Automatic Cover Guidelines

by Aaron Ellsworth

In order to design a pool that will include an automatic cover, it is important to consider the following guidelines:

- **Drop to water** - This is the distance from the cover guide to the water level in the pool. For the best possible results, it is important to keep the track as close to the water level as possible. Strive to keep your cover guides within 4 inches of the water's surface.

- **Drag** (or resistance) - It takes almost no effort to push or pull a cover across water. Covering dry surfaces can create a lot of drag or resistance. This occurs frequently on wide, lowered-end walls, spa walls, large radius corners, etc.

  One way to combat this problem is to limit these drag areas to 10% of the pool size. Another way to handle this problem is by using blowers. Lifting a cover with blowers requires a significant amount of air flow (more than you might think) and must be done properly. See detail in Blower section.

  In some cases, as in a pool-in-pool application or extreme cantilever, designers can start by drawing a rectangle representing the size of the cover. They then can draw the free-formed edge of the pool within the rectangle. By designing the free-formed pool edge as close as possible to the rectangle lines, the designer can help to minimize the amount of deck drag on the cover. Too often, designers start with a free-formed shape and try to fit a rectangle cover around that. This typically results in more deck drag than is necessary.

  When designing a cover where the guide is fastened to or flush with, the surface of the deck (Topguide or Recessed Horizontal Guide), try to keep your guides within a few inches of the waters edge along the length of the pool. Try not to extend the guide more than two feet past water's edge at each end of the pool.

- **Switch location**-Having the switch correctly located can prevent many problems and costly repairs. When selecting a location for the switch, keep in mind that you must be able to see the entire pool at all times.

  It is best if you can be closer to the Leading Edge Bar when the cover is in the open position so you can see that the cover is running straight. We recommend that the switch be located along the length of the pool halfway between the middle of the pool and the mechanism end, not more than twelve feet from water's edge. Poorly located switches are one of the largest contributors to cover failure.

- **Drains**-Lack of sufficient drainage is the most frequent cause of cover failure. When a cover housing is flooded, it is not just the motor that might be damaged. The roll-up tube often fills with water, which can weigh several hundred pounds causing the tube to fail and the cover to rip.

  The best way to protect your automatic cover is to have proper drainage. We recommend at least one three inch (3") drain. Increasing the size of your drain to four inches (4") can offer additional protection. Additional drains can be added to further prevent the possibility of flooding. Drain pipe smaller than three inches is not recommended.

- **Large Pools**- If the pool you are designing is wider than twenty four feet, please consult your local Coverstar Distributor or Value Added Reseller.

By following the above mentioned tips and guidelines, we are confident that your automatic cover project will be a pleasant and trouble free experience for you and your customer. Thank you for choosing Coverstar. We look forward to working with you.

Sincerely,
Aaron Ellsworth

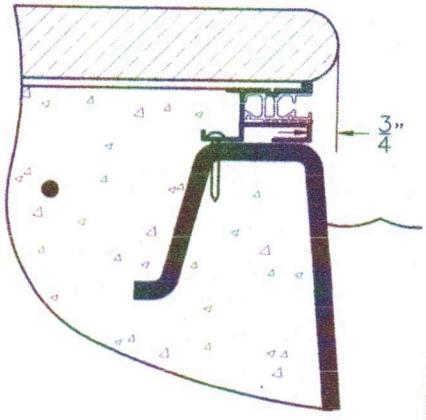
Fiberglass Pool Underguide System

For Rectangular Fiberglass Pools Only

¾ inch overhang both sides of pool

A

B



General Requirements

1. Pool must be true rectangle. (AB=CD, AC=BD, AD=BC)
2. Keep pool walls level and straight through the entire project. Temporary internal bracing is recommended, keep bracing below top of pool.
3. Deck or coping around pool must not cantilever more than ¾ inch beyond Encapsulation.
4. Encapsulation will add 1½ inch to pool elevation
5. One 3 inch diameter drain from housing required. Adequate housing drainage required.

Excavation

1. For polymer housing dig 16" down and 24" back from pool. Dig 4' past waters edge on motor side and 2' on non motor side. For concrete housing dig 24" down and 24" back from pool. Dig 4' past waters edge on motor side and 2' on non motor side.
2. If drywell will be used for drainage, for convenience dig at this time. Dig hole 30 inches wide and 7 feet deep, 1 foot of stone in bottom. See drywell in housing section of this manual.

Cover Housing

1. Install housing or form for concrete housing after pool has been set and back filled. Refer to the housing section for installation.
2. Motor end offset is 36" and non motor side is 12" from interior of pool walls.
3. Housing is 14" wide and 14" deeper than top of pool shell.

Steel

1. Tie cantilevered deck rebar to side of pool lip. Do not go through the top of pool edge or through the encapsulation.

Plumbing

1. Avoid placing plumbing under housing. If required, plumbing and light conduits must be kept 16 inches lower than side wall elevation in housing area.
2. 3 inch drain required at motor end of housing. Non-motor end drain also is best. Keep drains tight to housing ends.
3. Do not install skimmer or order pools with the skimmer at the housing end of the pool.

Electrical

1. #8 solid bond wire with 3 foot tail at each end of housing. Wire must be bonded to equipment pad.
2. Motor under full load rated 8.8 AMP 120VAC. Use adequate wire size and follow required codes.
3. Wire to housing should terminate in all-weaather junction box. Standard system requires all wires to be sized for motor rating. Key switch carries full motor load. Circuit boards require wire for 5VDC run in conduit seperate from AC wiring.
4. Key switch requires single gang all weather junction box. It must be located where 100 % of pool surface is visable. If pool is outside switch should be outside also.

Bond Beam/Collar

1. Pour bond beam/collar or sub deck to top of encapsulation after encapsulation and housing have been installed.
2. Make bond beam/collar wide enough to completely support coping material with ¾" overhang.

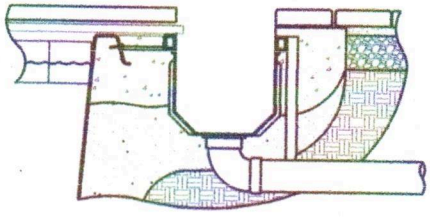
Cantilevered Edge

1. Cantilever edge cannot overhang more than ¾ beyond encapsulation, including edge treatments such as bullnose, round over or rock facing.
2. If planning to match walk-on lid with coping, material should be 2 inches thick and/or have sufficient strength to span brackets 24 inches apart. Material selection and strength is responsibility of builder.
3. Cantilevered edge continues over lowered bond beam ending flush with inside of housing.

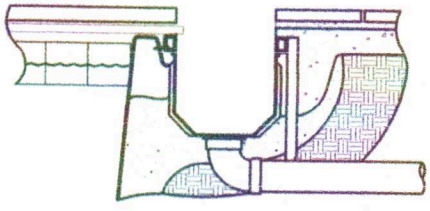
Cover Installation

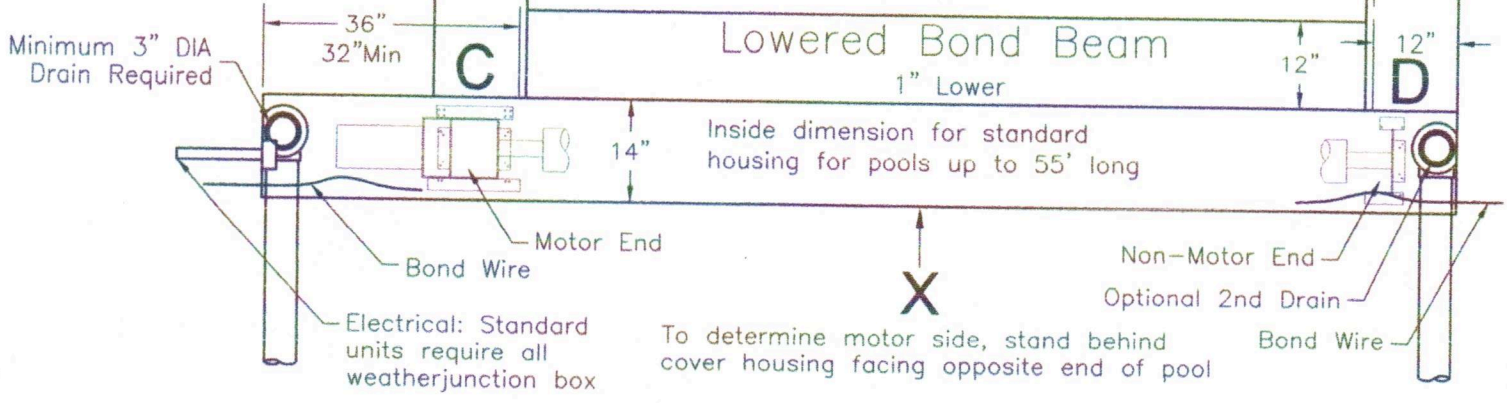
1. Cover may be installed only after pool water is with in 6" of guides
2. In no case may cover be left over pool without water level in pool at final elevation.

6" standoff brackets for Fiberglass Pools wider than 12'

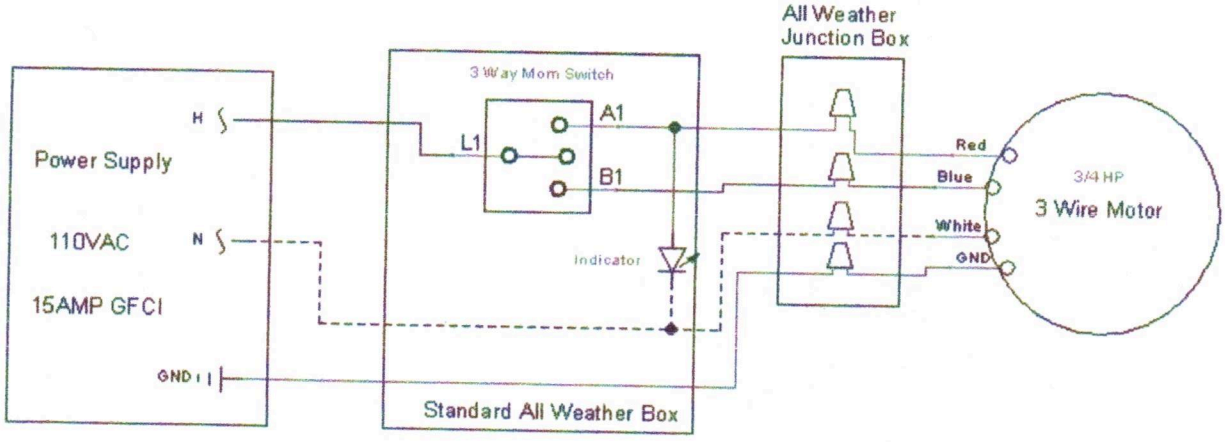


Direct mount for Fiberglass Pools 12' and narrower





WIRING INSTRUCTIONS
110VAC 3 WIRE MOTOR USING A 3 WAY SWITCH



Installation Notes:

* The control switch is mounted in a standard depth single gang all weather box.
* Motor connections are made in an all-weather box mounted as high as possible in the cover box.
* The control switch must be mounted in a location where 100% of the pool surface is visible.
* The **HOT** (black) wire from the power supply connects to the L1 terminal on the switch.
* The **NEUTRAL** (white) wire from the power supply connects to the indicator light and also passes through to be connected at the motor conduit white wire.
* The remaining wire on the indicator light connects to a directional terminal on the switch (A1 or A2).
* The Red and Blue wires from the motor connect to the directional terminals on the switch.
(A1 and A2) The red and blue wires may be switched with each other to change the motor direction.
* The motor requires 8 amps and all wiring from the power supply to the motor must be sized accordingly.
* Use a 15amp GFCI breaker at the panel.

Troubleshooting Tips:

* If the indicator light does not come on in either switch position, check the power supply for 110v.
* If the indicator light comes on in one direction but not the other, the problem is probably a connection either at the switch or in the junction box in the cover box.
* If the indicator light comes on in both directions but the motor does not run at all, check the neutral wire and it's connections.

THEN CHECK THE FOLLOWING

* Disconnect wires from the switch and test for continuity, you should have continuity between L1 and A1 when you toggle the switch in one direction and between L1 and A2 in the other direction. (Do not attempt to run this test with wires connected to the switch, you will get false readings.)
* Using a test cord, disconnect wires in the all weather box and connect the neutral wire to the white motor wire and connect the hot wire to the red motor wire. The motor should run. Then switch the hot wire over to the blue motor wire. The motor should run in the other direction.

If the motor runs in both directions using this method, the trouble is in the components or wiring leading up to that point in the system. If the motor still does not run properly, youmay need to investigate the capacitor inside the control box mounted on top of the motor.

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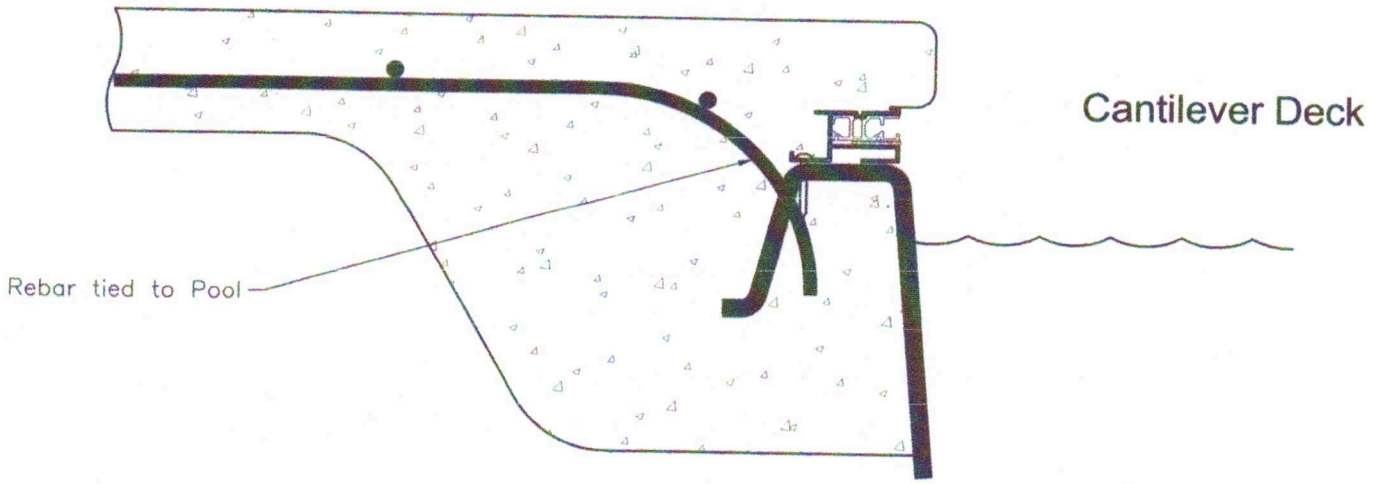
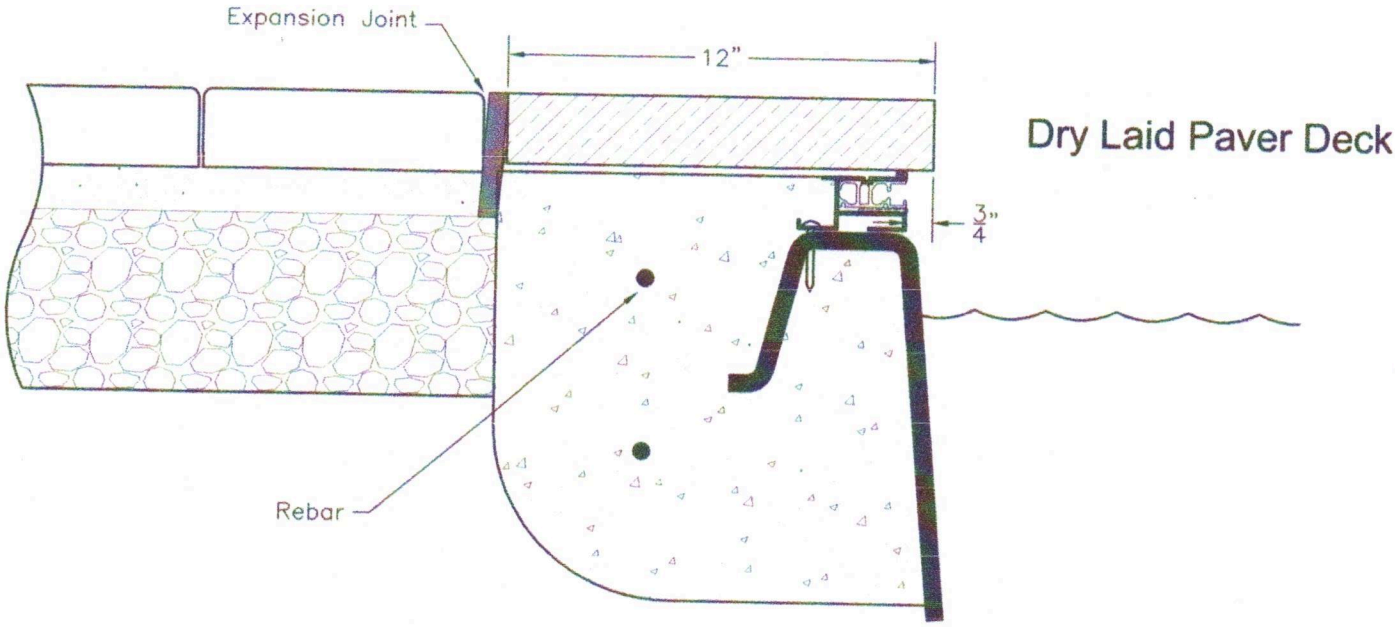
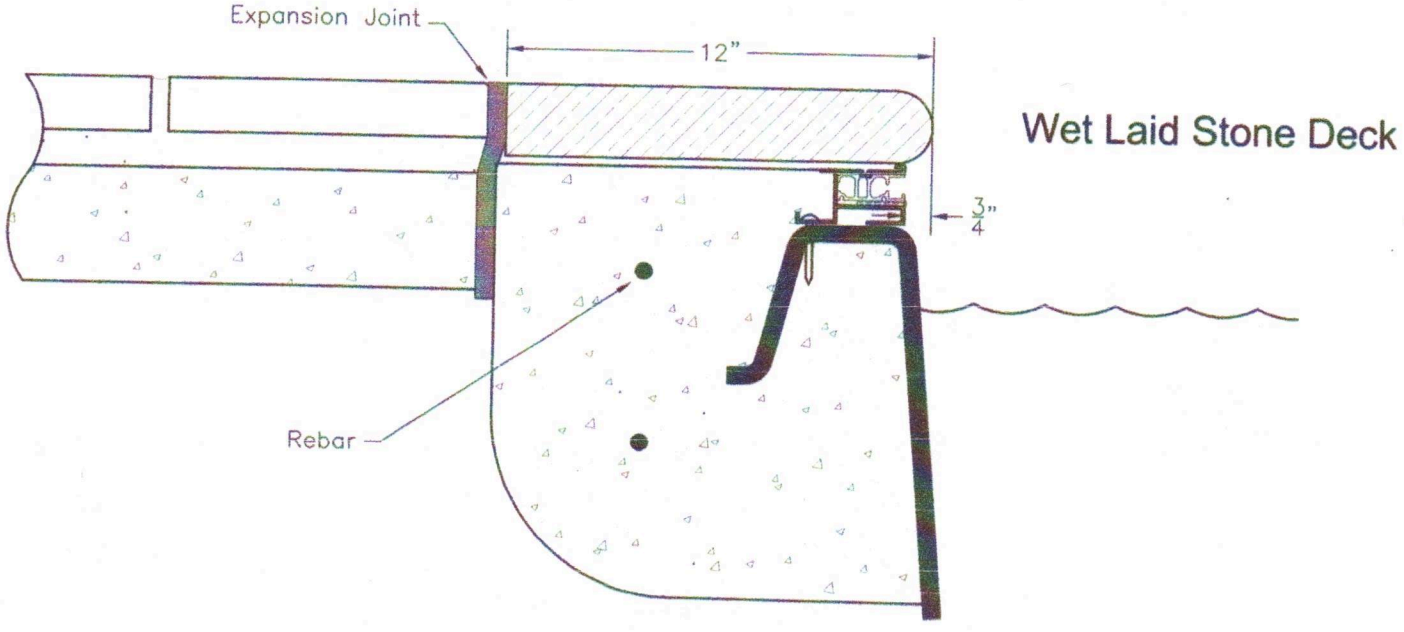
Fiberglass Pool Underguide
Coping and Deck Detail



Cantilever Deck



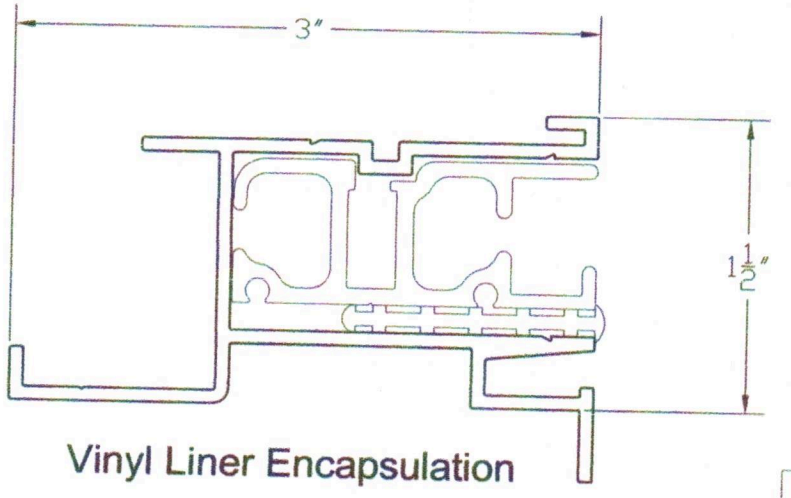
Dry Laid Paver Deck



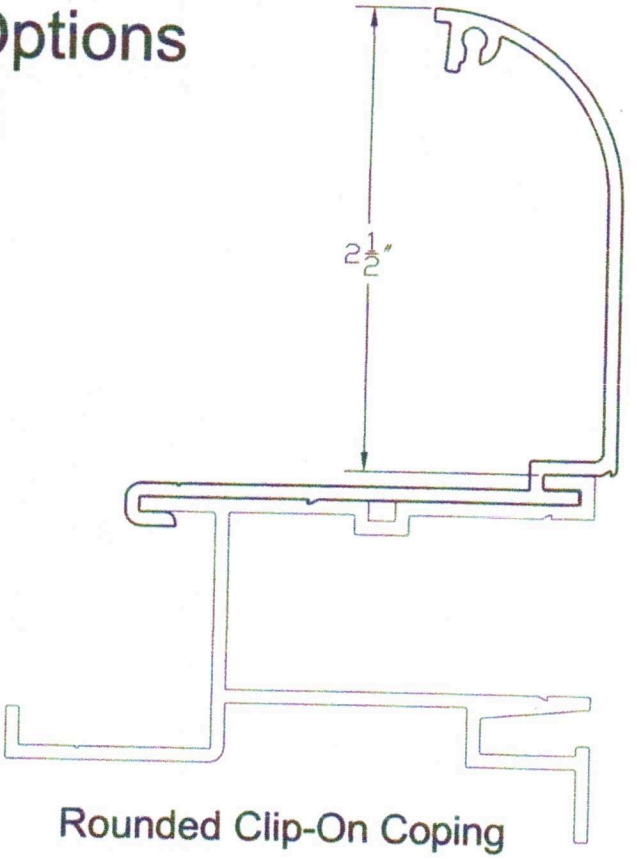
Wet Laid Stone Deck

Vinyl Liner Pool Encapsulation and Coping Options

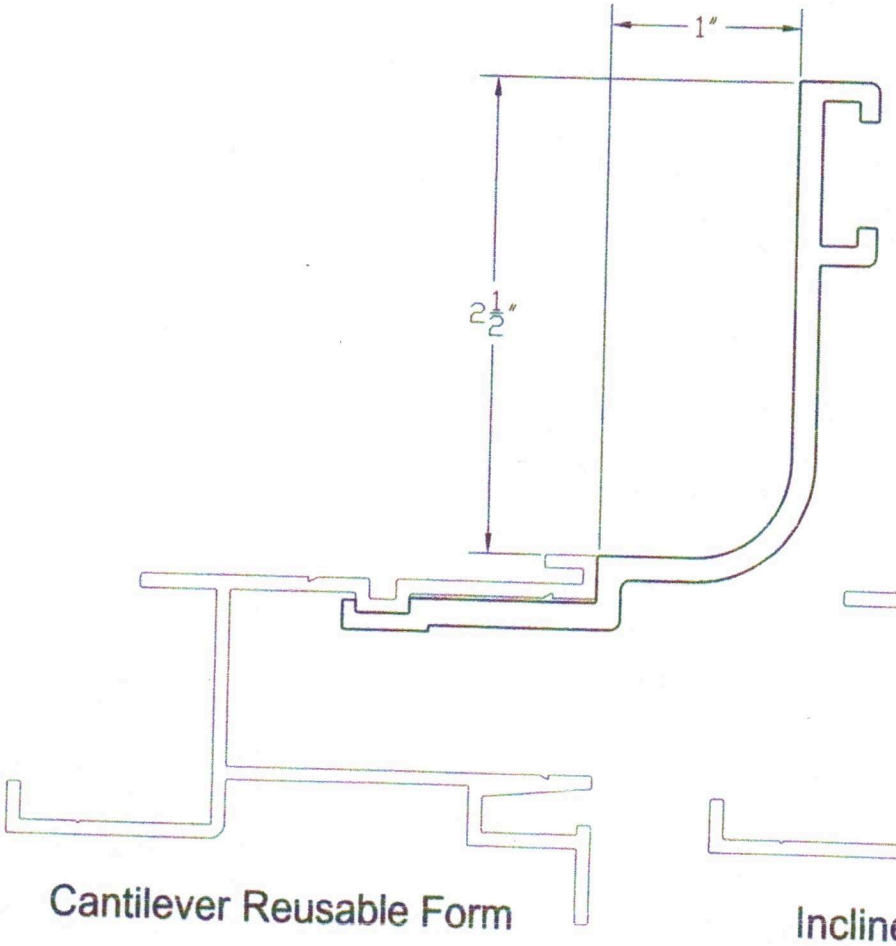
Scale 1:1



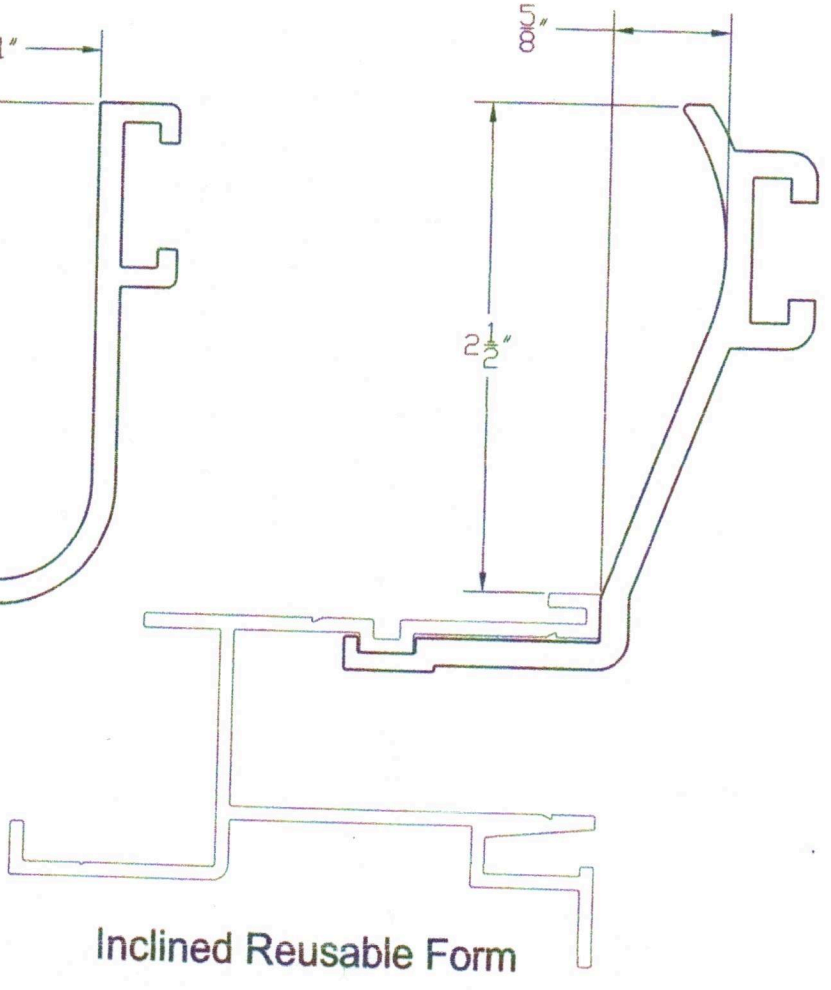
Vinyl Liner Encapsulation



Rounded Clip-On Coping



Cantilever Reusable Form



Inclined Reusable Form