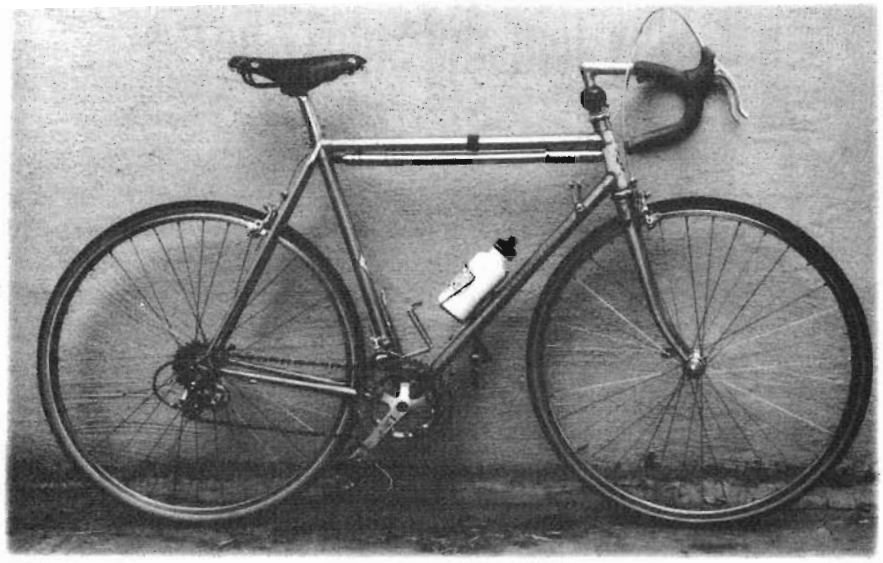
Rivendell Road Standard and LongLow Frames



Road Standard (Grant's bike)

Most of the changes in road frame design during the past 20 years have been subtle, but the cumulative effect of shorter chainstays, steeper angles, loss of eyelets, and vertical dropouts has made the modern road bike less versatile than a 1970's model. Yet no more raceworthy.

The easily overlooked and rarely discussed details make the difference—the height of the brake bridge, the length of the fork and the distance from the brake bolt hole to the underside of the crown, and the internal dimension of the crown and the chainstays just behind the bottom bracket. Magazine road tests rarely mention these details, but they're important because they determine the tires the frame will accept, and tires, more than any other single component, determine what kind of roads or trails the bike is suited for.

Dropout eyelets are another thing. It used to be that even racing frames had them, but now, to save a fraction of an ounce and to present a clean frame, virtually all production makers have eliminated eyelets on their sporty bikes, and with no eyelets, there's no convenient way to mount racks or mudguards. When you're shopping for a road bike, you don't imagine yourself carrying loads or riding in the rain, but eyelets weigh so little and offer so much, it seems a shame to eliminate them altogether. Eight years from now your riding habits may change, you may live in Seattle, you might shop by bike, or want to tour ... and you'll want eyelets. Or you may decide it's no

longer acceptable to spray grimy road water on your clubmates and riding pals. Some clubs require fenders.

We aren't trying to turn nice zippy road bikes into workhorses. The point is, you can have the features that increase versatility without giving up any of the qualities that make a good road bike feel so fine. The Rivendell Road Standard frame is as raceworthy as any frame, but it is so much more versatile than a typical modern race frame, it's like having another frame entirely. The LongLow, even more so. Though we sort of promote it as a versatile 700c bike frame, the LongLow has specifications that in any era other than the extreme one we're in now, would brand it as a racehorse.

This is our name plate. It is cloisonne, multi-colored, weighs 13g, and is affixed to the head tube by two tiny screws (not included in the listed weight).

These frames (and all our frames) are made from Reynolds 753 steel tubing drawn to our own specifications, and the tubes are heavier than the stock Reynolds 753 tubes and other modern superlight steel tubes. But the extra material is well-placed: The upper down tube butt is 100mm, because the most vulnerable part of any tube on a bike is the underside of the upper portion of the down tube, and the long butt protects this vulnerable area. A tube won't buckle there without you running into something, but accidents happen, and the long butt makes sense for a frame built to ride hard in all conditions for a long time. Also, the shifter boss is brazed on within the butted area, and the base corners are rounded, which fairly eliminates the chance of a fatigue crack at a corner.

The Rivendell frames has a shallow seat tube angle to keep your weight back, which in turn reduces weight on your hands and strain on your shoulders. Since the shallow angle shifts your weight to the rear, we've compensated with a slightly shorter than normal front-center (the distance between the crank axle and the front hub axle), and used longer chainstays to shift the rear wheel slightly farther back. The slightly shorter front-center with a longer rear-center is the opposite of most modern frames, which tend to be short in the rear, long in front. Those bikes feel funny to me (Grant), but that may be the curse of having paid too much attention on too many test rides over the years. In any case, the bikes I like tend to be shorter up front and longer in back. (Ritchey road frames are that way; and Pino Morroni frames are this way in extreme.) Following are some other features.

Extended head tube and fork steerer

The standard Rivendell frame has a head tube 15mm taller than the top of the lug, and the steering tube is 10mm extra longer (the gap is filled with a machined spacer). These features allow you to get the bars higher than you can with a standard frame (10mm steerer+ 15mm head tube = 25mm higher). So if you ordinarily ride a 56 road frame, you can get the bars as high as they'd

be on a 58.5 frame. We also slope the top tube up on both the Road Standard (1°) and LongLow (2°) to raise the bars without making the bikes look funny. (1° up x 55mm = 10mm up)

The taller head tube also effectively shortens the top tube by a few millimeters without shortening the wheelbase or front-center.

things happen when you raise the bars.

LOW BOTTOM BRACKET

Conventional wisdom says a lower BB makes a bike handle better and easier to control at high speed, and we buy into that one all the way. In BB heights, 265mm is considered low, 275mm is considered high. To determine the bottom bracket height you measure the height of the hub (the wheel radius), and subtract the drop—the distance the center of the bottom bracket falls below the centerline of the wheels. In the case of a road bike with skinny 700c tires, the wheel radius is about 336mm. On a typical road frame with 70mm of drop, this yields a bottom bracket height of 266mm—pretty good. But once you put on a tire of truly useful, all-round dimensions (an Avocet 700x32, for instance), the BB jumps to

LongLow

We like a higher bar position, and in general suggest riding the bars within an inch of the height of the saddle—an impossibility on most off-the-shelf bikes, unless you use a non-off-the-shelf stem with a longer quill or a higher rise. A higher bar opens you up at the waist, so it improves breathing. It tends to lift an oversized belly out of the way of your thighs. It brings the drops into a more useful zone. It takes weight off your hands and shoulders; and it reduces strain on your back. Good

LongLow Fork Crown

275mm, which is too high for our taste.

Both the Road Standard and LongLow accept a huge range of road tires, but we designed specifically for tires with a minimum diameter of 680mm diameter(a Ritchey 700x25, for instance), and gave them 80mm of drop. With such a tire, the bottom bracket height is 260mm; a good deal lower than most bikes, and that's one reason they handle so nicely. Do you have to pay attention to pedal clearance around corners? Of course. But you shouldn't pedal through high-speed corners, anyway. You'll corner faster with more control if the bottom bracket is lower, and the bike feels so much better. The low bottom bracket and longer chainstays add a measure of steadiness that's apparent on a ride, but hard to describe. The tighter the S-turns and more frequent your weight shifts, the more you'll notice the difference. There's no "stiff" zone as you shift the bike from leaning hard left to leaning hard right. It's a good feeling!

LOWER STANDOVER HEIGHT

For any given frame size, a shallower seat tube angle and a lower bottom bracket result in a lower top tube, and Rivendells have both a lower bottom bracket and a shallower seat tube angle than most frames. If you currently ride a 56cm frame and have an inch of crotch clearance, you'll probably be able to straddle a 58cm Rivendell. Maybe a 59.

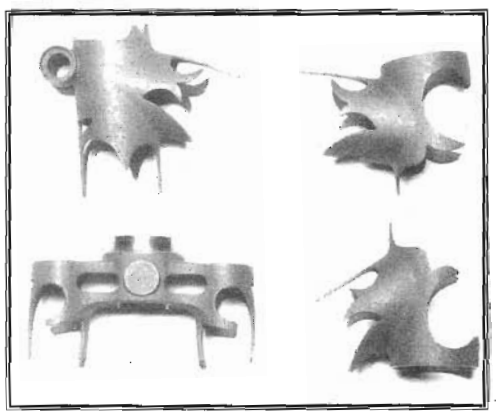
HORIZONTAL DROPOUTS ...

... allow you to increase or decrease the effective chainstay length by about 10mm. Slide the wheel back for added tire and fender clearance, or push it forward, or ride it in the middle.

There's nothing wrong with vertical dropouts, but the most likely explanation for their popularity is that the chainstays on most road bikes are so short you can't slide the wheel forward to remove it, because it hits the back of the seat tube. A vertical dropout lets the wheel drop straight down without moving forward, solving the problem short chainstays created. A better way is to lengthen the chainstays in the first place, but short chainstays impress a lot of people, so makers are reluctant to do that. We prefer horizontals, but not by a landslide, and if you want verticals, we'll do it for a small ($25) upcharge. Horizontals aren't cheaper to build with than verticals. We charge more because the change from spec requires the tubes to be cut differently than we normally do, and you have to pay for that.

Starting sometime in 1997 we'll use a forged dropout designed and made specifically for Rivendells and Herons. It's made in Italy by Tecnociclo.

CLEARANCE FOR 35C TIRES



Richard Sachs designed the lugs for us. The points are well out of the stress areas, the tubes are well supported, and despite the fanciness, they're quick to braze. The crown weighs just 100g, has rounded windows and properly shaped front and rear points to eliminate stress, and is thoroughly tested. The top has a waist and epaulets.

(ROAD STANDARD), OR
35C TIRES WITH FENDERS (LONGLOW)

Most modern road bikes are out of their element off the race course because they don't have clearance for tires larger than 700x28. Rivendell road frames fit tires up to 700x35, so you can ride them not only on any road, but most fire trails, too. There are many benefits to a little more air. You can safely ride lower pressures, adding comfort on rough roads and traction in turns and in the rain. A slightly softer tire is probably faster than a skinny hard one on rough surfaces, too, because the tire deforms when it hits a bump and rolls right on over it, whereas a hard skinny tire will send the shocks right up to your hands and arms. Another plus with higher volume tires is their broader range of ridable air pressures. Who hasn't flatted without a spare or repair kit, and had to ride as far as possible between pump-stops? You can ride a slow leak farther if your tires are fatter.

Even if you don't plan to ride chubbies, the added clearance makes room for fenders, or gives the wheel some wobbling room if you happen to break a spoke, and that can save you a walk.

DROPOUT EYELETS! ...

... to mount a rack or fenders. If you want to mount both, use a longer bolt in front (putting them both on the same bolt), and either do the same on the rear, or use a Blackburn Custom eyelet, made expressly for the purpose of fitting racks or fenders on eyeletless dropouts. They cost $5, weigh 11g per pair, and we stock them. The underside of the brake bridge is tapped, so you can ream a hole in the fender and mount it directly with a really short pan-head screw (M5 thread). That pulls it farther from the tire than a conventional mounting method allows.

NOTE ABOUT TOE CLIP OVERLAP...

On smaller Rivendell road frames and some of the short top tube models, when your foot is at 3:00 and the wheel is turned enough, the tire will indeed touch your toe clip or shoe. Don't worry about it—if you turn the wheel that much when you're going faster than 5 mph, you'll crash way before the toe hits. Adding a front fender decreases this clearance further (as will a bigger foot or tire), but it still isn't a problem at riding speeds. Occasionally having toe clip overlap is noticeable when starting off, or doing a track stand at a stop light, but that's a small price to pay for a better ride.

SMALL BIKES & WHEEL SIZES

Our 50cm and 51cm road frames are designed for 26-inch wheels, because 700c-wheel frames of this size have too many compromises—high bottom brackets, long top tubes, too shallow head tubes, too steep seat tubes, or some combination thereof. Going to a 26-inch wheel (we use the so-called "mountain" 26-inch) allows us to design the frame correctly without having to worry whether or not the front wheel's going to hit the down-tube. Our 26-inch wheel road frames have vertical dropouts, because horizontals don't work with those particular geometries. The reasons take too long to explain here, but if you're curious, please ask.

Top Secret Geometry

subject to change without notice

ROAD STANDARD

SIZE C-T	ST ANGLE	HT ANGLE	FORK RAKE	TOP TUBE*	CHAIN STAY	BB DROP	REAR SPREAD**	TT/ST Ø	DT Ø
50	74	72	4.0	52.5	41.5	4.5	130	28.6	28.6
51	74	72	4.0	53	41.5	4.5	130	28.6	28.6
52	73.5	72.5/72	4.5/5.0	53.5/52.5	42	8	130	28.6	28.6
53	73.5	72.5/73	4.5	54/53	42	8	130	28.6	28.6
54	73	73	4.5	55/54	42.5	8	130	28.6	28.6
55	73	73	4.5	56/55	42.5	8	130	28.6	28.6
56	72.5	73.5	4.25	57/55.5	43	8	130	28.6	28.6
57	72.5	73.5	4.25	57.5/56	43	8	130	28.6	31.8.
58	72.5	73.5	4.25	58.5/56.5	43	8	130	28.6	31.8
59	72.5	73.5	4.25	59/57	43.5	8	130	28.6	31.8
60	72.5	73.5	4.25	59.5/58	43.5	8	130	28.6	31.8
61	72.5	73.5	4.25	60/58.5	43.5	8	130	28.6	31.8
62	72	73.5	4.25	60.5/59	44.5	8	130	28.6	31.8
63	72	73.5	4.25	61/59.5	44.5	8	130	28.6	31.8
64	72	73.5	4.25	61.5/60	44.5	8	130	28.6	31.8
65	72	73.5	4.25	62.5/60.5	44.5	8	130	28.6	31.8

LONGLOW

SIZE C-T	ST ANGLE	HT ANGLE	FORK RAKE	TOP TUBE*	CHAIN STAY	BB DROP	REAR SPREAD**	TT/ST Ø	DT Ø
52	73	72	5	53.5	44	8	130	28.6	28.6
53	73	72.5/72	4.5/5	54.5	44	8	130	28.6	28.6
54	72.5	72.5/72	4.5/5	55.5/54.5	44	8	130	28.6	28.6
55	72.5	72.5	4.5	56/55	44	8	130	28.6	28.6
56	72.5	73	4.5	56.5/55.5	44	8	130	28.6	28.6
57	72	73	4.5	57/56	44	8	130	28.6	28.6
58	72	73	4.5	58/57	44	8	130	28.6	28.6
59	72	73.5	4.25	58.5/57.5	45	8	130	28.6	28.6
60	72	73.5	4.25	59/58	45	8	130	28.6	28.6
61	72	73.5	4.25	59.5/58.7	45	8	130	28.6	28.6
62	72	73.5	4.25	60.5/59	45	8	130	28.6	31.75
63	72	73.5	4.25	61/59.5	45	8	130	28.6	31.75
64	72	73.5	42.5	61.5/60	45	8	130	28.6	31.75
65	72	73.5	4.25	62.5/60	45	8	130	28.6	31.75

RIVENDELL BICYCLE WORKS
FRAME ORDER RECEIPT

ORDER #:	351
CREATED:	12/11/97
MODIFIED:	12/11/97
INVOICE#:	0

Customer #9594 **RAY SACHS**

Style: ROAD
◉ STANDARD ○ SHORT TOP TUBE

Size: 58
Headtube Extension: 20mm
Rear Spacing: 130mm

Rider Height: 71.5
Rider Weight: 165
Pubic Bone Height: 86.2
Saddle Height: 75.8

Desired Date: 1/18/98
Absolute Deadline: 2/5/98

Paint Options:

Color: JB Green pearl, dark, candy
Painted Name: location(s) @

Window Detailing: ◉ None ○ Fill ○ Outline
Painted Headtube: ☒
Masked Rear Dropouts: ☐
Touchup Paint (qty): main tube color
head tube color

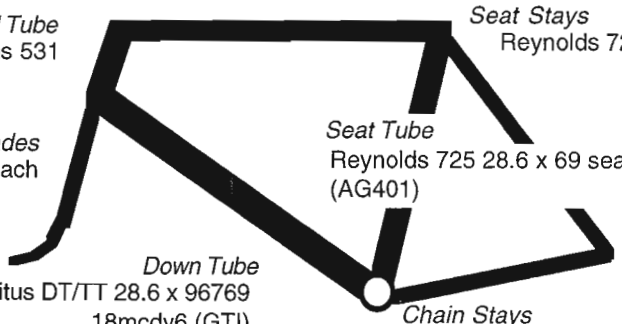
Braze-ons:

Lowrider: ○ STD ○ Blackburn ○ None
Cables: ◉ Shifter Bosses ○ Split Stops
Brakes: ○ Cantilevers ◉ Sidepulls
Rear Rack Seatstay Mounts: ○ Yes ◉ No
Low Rider Rack: ○ STD ○ Blackburn ○ None

Installed Parts:

Headset:
BB:
Pump:

Top Tube
Reynolds 725 28.6 x 858 downtube (AG206)



Head Tube
reynolds 531

Seat Stays
Reynolds 725 seat stay 16 x 0.7

Fork Blades
Columbus 28 x 20 fork blade, each

Seat Tube
Reynolds 725 28.6 x 69 seat tube
(AG401)

Down Tube
Vitus DT/TT 28.6 x 96769
18mcdv6 (GTI)

Chain Stays
VITUS BASE 22.1 x 0.9 x 420mm 18mcdv6

1561-B Third Avenue, Walnut Creek, CA 94596 U.S.A. • Ph: (510) 933-7304 • Fx: (510) 933-7305

RIVENDELL BICYCLE WORKS
FRAME ORDER RECEIPT

ORDER #:	351
CREATED:	12/11/97
MODIFIED:	3/31/98
INVOICE#:	21416

Customer #9594 **RAY SACHS**

Frame:

Style: ROAD

◉ STANDARD ○ SHORT TOP TUBE

Size: 58

Headtube Extension: 15mm

Rear Spacing: 130mm

Serial #: JS9718

Paint Options:

Color: JB Green solid 1317

Painted Name: location(s) @

Window Detailing: ○ None ◉ Fill ○ Outline

Painted Headtube: ☒

Masked Rear Dropouts: ☐

Touchup Paint (qty): main tube color

head tube color

Braze-ons:

Cables: ◉ Shifter Bosses ○ Split Stops

Brakes: ○ Cantilevers ◉ Sidepulls

Rear Rack Seatstay Mounts: ○ Yes ◉ No

Low Rider Rack: ○ STD ○ Blackburn ○ None

Rider Info:

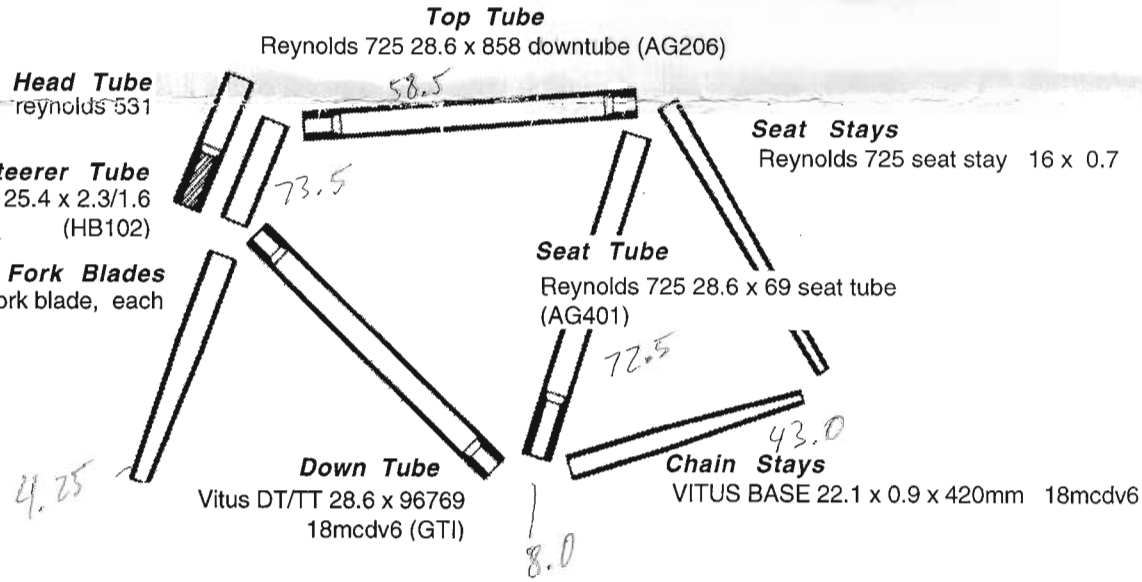
Rider Height: 71.5
Rider Weight: 165
Pubic Bone Height: 86.2
Saddle Height: 75.8

Desired Date: 1/18/98
Absolute Deadline: 2/5/98

Installed Parts:

Headset:
BB 1:
BB 2:

Pump:



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