not been installed at Station #2.

Impact fees: No

- 20. Will the General Contractor be responsible for the costs of construction materials testing and special inspections?**

The County will be responsible for testing costs but the general contractor with coordinate testing.

- 21. Will the General Contractor be responsible for the costs to remove and replace any rock and/or unsuitable soils that may be encountered during construction or will this work be performed on a change order basis as needed?**

If this refers to gravel base at Station #4, the GC is responsible for excavation and re-placing the stone. If this refers to subsurface rock and unsuitable soil, the remediation of these will be per approved change order.

**\*\*\*See updated Base Bid Summary Form – Attachment #9**

- 22. Can the civil engineer issue a CAD file for the sitework to the general contractors? The CAD file will help the sitework contractors more accurately calculate their earthwork, storm, and utilities quantities for bidding purposes.**

The civil engineering CAD files will not be released at this time.

Once the contract has been awarded, the GC can then request the files and sign and return a digital release form. After the release form has been submitted the CAD files will then be sent to the GC

- 23. Please specify the size and type of storm pipe that leaves the OCS in the Micropool Extended Detention Pond.**

18" HDPE

- 24. Please provide material specifications for the chain link fence and gates (fabric gauge, black vinyl, posts size, etc...).**

**\*\*\*See attached specification Section 02 82 10 Chain Link Fences and Gates – Attachment #1**

- 25. Please specify the number of shelves, the height of shelves, and the material spec of the shelves at Pantries 115, 116, and 117.**

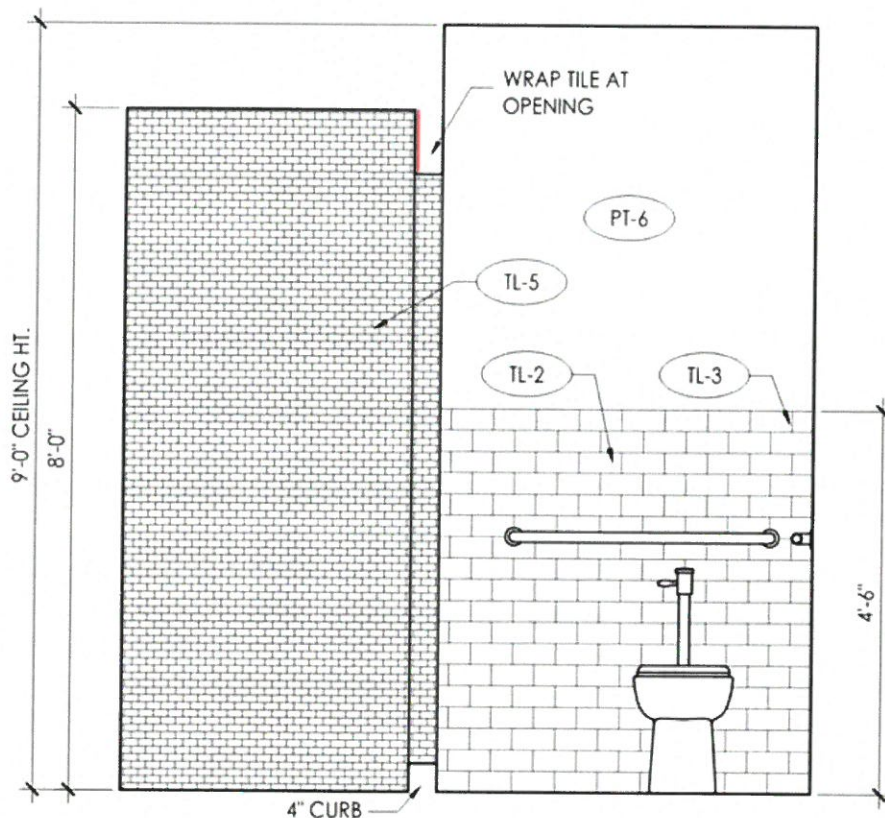
See section 06 20 00 2.4 SHELVING AND CLOTHES RODS for type of shelving required in pantries. 18" between each shelf. Lowest shelf at 2'-7" AFF.

- 26. Please specify the glazing requirements and the finish specifications for the Four Fold bay doors.**

**\*\*\*See specifications attached for Door engineering – Attachment #2**



27. Please provide specifications for the Overhead Roll-Up Doors to be priced in Alternate #1.  
**\*\*\* See specifications attached – Attachment #3**
28. Please provide specifications for the “CONC – Concrete Cleaned & Sealed” that is called out on the Material Legend on A702.  
**\*\*\* See specifications attached – Attachment #5**
29. Will a resinous flooring be required for the Apparatus Bays? If so, please provide specifications.  
 No. See A702 Finish Plan
30. The elevations on A708 call for the tile to wrap into shower area. Please clarify which tile should wrap and to what extent it should continue into the shower? Should that 9 inches of wrapping tile continue all the way to the back wall which is full height mosaic? Should it also continue onto the ceiling or be mimicked on the other wing wall of the shower?



TL-5 will wrap the inside of the opening. The entire interior of the shower walls will be TL-5 as shown. The ceiling is a moisture mold resistant GWB (see RCP). Interiors show an 8'-0" ceiling at showers, RCP shows 9'-0". Please price tile for 9'-0" ceilings within shower enclosure.

31. Please confirm that a flag pole is required for both Fire Stations, and if so please provide a specification for the flag poles.  
 Yes. **\*\*\* See attached specification – Attachment #6**

32. Please specify a size for the Skimmer in the detention pond.

Calculate Skimmer Size				
Basin Volume in Cubic Feet	8,236	Cu.Ft	Skimmer Size	2.0 Inch
Days to Drain*	3	Days	Orifice Radius	0.9 Inch[es]
			Orifice Diameter	1.8 Inch[es]
<small>*In NC assume 3 days to drain</small>				

Estimate Volume of Basin				
	Length	Width		
Top of water surface in feet			Feet	
Bottom dimensions in feet			Feet	
Depth in feet			Feet	
			VOLUME	0 Cu. Ft.

33. The Water Vault shown on the Fire Station #2 Utility sheet C5 shows a Domestic line coming straight out of the Water Vault, but the detail given on the Water System Details sheet c13 does not show the domestic line, meter or BFP. Please specify what items are required at the Water Vault.

The domestic meter will come off before the fire meter. It is not in the vault.

34. Will the General Contractor be responsible for the costs of NPDES monitoring for Fire Station #4?

See SUMMARY 01 10 00 E 2.j. and G.p.

“Contractor will be responsible for NPDES monitoring for the duration of the project.”

35. Fire Station #2 A101 Floor Plan shows a Washer and Dryer in Room 141, but they are not shown on page A402 with the Equipment Legend. Are the Washer and Dryer in Room 141 the same spec as the Washer and Dryer in Room 119?

All equipment shown in Fire Riser Room 141 will not be installed during construction, these are future fixtures. All necessary stub-outs for plumbing and electrical will be installed per locations shown in plan.

36. Fire Station #4 A101 Floor Plan shows: Continental Girbau Extractor, Circul Air Hose Drying Cabinet, Schulz 80 GAL Vertical Comp, 4 Bank Storage, and Hushair Connect 7500 20HP Compressor. We have specs for the Hushair Connect 7500 20HP Compressor and for the Continental Girbau Extractor, but we do not have specs for the Circul Air Hose Drying Cabinet, Schulz 80 GAL Vertical Comp, 4 Bank Storage. Are these items in the General Contractor’s scope of work? If so, please provide specifications for these items.

**\*\*\*See attached information for the Circul Air Hose Drying Cabinet for Station #4 – Attachment #7**

The existing compressor will be moved from existing Station 4 to the new station on McElroy Road. Contractors will NOT need to purchase a new compressor but will have to install the old compressor at the new location. Fayette County will move the compressor. The contractor will be responsible for the electrical connection. – Air compressor (Schulz 80 GAL Vertical Compressor is no longer needed) **See Attachment #8**



**37. Please confirm that the owner is paying for the special inspections.**

The county will be responsible for testing costs but the general contractor with coordinate testing.

**38. Please confirm that the grids are between the glass.**

Yes.

**39. Sections 2656000, 2641000, 265119 are to be omitted from the specification and the information on the electrical drawings supersede in any electrical conflicts.**

Received by (Name): \_\_\_\_\_ Company \_\_\_\_\_

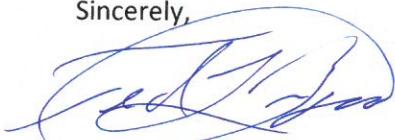
Note: If this addendum is not returned to the Fayette County Purchasing Department or if it is returned not signed, responding individuals, companies or other organizations will still be responsible for the requirements of this addendum and the specifications or changes herein.

The opening date for this ITB has not changed. **The opening time and date are Thursday, February 7, 2019 at 3pm.** Bids must be received by the Purchasing Department at the address above, Suite 204, at or before the opening date and time.

The deadline for inquiries has passed, so the Purchasing Department will not be able to accept any additional questions after this time.

If you have questions, please contact Natasha Duggan, Contract Administrator at (770) 305-5150 fax (770) 719-5534 or email at [nduggan@fayettecountyga.gov](mailto:nduggan@fayettecountyga.gov).

Sincerely,



Ted L. Burgess  
Director of Purchasing

**SECTION 028210 - CHAIN-LINK FENCES AND GATES**

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 FENCE COMPONENTS

- A. Fabric: Metallic-coated steel, 2-inch (50-mm) mesh, 0.148-inch- (3.76-mm) diameter wire.
  - 1. Selvage: Knuckled on both selvages.
- B. Posts and Rails: 4" diameter Galvanized-steel pipe complying with ASTM F 1043 requirements for heavy industrial fence.
- C. Tension Wire: Metallic-coated steel, ASTM A 817 and ASTM A 824.
- D. Fittings and Accessories: ASTM F 626 and as follows:
  - 1. Post and Line Caps: Provide weathertight cap for each post. Provide line post caps with loop to receive tension wire or top rail.
  - 2. Post Brace Assembly: Same material as top rail with 3/8-inch- (9.5-mm-) diameter rod and adjustable tightener.
  - 3. Bottom and Center Rail: Same material as top rail with cap on each end.
- E. Gate Posts, Swing Gates, and Accessories: ASTM F 900, same metal and finish as posts and rails, with galvanized hardware and accessories.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install fence to comply with ASTM F 567.
- B. Excavation: Drill post holes 8 inches (200 mm) in diameter and 40 inches (1.02 m) in depth, equally spaced, but not more than 10 feet (3.05 m) apart.
- C. Setting Posts: Set posts in holes approximately 4 inches (102 mm) above bottom of excavation. Align posts vertically and align tops. Pour concrete footings with tops 2 inches (50.8 mm) below grade.

**END OF SECTION 02 82 10**





**SECTION 08 35 00 – FOLDING DOORS AND GRILLES**

**F-SERIES: FF300 SPECIFICATIONS**  
**Four-Fold Door Systems**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes Four-Fold metal doors with surface mounted tube frames.
- B. Operation of Four-Fold metal doors includes overhead mounted electro-mechanical operators.

**1.3 SUBMITTALS**

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of product specified consisting of manufacturer's technical Product Data and installation instructions for each type of door required, including data substantiating that products comply with requirements.
- C. Submittal Drawings showing fabrication and installation of Four-Fold metal doors including plans, elevations, sections, details of components, hardware, operating mechanism, and attachments to the other units of Work. Include wiring diagrams for coordination with electrical trade.
- D. Reference list including (5) successful installations of this type of door within the past two (2) years.

**1.4 QUALITY ASSURANCE**

- A. Doors shall be designed to withstand external or internal horizontal wind loads of **(25)** pounds minimum per square foot. The maximum allowable deflection shall not exceed 1/120 of the span. Fiber stresses in main members shall be limited to 27,000 pounds per square inch. Steel frames shall be designed in accordance with the AISC "Steel Construction Manual".

- B. Door manufacturer shall have at least 10 years experience in manufacturing door type specified.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Store delivered materials and equipment in dry locations with adequate ventilation, free from dust and water, and so as to permit access for inspection and handling.
- B. Handle materials carefully to prevent damage.

#### 1.6 WARRANTY

- A. The door manufacturer shall provide a written standard limited warranty for material and workmanship.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Four-Fold industrial metal doors manufactured by Door Engineering and Manufacturing, 400 Cherry Street, Kasota, MN 56050, (800)-959-1352 or equal products by other manufacturers approved in advance.

##### **FF300 Series: Glazed**

#### 2.2 MATERIALS

- A. Steel Tube: ASTM A513 and ASTM A500/A500M
- B. Steel Sheets: Steel sheets of commercial quality, complying with ASTM A1011/A1011M hot-rolled steel sheet.
- C. Hardware: Manufacturer's standard components.
- D. Fasteners: Zinc-coated steel.

#### 2.3 FOUR-FOLD DOORS

- A. Construction: Door framing shall be minimum 11-gauge structural steel tube with 14-gauge steel sheet on the exterior and interior faces. Sheeting shall be formed on the vertical edges with no visible welds on the interior or exterior panel faces. All frames and framing members shall be true to dimension and square in all directions, and no door shall be bowed, warped, or out of line, in the vertical or horizontal plane of the door opening by more than 1/8 inch in 20 feet. Exposed welds and welds which interfere with the installation of various parts shall be ground smooth and flush.
- B. Surface Mounted Tube Frame: Supply pre-hung tube frame system constructed of minimum TS6x4x0.25, designed to anchor to masonry wall construction or



weld to steel structure. All hinges, track supports and operator supports shall be factory attached. (See structural drawings for information).

- C. Factory finish: Door Panels and Tube Frames shall be finished with manufacturer's standard PPG Spectracron epoxy primer and polyurethane top coat. Customer to select from Manufacturer's standard color chart or furnish sample to match.
  - 1. Operator and operating hardware shall be powder-coated manufacturer's standard gray.
- D. Hardware: Hardware shall include guide tracks and brackets, trolleys, center guides, not less than three pairs of jamb and fold hinges per opening, and all bolts, nuts, fasteners, etc. necessary for complete installation and operation.
  - 1. All hardware, including hinges and trolleys, shall be bolted to the panel for easy removal for service or panel replacement.
  - 2. Doors up to 16' wide and under 30psf windload shall require no floor mounted supports, guides or tracks.
  - 3. Top tracks shall be adjustable on the end track hangers to allow for adjustment of the door panels in the open position and easily replaceable without removal of the door framing or operators.
- E. Hinges: Jamb hinges shall be dual shear and have two thrust bearings and two needle bearings. Fold hinges shall be stainless steel and be dual shear with two thrust bearings. All bearings shall be completely concealed within the hinge barrel and include grease zerks. All hinge pins shall be minimum 3/4" diameter hardened steel.
- F. Hinge Guards: Provide plastic guards at jamb hinges to prevent access through hinge space.
- G. Weatherstripping: Material shall be adjustable and readily replaceable and provide a substantially weather-tight installation. Weatherstripping at center shall be 1/16" cloth inserted neoprene and include no exposed fasteners on the exterior face of the panel. Weatherstripping at sill shall include two 1/16" cloth inserted neoprene sweeps with an aluminum retainer. The retainer shall be attached to the door with adhesive.
- H. Perimeter Weatherstripping: Provide jamb and head weatherstripping of 1/16" cloth-inserted neoprene bulb (or closed cell neoprene).
- I. Vision Panels: Provide 1" insulated, tempered, vision panels of the size, shape and location as noted on the drawings.

#### 2.4 OPERATOR

- A. Each Four-Fold door shall be operated by an overhead mounted electro-mechanical drive unit designed for high cycle operation. Operator consists of an electric motor, gear reducer, and rotating drive arm. The door shall be operated with connecting rods attached to the rotating drive arm on the operator and to

control arms attached to the jamb door section and to the door lintel. The connecting rods shall be positive drive, keeping the door under firm control at all times. The connecting rods shall be fitted with spherical bearings and control arms shall be equipped with oil impregnated bronze bearings on polished shafts.

- B. Operator shall be instantly reversible, open and close rapidly and start and stop gradually. Operator shall be adjustable to allow door to fully clear the opening. Operator shall automatically lock the door in the closed position. Operator shall be equipped with disengaging mechanism to convert to manual operation.
- C. Electric motor shall be of sufficient size to operate doors under normal operating conditions at no more than 75 percent of rated capacity. The motor shall be wound for three phase 208/230/480 VAC, 60 Hertz operation.
- D. Electric Controls: Controls shall be furnished by the door manufacturer and shall be complete for each door, and built in accordance with the latest NEMA standards. **Incoming electrical shall be (Choose One): 208/230VAC 3-phase per electrical drawings.**
  - 1. Control panel assemblies shall be UL listed as per NFPA70.
  - 2. Controls shall include a programmable logic controller with digital message display or LED indicators. Controller shall include programmable close timers and programmable inputs/outputs.
  - 3. Controls shall include a variable frequency drive with independent adjustment of the opening and closing speeds.
  - 4. Enclosures shall be NEMA 4 with disconnect switch.
  - 5. Pushbuttons (interior) for each door shall have one (1) momentary pressure three-button push-button station marked "OPEN", "CLOSE" and "STOP". Push button enclosure shall be NEMA 4.
  - 6. Limit switches shall be provided to stop the travel of the door in its fully open or fully closed position.
  - 7. Safety edges: Provide 4-wire fail-safe electric safety edges on leading edge of all doors to reverse door upon contact with obstruction.
  - 8. Photo eyes: Provide (1) exterior, jamb mounted, light Curtain type photo eyes, NEMA 4 rated. Photo eye shall cover from floor level to 72" above floor.
  - 9. Presence Sensor: Provide (1) interior, overhead mounted, presence sensor with pre-open and pre-close safety fields. Sensor shall be LZR-Widescan or equal.
  - 10. Radio controls: Provide one (1) radio receiver and (1) single button remotes per door. Remotes to open and close doors with single button.



**11. Timer Activation Loop Detectors (fire station applications):**  
Provide "pulse on exit type" loop detector to activate auto close timer once loop has been activated and cleared, include hand/auto switch to deactivate timer. G.C. to coordinate installation of preformed loop with installer prior to exterior apron being poured.

**12. Warning Horn/Strobe: Provide warning light and strobe. Include outputs PLC to allow for activation while door is in motion both opening and closing, along with activation prior to closing. Include programmable "delay-to-close" timer which activates the warning horn for a set time, prior to the door closing.**

13. Wiring: Door manufacturer shall supply controls and components only. Electrical contractor shall install controls and furnish and install conduits and wiring for jobsite power and control wiring.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install Four-Fold metal doors in strict accordance with the approved drawings by qualified door erection crews. All door openings shall be completely prepared by the general contractor prior to the installation of the doors. Permanent or temporary electric wiring shall be brought to the door opening before installation is started and shall be completed so as not to delay the inspection test.
- B. Doors shall be set plumb, level, and square, and with all parts properly fastened and mounted. All moving parts shall be tested and adjusted and left in good operating condition.

#### 3.2 ADJUSTING AND CLEANING

- A. Inspection of the doors and a complete operating test will be made by the installer in the presence of the general contractor or architect as soon as the erection is complete. Any defects noted shall be corrected. After door approval in the above test, the general contractor must assume the responsibility for any damage or rough handling of the doors during construction until the building is turned over to the owner and final inspection is made.
- B. Clean surfaces and repaint abraded or damaged finished surfaces to match factory-applied finish.

END OF SECTION



Arm-R-Lite Door Manufacturing Co., Inc

P: 908-754-2600 • F: 908-754-6522 • E: [info@arm-r-lite.com](mailto:info@arm-r-lite.com) • W: [www.arm-r-lite.com](http://www.arm-r-lite.com)

**SECTION 08 36 13**  
**SECTIONAL GLASS & ALUMINUM OVERHEAD DOORS**  
**Arm-R-Lite: ALUMINUM CARRIAGE HOUSE MODEL**

**SPECIFIER NOTES** should appear in **Blue**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Glazed Aluminum Sectional Overhead Doors.
- B. Electric Operators and Controls.
- C. Operating Hardware, tracks, and support.

1.2 REFERENCES

- A. ANSI/DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors.

1.3 DESIGN / PERFORMANCE REQUIREMENTS

- A. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- D. Operation and Maintenance Data.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum (20) years documented experience.
- B. Installer Qualifications: Authorized representative of the manufacturer with minimum (10) years approved by manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Protect materials from exposure to moisture until ready for installation.
- C. Store materials in a dry, ventilated weathertight location.





## Arm-R-Lite Door Manufacturing Co., Inc

P: 908-754-2600 • F: 908-754-6522 • E: [info@arm-r-lite.com](mailto:info@arm-r-lite.com) • W: [www.arm-r-lite.com](http://www.arm-r-lite.com)

### 1.7 WARRANTY

- A. 20-year welded aluminum frame warranty. (Except on top sections when trolley operated.) Standard one year warranty applies to the rest of the door (track, spring, hardware.)
- A. Finish Warranty:
  - 1. 1-year warranty finish for standard RAL Powdercoat, except on installations within 1 mile of salt water. Color to be determined.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: For purposes of designating type and quality of work under this Section, Drawings and Specifications are based on products manufactured or Furnished by ARM-R-LITE DOOR MANUFACTURING CO. Toll Free: 800-554-5816 P:908-754-2600 ext 4016 Shannon McGrady F: 908-754-6522 email: [smcgrady@arm-r-lite.com](mailto:smcgrady@arm-r-lite.com) W: [www.arm-r-lite.com](http://www.arm-r-lite.com).

#### 2.2 GLAZED ALUMINUM SECTIONAL OVERHEAD DOORS

- A. Glazed Sectional Overhead Doors: ALUMINUM CARRIAGE HOUSE MODEL MODEL by Arm-R-Lite Door Manufacturing Co., Inc. Units shall have the following characteristics:
  - 1. Door Assembly: Stile and rail assembly secured with concealed heli-arch welds. Through rods, bolts, and self-tapping screw construction methods will not be accepted
    - a. Panel Thickness: 1-3/4 inches
    - b. Center Stile Width: 3-3/8 inches
    - c. End Stile Width: 7-1/2 inches
    - d. Meeting Rail Pair Width: 3-3/8 inches wide per pair
    - e. Top Rail Width: 7-1/2 inches
    - f. Bottom Rail Width: 7-1/2 inches
    - g. Aluminum Panels: .050 inch, non-insulated aluminum panels
    - h. Stiles and Rails to be constructed of 4-sided .075 - .085 extruded 6063 - T6 aluminum alloy.
    - i. Carriage House Design Layout:
      - 1) Model ARL-E with middle row of panels to be replaced with glass
    - j. Springs: 100,000 cycles
    - k. Glazing: 7/16 inch insulated glass units
  - 2. Finish and Color:
    - a. Powdercoating Finish: color as selected by architect from manufacturer's standard RAL colors
  - 3. Windload Design: Provide to meet the Design/Performance requirements specified.
  - 4. Hardware: All hinges and fixtures made of 14 gauge galvanized steel. Full floating, ball bearing rollers to have hardened steel races and roller sizes to be adequate for design requirements and limitations. Heavy-duty, fully adjustable roller brackets are attached to each end cap to provide an easy adjustment of the door to the job for proper seal. All hardware is heavy-duty and rust resistant with galvanized fasteners.
    - a. Stainless Steel Corrosion Resistant Package: Stainless steel track, face hardware, and cables for high moisture or corrosive environment.
  - 5. Lock: Interior galvanized single unit.
  - 6. Weatherstripping:
    - a. Flexible bulb-type strip at bottom section.
    - b. Flexible Jamb seals.
    - c. Flexible Header seal.
  - 7. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
  - 8. Manual Operation: chain hoist





**Arm-R-Lite Door Manufacturing Co., Inc**

P: 908-754-2600 • F: 908-754-6522 • E: [info@arm-r-lite.com](mailto:info@arm-r-lite.com) • W: [www.arm-r-lite.com](http://www.arm-r-lite.com)

- 9. Electric Motor Operation: provide electric operator, size and type as recommended by manufacturer.
  - a. Entrapment Protection: Required for momentary contact, includes radio control operation.
  - b. Operator Controls:
    - 1) Push-button operated control stations with open, close, and stop buttons.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

- A. Verify that all openings are ready to receive work and opening dimensions and tolerances are within specified limits.
- B. Beginning of installation means acceptance of existing surfaces.

**3.2 PREPARATION**

- A. Prepare opening to permit correct installation of door unit.

**3.3 INSTALLATION**

- A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions. Framing and opening preparation per submitted shops is the responsibility of the general contractor and not the sectional door installer.
- B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
- C. Anchor assembly to wall construction and building framing without distortion or stress.
- D. Secure tracks to structural members only.
- E. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.
- F. Install perimeter trim and closures

**3.4 TOLERANCES**

- A. Maintain dimensional tolerances and alignment with adjacent work
- B. Maximum variation from plumb: 1/8 inch
- C. Maximum variation from level: 1/8 inch
- D. Longitudinal or diagonal warp: plus or minus 1/8 inch from 10 ft. straight edge

**3.5 CLEANING AND ADJUSTING**

- A. Clean doors, frames and glass.

**3.6 PROTECTION**



**Arm-R-Lite Door Manufacturing Co., Inc**

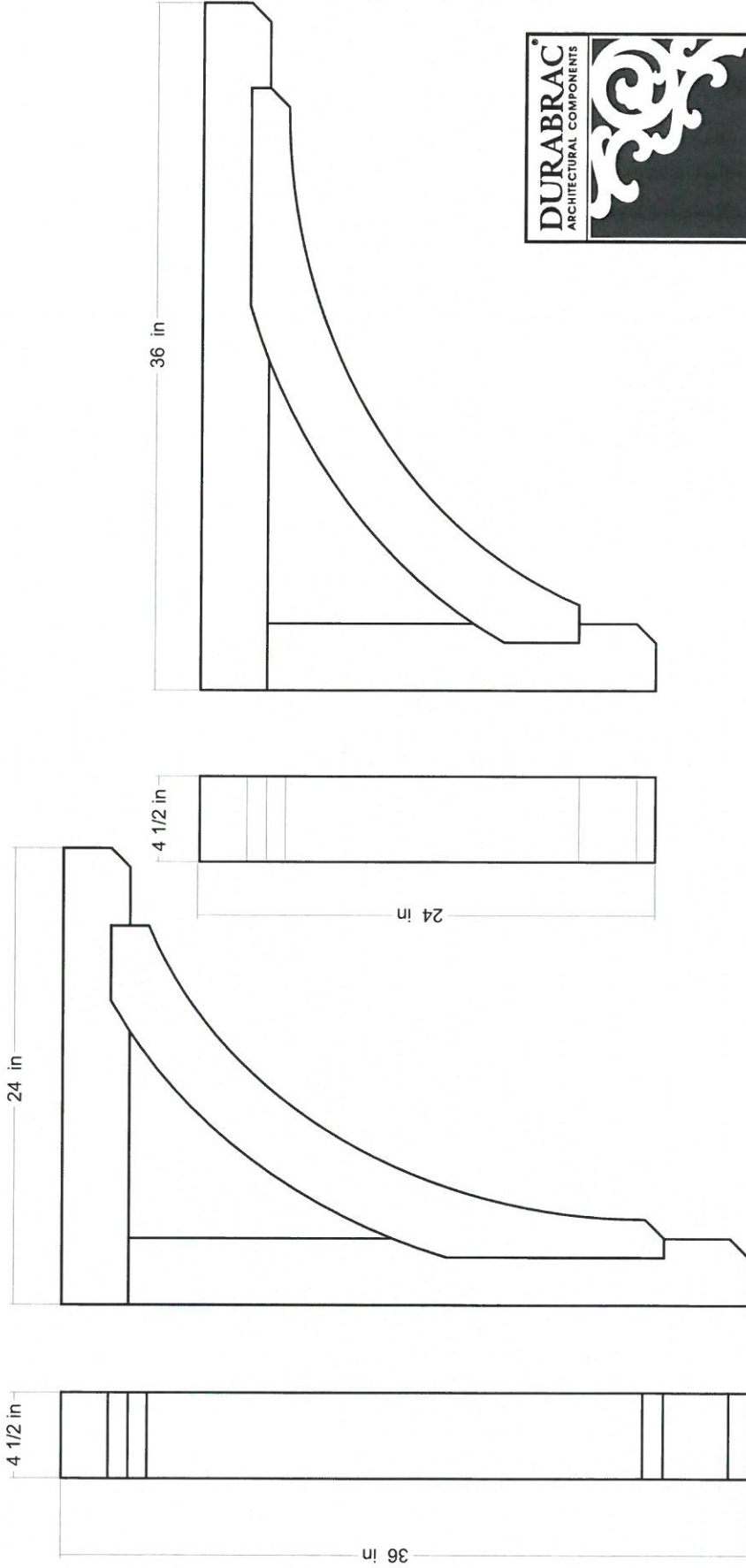
P: 908-754-2600 • F: 908-754-6522 • E: [info@arm-r-lite.com](mailto:info@arm-r-lite.com) • W: [www.arm-r-lite.com](http://www.arm-r-lite.com)

- A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.
- B. Protect installed products until completion of project.
- C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

**END OF SECTION 08 36 13**

# Durabrac® BUILD\_0532

Attachment #4



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Durabrac Architectural Components  
[www.durabrac.com](http://www.durabrac.com)  
850.433.4981

SCALE: 1 = 1

DRAWN BY:

Sheehan

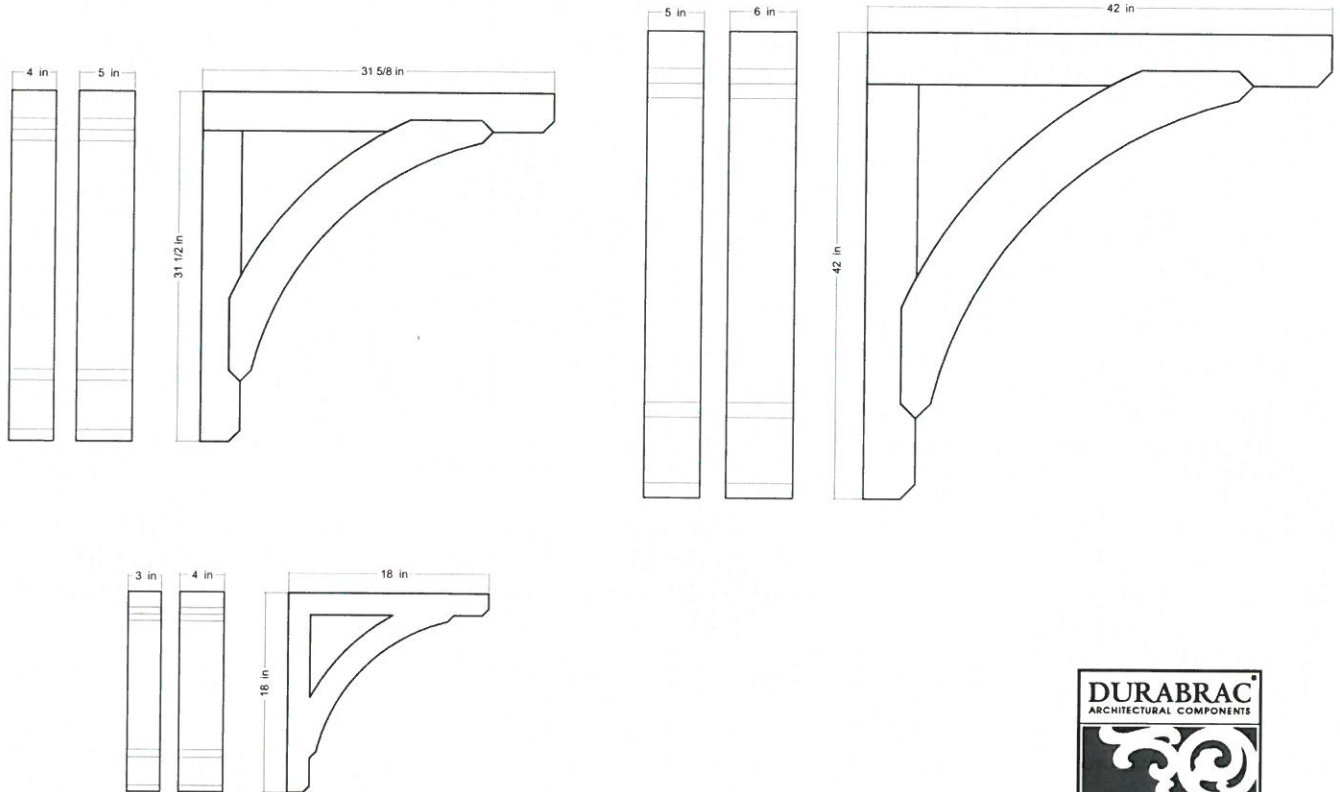
SPECIFY: Specify as Durabrac # BUILD\_0532

PURCHASING:

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# Durabrac BUILD\_0530



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Durabrac Architectural Components

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## SECTION 03 35 00 - POLISHED CONCRETE FINISHING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to Work of this Section.
- B. Section Includes:
  - 1. Integrally colored concrete slabs-on-grade and interior floor slabs.
  - 2. Curing of integrally colored concrete.
- C. Related Sections:
  - 1. Division 3 Section "Cast-In-Place Concrete" for general applications of concrete and coordination of sample submittal.
  - 2. Division 7 Section "Joint Sealants".

#### 1.2 SUBMITTALS

- A. P Product Data: Submit manufacturer's complete technical data sheets for the following:
  - 1. Colored admixture.
  - 2. Curing compound.
- B. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.
- C. Polished concrete samples for each Polished Concrete finish required.

#### 1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with 10-years of experience in the production of specified products.
- B. Installer Qualifications: An installer with 5 years of experience with work of similar scope and quality.
- C. Comply with the requirements of ACI 301.

- D. Obtain each specified material from same source and maintain high degree of consistency in workmanship throughout Project.
- E. Notification of manufacturer's authorized representative shall be given at least 1-week before start of Work.
- F. Environmental Limitations:
  - 1. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation and other conditions affecting chemical performance.
  - 2. Flatness and levelness
    - a. Finish concrete shall have a minimum Floor Flatness rating of at least 50.
    - b. Finish concrete shall have a minimum Floor Levelness rating of at least 30.
    - c. Finish concrete shall be cured a minimum of 28 days or at which point equipment can be put on the slab and does not displace aggregate.
  - 3. Application of finish system shall take place a minimum of 21 days prior to fixture and trim installation and/or substantial completion.
  - 4. Finish concrete area shall be closed to traffic during finish floor application and after application for the time as recommended by the manufacturer.

#### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Colored Admixture: Comply with manufacturer's instructions. Deliver colored admixtures in original, unopened packaging. Store in dry conditions.

#### 1.5 PROJECT CONDITIONS

- A. Integrally Colored Concrete Environmental Requirements:
  - 1. Schedule placement to minimize exposure to wind and hot sun before curing materials are applied.
  - 2. Avoid placing concrete if rain, snow, or frost is forecast within 24-hours. Protect fresh concrete from moisture and freezing.
  - 3. Comply with professional practices described in ACI 305R and ACI 306R.
- B. Schedule delivery of concrete to provide consistent mix times from batching until discharge. Mix times shall meet manufacturer's written recommendations.

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURER

- A. L.M. SCOFIELD COMPANY, Douglasville, Georgia and Los Angeles, California (800) 800-9900 or the appropriate local contact: Eastern Division – 201-672-9050; Western Division – 323-720-3055; Central Division Office – 630-377-5959.

### 2.2 MATERIALS

- A. Colored Admixture for Integrally Colored Concrete: CHROMIX P® Admixture and CHROMIX ML®; L.M. SCOFIELD COMPANY.

1. Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are limeproof and ultra-violet resistant.

2. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194.

- B. Curing Compound for Integrally Colored Concrete: Curing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.

1. Interior Integrally Colored Concrete: COLORCURE® (Pigmented) or CEMENTONE® (Clear); L.M. Scofield company. Use to cure interior flatwork that will receive regular maintenance.

- C. SUBSTITUTIONS

1. The use of products other than those specified will be considered per the Bidder Substitution Terms and Conditions stated in the Invitation to Bid.

### 2.3 COLORS

- A. Concrete Color:
1. Cement: Color shall be gray.
  2. Sand: Color shall be locally available natural sand.
  3. Aggregate: Concrete producer's standard aggregate complying with specifications
  4. Colored Admixture: As selected by Architect from Scofield Color Chart A-312.

### 2.4 CONCRETE MIX DESIGN

- A. Concrete Color: Minimum Cement Content: 5 sacks per cubic yard of concrete.



- B. Slump of concrete shall be consistent throughout Project at 4-inches or less. At no time shall slump exceed 5-inches. If super plasticizers or mid-range water reducers are allowed, slump shall not exceed 8-inches.
- C. Do not add calcium chloride to mix as it causes mottling and surface discoloration.
- D. Supplemental admixtures shall not be used unless approved by manufacturer.
- E. Do not add water to the mix in the field.
- F. Add colored admixture to concrete mix according to manufacturer's written instructions.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install concrete according to requirements of Division 3 Section "Cast-In-Place Concrete."
- B. Do not add water to concrete mix in the field.
- C. Surfaces shall be finished uniformly with the following finish
  - 1. Ground and Polished Concrete Surface: Precautions should be taken to insure the surface is in tolerances to perform this function.

#### 3.2 POLISHED CONCRETE APPLICATION

- A. Applicator shall examine the areas and conditions under which work of this section will be provided and the General Contractor shall correct conditions detrimental to the timely and proper completion of the work and the Applicator shall not proceed until unsatisfactory conditions are resolved
- B. Grind the concrete floor to within 2 – 3 inches of walls with 16, 25, 40, 60, 80 and/or 150 grit removing construction debris, floor slab imperfections and until there is a uniform scratch pattern and desired concrete aggregate exposure.
- C. Apply material approved by architect for color effects in accordance with the architectural drawings and the manufacturer's recommended guidelines.
- D. Fill construction joints and cracks with filler products as specified in accordance with manufacturer's instructions colored to match (or contrast) with concrete color as specified by architect
- E. Apply densifying impregnator undiluted at approximately 200 square feet per gallon using a stiff, long bristled broom. Cover the entire area liberally. Using a broom, work the densifier into the substrate for 30 minutes. During this 30-minute period,

continually keep the substrate wet with densifier. Squeegee excess material off the floor. Allow 12 to 24 hours for full cure.

- F. Grind the floor to within 2 – 3 inches of walls with metal bonded diamond grits of 150 and 300—grinding 90 degrees from each previous grind and removing all the scratches from the previous grit. Vacuum the floor thoroughly after each grind using a squeegee vacuum attachment.
- G. (If specified) Grind the edges with 40, 60, 120 and 220 grit grinding pads removing all of the scratches from the previous grit. Vacuum the floor thoroughly after each grind using a squeegee vacuum attachment.
- H. Polish the floor, to desired sheen level, with phenolic resin bonded diamond grits of 100, 400, 800, 1500 and 3000—first polishing the edges (if specified) with pads of the same grit and then the field of the floor removing all scratches from the previous grit. After each polish, clean the floor thoroughly using clean water and an auto scrubber or a mop and a wet vacuum.
- I. After the floor has dried, apply densifier at a rate of 300 square feet per gallon. Using a broom, work the material into the floor for a minimum of 10 minutes. Tight squeegee the remaining material from the floor without leaving squeegee marks or puddles. Allow to cure for 12 – 24 hours.
- J. Using a high speed (2000 – 3000 rpm) burnishing machine and hogs hair burnishing pad, buff the surface to a high shine.
- K. Upon completion, the work shall be ready for final inspection and acceptance by the customer.

### 3.3 CURING

- A. Integrally Colored Concrete: Apply [curing] [curing and sealing] compound for integrally colored concrete according to manufacturer's instructions using manufacturer's recommended application techniques. Apply curing and sealing compound at consistent time for each pour to maintain close color consistency.
- B. Curing compound shall be same color as the colored concrete and supplied by same manufacturer of the colored admixture.
- C. Precautions shall be taken in hot weather to prevent plastic cracking resulting from excessively rapid drying at surface as described in CIP 5 *Plastic Shrinkage Cracking* published by the National Ready Mixed Concrete Association.
- D. Do not cover concrete with plastic sheeting.

### 3.4 TOLERANCES

- A. Minor variations in appearance of integrally colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

### 3.5 CLEANING

- A. The work area shall be kept clean and free of debris at all times.
- B. Remove slurry and dust from adjoining surfaces as necessary.
- C. Dispose of material containers in accordance with local regulations.
- D. Protect finished work until fully cured per manufacturer's recommendations.

### 1. FLOOR PROTECTION

- a. The General Contractor is responsible for using Temporary Floor Protection throughout the project to safeguard the surface quality of concrete slabs before and after application of decorative finishes or installations of other materials.
- b. All concrete floors that will be not be covered by other materials will be protected throughout the project. The concrete slab must be treated as a finished floor at all times during construction.
- c. Temporary Floor Protection will be removed only while finish work to the concrete is being performed and will be replaced after the final finish has cured sufficiently.
- d. Temporary Floor Protection will be Proguard Duracover as manufactured by L. M. Scofield Company, Douglasville, GA (800-800-9900). Seaming of the temporary floor protection will be performed with Scofield Proguard Heavy Duty Seaming Tape. Both products will be installed following the manufacturer's published installation procedures.
- e. DO NOT APPLY THE HEAVY DUTY SEAMING TAPE TO BARE OR FINISHED FLOORS OR WALL SURFACES AT ANY TIME. IT WILL PERMANENTLY DAMAGE THE FLOOR

No substitutions will be allowed

### 3.6 APPLICATORS

- A. For a list of qualified contractors, contact your local Scofield representative or the appropriate Division Office: Eastern Division – 201-672-9050; Western Division – 323-720-3055; Central Division Office – 630-377-5959.



PART 4 - SCHEDULES

4.1 CUT AND SHINE LEVELS

- A. Cut Level (Depth of cut)
  - 1. Grade 1 – cream finish
- B. Shine Level
  - 1. Class 2 – 800 grit polish
- C. Polished concrete finish coat
  - 1. At a distance of 100 feet, the floor will reflect images from side lighting.
  - 2. Apply two applications of SCOFIELD® Finish Coat.

**END OF SECTION 03 35 00**

Attachment #6  
Model ECA30 - ESR30C61



6" - 14 gauge spun aluminum ball  
gold anodized

Single sheave truck, cast aluminum  
revolving, non-fouling type

2 Bronze swivel snaps with covers  
per halyard

1 Set of halyard: #10 poly

1 - 9" Cast aluminum cleat

Aluminum flash collar

3000 PSI concrete

Hardwood wedges  
(supplied by others)

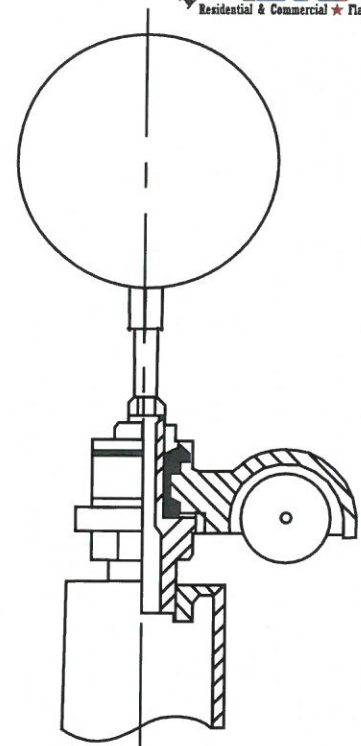
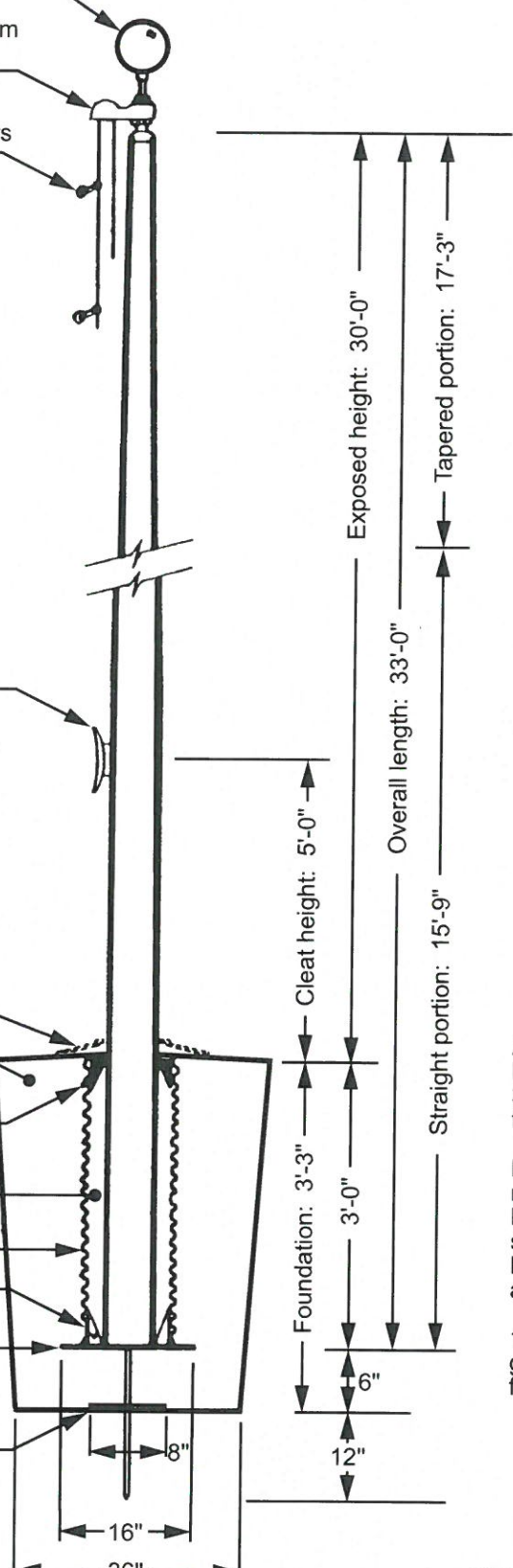
Dry sand tightly tamped  
after aligning pole

Foundation sleeve -16 ga  
hot dip galvanized steel

Steel centering wedges

1/4" Steel base plate

1/4" Steel support plate  
welded to grounding spike



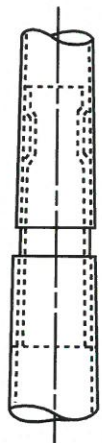
Truck Detail

Aluminum body  
Stainless steel ball bearings  
Aluminum sheave  
Cast aluminum spindle

All shafts with overall  
length of more than  
38'-6" are shipped in  
two sections.

Each section matched  
marked for field assembly.  
Exposed portion of jam  
sleeve must be **well  
lubricated** prior to  
assembly.

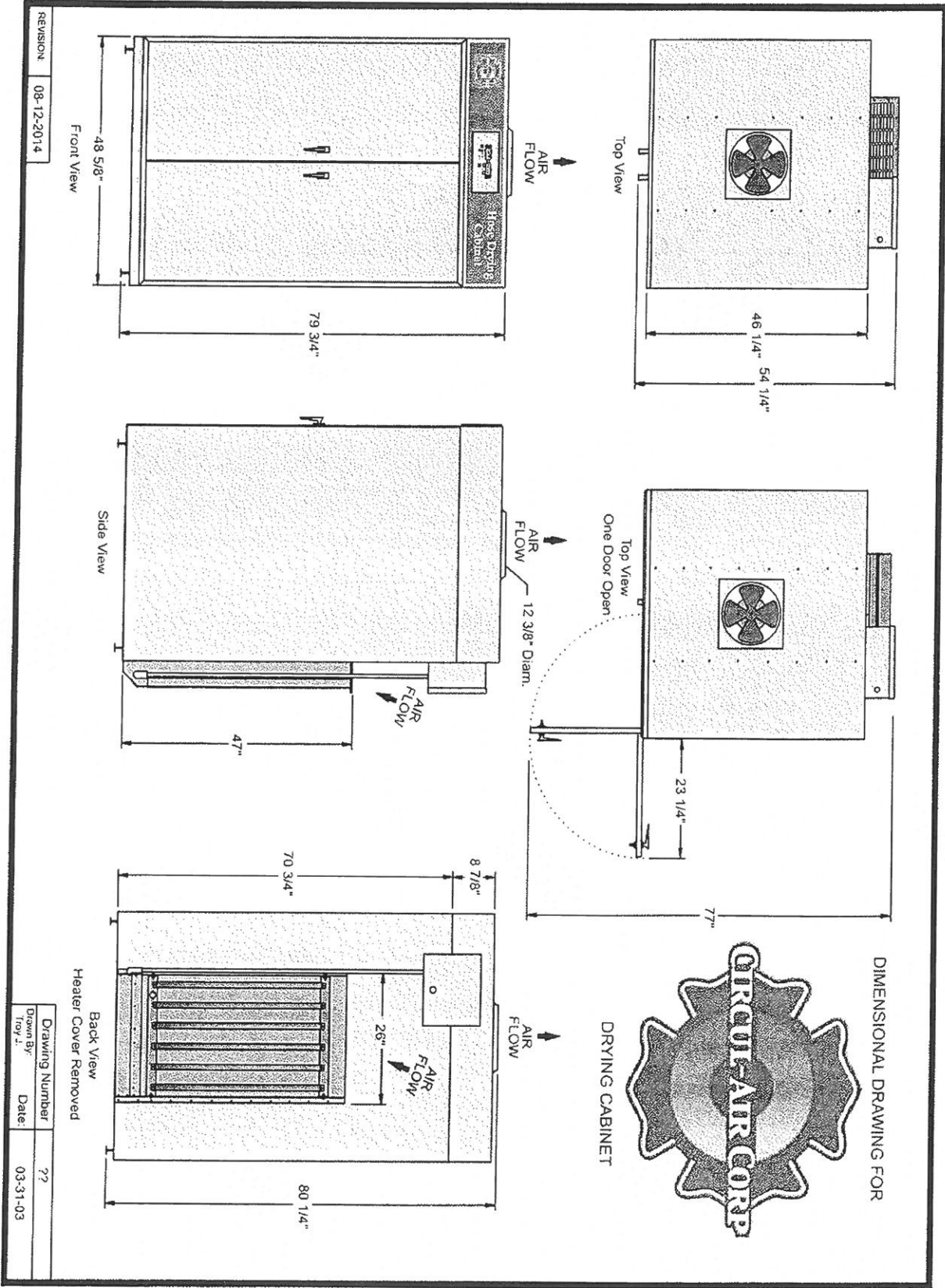
1-1/2" maximum shop  
gap allowed for field  
fitting (ram for tight joint)



Filename: ECA30 stationary\_single sheave\_truck.ai

Project:	Ground set tapered aluminum flagpole: ALLOY: 6063T6	FLAGPOLES ETC	Date:
Location:	Exposed height: 30'-0"	Overall height: 33'-0"	Revision:
Architect:	Ships in 1 or 2 sections	Butt diameter: 6"	
Contractor:	Top diameter: 3-1/2"	Wall thickness: .156"	
Customer:	Finish: 100 grit polish	(888) 735-5591	Job:

# Circul Air Corporation



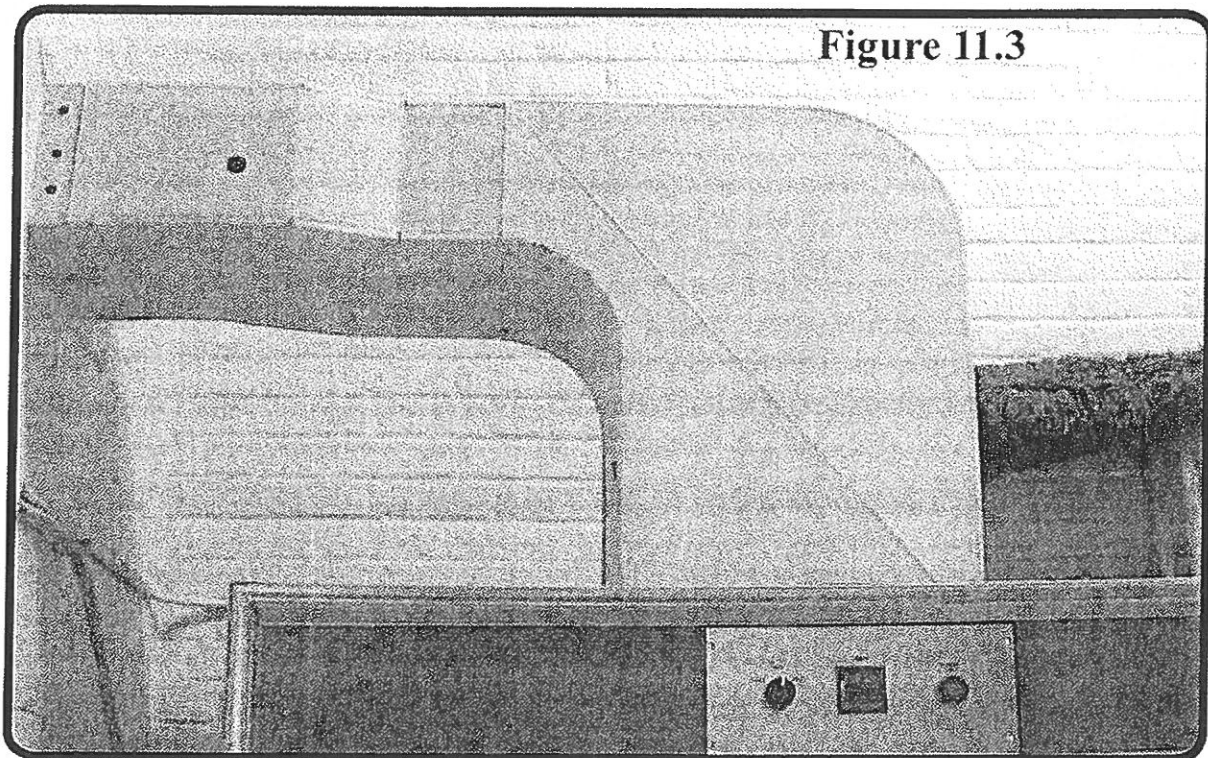
# Circul Air Corporation

## TEMPERATURE RISE

Temperature elevation within cabinets in the drying period is moderate due to cooling effect of wet hose or wet clothing on the pre-heated air. Average rise during the cycle is only about 10° F to 15° F; maximum about 25° over ambient (room) temperature. The high rate of air changes (5 to 6 a minute) with controlled heat input provides an ideal drying rate. Keep doors closed while hose is drying.

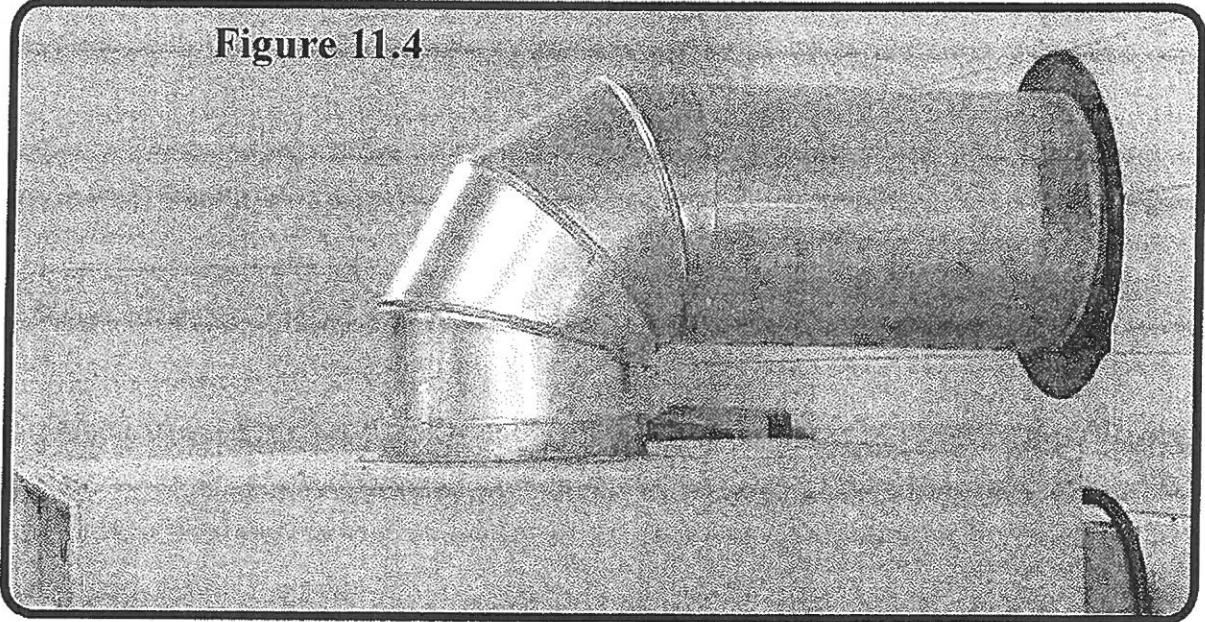
## VENTILATION

1. Unless the moist air leaving the dryer is exhausted from the room it will increase the ambient relative humidity. Thus, the wet air around the hose dryer is re-circulated and the drying rate retarded. We recommend installation of a duct from the top of the hose dryer to the exterior of your building. **Remember . . . you can't dry hose or fire clothing with wet air . . . get it out of the room and out of the building.**
2. Adequate ventilation **MUST** be provided for all Circul-Air Hose Dryer Installations - It is as essential for Circul-Air Hose Dryers as it is for any domestic or commercial clothes dryer, and even more so. The moisture laden air from the dryer must be expelled from the room and building to prevent its re-circulation into the back of the hose dryer or to create condensation, and to assure optimum drying time. It is as important to good performance as is the loosening of the hose coils when placing them into the hose dryer to avoid contact between wet jackets.
3. The drying process is, accelerated evaporation. The hose dryer speeds the process by its programmed balance between temperature rise and the rate of air changes (approximately 6 times per minute). Proper ventilation does the rest.
4. The exhaust orifice at the top center of the hose dryer is round (12 3/8" in diameter). **Never:** apply screws directly into the blow-





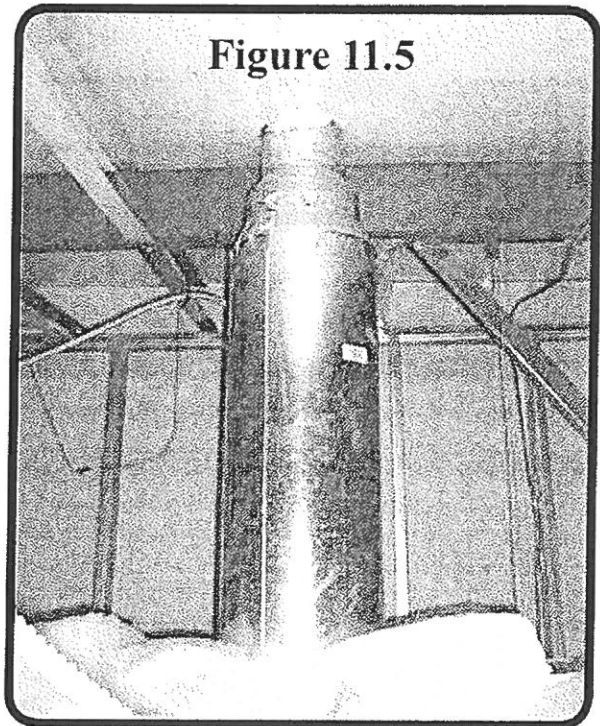
**Figure 11.4**



er exhaust orifice, because the penetration of the screws may hit or stop the fan blades from turning causing the fuse to blow when hose dryer is operating. We Recommend a 14" round duct be used. If a rectangular, square or larger round duct is preferred, an adapter can be attached to the top of the hose dryer to fit the desired size and shape of the duct. Our lab tests have shown that when such rectangular ducts are employed they should not have less than 8" x 16" of final free airflow from the building in order to provide satisfactory airflow. For an example of a the square venting duct for your hose dryer see **Figure 11.3.** (on the previous page) For an example of a 14" round duct with a flange installed onto the hose dryer top see **Figure 11.4.**

dryer against an exterior wall. This involves only a short duct with a 90° elbow and a self-closing louvered shutter. **AVOID long ducts whenever possible;** long vertical or horizontal stacks require booster or roof vent fans at points of discharge to balance the airflow of approximately 900 CFM per Hose Dryer.

**Figure 11.5**



5. Figure 11.5 shows how not to vent you Circul-Air Hose Dryer. as you can see in this photo they have reduced the size of the duct work twice and in doing so they has change the performance of the hose dryer and increase the drying time exponentially. Avoid this at times.
6. The ideal hose dryer installation - simple and very efficient - is to locate the hose

# Circul Air Corporation

7. Where two or more hose dryers are vented through a common duct, the roof fan should be controlled by a variable speed switch (2 or 3 speed) to limit the airflow when only one hose dryer is in use.
- 3 **Relative humidity** in the room where the hose dryer is installed.
- 4 **Loosening of hose coils** to permit free circulation of fresh air between jacket coils. (See Photo 12.1.4)

## HUMIDITY:

In certain areas where the relative humidity is constantly high, use of **de-humidifiers in the drying room is recommended**. They need not be connected to the hose dryers, as any reduction in the moisture content of the air prior to its introduction into the hose dryer will benefit its performance. In SPECIAL HOSE ROOMS, where hose is washed, dried and stored, we definitely recommend that humidity control equipment be installed.

## SERVICE AND OPERATING SUGGESTIONS FOR CIRCUL-AIR DRYING CABINET

Efficient operation of your Circul-Air Hose Drying Cabinet depends upon a good installation and proper usage. We suggest you read carefully the plate mounted on the inside of the left-hand door of your hose dryer. Make sure it is operated at proper voltage and on the proper phase service (single phase or three phase).

**Several factors** affect the drying rate and we list them here. All are important and within your control:

- 1 **Proper ventilation** to exhaust the moisture laden air from the room after it leaves the hose dryer.
- 2 **Adequate thermal rise** within the hose dryer.

- 5 **Leveling the hose dryer** to prevent any air leaks around doors resulting from torsion.

## VENTILATION:

Unless the moist air leaving the hose dryer is exhausted from the room it will, in turn, increase the ambient relative humidity in the room. Thus, the wet humid air around the hose dryer is then reintroduced into the hose dryer and the drying rate is retarded. Thus, we recommend either a duct from the top of the hose dryer to the exterior of your building or, at least, a vent fan in the wall, ceiling or roof above it. A duct is recommended unless there is absolutely no way it can be done. If the duct goes through the roof or the venting through a wall is a distance of 10 feet or greater from the hose dryer or the use of multiple bends in the ducting it is recommended that a booster fan be installed at the point of exit from the building to offset the pressure loss.

## THERMAL RISE:

High temperatures are neither required nor desirable, and cannot, in fact, be generated in the hose dryer. A mild temperature rise is necessary for a reasonably fast drying rate. The heater output is engineered to give a 10 to 25 degree rise when the hose dryer cabinet is empty. The wet hose lowers this temperature at the beginning of the drying cycle. The drying rate is fastest when room (ambient) temperature is moderate and relative humidity is low. Hose dryers function slowly in unheated or poorly heated buildings and in areas of high humidity.





# 3M™ Scott™ HushAir Connect 7500 & RevolveAir Connect

Attachment #8

## How to order a compressor system

Step 1		HP	Power Options	P/N
Choose your compressor		10	208v/3ph/60Hz	8004557
		10	230v/3ph/60Hz	8004854
		10	208v/1ph/60Hz	8004856
		10	230v/1ph/60Hz	8004858
		10	460v/3ph/60Hz	8004864
		20	208v/3ph/60Hz	8004553
		20	230v/3ph/60Hz	8004876
		20	460v/3ph/60Hz	8004882
Step 2		*PressureOptions	RFID	P/N
Choose your charge station		Dual-Pressure	RFID	8004442
		Dual-Pressure	Non-RFID	8004891
		Multi-Pressure	RFID	8004440
		Multi-Pressure	Non-RFID	8004894
Step 3		Storage Options	P/N	
Choose your storage		4 Bank ASME storage	8004260	
		3 Bank ASME storage	8004886	
		2 Bank ASME storage	8004888	

\*When selecting the charge station part number above, please specify the desired preset pressures, i.e. 2216psi, 3000psi, 4500psi, or 5500psi. For clarification, dual-pressure can be configured with any two of the aforementioned pressures and multi-pressure can be configured with any three of the aforementioned pressures.

NOTE: For ordering purpose, you must select a compressor, charge station, and storage option. Individual components are not available. Smart Fill auto-cascade is standard on all charge stations.





## How to properly spec a compressor system

### Customer Statistics

Does the customer currently have a compressor or cascade system?

#### Compressor

- What is the horsepower? (Example: 7.5 hp, 10 hp, 15 hp, 20 hp, 30 hp)
- What is the cfm output? (Example: 8 cfm, 11 cfm, 18 cfm, 25 cfm)
- What is the operating pressure? (Example: 5000 psi or 6000 psi)
- Does the current compressor system meet the customer's needs?

#### Cascade

- What type of storage cylinders? (Example: UN or ASME)
  - If using UN, are the storage cylinders within the prescribed hydro period?
- What is the pressure rating? (Example: 5000psi or 6000psi)
- How many storage cylinders?
- Does the current cascade system meet the customer's needs?

### Sizing Requirements

What type(s) of cylinders does the customer fill?

**Pressure** (Example: 2216 psi, 3000 psi, 4500 psi, 5500 psi)

**Duration** (Example: 30-min, 45-min, 60-min, 75-min)

How often does the customer fill cylinders? (Example: daily, weekly, etc.)

How many cylinders does the customer fill at any given time? (Example: <10, 10 to 20, >20, etc.)

Does the customer have to depend on immediately filling cylinders following a call or do they have a sufficient supply of spare cylinders?

How do you calculate the time it will take to fill the specific type of cylinder the customer has?

**Cylinder capacity** (Example: 45 scf, 65 scf, 87 scf, 111 scf)

**Compressor horsepower** (Example: 7.5 hp, 10 hp, 15 hp, 20 hp, 30 hp)

**Compressor output** = Cylinder capacity (scf) divided by Horsepower (hp)

- **Example:** 45 scf divided by 10hp = 4.5 minutes to fill one cylinder
- "Rule of thumb" - 1 HP provides 1 cfm of output

### Power Requirements

Power is defined as voltage, phase, hertz, and amperage.

**Voltage** – 208v, 230v, or 460v

**Phase** – Single-phase or Three-phase

**Hertz** – 60 Hz (North America) or 50 Hz (Outside North America)

**Amperage** – Amount of power being used

Checklist:

- Power must be checked by a certified electrician to verify the Volts-Phase-Hertz-Amps
- Power must be measured at the electrical box to ensure there are no issues during installation

### Installation Requirements

Where will the compressor be installed? (Example: Apparatus bay, utility room, SCBA room, compressor room)

What is the size of the room? (Example: 10' x 10')

- Room should be sized large enough to allow for proper air flow and ventilation
- Room should have a large enough doorway to accommodate the compressor (Example: 36" door)
- Room should be sized large enough to accommodate a pallet jack or hand lift
- Room should be sized large enough to allow the system to be serviced by a technician

Have considerations been made for moving the compressor from the delivery truck?

- Loading dock
  - If No, a lift gate will be required for delivery
- Pallet jack or hand lift
- Elevators (Example: width, height, length, weight capacity, etc.)
- Type of floor (Example: elevated, raised, etc.)
- Width of hallway
- Width of door(s)



#### 3M Scott Fire & Safety

Personal Safety Division  
Monroe Center, P.O. Box 569  
Monroe, NC 28111

Phone 1-800-247-7257  
Email Us-3m-ScottMonroeCSR@mmm.com  
Web 3MScott.com

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K. A. Oldham Design, Inc.  
 Project Number: 1852.00  
 Project Number: 1748.00

Fayette County  
 Fire Station No. 2  
 Fire Station No. 4

**BASE BID SUMMARY FOR: FAYETTE COUNTY FIRE STATION NO. 4 (1748.00)**

A	General Conditions	Cost \$	Sub-total.	Proposed Subcontractors
101	Permits (BY OWNER)	0		
102	Mobilization and Field Office			
103	Performance Bond / 100% Material Payment Bond			
104	Project Insurance			
105	Payroll Taxes & Benefits			
106	Job Supervision			
107	Field Eng. / Layout / Construction Staking / Testing			
108	Equipment			
109	Expendables / Job Trailer / Toilets / Misc. Expenses			
110	Construction Utilities (Temporary)			
111	Construction Project Signage Allowance	\$1000.00		
112	General Clean-up & Disposal			
<b>A</b>	<b>Subtotal</b>			
<b>B</b>	<b>Site Development</b>			
202	Concrete Sidewalks, Drives and Aprons			
203	Erosion Control Maintenance Allowance	\$5,000		
204	Landscape Allowance	\$5,000		
205	Site Utilities Connections			
207	Curb & Gutter / Striping / Signage			
208	Materials & Labor to replace spoiled stone base, Allowance	\$10,000		
<b>B</b>	<b>Subtotal</b>			
<b>C</b>	<b>Building Construction</b>			
302	Concrete			
303	Masonry			
304	Steel			
305	Rough Carpentry, Framing, Ply-wood (including nailers and sheathing)			
306	Cabinetry/Millwork			
307	Batt Insulation			
308	PEMB: Structure, Wall Panels, Gutters, Downspouts, Siding, Ceiling, Insulation			
309	Flashing and Sheet Metal			
310	Waterproofing			
311	Cement Board Siding and Trim			
312	Caulking and Sealants			
313	Doors & Frames			
314	Door Finish Hardware			
315	Aluminum Storefront System			
316	Four Fold Apparatus Bay Doors			
317	Gerkin Windows			
318	Lighting Fixtures			
319	Gypsum Wall Board Assemblies			
320	Ceiling Assemblies (2x2) & GWB			
321	Carpet			
322	Rubber base			
323	Porcelain tile			
324	Resilient Flooring			
325	Epoxy floor covering			
326	Paint			
327	Fire Extinguishers and Accessories (Allow for Type A-B-C 10 lb.)			
328	Toilet Accessories			
329	Plumbing			
330	HVAC			
331	Electrical			
332	Special Equipment			
333	Specialties, Misc. Items			
334	Misc Finishes			
<b>C</b>	<b>Subtotal</b>			
<b>D</b>	<b>Recap of Construction Costs</b>			
	General Conditions (101-112)			
	Site Development/Grading(202-208)			
	Building Construction (302-334)			
	Overhead & Profit			
	<b>STATION 4 TOTAL BID</b>			

**BASE BID SUMMARY FOR: FAYETTE COUNTY FIRE STATION NO. 2 (1852.00)**

A	General Conditions	Cost \$	Sub-total.	Proposed Subcontractors
101	Permits (BY OWNER)	0		
102	Mobilization and Field Office			
103	Performance Bond / 100% Material Payment Bond			
104	Project Insurance			
105	Payroll Taxes & Benefits			
106	Job Supervision			
107	Field Eng. / Layout /Construction Staking / Testing			
108	Equipment			
109	Expendables / Job Trailer / Toilets / Misc. Expenses			
110	Construction Utilities (Temporary)			
111	Construction Project Signage Allowance	\$1000.00		
112	General Clean-up & Disposal			
<b>A</b>	<b>Subtotal</b>			
<b>B</b>	<b>Site Development</b>			
201	Site Clearing			
202	Concrete Sidewalks, Drives and Aprons			
203	Erosion Control Maintenance Allowance	\$5,000		
204	Erosion Control, BMP's and Stabilization including removal			
205	Earthwork + Grading including fine grading			
206	Landscape Allowance	\$5,000		
207	Stone Base for Building and All Paving			
208	Site Utilities Connections			
209	Septic/Sewer System			
210	Curb & Gutter / Striping / Signage / Asphalt			
211	Materials & Labor to replace spoiled stone base, Allowance	\$10,000		
<b>B</b>	<b>Subtotal</b>			
<b>C</b>	<b>Building Construction</b>			
302	Concrete			
303	Masonry			
304	Steel			
305	Rough Carpentry, Framing, Ply-wood (including nailers and sheathing)			
306	Cabinetry/Millwork			
307	Batt Insulation			
308	PEMB: Structure, Wall Panels, Gutters, Downspouts, Siding, Ceiling, Insulation			
309	Flashing and Sheet Metal			
310	Waterproofing			
311	Cement Board Siding and Trim			
312	Caulking and Sealants			
313	Doors & Frames			
314	Door Finish Hardware			
315	Aluminum Storefront System			
316	Four Fold Apparatus Bay Doors			
317	Gerkin Windows			
318	Lighting Fixtures			
319	Gypsum Wall Board Assemblies			
320	Ceiling Assemblies (2x2) & GWB			
321	Carpet			
322	Rubber base			
323	Porcelain tile			
324	Resilient Flooring			
325	Epoxy floor covering			
326	Paint			
327	Fire Extinguishers and Accessories (Allow for Type A-B-C 10 lb.)			
328	Toilet Accessories			
329	Plumbing			
330	HVAC			
331	Electrical			
332	Special Equipment			
333	Specialties, Misc. Items			
334	Misc Finishes			
<b>C</b>	<b>Subtotal</b>			
<b>D</b>	<b>Recap of Construction Costs</b>			
	General Conditions (101-112)			

K. A. Oldham Design, Inc.  
 Project Number: 1852.00  
 Project Number: 1748.00

Fayette County  
 Fire Station No. 2  
 Fire Station No. 4

	Site Development/Grading(201-211)			
	Building Construction (302-334)			
	Overhead & Profit			
	<b>STATION 2 TOTAL BID</b>			

**TOTAL BID SUMMARY FOR: FAYETTE COUNTY FIRE STATION NO. 2 AND STATION NO. 4**

	<b>STATION 4 TOTAL BID</b>			
	<b>STATION 2 TOTAL BID</b>			
	<b>STATION 2 AND STATION 4 TOTAL BID</b>			