



# WEEK TO WICKED

## The AMD SS396 Chevelle Went From Semi-Stocker To Rad Pro Tourer In Five Days

► TEXT STEVEN RUPP PHOTOS BY THE AUTHOR

**P**roject cars seem to take forever to get done, or worse, never get done. Yeah, we've all been there and experienced the pain. After all, while you build a car it's just a big wallet suck and until the Chevy finally hits the road you might as well be doing an art project. In a perfect world you would order a huge stack of parts, take the week off work, and invite over some buddies to help get 'er done.

Well, we decided to do just that and try to live in that perfect world



where project cars go from blah to badass in short order. After getting the idea the next question was which car to transform. Our build plan was for this to get done in a week, so that nixed any ideas of paint and bodywork. Eventually, we settled on a 1967 Chevelle project car we had hanging out in our tech center that had been completely restored years ago by the crew at Auto Metal Direct (AMD). Now, we know what some of you are thinking, "How could you mess with such a cleanly restored





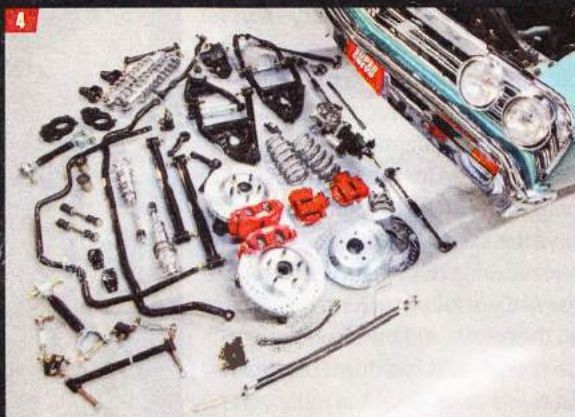
Our starting point was this 1967 Chevelle SS. It started out as a rusted-out hulk that most people wouldn't have bothered with. But the team at Auto Metal Direct (AMD) replaced nearly every single panel on the Chevy and fully restored it to show-ready condition. The body was then given a stunning new paintjob courtesy of Axalta and restored with mostly stock parts and a rebuilt 402 big-block engine and overdrive trans. Once done, AMD gave the sweet Chevelle to us for editorial use. It didn't handle well and was tiring to drive, but it was a really clean candidate for our project.



Before the new stuff could go in, we had to pull the old parts out of the way. First to go was the portly 402 big-block.



After four hours we had removed the drivetrain, suspension, brakes, rearend, and most of the wiring. By lunch on the first day, we were feeling pretty confident.



Classic Performance Products (CPP) signed up to provide the Chevelle its new suspension, steering, and brakes. We elected to go with their Pro-Touring Level III kit since we've used it before and were happy with the results. As you can see, there were a lot of parts involved.



To firm things up we decided to replace all the Chevelle's rubber frame bushings with polyurethane pieces from Energy Suspension. The install was super easy and we used a pole jack to swap the bushings one at a time.



On Day 2, we dove into the Chevelle's suspension installation. The CPP spindles utilized modern Corvette sealed bearings so it was nice not having to mess with packing wheel bearings with grease. It also saved us a lot of time. To help move things along CPP sent over a few of their technicians.



car!” Well, it was really pretty easy. The Chevelle started out as a rusted-out hulk that nobody in their right mind would try to restore. But Mark Headrick, president of Auto Metal Direct, was up for the challenge so he bought the Chevelle and let his team save the car using AMD replacement panels. Craig Hopkins and his crew at the AMD Installation Center replaced all the panels, did the laser-straight bodywork, and laid down the beautiful Axalta paint. After the roller was looking great the AMD team completely restored the Chevelle into a running and driving car. Afterwards, Mark gave the '67 to *Super Chevy* for use in editorial stories and to show that with today's aftermarket almost no classic Chevys are beyond rescuing. He knew we would someday give it the restomod treatment so we thought it would be cool to fulfill his vision. The Chevelle is a real SS, but there isn't a numbers-matching part on it. The handling was uninspiring and even though it managed to run a 13.5 on slicks at the dragstrip it wasn't particularly “fast” and went through gas like a politician spending tax revenue. What it did have going for it was a pristine body, solid frame, and beautiful paint. It was the perfect candidate for a mechanical makeover into something a lot more fun to drive.

The decision was made to go with an LS powerplant from BluePrint Engines. Why? Simple. Aside from looks and exhaust note, the LS has a traditional big-block beat in every category. It makes more power per inch, weighs less, gets better fuel economy, and in most cases has better driveability. As for the rest, we opted to replace every single mechanical and electrical component aside from the 12-bolt rear, aluminum driveshaft, and windshield wiper motor.

The project was dubbed the CPP Week To Wicked Chevelle build, Presented by Super Chevy and Axalta, and we enlisted “buddies” from a host of aftermarket companies to



Installing the suspension parts chewed up a good part of the day, but everything went together smoothly. The front brake lines were replaced, but we retained the main line running back to the rear brakes.



The CPP suspension kit included Viking Performance billet double-adjustable coilover shocks. In addition to letting us set the ride height, they are adjustable to fit how we will be driving, whether it's on the street or at the track.



While the front parts were going on, the CPP team was reworking the Chevelle's 12-bolt rear. We did hit a speedbump when the team realized the rear had C-clip eliminators, which caused the bolts to be too short. After a quick trip to the hardware store, we were back on track.



come to our tech center and help us take our Chevelle from weak to wicked (see what we did there)..We like our weekends so we made it even more challenging by having our week be five instead of seven days. At the end of the build we would take the Chevelle for some long cruise just to show that it was actually built and not all smoke and mirrors like some reality TV show.

So, what did we learn? Well, first, projects like this can only be pulled off with the right team. Having some

of the best aftermarket experts on hand from companies like CPP, Painless, Flex-a-lite, and others made the transformation go smoothly. Second, we learned that you can go from ahead of the game to falling behind pretty quickly, so planning is key. Third, we confirmed that no problem is too tough to figure out if you just work through it. Was it exhausting? Yep, but it was one of the most enjoyable weeks we spent wrenching on a project and when the Chevelle did its first burnout,

late on the fifth day, we were all smiles.

Here's a rundown of what was done during the five days of the build, and the desert cruise the followed. Obviously, it's just a sampling since a lot goes down in a week of wrenching. If you want more info there's a ton of stories, and even some video, available on [www.superchevy.com](http://www.superchevy.com). Just type Week To Wicked into the search box for the entire web content on our crazy idea to transform a classic in just five days.



The rear was then lifted back under the Chevelle and bolted in place with the new CPP suspension parts and another pair of Viking double-adjustable shocks. The CPP coilover bracket kit was a pretty cool piece of engineering and gave us a rock-solid mounting point for the shocks without any welding.



Rounding out the new braking system was CPP's Hydra Stop hydraulic power brake system. The system doesn't take up a lot of space and utilizes the power steering system to generate braking assistance rather than engine vacuum.



Messing with the engine was set for Day 3, but we were a bit ahead of the game so we were able to get started on Day 2. The 427-inch LS3 (stock 4.065 bore, 4.100 stroke) was built by BluePrint Engines and rated at 625 hp. In fact, we went there to see it come together and get spun up, with long-tube headers, on their engine dyno. It came ready to rock with coil packs and a GM-style wiring harness. For a drive system we opted for the new eight-rib system from Eddie Motorsports. We're not installing A/C at this time, but we will eventually, so it's nice that the system already has a compressor. The coil wire covers were custom made and painted by BluePrint for this project. They're pretty cool, so we're trying to convince them to make them an offering in their catalog.

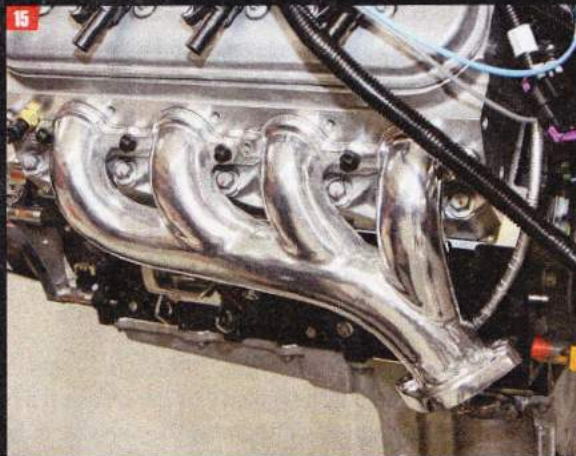


To get the new LS into the classic Chevy we used an LS-swap kit from CPP. It included a pan that would clear the Chevelle's frame and steering along with engine mounts, frame horns, transmission crossmember, and exhaust manifolds. Guaranty Chevrolet, down the street from our tech center, hooked us up with a starter and the required dipstick assembly.





The CPP engine plates are a pretty cool deal. They're slotted so the engine can slide forward and rearward until it's in just the right spot. The plates accept polyurethane mounts like these from Energy Suspension.



Normally we would run long-tube headers on a 625hp engine, but we only have a week and didn't have time for a custom exhaust system. CPP already had an LS-powered Chevelle that was running their exhaust manifolds so we just copied that car's exhaust system. This saved us an entire day at the exhaust shop. Besides, swapping to long-tubes will make for a good dyno story in the future.

**Aside from looks and exhaust note, the LS has a traditional big-block beat in every category.**



The LS 427 engine was then lowered into our Chevelle and bolted in place, ending Day 2. We were ahead of schedule and feeling pretty good.

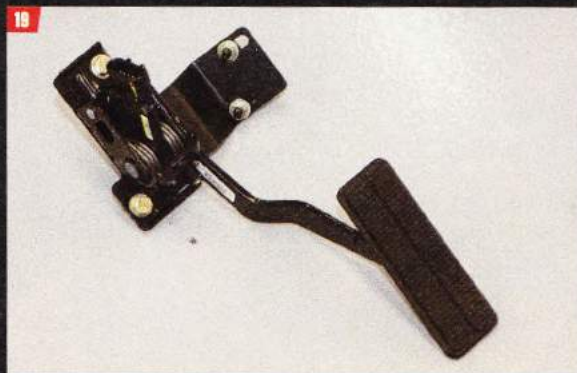




Day 3 started off with the installation of the Performance Automatic 4L80E transmission. It was built to handle the 625hp Blueprint engine and the overdrive will let us easily cruise down the highway. This transmission, coupled with our EFI LS engine, should dramatically increase the Chevelle's mpg.



To control the 4L80E, Performance Automatic included this MSD Transmission Control Module (TCM). Using the handheld programmer we will be able to easily adjust shift points, firmness, and other aspects of our new 4L80E four-speed trans. To keep it out of the way we mounted it under the passenger seat.



The new Blueprint engine utilizes an electronic "throttle-by-wire" throttle body, requiring an electronic throttle pedal. Typically finding a way to mount the modern pedal in a classic Chevy is a pain, but CPP came up with this bracket system that simply bolted in place. It even blocked off the hole in the firewall that was for the old throttle cable.



Supplying fuel to our new Blueprint 427 LS is the job of this fully baffled EFI-ready tank from Tanks Inc. It showed up ready to go with an integrated 255-gph pump and 0-90 ohm sending unit. The silver powdercoated tank was the same dimensions as a stock tank, so it simply bolted in place.

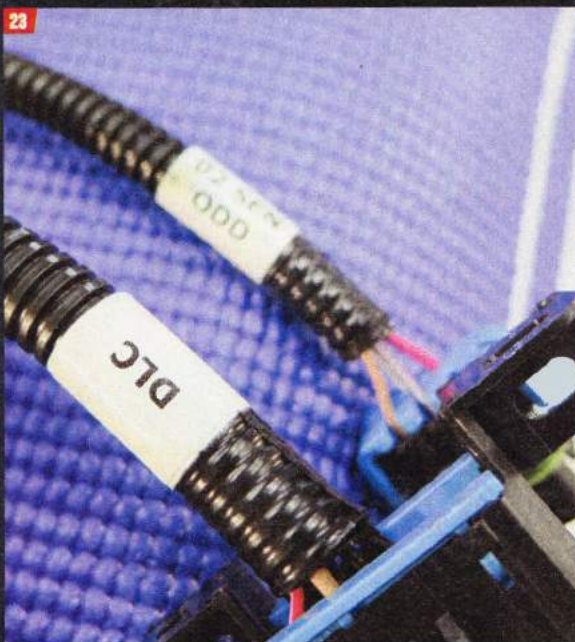


Day 4 was all about wiring but we also had a lot of small tasks to tackle such as plumbing the fuel system. To keep things simple we initially ran this GM combination fuel filter/regulator for the fuel system. Later we would find out that it wasn't compatible with the large fuel pump in the tank so we swapped to an adjustable Aeromotive fuel regulator and filter assembly. It's a good LS swap part, just not if you're running a high-volume fuel pump. Hey, we're re-building a car in a week, so we expect to have a few hiccups along the way.



To keep our Chevelle running cool we went with this aluminum radiator and fan system from Flex-a-lite. The angled notches on the bottom of the tanks let it slide right down between the framers. The large fan is controlled by the engine ECU sent by Blueprint.





Day 4's wiring was made a bit easier since the engine's harness came labeled and ready to plug in. The ECU that came with the engine is the same one they used on the engine dyno at BluePrint so it contained the proper tune.



Around noon the Chevelle's new rollers showed up. The 18-inch American Legend three-piece wheels were custom made for the project and wrapped in Falken Azenis rubber.



With the wheels installed the Chevelle was finally able to get on the ground and off the lift for the first time since Monday.



It was one of the **most enjoyable weeks** we spent wrenching on a project.



With the car off the lift, Jeff Abbott from Painless Performance Products could finally get inside the car and start installing the wiring he had been working on. Jeff had been on hand all week and although he couldn't be in the car, he had been busy building the new harness using the old one as a template. The new Painless system utilizes modern blade-style fuses instead of the old-school glass ones. Wiring a car can easily take over a week, but we only had a couple of days to get it done.



Wiring was, to be kind, a challenge. It's just a lot of critical connections to make in just a few hours. We also had to wire the engine's ECU into the rest of the Chevelle's wiring. The team ended up cutting, splicing, and getting everything right until very late in the evening. Time was running out and even though we were once ahead of the game we were now barely on track. Jeff from Painless also redid all of the Chevelle's grounds the right way.



While the wiring was going in, the team tackled all the little things in the engine bay like heater hoses, plug wires, power steering plumbing, and radiator hoses. We hadn't considered an air intake so we grabbed one of the plastic "you build" kits from Airaid.





Day 5 rolled around and we still had a lot to do. The dash was out and we were busy installing the new Dakota Digital VHX gauge system. Fortunately, the wiring had been finished the night before, so we at least had a head start.



The Dakota Digital VHX system really updated the dash and the best part was that it simply plugged into the car's new OBD-II port to draw gauge data for items like water temp, oil pressure, volts, etc. This made the whole process a whole lot faster and at this point anything that saved time was welcomed.



The new exhaust system, which was fabricated beforehand by the Muffler Man in Placentia, California, was then lifted in place. A collective sigh of relief was heard when the new system fit perfectly under the Chevelle.



After installing the new tilt steering column from CPP we were able to bolt in a pair of these ProCar by SCAT bucket seats. They have modern bolstering, but still retain a classic look, so they won't feel out of place mounted in our Chevelle.



We even had time for some dress-up items from Eddie Motorsports, such as their hood hinges, sill plates, window cranks, and these recently introduced billet door handles.

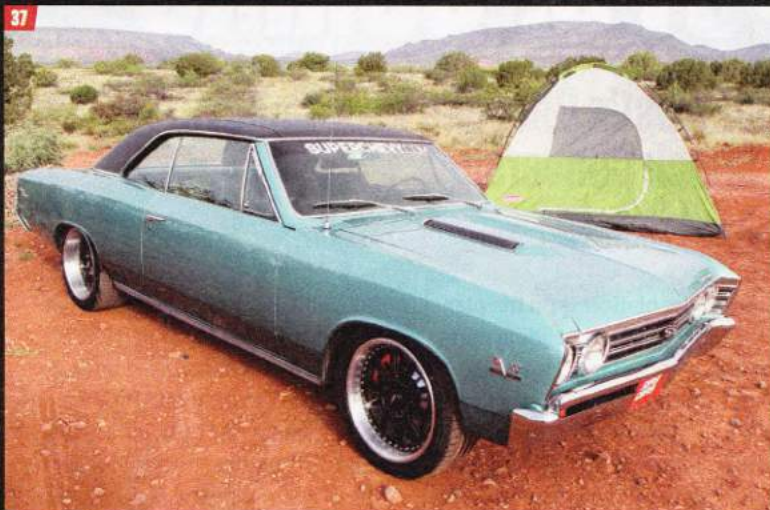


It was a really long week, but as the sun set on Day 5 the Chevelle fired to life and did its first of many burnouts. The crew was tired, but for some the build wasn't over. After resting up over the weekend the Chevelle hit the road on Monday. First stop was Westech Performance to check the tune on the engine and dial in the shift points for the Performance Automatic 4L80E transmission. It put down 450 hp, a bit less than expected, but the 4L80E accounts for good chunk of that drivetrain loss and we feel the exhaust manifolds weren't helping the 427 breathe to its full potential, but that's something we can address down the road. For now, the Chevelle was running smooth and strong, perfect for a little road trip.





To shake out the newly rebuilt Chevy, Evan Perkins and video wizard John Wilcox hopped in and hit the road to Tucson, Arizona. They even managed to find some barely paved roads through the beautiful Arizona desert.



Car camping in a Pro Touring '67 Chevelle? Why not? We still have a few kinks to work out but the Chevelle has a lot of events planned for this year, including the Hot Rod Power Tour. Rebuilding a car in a week is exhausting work, but the nearly instant gratification is something we could get used to. Now go get that project of yours done and on the road! 🍷

## SOURCES

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americanlegendwheels.com

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