Laboratory Hoods, Casework & Scrubbers Product Catalog

Quality Plastic Laboratory Hoods, Casework, and Custom Plastic Fabricated Products for Today's Industries

TFI INLINE DESIGN
An Elemental Scientific Company

Master Table of Contents

Plastic Fume Hoods

- Specifications
- Cut Sheets

Hood Table of Contents

Counter Top Polypro Hood Material Specifications

SUPER STRUCTURE		WHITE S/R POLYPROPYLENE
WORK SURFACE		WHITE S/R POLYPROPYLENE
SASH		3/8" CLEAR LEXAN
	CABLE	.125 DIA. BRAIDED POLYESTER
	PULLEYS	HIGH DENSITY POLYETHYLENE
	PULLEY BOLTS	3/8-16 FIBERGLASS/ SST
	WASHERS	TEFLON
	COUNTER WEIGHTS	STEEL INSIDE SEALED POLYPRO CASE
	HANDLE	3/4" BLACK POLYPROPYLENE
	HANDLE BOLTS	1/4-20 FIBERGLASS
	SASH TRACK	HIGH DENSITY POLYETHYLENE
	SASH TRACK BOLTS	1/4-20 POLYCARBONATE
BAFFLES		1/4" WHITE POLYPROPYLENE
	KNOBS	MOLDED BLACK PLASTIC
	BOLTS	1/4-20 POLYCARBONATE
AIR FOIL		3/8" WHITE POLYPROPYLENE
	AIRFOIL BOLTS	3/8-16 FIBERGLASS
FRONT PANEL		3/8" WHITE POLYPROPYLENE
	BOLTS	3/8-16 FIBERGLASS
ELECTRICAL BOXES		GRAY PVC
	MOUNTING SCREWS	STAINLESS STEEL / BEHIND COVER
PLUG COVERS		3/4" BLACK POLYETHYLENE
LIGHT PANEL		1/4" CLEAR LEXAN
	GASKET	BLENDED NEOPRENE RUBBER
	ADHESIVE	POLYETHYLENE DOUBLE SIDED TAPE
	BOLTS	1/4-20 NYLON THIMBSCREW
LIGHT FIXTURE		TWIN BULB LED OR FLUORESCENT

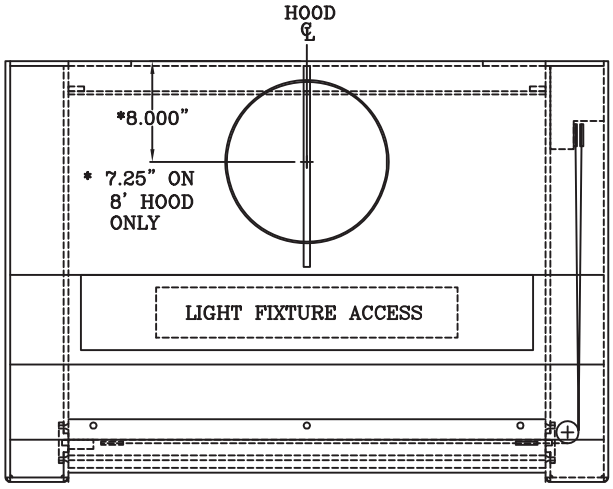
Counter Top Polypro Hood Material Specifications

Polypropylene Constant Volume Fume Hood

Dimensions	4ft	5ft	6ft	8ft
Width	48"	60"	72"	96"
Depth	33.5"	33.5"	33.5"	33.5"
Height (overall)	59.5"	59.5"	59.5"	59.5"
Deck Area				
Width	38"	50"	62"	86"
Depth	26.25"	26.25"	26.25"	26.25"
Height (inside work area)	44.5"	44.5"	44.5"	44.5"
Airflow Specification				
Inflow Air Velocity	100 LFPM @ sash full open	100 LFPM @ sash full open	100 LFPM @ sash full open	100 LFPM @ sash full open
Exhaust Volume	604 CFM	794 CFM	985 CFM	1366 CFM
Exhaust Static Pressure	.5"	.5"	.5"	.5"
Exhaust Duct Collar	10.75" I.D. 11.00" O.D.	12.75" I.D. 13.00" O.D.	12.75" I.D. 13.00" O.D.	14.00" I.D. 14.25" O.D.
Electrical - (optional)				
Volts AC - 60Hz	115 v 20 amp	115 v 20 amp	115 v 20 amp	115 v 20 amp
Optional	220 v 10 amp	220 v 10 amp	220 v 10 amp	220 v 10 amp
Fluorescent-Led Lights	(1) 3ft Fixture	(1) 4ft Fixture	(1) 4ft Fixture	(2) 3ft Fixtures
Fluorescent-Led Bulbs	(2) @ 30 watt	(2) @ 30 watt	(2) @ 30 watt	(4) @ 30 watt
Weight				
Approximate Shipping (without crate)	600 lbs.	630 lbs.	650 lbs.	800 lbs.

FUME HOOD

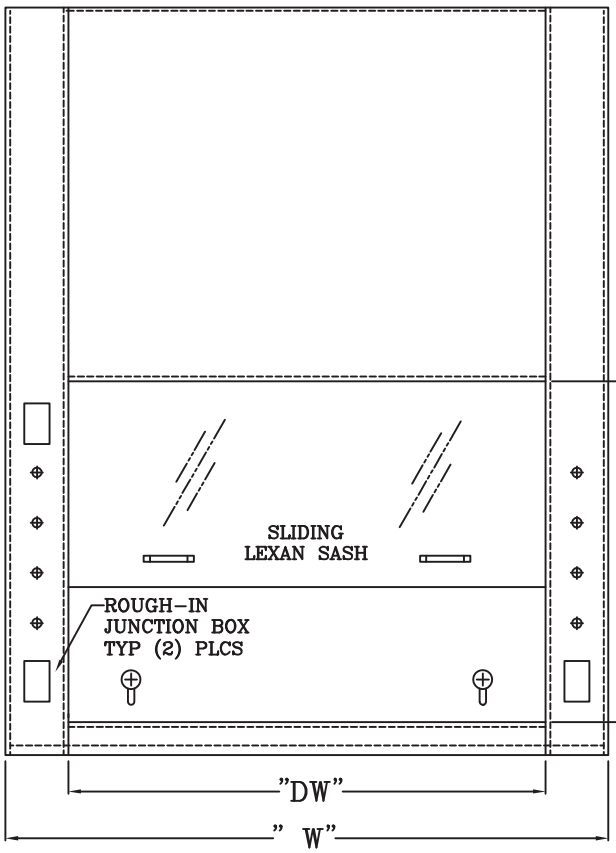
COUNTER TOP FUME HOOD



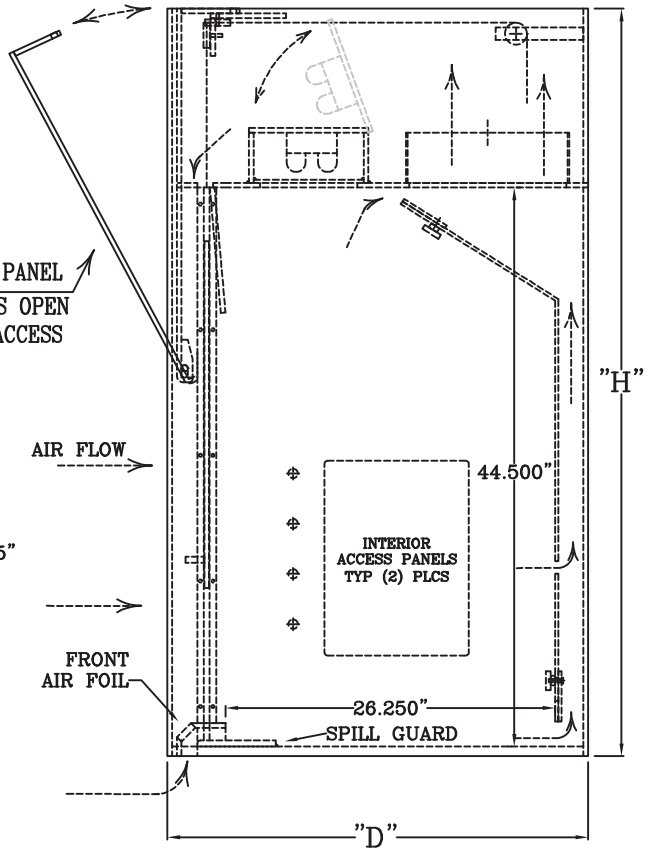
TOP VIEW

FEATURES :

1. THE HOOD INTERIOR AND SUPERSTRUCTURE SHALL BE CONSTRUCTED WITH NON METALIC MATERIALS. STANDARD MATERIALS: WHITE POLYPROPYLENE. OPTIONAL MATERIALS: WHITE PVC, F/R POLYPROPYLENE.
2. VAPOR PROOF FLUORESCENT LIGHT FIXTURE.
3. FIXTURE CUT-OUTS W/ COVERS (WIRING AND PLUMBING BY OTHERS).
4. COUNTERBALANCED CLEAR LEXAN VERTICAL SLIDING SASH.
5. INTERIOR ACCESS PANELS FOR WIRING AND PLUMBING.
6. INTEGRAL WORK SURFACE .
7. EXHAUST DUCT :
   - 3' HOOD – (1) 10" ROUND – 10.75" I.D.
   - 4' HOOD – (1) 10" ROUND – 10.75" I.D.
   - 5' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 6' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 8' HOOD – (1) 14" ROUND – 14.00" I.D.



FRONT VIEW



SIDE VIEW

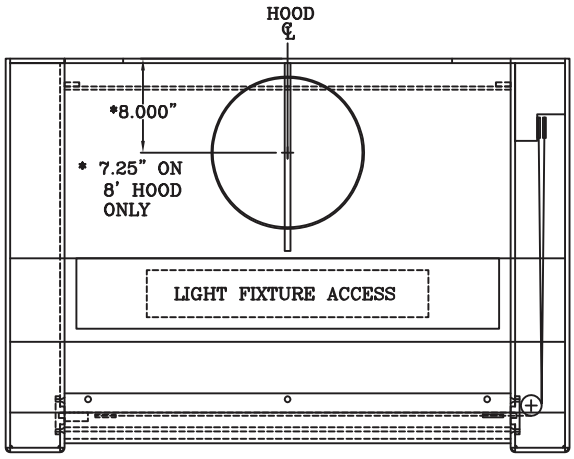
PART NUMBER	W	H	D	"DW"
ID-CT-36-FH	35"	59.5"	33.5"	26"
ID-CT-48-FH	48"	59.5"	33.5"	38"
ID-CT-60-FH	60"	59.5"	33.5"	50"
ID-CT-72-FH	72"	59.5"	33.5"	62"
ID-CT-96-FH	96"	59.5"	33.5"	86"

PLASTIC FUME HOOD

FUME HOOD

COUNTER TOP FUME HOOD

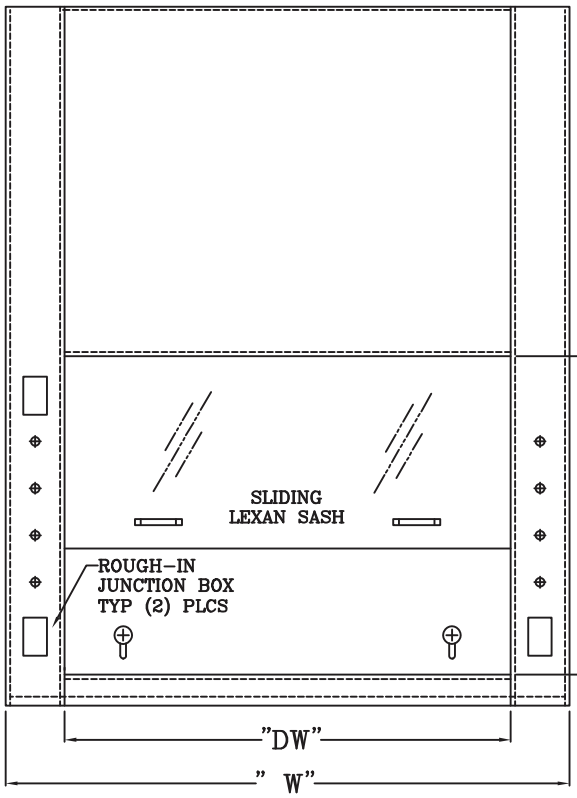
MODIFIED FOR USE WITH VAV STSTEMS



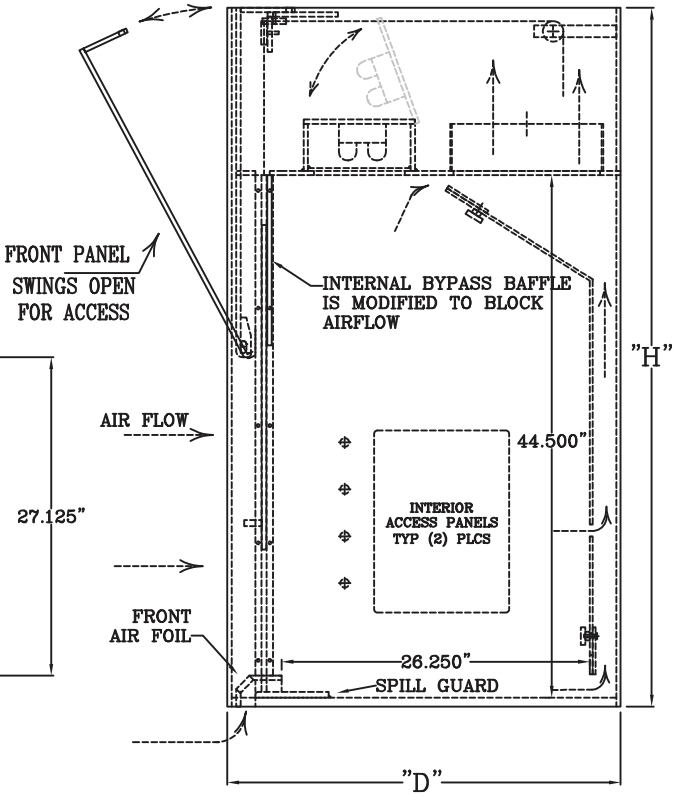
TOP VIEW

FEATURES :

1. THE HOOD INTERIOR AND SUPERSTRUCTURE SHALL BE CONSTRUCTED WITH NON METALIC MATERIALS. STANDARD MATERIALS: WHITE POLYPROPYLENE. OPTIONAL MATERIALS: WHITE PVC, F/R POLYPROPYLENE.
2. VAPOR PROOF FLUORESCENT LIGHT FIXTURE.
3. FIXTURE CUT-OUTS W/ COVERS (WIRING AND PLUMBING BY OTHERS).
4. COUNTERBALANCED CLEAR LEXAN VERTICAL SLIDING SASH.
5. INTERIOR ACCESS PANELS FOR WIRING AND PLUMBING.
6. INTEGRAL WORK SURFACE .
7. EXHAUST DUCT :
   - 4' HOOD – (1) 10" ROUND – 10.75" I.D.
   - 5' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 6' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 8' HOOD – (1) 14" ROUND – 14.00" I.D.



FRONT VIEW



SIDE VIEW

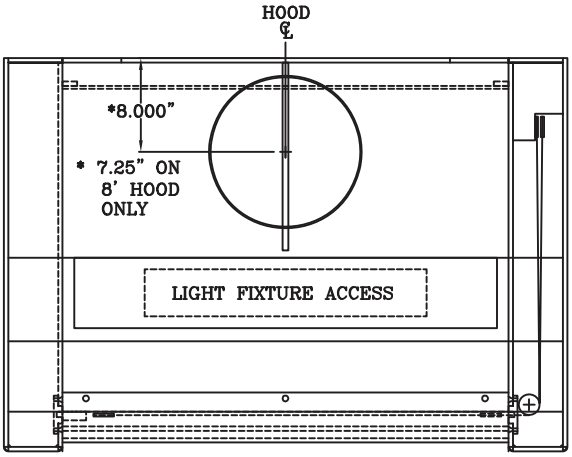
PART NUMBER	W	H	D	"DW"
ID-CT-48-FH	48"	59.5"	33.5"	38"
ID-CT-60-FH	60"	59.5"	33.5"	50"
ID-CT-72-FH	72"	59.5"	33.5"	62"
ID-CT-96-FH	96"	59.5"	33.5"	86"

PLASTIC FUME HOOD

FUME HOOD

COUNTER TOP FUME HOOD

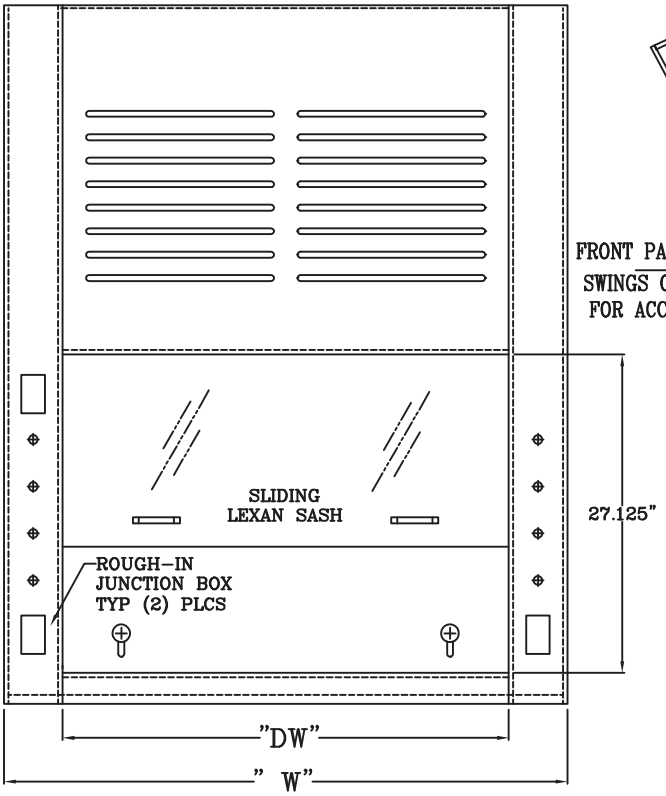
—FRONT BYPASS AUXILIARY AIR—



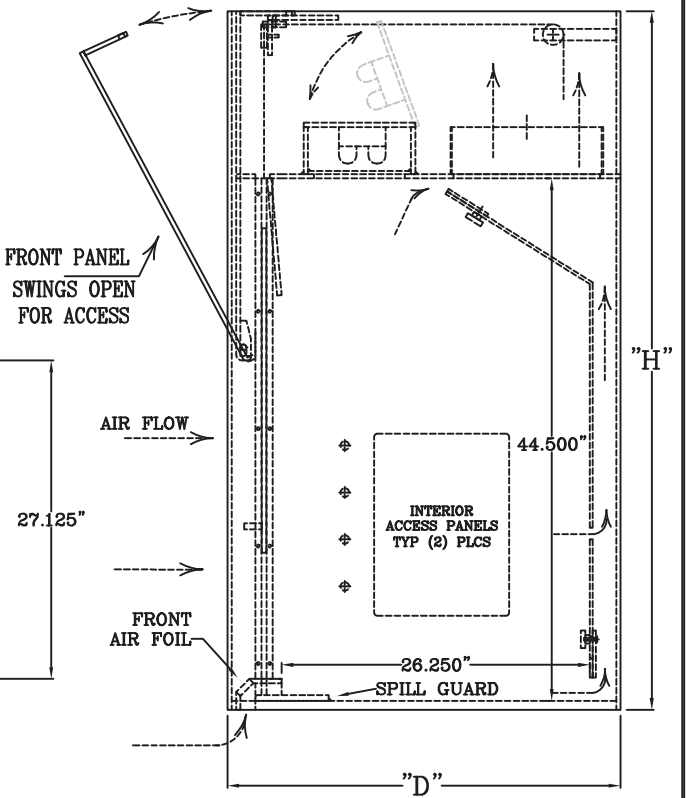
TOP VIEW

FEATURES :

1. THE HOOD INTERIOR AND SUPERSTRUCTURE SHALL BE CONSTRUCTED WITH NON METALIC MATERIALS. STANDARD MATERIALS: WHITE POLYPROPYLENE. OPTIONAL MATERIALS: WHITE PVC, F/R POLYPROPYLENE.
2. VAPOR PROOF FLUORESCENT LIGHT FIXTURE.
3. FIXTURE CUT-OUTS W/ COVERS (WIRING AND PLUMBING BY OTHERS).
4. COUNTERBALANCED CLEAR LEXAN VERTICAL SLIDING SASH.
5. INTERIOR ACCESS PANELS FOR WIRING AND PLUMBING.
6. INTEGRAL WORK SURFACE .
7. SLOTTED FRONT BYPASS PANEL.
8. EXHAUST DUCT :
   - 4' HOOD – (1) 10" ROUND – 10.75" I.D.
   - 5' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 6' HOOD – (1) 12" ROUND – 12.75" I.D.
   - 8' HOOD – (1) 14" ROUND – 14.00" I.D.



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	"DW"
ID-CT-48-FH	48"	59.5"	33.5"	38"
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ID-CT-72-FH	72"	59.5"	33.5"	62"
ID-CT-96-FH	96"	59.5"	33.5"	86"

PLASTIC FUME HOOD

TFI/Inline Design CT (Counter Top) Fume Hood Specifications

Part 1 - General

1.1 Description of Work

All TFI/Inline Design counter top polypropylene limited bypass exhausted hoods shall be furnished and shall be demonstrated to properly perform in accordance with the specifications set forth herein.

1.2 Products Included

A. **CT** (Counter Top)

Complete one-piece bench top polypropylene hood with minimum use of metal parts. All metal parts are totally enclosed in plastic and the adjustable window is 3/8" polycarbonate material to access the nonmetal work zone.

B. Fume Hood Base

Standard fitted bases to accommodate the width, depth and desired work surface height. Styles can be chosen from TFI/Inline Design standard casework catalog.

1.3 Delivery, Storage and Handling

A. Polypropylene fume hoods and related materials require the interior building temperature not to exceed 90°F to avoid undue structural fatigue and damage.

B. Finished surfaces will be protected from soiling or damage during handling. The equipment comes with a protective film that should be left in place while handling, and then removed only where pieces are mated during installation.

C. When ambient temperatures are below -20°F, careful handling is required to prevent polypropylene from cracking.

1.4 Submittals

A. **Product Data:** TFI/Inline Design will submit manufacturer's data for each fume hood being furnished. Included will be locations, size and service requirements for each utility connection, as well as component dimensions and configurations.

B. **Shop Drawings:** TFI/Inline Design shall provide scalable drawings(s) of each hood, illustrating top, side, and front views. Drawings shall include all component dimensions, options and special features. Particular attention shall be given to installation interfaces as required by other trades (plumbing fixtures, exhaust connections, electrical requirements, etc.). Drawings shall be available on electronic format for viewing using AutoCAD (2000 or higher), as well as in pdf format.

C. Upon Request, TFI/Inline Design shall submit 3-inch by 3-inch samples of all construction materials where required, including hinges, door pulls, fastening devices, etc.

D. TFI/Inline Design shall submit detailed seismic anchorage and attachment drawings and calculations complying with all Uniform Building Code requirements and regulations for seismic restraint (where applicable).

E. **Certifications:** Submit certifications stating that items in this section are installed per applicable referenced codes, standards, specifications and are complete and ready for intended function. Copies of all hood certification test reports shall be included.

F. **Operations and Maintenance Manuals:** TFI/Inline Design will submit complete operating and maintenance manuals for each type of hood and size that describe proper operating procedures, maintenance and replacement schedules, replaceable component parts lists.

1.5 Quality Assurance

A. **TFI/Inline Design** has ten years or more experience in the manufacture of polypropylene fume hoods.

B. **Factory Testing:** Prior to delivery to the job site, and only if required by the customer, every hood shall be tested to manufacturer's specifications for performance and safety and a copy of the "Inspection Report" report shall accompany each hood. One representative sample hood of each type shall have been tested according to the test procedures outlined below to verify that subsequent production models meet the "Personnel Protection Factor". The test facility (emulating actual operating conditions), samples, apparatus and instruments to be supplied by the manufacturer.

1. ANSI/ASHRAE 110-1995: A tracer gas is introduced 6-inches behind the sash at a rate of 4 liters per minute. A sensor located outside the work zone monitors for gas leakage from the hood face. The "Personnel Protection Factor" shall be less than 4.0 AM at less than 0.1 PPM, in the center, right and left sides of the work access opening.

C. **Field Testing:** If required, each cabinet shall be subjected to field certification per manufacturer procedures and performance criteria, after the cabinets are completely installed and all exhaust/supply systems fully operational and balanced as intended. The field tests shall be conducted by an independent certifying agency, selected by the manufacturer and approved by the Owner, at no expense to the Owner. The owner is his representative may witness the tests. In the event that cabinets cannot be certified, a detailed report shall be prepared outlining deficiencies.

D. **Training:** TFI/Inline Design offers free training via telephone and email correspondence for no charge to the customer. "On-site" training given by a representative of TFI/Inline Design is available to the customer at an additional charge that is disclosed at the time such service is requested.

1.6 Warranty

A. TFI/Inline Design shall provide a written warranty that work shall be free from defects in materials (structural failure, warping and finish integrity) and workmanship for a period of 2 years from the date of acceptance or Substantial Completion (whichever is later). Stipulate that defects that develop within the warranty period shall be removed, repaired and replaced at no additional cost to the Owner.

1.7 References

B. American National Standards Institute (ANSI)
- **1.** ANSI/ASHRAE Standard 110-1995-Metheod of Testing Performance of Laboratory Fume Hoods
- **2.** National Electrical Code

C. SEFA Member

1.8 Materials

A. Appendix 1: Properties of Standard and Flame Retardant Polypropylene Materials.

B. Appendix 2: Typical Chemical Resistance Properties for Polypropylene Materials.

C. Appendix 3: Properties of Polycarbonate (Lexan™) Material

Part 2- Products

2.1 Limited Bypass Exhausted Counter Top Polypropylene Fume Hoods

A. Manufacturer:

1. The design of counter top polypropylene fume hood is based on products manufactured by TFI/Inline Design Corporation. Each fume hood shall have a completely welded shell assembly (case), which shall be rigid and self-supporting, requiring little or no field assembly.

2. Products of other polypropylene fume hood manufacturers may be used as an approved equal, provided they meet the product specifications and performance characteristics specified herein.

B. General Design Requirements:

1. Fume hoods required under this specification will be referenced as: CT (Counter Top) Fume Hoods.

2. Fume Hood Configurations: Provide in sizes and configurations with fume hood base shown on the drawings.

C. CT Hood Performance Characteristics

1. All cabinets of size and type as indicated on the hood schedule shall be a bench style, single pass flow-through design in which air is drawn over the hood's internal work surface, pulled behind rear adjustable interior exhaust baffles, to a single exit point at the top of the hood.

2. Minimum average inflow velocity through the work access opening shall be 100 LFPM with sash full open. Working sash heights vary between fully closed and fully open, without the loss of the "personnel protection factor".

3. The exhaust volumes and negative static pressures required per cabinet size shall not exceed the following based on an average inflow velocity of 100 FPM at a sash height of fully open.

Hood width	26.25- inch depth	30-inch depth
4 foot	604CFM @ .5" s.p.	604 CFM @ .5" s.p.
5 foot	794 CFM @ .5" s.p.	794 CFM @ .5" s.p.
6 foot	985 CFM @ .5" s.p.	985 CFM@ .5"s.p.
8 foot	1,366CFM @ 5"s.p.	1,366 CFM@ .5"s.p.

4. The work zone shall be illuminated by a "roof mounted", fluorescent light fixture and shall provide an average of 100 foot-candles, as measured at

the work surface. The lamp shall use two T8 bulbs and use listed electronic ballast. The fluorescent fixture shall be housed in a gas-tight chamber that is an integral part of the fume hoof, constructed from 3/8-inch polypropylene with a clear polycarbonate lens. All lamps shall be easily replaceable by accessing them via a polypropylene hinged lid simple tools (flathead screwdriver).

5. All electronic controls shall be housed in a separate gastight PVC enclosure and shall be accessible from the top of the cabinet.

6. The polypropylene workspace shall be enclosed on both sidewalls by a 4.25-inch wide plumbing chase. The chase shall extend the full height and width of the cabinet's exterior sidewall. Access panels are provided on the interior sides of the chase. Exterior access panels are available upon request. All panels shall be mounted flush to the surrounding material using ¼-20 x ½"long flat head polycarbonate screws and provide sufficient access for maintenance and repair of plumbing, electrical and sash components.

D. Exhausted Counter Top Fume Hood Construction

1. The hoods plumbing chase, structural support members and primary superstructure shall be constructed from 3/8-inch fully stress relieved, refrigerator white, polypropylene sheet stock. All sections are to be reinforced where necessary and continuously heat seam welded to a form a rigid structure with all exterior welds finished flush with the surrounding surfaces. Rear exhaust duct and the perforated, removable work surface shall use ¼- inch material.

2. The hood work surface shall be constructed using ¾" polypropylene material of the same color and grade as the structure of the hood itself. The work surface is integral, being completely welded to the hood using 5/32-inch diameter welding rod on the interior of the hood. The bottom side of the hood work surface is free of welds and is flush for easy connection to base cabinets.

3. The air foil located at the hood work space opening, shall be constructed using 3/8-inch thick polypropylene, and is lifted 1-inch above the front spill lip, allowing air flow across hood work surface when sash is fully closed. Air foil is mounted using ¾-inch polypropylene blocks which are drilled and tapped for 3/8-13 inch FRP bolts to be bolted from below the front of hood work surface.

4. The sash material shall be 3/8-inch polycarbonate (LEXAN™ or similar brand). Margard™ is available upon specific request. The sash is suspended within polyethylene glide channels by a 1/8-inch polyester cable routed over front and rear HDPE pulleys connected to a completely enclosed polypropylene enclosed counter balanced weight located in the plumbing chase.

5. All internal electrical wiring shall be enclosed in flexible, UL Listed or Listed fittings. All internal junction boxes and enclosures shall be constructed from PVC and shall be liquid-tight construction and gasketed where required. All exposed controls and visual indicators shall be constructed from non-metal corrosive-resistant materials or protected by non-metal, gas-tight enclosures with a clear viewing lens, where required.

6. Supply mains to the cabinet shall be connected to a UL Listed junction box of suitable size to accommodate required circuits as indicated on the hood schedule. The junction box shall be non-metallic and require non-metallic liquid-tight connections.

7. Closure panels, where specified, shall be constructed from materials to match the ELF hood and shall use 3/8-inch polypropylene. The panels shall enclose the top of the cabinet to the ceiling and/or the plumbing chase to the wall in the rear. Panels shall be finished to match hood type. For ceiling enclosures, the panels shall be louvered (or slotted) to obtain supply air for the down flow, unless otherwise specified. The side panels shall fasten to the top of the cabinet and the rear wall. The front panel shall fasten only to the side panels and easily removable to provide access to the top for maintenance purposes.

E. Counter Top Polypropylene Fume Hood Services

1. Services shall be provided in each hood as per the hood schedule. Hood shall have pre-punched holes on the hood post unless otherwise required.

2. Service fixtures and fittings mounted inside of hood shall consist of labeled hose nozzle outlets remotely controlled from the hood post with color-coded index handles. The fixtures (valves and nozzles) shall be constructed from polypropylene unless otherwise noted. The valve body shall be easily removed from the front of the repair.

3. Service fixtures shall be provided with piping, from the outlet/valve to the exterior. Where services are scheduled on both sides of the hood, piping shall be connected for a coordinated single point connection to the building services.

4. Exhaust duct wash downs, where specified, consist of one, ½-inch, schedule 80, PVC pipes (spray bars) extending horizontally across the top rear interior of hood behind exhaust baffles. Each spray bar shall consist of replaceable, 1/4-inch NPT, PVC spray heads, with a 120-degree spray angle and 1.4 GPM at 40 PSI, on evenly spaced centers (minimum of three), oriented toward the top rear corner of the hood interior. The spray bars shall be manifolded to a common point through a ball valve mounted on the hood post as shown on the drawings or operator control (on/off and flow rate). The valve shall be plumbed out the rear of the cabinet for connection to building utilities. A 1.5-inch, NPT threaded drain hole shall be installed in the center of the floor of the exhaust duct to remove wash down water. The floor shall insure complete drainage of wash water.

5. Sinks of size per the hood schedule and/or cup sinks (nominal 6” by 3”) shall be under mounted and flush with the bottom of the work surface. Other custom sinks and integral sinks shall be mounted according to the specifics given by the customer.

6. Service for flammable gas shall be installed per local codes using approved piping methods. Where metallic (black pipe) is required, the pipe can be epoxy coated, including the remove valve and all internal piping.

7. Electrical services shall be three wire grounding type receptacles rated for 120 volt or 220 volt supply per the schedule. Outlets shall be provided on the hood post where noted. If required, each outlet shall have a non-metallic, corrosive resistant, vapor-tight cover.

Part 3- Installation, adjusting, cleaning and protection

3.1 Installation

A. Fume Hood Base Installation:
Temporarily set fume hood bases plumb, square, and straight with no distortion
Use shims as required for added support.

B. Fume Hood Installation:

Set fume hood on base cabinet and using base cabinet leg levelers plumb, square, and straight with no distortion. Fasten fume hood to bases from inside the base cabinet, through perimeter base cabinet strips, using polycarbonate screws or capped steel.

C. Accessory Installation:
Install sinks, cup sinks and accessories in accordance with manufacturer's recommendations.

3.2 Adjusting

A. Repair or remove and replace defective work, as directed by Owner's Representative upon completion of installation.

B. Adjust sash, doors, hardware, fixtures and other moving or operating parts to function smoothly.

3.3 Cleaning

A. Remove all remaining protective masking from the cabinet.

B. Clean finished fume hood, work surfaces, and accessories. Touch up as required, wipe down and vacuum the interior of the equipment. **Note:** Alcohol and Acetone is an effective cleaning agent to remove dust and dirt from the surface. Consult MSDS for precautions.

3.4 Protection of Finished Work

A. Provide all necessary protective measures to prevent exposure of the countertop fume hood to other construction activity during operational test and balancing.

B. Advise contractor of procedures and precautions for protection of material, installed fume hood and fixtures from damage by work of other trades.

--END OF SECTION--

Counter Top PVC Hood Material Specifications

SUPER STRUCTURE		3/8" WHITE PVC - Type 1
WORK SURFACE		1/2" WHITE PVC - Type 1
SASH		3/8" CLEAR LEXAN
	CABLE	.060 DIA. BRAIDED POLYESTER
	PULLEYS	HIGH DENSITY POLYETHYLENE
	PULLEY BOLTS	3/8-16 FIBERGLASS/ SST
	WASHERS	TEFLON
	COUNTER WEIGHTS	STEEL INSIDE SEALED PVC CASE
	HANDLE	3/4" BLACK POLYPROPYLENE
	HANDLE BOLTS	1/4-20 POLYCARBONATE
	SASH TRACK	HIGH DENSITY POLYETHYLENE
	SASH TRACK BOLTS	1/4-20 POLYCARBONATE
BAFFLES		1/4" WHITE PVC - Type 1
	KNOBS	MOLDED BLACK PLASTIC
	BOLTS	1/4-20 POLYCARBONATE
AIR FOIL		3/8" WHITE PVC - Type 1
	AIRFOIL BOLTS	3/8-16 FIBERGLASS
FRONT PANEL		3/8" WHITE PVC - Type 1
	BOLTS	3/8-16 FIBERGLASS
ELECTRICAL BOXES		GRAY PVC
	MOUNTING SCREWS	STAINLESS STEEL / BEHIND COVER
PLUG COVERS		3/4" BLACK ABS
LIGHT PANEL		1/4" CLEAR LEXAN
	GASKET	BLENDED FOAM RUBBER
	ADHESIVE	FOAM DOUBLE SIDED TAPE
	BOLTS	1/4-20 NYLON THIMBSCREW
LIGHT FIXTURE		TWIN BULB LED OR FLUORESCENT

Counter Top PVC Hood Material Specifications

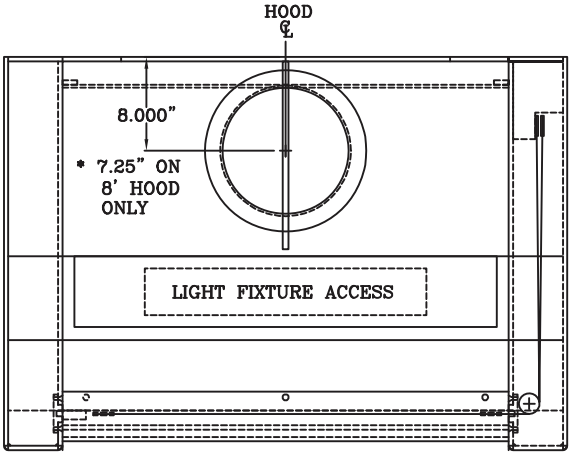
PVC Constant Volume Fume Hood

Dimensions	4ft	5ft	6ft	8ft
Width	48"	60"	72"	96"
Depth	33.5"	33.5"	33.5"	33.5"
Height (overall)	59.5"	59.5"	59.5"	59.5"
Deck Area				
Width	38"	50"	62"	86"
Depth	26.25"	26.25"	26.25"	26.25"
Height (inside work area)	44.5"	44.5"	44.5"	44.5"
Airflow				
Inflow Air Velocity	**100 LFPM @ sash full open**	**100 LFPM @ sash full open**	**100 LFPM @ sash full open**	**100 LFPM @ sash full open**
Exhaust Volume	**604 CFM**	**794 CFM**	**985 CFM**	**1366 CFM**
Exhaust Static Pressure	**.5"**	**.5"**	**.5"**	**.5"**
Exhaust Duct Collar	**10.75" I.D. 11.00" O.D.**	**12.75" I.D. 13.00" O.D.**	**12.75" I.D. 13.00" O.D.**	**14.00" I.D. 14.25" O.D.**
Electrical (optional)				
Volts AC - 60Hz	**115 v 20 amp**	**115 v 20 amp**	**115 v 20 amp**	**115 v 20 amp**
Optional	**220 v 10 amp**	**220 v 10 amp**	**220 v 10 amp**	**220 v 10 amp**
Flourescent Lights	**(2) 2ft - 20 watt**	**(2) 4ft - 40 watt**	**(2) 4ft - 40 watt**	**(6) 2ft - 20 watt**
LED Lights	**(1) 2ft - 12 watt**	**(2) 4ft - 14 watt**	**(2) 4ft - 14 watt**	**(3) 2ft - 12 watt**
Weight				
Approximate Shipping (without crate)	**865 lbs.**	**907 lbs.**	**936 lbs.**	**1,152 lbs.**

FUME HOOD

COUNTER TOP FUME HOOD

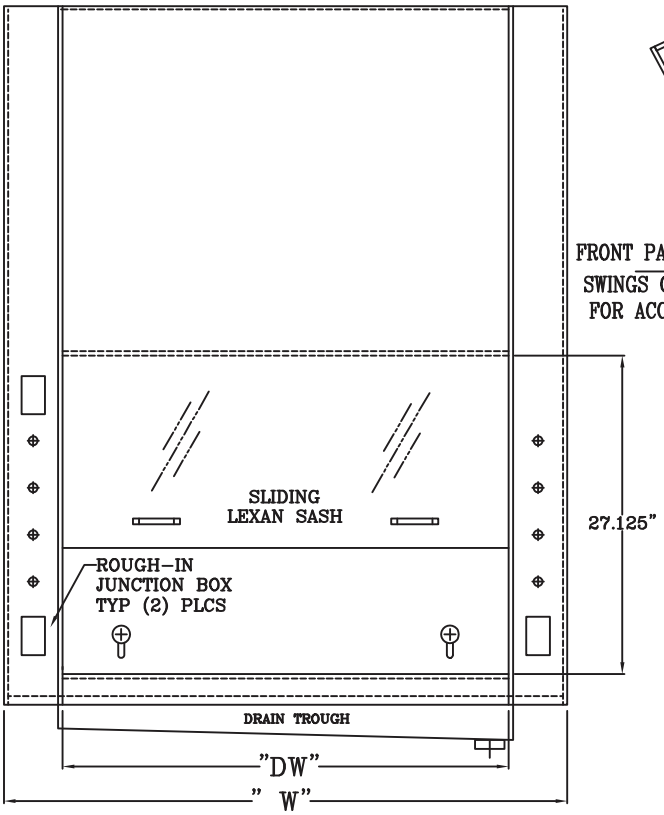
– FOR PERCHLORIC ACID USE –



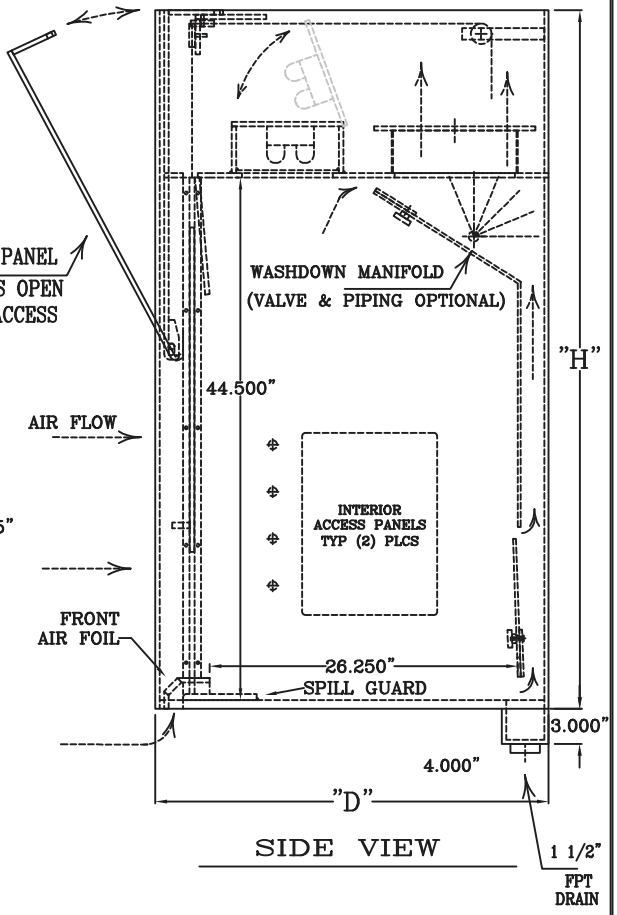
TOP VIEW

FEATURES :

1. THE HOOD INTERIOR AND SUPERSTRUCTURE SHALL BE CONSTRUCTED WITH WHITE PVC. ALL SEAMS WILL BE HEAT WELDED AND BE LIQUID TIGHT.
2. VAPOR PROOF FLUORESCENT LIGHT FIXTURE.
3. FIXTURE CUT-OUTS W/ COVERS (WIRING AND PLUMBING BY OTHERS).
4. COUNTERBALANCED CLEAR LEXAN VERTICAL SLIDING SASH.
5. INTERIOR ACCESS PANELS FOR WIRING AND PLUMBING.
6. INTEGRAL PVC WORK SURFACE .
7. A MANUAL PLENUM WASHDOWN SYSTEM IS INSTALLED BEHIND REMOVABLE EXHAUST BAFFLES.
8. A SLOPING DRAIN TROUGH WITH A 1 1/2" FPT DRAIN FITTING IS INTEGRALLY WELDED AT REAR OF HOOD.
9. EXHAUST DUCT :
   - 4' HOOD – (1) 10" ROUND – 13.75" FLANGE O.D.
   - 5' HOOD – (1) 12" ROUND – 15.75" FLANGE O.D.
   - 6' HOOD – (1) 12" ROUND – 15.75" FLANGE O.D.
   - 8' HOOD – (1) 14" ROUND – 17.00" FLANGE O.D.



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	"DW"
ID-CT-48-PFH	48"	59.5"	33.5"	38"
ID-CT-60-PFH	60"	59.5"	33.5"	50"
ID-CT-72-PFH	72"	59.5"	33.5"	62"
ID-CT-96-PFH	96"	59.5"	33.5"	86"

PLASTIC FUME HOOD

TFI/Inline Design PVC Perchloric Acid Fume Hood Specifications

Part 1 - General

1.1 Description of Work

All TFI/Inline Design PVC perchloric acid limited bypass exhausted hoods shall be furnished and shall be demonstrated to properly perform in accordance with the specifications set forth herein.

1.2 Products Included

A. PVC Perchloric Acid Use

Complete one-piece bench top PVC hood with minimum use of metal parts. All metal parts are totally enclosed in plastic and the adjustable window is 3/8" polycarbonate material to access the nonmetal work zone.

B. Fume Hood Base

Standard fitted bases to accommodate the width, depth and desired work surface height. Styles can be chosen from TFI/Inline Design standard casework catalog.

1.3 Delivery, Storage and Handling

A. PVC fume hoods and related materials require the interior building temperature not to exceed 90°F to avoid undue structural fatigue and damage.

B. Finished surfaces will be protected from soiling or damage during handling. The equipment comes with a protective film that should be left in place while handling, and then removed only where pieces are mated during installation.

C. When ambient temperatures are below 30°F, careful handling is required to prevent PVC from cracking.

1.4 Submittals

A. **Product Data:** TFI/Inline Design will submit manufacturer's data for each fume hood being furnished. Included will be locations, size and service requirements for each utility connection, as well as component dimensions and configurations.

B. **Shop Drawings:** TFI/Inline Design shall provide scalable drawings(s) of each hood, illustrating top, side, and front views. Drawings shall include all component dimensions, options and special features. Particular attention shall be given to installation interfaces as required by other trades (plumbing fixtures, exhaust connections, electrical requirements, etc.). Drawings shall be available on electronic format for viewing using AutoCAD (2000 or higher), as well as in pdf format.

C. Upon Request, TFI/Inline Design shall submit 3-inch by 3-inch samples of all construction materials where required, including hinges, door pulls, fastening devices, etc.

D. TFI/Inline Design shall submit detailed seismic anchorage and attachment drawings and calculations complying with all Uniform Building Code requirements and regulations for seismic restraint (where applicable).

E. **Certifications:** Submit certifications stating that items in this section are installed per applicable referenced codes, standards, specifications and are complete and ready for intended function. Copies of all hood certification test reports shall be included.

F. **Operations and Maintenance Manuals:** TFI/Inline Design will submit complete operating and maintenance manuals for each type of hood and size that describe proper operating procedures, maintenance and replacement schedules, replaceable component parts lists.

1.5 Quality Assurance

A. **TFI/Inline Design** has ten years or more experience in the manufacture of polypropylene fume hoods.

B. **Factory Testing:** Prior to delivery to the job site, and only if required by the customer, every hood shall be tested to manufacturer's specifications for performance and safety and a copy of the "Inspection Report" report shall accompany each hood. One representative sample hood of each type shall have been tested according to the test procedures outlined below to verify that subsequent production models meet the "Personnel Protection Factor". The test facility (emulating actual operating conditions), samples, apparatus and instruments to be supplied by the manufacturer.

1. ANSI/ASHRAE 110-1995: A tracer gas is introduced 6-inches behind the sash at a rate of 4 liters per minute. A sensor located outside the work zone monitors for gas leakage from the hood face. The "Personnel Protection Factor" shall be less than 4.0 AM at less than 0.1 PPM, in the center, right and left sides of the work access opening.

C. **Field Testing:** If required, each cabinet shall be subjected to field certification per manufacturer procedures and performance criteria, after the cabinets are completely installed and all exhaust/supply systems fully operational and balanced as intended. The field tests shall be conducted by an independent certifying agency, selected by the manufacturer and approved by the Owner, at no expense to the Owner. The owner is his representative may witness the tests. In the event that cabinets cannot be certified, a detailed report shall be prepared outlining deficiencies.

D. **Training:** TFI/Inline Design offers free training via telephone and email correspondence for no charge to the customer. "On-site" training given by a representative of TFI/Inline Design is available to the customer at an additional charge that is disclosed at the time such service is requested.

1.6 Warranty

A. TFI/Inline Design shall provide a written warranty that work shall be free from defects in materials (structural failure, warping and finish integrity) and workmanship for a period of 2 years from the date of acceptance or Substantial Completion (whichever is later). Stipulate that defects that develop within the warranty period shall be removed, repaired and replaced at no additional cost to the Owner.

1.7 References

B. American National Standards Institute (ANSI)

1. ANSI/ASHRAE Standard 110-1995-Metheod of Testing Performance of Laboratory Fume Hoods

2. National Electrical Code

C. SEFA Member

1.8 Materials

A. Appendix 1: Properties of Standard and Flame Retardant Polypropylene Materials.

B. Appendix 2: Typical Chemical Resistance Properties for Polypropylene Materials.

C. Appendix 3: Properties of Polycarbonate (Lexan™) Material

Part 2- Products

2.1 Limited Bypass PVC Perchloric Acid Fume Hoods

A. Manufacturer:

1. The design of the perchloric acid fume hood is based on products manufactured by TFI/Inline Design Corporation. Each fume hood shall have a completely welded shell assembly (case), which shall be rigid and self-supporting, requiring little or no field assembly.

B. General Design Requirements:

1. Fume hoods required under this specification will be referenced as: PVC Perchloric Acid Fume Hoods.

2. Fume Hood Configurations: Provide in sizes and configurations with fume hood base shown on the drawings.

C. PVC Hood Performance Characteristics

1. All cabinets of size and type as indicated on the hood schedule shall be a bench style, single pass flow-through design in which air is drawn over the hood's internal work surface, pulled behind rear adjustable interior exhaust baffles, to a single exit point at the top of the hood.

2. Minimum average inflow velocity through the work access opening shall be 100 LFPM with sash full open. Working sash heights vary between fully closed and fully open, without the loss of the "personnel protection factor".

3. The exhaust volumes and negative static pressures required per cabinet size shall not exceed the following based on an average inflow velocity of 100 FPM at a sash height of fully open.

Hood width	26.25- inch depth	30-inch depth
4 foot	604CFM @ .5" s.p.	604 CFM @ .5" s.p.
5 foot	794 CFM @ .5" s.p.	794 CFM @ .5" s.p.
6 foot	985 CFM @ .5" s.p.	985 CFM@ .5"s.p.
8 foot	1,366CFM @ 5"s.p.	1,366 CFM@ .5"s.p.

4. The work zone shall be illuminated by a "roof mounted", fluorescent light fixture and shall provide an average of 100 foot-candles, as measured at the work surface. The lamp shall use two T8 bulbs and use listed electronic ballast. The fluorescent fixture shall be housed in a gas-tight chamber that is an integral part of the fume hoof, constructed from 3/8-

inch PVC with a clear polycarbonate lens. All lamps shall be easily replaceable by accessing them via a PVC hinged lid using simple tools (flathead screwdriver).

5. All electronic controls shall be housed in a separate gastight PVC enclosure and shall be accessible from the top of the cabinet.

6. The polypropylene workspace shall be enclosed on both sidewalls by a 4.25-inch wide plumbing chase. The chase shall extend the full height and width of the cabinet's exterior sidewall. Access panels are provided on the interior sides of the chase. Exterior access panels are available upon request. All panels shall be mounted flush to the surrounding material using ¼-20 x ½"long flat head polycarbonate screws and provide sufficient access for maintenance and repair of plumbing, electrical and sash components.

D. Perchloric Fume Hood Construction

1. The hoods plumbing chase, structural support members and primary superstructure shall be constructed from 3/8-inch white PVC sheet stock. All sections are to be reinforced where necessary and continuously heat seam welded to a form a rigid structure with all exterior welds finished flush with the surrounding surfaces. Rear exhaust duct and the perforated, removable work surface shall use ¼- inch material.

2. The hood work surface shall be constructed using 1/2" PVC material of the same color and grade as the structure of the hood itself. The work surface is integral, being completely welded to the hood using 3/16-inch diameter welding rod on the interior of the hood. The bottom side of the hood work surface is free of welds and is flush for easy connection to base cabinets.

3. The air foil located at the hood work space opening, shall be constructed using 3/8-inch thick PVC, and is lifted 1-inch above the front spill lip, allowing air flow across hood work surface when sash is fully closed. Air foil is mounted using ¾-inch PVC blocks which are drilled and tapped for 3/8-13 inch FRP bolts to be bolted from below the front of hood work surface.

4. The sash material shall be 3/8-inch polycarbonate (LEXAN™ or similar brand). Margard™ is available upon specific request. The sash is suspended within polyethylene glide channels by a 1/8-inch polyester cable routed over front and rear HDPE pulleys connected to a completely enclosed polypropylene enclosed counter balanced weight located in the plumbing chase.

5. All internal electrical wiring shall be enclosed in flexible, UL Listed or Listed fittings. All internal junction boxes and enclosures shall be constructed from PVC and shall be liquid-tight construction and gasketed where required. All exposed controls and visual indicators shall be constructed from non-metal corrosive-resistant materials or protected by non-metal, gas-tight enclosures with a clear viewing lens, where required.

6. Supply mains to the cabinet shall be connected to a UL Listed junction box of suitable size to accommodate required circuits as indicated on the hood schedule. The junction box shall be non-metallic and require non-metallic liquid-tight connections.

7. Closure panels, where specified, shall be constructed from materials to match the hood and shall use 3/8-inch PVC. The panels shall enclose the top of the cabinet to the ceiling and/or the plumbing chase to the wall in the rear. Panels shall be finished to match hood type. For ceiling enclosures, the panels shall be louvered (or slotted) to obtain supply air for the down flow, unless otherwise specified. The side panels shall fasten to the top of the cabinet and the rear wall. The front panel shall fasten only to the side panels and easily removable to provide access to the top for maintenance purposes.

E. PVC Perchloric Acid Fume Hood Services

1. Services shall be provided in each hood as per the hood schedule

2. Service fixtures and fittings mounted inside of hood shall consist of labeled hose nozzle outlets remotely controlled from the hood post with color-coded index handles. The fixtures (valves and nozzles) shall be constructed from polypropylene unless otherwise noted. The valve body shall be easily removed from the front of the repair.

3. Service fixtures shall be provided with piping, from the outlet/valve to the exterior. Where services are scheduled on both sides of the hood, piping shall be connected for a coordinated single point connection to the building services.

4. Exhaust duct wash downs, where specified, consist of one, ½-inch, schedule 80, PVC pipes (spray bars) extending horizontally across the top rear interior of hood behind exhaust baffles. Each spray bar shall consist of replaceable, 1/4-inch NPT, PVC spray heads, with a 120-degree spray angle and 1.4 GPM at 40 PSI, on evenly spaced centers (minimum of

three), oriented toward the top rear corner of the hood interior. The spray bars shall be plumbed to a common point through a ball valve mounted on the hood post as shown on the drawings or operator control (on/off and flow rate). The valve shall be plumbed out the rear of the cabinet for connection to building utilities. A 1.5-inch, NPT threaded drain hole shall be installed in the center of the floor of the exhaust duct to remove wash down water. The floor shall insure complete drainage of wash water.

5. Sinks of size per the hood schedule and/or cup sinks (nominal 6" by 3") shall be under mounted and flush with the bottom of the work surface. Other custom sinks and integral sinks shall be mounted according to the specifics given by the customer.

6. Service for flammable gas shall be installed per local codes using approved piping methods. Where metallic (black pipe) is required, the pipe can be epoxy coated, including the remove valve and all internal piping.

7. Electrical services shall be three wire grounding type receptacles rated for 120 volt or 220 volt supply per the schedule. Outlets shall be provided on the hood post where noted. If required, each outlet shall have a non-metallic, corrosive resistant, vapor-tight cover.

Part 3- Installation, adjusting, cleaning and protection

3.1 Installation

A. Fume Hood Base Installation:
Temporarily set fume hood bases plumb, square, and straight with no distortion using the leg levelers. Use shims as required for added support.

B. Fume Hood Installation:

Set fume hood on base cabinet and using base cabinet leg levelers plumb, square, and straight with no distortion. Fasten fume hood to bases from inside the base cabinet, through perimeter base cabinet strips, using polycarbonate screws or capped steel.

C. Accessory Installation:
Install sinks, cup sinks and accessories in accordance with manufacturer's recommendations.

3.2 Adjusting

A. Repair or remove and replace defective work, as directed by Owner's Representative upon completion of installation.

B. Adjust sash, doors, hardware, fixtures and other moving or operating parts to function smoothly.

3.3 Cleaning

A. Remove all remaining protective masking from the cabinet.

B. Clean finished fume hood, work surfaces, and accessories using Windex or a similar product. Touch up as required, wipe down and vacuum the interior of the equipment.

3.4 Protection of Finished Work

A. Provide all necessary protective measures to prevent exposure of the PVC perchloric acid fume hood to other construction activity during operational test and balancing.

B. Advise contractor of procedures and precautions for protection of material, installed fume hood and fixtures from damage by work of other trades.

--END OF SECTION--

Laminar Flow Polypro Hood Material Specifications

SUPER STRUCTURE		WHITE S/R POLYPROPYLENE
WORK SURFACE		WHITE S/R POLYPROPYLENE
SASH		3/8" CLEAR LEXAN
	CABLE	.060 DIA. BRAIDED POLYESTER
	PULLEYS	HIGH DENSITY POLYETHYLENE
	PULLEY BOLTS	3/8-16 FIBERGLASS/ SST
	WASHERS	TEFLON
	COUNTER WEIGHTS	STEEL INSIDE SEALED POLYPRO CASE
	HANDLE	3/4" BLACK ABS
	HANDLE BOLTS	1/4-20 POLYCARBONATE
	SASH TRACK	HIGH DENSITY POLYETHYLENE
	SASH TRACK BOLTS	1/4-20 POLYCARBONATE
HEPA FILTER		99.9% EFFICIENT - WOOD FRAME SEPORATOR-LESS
	HOLD DOWN BOLTS	1/2-13 X 1 1/2" FIBERGLASS
PRE-FILTER		POLYESTER / CARDBOARD
BLOWER		POLYPROPYLENE HOUSING W/ POLYPROPYLENE IMPELLER WHEEL
FRONT PANEL		3/8" WHITE POLYPROPYLENE
ELECTRICAL BOXES		GRAY PVC
	MOUNTING SCREWS	STAINLESS STEEL / BEHIND COVER
PLUG COVERS		3/4" BLACK POLYETHYLENE
LIGHT PANEL		1/4" CLEAR LEXAN
	GASKET	BLENDED NEOPRENE RUBBER
	BOLTS	1/4-20 NYLON THIMBSCREW
LIGHT FIXTURE		TWIN BULB LED OR FLUORESCENT

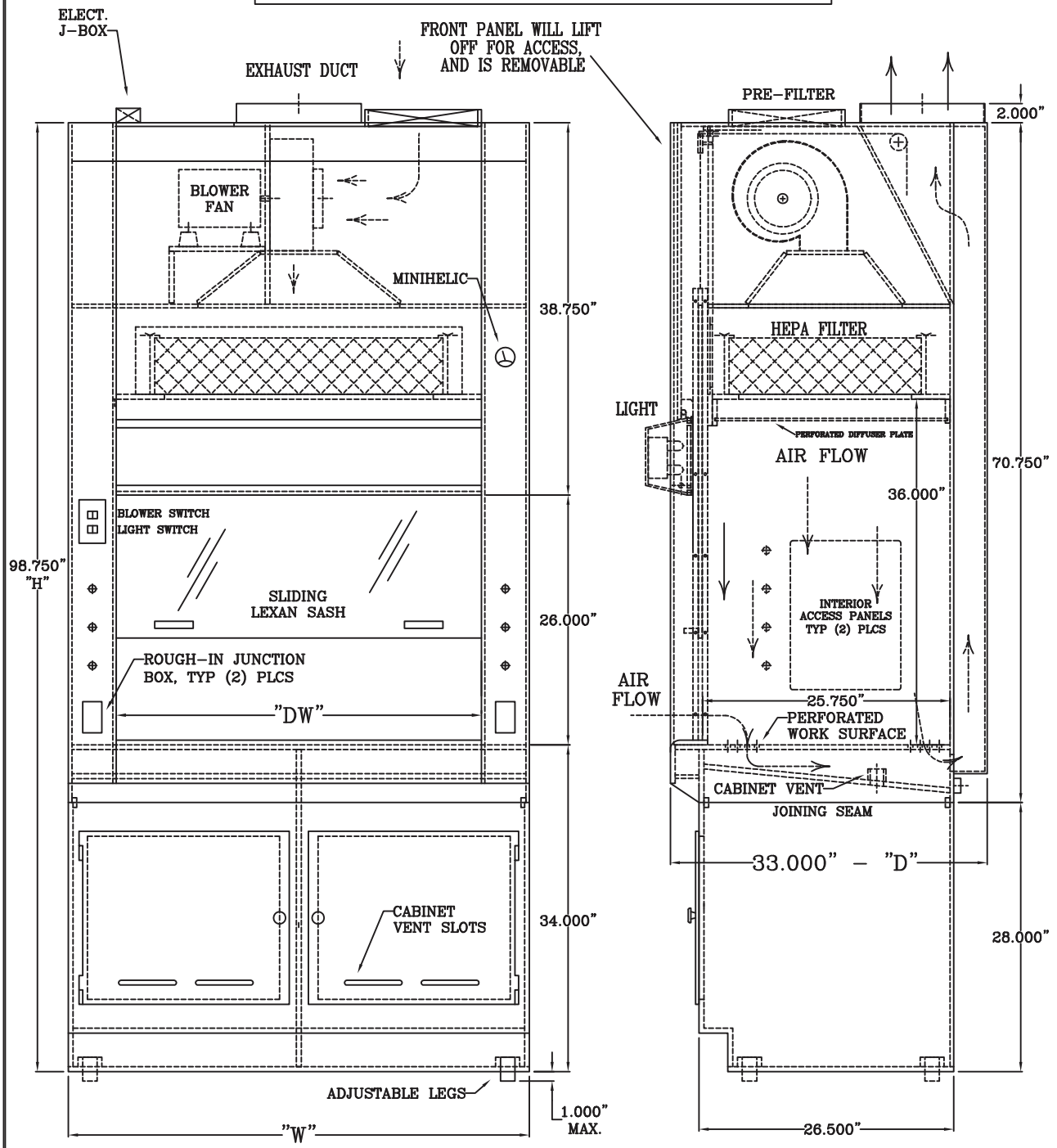
Laminar Flow Polypro Hood Material Specifications

Polypropylene Vertical Laminar Flow Hood

Dimensions	4ft	5ft	6ft	8ft
Width	48"	60"	72"	96"
Depth	33"	33"	33"	33"
Height (overall)	100.75"	100.75"	100.75"	100.75"
Deck Area				
Width	38"	50"	62"	86"
Depth	25"	25"	25"	25"
Height (inside work area)	**35”**	**35”**	**35”**	**35”**
Airflow Specification				
Inflow Air Velocity	100 LFPM @ 10" sash opening	100 LFPM @ 10" sash opening	100 LFPM @ 10" sash opening	100 LFPM @ 10" sash opening
Down Flow Filtered Air	60 LFPM (396 CFM)	60 LFPM (520 CFM)	60 LFPM (646 CFM)	60 LFPM (896 CFM)
Exhaust Static Pressure	n/a	1.35"	1.40"	1.65"
Exhaust Volume (Calculated)	659 CFM 10" sash opening	867 CFM 10" sash opening	1075 CFM 10" sash opening	1492 CFM 10" sash opening
Exhaust Duct Collar (Approximate)	10" diameter (1284 FPM)	12" diameter (1152 FPM)	12" diameter (1426 FPM)	14" diameter (1449 FPM)
HEPA Filter(s) - 5-7/8" h (Maximum CFM @ 1" SP)	(1) - 18x24 775	(1) - 18x30 1002	(2) - 18x24 1550	(2) - 18x30 1995
Pre-filter(s) - 2" H	(1) - 12" x 24"	(1) - 12" x 24"	(1) - 12" x 24"	(2) - 12" x 24"
Electrical				
Volts AC - 60Hz	115 v 20 amp	115 v 20 amp	115 v 20 amp	115 v 20 amp
Optional	220 v 10 amp	220 v 10 amp	220 v 10 amp	220 v 10 amp
Weight				
Approximate Shipping (without crate)	700 lbs.	730 lbs.	825 lbs.	1265 lbs.

FUME HOOD

LAMINAR FLOW FUME HOOD



PART NUMBER	W	H	D	"DW"
ID-CB-48-LFH	48"	98.75"	33"	38"
ID-CB-60-LFH	60"	98.75"	33"	50"
ID-CB-72-LFH	72"	98.75"	33"	62"
ID-CB-96-LFH	96"	98.75"	33"	86"

PLASTIC LAMINAR FLOW FUME HOOD

TFI/Inline Design ELF (Exhausted Laminar Flow) Hood Specifications

Part 1 - General

1.1 Description of Work

All TFI/Inline Design bench top polypropylene exhausted laminar flow fume hoods shall be furnished and shall be demonstrated to properly perform in accordance with the specifications set forth herein.

1.2 Products Included

A. ELF (Exhausted Laminar Flow)
Complete one-piece bench top polypropylene hood with minimum use of metal parts. All metal parts are totally enclosed in plastic, HEPA filter is seporatorless and the adjustable window is 3/8" polycarbonate material to access the nonmetal work zone.

B. Fume Hood Base

Custom fitted acid storage fume hood bases to accommodate the width, depth and desired work surface height.

1.3 Delivery, Storage and Handling

A. Polypropylene fume hoods and related materials require the interior building temperature not to exceed 90°F to avoid undue structural fatigue and damage.

B. Finished surfaces will be protected from soiling or damage during handling. The equipment comes with a protective film that should be left in place while handling, and then removed only where pieces are mated during installation.

C. When ambient temperatures are below -20°F, careful handling is required to prevent polypropylene from cracking.

1.4 Submittals

A. **Product Data:** TFI/Inline Design will submit manufacturer's data for each fume hood being furnished. Included will be locations, size and service requirements for each utility connection, as well as component dimensions and configurations.

B. **Shop Drawings:** TFI/Inline Design shall provide scalable drawings(s) of each hood, illustrating top side, and front views. Drawings shall include all component dimensions, options and special features. Particular attention shall be given to installation interfaces as required by other trades (plumbing fixtures, exhaust connections, electrical requirements, etc.). Drawings shall be available on electronic format for viewing using AutoCAD (2000 or higher), as well as in pdf format.

C. Upon Request, TFI/Inline Design shall submit 3-inch by 3-inch samples of all construction materials where required, including hinges, door pulls, fastening devices, etc.

D. TFI/Inline Design shall submit detailed seismic anchorage and attachment drawings and calculations complying with all Uniform Building Code requirements and regulations for seismic restraint (where applicable).

E. **Certifications:** Submit certifications stating that items in this section are installed per applicable referenced codes, standards, specifications and are complete and ready for intended function. Copies of all hood certification test reports shall be included.

F. **Operations and Maintenance Manuals:** TFI/Inline Design will submit complete operating and maintenance manuals for each type of hood and size that describe proper operating procedures, maintenance and replacement schedules, replaceable component parts lists.

1.5 Quality Assurance

A. **TFI/Inline Design** has ten years or more experience in the manufacture of polypropylene fume hoods.

B. **Factory Testing:** Prior to delivery to the job site, and only if required by the customer, every hood shall be tested to manufacturer's specifications for performance and safety and a copy of the "Inspection Report" report shall accompany each hood. One representative sample hood of each type shall have been tested according to the test procedures outlined below to verify that subsequent production models meet the "Personnel Protection Factor" and "Product Protection" criteria. The test facility (emulating actual operating conditions), samples, apparatus and instruments to be supplied by the manufacturer.

1. ANSI/ASHRAE 110-1995: A tracer gas is introduced 6-inches behind the sash at a rate of 4 liters per minute. A sensor located outside the work zone monitors for gas leakage from the hood face. The "Personnel

Protection Factor" shall be less than 4.0 AM at less than 0.1 PPM, in the center, right and left sides of the work access opening.

C. **Field Testing:** If required, each cabinet shall be subjected to field certification per manufacturer procedures and performance criteria, after the cabinets are completely installed and all exhaust/supply systems fully operational and balanced as intended. The field tests shall be conducted by an independent certifying agency, selected by the manufacturer and approved by the Owner, at no expense to the Owner. The owner is his representative may witness the tests. In the event that cabinets cannot be certified, a detailed report shall be prepared outlining deficiencies.

D. **Training:** TFI/Inline Design offers free training via telephone and email correspondence for no charge to the customer. "On-site" training given by a representative of TFI/Inline Design is available to the customer at an additional charge that is disclosed at the time such service is requested.

1.6 Warranty

A. TFI/Inline Design shall provide a written warranty that work shall be free from defects in materials (structural failure, warping and finish integrity) and workmanship for a period of 2 years from the date of acceptance or Substantial Completion (whichever is later). Stipulate that defects that develop within the warranty period shall be removed, repaired and replaced at no additional cost to the Owner.

1.7 References

A. ISO 14644 Class 10 (or better if requested)

B. American National Standards Institute (ANSI)

1. ANSI/ASHRAE Standard 110-1995-Metheod of Testing Performance of Laboratory Fume Hoods

2. National Electrical Code

C. SEFA Member

1.8 Materials

A. Appendix 1: Properties of Standard and Flame Retardant Polypropylene Materials.

B. Appendix 2: Typical Chemical Resistance Properties for Polypropylene Materials.

C. Appendix 3: Properties of Polycarbonate (Lexan™) Material

Part 2- Products

2.1 Exhausted Laminar Flow Polypropylene Fume Hoods

A. Manufacturer:

1. The design of the exhausted laminar flow polypropylene fume hood is based on products manufactured by TFI/Inline Design Corporation. Each fume hood shall have a completely welded shell assembly (case), which shall be rigid and self-supporting, requiring little or no field assembly.

2. Products of other polypropylene fume hood manufacturers may be used as an approved equal, provided they meet the product specifications and performance characteristics specified herein.

B. General Design Requirements:

1. Fume hoods required under this specification will be referenced as: Exhausted Laminar Flow Hoods (ELF)

2. Fume Hood Configurations: Provide in sizes and configurations with fume hood base shown on the drawings.

C. ELF Performance Characteristics

1. All cabinets of size and type as indicated on the hood schedule shall be a bench style, single pass flow-through design in which all HEPA filtered work zone (down flow) and work access inflow air, is drawn through the cabinet's internal exhaust plenums to a single exit point at the top.

2. Air shall be drawn into the HEPA filter by the internal supply blower from a pre-filter at the top of the cabinet. The air shall exit the HEPA filter through a diffuser into the top of the work zone in a laminar manner. The air will split at the removable work surface perforated inserts with ½ being drawn into 2 rear inlet grills and ½ drawn into the 2 front inlet grills along with the work access inflow. The combination of the down flow and inflow into the front inlet grill forms an "air barrier" that creates the "personnel protection factor".

3. The area beneath the removable work surface shall form a leak-tight exhaust plenum that shall drain to a single, polypropylene, 1 inch FPT polypropylene drain fitting. 1 ½-inch vent holes shall be provided through the bottom of the hood plenum to provide venting for the base cabinets below. Each vent hole shall be shall be protected from plenum spills by 1.497 inch high pipes.

4. The supply HEPA filter(s) shall be in a separate compartment and removable from the front of the cabinet.

5. The positive pressure supply plenum shall be surrounded by negative pressure, even down to the interface of the supply HEPA filter and the filter frame in order to absolutely preclude any gasket leaks from contaminating the HEPA filtered work zone air.

6. The down flow air velocity from a clean HEPA filter shall average from 55 to 60 LFPM with no single point more than 20% above or below the average velocity measured in a horizontal plane defined by the bottom of edge of the sash at normal working height (10 inches).

7. Minimum average inflow velocity through the work access opening shall be 105 LFPM with a 10-inch normal sash opening. Working sash heights shall vary between 8 and 12-inches without a loss of the "personnel protection factor". The maximum non-working height shall be 22.5-inches

8. The exhaust volumes and negative static pressures required per cabinet size shall not exceed the following based on an average inflow velocity of 100 FPM at a work access opening height of 10-inches and an average internal down flow velocity of 60 LFPM.

Hood width	25.75- inch depth	29-inch depth
4 foot	659 CFM @ 1" s.p.	719CFM @ 1" s.p.
5 foot	867 CFM @ 1.35" s.p.	942CFM @ 1.36" s.p.
6 foot	1,075 CFM @ 1.4" s.p.	1,195 CFM@ 1.42"s.p.
8 foot	1,492 CFM @ 1.65"w.g.	1,642 CFM@ 1.70"s.p.

9. The supply HEPA filter shall be wood board framed and constructed from non-woven pleated fiberglass media with separatorless media. All media shall be a minimum of 99.99% efficient on 0.3-micron particles with greater efficiency on smaller and /or larger particles. [Efficiencies of 99.999% and 99.9999% on 0.12-micron particles may be specified].

10. The internal down flow blower shall be a non-overloading, backward inclined, dynamically balanced, motorized impeller and be fully encapsulated within a polypropylene compartment of the fume hood.

11. All motors shall sized to automatically compensate for airflow as the filter loads with particulate to achieve a fan delivery fall off of no more than 10% for an 80% increase in pressure drop across the filter. The motor shall be cooled (both self cooled as well as cooled by positive air passing through the motor compartment), rated for 24-hour continuous operation, lubricated for life and speed controlled by a VFD (variable

frequency device) accessible through a polycarbonate window at the front of the removable access panel.

12. Vibration, due to the motor, shall be minimized through the use of vibration isolators when mounting the motor/blower assembly to the internal frame.

13. The work zone shall be illuminated by an externally mounted, polypropylene, fluorescent light fixture and shall provide an average of 100 foot-candles, as measured at the work surface. The lamp shall use two T8 bulbs and use a thermally protected, listed electronic ballast with automatic reset. The fluorescent fixture shall be gas-tight and constructed from ¼-inch polypropylene with a clear polycarbonate lens. All lamps shall be easily replaceable using simple tools (flathead screwdriver).

14. All electronic controls shall be housed in a separate gastight polypropylene enclosure and shall be accessible from the top of the cabinet.

15. The polypropylene workspace shall be enclosed on both sidewalls by a 4.25-inch wide plumbing chase. The chase shall extend the full height and width of the cabinet's exterior sidewall. Access panels are provided on the exterior sides of the chase. Exterior access panels are available upon request. All panels shall be mounted flush to the surrounding material using ¼-20 x ½"long flat head polycarbonate screws and provide sufficient access for maintenance and repair of plumbing, electrical and sash components.

D. Exhausted Laminar Flow Fume Hood Construction

1. The cabinets work space, plumbing chase, structural support members and bottom shall be constructed from ½-inch fully stress relieved, refrigerator white, polypropylene sheet stock. All sections are to be reinforced where necessary and continuously heat seam welded to a form a rigid structure with all exterior welds finished flush with the surrounding surfaces. Rear exhaust duct and the perforated, removable work surface shall use ¼- inch material.

2. The upper structure of the cabinet containing the HEPA filter, blower, supply plenum and electronics will be constructed using 3/8-inch thick polypropylene and shall be an integral extension of the work space sides and back walls (i.e. one-piece construction).

3. Access to the HEPA filters and motor blower assembly for maintenance and repair shall be through a flush mounted access panel in the upper portion of the hood face. Access to internal components shall NOT require disassembly of the window sash and glide system.

4. Pre-filter(s) shall be mounted on the top of the motor/blower module and easily replaceable. Pre-filter(s) shall be 1-inch thick non-woven fiberglass and shall be 40 percent efficient per the Atmospheric Dust Test.

5. Closure panels, where specified, shall be constructed from materials to match the ELF hood and shall use 3/8-inch polypropylene. The panels shall enclose the top of the cabinet to the ceiling and/or the plumbing chase to the wall in the rear. Panels shall be finished to match hood type. For ceiling enclosures, the panels shall be louvered (or slotted) to obtain supply air for the down flow, unless otherwise specified. The side panels shall fasten to the top of the cabinet and the rear wall. The front panel shall fasten only to the side panels and easily removable to provide access to the top for maintenance purposes.

6. The sash material shall be 3/8-inch polycarbonate (LEXAN™ or similar brand). Margard™ is available upon specific request. The sash is suspended within polyethylene glide channels by a 1/8-inch polyester cable routed over front and rear HDPE pulleys connected to a completely enclosed polypropylene enclosed counter balanced weight located in the plumbing chase.

7. The diffuser below the HEPA filter shall fit snugly full width and length of the work zone and constructed from 3/16-inch thick, 1/8-inch diameter holes on ¼" centers, at 22 percent open, perforated polypropylene and held in place using polycarbonate flat head screws. If required, a felt wiper shall be installed between the sash and the front of the hood below the finished front panel, to provide a seal against the sash material.

8. All internal electrical wiring shall be enclosed in flexible, UL Listed or Listed fittings. All internal junction boxes and enclosures shall be constructed from PVC and shall be liquid-tight construction and gasketed where required. All exposed controls and visual indicators shall be constructed from non-metal corrosive-resistant materials or protected by non-metal, gas-tight enclosures with a clear viewing lens, where required.

9. The work surface shall be non-removable and constructed from 1/2-inch thick polypropylene material, reinforced with polypropylene support baffels to maintain surface flatness. The perforated front and rear removable sections shall be 3/16-inch diameter holes in 5/16-inch

alternate centers, at 33% open whose width is suitable to provide both personnel and product protection per the testing methods of NSF STD 49.

10. Supply mains to the cabinet shall be connected to a UL Listed junction box of suitable size to accommodate required circuits as indicated on the hood schedule. The junction box shall be non-metallic and require non-metallic liquid-tight connections.

11. Unless not required, all hoods shall be provided with a separate support base cabinet constructed from ½-inch polypropylene. Fume hood base cabinets shall be constructed per the requirements for the polypropylene base cabinets, section 12350, except as specified herein.

a. The top of the base cabinet shall have a 1.5-inch tall vertical positioning strip welded to the interior of the sides and back of the base cabinet, designed to be bolted to the fume hood using polycarbonate screws.

b. All base cabinet doors shall have two ½-inch wide by 7-inch long vent slots, centered 2.25-inches above the bottom of the door and evenly spaced.

E. Exhausted Laminar Flow Fume Hood Services

1. Services shall be provided in each hood as per the hood schedule. Hood shall not have any pre-punched holes on the hood post except for services per the schedule. Where multiple services are scheduled, provide one on each side.

2. Service fixtures and fittings mounted inside of hood shall consist of labeled hose nozzle outlets remotely controlled from the hood post with color-coded index handles. The fixtures (valves and nozzles) shall be constructed from polypropylene unless otherwise noted. The valve body shall be easily removed from the front of the repair.

3. Service fixtures shall be provided with piping, from the outlet/valve to the exterior. Where services are scheduled on both sides of the hood, piping shall be connected for a coordinated single point connection to the building services.

4. Exhaust duct wash downs, where specified, consist of two, ½-inch, schedule 80, PVC pipes (spray bars) extending horizontally across the rear exhaust duct, one located approximately centered vertically in rear exhaust plenum, another located centered in round exhaust duct collar at top of hood. Each spray bar shall consist of replaceable, 1/4-inch NPT, PVC spray heads, with a 120-degree spray angle and 1.4 GPM at 40 PSI, on evenly spaced centers (minimum of three), oriented down toward the floor. The spray bars shall be manifolded to a common point through a ball valve mounted on the hood post as shown on the drawings or operator control (on/off and flow rate). The valve shall be plumbed out the rear of the cabinet for connection to building utilities. A 1 /2-inch, NPT threaded drain hole shall be installed in the center of the floor of the exhaust duct to remove wash down water. The floor shall insure complete drainage of wash water.

5. Sinks of size per the hood schedule and/or cup sinks (nominal 6” by 3”) shall be under mounted and flush with the bottom of the work surface. Other custom sinks and integral sinks shall be mounted according to the specifics given by the customer.

6. Service for flammable gas shall be installed per local codes using approved piping methods. Where metallic (black pipe) is required, the pipe can be epoxy coated, including the remove valve and all internal piping.

7. Electrical services shall be three wire grounding type receptacles rated for 120 volt or 220 volt supply per the schedule. Outlets shall be provided on the hood post where noted. If required, each outlet shall have a non-metallic, corrosive resistant, vapor-tight cover.

Part 3- Installation, adjusting, cleaning and protection

3.1 Installation

A. Fume Hood Base Installation:
Temporarily set fume hood bases plumb, square, and straight with no distortion using the leg levelers. Use shims as required for added support.

B. Fume Hood Installation:

Set fume hood on base cabinet and using base cabinet leg levelers plumb, square, and straight with no distortion. Fasten fume hood to bases from inside the base

cabinet, through perimeter base cabinet strips, using polycarbonate screws or capped steel.

C. Accessory Installation:
Install sinks, cup sinks and accessories in accordance with manufacturer's recommendations.

3.2 Adjusting

A. Repair or remove and replace defective work, as directed by Owner's Representative upon completion of installation.

B. Adjust sash, doors, hardware, fixtures and other moving or operating parts to function smoothly.

3.3 Cleaning

A. Remove all remaining protective masking from the cabinet.

B. Clean finished fume hood, work surfaces, and accessories. Touch up as required, wipe down and vacuum the interior of the equipment. **Note:** Alcohol and Acetone is an effective cleaning agent to remove dust and dirt from the surface. Consult MSDS for precautions.

3.4 Protection of Finished Work

A. Provide all necessary protective measures to prevent exposure of the vertical laminar flow fume hood to other construction activity during operational test and balancing. In particular high concentrations of aerosols caused by spray painting or plaster dust can seriously shorten the lifetime of the HEPA filter.

B. Advise contractor of procedures and precautions for protection of material, installed fume hood and fixtures from damage by work of other trades.

--END OF SECTION--

Plastic Casework

- Specifications
- Cut Sheets

Casework Table of Contents

Laboratory Polypropylene Casework Specifications 1

SECTION 12350
Laboratory Polypropylene Casework

Part 1 General

1.1 References

A. **The following is a list of standards which may be referenced in this section**
1. Americans with Disabilities Act (ADA).
2. American national Standards Institute (ANSI).
3. American Society of Heating, Refrigeration, and Air-Conditioning Engineers, Inc. (ASHRAE).
4. American Society for Testing and Materials (ASTM).
5. National Electrical Manufacturer's Association (NEMA).
6. National Institute of Standards and Technology (NISTA).
7. Scientific Equipment and Furniture Association (SEFA)
8. National Association of Manufacturers; www.nam.org
9. National Federation of Independent Business; www.nfib.com

1.2 Summary

A. The scope of work includes the following:
1. Casework (Base, Floor, Wall Case)
2. Storage, carts, bench units
3. Fume hoods
4. Shelving, sinks, counters, accessories

B. Related Section include the following:
1. Division 6 Section "Rough Carpentry" for wood blocking for anchoring casework to walls.
2. Division 9 Section "Gypsum Board Assemblies" for reinforcements in metal-framed gypsum board partitions for anchoring laboratory casework.
3. Division 9 Section "Resilient Wall Base and Accessories" for resilient base applied to toe base of floor casework.
4. Division 15 and 16 Sections for installing service fitting specified in this Section.

1.2 Performance Requirements (wall case, shelf, counter capable load).

1.3 SUBMITTAL

A. Shop Drawings: Completely detailed describe and illustrate features, materials, fabrication, and layout with rough-in details for plumbing, electrical, ventilation connections.

B. Show required field measurements, provide details and dimensions.

C. Provide installation instructions, operations and maintenance information.

D. Hardware samples.

E. Quality Assurance Statement and printed warranty.

F. References and minimum of 5 years experience.

G. Delivery, Storage, Handling.

Laboratory Polypropylene Casework Specifications [2]

1.4 Manufacturers

Polypropylene casework meeting the specifications and may be used is that of :

TFI/Inline Design Corporation, 5658 E 58th Ave. Commerce City, CO 80022, A SEFA Member

(303) 288-8486

WWW.tfiinlinedesign.net

1.5 Materials

Polypropylene: Stress relieved polypropylene, 3/16", 3/8", ½" thick material, with hot air welded joints.

A. Fully seam welded reinforced polypropylene for base, wall, and tall cabinets.
B. Polypropylene hardware hinges and pulls attached with polypropylene screws.
C. Stress relieved, standard white, option for black.
D. Minimum of two hinges for doors.
E. Two pulls for drawers 24" and wider.
F. Door catch: 20 mil polyethylene coated magnets imbedded into the door/frame at center of each door. Provide a minimum pull of 4 pounds.
G. Adjustment clips PVC to adjust shelf position ½ inch increments.
H. Seismic restraining lip as noted on details will be ½" and on all open shelving. **NOTE**: Restraining Lip is not standard. Quoted as option when needed.
I. Guides, smooth, precise, with a minimal side-to-side motion when drawer is extended full depth.
J. Trim will be secure and rigid and match.
K. Transparent Doors: Clear tempered float glass, conforming to ASTM C1048, Kind FT, Condition A. Type I, Class 1, glazing quality, 6mm (3/16") minimum thickness.
L. Adhesives and caulking to be water-resistant.
M. Supports for piping chase Unistrut or polypropylene.

Construction General

Each casework unit has a completely welded shell assembly (case) which is rigid and self-supporting for use interchangeably in a group of cases or for single unit use. Each unit is complete and can be relocated at any time without requiring field application of finished ends or other such parts. Units have flush front construction with intersection of vertical and horizontal case members, such as end panels, in same plane without overlap. Face joints shall provide a continuous flat plane. A uniform clearance around door and drawers are provided.

A. **Materials Polypropylene:** Stress relieved polypropylene, ¼", 3/8", ½" thick material, with hot air welded joints.
B. **Base Unit**
   1. **Intermediate rails are provided between door and drawers.**
   2. If required between drawers indicate and this adds to cost and must be noted on the drawings.

Laboratory Polypropylene Casework Specifications 3

3. **Case bottom** is a pan type and will be sealed to sides to contain liquids and to provide ease of cleaning. **NOTE**: Drawer Units are an exception to this design.
4. **Toe space rails** shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, minimum 3 inches deep and 4 inches high. When base is omitted, this space shall be fully enclosed.
5. **A front and back flange** shall be furnished on the top of each cabinet for fastening the countertop. **Note**: All fume base cabinets will have 4-sided flange.
6. **Removable back panel** provides access to utility chase through either access panels in integral fixed backs or back panels removable from the interior of an installed case. **Note**: Drawer units are an exception to this specification.
7. Integral back with open area for plumbing will be provided on sink base units.
8. **Knee space back panels** are same finish as cabinets and remove easily.
9. **Optional with added cost is leg levelers** if indicated, and will be of 3/4" FRP ATR (all thread rod). The levelers will be located in all (4) corners of the cabinets indicated. An all polypropylene block 1-1/2" thick and threaded through (FPT) is welded in each corner to allow adjustment of leg leveler and to provide addition reinforcement.

C. Doors: Doors consist of solid one-piece construction. Corners and edges to be ground smooth to prevent exposure of sharp edges.
Note: Doors are easily removed. No welds on doors unless option sliding Latch is required.

D. Shelves are adjustable and shall be constructed with a design load of 50lbs per square foot. Shelves adjustable on 1/2" on centers in base units and wall case and storage units are 1" on center.

E. Wall Upper Cabinets

1. Shell Construction is ½" polypropylene material is completely welded.
2. Wall cabinets are self-supporting.
3. Doors consist of solid one-piece construction. Welds on corners and edges (if sliding latch is used) to be ground smooth to prevent exposure of sharp edges. Available hinged, or sliding and materials of Polypropylene, Lexan, or Glass. Doors are easily removed.
4. Shelves are adjustable and are constructed with a design load of 50 pounds per square foot capable load. Shelves shall be adjustable on 1" centers.

F. Polypropylene Casework Hardware

1. The drawer and door pulls can be polypropylene, PVC, or ABS plastic.
2. Pulls can be recessed (not attached to the top edge of drawers or doors) or wire pulls (optional), which offer a comfortable hand grip with a thru-

Laboratory Polypropylene Casework Specifications 4

bolted to door or drawer with non-metal fasteners from back face. Pulls will meet State and Federal Handicapped Accessibility Regulations.

3. Hinges will be polypropylene, "Inline" lift off style.
4. Each hinge consists of two (2) halves with a centering pin.
5. The doors have a top and bottom knuckle that is machined with a radius from the door material for strength.
6. The front support frame has a top and bottom knuckle welded in place that is offset from the door knuckles. One pair of hinges will be provided for doors less than 36" in height and 1-1/2 pair for doors over 36" in height.

G. Door Catch is a standard door catches, but is encapsulated magnets installed in the door and doorframe. Door catches are capable of a 4 lbs magnetic pull same as base catches.

H. Latches (an option), is non-metallic with non-metallic strike plates. Latch moves horizontally, 3/16" to lock door.

I. Drawer Guides are same materials as cabinets and provide a quiet smooth operation. Two guides or rails are machined to fit drawer bottom edges, to provide additional strength and one-piece construction. Bottom drawer edge is oversized to fit guides in place of attaching a rail to drawer by means of mechanical attachment or welding to side of drawer.

J. Work Surfaces

K. Carts

L. Bench

M. Sinks and accessories

N. Accessories: Reagent Shelves, Lattice, road and crossbar.

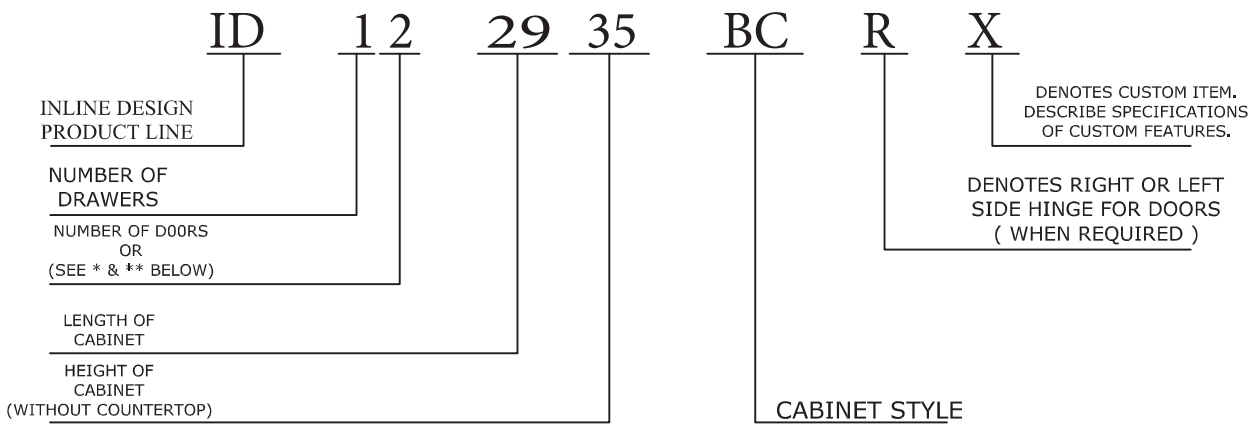
O. Pegboards

P. Sloped tops

Q. Molding

R. Special bases

STANDARD TFI/INLINE DESIGN PART #'S FOR POLYPROPYLENE CASEWORK



CABINET STYLES :

BC - BASE CABINET
SC - SINK CABINET
TC - TALL CABINET
EBC - EXTENDED BASE CABINET
CBC - CORNER BASE CABINET
FB - FUME BASE CABINET

FC - FILE CABINET
KS - KNEE SPACE
KEP - KNEE SPACE END PANEL
FFP - FRONT FILLER PANEL
SFP - SIDE FILLER PANEL
CFP - CORNER FILLER PANEL

WC - WALL CABINET
EWC - EXTENDED WALL CABINET
CWC - CORNER WALL CABINET
OBC - OPEN BASE CABINET
OBSC - OPEN BOOK SHELF CABINET

- ALL STANDARD BASE CABINETS ARE 22" DEEP - OUTSIDE DIMENSION
- ALL STANDARD WALL CABINETS ARE 13" DEEP - OUTSIDE DIMENSION

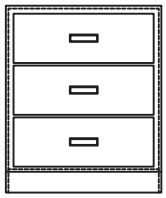
* FOR AN ALL DRAWER BASE CABINET, A LETTER INDICATES DRAWER CONFIGURATION :
S - SINGLE VERTICAL ROW
D - DOUBLE VERTICAL ROW
C - COMBINATION OF SIZES

** FOR WALL CABINETS, A LETTER(S) INDICATES DOOR STYLE :
GSL - GLASS SLIDING DOORS
SL - SLIDING DOORS (POLYPROPYLENE)
GL - GLASS DOORS (HINGED)

EFFECTIVE DATE: May 2007

POLYPROPYLENE CASEWORK

BASE CABINETS



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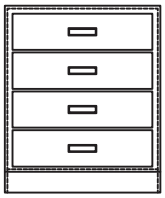

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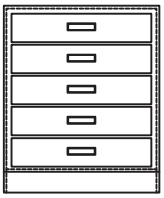

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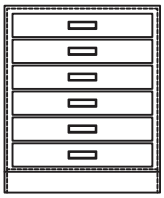

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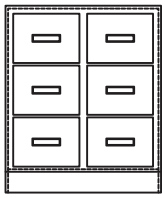

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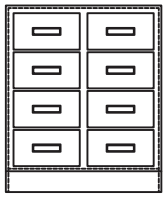

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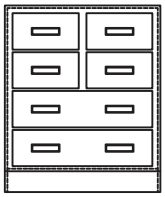

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COMBINATION
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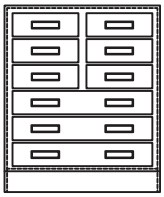
COMBINATION
(PAGE B-8)



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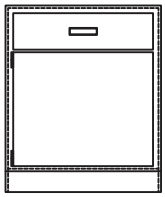

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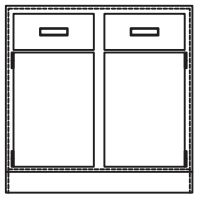

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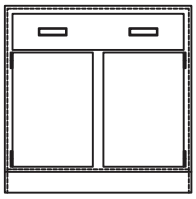
(PAGE B-11)



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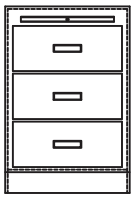

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PULL-OUT SHELF
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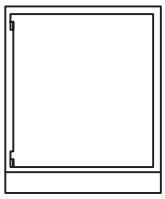

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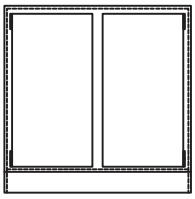

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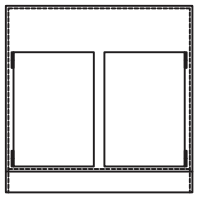

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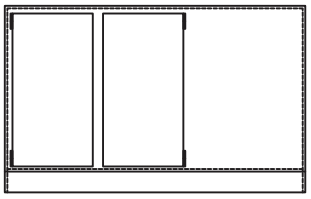

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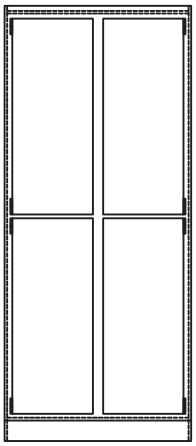

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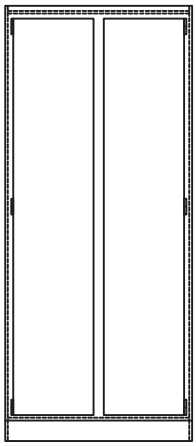

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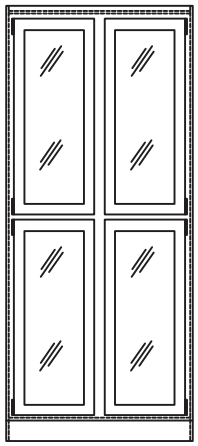

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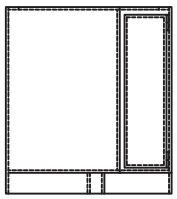
4 DOOR - TALL
(PAGE B-18B)



ID-01-XXXX-CBC
1 DOOR CORNER
(PAGE B-19)

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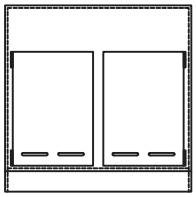
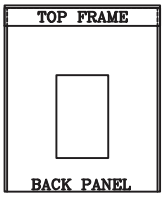
POLYPROPYLENE CASEWORK

BASE CABINETS

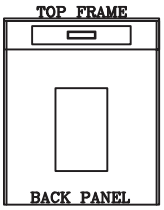


ID-02-XXXX-FB
2 DOOR FUME BASE
(PAGE B-20)

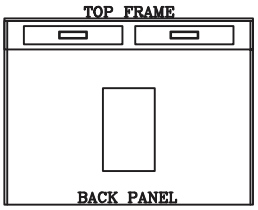


ID-00-XXXX-KS
KNEE SPACE
(PAGE B-21)

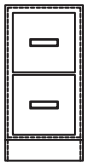
ID-00-XXXX-XX-KEP
KNEE SPACE END PANEL
(PAGE B-21A)



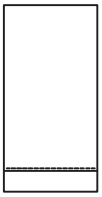
ID-10-XXXX-KS
1 DRAWER KNEE SPACE
(PAGE B-22)



ID-20-XXXX-KS
2 DRAWER KNEE SPACE
(PAGE B-22A)



ID-2S-XXXX-FC
2 DRAWER FILE
(PAGE B-23)



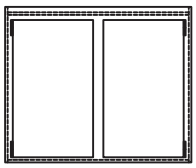
ID-00-XXXX-FFP
FRONT FILLER PANEL
(PAGE B-24)

ID-00-XXXX-SFP
SIDE FILLER PANEL
(PAGE B-25)

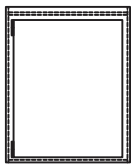
ID-00-XXXX-CFP
CORNER FILLER PANEL
(PAGE B-26)

ID-00-XXXX-CFFP
CORNER FRONT FILLER PANEL
(PAGE B-27)

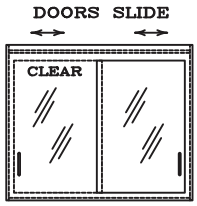
WALL CABINETS



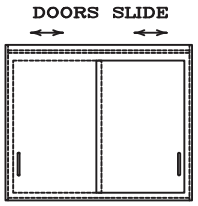
ID-2-XXXX-WC
2 DOOR
(PAGE W-1)



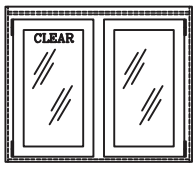
ID-1-XXXX-WC
1 DOOR
(PAGE W-2)



ID-2GSL-XXXX-WC
2 DOOR SLIDING
CLEAR
(PAGE W-3)

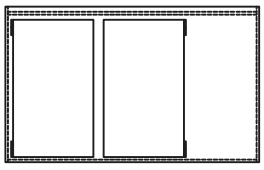


ID-2SL-XXXX-WC
2 DOOR SLIDING
(PAGE W-4)

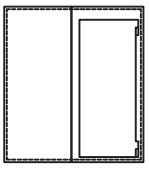


ID-2GL-XXXX-WC
2 DOOR - CLEAR
(PAGE W-5)

ID-1GL-XXXX-WC
1 DOOR - CLEAR
(PAGE W-6)



ID-02-XXXX-EWC
2 DOOR EXTENDED
(PAGE W-7)



ID-1-XXXX-CWC
CORNER WALL CABINET
(PAGE W-8)

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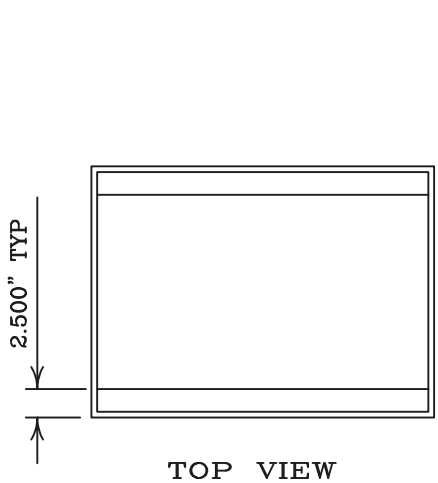
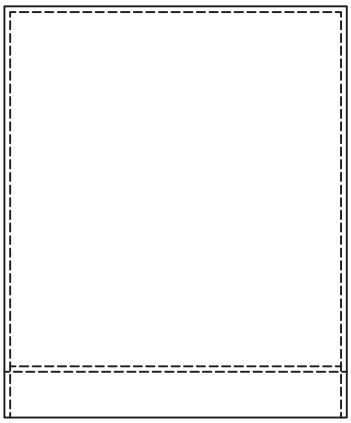
BASE CABINET

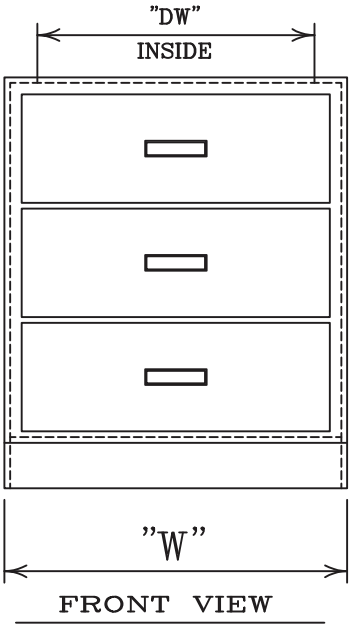
(3) SINGLE DRAWER UNIT



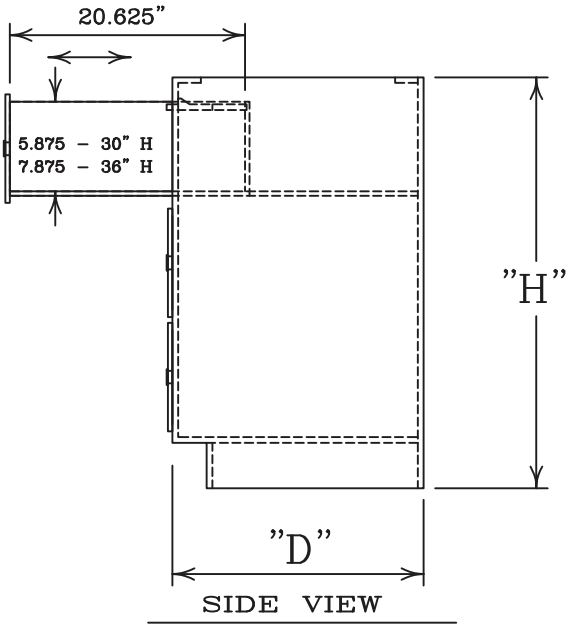
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID–3S–1830–BC	18"	29"	22"	12.25"
ID–3S–2430–BC	24"	29"	22"	18.25"
ID–3S–3030–BC	29"	29"	22"	24.25"
ID–3S–3630–BC	35"	29"	22"	30.25"
ID–3S–1836–BC	18"	35"	22"	12.25"
ID–3S–2436–BC	24"	35"	22"	18.25"
ID–3S–3036–BC	29"	35"	22"	24.25"
ID–3S–3636–BC	35"	35"	22"	30.25"

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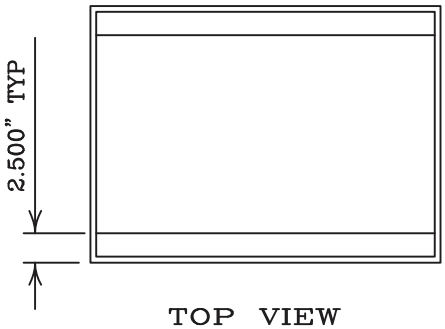
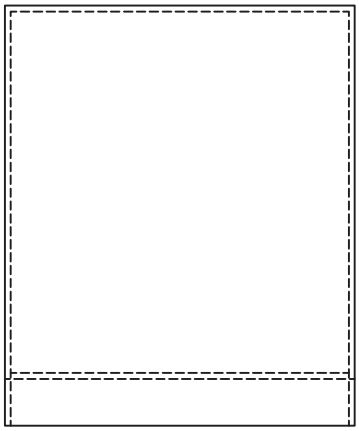
BASE CABINET

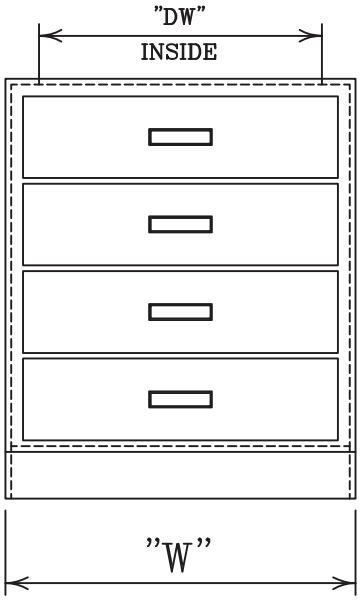
(4) SINGLE DRAWER UNIT



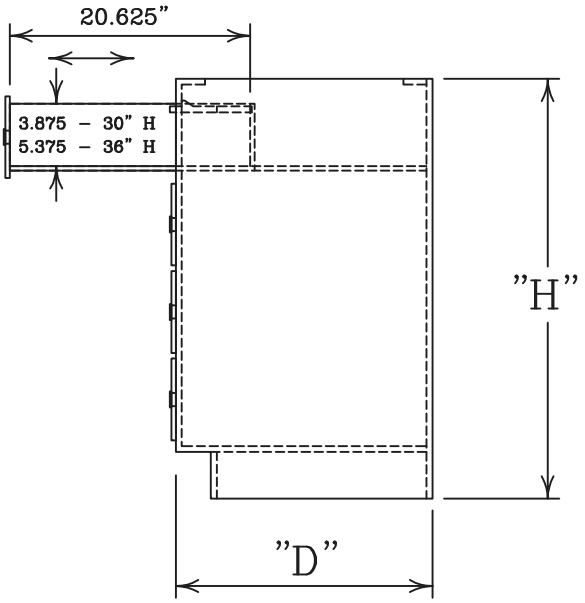
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

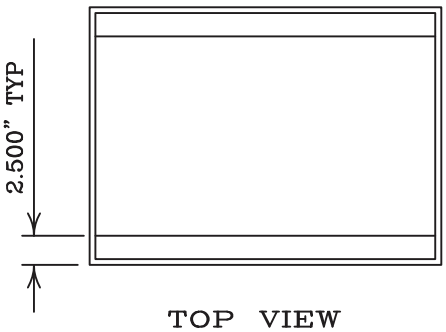
- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-4S-1830-BC	18"	29"	22"	12.25"
ID-4S-2430-BC	24"	29"	22"	18.25"
ID-4S-3030-BC	29"	29"	22"	24.25"
ID-4S-3630-BC	35"	29"	22"	30.25"
ID-4S-1836-BC	18"	35"	22"	12.25"
ID-4S-2436-BC	24"	35"	22"	18.25"
ID-4S-3036-BC	29"	35"	22"	24.25"
ID-4S-3636-BC	35"	35"	22"	30.25"

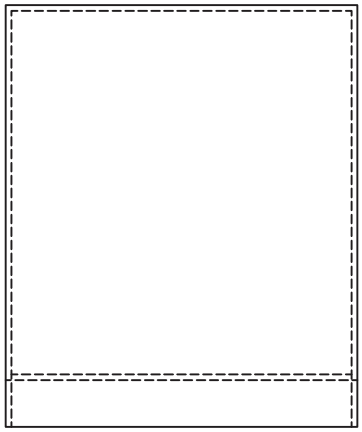
POLYPROPYLENE CASEWORK

BASE CABINET

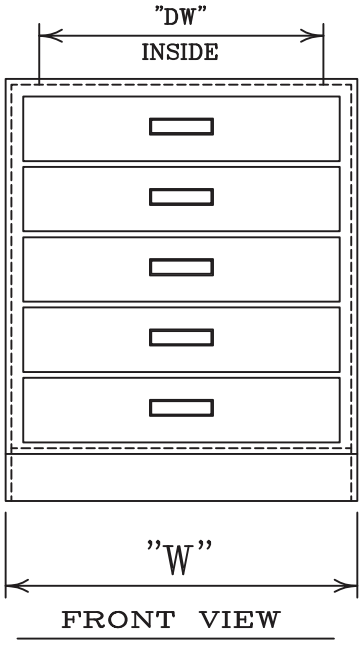
(5) SINGLE DRAWER UNIT



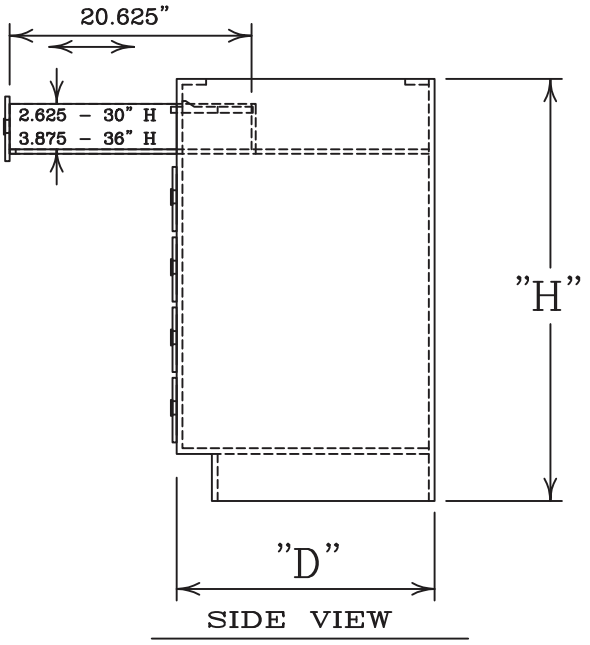
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-5S-1830-BC	18"	29"	22"	12.25"
ID-5S-2430-BC	24"	29"	22"	18.25"
ID-5S-3030-BC	29"	29"	22"	24.25"
ID-5S-3630-BC	35"	29"	22"	30.25"
ID-5S-1836-BC	18"	35"	22"	12.25"
ID-5S-2436-BC	24"	35"	22"	18.25"
ID-5S-3036-BC	29"	35"	22"	24.25"
ID-5S-3636-BC	35"	35"	22"	30.25"

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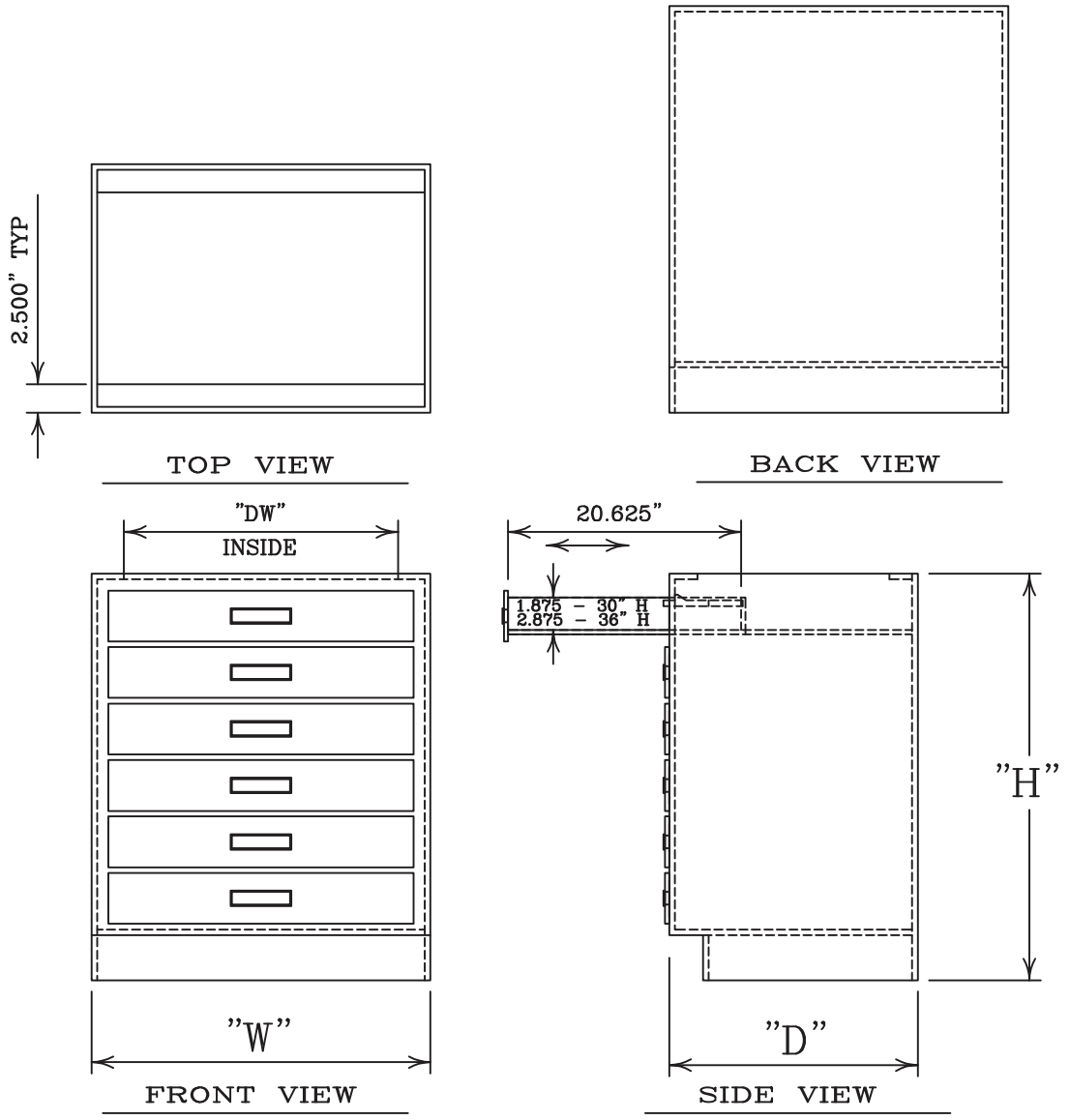
BASE CABINET

(6) SINGLE DRAWER UNIT



FEATURES :

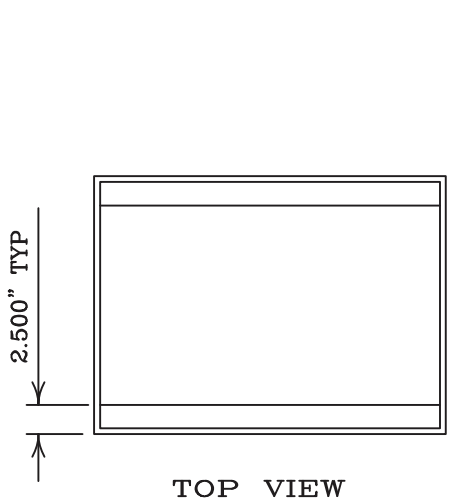
- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-6S-1830-BC	18"	29"	22"	12.25"
ID-6S-2430-BC	24"	29"	22"	18.25"
ID-6S-3030-BC	29"	29"	22"	24.25"
ID-6S-3630-BC	35"	29"	22"	30.25"
ID-6S-1836-BC	18"	35"	22"	12.25"
ID-6S-2436-BC	24"	35"	22"	18.25"
ID-6S-3036-BC	29"	35"	22"	24.25"
ID-6S-3636-BC	35"	35"	22"	30.25"

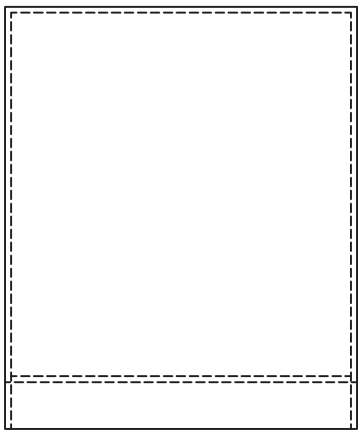
POLYPROPYLENE CASEWORK

BASE CABINET

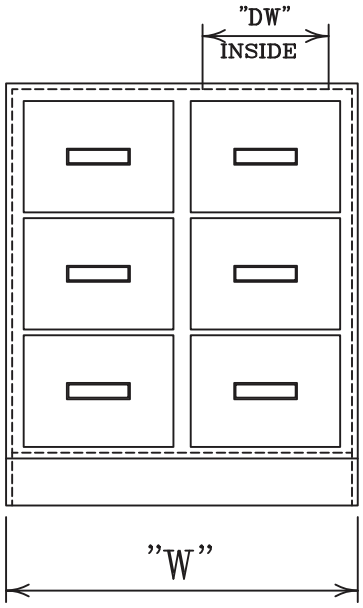
(6) DOUBLE DRAWER UNIT



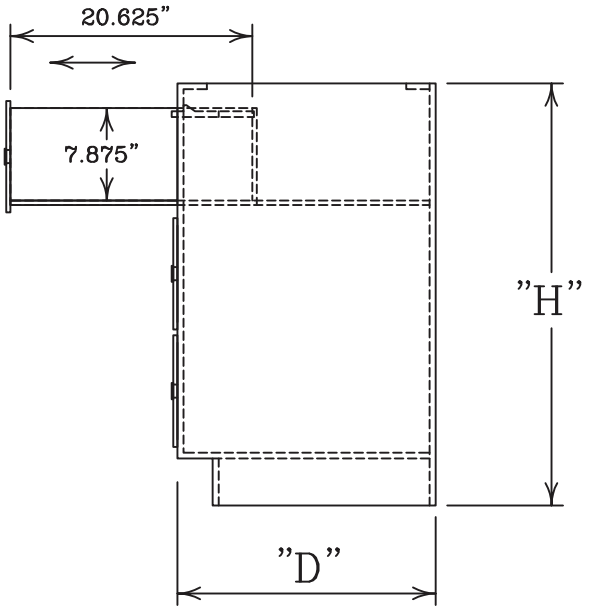
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-6D-3636-BC	35"	35"	22"	12.75"
ID-6D-4236-BC	42"	35"	22"	15.75"
ID-6D-4836-BC	48"	35"	22"	18.75"

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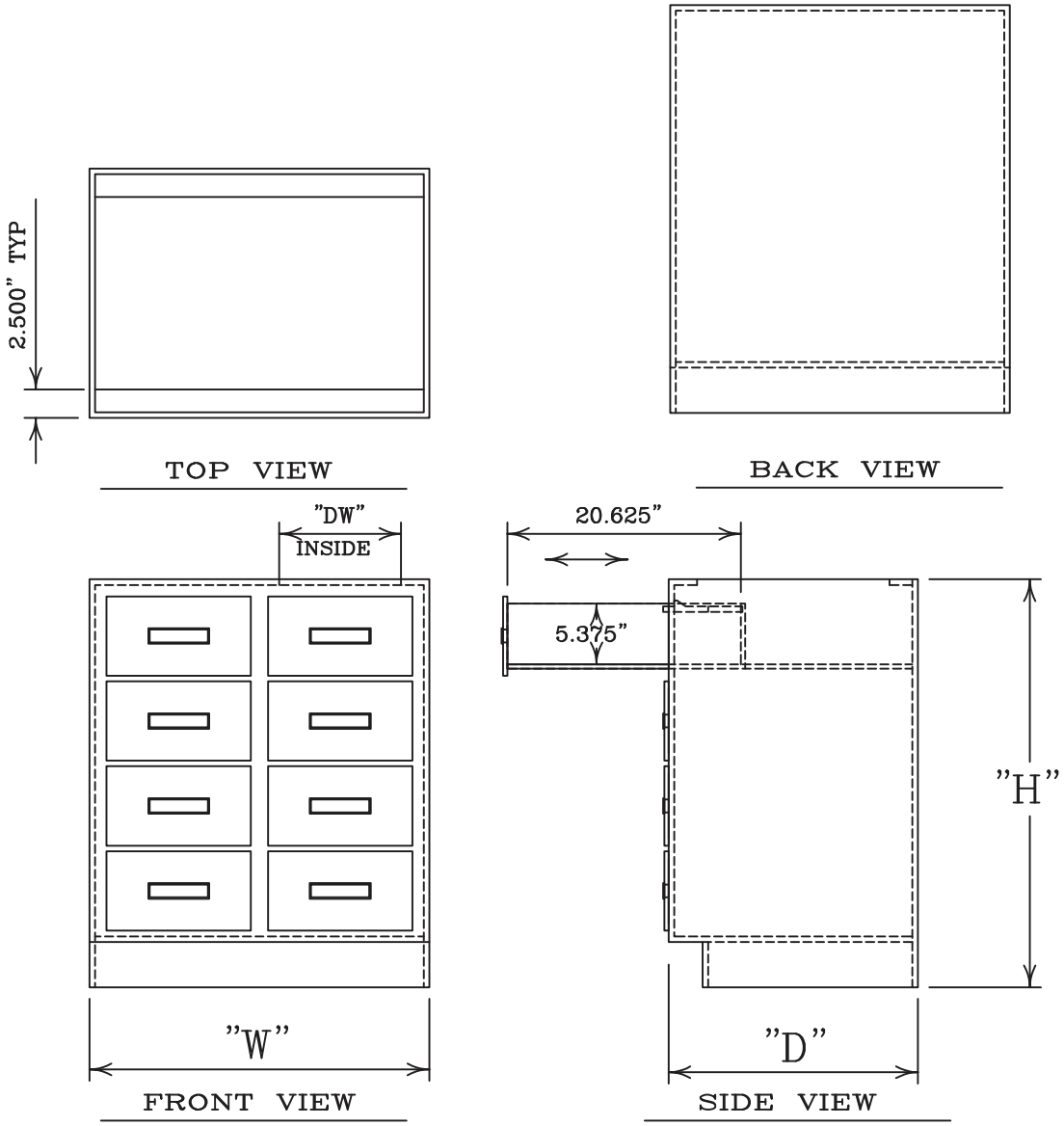
BASE CABINET

(8) DOUBLE DRAWER UNIT



FEATURES :

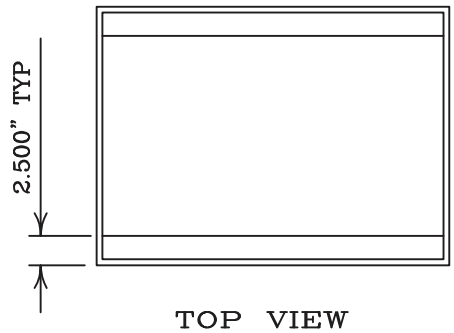
- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-8D-3636-BC	35"	35"	22"	12.75"
ID-8D-4236-BC	42"	35"	22"	15.75"
ID-8D-4836-BC	48"	35"	22"	18.75"

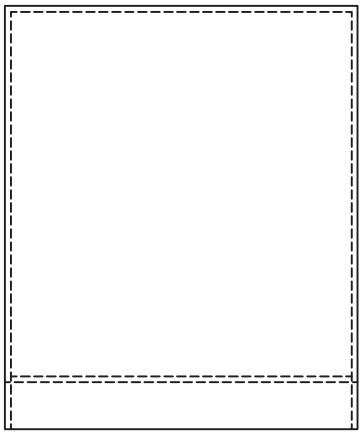
POLYPROPYLENE CASEWORK

BASE CABINET

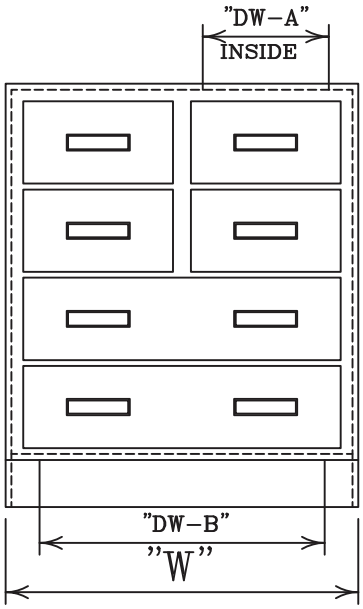
(6) DRAWER COMBINATION UNIT



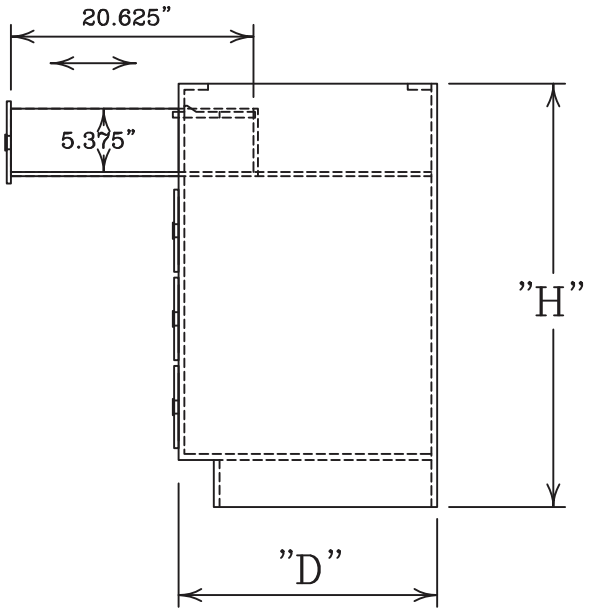
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW-A	DW-B
ID-6C-3636-BC	35"	35"	22"	12.75"	30.25"
ID-6C-4236-BC	42"	35"	22"	15.75"	36.25"
ID-6C-4836-BC	48"	35"	22"	18.75"	42.25"

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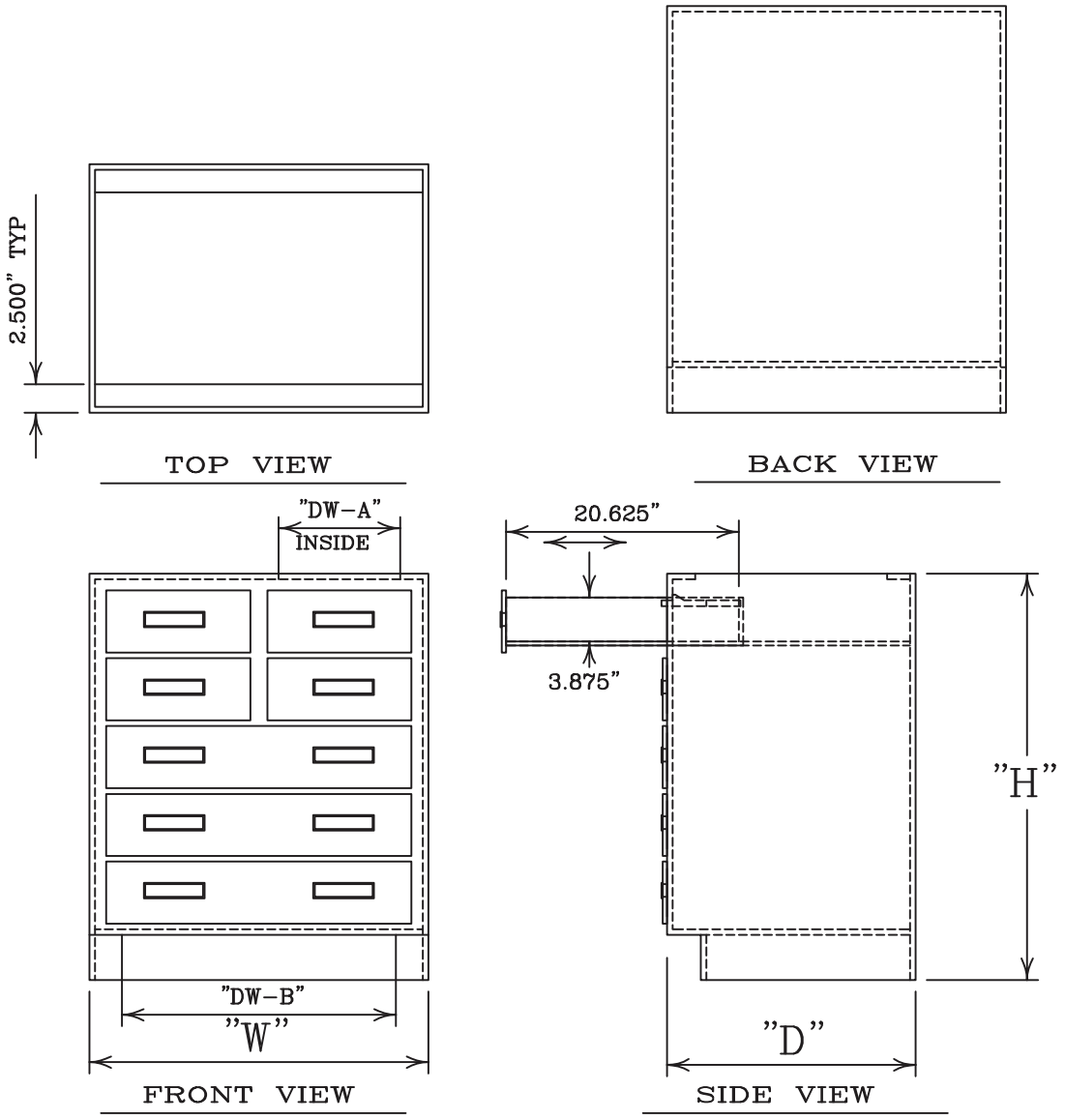
BASE CABINET

(7) DRAWER COMBINATION UNIT



FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW-A	DW-B
ID-7C-3636-BC	35"	35"	22"	12.75"	30.25"
ID-7C-4236-BC	42"	35"	22"	15.75"	36.25"
ID-7C-4836-BC	48"	35"	22"	18.75"	42.25"

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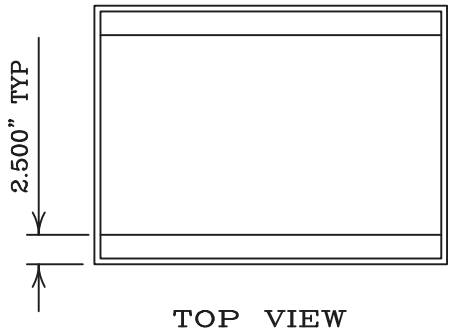
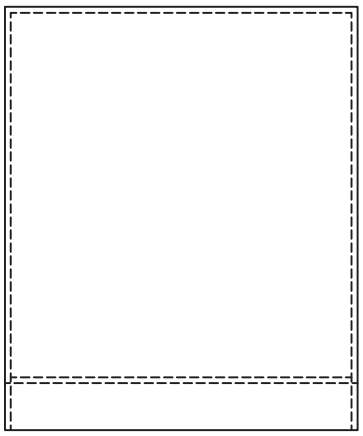
BASE CABINET

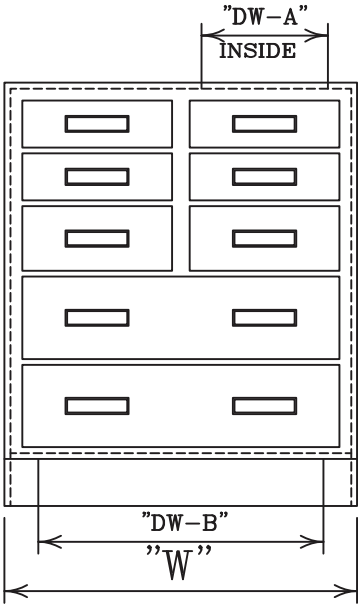
(8) DRAWER COMBINATION UNIT



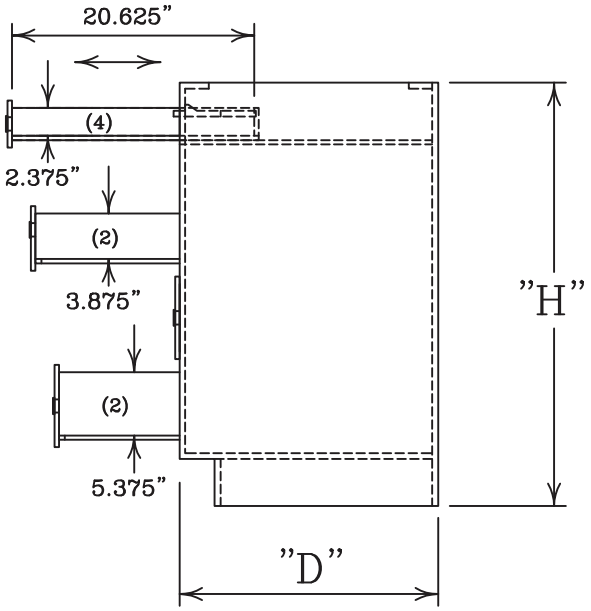
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW-A	DW-B
ID-8C-3636-BC	35"	35"	22"	12.75"	30.25"
ID-8C-4236-BC	42"	35"	22"	15.75"	36.25"
ID-8C-4836-BC	48"	35"	22"	18.75"	42.25"

POLYPROPYLENE CASEWORK

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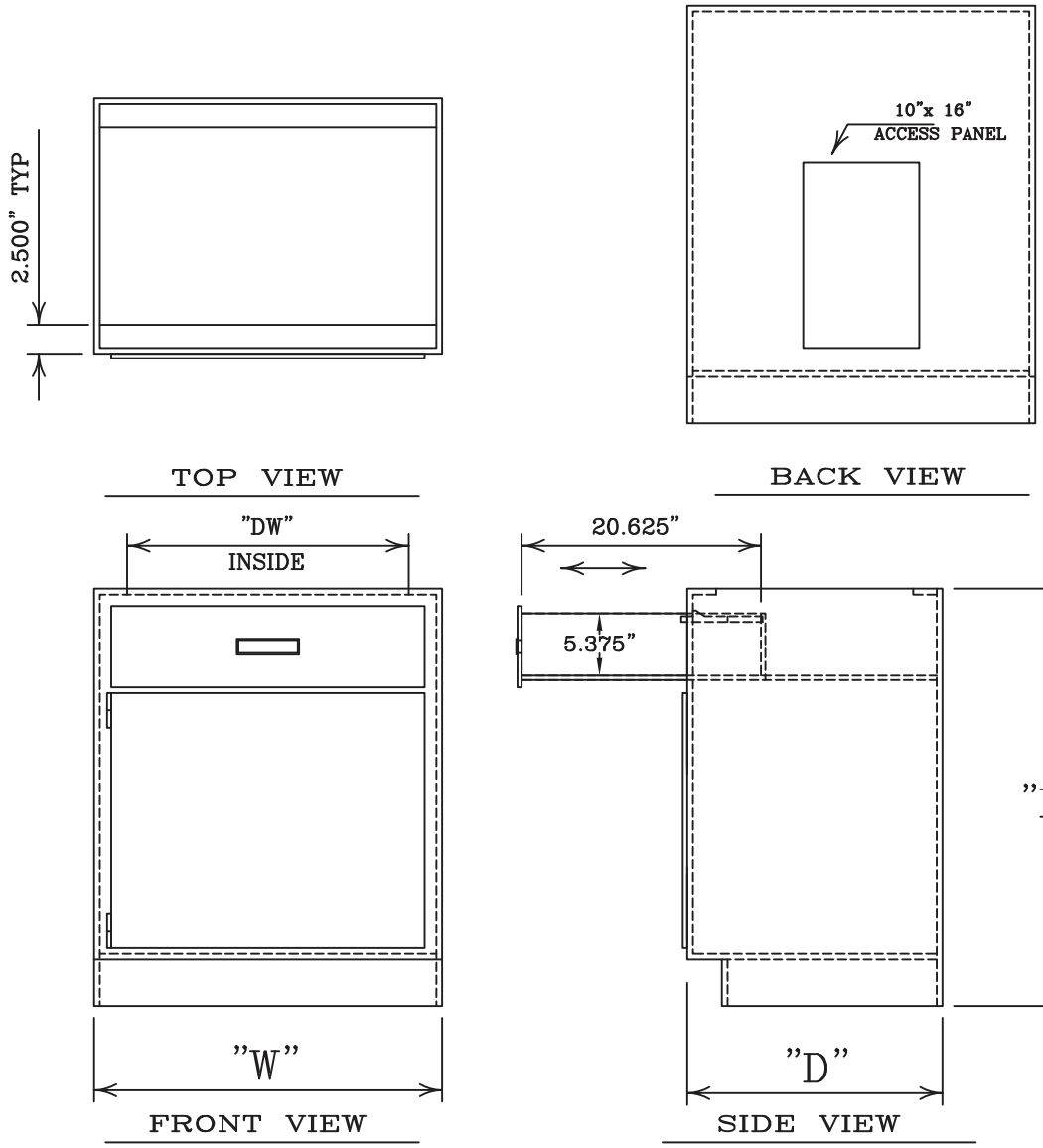
BASE CABINET

COMBINATION (1) DOOR / (1) DRAWER



FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL (- OPTIONAL -).
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

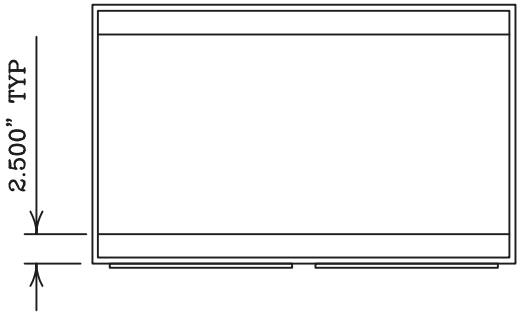
PART NUMBER	W	H	D	DW
ID-11-1830-BC	18"	29"	22"	12.25"
ID-11-2430-BC	24"	29"	22"	18.25"
ID-11-1836-BC	18"	35"	22"	12.25"
ID-11-2436-BC	24"	35"	22"	18.25"

* INDICATE LEFT (AS SHOWN) OR RIGHT
LEFT HINGE ADD -L SUFFIX
RIGHT HINGE ADD -R SUFFIX

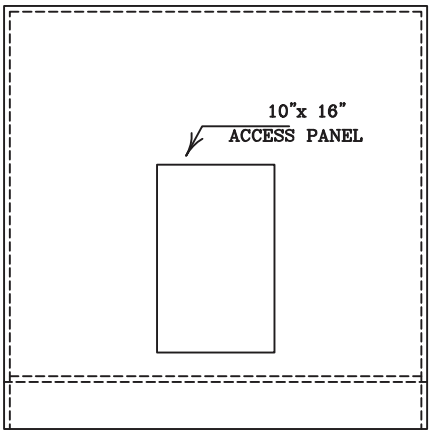
POLYPROPYLENE CASEWORK

BASE CABINET

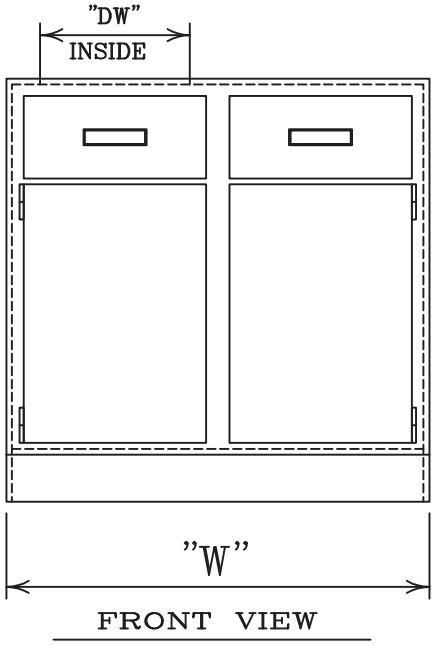
COMBINATION (2) DOORS / (2) DRAWERS



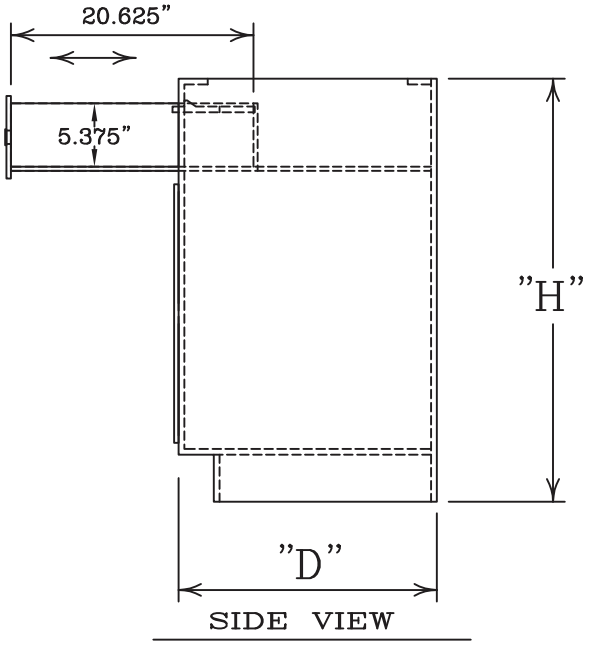
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

PART NUMBER	W	H	D	DW
ID-22-3630-BC	35"	29"	22"	12.75"
ID-22-4230-BC	42"	29"	22"	15.75"
ID-22-4830-BC	48"	29"	22"	18.75"
ID-22-3636-BC	35"	35"	22"	12.75"
ID-22-4236-BC	42"	35"	22"	15.75"
ID-22-4836-BC	48"	35"	22"	18.75"

POLYPROPYLENE CASEWORK

35

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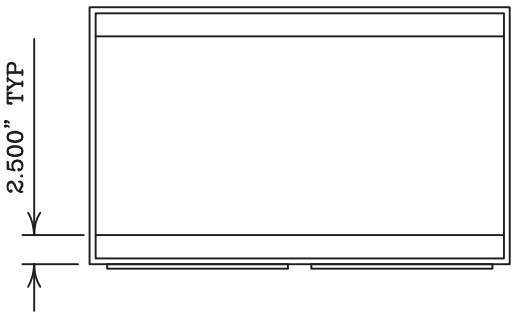
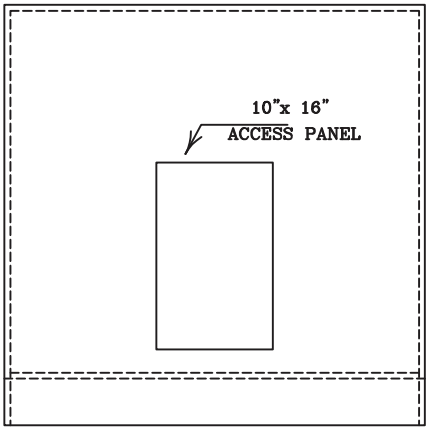
BASE CABINET

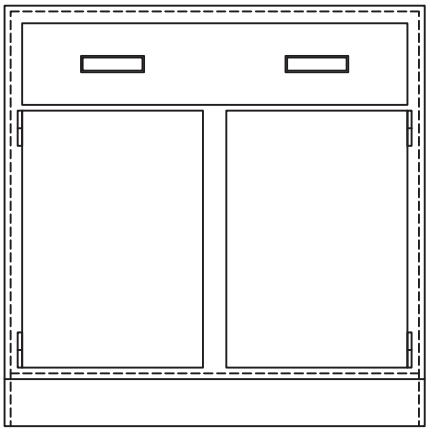
COMBINATION (1) DRAWER/ (2) DOORS



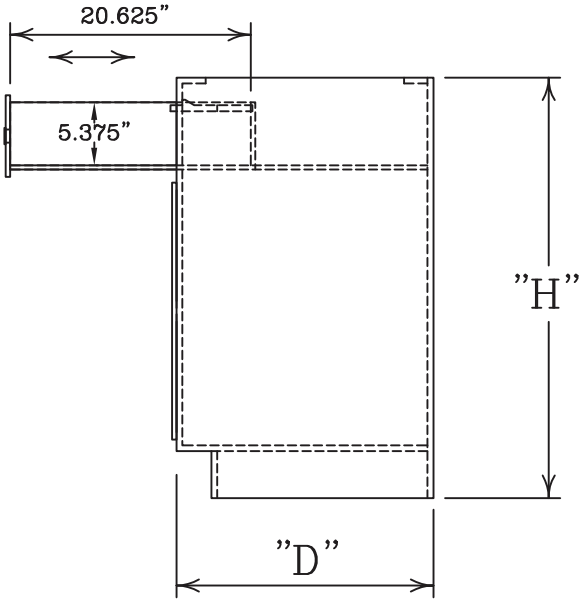
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D
ID-12-3030-BC	29"	29"	22"
ID-12-3630-BC	35"	29"	22"
ID-12-4230-BC	42"	29"	22"
ID-12-4830-BC	48"	29"	22"
ID-12-3036-BC	29"	35"	22"
ID-12-3636-BC	35"	35"	22"
ID-12-4236-BC	42"	35"	22"
ID-12-4836-BC	48"	35"	22"

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

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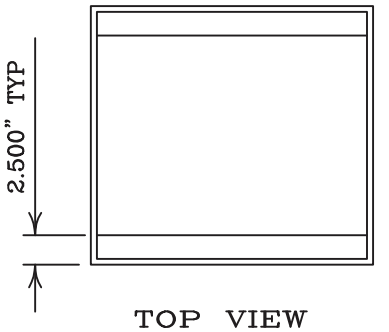
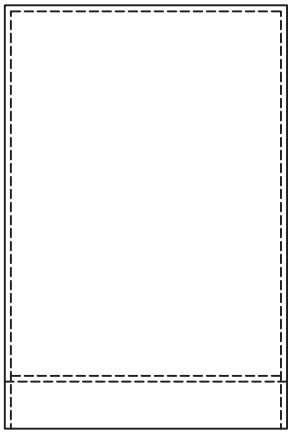
BASE CABINET

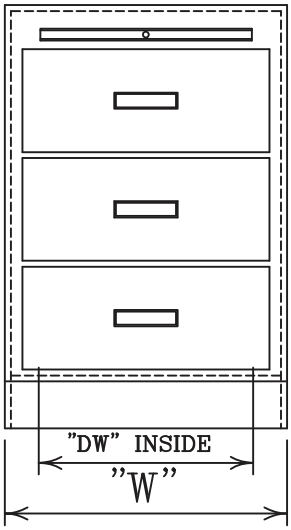
(3) SINGLE DRAWER UNIT WITH PULL OUT SHELF



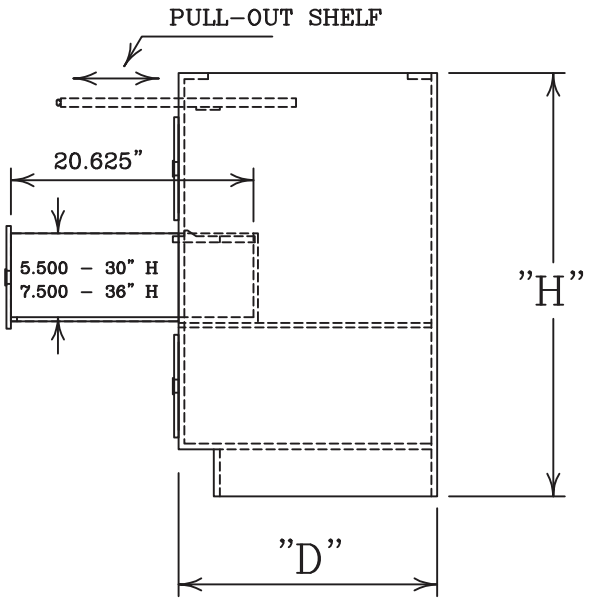
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-3S-1830-BC-S	18"	30"	22"	12.25"
ID-3S-2430-BC-S	24"	30"	22"	18.25"
ID-3S-1836-BC-S	18"	36"	22"	12.25"
ID-3S-2436-BC-S	24"	36"	22"	18.25"

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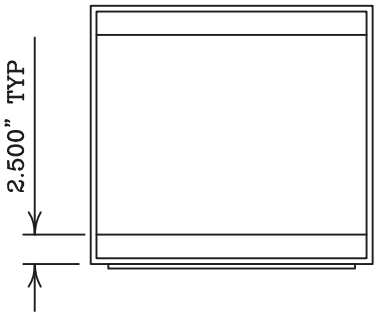
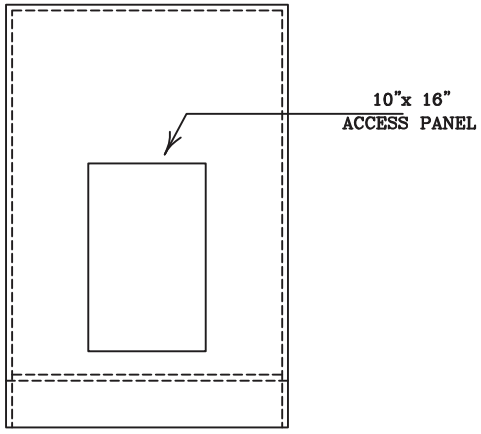
BASE CABINET

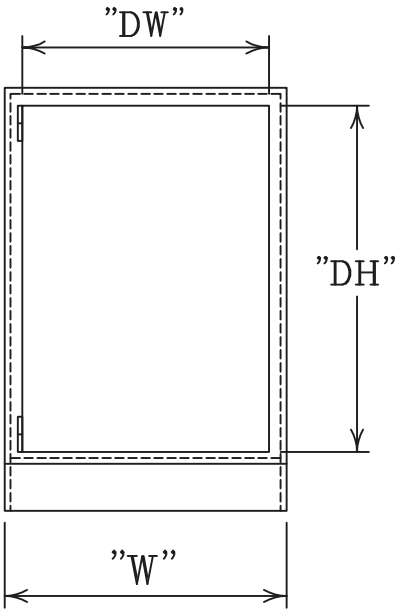
SINGLE DOOR BASE CABINET



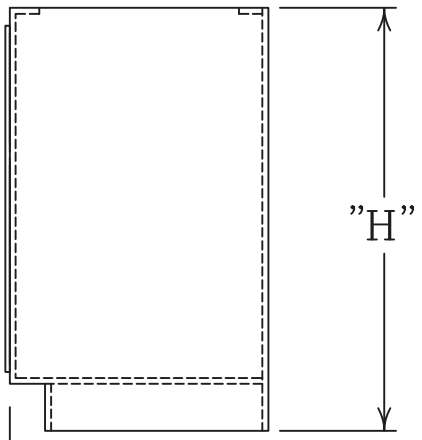
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-01-1830-BC	18"	29"	22"	15"	23.5"
ID-01-2430-BC	24"	29"	22"	21"	23.5"
ID-01-1836-BC	18"	35"	22"	15"	29.5"
ID-01-2436-BC	24"	35"	22"	21"	29.5"

* INDICATE LEFT (AS SHOWN) OR RIGHT
LEFT HINGE ADD -L SUFFIX
RIGHT HINGE ADD -R SUFFIX

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

POLYPROPYLENE CASEWORK

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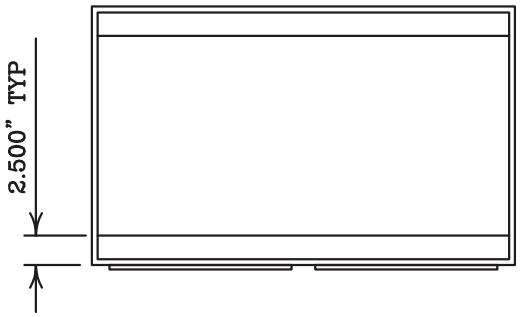
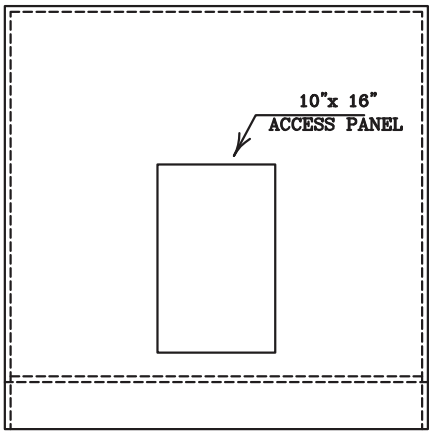
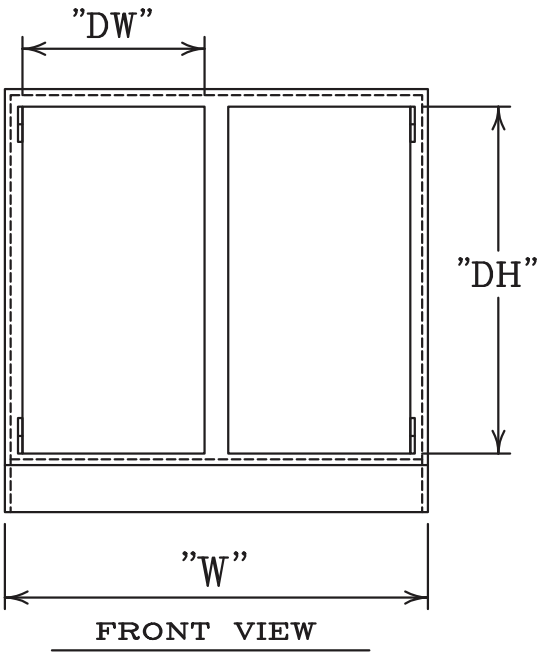
BASE CABINET

DOUBLE DOOR BASE CABINET



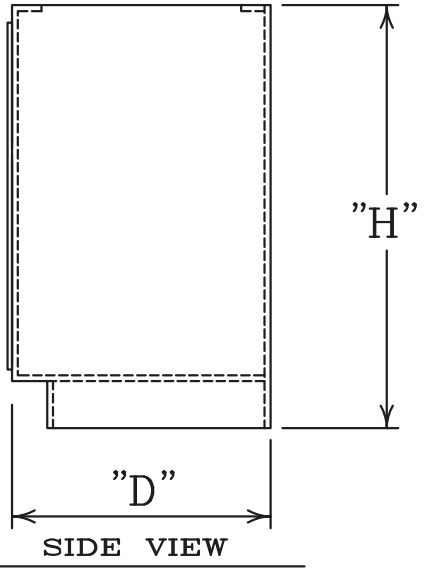


TOP VIEW



FRONT VIEW

BACK VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-02-3030-BC	29"	35"	22"	12.5"	23.5"
ID-02-3630-BC	35"	35"	22"	15.5"	23.5"
ID-02-4230-BC	42"	35"	22"	18.5"	23.5"
ID-02-4830-BC	48"	35"	22"	21.5"	23.5"
ID-02-3036-BC	29"	35"	22"	12.5"	29.5"
ID-02-3636-BC	35"	35"	22"	15.5"	29.5"
ID-02-4236-BC	42"	35"	22"	18.5"	29.5"
ID-02-4836-BC	48"	35"	22"	21.5"	29.5"

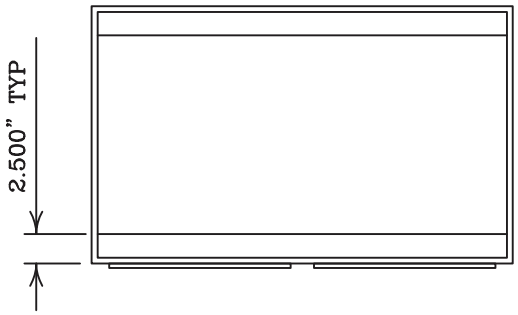
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

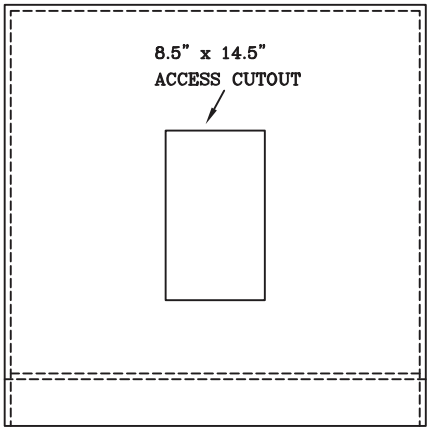
POLYPROPYLENE CASEWORK

BASE CABINET

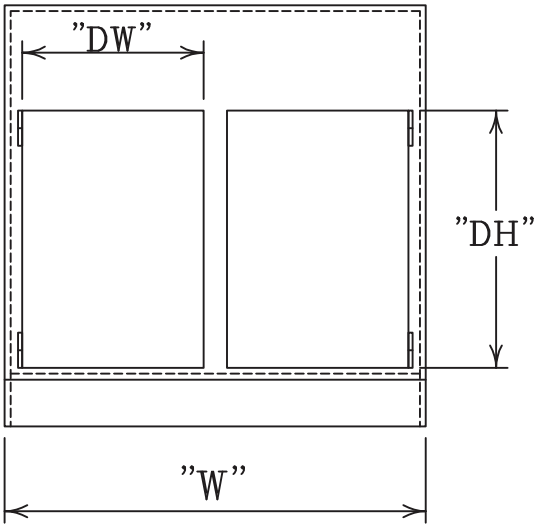
SINK BASE CABINET



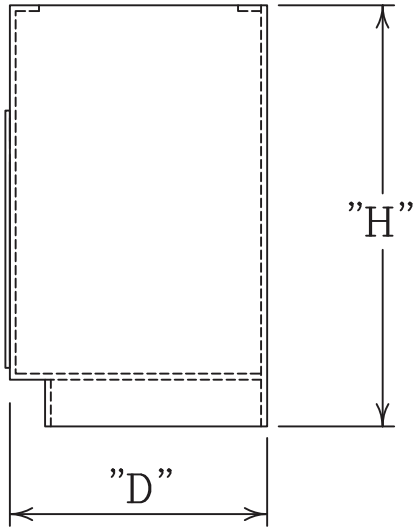
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-02-3030-SC	29"	29"	22"	12.5"	16"
ID-02-3630-SC	35"	29"	22"	15.5"	16"
ID-02-4230-SC	42"	29"	22"	18.5"	16"
ID-02-4830-SC	48"	29"	22"	21.5"	16"
ID-02-3036-SC	29"	35"	22"	12.5"	22"
ID-02-3636-SC	35"	35"	22"	15.5"	22"
ID-02-4236-SC	42"	35"	22"	18.5"	22"
ID-02-4836-SC	48"	35"	22"	21.5"	22"

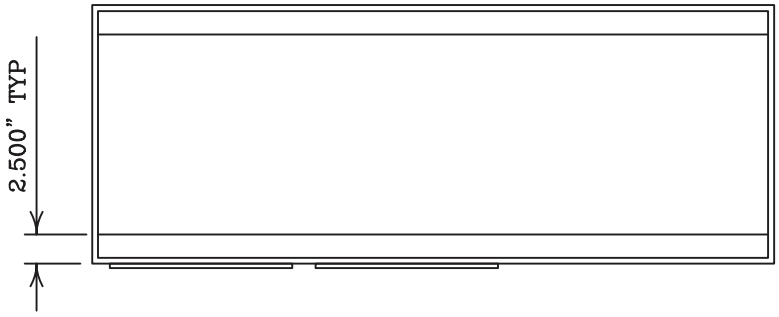
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REAR ACCESS CUTOUT FOR PLUMBING
- NO METAL OR NYLON USED IN CONSTRUCTION.

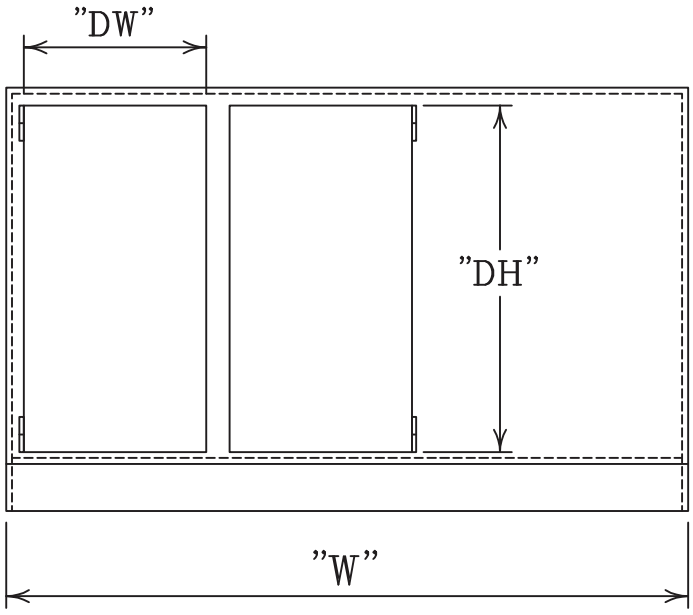
POLYPROPYLENE CASEWORK

BASE CABINET

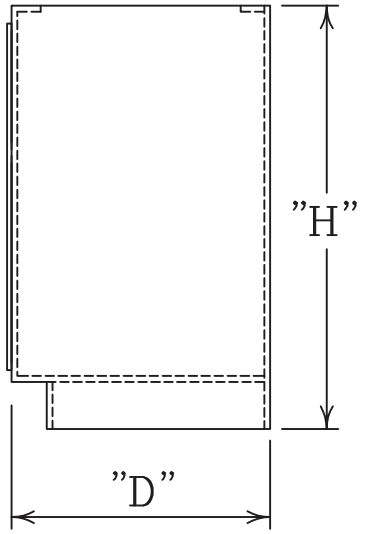
EXTENDED CORNER BASE CABINET



TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-02-5330-EBC	53"	29"	22"	12.5"	23.5"
ID-02-5930-EBC	59"	29"	22"	15.5"	23.5"
ID-02-5336-EBC	53"	35"	22"	12.5"	29.5"
ID-02-5936-EBC	59"	35"	22"	15.5"	29.5"

* INDICATE LEFT (AS SHOWN) OR RIGHT

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (1) ADJUSTABLE SHELF.

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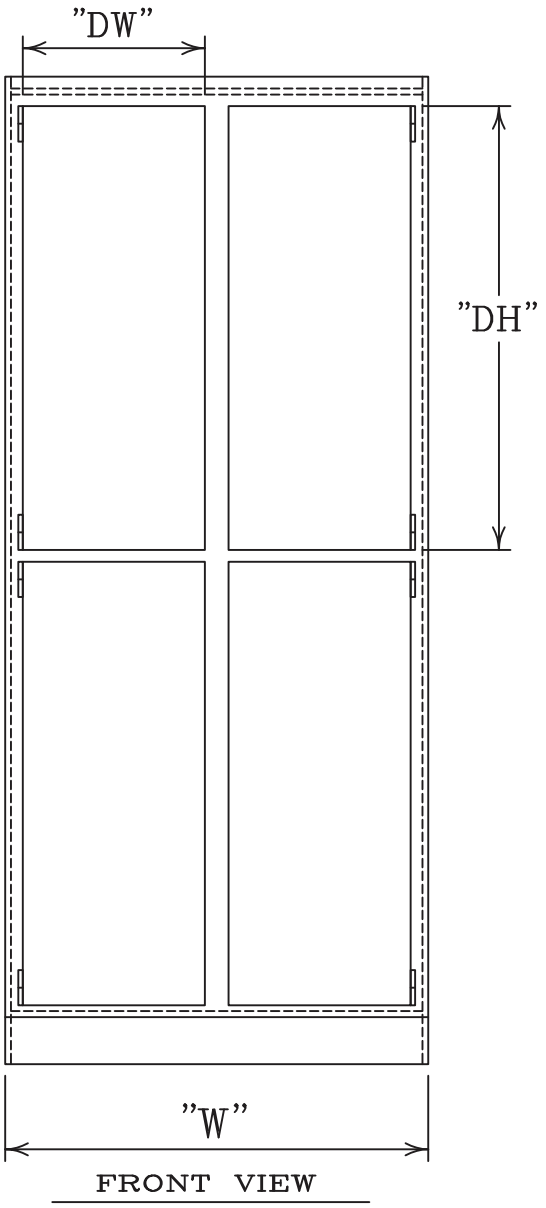
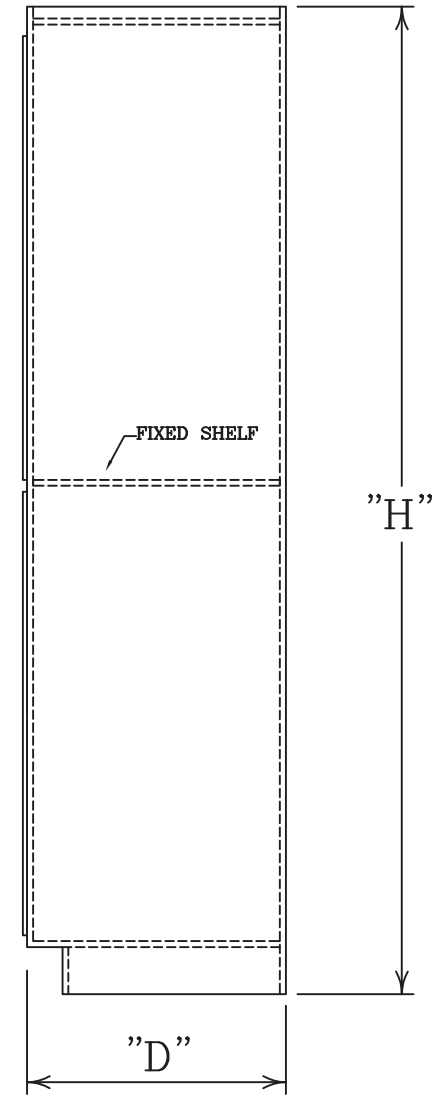
TALL CABINET

TALL CABINET W/ FOUR DOORS



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-04-3084-TC	29"	84"	22"	12.5"	37.75"
ID-04-3684-TC	35"	84"	22"	15.5"	37.75"
ID-04-4284-TC	42"	84"	22"	18.5"	37.75"
ID-04-4884-TC	48"	84"	22"	21.5"	37.75"

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (4)ADJUSTABLE SHELVES + (1) FIXED IN CENTER, SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS.

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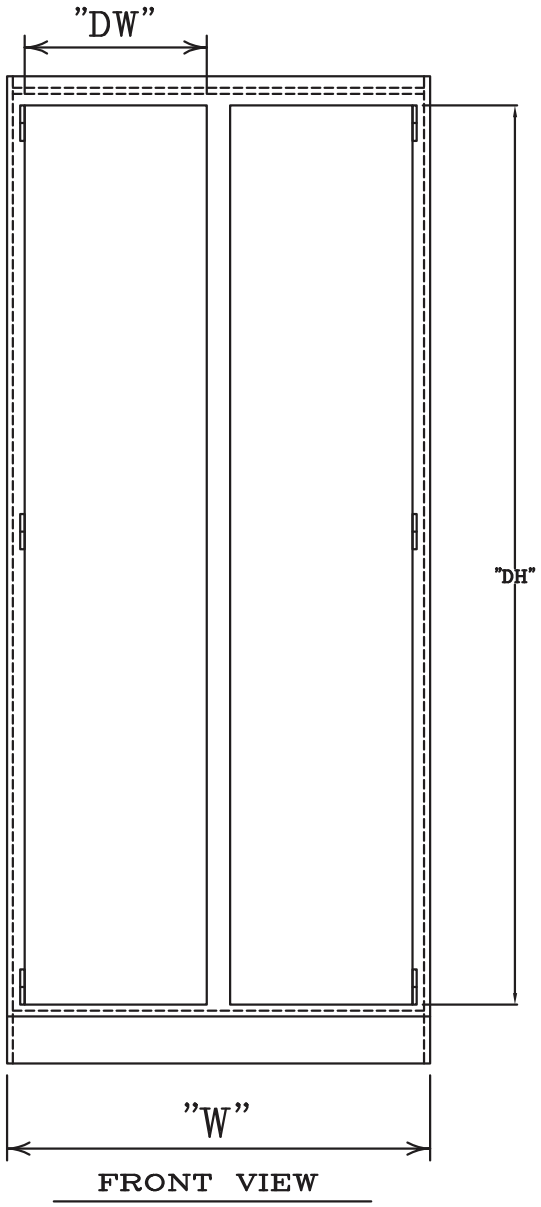
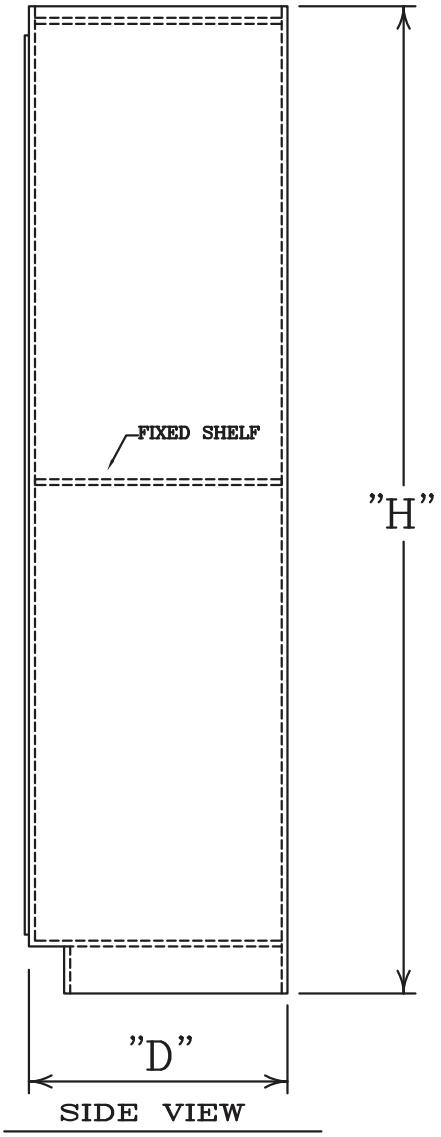
TALL CABINET

TALL CABINET W/ DOUBLE DOORS



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-02-3084-TC	29"	84"	22"	12.5"	76.5"
ID-02-3684-TC	35"	84"	22"	15.5"	76.5"
ID-02-4284-TC	42"	84"	22"	18.5"	76.5"
ID-02-4884-TC	48"	84"	22"	21.5"	76.5"

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (4) ADJUSTABLE SHELVES + (1) FIXED IN CENTER, SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS.

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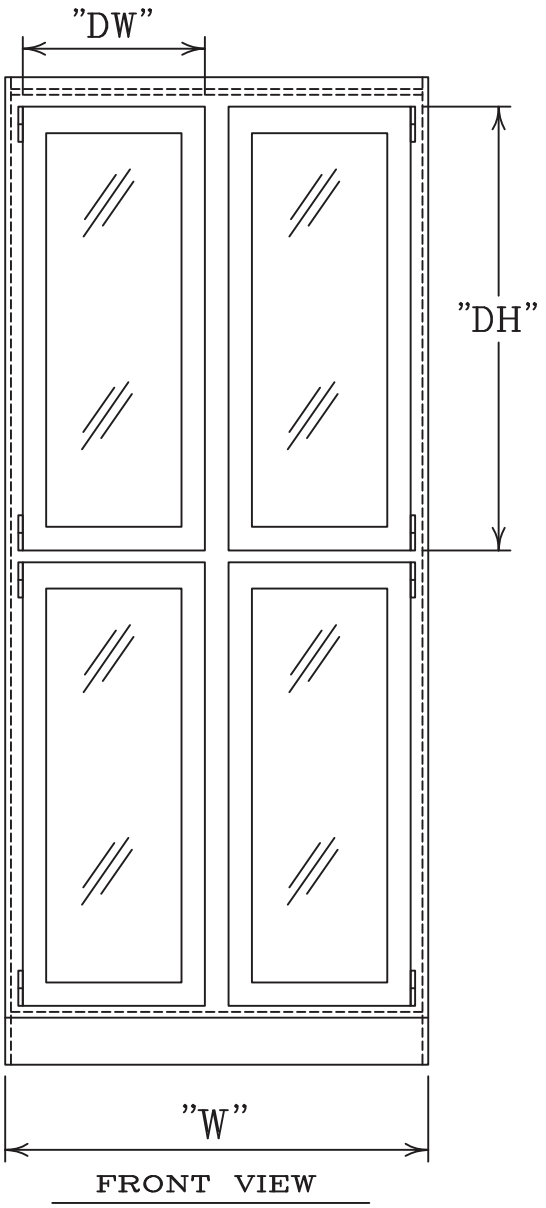
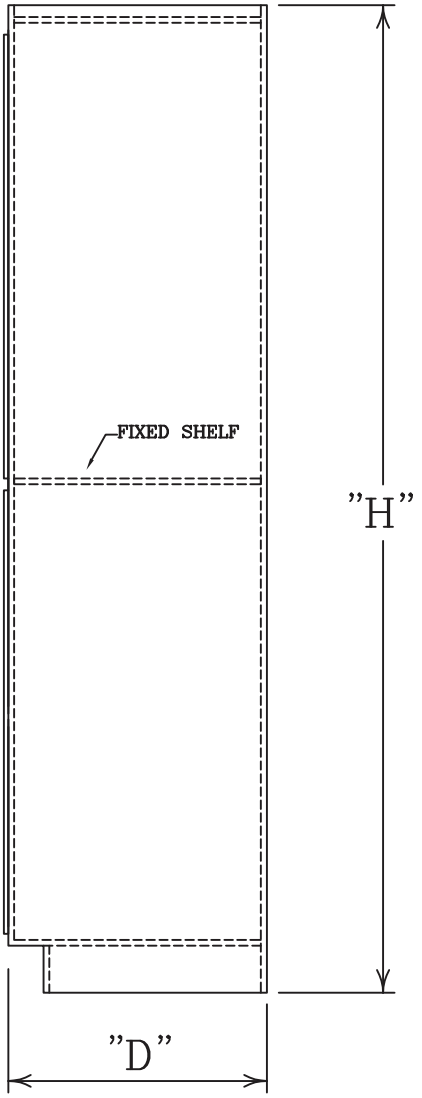
TALL CABINET

TALL CABINET W/ FOUR GLASS DOORS



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH
ID-04-3084-TC-GL	29"	84"	22"	12.5"	37.75"
ID-04-3684-TC-GL	35"	84"	22"	15.5"	37.75"
ID-04-4284-TC-GL	42"	84"	22"	18.5"	37.75"
ID-04-4884-TC-GL	48"	84"	22"	21.5"	37.75"

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- (4)ADJUSTABLE SHELVES + (1) FIXED IN CENTER, SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS.

POLYPROPYLENE CASEWORK

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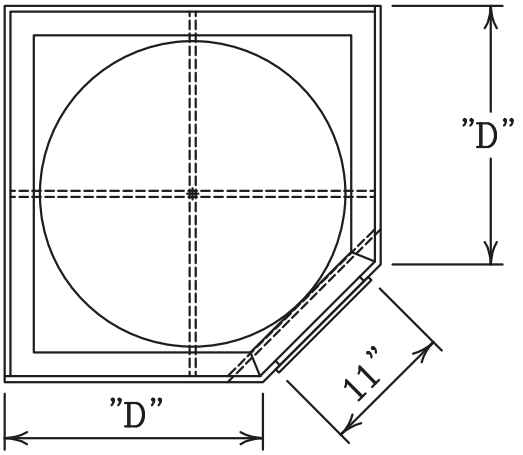
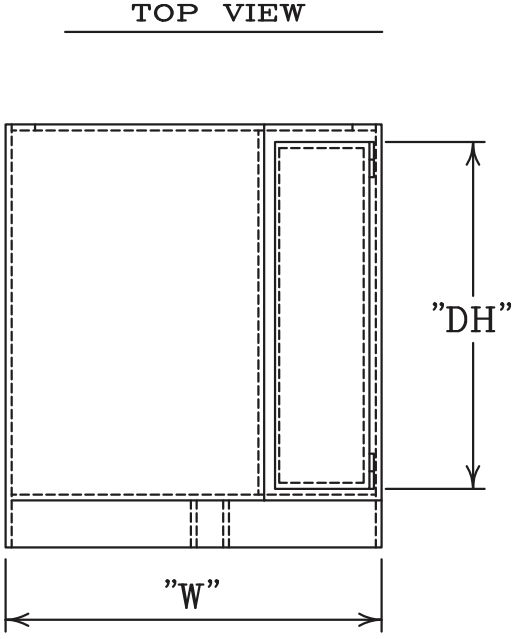
BASE CABINET

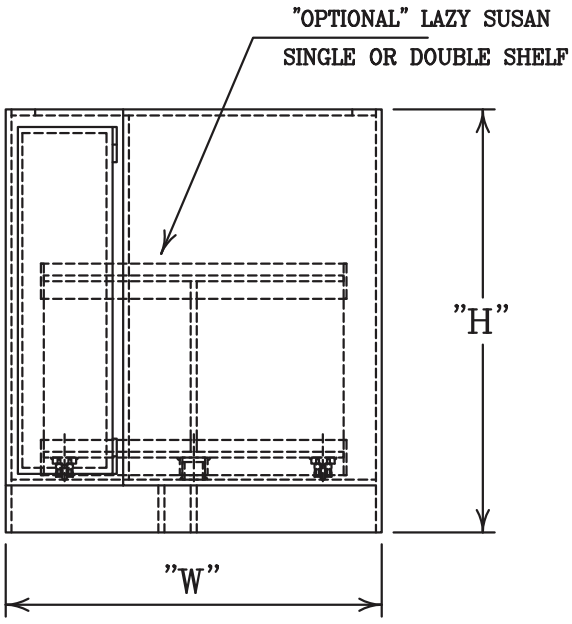
CORNER BASE CABINET



TOP VIEW



LEFT SIDE VIEW



RIGHT SIDE VIEW

PART NUMBER	W	H	D	"DH"
ID-01-3230-CBC	32"	29"	22"	23.5"
ID-01-3236-CBC	32"	35"	22"	29.5"

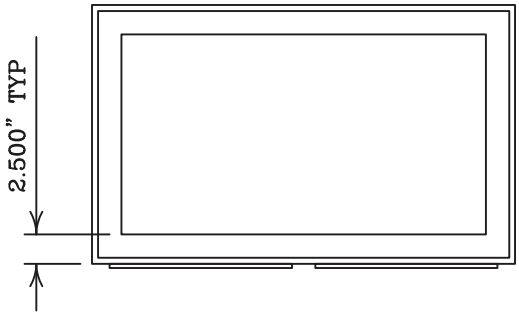
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL(S) ("OPTIONAL").
- NO METAL OR NYLON USED IN CONSTRUCTION.
- "OPTIONAL" LAZY SUSAN, SINGLE OR DOUBLE SHELF.

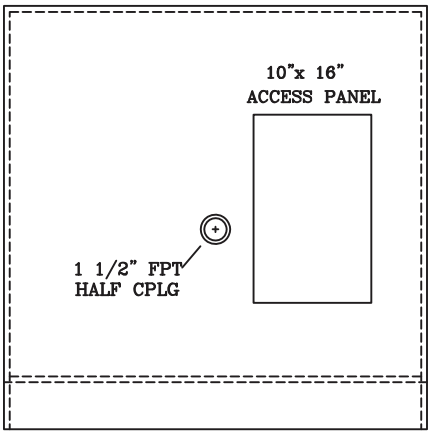
POLYPROPYLENE CASEWORK

BASE CABINET

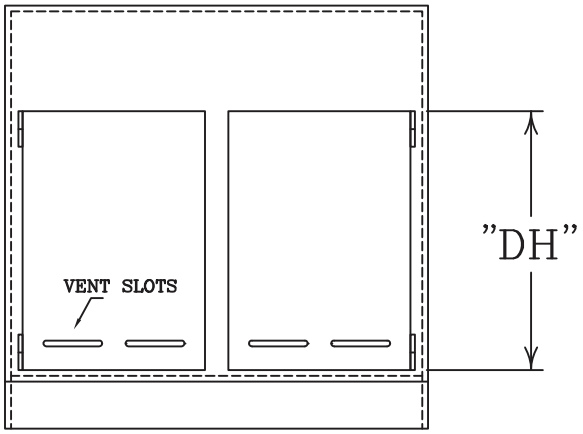
FUME HOOD BASE CABINET



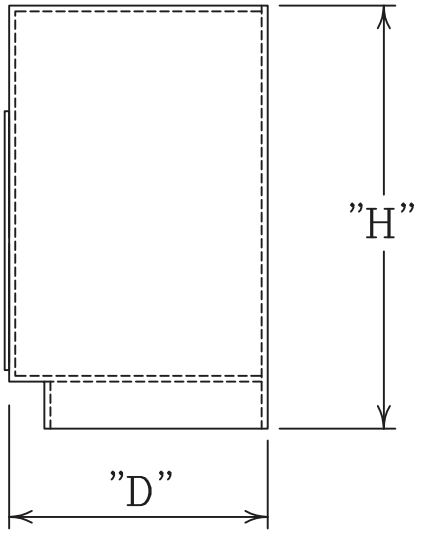
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	"DH"
ID-02-3030-FB	29"	29"	22"	16"
ID-02-3630-FB	35"	29"	22"	16"
ID-02-4830-FB	48"	29"	22"	16"
ID-02-3036-FB	29"	35"	22"	22"
ID-02-3636-FB	35"	35"	22"	22"
ID-02-4836-FB	48"	35"	22"	22"

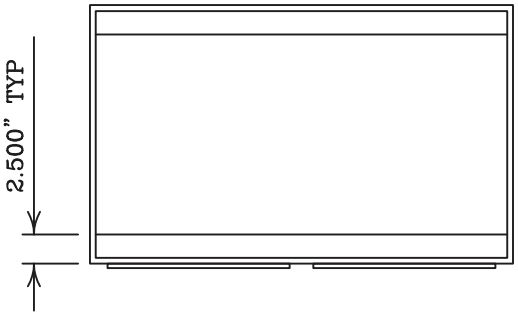
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.

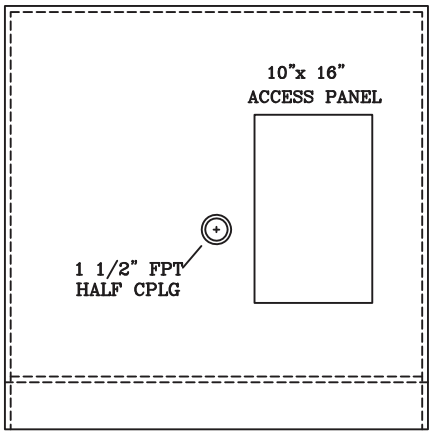
POLYPROPYLENE CASEWORK

BASE CABINET

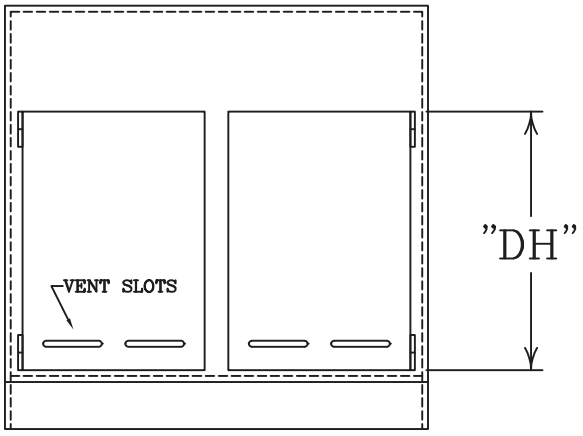
ACID STORAGE BASE CABINET



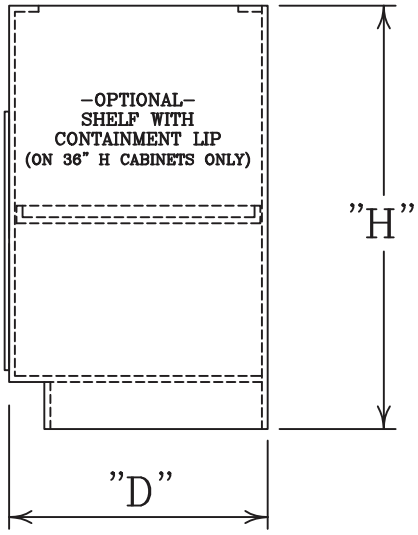
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE REAR ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	"DH"
ID-02-3030-AC	29"	29"	22"	16"
ID-02-3630-AC	35"	29"	22"	16"
ID-02-4830-AC	48"	29"	22"	16"
ID-02-3036-AC	29"	35"	22"	22"
ID-02-3636-AC	35"	35"	22"	22"
ID-02-4836-AC	48"	35"	22"	22"

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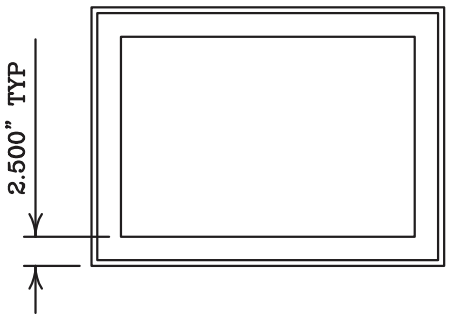
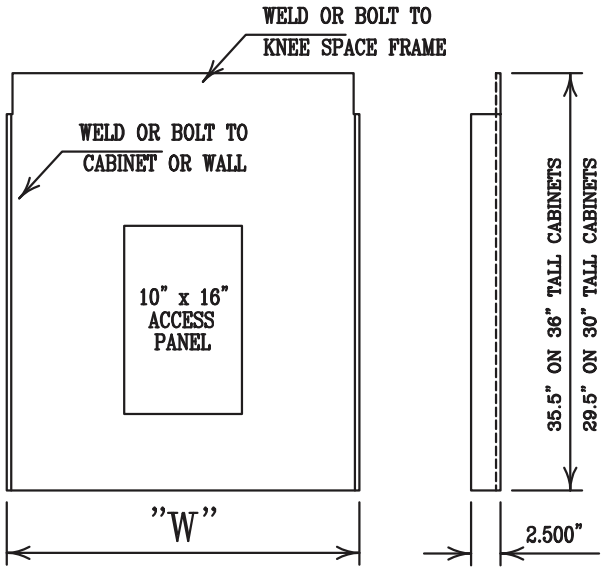
BASE CABINET

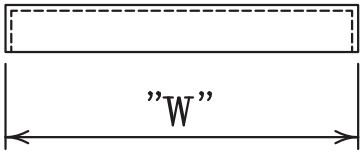
KNEE SPACE WITH BACK ENCLOSURE



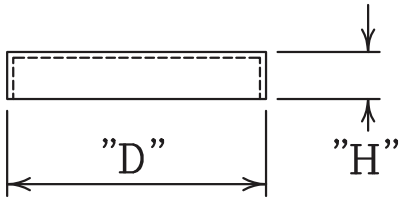
TOP VIEW



BACK ENCLOSURE PANEL
— OPTIONAL—



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D
ID–00–3030–KS	29"	4"	22"
ID–00–3630–KS	35"	4"	22"
ID–00–4230–KS	42"	4"	22"
ID–00–4830–KS	48"	4"	22"
ID–00–2436–KS	24"	4"	22"
ID–00–3036–KS	29"	4"	22"
ID–00–3636–KS	35"	4"	22"
ID–00–4236–KS	42"	4"	22"
ID–00–4836–KS	48"	4"	22"

IF A BACK ENCLOSURE PANEL IS NEEDED, ADD THE SUFFIX –BP
EXAMPLE:
A KNEE SPACE 36" W. x 36" H. WITH BACK PANEL WOULD BE ID–00–3636–KS–BP

FEATURES :

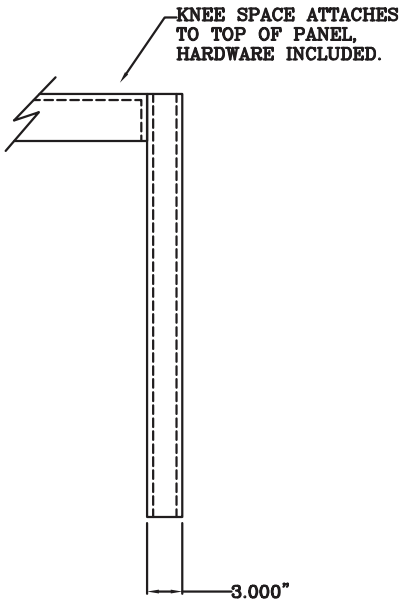
- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE BACK ENCLOSURE WITH ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.

POLYPROPYLENE CASEWORK

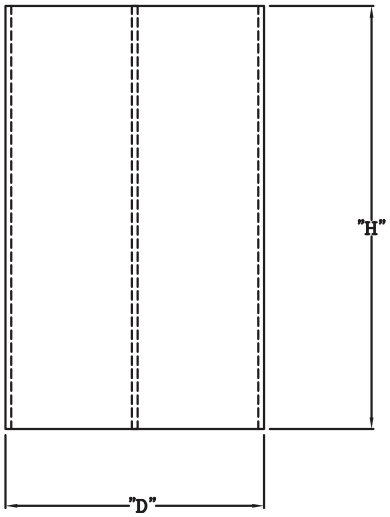
BASE CABINET

KNEE SPACE END PANEL

TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D
ID-00-0330-22-KEP	3"	29"	22"
ID-00-0336-22-KEP	3"	35"	22"
ID-00-0330-30-KEP	3"	29"	30"
ID-00-0336-30-KEP	3"	35"	30"

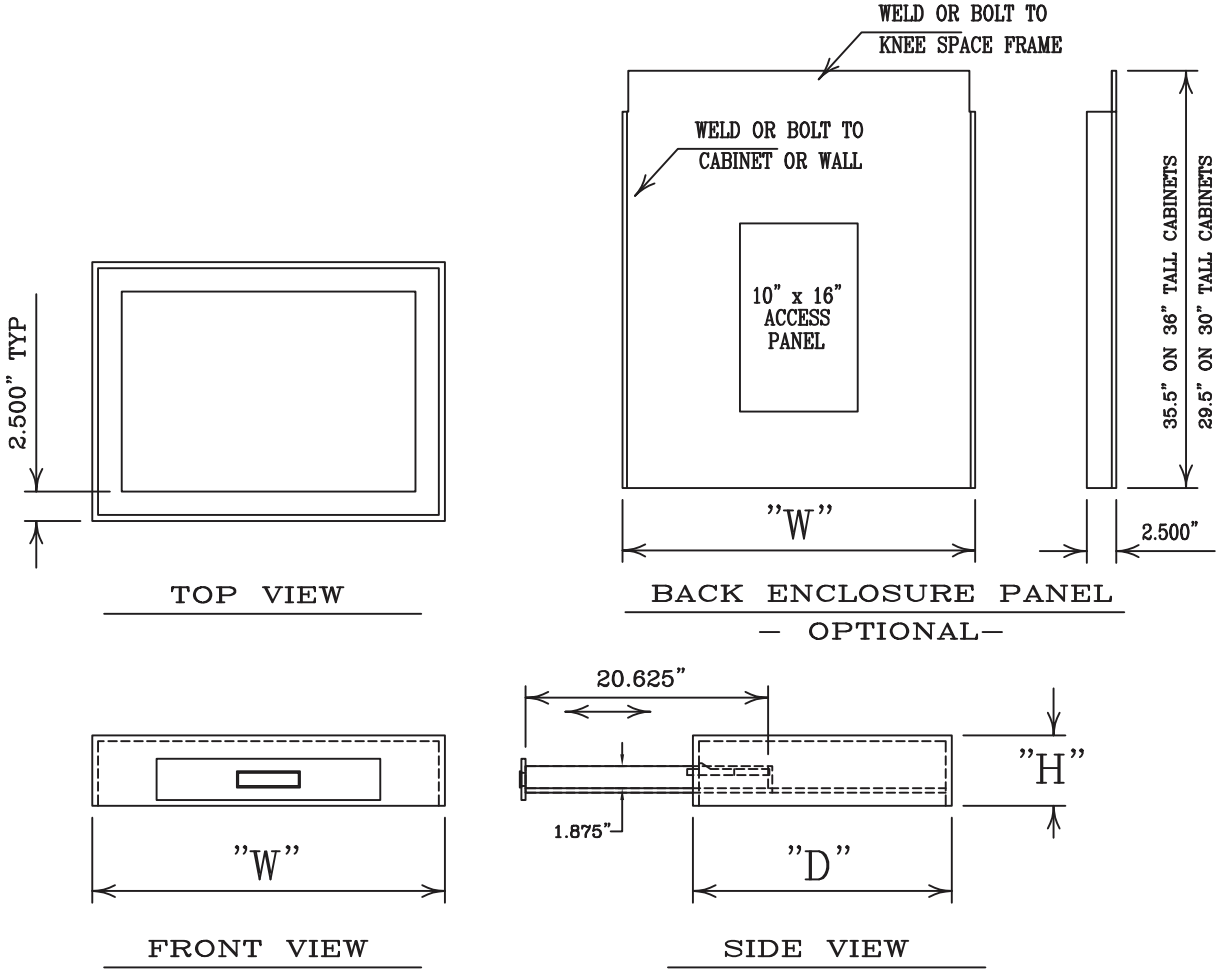
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- WELD OR BOLT ON INSTALLATION.

POLYPROPYLENE CASEWORK

BASE CABINET

KNEE SPACE WITH DRAWER & BACK ENCLOSURE



PART NUMBER	W	H	D
ID-10-2430-KS	24"	6"	22"
ID-10-3030-KS	29"	6"	22"
ID-10-3630-KS	35"	6"	22"
ID-10-2436-KS	24"	6"	22"
ID-10-3036-KS	29"	6"	22"
ID-10-3636-KS	35"	6"	22"

IF A BACK ENCLOSURE PANEL IS NEEDED, ADD THE SUFFIX -BP
EXAMPLE:
A KNEE SPACE 35" W. x 35" H. WITH BACK PANEL WOULD BE ID-10-3636-KS-BP

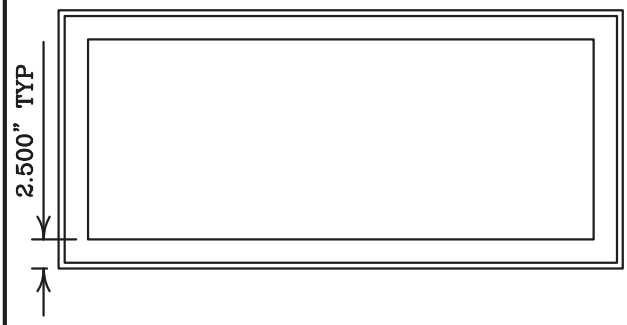
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE BACK ENCLOSURE WITH ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.

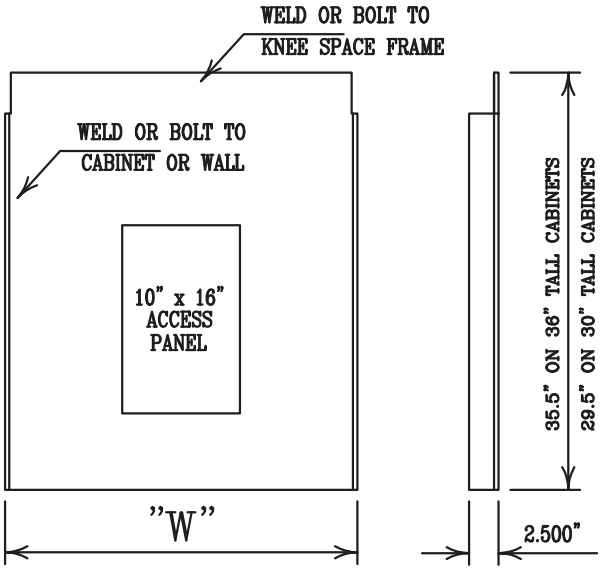
POLYPROPYLENE CASEWORK

BASE CABINET

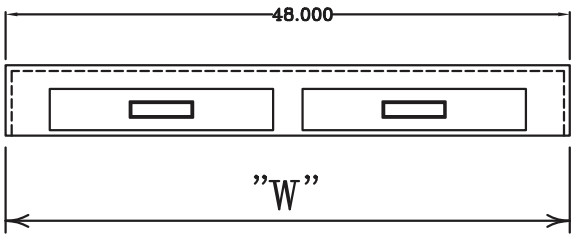
KNEE SPACE WITH (2) DRAWERS & BACK ENCLOSURE



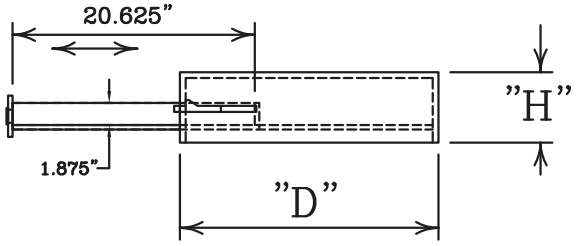
TOP VIEW



BACK ENCLOSURE PANEL
— OPTIONAL—



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D
ID–20–4830–KS	48"	6"	22"
ID–20–6030–KS	60"	6"	22"
ID–20–7230–KS	72"	6"	22"
ID–20–4836–KS	48"	6"	22"
ID–20–6036–KS	60"	6"	22"
ID–20–7236–KS	72"	6"	22"

IF A BACK ENCLOSURE PANEL IS NEEDED, ADD THE SUFFIX –BP
EXAMPLE:
A KNEE SPACE 48" W. x 35" H. WITH BACK PANEL WOULD BE ID–20–4836–KS–BP

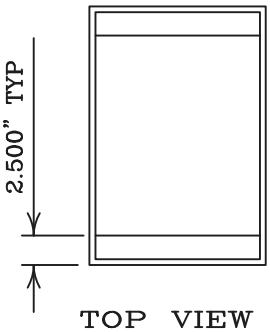
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- REMOVABLE BACK ENCLOSURE WITH ACCESS PANEL.
- NO METAL OR NYLON USED IN CONSTRUCTION.

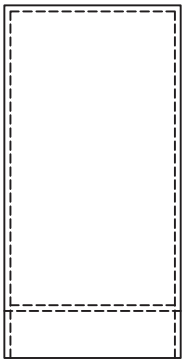
POLYPROPYLENE CASEWORK

BASE CABINET

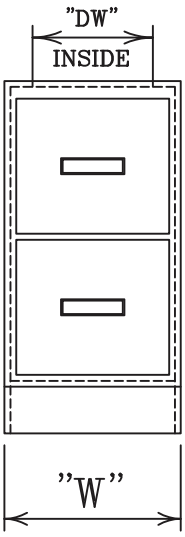
(2) DRAWER FILE CABINET



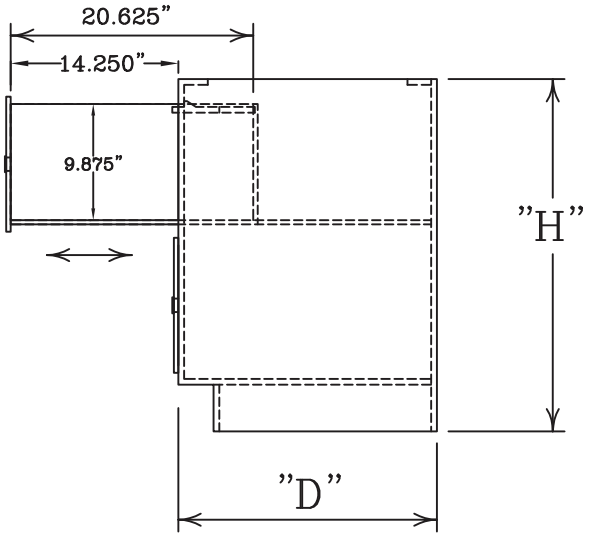
TOP VIEW



BACK VIEW



FRONT VIEW



SIDE VIEW

FEATURES :

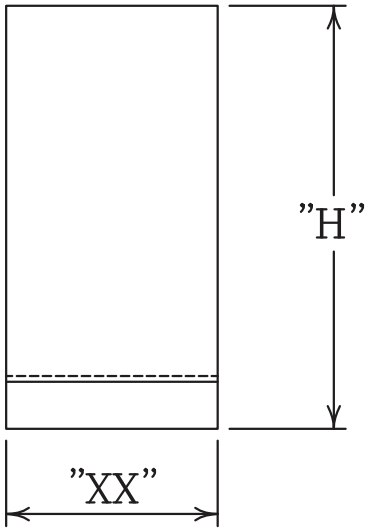
- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- NO METAL OR NYLON USED IN CONSTRUCTION.

PART NUMBER	W	H	D	DW
ID-2S-1530-FC	15"	29"	22"	10.25"
ID-2S-1830-FC	18"	29"	22"	13.25"
ID-2S-2430-FC	24"	29"	22"	19.25"

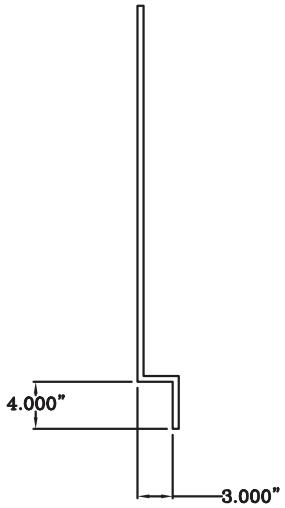
POLYPROPYLENE CASEWORK

BASE CABINET

FRONT FILLER PANELS



FRONT VIEW



SIDE VIEW

PART NUMBER	XX	H
ID-00-XX30-FFP	1"-48"	29"
ID-00-XX36-FFP	1"-48"	35"

"XX" = WIDTH OF PANEL

EXAMPLE :
PART # FOR A PANEL 6" WIDE x 35" HIGH
WOULD BE - ID-00-0636-FFP

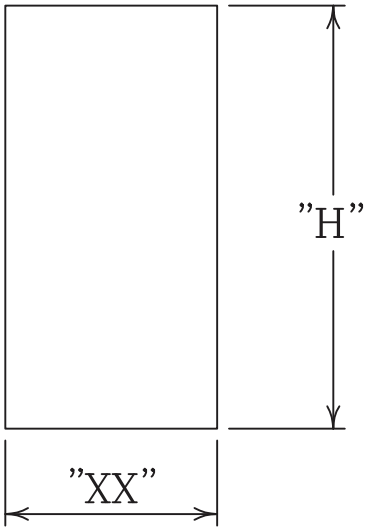
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- NOT FOR USE AS A STRUCTURAL MEMBER.
- CUSTOM CUT TO WIDTH AVAILABLE.
- WELD OR BOLT ON INSTALLATION.

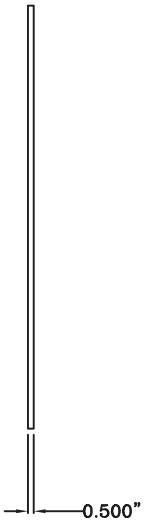
POLYPROPYLENE CASEWORK

BASE CABINET

SIDE FILLER PANELS



FRONT VIEW



SIDE VIEW

PART NUMBER	XX	H
ID-00-XX30-SFP	1"-48"	29"
ID-00-XX36-SFP	1"-48"	35"

"XX" = WIDTH OF PANEL

EXAMPLE :
PART # FOR A PANEL 6" WIDE x 35" HIGH
WOULD BE - ID-00-0636-SFP

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- NOT FOR USE AS A STRUCTURAL MEMBER.
- CUSTOM CUT TO WIDTH AVAILABLE.
- WELD OR BOLT ON INSTALLATION.

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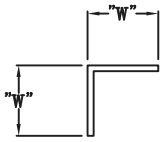
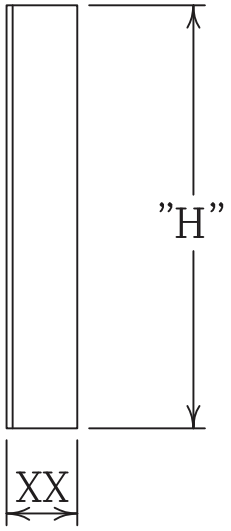
BASE CABINET

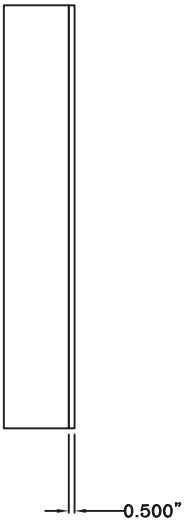
CORNER FILLER PANELS



PLAN VIEW



LEFT SIDE VIEW



RIGHT SIDE VIEW

PART NUMBER	XX	H
ID-00-XX30-CFP	1"-12"	29"
ID-00-XX36-CFP	1"-12"	35"

"XX" = WIDTH OF PANEL

EXAMPLE :
PART # FOR A PANEL 6" WIDE x 35" HIGH
WOULD BE - ID-00-0636-CFP

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- NOT FOR USE AS A STRUCTURAL MEMBER.
- CUSTOM CUT TO WIDTH AVAILABLE.
- WELD OR BOLT ON INSTALLATION.

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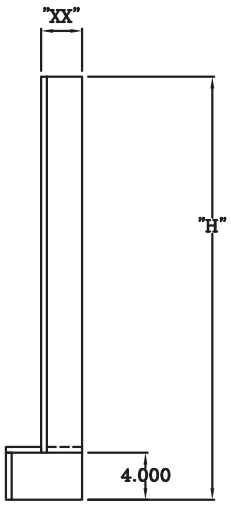
BASE CABINET

CORNER FRONT FILLER PANELS

PLAN VIEW



LEFT SIDE VIEW

RIGHT SIDE VIEW

PART NUMBER	XX	H
ID-00-XX30-CFFP	1"-12"	29"
ID-00-XX36-CFFP	1"-12"	35"

"XX" = WIDTH OF PANEL

EXAMPLE :
PART # FOR A PANEL 6" WIDE x 35" HIGH
WOULD BE - ID-00-0636-CFFP

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION.
- MODULAR INTERCHANGEABLE DESIGN.
- NOT FOR USE AS A STRUCTURAL MEMBER.
- CUSTOM CUT TO WIDTH AVAILABLE.
- WELD OR BOLT ON INSTALLATION.

POLYPROPYLENE CASEWORK

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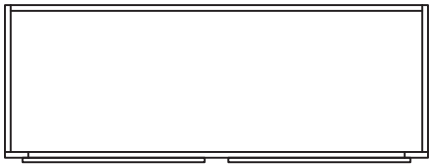
WALL CABINET

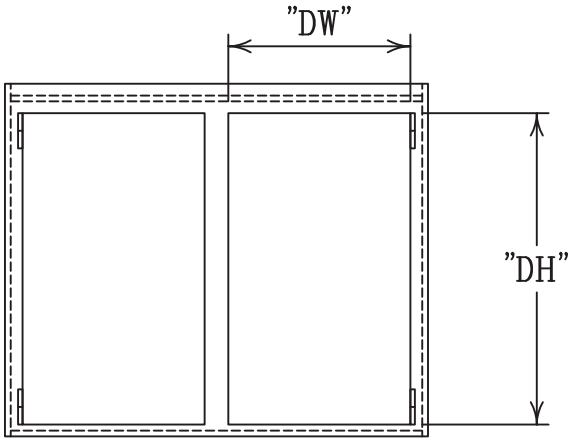
DOUBLE DOORS



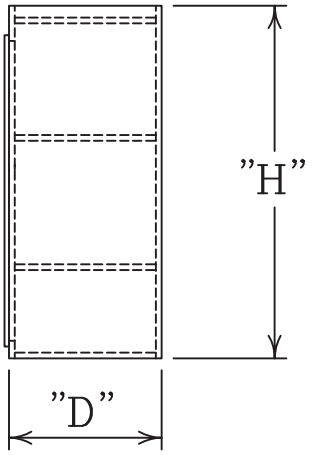
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS

TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-2-3024-WC	29"	24"	13"	12.5"	20.5"	1
ID-2-3624-WC	35"	24"	13"	15.5"	20.5"	1
ID-2-4224-WC	42"	24"	13"	18.5"	20.5"	1
ID-2-4824-WC	48"	24"	13"	21.5"	20.5"	1
ID-2-3030-WC	29"	29"	13"	12.5"	26.5"	2
ID-2-3630-WC	35"	29"	13"	15.5"	26.5"	2
ID-2-4230-WC	42"	29"	13"	18.5"	26.5"	2
ID-2-4830-WC	48"	29"	13"	21.5"	26.5"	2

POLYPROPYLENE CASEWORK

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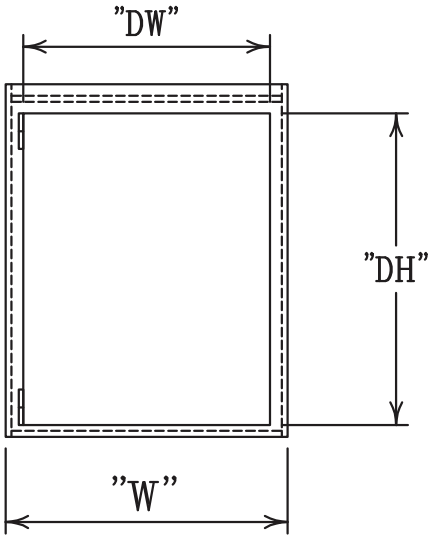
WALL CABINET

SINGLE DOOR

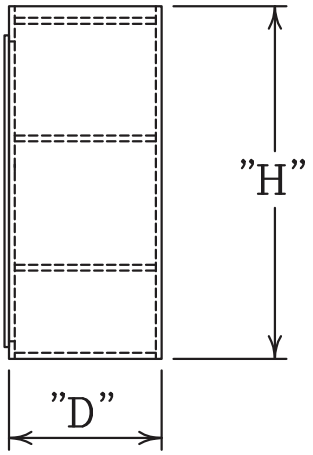
TOP VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS



FRONT VIEW



SIDE VIEW

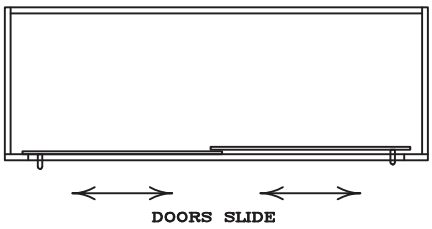
PART NUMBER	W	H	D	DW	DH	SHELVES
ID-1-1824-WC	18"	24"	13"	15"	20.5"	1
ID-1-2424-WC	24"	24"	13"	21"	20.5"	1
ID-1-1830-WC	18"	29"	13"	15"	26.5"	2
ID-1-2430-WC	24"	29"	13"	21"	26.5"	2

* INDICATE LEFT (AS SHOWN) OR RIGHT.
LEFT HINGE ADD -L SUFFIX
RIGHT HINGE ADD -R SUFFIX

POLYPROPYLENE CASEWORK

WALL CABINET

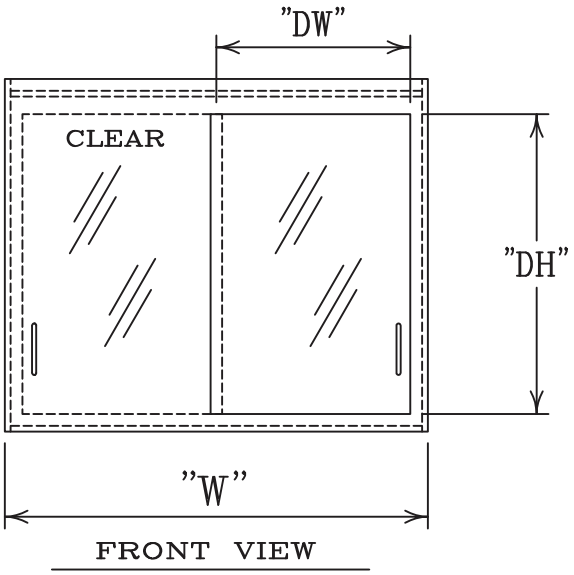
GLASS SLIDING



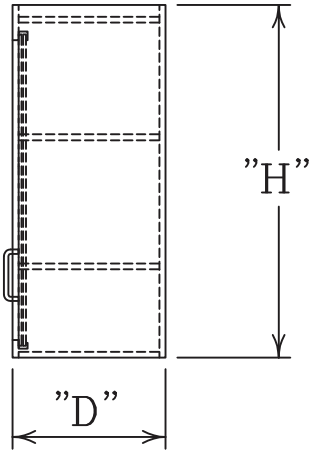
TOP VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS
- DOORS AVAILABLE IN LEXAN, PVC, OR SAFETY GLASS.



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-2GSL-3024-WC	29"	24"	13"	13.5"	19.5"	1
ID-2GSL-3624-WC	35"	24"	13"	16.5"	19.5"	1
ID-2GSL-4224-WC	42"	24"	13"	19.5"	19.5"	1
ID-2GSL-4824-WC	48"	24"	13"	22.5"	19.5"	1
ID-2GSL-3030-WC	29"	29"	13"	13.5"	25.5"	2
ID-2GSL-3630-WC	35"	29"	13"	16.5"	25.5"	2
ID-2GSL-4230-WC	42"	29"	13"	19.5"	25.5"	2
ID-2GSL-4830-WC	48"	29"	13"	22.5"	25.5"	2

POLYPROPYLENE CASEWORK

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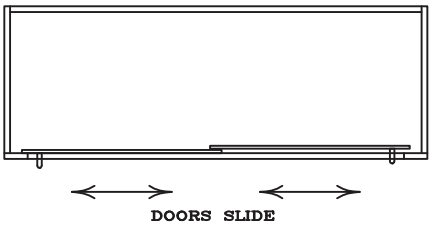
WALL CABINET

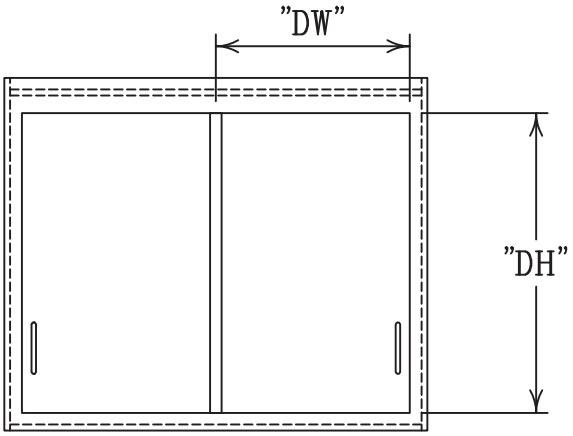
SLIDING DOORS



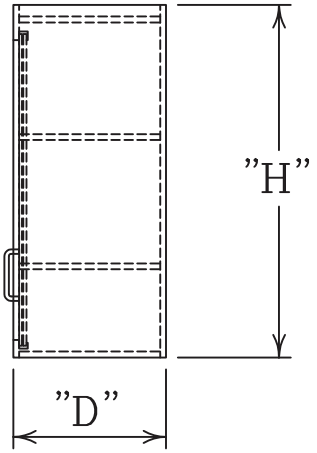
TOP VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-2SL-3024-WC	29"	24"	13"	13.5"	19.5"	1
ID-2SL-3624-WC	35"	24"	13"	16.5"	19.5"	1
ID-2SL-4224-WC	42"	24"	13"	19.5"	19.5"	1
ID-2SL-4824-WC	48"	24"	13"	22.5"	19.5"	1
ID-2SL-3030-WC	29"	29"	13"	13.5"	25.5"	2
ID-2SL-3630-WC	35"	29"	13"	16.5"	25.5"	2
ID-2SL-4230-WC	42"	29"	13"	19.5"	25.5"	2
ID-2SL-4830-WC	48"	29"	13"	22.5"	25.5"	2

POLYPROPYLENE CASEWORK

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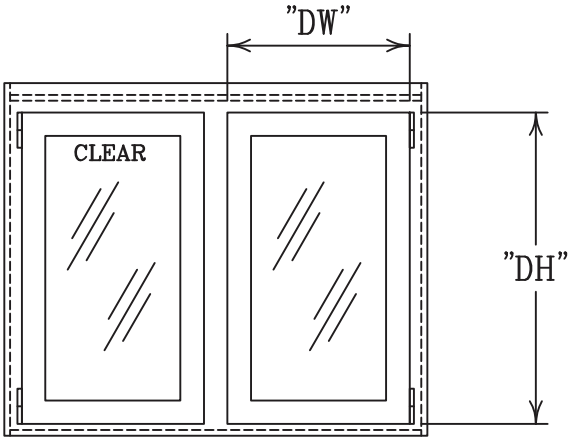
WALL CABINET

FRAMED GLASS DOORS

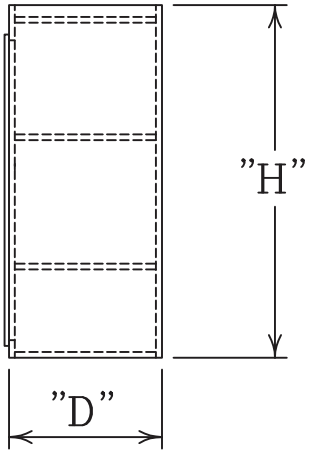
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS
- DOORS AVAILABLE IN LEXAN, PVC, OR SAFETY GLASS.

TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-2GL-3024-WC	29"	24"	13"	12.5"	20.5"	1
ID-2GL-3624-WC	35"	24"	13"	15.5"	20.5"	1
ID-2GL-4224-WC	42"	24"	13"	18.5"	20.5"	1
ID-2GL-4824-WC	48"	24"	13"	21.5"	20.5"	1
ID-2GL-3030-WC	29"	29"	13"	12.5"	26.5"	2
ID-2GL-3630-WC	35"	29"	13"	15.5"	26.5"	2
ID-2GL-4230-WC	42"	29"	13"	18.5"	26.5"	2
ID-2GL-4830-WC	48"	29"	13"	21.5"	26.5"	2

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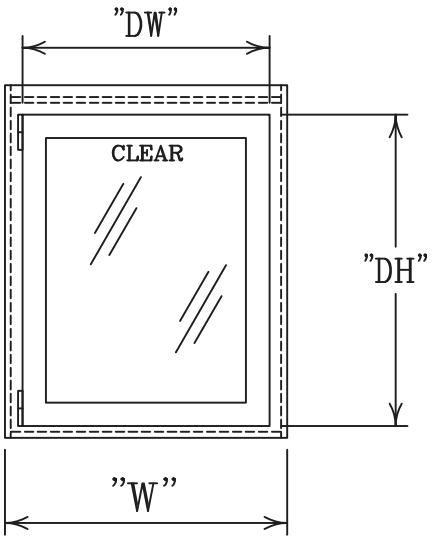
WALL CABINET

SINGLE GLASS DOOR

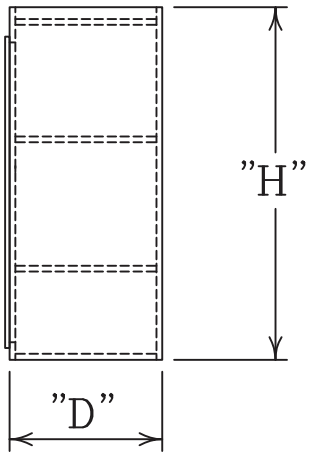
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS
- DOORS AVAILABLE IN LEXAN, PVC, OR SAFETY GLASS.

TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-1GL-1824-WC	18"	24"	13"	15"	20.5"	1
ID-1GL-2424-WC	24"	24"	13"	21"	20.5"	1
ID-1GL-1830-WC	18"	29"	13"	15"	26.5"	2
ID-1GL-2430-WC	24"	29"	13"	21"	26.5"	2

* INDICATE LEFT (AS SHOWN) OR RIGHT.
LEFT HINGE ADD -L SUFFIX
RIGHT HINGE ADD -R SUFFIX

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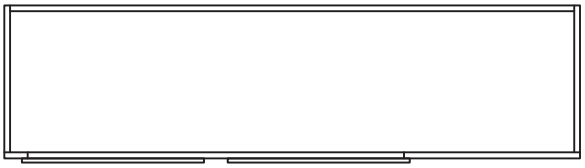
WALL CABINET

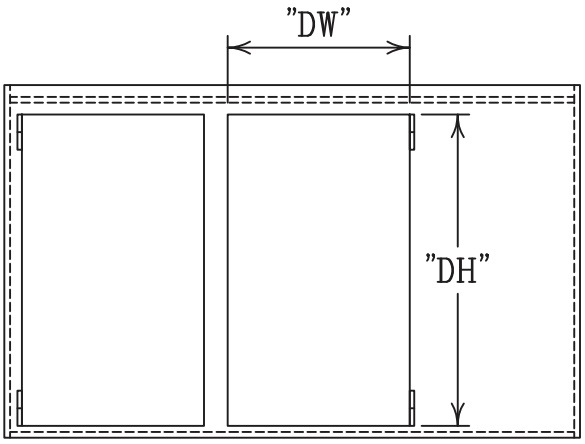
EXTENDED CORNER WALL CABINET



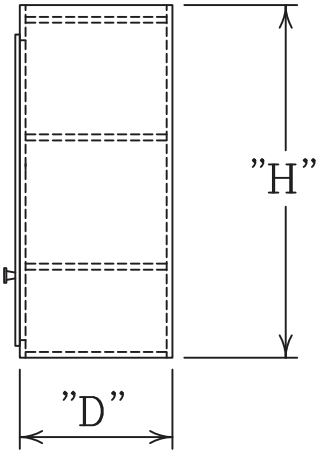
FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS

TOP VIEW



FRONT VIEW



SIDE VIEW

PART NUMBER	W	H	D	DW	DH	SHELVES
ID-02-3724-EWC	37"	24"	13"	9.5"	20.5"	1
ID-02-4924-EWC	49"	24"	13"	9.5"	20.5"	1
ID-02-3730-EWC	37"	29"	13"	15.5"	26.5"	2
ID-02-4930-EWC	49"	29"	13"	15.5"	26.5"	2

* INDICATE LEFT (AS SHOWN) OR RIGHT.

POLYPROPYLENE CASEWORK

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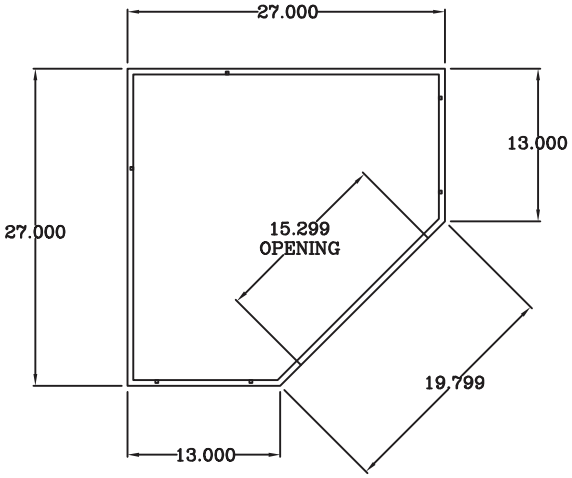
WALL CABINET

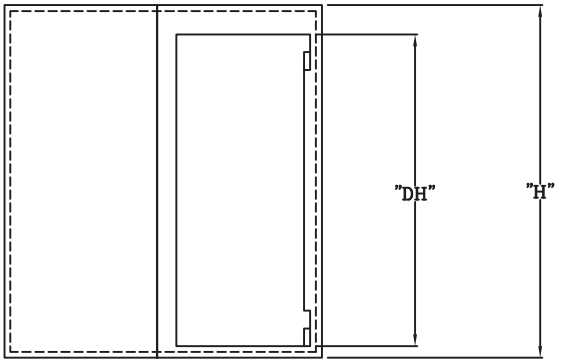
CORNER WALL CABINET



TOP VIEW

FEATURES :

- CONSTRUCTED FROM WHITE STRESS RELIEVED POLYPROPYLENE.
- WELDED CONSTRUCTION WITH LIQUID TIGHT BASE.
- MODULAR INTERCHANGEABLE DESIGN.
- RECESSED LIQUID TIGHT TOP
- NO METAL OR NYLON USED IN CONSTRUCTION.
- ADJUSTABLE SHELVES.
- SHELVES ADJUST UP OR DOWN ON 1" INCREMENTS



SIDE VIEW

PART NUMBER	W	H	DH	SHELVES
ID-1-2724-CWC	27"	24"	20.5"	1
ID-1-2730-CWC	27"	29"	26.5"	2

POLYPROPYLENE CASEWORK

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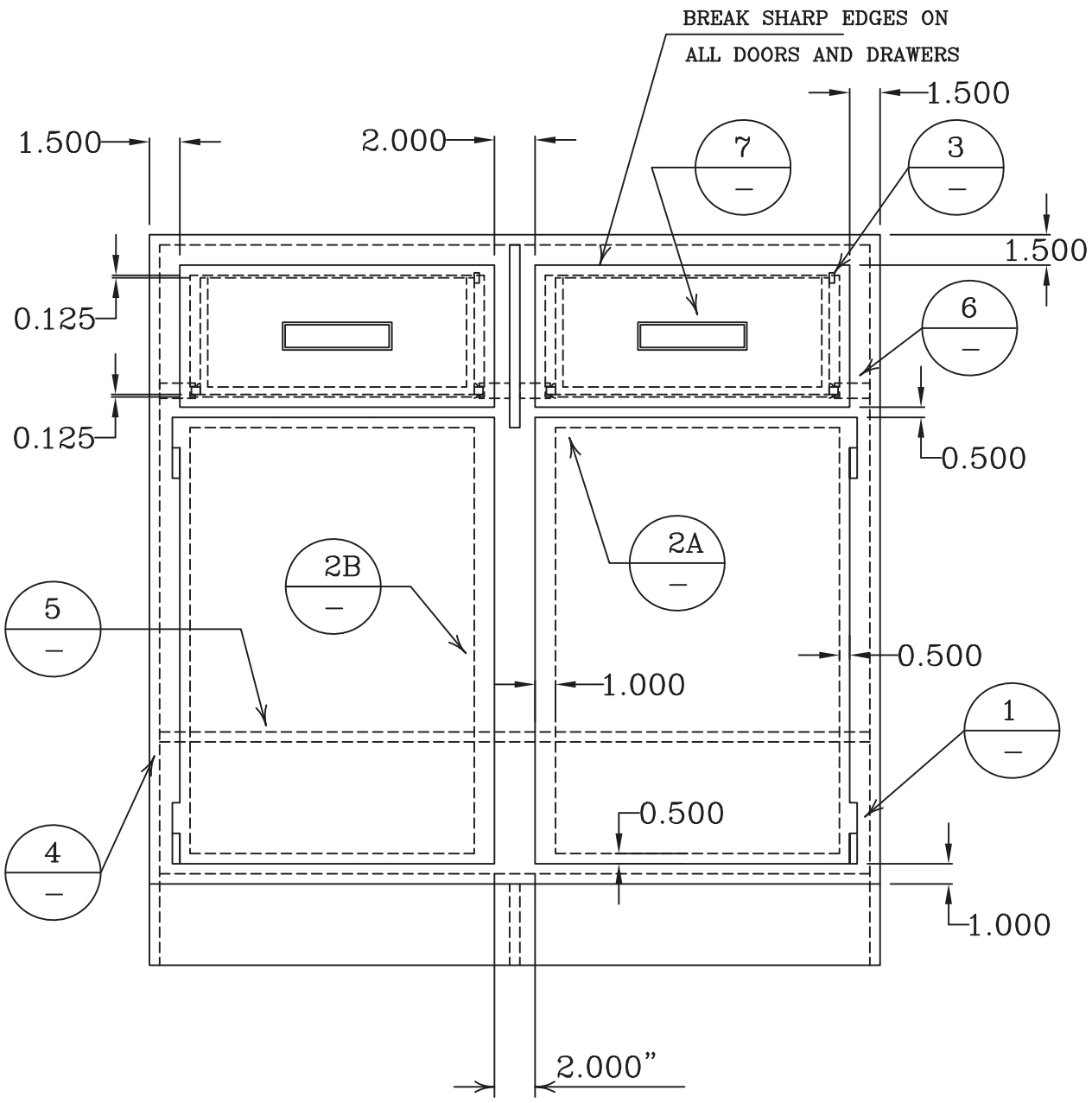
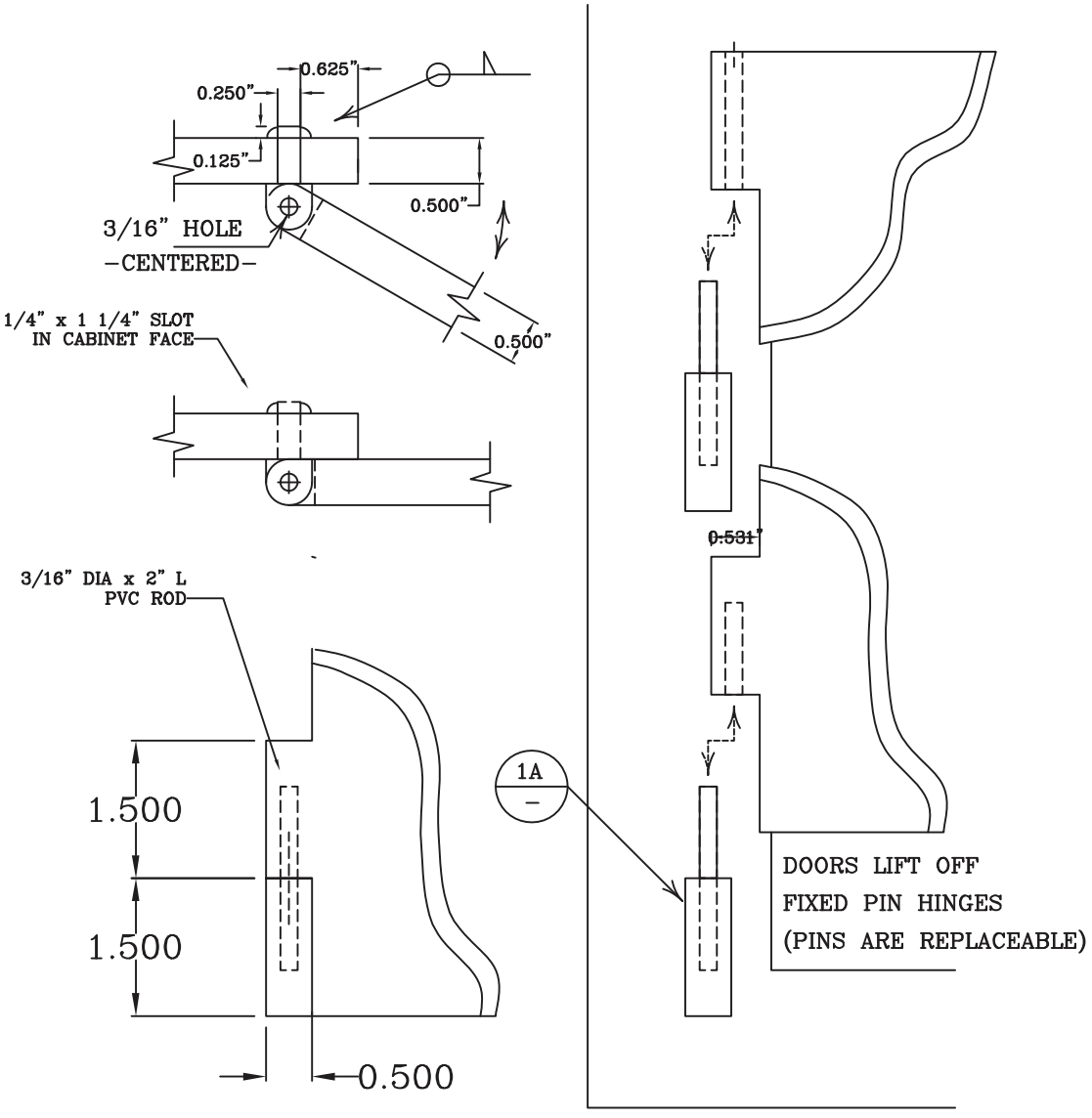


BASE CABINET
TYP STANDARDS AND DETAILS

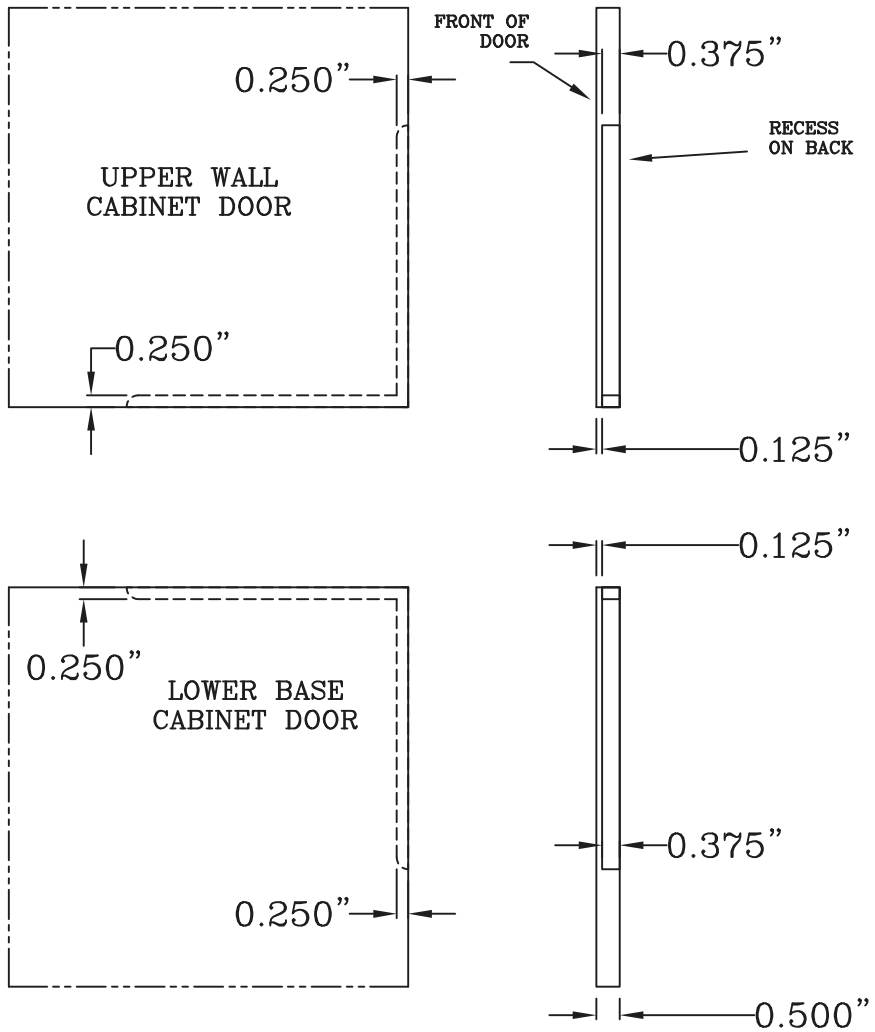
POLYPROPYLENE CASEWORK



DOOR HINGE 1/—

QUANTITY : (2) MIN. PER DOOR (TO 36" H.)
(3) MIN. PER DOOR (OVER 36" H.)
MATERIAL : 1/2" WHITE POLYPRO
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK

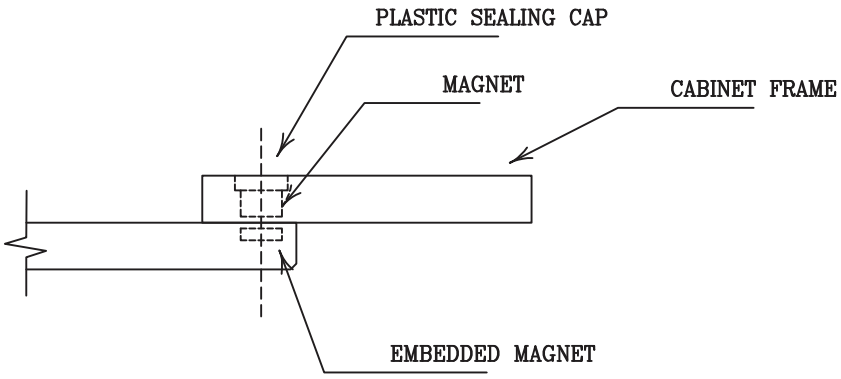


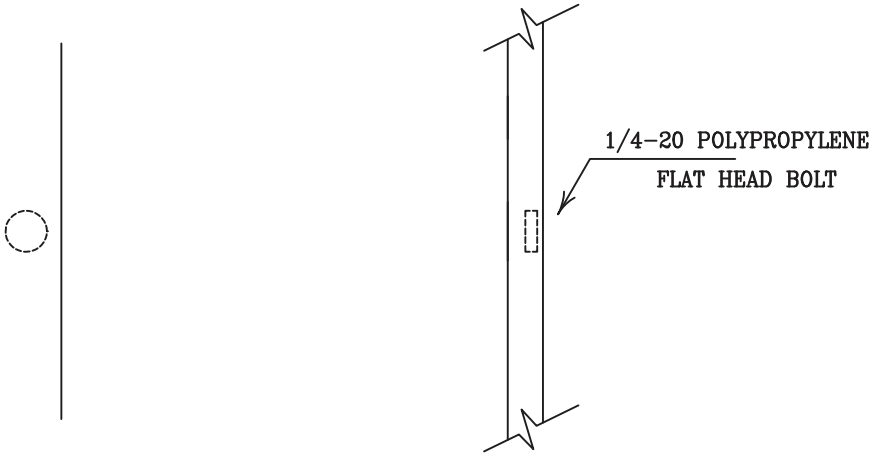
DOOR PULL RECESS

2A
—

QUANTITY : (1) PER DOOR
MATERIAL : WHITE POLYPRO
SCALE : 1/4” = 1”

POLYPROPYLENE CASEWORK





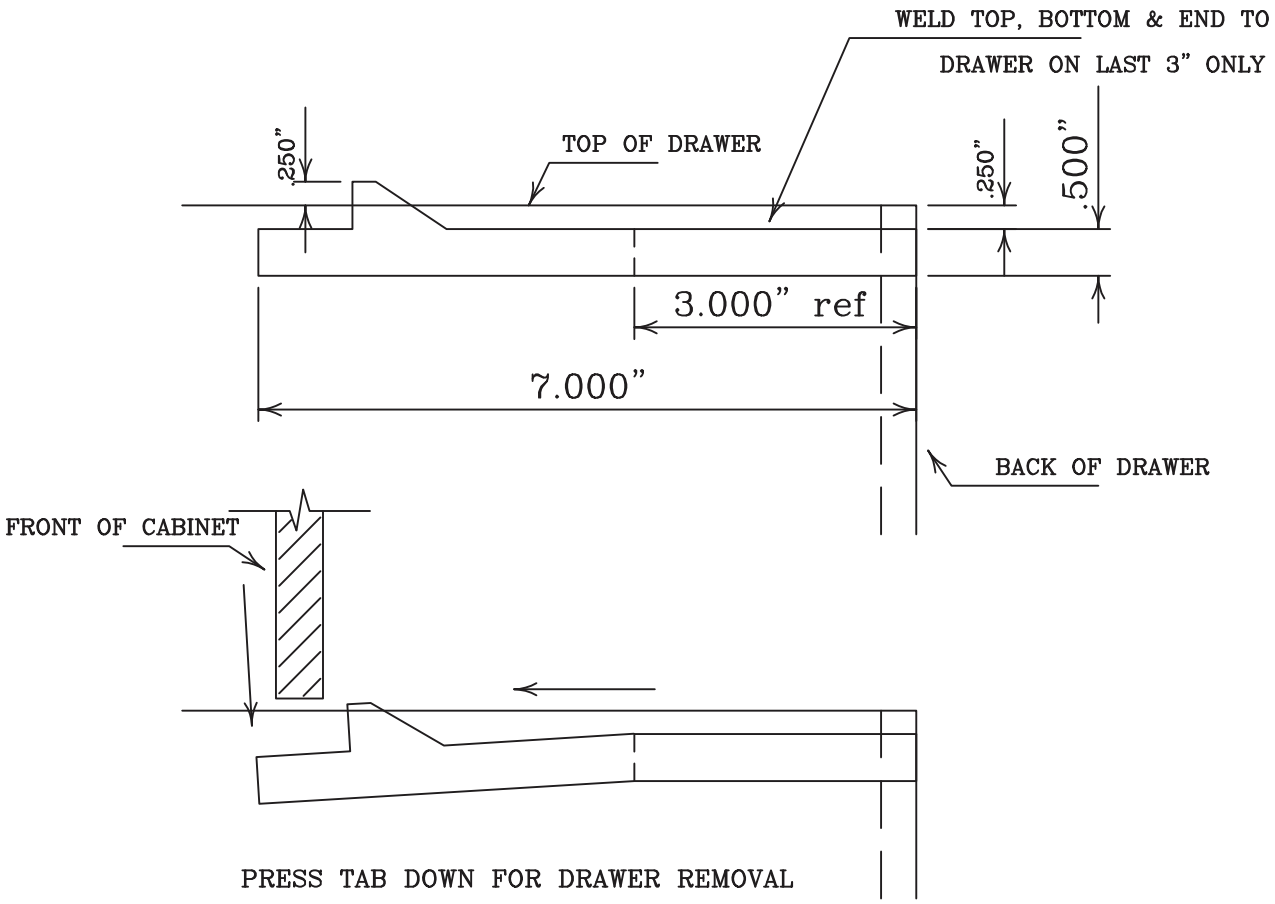
FRONT VIEW

SIDE VIEW

DOOR MAGNET 2B

QUANTITY : (1) PER DOOR
MATERIAL : BLACK PLASTIC
SCALE : 1/2" = 1"

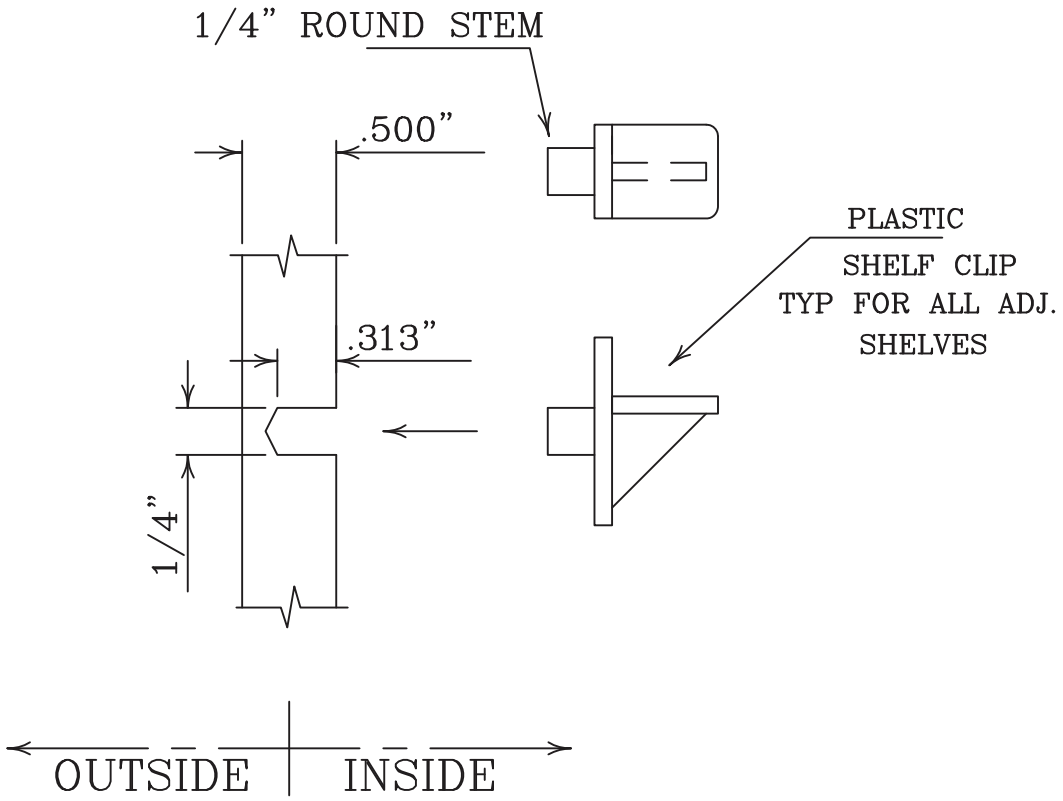
POLYPROPYLENE CASEWORK



DRAWER STOP 3

QUANTITY : (1) PER DRAWER
MATERIAL : 3/16" WHITE POLYPRO
SCALE : 1/2" = 1"

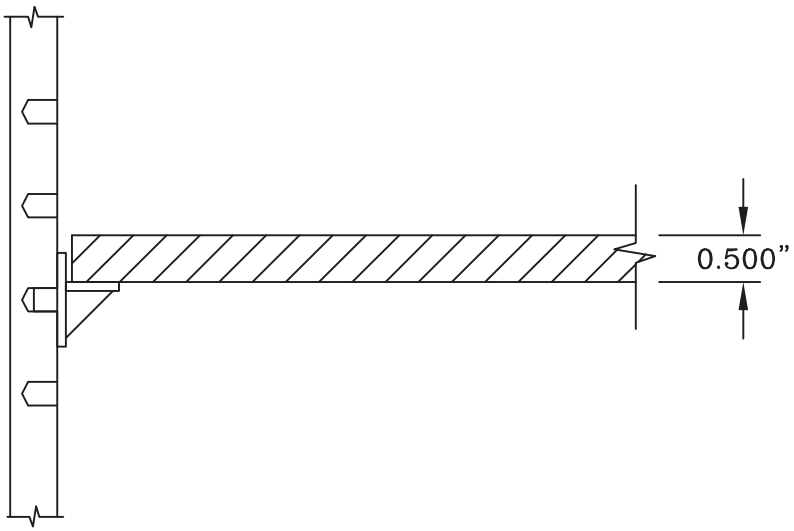
POLYPROPYLENE CASEWORK



SHELF CLIP 4

QUANTITY : (6) PER SHELF
MATERIAL : PLASTIC

POLYPROPYLENE CASEWORK



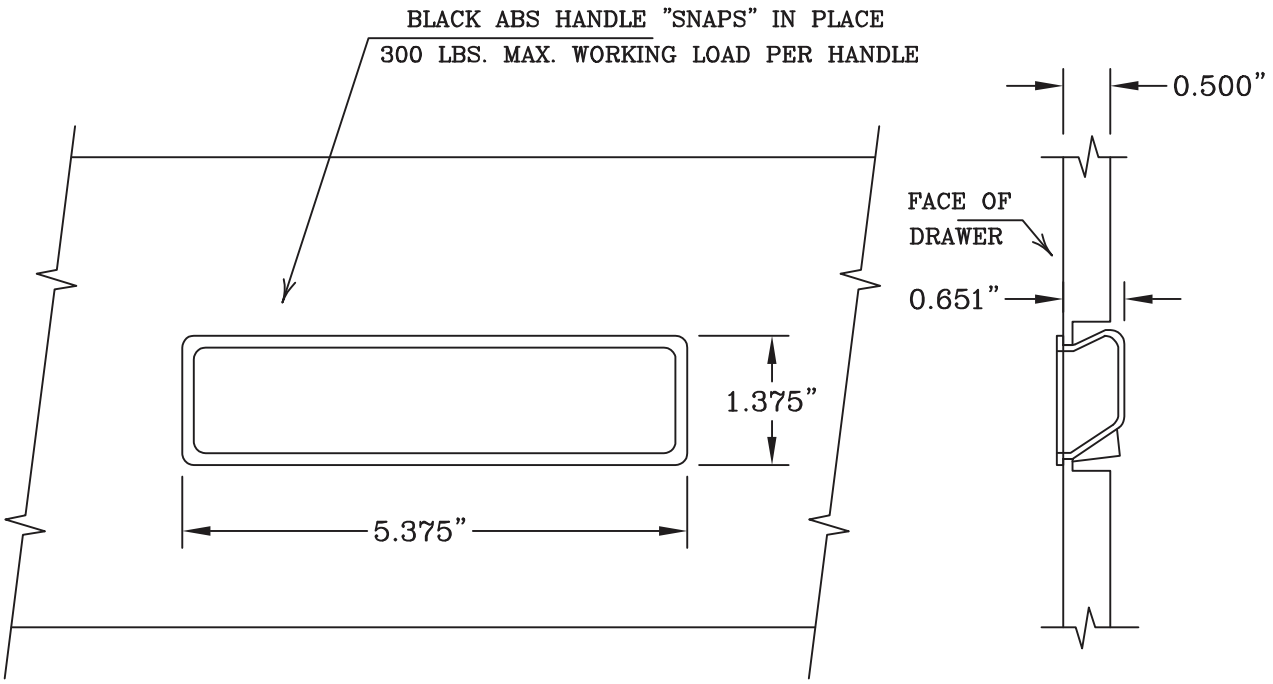
ADJUSTABLE SHELF DETAIL
BASE & UPPER CABINETS

5
—

QUANTITY : AS REQUIRED
MATERIAL : 1/2” WHITE POLYPRO
SCALE : 1/2” = 1”

SIZE SHELVES AS REQUIRED PER CABINET STYLE
(APROX. 1/4” SHORTER L & W OF CABINET INSIDE DIMENSION)
* NOT ALL SHELVES WILL BE REMOVABLE FROM
CABINETS AFTER COMPLETION

POLYPROPYLENE CASEWORK



FRONT VIEW

SIDE VIEW

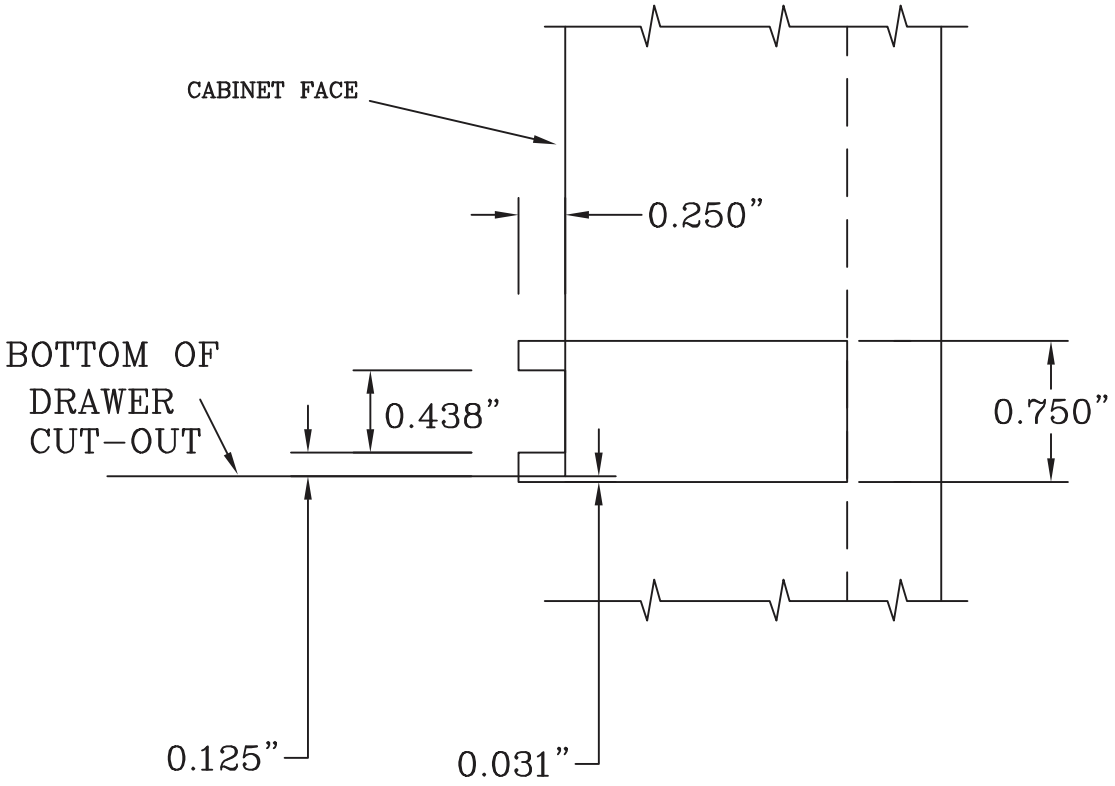
DRAWER PULL

7
—

QUANTITY : AS REQUIRED
MATERIAL : BLACK ABS
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK

* ALL RAILS ARE 21" LONG



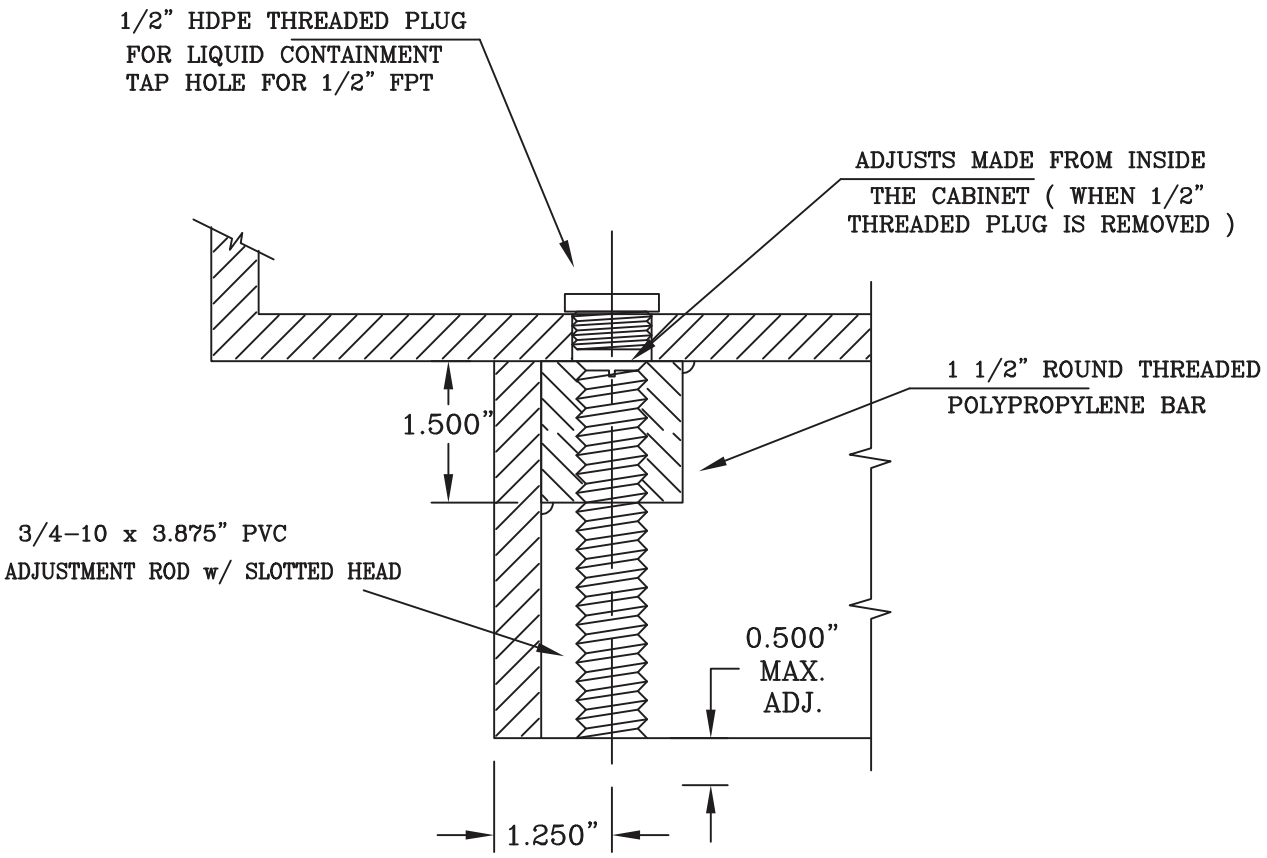
DRAWER SLIDE RAILS

6

—

QUANTITY : (2) PER DRAWER
MATERIAL : 3/4" WHITE POLYPRO
SCALE : 1" = 1"

POLYPROPYLENE CASEWORK



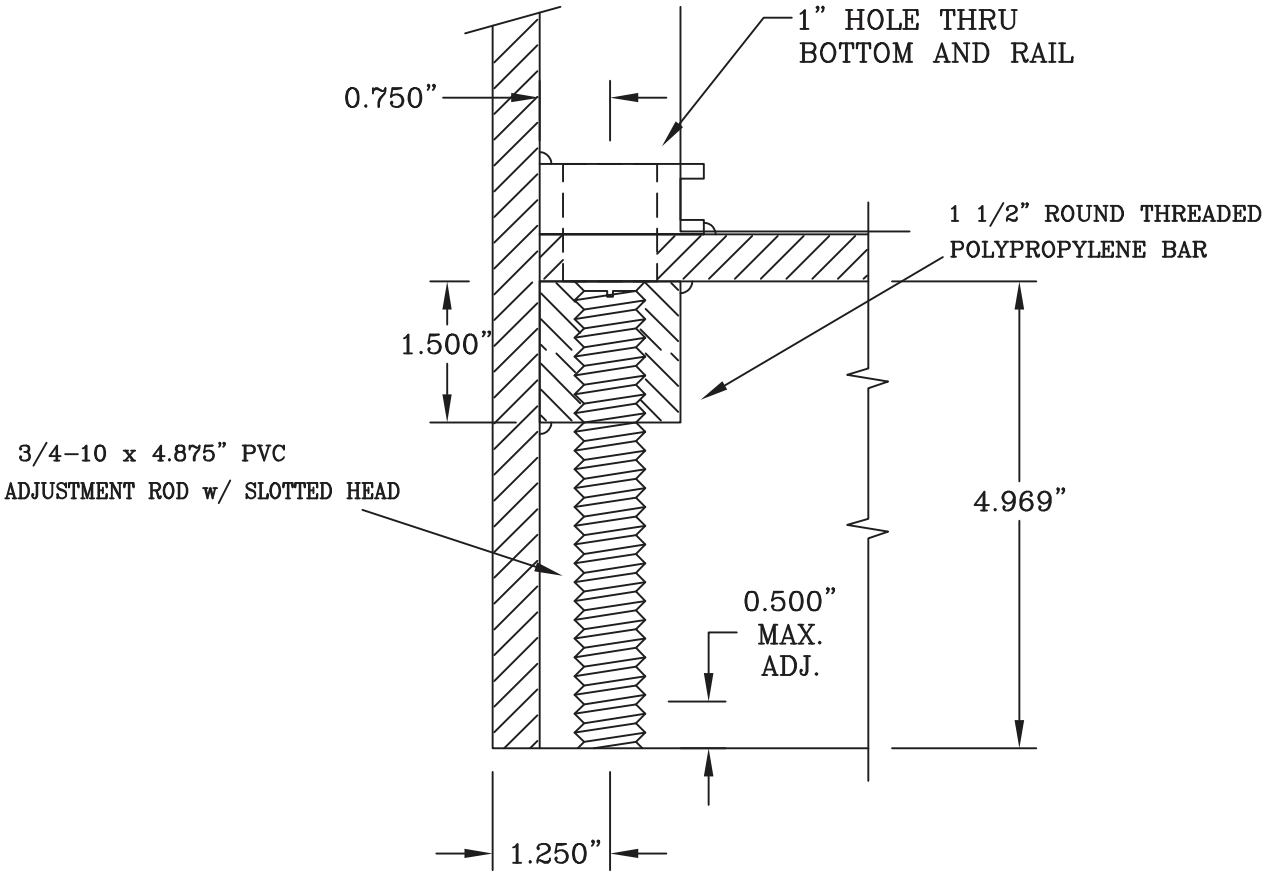
SIDE VIEW

CABINET LEVELERS

— OPTIONAL —

QUANTITY : MIN. (4) PLCS
MATERIAL : PVC ROD / POLYPROPYLENE
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK



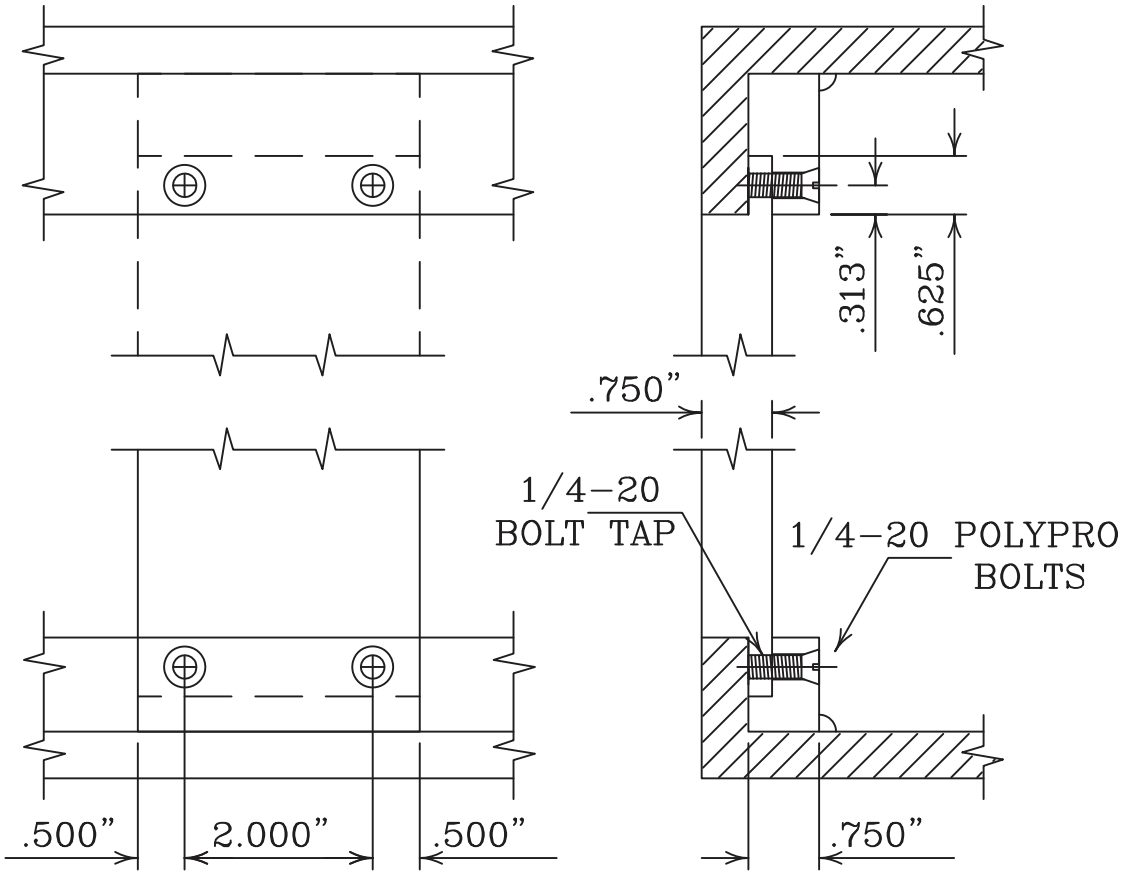
FRONT VIEW

LEVELERS FOR DRAWER BASE UNITS

— OPTIONAL —

QUANTITY : MIN. (4) PLCS
MATERIAL : PVC ROD / POLYPROPYLENE
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK

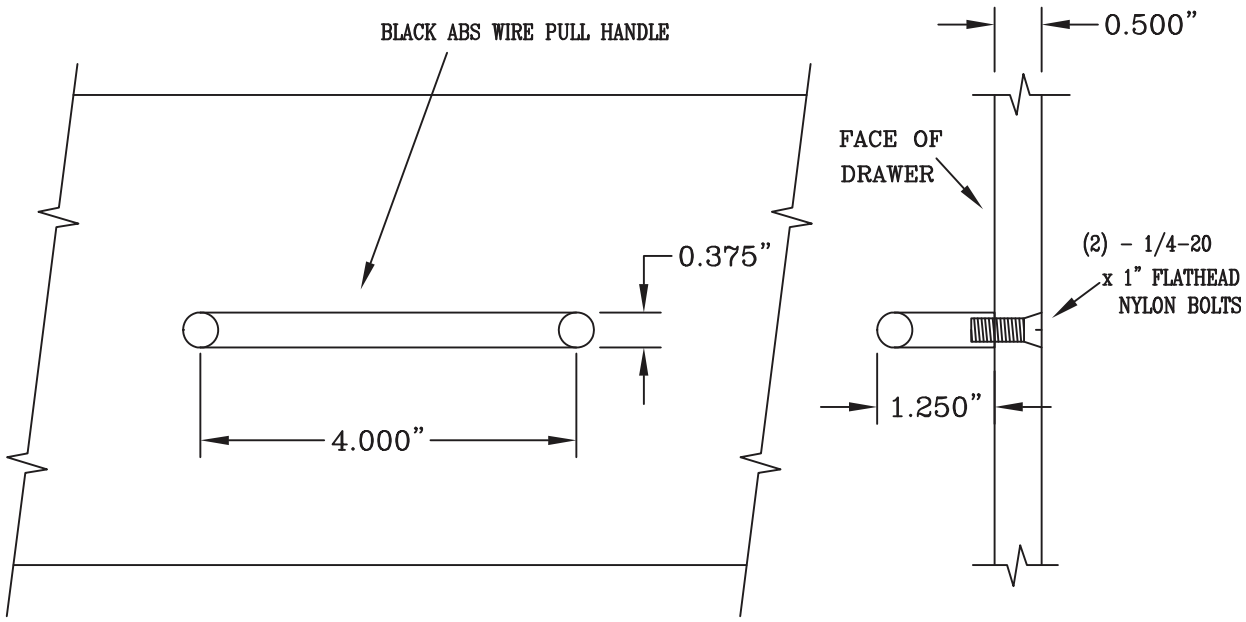


REMOVABLE CENTER POST

– OPTIONAL –

QUANTITY : AS REQUIRED
MATERIAL : POLYPROPYLENE
SCALE : 1/2” = 1”

POLYPROPYLENE CASEWORK



FRONT VIEW

SIDE VIEW

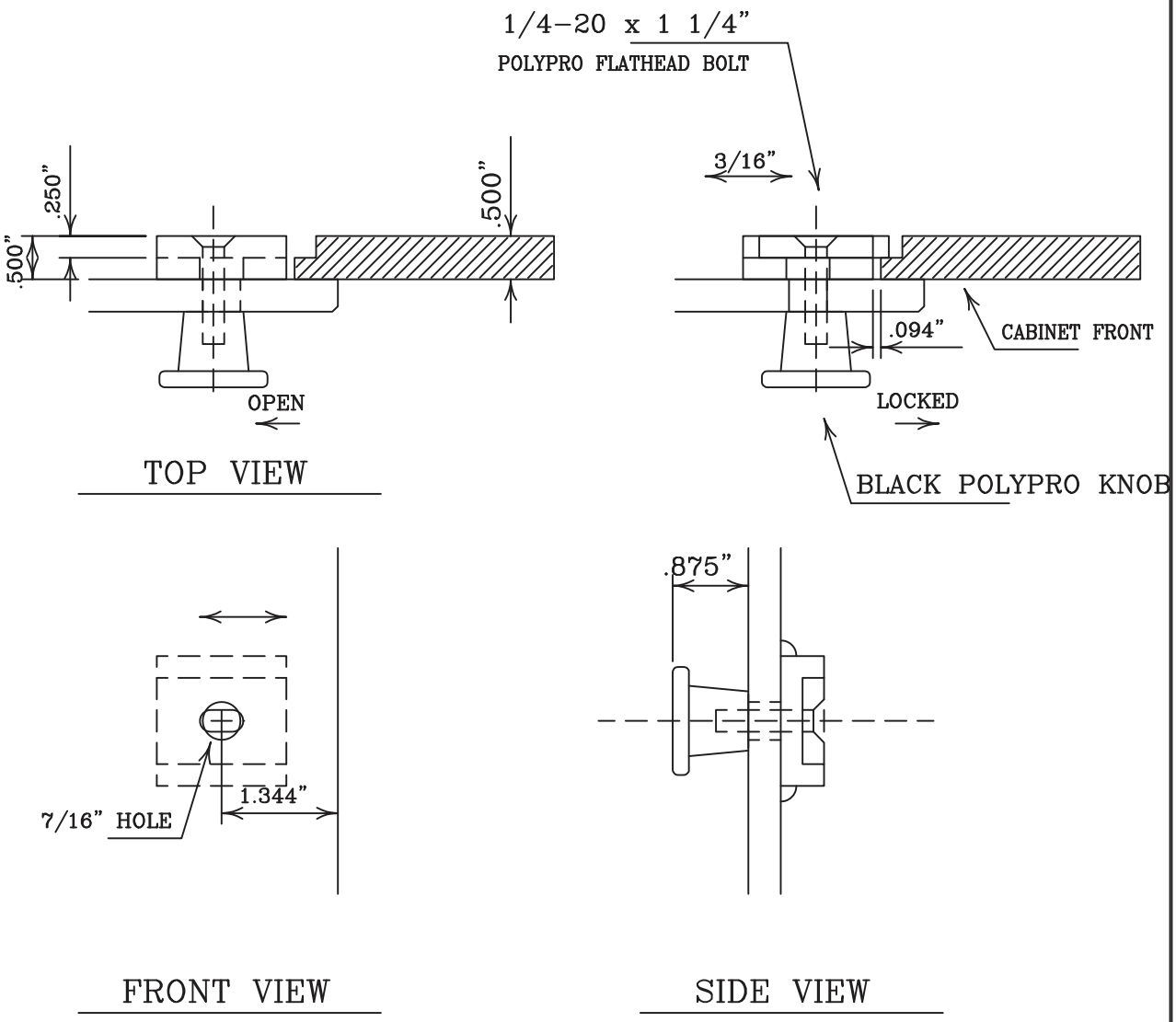
DRAWER PULL —OPTIONAL—

7A

–

QUANTITY : AS REQUIRED
MATERIAL : BLACK ABS
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK



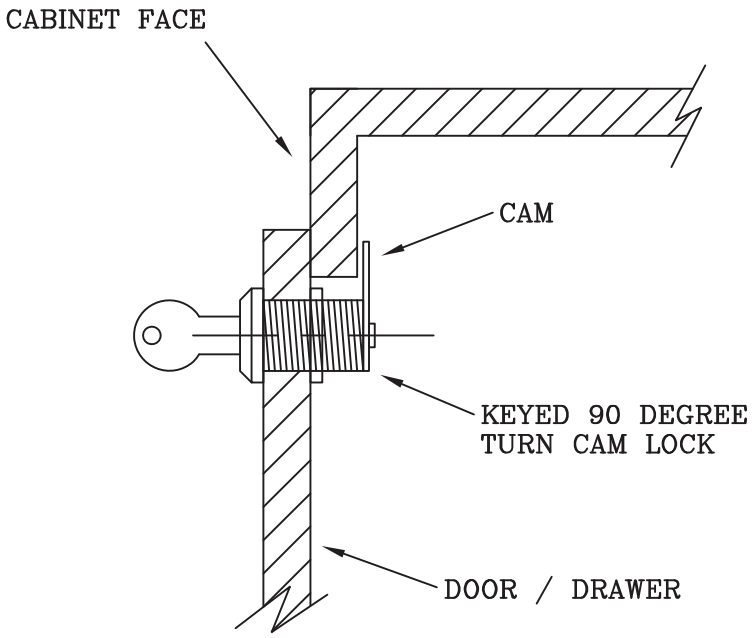
-OPTIONAL-
DOOR LATCH

2
-

QUANTITY : (1) PER DOOR
MATERIAL : WHITE POLYPRO
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK

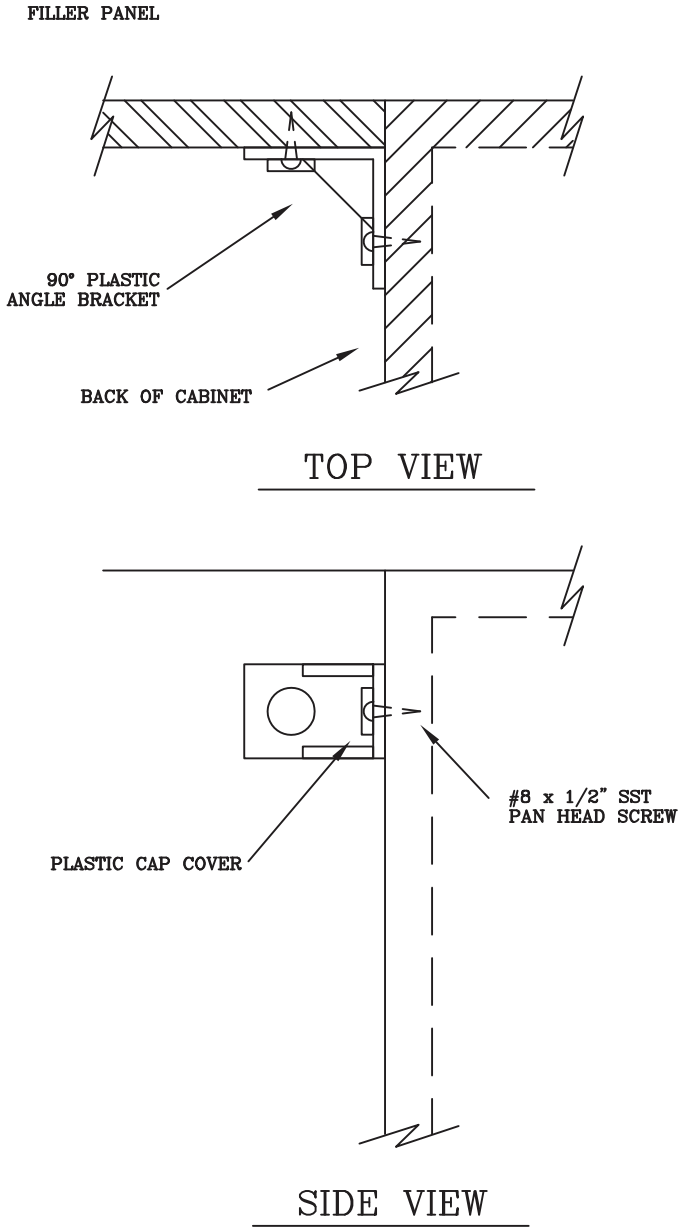
KEY LOCK FOR DOORS / DRAWERS



— OPTIONAL —

POLYPROPYLENE CASEWORK

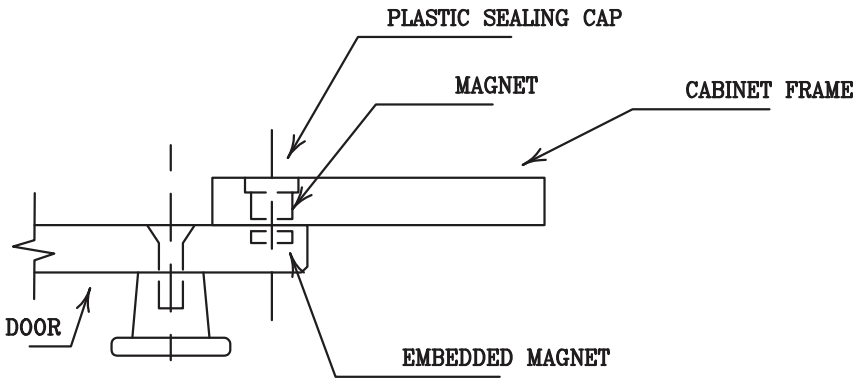
FILLER PANEL MOUNTING KIT



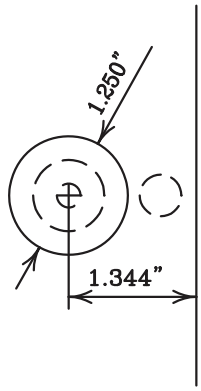
* (3) ANGLE BRACKETS WITH SCREWS AND CAP COVERS ARE INCLUDED PER KIT

POLYPROPYLENE CASEWORK

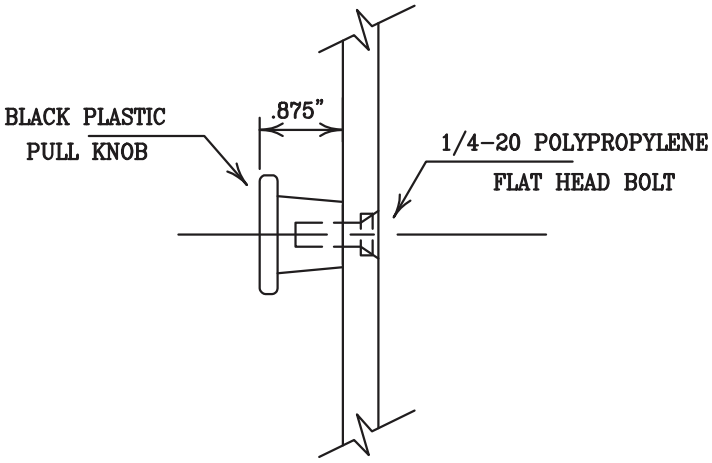
"OPTIONAL" PULL KNOBS



TOP VIEW



FRONT VIEW



SIDE VIEW

DOOR PULL & LATCH

QUANTITY : (1) PER DOOR
MATERIAL : BLACK PLASTIC
SCALE : 1/2" = 1"

POLYPROPYLENE CASEWORK

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