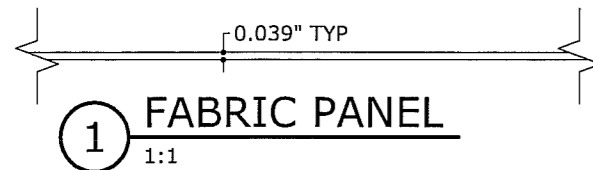


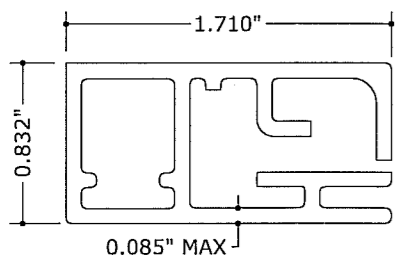
# FABRIC-SHIELD™ PULL DOWN SHUTTER

FRANK L. BENNARDO, P.E.  
# PE0046549

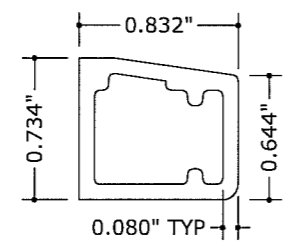
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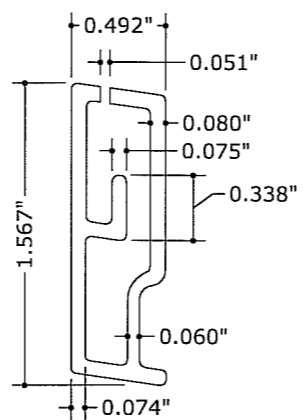
1 FABRIC PANEL  
1:1



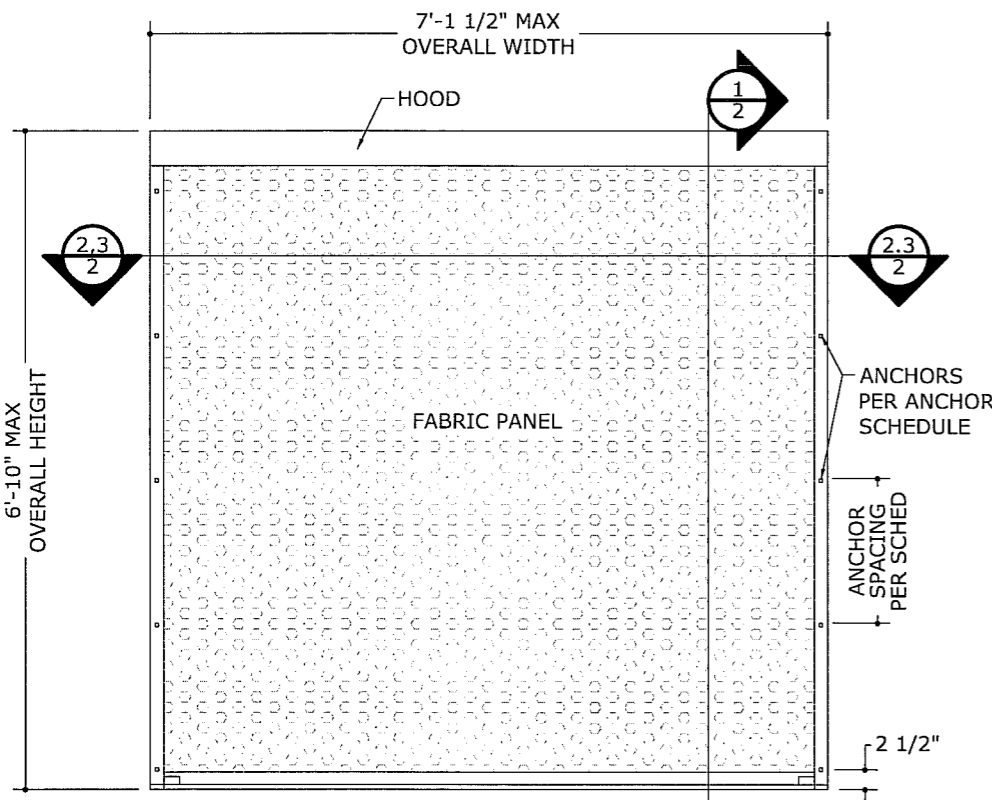
2 SIDE GUIDE  
1:1



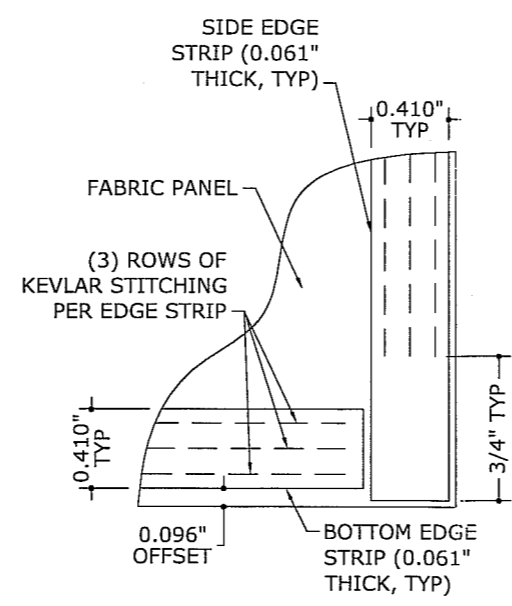
3 SILL TRACK  
1:1



4 CURTAIN BAR  
1:1



1 TYPICAL ELEVATION  
1/2" = 1'-0"



2 FABRIC EDGE CONSTRUCTION  
1:1 INTERIOR ELEVATION

MAX ALLOWABLE LOAD: ±57.0 PSF  
MAX ALLOWABLE OVERALL WIDTH: 7' - 1 1/2"  
MAX ALLOWABLE OVERALL HEIGHT: 6' - 10"

### SPAN NOTES:

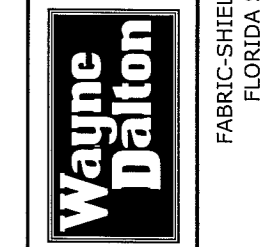
1. ALLOWABLE PRESSURES SHALL NOT BE EXCEEDED.
2. PANEL SPANS LONGER THAN MAXIMUM NOTED ABOVE ARE NOT ACCEPTABLE.
3. NO MINIMUM SIZES APPLY FOR THIS PRODUCT.
4. NO SEPARATION FROM GLASS IS REQUIRED.
5. VALID FOR USE IN ALL AREAS OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).

### GENERAL NOTES:

1. THIS PRODUCT HAS BEEN TESTED AND EVALUATED AS A LARGE MISSILE IMPACT PROTECTIVE SYSTEM IN ACCORDANCE WITH THE 2004 FLORIDA BUILDING CODE, FOR USE IN ALL AREAS OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ), AND IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE.
2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
3. POSITIVE AND NEGATIVE DESIGN PRESSURES TO BE USED WITH THESE DRAWINGS SHALL BE DETERMINED BY OTHERS FOR SPECIFIC JOBS IN ACCORDANCE WITH THE GOVERNING CODE. WHEN CALCULATING PRESSURES PER ASCE 7-98 (OR LATER EDITION), USE OF DIRECTIONALITY FACTOR Kd=0.85 IS ALLOWED.
4. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.
5. PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND NEW SUPERIMPOSED LOADS.
6. FABRIC PANEL MATERIAL SHALL BE PVC COATED WOVEN POLYESTER FABRIC (THICKNESS t=0.039") WITH MINIMUM AVERAGE Fu=12.63 KSI.
7. PANELS SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER PANEL AS FOLLOWS:  
  
WAYNE-DALTON CORP.  
DRAWING NO. 04-133-0002  
REFERENCE FLORIDA STATEWIDE APPROVAL
8. THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO THE MAXIMUM SPAN(S) AND LOAD(S) SHOWN ON THESE DRAWINGS. REFERENCE HURRICANE ENGINEERING & TESTING, INC (HETI OF MIAMI, FL) TEST REPORTS Nos. HETI-04-1368, HETI-04-1369, & HETI-04-T109.
9. ALL EXTRUSIONS SHALL BE 6063-T5 OR STRONGER (e.g. 6061-T6) ALUMINUM ALLOY, UNLESS NOTED OTHERWISE HEREIN.
10. ALL BOLTS & WASHERS SHALL BE ZINC COATED, GALVANIZED OR STAINLESS STEEL WITH A MINIMUM TENSILE STRENGTH OF 60 KSI.
11. ALL ACCEPTANCE CRITERIA HAVE BEEN MET FOR THIS SHUTTER AS A NON-POROUS SYSTEM, AS DEFINED IN ASTM E1996. IN KEEPING WITH THIS STANDARD, NO MINIMUM SEPARATION FROM THE GLAZING BEING PROTECTED IS REQUIRED, AND BREAKING OF THIS GLAZING DOES NOT COMPROMISE THE BUILDING ENVELOPE.

FRANK L. BENNARDO, P.E., INC.  
CONSULTING ENGINEERS  
4441 N. DIXIE HIGHWAY  
BOCA RATON, FL 33431  
PH: (561) 391-2888 FAX: (561) 391-2862  
CERTIFICATE OF AUTHORIZATION: #9885

MANUFACTURED BY:  
**WAYNE-DALTON CORP**  
3395 ADDISON DRIVE  
PENSACOLA, FL 32514  
www.wayne-dalton.com



REMARKS	DWN	CHKD	DATE
INIT ISSUE	CL	FLB	6/1/04
2004 FBC	CL	FLB	8/5/05
ADD ANCHOR POSITION 2	CL	FLB	4/10/06

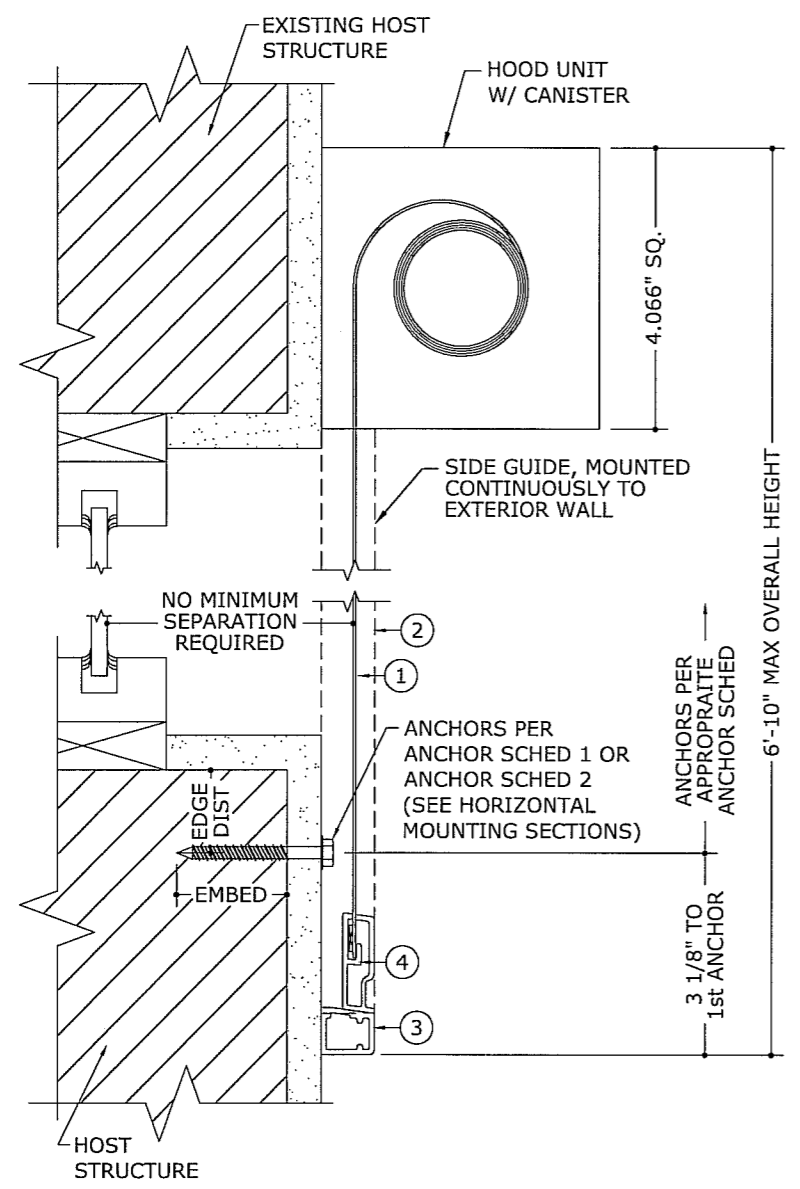
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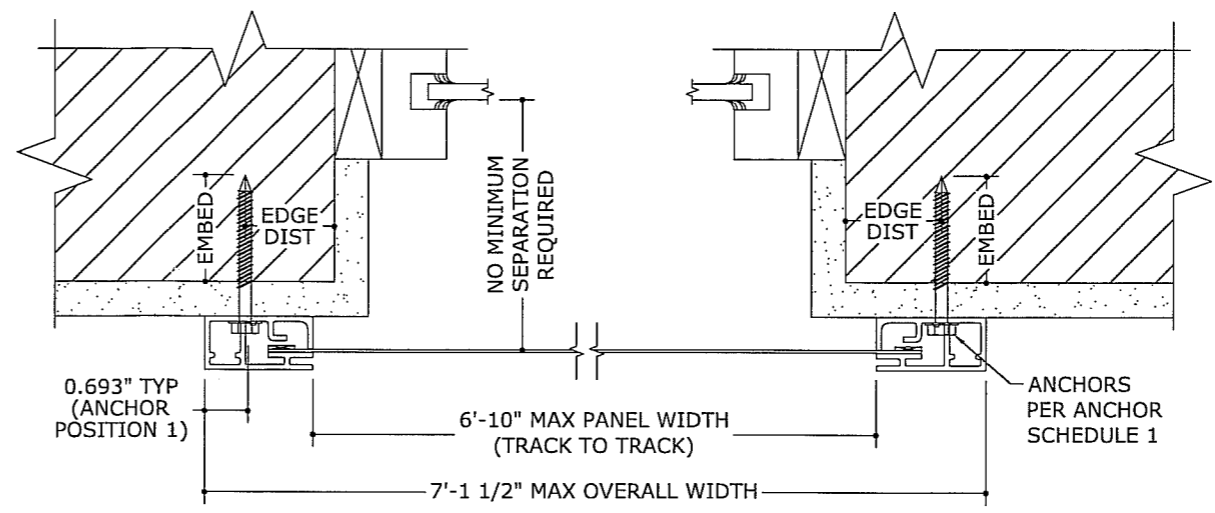
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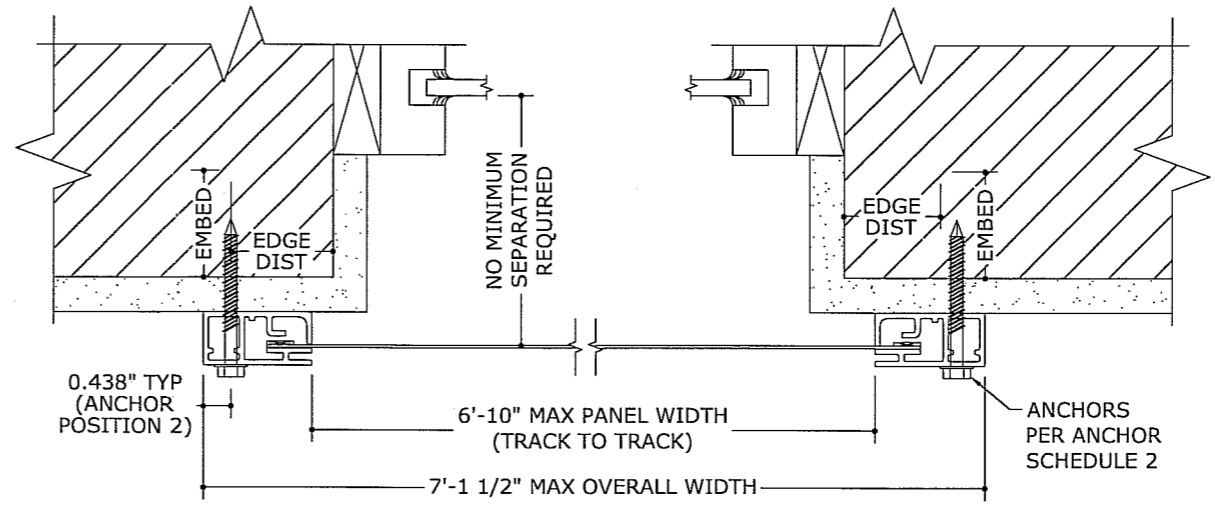
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1 VERT MOUNTING SECTION  
 2 4" = 1'-0"



2 HORIZ MOUNTING SECTION (ANCHOR POSITION 1)  
 2 4" = 1'-0"



3 HORIZ MOUNTING SECTION (ANCHOR POSITION 2)  
 2 4" = 1'-0"

FRANK L. BENNARDO, P.E.  
 # PE0046549

04/11/2006

FRANK L. BENNARDO, P.E., INC.  
 CONSULTING ENGINEERS  
 4441 N. DIXIE HIGHWAY  
 BOCA RATON, FL 33431  
 PH: (561) 391-2888 FAX: (561) 391-2862  
 CERTIFICATE OF AUTHORIZATION: #9885

MANUFACTURED BY:  
**WAYNE-DALTON CORP**  
 3395 ADDISON DRIVE  
 PENSACOLA, FL 32514  
 www.wayne-dalton.com

**Wayne Dalton**  
 FABRIC-SHIELD™ PULL-DOWN SHUTTER  
 FLORIDA STATEWIDE APPROVAL

REMARKS	DWN	CHKD	DATE
INIT ISSUE	CL	FLB	6/1/04
2004 FBC	CL	FLB	8/5/05
ADD ANCHOR POSITION 2	CL	FLB	4/10/06

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CONSULTING ENGINEERS  
4441 N. DIXIE HIGHWAY  
BOCA RATON, FL 33431  
PH: (561) 391-2888 FAX: (561) 391-2862  
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### ANCHOR SCHEDULE 1 (ANCHOR POSITION 1)

HOST STRUCT.	ANCHOR	LOAD (psf)	2 1/2" MIN EDGE DISTANCE			
			Panel Width Up To 4'-0"	Panel Width Up To 5'-4"	Panel Width Up To 6'-10"	
CONCRETE	1/4" TAPCON (ELCO) WITH 1-3/4" EMBEDMENT (3320psi MIN CONC) 	35	18"	18"	16"	
		40	18"	18"	14"	
		45	18"	16"	13"	
		50	18"	15"	11"	
		57	17"	13"	10"	
CONCRETE	5/16" ELCO TAPCON WITH 1-3/4" EMBEDMENT (3513psi MIN CONC) 	35	18"	18"	18"	
		40	18"	18"	18"	
		45	18"	18"	16"	
		50	18"	18"	15"	
		57	18"	17"	13"	
HOLLOW BLOCK	1/4" ELCO TAPCON WITH 1/4" EMBEDMENT 	35	18"	15"	12"	
		40	17"	13"	10"	
		45	16"	12"	9"	
		50	14"	10"	8"	
		57	12"	9"	7"	
	HOLLOW BLOCK	5/16" ELCO TAPCON WITH 1/4" MIN EMBEDMENT 	35	18"	18"	15"
			40	18"	16"	13"
			45	18"	14"	11"
			50	17"	13"	10"
			57	15"	11"	9"
WOOD	1/4" TAPCON OR #14 WOOD SCREW WITH 1-3/4" MIN EMBEDMENT 	3/4" MIN EDGE DISTANCE				
		35	18"	18"	14"	
		40	18"	15"	12"	
		45	18"	14"	11"	
		50	16"	12"	10"	
	57	14"	11"	8"		
	WOOD	5/16" TAPCON OR LAG SCREW WITH 2-1/2" MIN THREAD PENETRATION 	1 1/4" MIN EDGE DISTANCE			
			35	18"	18"	16"
			40	18"	18"	14"
			45	18"	16"	12"
50			18"	14"	11"	
57	17"	13"	10"			

### ANCHOR SCHEDULE 2 (ANCHOR POSITION 2)

HOST STRUCT.	ANCHOR	LOAD (psf)	2 1/2" MIN EDGE DISTANCE			
			Panel Width Up To 4'-0"	Panel Width Up To 5'-4"	Panel Width Up To 6'-10"	
CONCRETE	1/4" TAPCON (ELCO) WITH 1-3/4" EMBEDMENT (3320psi MIN CONC) 	35	18"	18"	16"	
		40	18"	18"	14"	
		45	18"	16"	13"	
		50	18"	15"	11"	
		57	17"	13"	9"	
CONCRETE	5/16" ELCO TAPCON WITH 1-3/4" EMBEDMENT (3513psi MIN CONC) 	35	18"	18"	18"	
		40	18"	18"	18"	
		45	18"	18"	16"	
		50	18"	18"	15"	
		57	18"	17"	12"	
HOLLOW BLOCK	1/4" ELCO TAPCON WITH 1/4" EMBEDMENT 	35	18"	15"	12"	
		40	17"	13"	10"	
		45	16"	12"	9"	
		50	14"	10"	8"	
		57	12"	9"	6"	
	HOLLOW BLOCK	5/16" ELCO TAPCON WITH 1/4" MIN EMBEDMENT 	35	18"	18"	15"
			40	18"	16"	13"
			45	18"	14"	11"
			50	17"	13"	10"
			57	15"	11"	7"
WOOD	1/4" TAPCON OR #14 WOOD SCREW WITH 1-3/4" MIN EMBEDMENT 	3/4" MIN EDGE DISTANCE				
		35	18"	18"	14"	
		40	18"	15"	12"	
		45	18"	14"	11"	
		50	16"	12"	10"	
	57	14"	11"	8"		
	WOOD	5/16" TAPCON OR LAG SCREW WITH 2-1/2" MIN THREAD PENETRATION 	1 1/4" MIN EDGE DISTANCE			
			35	18"	18"	16"
			40	18"	18"	14"
			45	18"	16"	12"
50			18"	14"	11"	
57	17"	13"	9"			

### ANCHOR NOTES:

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
2. HOST STRUCTURE MAY BE CONCRETE, HOLLOW BLOCK, OR WOOD AS DESCRIBED BELOW AND/OR PER APPROPRIATE ANCHOR SCHEDULE.
3. TAPCONS SHALL BE BY ELCO, OR BY OTHERS OF EQUIVALENT OR GREATER TENSILE AND SHEAR CAPACITIES.
4. MINIMUM EMBEDMENT SHALL BE AS NOTED UNDER EACH ANCHOR. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO, FOAM, BRICK, AND OTHER EXTERIOR WALL FINISHES.
5. ENSURE MINIMUM EDGE DISTANCE FOR ALL ANCHORS AS SHOWN IN APPROPRIATE ANCHOR SCHEDULE.
6. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT ANCHORS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT PLYWOOD.
7. WHERE 1/4" ANCHORS FASTEN TO NARROW FACE OF WOOD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x4 (MIN) WOOD STUD (3/4" EDGE DISTANCE IS ACCEPTABLE FOR 1/4" ANCHORS TO WOOD FRAMING). WOOD STUD SHALL BE "SOUTHERN PINE" G=0.55 OR GREATER DENSITY.
8. MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS INTO BASE ANCHOR AND MAY HAVE EITHER PAN HEAD, TRUSS HEAD, OR WAFER HEAD ("SIDEWALK BOLT"), U.N.O.

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