

Installing “C7 Carbon” Side Skirts and Splitter

The GM “Build-A-C8” website, when first available, listed an option I wanted. It was GM order number 5W8, Side Skirts and Splitter painted Carbon Flash. It had



a MSRP of \$3850. (That is essentially what I had on my 2017 Grand Sport with the GM Stage 2 Aero option.) That was quickly constrained and only the visible Carbon Fiber offered, GM order number 5VM at a cost of \$4850. I ordered since in my rural area “Side Skirts” are essential to stop pebbles and debris on the sides

of our roads (we have few with other than gravel or grass) marking the rocker panels. Part number 5VM was later constrained due to vendor supply issues.

Fortunately, C7 Carbon offers what they refer to as the equivalent of GM 5VM in either visible Carbon Fiber OR Painted Carbon Flash. As with their Splitter I added to my 2014 Z51 in Visible Carbon Fiber, their products are made from fiberglass with, if so ordered, a finished layer of real Carbon Fiber.

How To Install:

Of interest, the C7 Carbon Side Skirts are “easier to install” than the OEM 5VM! GM uses a bolt on the winglet rear end of the Side Skirt that requires drilling a 3/8-inch hole on the fender. Some installers of the GM product remove the rear wheel, inner fender well liner for drilling and bolt access! GM also uses 3M automotive tape AND a strong 3M Window-Weld adhesive.

C7 Carbon has a large flat area instead of a bolt. I elected to add two strips of 3M Automotive Double-Sided Tape on that flat area. ***I No Longer Recommend AS IT'S NOT NEEDED. Details Follow***

I discuss alternatives in an Epilogue that also presents details of the GM complex install procedures of their 5VM. The thicker more ridged C7 Carbon construction of fiberglass and a thin carbon fiber layer (if ordered) may be what allowed the fender-bolt free install.



The Following is A Picture/Caption Review of My Install

Photo/Detailed Caption Sequence

Splitter and Side Skirts Arrived

As with prior products I have received from *C7 Carbon (2014 C7 Visible Carbon Fiber Splitter and 2017 Grand Sport painted Carbon Flash Rear Diffuser)* - they arrived in perfect condition.

They come very well packaged. In this case 3 separate boxes. This is the Splitter, that like the Side Skirts, each wrapped in foam sheets then bubble wrap. Zero damage, all looked great.



First issue is raising the car enough to gain access to the rocker panel underside to drill holes and install Rivets, the fasteners supporting the Side Skirts.

I use these stanchions fabricated some years ago that raise the car 6 1/4 inches (details in Appendix.)

Checked and there is about a 3-inch clearance under my right-angle drill so could get by placing the wheels on a stack of 4-inch-high boards or perhaps 4"x8"x16" solid concrete blocks (~\$2 each from Lowes!)

Note the dirt on the area the side skirts will cover. Used the 2 products shown to clean the area. Alcohol works fine and has less odor! The 3M General Purpose Adhesive Cleaner is great for about anything on the surface. It's sold in automotive paint stores.

The OEM bolt (*circled in Yellow*) is one you will remove AND that locates the Side Skirts in a predrilled hole! No guessing where to drill or anything to mark! It's 7mm so will need a socket or wrench to remove.





Only a small area will need to be cleaned. BUT might as well remove what dirt will be behind the Side Skirts!

Note, the one concern adding the 3M tape is it is 0.045 inches thick. So, the large flat area on the Side Skirt will protrude 0.045 further than is not used. For that reason and dirt accumulation NO LONGER RECOMMEND,

See Epilogue for possible options.

This is the 7mm OEM bolt that is removed and installs in the predrilled hole in the C7 Carbon Side Skirt.

Since I elected to use 3M Double-Side Automotive Tape, the Side Skirt will be installed as a test fit then areas marked to clean and put-on 3M Adhesive Promoter.



Since I planned on installing 3M Double Sided Tape and use Adhesive Promotor, I marked those areas after “temporarily installing” the Side Skirt. In the furthest front predrilled rivet hole, I used an 1/8-inch drill bit and installed a sheet metal screw that was slightly larger in diameter.

When all other rivet holes were drilled and Rivets installed, it’s removed, drilled with a 3/16-inch bit and a Rivet installed.



This is a picture of the Side Skirt temporarily Installed to mark the areas that will get 3M Adhesive Promoter.

Those are shown with masking tape. The Adhesive Promoter is placed below tape placed on the rocker panel. The masking tape assures it is NOT put on any area that will not be covered. Although being used for the 3M tape would also be the procedure if using what GM recommends the 3M Window-Weld Superfast Urethane adhesive. *See Epilogue no longer recommended.*

I purchased the 3M Adhesive Promoter in package with sponge soaked with liquid. Applied with a Q-Tip pressed on sponge.

If electing to use 3M Tape and Adhesive Promotor, when cutting the 3M tape, leave ~3 inches of the Red Cover plastic and I used masking tape to attach to the sides so the cover can be removed when the Side Skirt is on the car.

Install on the car with the bolt and screw only held loosely so the Red Tape cover can be pulled lose. Tightened bolt and screw.



Drilled in the predrilled holes in the Side Skirts and installed 6 Rivets, then removed the front “screw,” drilled that 3/16-inch hole (from the 1/8-inch hole drilled for the screw) and installed the last rivet on that side.

The Appendix has a discussion of the supplied rivets and what I finally used.

Fit and Finish Look Great.

As mentioned, the exact Side Skirt position is defined by the OEM bolt in the rear. The large flat area by the rear “winglet” is probably sufficient to support the Side Skirt *WITHOUT* the 3M tape.

But the tape installed easily. Bought 15 feet of 1/2 inch wide, 45 mills thick of 3M VHB Foam Automotive Tape for ~\$10 from Amazon.



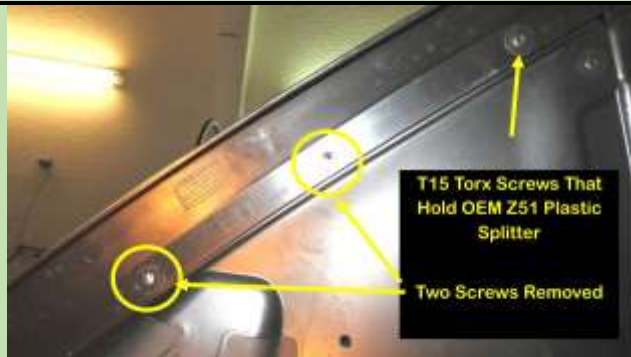
The second side installs like the 1st. **The 3M tape was used on the Side Skirt front lip in two ~6-inch area. Not needed. As mentioned, would not use 3M tape on the Triangular Rear area, as it leaves a dirt collecting gap!**

See Epilogue

Note the 4 pieces of 3M tape ready to install after the Adhesive Promotor is applied. About 3 inches of tape were removed and discarded so Red Protective Cover could be placed outside, secured with masking tape. Then the Red Cover is pulled away uncovering the tape.

Splitter Install

The C7 Carbon Splitter is easy to install. First remove the OEM Splitter Laying over box the C7 Carbon was shipped in) as the new Splitter uses the same OEM bolts.



The OEM Splitter screws are T15 Torx. I found a small hand ratchet was easiest to use. The screws are not that tight to require all but that small round ratchet. More effort to use my right-angle drill AND that could overtighten on the install.

Note: I used the stanchions on the two front wheels to help with the install. Can be done without but makes access easier.

However, that did mean I had to prop one end up while I started to install screws from the other end.

Most of the C7 Carbon drill holes lined up with the threaded clips they screw into. A few did not so used an Awl to align the clip. They are attached to the rubber like material and moved in line. See inset pic with metal clip in white.



Finished Car with Splitter and Side Skirts. Looks Great!



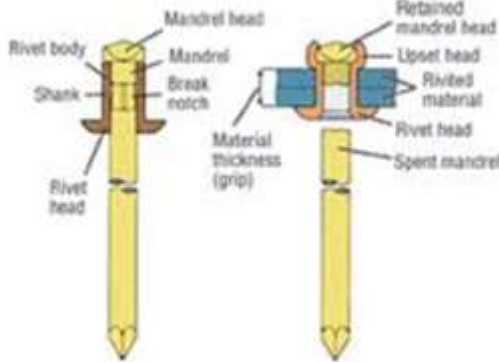
Appendix: Rivets

Installed the first few of the supplied Rivets and it required a lot of force using my very old hand Rivet Gun.

Thought it was usually high and then saw a magnet attracted the Rivet mandrel!

The Rivet Gun was also not gripping the Mandrel, it was slipping. Bought a new Rivet gun to replace one that was 25+ years old.

This one is from Harbor Freight and has larger longer handles. With coupon ~\$8!



Rivet Size	Rivet Body	Mandril	Load
3/16	Al	Steel	520 lb
3/16	Al	Al	320 lb
5/32	Al	Al	230 lb

With the new gun, the force required with the supplied Rivets was still high. Then one Rivet pulled out. Could not put another in that same 3/16 Inch drill hole it just pulled out as well. Appeared the composite rocker panel hole had enlarged, to the upset Rivet head size!

Looked at the Rivets I had. Had a 3/16 aluminum Rivet but it also had an aluminum Mandrel NOT steel.

Checked the loads each supply. Note the load is only 320 lbs with the Aluminum Mandrel versus 520 lbs for a steel Mandrel for the same 3/16-inch Aluminum Rivet! 520 lbs appears more than the composite rocker can support.

The aluminum Mandrel worked fine!

Checked to be sure the steel Mandrel had the notch break area. It did and so did the aluminum Mandrel. The only issue is mine were not Mushroom Heads.

But addressed that issue before!



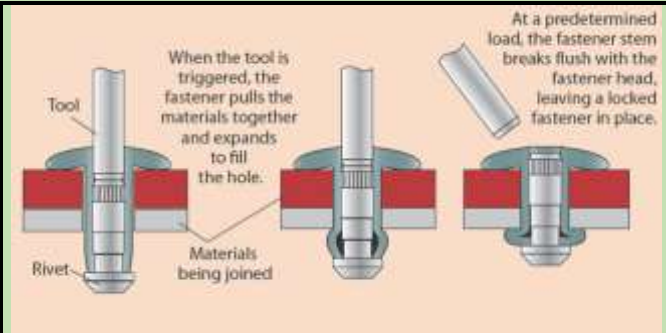


Aluminum Mandril Rivet
Also Has ~1/8 inch
Shorter Shank

I had what are called “Back-Up Plates” for my 3/16-inch aluminum Rivets. They are designed to fit below the smaller Rivet head and provide the same 1/2 inch diameter area as the Mushroom Rivets. Therefore the lower unit load on the fiberglass is the same.

Might consider getting Mushroom Rivets with aluminum Mandrels or if you have the Rivets, a box of Back-Up Plates.

Perhaps these pics of how a Blind Rivet works are helpful.



Note: For the hole where the Rivet pulled out and would not accept another Rivet (*probably because the composite rocker panel enlarged to the size of the upset Rivet head*) I just installed a Scrivet to fill the hole! Scrivets would NOT be useful to support the Side Skirts, they do not provide a lot of holding force.

I then drilled a new 3/16-inch hole through the Side Skirt and Rocker Panel close to the Scrivet and inserted an Aluminum Rivet with Aluminum Mandrel!

Epilogue

After 10 months the side skirts and splitter look great. Several Corvette Forum members questioned the lack of using a bolt. I talked with a company who makes the equivalent of the GM 5VM in carbon fiber and asked their opinion of the GM use of a bolt, the use of a very strong adhesive in addition to 3M Double Side Tape and the rivets under the side skirts. The comments were interesting.

Asked their opinion if the install procedure was defined by the manufacturer of the GM 5VM or GM. They thought both. The bolt perhaps fit with the vendors product construction method The strong adhesive was probably GM, using the common construction of the C8 where a great deal of adhesive is used. *(IMO the very thin more flexible Carbon Fiber construction is also the reason for needing both.)*

BOTTOM LINE: *I believe the C7 Carbon install with just rivets and one OEM bolt on the bottom of the rocker work fine. Probably because of their thicker and therefore more ridged fiberglass product construction versus all carbon fiber construction. I also don't think the 3M tape I added was NEEDED OR HELPFUL. The top long stripes on the sides leave 0.045 inches thick that is somewhat noticeable. On the rear it leaves a 0.045 gap that collates dirt and debris. I mainly added as thought any flexing would cause abrasion on the painted fender surface. That "possible" concern (assuming the skirts would ever be removed) could be handled better with a very thin film of car paint finish urethane plastic film over the rear back edge of the side skirt winglet where it contacts the fender!*

I base the "only rivets needed" opinion on several observations:



Installed full length side skirts on my 2014 Z51 only using the rivets as recommended

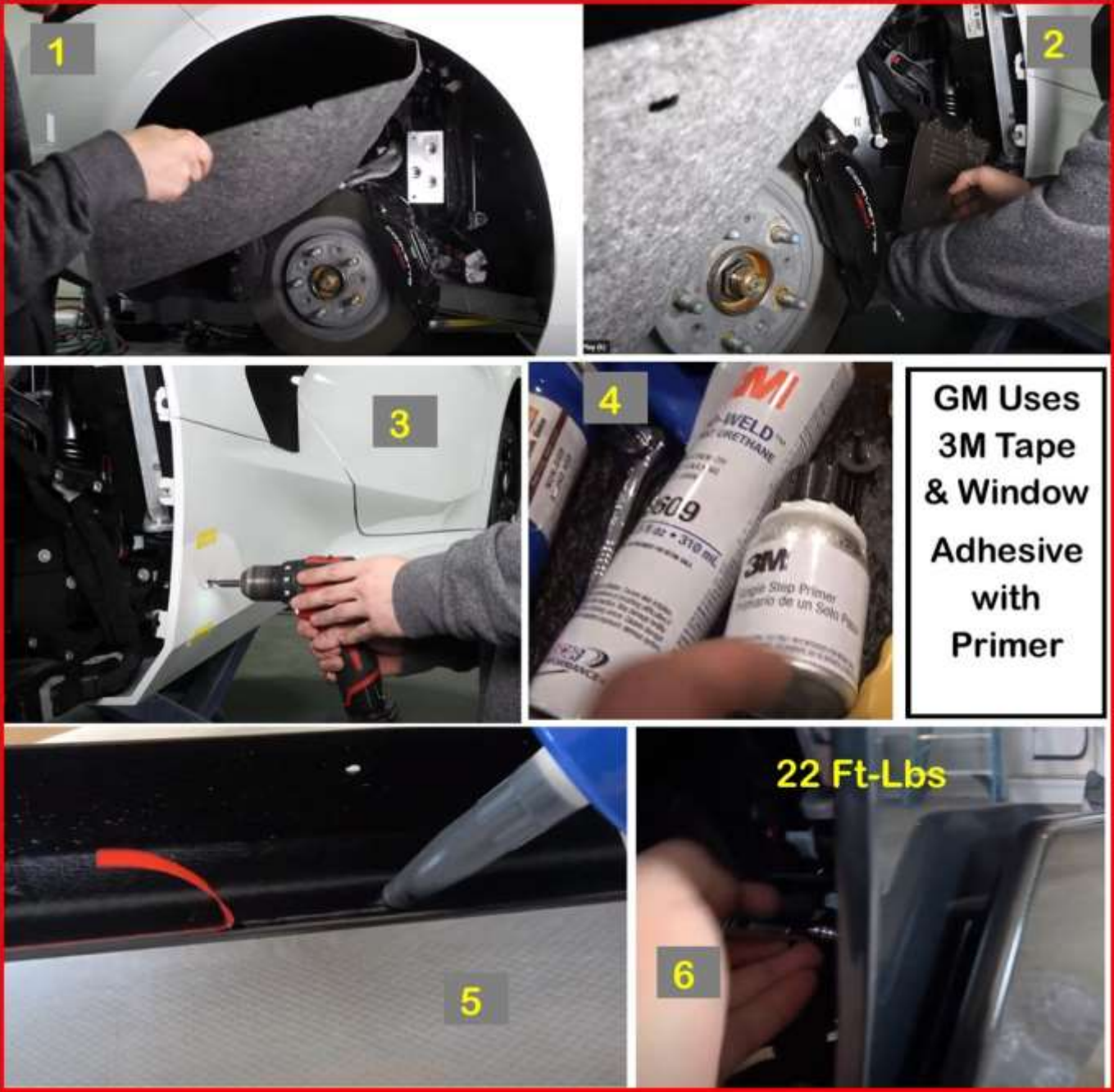


The full-length OEM side skirts on my 2017 Grand Sport were installed with only rivets

My C8 C7 Carbon side skirts are very solid, no vibration and are held tightly to the body. Can pull on the winglet and there is no movement. **However instead of 3M tape would recommend a small piece of Plastic Paint Protection on the back of the rear winglet.**

Pics of GM instructions for the install of their 5VM side skirts are shown below.

SUMMARY INSTALL SUGGESTIONS: 1) The C7 Carbon Instructions of only using rivets on the Bottom of the Side Skirts is no doubt all that is required. 2) If further hold force is used, the GM recommended 3M Urethane Adhesive (#08695) and promoter would provide the thinnest extra attachment. 3) The use of 3M Automotive tape I used, although simple to apply on the large flat surface it leaves a 0.045-inch gap that collects dirt and debris. A small piece of Plastic paint film protection on the winglet back side could be used to protect against possible paint abrasion. Would not use 3M tape along the sides.

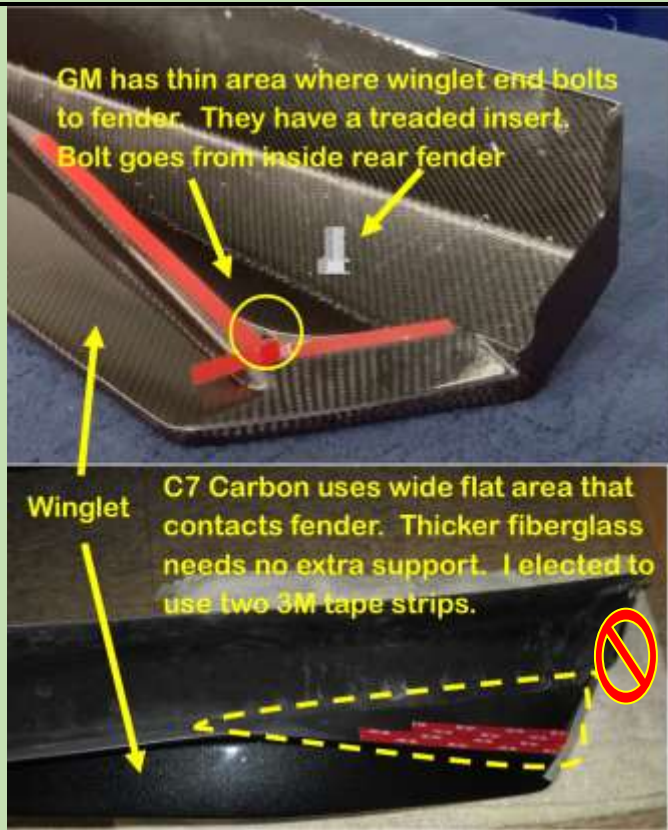


**GM Uses
3M Tape
& Window
Adhesive
with
Primer**

22 Ft-Lbs

Following the GM Install Procedure by number:

1. First the car needs to be lifted and the rear wheel removed. Then the front of the inner wheel well, unscrewed and pulled back.
2. Some folks remove the electronic control module behind the passenger fender where a hole will be drilled and access to install a bolt is needed.
3. A template is placed, and a 3/8-inch hole drilled.
4. A very strong 3M window adhesive is used with their primer, below the 3M tape.
5. It's applied along the top edge of the side skirts. Note the 3M Tape also used.
6. The skirt is installed, and the bolt torqued to 22 ft-lbs. Then the bottom holes are drilled, and 3/16-inch rivets installed.

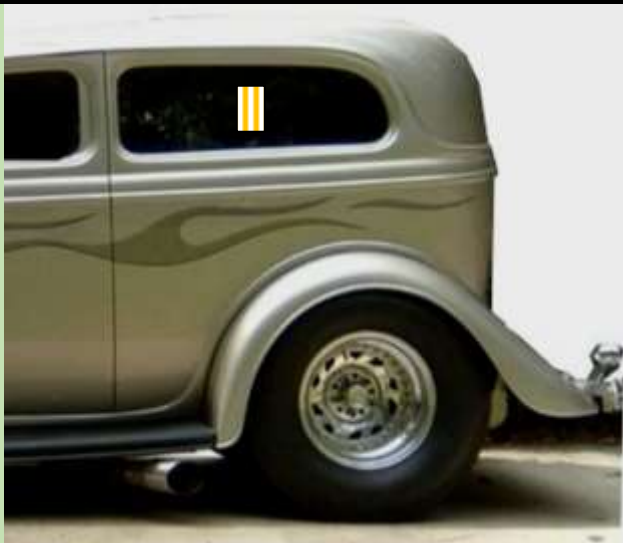


These pics of the inside of the GM and C7 Carbon side skirts provide a perspective why each can (*must*) use different attachment methods.

Note the carbon fiber GM side skirts have thin edges and in some areas like the top pic and furthest most rear (*right*) in this pic. It's only a few layers of carbon fiber. The manufacturer again had only a thin surface to attach the winglet area to the fender. They used a threaded insert (*Yellow circle*) to accept a bolt inserted from inside the fender. The need to drill the large 3/8-inch hole is no doubt to allow room for alignment.

The C7 thicker fiberglass is very ridged, and they used a large area (*outlined in Yellow*) that fits flat with the fender. ***Instead of the 3M tape used, I would recommend just a small piece of plastic protective paint film over the back side of the winglet.***

When I semi-retired in 1999, I built my street rod and installed my rear windows with similar 3M windshield strong adhesive to what GM specifies be used to install their 5VM side skirts. I used it to attach the rear side windows in recesses in the body prior to the interior trim install.



The adhesive, like that GM recommends be used with their 5VM, came in a cartridge. It was very viscous and was hard time getting applied. Talked with a "pro" window installer who said he places the cartridge on a hot engine, so it flows easier! In shops they use and air powered gun. Also, any excess was vey hard to remove.

I wedged a carefully cut 2X4 and a wood wedge between the windows and had it in place for a day as the adhesive cured. Not sure how the GM adhesive applies. It is 20 years later, and adhesive technology has advanced!

Appendix: Fabricating Wood Stanchions

The car needs to be raised to have access to the bottom for drilling the rocker panels. I made 2 stanchions as I will only use Jack Stands on one end of a car (*in fact, one set of my jack stands warnings: "Use Only To Support One End Of The Car At A Time!"*)

Made wood stanchions to place under the tires one end of the car and use jack stands on the other end. They would also be useful for oil changes etc.

Purchased a 2X6 twelve feet long for under \$8. Lowes cut them in half so the two pieces would fit in our SUV. Look for a straight, low knot board!

Note could use a 2X8 if desired.



Cut four pieces each, 21 inches and 9 1/2 inches long and assembled the bases shown using 3-inch-long wood screws. Used 3 screws to fasten the ~6-inch sides. Cut pieces of some scrap 3/4 inch thick plywood I had in my "might use someday pile" and screwed it into the base. This made the total height slightly over 6.25 inches for the stanchions.



Added some scrap 2-inch square wood sections at two edges. These were not really needed to secure the car since I always use wheel chocks on the wheels opposite the end being jacked but just in case they provide a tire stop.

NOTE: BUILD AT YOUR OWN RISK AND CONSIDER YOUR WOOD WORKING SKILLS.

For fun, calculated safety factors. Even with inferior construction and minimum was 15. Have used for 7 years.

“54” C8, 2017 Grand Sport & 2014 Z51 Stingray Mods, Info Available As PDFs:



55 PDFs discuss improvements or info about a C8, 2017 Grand Sport, 2014 Z51 Stingray function and/or esthetics. Some are minor and others, like the installing “Low Dust Brake Pads” on C8 & C7s, have detailed information.

Below are the PDF's available. Click on picture or Blue PDF link or copy and paste the PDF link (Blue type) into your browser. Or email me at GUtrachi@aol.com and state the title desired, shown in Yellow:

C8 Install High Wing

How To Remove Rear Bumper- Install Wing
http://netwelding.com/C8_High_Wing.pdf



C8, C7 eLSD vs Positraction

eLSD is a Modern Dif; Positraction is from 1960s
http://netwelding.com/eLSD_VS_Pos.pdf



C8 FWD Hybrid

WFWD Hybrid Provides More Power & MPG
http://netwelding.com/C8_FWD_Hybrid.pdf



C8 Edge Red Engine Cover

Engine Cover Matches Valve Covers
http://netwelding.com/Engine_Cover.pdf



C8 Engine Compartment Lights

Multicolor Lights Remote operated
http://netwelding.com/Engine_Lights.pdf



C8 Side Skirts & Splitter

Install C7 Carbon side skirts & splitter on C8
http://netwelding.com/Side_Skirts.pdf



C8 Z51, GS/C7 Z51 Ceramic Brake Pads

Performance Vettes have dusty brakes. These help!
http://netwelding.com/Ceramic_Pads.pdf



C8 Low Restriction Air Intake

Low Restriction Air Filter Why & How To

http://netwelding.com/C8_Air_Intake.pdf



C8 & C7 Splitter & C8 Condenser Mesh

Mesh Protects AC Condenser & Splitter Install

http://netwelding.com/CF_Splitter.pdf



C8/GS/C7 Splash Guards

GM splash guards. ACS Best Front Guards for GS.

http://netwelding.com/Splash_Guard.pdf



Jacking a C8/GS/C7 Vette

Safely jacking either front only or back & front

http://netwelding.com/Jacking_A_C7.pdf



C8 & C7 Plates & Frame;

Must Meet South Carolina Law

http://netwelding.com/License_Plate_Frame.pdf



Change GS/C7 Oil

WHY change your own oil and C7 Lifting Methods

http://netwelding.com/Changing_Oil.pdf



C8/GS/C7 Mirror Proximity Alarm

Limit switch alarm warns when close to door frame

http://netwelding.com/Mirror_Proximity_Alarm.pdf



Jacking Pads for C8/GS/C7

Manual says Jacking Pads 2 1/2-inch max OD..

http://netwelding.com/Jacking_pads.pdf



C8/GS/C7 Radar Power

For C7 tapped rear fuse panel. For GS tapped mirror

http://netwelding.com/Radar_Detector_Power.pdf



C8 & C7 Wheel Chatter/Hop

Why sharp, low speed turns with cold tires causes the front tires to chatter/hop.

http://netwelding.com/Wheel_Chatter.pdf



C8/GS/C7 Wheel Locks

Wheel locks, help protect your expensive wheels.

http://netwelding.com/Wheel_Locks.pdf



Deer Whistle Installed on C8/GS/C7

Do they work? Plus Install Info

http://netwelding.com/Deer_Whistle.pdf



C8 & C7 Splitter Protector

Scrape Armor Protection for Splitter

http://netwelding.com/Splitter_Protectors.pdf



C8 & C7 Cargo Area

Rear cargo area storage device and rear protector

http://netwelding.com/Rear_Cargo_Area.pdf



C8 Coilover Tower Covers

Prevent water from filling Cast aluminum cavities
http://netwelding.com/Tower_Covers.pdf



C8.R Info & GS Rear Diffuser (Fits Any C7)

Rear Carbon Flash Composite Diffuser
http://netwelding.com/Rear_Diffuser.pdf



GS/C7 Belt Rattle

Passenger seat belt rattles against the seat back.
http://netwelding.com/Eliminate_Rattle.pdf



Aluminum C7 Chassis and Weld Repair

The C7 aluminum chassis. Includes weld repair info.
http://netwelding.com/Aluminum_Chassis.pdf



Manage GS/C7 Spilled Gas & Door Lock

Protect when filling gas. Preventing door lock failure.
http://netwelding.com/Manage_Spilled_Gas.pdf



GS/C7 License Plate & Cargo Lights

LED license plate light & cargo area bulbs
http://netwelding.com/License_Plate_Light.pdf



GS/C7 Door Panel Protector

Black plastic protector prevents scuffing of door
http://netwelding.com/Door_Panel_Protector.pdf



GS/C7 Improved Cup Holder

A solution to the cup holder spilling
http://netwelding.com/Improved_cup_Holder.pdf



C7 Carbon Fiber Grille Bar

Install genuine carbon fiber grille bar overlay
http://netwelding.com/CF_Grille_Bar.pdf



Replacing C7 Battery

Tricks for installing battery!
http://netwelding.com/Battery_Issues.pdf



GS/C7 Window Valet

Lower Windows With FOB Helps Latch Hatch
http://netwelding.com/Hatch_Latch.pdf



GS/C7 Blind Spot Mirror

Smaller rear and side windows cause C7 blind spots.
Small "blind spot mirrors" help

http://netwelding.com/Blind_Spot.pdf



GS/C7 Skid Pad Protector

After the air dam, the aluminum "skid pad" hits
http://netwelding.com/Skid_Pad_Protector.pdf



GS/C7 OnStar Lights

Rear view mirror OnStar LED's, at a quick glance, look like a police car flashing light! This is a fix.

http://netwelding.com/OnStar_Lights.pdf



GS/C7 Skip Shift Eliminator

Skip Shift Eliminator install with suggestions on jacking a C7.

http://netwelding.com/Skip_shift_Eliminator.pdf



GS/C7 Catch Can & Clean Oil Separator

What is Coking and how to reduce the potential

http://netwelding.com/Catch_Can.pdf



GS MGW Flat Stick Shifter

The MGW shifter shortens throw and is more precise

http://netwelding.com/MGW_Shifter.pdf



GS/C7 Round Shift Knob

A round shift knob shortens throw on OEM shifter

http://netwelding.com/Shift_Knob.pdf



GS/C7 Stingray Sill Plate

Stingray sill plate replaces original.

http://netwelding.com/Sill_Plate.pdf



GS/C7 Nylon Bra

Nylon Bra Stops Bugs. Fits with Stage 3 Winglets

http://netwelding.com/Nylon_Bra.pdf



GS/C7 Clutch Fluid Change

Clutch fluid after 3000 miles gets dirty

http://netwelding.com/Clutch_Fluid.pdf



C7 Carbon Fiber Hood Vent

Replaces Plastic Hood Vent

http://netwelding.com/Hood_Vent.pdf



GS/C7 Cold Air Intake

Low Restriction Air Filter & Duct

http://netwelding.com/Cold_Air_Intake.pdf



GS/C7 Soler Modified Throttle Body

For Improved Throttle Response

http://netwelding.com/Soler_Mod_TB.pdf



Garmin GPS for GS Cubby

Garmin Mounts in GS Cubby & Apple CARPLAY

http://netwelding.com/GPS_In_Cubby.pdf



<p>GS Splitter Stage 3 Winglet <i>Stage 3 Winglets Integrate with Spats</i> http://netwelding.com/Stage_3_Winglets.pdf</p>	
<p>C7 Removing GM Plastic Film <i>How To Remove The Rocker Panel Film</i> http://netwelding.com/Rocker_Panel_Film.pdf</p>	
<p>GS 2LT to 2.5 LT <i>Red Upper Dash Pad Like 3LT</i> http://netwelding.com/Red_Dash_Pad.pdf</p>	
<p>Jake Emblem/Decals for GS <i>Jake Symbols Support GS Racing Image</i> http://netwelding.com/Jake_Embles.pdf</p>	
<p>Rusty GS/C7 Muffler <i>Why the C7 muffler rusts way to turn matte black.</i> http://netwelding.com/Muffler_Rust.pdf</p>	
<p>GS Engine Compartment Mods <i>Cosmetic Additions in Engine Compartment</i> http://netwelding.com/Engine_Compartment.pdf</p>	
<p>GS Vitesse Throttle Controller: Fits All C7s <i>Adjustable Throttle-by-Wire Control</i> http://netwelding.com/Throttle_Control.pdf</p>	
<p>Boomy Bass Solution <i>Use Presets to Adjust Bass etc. Tone/Balance</i> http://netwelding.com/Boomy_Bass</p>	
<p>GS/C7 Air Dam, Functions <i>Why Missing from Z51, Some GS & Z06</i> http://netwelding.com/Air_Dam.pdf</p>	
<p>Rusty GS/C7 Muffler <i>Why the C7 muffler rusts way to turn matte black.</i> http://netwelding.com/Muffler_Rust.pdf</p>	
<p>Engineering a ProStreet Rod <i>How Our '34 ProStreet Rod Was Designed and Built</i> http://netwelding.com/Engineering%20Street%20Rod%203-08.pdf</p>	
<p>Motorsports Welding Article <i>Wrote a 5 Page Article for AWS March 2018 Journal Covers NHRA and NASCAR Chassis Design</i> http://netwelding.com/Motorsports_Welding_2018.pdf</p>	