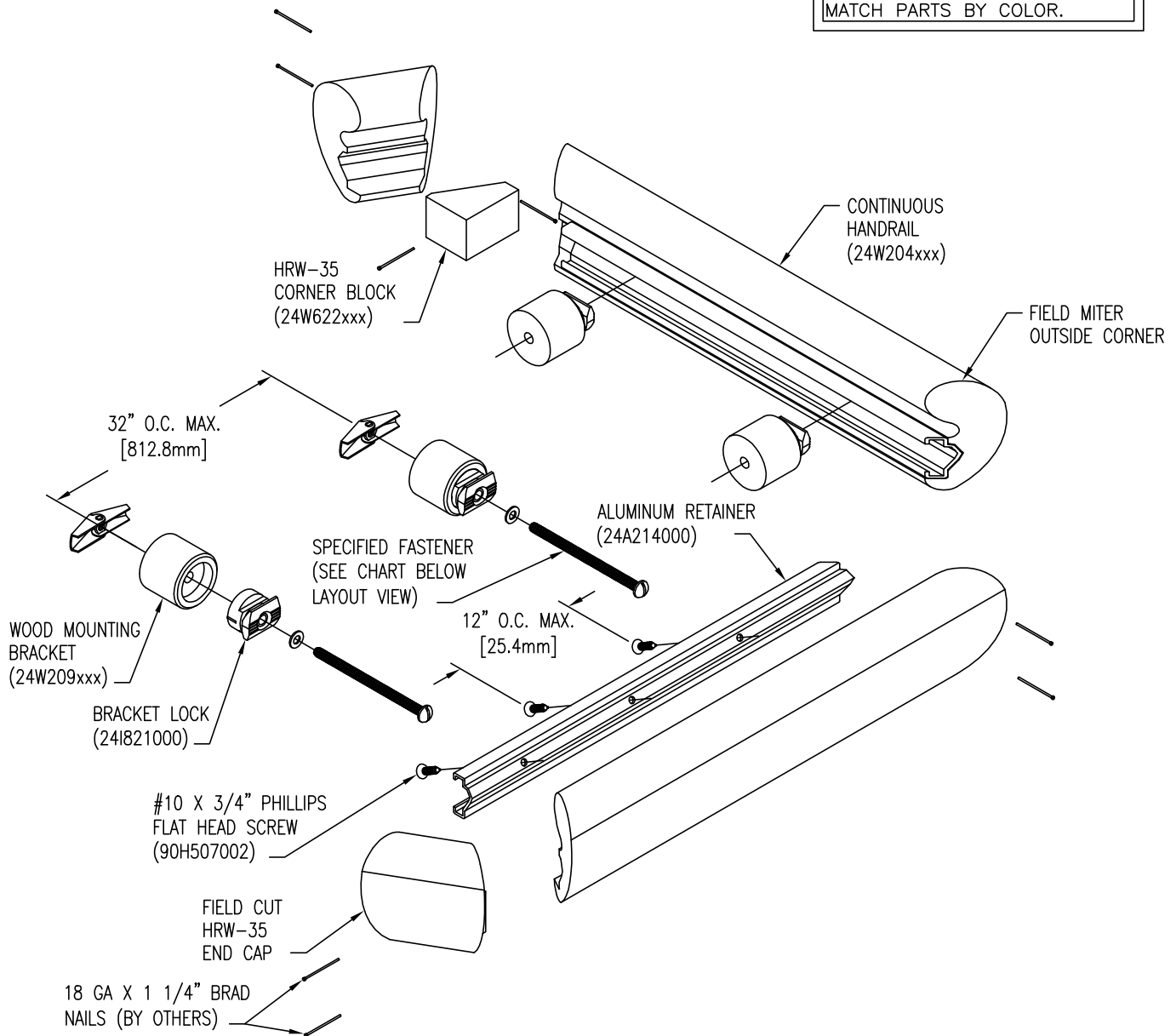


WALL CONDITION	SPECIFIED FASTENER	DRILL DIAMETERS		C/S PART NUMBER
		WALL	RETAINER	
STEEL STUD/GYPSUM WALL	1/4-20 X 4" RD. HD. BOLT/TOGGLE WING	3/4"	9/32"	90H059002
CONCRETE/CONC. BLOCK	#14 X 4" PH. RD. AP SCREW	7/32"	9/32"	90H225002
WOOD STUD/GYPSUM WALL	#14 X 4" PH. RD. AP SCREW	7/32"	9/32"	90H225002

INSTALLATION INSTRUCTIONS

HRW-35

DUE TO THE NATURE OF WOOD,
COMPONENT COLORS MAY VARY.
SORT WOOD COMPONENTS AND
MATCH PARTS BY COLOR.



NOTES:

1. ALL DIMENSIONS ARE TYPICAL.
2. FOR DRYWALL/PLASTER WALL CONSTRUCTION, IT IS RECOMMENDED FOR FASTENERS TO BE ENGAGED INTO METAL/WOOD STUDS TO MAINTAIN MAXIMUM PULLOUT STRENGTH.
3. INSTALL OUTSIDE CORNERS FIRST.
4. ALUMINUM RETAINER SPLICE SHOULD NOT EXCEED 3" DISTANCE FROM A BRACKET.
5. THE DISTANCE BETWEEN A WOOD SPLICE JOINT AND AN ALUMINUM SPLICE JOINT SHOULD NOT BE LESS THAN 12" [304.8mm].
6. MATERIAL MUST REACH 65°F MIN. TO 75°F MAX. 24 HOURS PRIOR TO INSTALLATION. THIS IS ESSENTIAL TO MINIMIZE EXPANSION AND CONTRACTION OF THE MATERIAL.

INSTALLATION INSTRUCTIONS

HRW-35 HANDRAIL

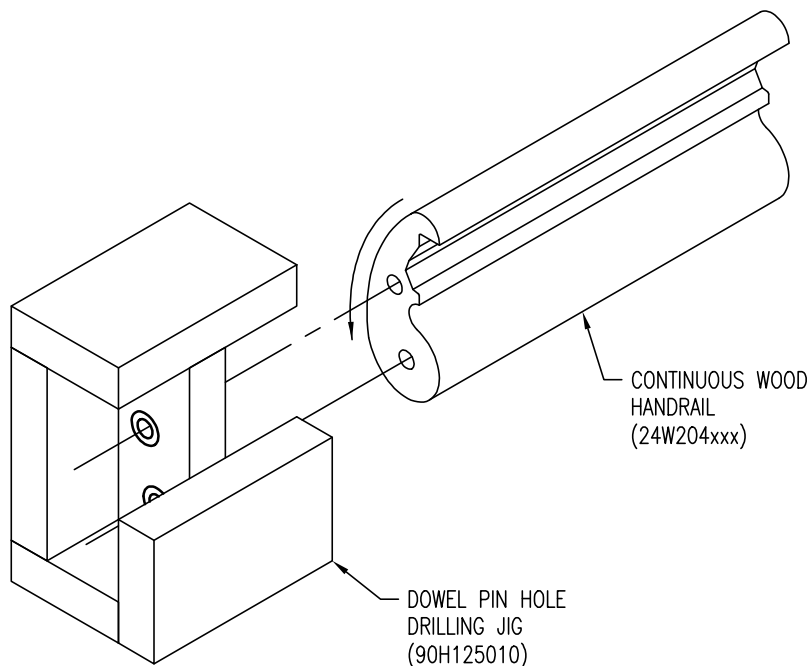
NOTE: ALL LINEAR MATERIAL TO BE SUPPLIED IN STOCK LENGTHS. WOOD IN 7'-0" TO 12'-0" [2.1M TO 3.7M] VARIABLE, AND ALUMINUM IN 20'-0" LENGTHS. THIS MATERIAL IS TO BE FIELD CUT USING QUALITY EQUIPMENT TO ENSURE THAT ALL CUTS ARE SQUARE. WHEN CUTTING WOOD SECTIONS, C/S RECOMMENDS USING A CARBIDE TRIPLE TOOTH BLADE, TO MINIMIZE CHIPPING AND MAINTAIN JOINT ALIGNMENT. WE SUGGEST LONGEST HANDRAIL RUNS BE INSTALLED FIRST. WHEN MATERIAL IS SHIPPED CUT-TO-SIZE, END CAPS ARE INSTALLED AND CORNERS ARE MITERED AS REQUIRED BY C/S.

1. USE LOCAL CODE REQUIREMENTS AND ESTABLISH HANDRAIL HEIGHT ABOVE FINISH FLOOR. DEDUCT 2 1/2" [63.5mm] AND SNAP A CHALK LINE AT THAT HEIGHT. THIS MARKS THE LOCATION OF THE MOUNTING BRACKET FASTENERS.
2. DETERMINE WALL FASTENER LOCATIONS BY USING THE REQUIRED DEDUCTIONS (SEE LAYOUT VIEW) AND DRILL HOLE DIAMETER (REFERENCE CHART BELOW LAYOUT VIEW) IN THE WALL FOR SPECIFIED WALL FASTENERS (SEE NOTE 2). USE A LEVEL TO ENSURE ASSEMBLY WILL BE LEVEL.
3. INSERT A BRACKET LOCK INTO EACH WOOD MOUNTING BRACKET. USING THE APPROPRIATE FASTENERS (REFERENCE CHART ON LAYOUT VIEW), ATTACH THE BRACKET ASSEMBLIES TO THE WALL AT THE PRE-DRILLED LOCATIONS.

NOTE: IF YOUR ORDER IS A CUT-TO-SIZE JOB, GO TO STEP 8.

NOTE: IF YOUR ORDER IS A PRE-ASSEMBLED JOB, GO TO STEP 10.

4. TO DETERMINE THE HANDRAIL LENGTH, REFERENCE THE LAYOUT VIEW FOR DEDUCTIONS. ALL HANDRAIL ENDS THAT RECEIVE END CAPS ARE TO BE CUT AT A 60-DEGREE ANGLE ON THE HANDRAIL.
5. DUE TO THE COLOR MATCH, END CAPS ARE TO BE CUT FROM THE SAME HANDRAIL SECTION. CUT THE END CAPS PER INSTRUCTIONS ON THE FOLLOWING PAGE (STEPS 5a-5c).
6. ATTACH END CAPS TO THE HANDRAIL WITH WOOD GLUE (TITEBOND IS RECOMMENDED) AND TWO 18 GA X 1 1/4" BRAD NAILS. HANDRAILS THAT INTERSECT AT INSIDE OR OUTSIDE CORNERS ARE TO BE JOINED IN THE SAME MANNER. WIPE OFF ANY EXCESS GLUE. FILL BRAD NAIL LOCATIONS USING THE PUTTY STICK SUPPLIED IN THE TOUCH UP KIT. EASE THE MITERED JOINT EDGE BY ADDING A SMALL BEVEL TO ELIMINATE SHARP EDGES. RESTAIN THE SANDED EDGE WITH THE STAIN STICK SUPPLIED IN THE TOUCH UP KIT.
7. CUT THE CONTINUOUS ALUMINUM RETAINER TO LENGTH USING THE REQUIRED DEDUCTIONS AS SHOWN ON LAYOUT VIEW.
8. FASTENERS START 2" [50.8mm] FROM THE ENDS OF RETAINER AND ARE 12" [305mm] ON CENTER. DRILL 7/32" [5.6mm] DIAMETER PILOT HOLE IN RETAINER.
9. ATTACH ALUMINUM RETAINER TO WOOD HANDRAIL. USING HOLES IN ALUMINUM RETAINER AS A TEMPLATE, DRILL 1/8" [3.2mm] DIAMETER PILOT HOLES INTO THE HANDRAIL 3/4" [19.0mm] DEEP. DO NOT DRILL THE PILOT HOLES WITHOUT A DRILL STOP.
10. REST THE RETAINER ON THE BRACKET ASSEMBLIES. USING THE WRENCH PROVIDED, TWIST EACH LOCK 90° TO SECURE THE WOOD WALL BRACKET INTO PLACE. SEE ILLUSTRATIONS 1 THROUGH 3.



HANDRAIL SPLICE DRILLING JIG

1. CUT HANDRAIL TO LENGTH. ALL SPLICE ENDS ARE TO BE SQUARE CUT. EASE FIELD CUT EDGES OF ALL WOOD COMPONENTS AND TOUCH UP USING ENCLOSED TOUCH-UP KIT.
2. USE DRILL JIG TO PRE-DRILL CLEARANCE HOLES 7/8" DEEP INTO HANDRAIL USING A 5/16" DRILL BIT (90H039000).

NOTE: CONTINUALLY CLEAN OUT WOOD CHIPS AS THE PILOT HOLE IS BEING DRILLED.

3. APPLY WOOD GLUE INTO THE HOLES AND CUT SURFACE OF HANDRAIL (TITEBOND IS RECOMMENDED).
4. INSERT DOWELS INTO THE PRE-DRILLED CLEARANCE HOLES.
5. ALIGN DOWELS WITH MATING HANDRAIL CLEARANCE HOLES.
6. CHECK SEAM FOR TIGHT FIT BETWEEN SECTIONS OF HANDRAIL.

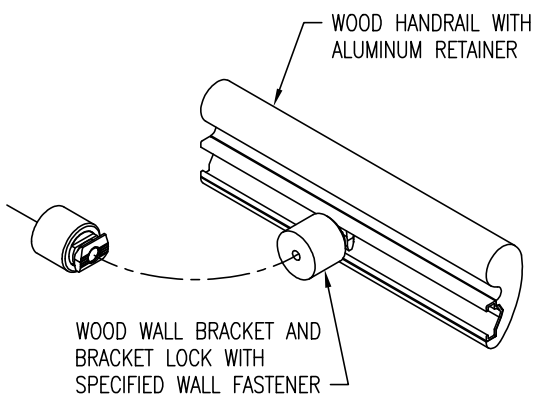


ILLUSTRATION 1

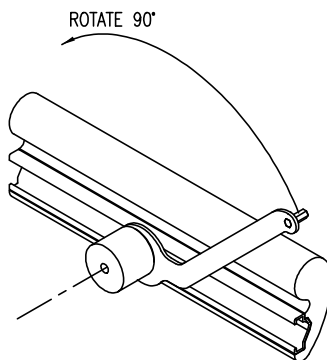


ILLUSTRATION 2

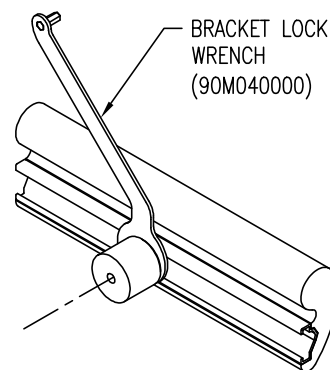
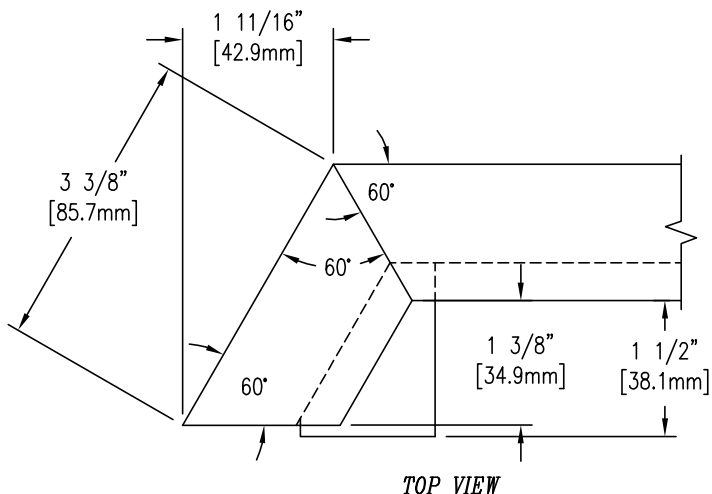
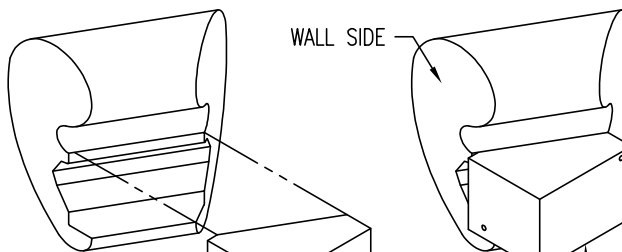
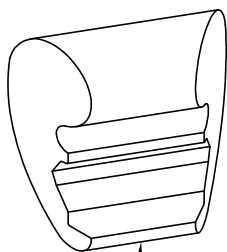


ILLUSTRATION 3



END CAP CUTTING INSTRUCTIONS

- 5a. FIELD CUT THE END CAP TO A FACE WIDTH 3 3/8" [85.7mm] LONG WITH 60° CUTS ON BOTH ENDS.
- 5b. GLUE (TITEBOND IS RECOMMENDED) CORNER BLOCK TO THE BACK SIDE OF THE END CAP. ALLOW 1/8" [3.2mm] PROTRUSION OF THE CORNER BLOCK FROM THE END CAP ON THE SIDE THAT MEETS THE WALL.
- 5c. USE TWO 18 GA X 1 1/4" BRAD NAILS TO FURTHER SECURE THE CORNER BLOCK TO THE END CAP ONCE THE GLUE STARTS TO CURE.



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7/30/03