

Town Highway 52

Road Name: Appears not to have official name; continuation of Old Stage Road (TH 50).

Road Number: Town Highway 52

Classification of Road: Class 4

- Vermont General Highway Map, Town of Halifax, 2013 Legend of “Impassable or Untraveled”
- Windham Regional Commission, Road Map, Feb. 2014, Legend of Impassable

Road Surface: Gravel

Length in miles (Total): 1.54 + 0.13 Class 3 on Western end

Length in miles to be traveled: Approx. 0.25 miles (1400 ft. per Google map tool)

Regular Weight Limit: 24,000 pounds (12 Tons)

Traffic Study: none

School Bus: no

Plowing Route: Partial, about 200 ft. to Kotanchik driveway, by historical understanding of road classification, which is in error. Truck used: Tandem as of current year.

Current condition: FAIR to the proposed access road (0.25 miles); passable by high clearance vehicles in good weather to the proposed access road ONLY.

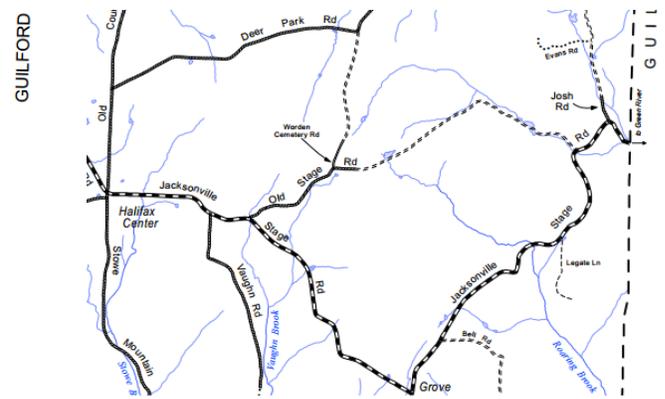
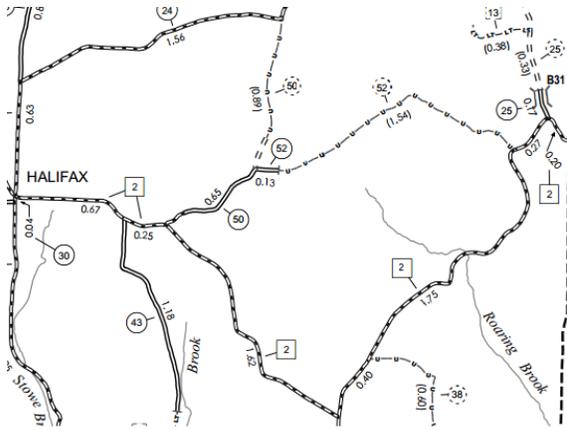
Existing town maintenance budget proportion estimate: Minimal costs for seasonal plowing; no other town maintenance performed.

Detail

The eastern end of Town Highway 52 (TH52), referred to locally by some as being part of Old Stage Road, intersects Jacksonville Stage Road near the Halifax/Guilford town line, and is designated Class 4. This section of TH 52 would be the sole access road to the proposed quarry site. The Class 4 portion continues for 1.54 miles where it joins a 0.13-mile Class 3 section and then becomes TH50 (Class 3). TH50 runs southwest for 0.65 miles, ending in another intersection with Jacksonville Stage. TH50 is named Old Stage Road officially. Starting at about 1000 feet beyond in westerly direction from the proposed quarry access road to the start of TH50, TH52 is largely impassable by vehicles. At times it is difficult to clearly distinguish the old road from other forest trails.

The Town of Halifax has several roads such as this one which are no longer contiguous, and these have proven to confuse emergency response personnel, delaying response times. In fact, recently updated GPS devices do not show this road at all today.

The only maintenance done on the town road is gravel provided up to the Kotanchik driveway. Any other maintenance done on the Class 4 portion of TH52 has been provided by the private landowner (Denison) for many years, as confirmed verbally by Mr. Denison in a public meeting with the Planning Commission. Just after the eastern entrance to TH52 there is a driveway on the right, and shortly beyond that is an 18” diameter plastic culvert which is partially plugged. Slightly farther on is a second culvert, also plastic, 12” in diameter, fully plugged. There are two other plastic culverts just north of the Kotanchik driveway, which are also undersized. TH52 is a single-lane road, small portions of which are traversable in dry weather by vehicles with high clearance and/or 4WD. The maps that follow show TH52 and adjoining roads by road number and by local name.



Road History Notes: The classification and naming of this road has some interesting variation. A 1994 map on the wall of the Town Office in Halifax labels the entire road as “Old Stage Rd” but it shows the eastern portion as a legal trail. A January 2003 topographic base map has the road name only over the western end Class 3 portion, and shows what is now known as TH 52 as a legal town trail. A January 2007 letter from the Agency of Transportation Policy and Planning Division Mapping Unit listed a table which gave LT-10 (Legal Trail-10) as replacing Former Highway TH-52. Finally, research in the town vault showed that TH-52 was among many roads the Selectboard reclassified in 1972. However, a Judgment Order from Superior Court in 1973 with Dennison [sic] Lumber Co. among the plaintiffs and the Town as defendant held that Road #52 (among others) was to remain a public highway. This court case was not entered into the Halifax Land Records until 1987, and the mileage correction was finally attempted to be updated in 2012 with the mapping division. All of this may simply be a long way to say, TH-52 is legally a class 4 road, to the best of our understanding today.

Expected increased maintenance costs and efforts:

Because we still lack specific details about the equipment hauling the stone, it is impossible for this small town government to estimate the full impact of these trucks. In fact, we believe this will take an engineering analysis. Minimally, we would like to have culvert replacements to our town standards, and we would like to have a better analysis of the road bed for gravel and top-level gravel recommendations. Road width should be increased appropriately to 20 feet. Bank stabilization should also be considered.

The road has not been maintained by the town in several decades. Therefore, the town would request that the applicant be responsible for bringing the road up to the town standards as a condition of the permit, minimally with the criteria noted above.

Additional proposed conditions requested by the town:

- TH 52 shall be officially named by the Town of Halifax Selectboard in consultation with local First Responders to avoid confusion that it is a contiguous road in case of emergency. Street signs, including road name and Dead End signs, to be paid by Applicant.
- The Highway Department Supervisor shall inspect the road for damage weekly, specific damage shall be documented, sent to property owner/quarry operator and repaired by the applicant to the town specifications.

Town Highway 2

Road Name: Jacksonville Stage Road

Road Number: Town Highway 2 (TH-2)

Classification of Road: Class 2

Road Surface: Gravel (small portion paved on the far west end going into West Halifax)

Length in miles (Total): 6.94 mi.

Length in miles to be traveled: 2.15 mi

Weight Limit: 24,000 pounds (12 Tons)

Traffic Study: Yes

School Bus: Not on quarry travel route; Old Stage Rd (TH-50) western portion to school

Plowing Route: Truck used: Tandem as of current year.

Current condition (traveled portion): Fair to Good

Existing annual town maintenance budget proportion (estimates): \$42,675

Detail



Quarry trucks would travel a 2.15-mile-long section of Jacksonville Stage Road (TH-2, 6.94 total miles), from the TH52 turnoff to Amidon Road. Jacksonville Stage is a town-maintained, Class 2, gravel road.

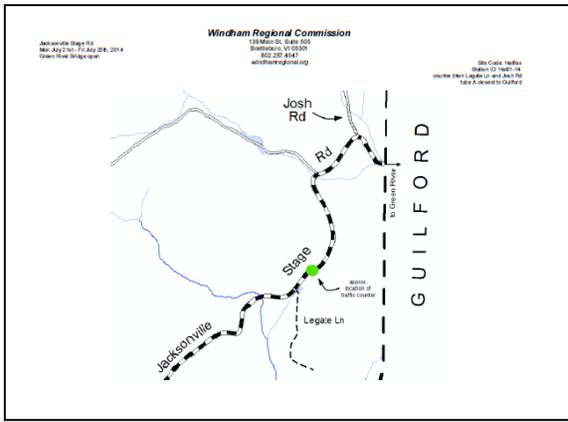
To the left is a picture of one turn with limited visibility.

A summer 2014 culvert inventory update on this road segment lists 16 culverts on the route: two in excellent condition, nine rated good, two fair and three poor. Those classified as poor/fair have some erosion, insufficient coverage, one is almost entirely plugged, and one is noted to need armoring on the upper end. Six are plastic, 10 galvanized. Diameters range from 8" to 80," and lengths from approximately 24 to 80 feet.

Pictured below are several of the culverts with erosion and exposure damage.



On July 21st, 2014, Windham Regional Commission commenced a five-day, Monday through Friday, traffic study on this section of Jacksonville Stage Road. The counter was positioned between Josh Road and Legate Lane, as shown in the following map.



Over the course of the five-day period, the counter recorded the passage of 407 vehicles; 4 motorcycles, 265 passenger cars, 111 pickups or vans, 14 single-unit 2-axle trucks, 2 single trailer 3- or 4-axle trucks, one single-trailer 6-or-more-axle truck, and 10 uncategorized vehicles.

Overall, Monday saw the heaviest volume of traffic, followed by Friday, with peak periods for both days between 9:00 p.m. and 2:00 a.m. Tuesday through Thursday showed a greater

volume between 6:00 a.m. and noon than did Monday and Friday. The chart below shows the compiled figures for the week, with peak periods highlighted.

Windham Regional Commission

139 Main St, Suite 505
Brattleboro, VT 05301
802.257.4547
windhamregional.org

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Jacksonville Stage Rd
Mon July 21st - Fri July 25, 2014
Green River Bridge open

Site Code: Halifax
Station ID: HAL01-14
counter btwn Legate Ln and Josh Rd
tube A closest to Guilford

Start Time	21-Jul-14		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	A to B	B to A	A to B	B to A	A to B	B to A	A to B	B to A	A to B	B to A	A to B	B to A	A to B	B to A	A to B	B to A
12:00 AM	3	1	2	0	2	1	3	0	3	3	-	-	-	-	3	1
01:00	5	2	3	6	4	2	2	4	1	3	-	-	-	-	3	4
02:00	3	7	1	1	2	1	3	2	3	2	-	-	-	-	2	3
03:00	4	0	3	6	4	4	3	1	5	1	-	-	-	4	2	
04:00	3	6	3	3	2	3	3	3	3	1	-	-	-	3	3	
05:00	5	7	4	1	4	1	2	3	3	3	-	-	-	4	3	
06:00	2	3	4	1	6	4	1	3	3	1	-	-	-	3	2	
07:00	5	7	5	5	2	5	5	4	5	2	-	-	-	4	5	
08:00	2	1	2	0	4	3	9	2	2	3	-	-	-	4	2	
09:00	4	4	3	1	4	0	0	0	8	3	-	-	-	4	2	
10:00	2	3	1	0	2	1	1	0	0	1	-	-	-	1	1	
11:00	1	2	1	0	0	3	2	0	0	0	-	-	-	1	1	
12:00 PM	2	2	1	3	1	1	0	1	3	0	-	-	-	1	1	
01:00	0	0	0	0	0	0	0	0	2	1	-	-	-	0	0	
02:00	0	1	0	0	0	0	0	0	0	0	-	-	-	0	0	
03:00	0	0	0	1	0	1	0	1	0	1	-	-	-	0	1	
04:00	0	0	0	0	0	0	0	0	0	0	-	-	-	0	0	
05:00	0	1	0	0	0	0	0	0	0	1	-	-	-	0	0	
06:00	0	0	0	1	0	1	0	1	0	0	-	-	-	0	1	
07:00	1	0	1	0	1	0	0	0	1	0	-	-	-	1	0	
08:00	0	0	0	0	0	1	1	0	0	1	-	-	-	0	0	
09:00	0	3	0	3	1	4	0	3	1	4	-	-	-	0	3	
10:00	1	2	1	1	0	5	0	1	1	2	-	-	-	1	2	
11:00	5	0	1	2	3	0	3	1	1	5	-	-	-	3	2	
Lane	46	52	36	35	42	41	36	30	45	40	0	0	0	0	42	39
Day	100		71		83		68		85		0		0		81	
AM Peak	01:00	02:00	07:00	01:00	06:00	07:00	08:00	01:00	09:00	01:00	-	-	-	-	03:00	07:00
Vol.	5	7	5	6	6	5	9	4	8	5	-	-	-	-	4	5
PM Peak	23:00	21:00	12:00	12:00	23:00	22:00	23:00	21:00	12:00	23:00	-	-	-	-	23:00	21:00
Vol.	5	3	1	3	3	5	3	3	3	5	-	-	-	-	3	3
Comb. Total	100		71		83		68		85		0		0		81	
ADT	ADT 81		AADT 81													

Expected increased road expenses and conditions:

- Guardrails on TH52 at the intersection of TH2 and TH52, at the expense of the applicant.

At the expense of the town, unless specific is damage is noted during regular maintenance checks, as in the earlier conditions notes:

- Improved signage for the blind corner
- Culverts upgraded as per regular schedule

Town Highway 32

Road Name: Amidon Road.
Road Number: Town Highway 32
Classification of Road: Class 3
Road Surface: Gravel
Length in miles (Total): 2.19
Length in miles to be traveled: 0.42
Regular Weight Limit: 24,000 lb/ 12 tons
Traffic Study: No
School Bus: No
Plowing: Yes.
Current condition (travelled): Fair to Good
Existing town maintenance budget proportion estimate: \$6,670

Detail

This small section of Amidon Road (less than half a mile) intersects Jacksonville Stage Road in a straight line, while Jacksonville Stage itself takes a 90-degree turn to the right. There are two culverts on this stretch of Amidon; both approximately 15 inches in diameter, one about 24 feet long, the other 20-30 feet. Both culverts were rated “good” during the summer 2014 inspection. The shorter culvert, with 6-inch of coverage, is dented on the upper end; the longer culvert has about two feet of coverage.

Conditions: None noted

Town Highway 39

Road Name: Stark Mountain Road
Road Number: Town Highway 39
Classification of Road: Class 3
Road Surface: Gravel
Length in miles (Total): 1.17
Length in miles to be traveled: 1.17
Regular Weight Limit: 24,000 lb / 12 tons
Traffic Study: Yes
School Bus: No
Plowing: Yes
Current condition: Fair, but steep, narrow and winding
Existing town maintenance budget proportion estimate: \$18,575

Detail

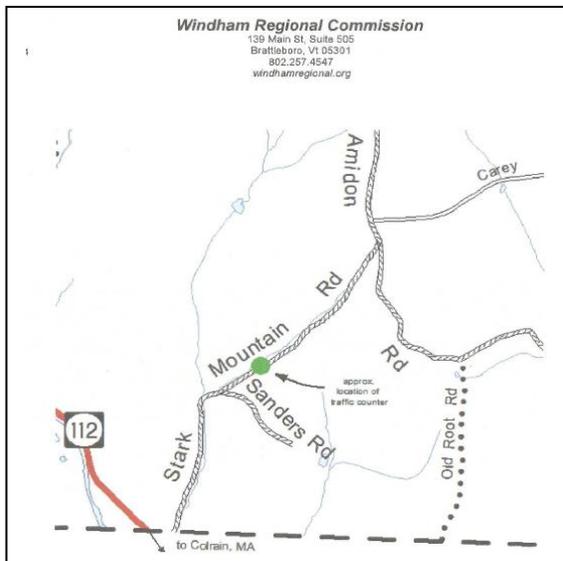
Quarry trucks would take a right-hand turn off Amidon Road onto Stark Mountain Road, and then travel 1.17 miles to Stark Mountain Road’s intersection with Route 112 and the Vermont/Colrain, Massachusetts border. Stark Mountain Road is a narrow, winding hill road, with gradients of 7.5-10.9% in places. Its most narrow sections are bordered by steep hillside and ravine; increasing road bed width is not a



feasible option from a cost perspective. The applicant has noted that road width ranges from 16.5 to 19 feet wide.

There are 18 culverts on Stark Mountain Road; 12 are galvanized, six plastic. Lengths range from 22 to 60 feet. Fourteen of these culverts are approximately 15 inches in diameter, one is 12-18 inches, two are 20 inches, and one is 108 inches. Four, including the largest, are rated excellent in condition, seven are rated good, two fair, and five poor. Of those designated in poor condition, one is plugged and needs retaining work on one end, others have insufficient coverage and erosion. In April 2013 Halifax applied for a Better Backroads Grant to assist in replacing culverts, reshaping and stone lining ditches, and adding gravel to improve the road surface. The estimated cost submitted with the application was \$20,643.00. This application was declined.

Below are some examples of culvert damage found on Stark Mountain Road during summer 2014 inventory.



Windham Regional Commission's July 21-25, 2014 traffic study (see chart on following page) returned a total traffic count of 281 vehicles, as follows: 165 cars and trailers, 85 2-axle long vehicles, one bus, 22 2-axle, six-tire vehicles, one 3-axle single vehicle, one 5-axle double vehicle, and six unclassified, or unknown vehicles. (See map on right for placement of traffic counter.) Overall, volume was relatively evenly distributed Monday through Friday. (While Friday totals show only about 50% of Monday-Thursday volume on the chart below, it is believed the counter was removed at mid-day Friday.) Virtually all travel occurred during daylight hours, 8:00 a.m. to 8:00 p.m., with peak periods of morning/afternoon travel widely distributed over that range.

Windham Regional Commission

Stark Mountain Rd
 Mon July 21st - Fri July 25th, 2014
 Green River Bridge open

139 Main St, Suite 505
 Brattleboro, VT 05301
 802.257.4547
 windhamregional.org

Site Code: Halifax
 Station ID: Hal02-14
 counter 50 meters N of Sanders Rd
 tube A closest to Sanders Rd

Start Time	21-Jul-14		22-Jul-14		23-Jul-14		24-Jul-14		25-Jul-14		26-Jul-14		27-Jul-14		Week Average	
	Direction 1	Direction 2	Direction 1	Direction 2												
12:00 AM	0	0	0	0	0	0	0	0	0	0	*	*	*	*	0	0
01:00	0	0	0	0	0	1	0	0	0	0	*	*	*	*	0	0
02:00	0	0	0	0	0	0	0	0	0	0	*	*	*	*	0	0
03:00	0	0	0	0	0	0	0	0	0	0	*	*	*	*	0	0
04:00	0	0	0	0	0	0	1	0	0	0	*	*	*	*	0	0
05:00	0	0	0	0	0	1	0	0	1	0	*	*	*	*	0	0
06:00	1	1	1	3	1	1	1	1	1	1	*	*	*	*	1	1
07:00	2	2	1	1	1	2	2	2	1	1	*	*	*	*	1	2
08:00	1	4	1	6	3	1	0	2	0	5	*	*	*	*	1	4
09:00	1	1	1	0	3	4	2	5	0	2	*	*	*	*	1	2
10:00	1	1	0	2	2	4	0	1	0	2	*	*	*	*	1	2
11:00	4	2	2	1	4	3	3	3	5	3	*	*	*	*	4	2
12:00 PM	2	0	4	4	2	1	3	2	4	1	*	*	*	*	3	2
01:00	5	3	2	0	2	2	3	1	0	0	*	*	*	*	2	1
02:00	4	3	0	2	0	3	1	1	0	0	*	*	*	*	1	2
03:00	1	3	3	1	3	1	1	0	0	0	*	*	*	*	2	1
04:00	4	4	3	2	0	3	1	1	0	0	*	*	*	*	2	2
05:00	2	4	4	1	2	3	1	3	0	0	*	*	*	*	2	2
06:00	0	3	2	4	4	6	1	3	0	0	*	*	*	*	1	3
07:00	1	1	3	1	0	0	1	2	0	0	*	*	*	*	1	1
08:00	2	2	2	2	1	0	5	0	0	0	*	*	*	*	2	1
09:00	0	0	3	1	0	0	1	0	0	0	*	*	*	*	1	0
10:00	2	0	1	0	0	0	0	2	0	0	*	*	*	*	1	0
11:00	0	0	0	0	0	1	1	1	0	0	*	*	*	*	0	0
Total Day	33	34	33	31	28	37	28	30	11	16	0	0	0	0	27	28
AM Peak	11:00	08:00	11:00	08:00	11:00	09:00	11:00	09:00	11:00	08:00	-	-	-	-	11:00	08:00
Vol.	4	4	2	6	4	4	3	5	5	5	-	-	-	-	4	4
PM Peak	13:00	16:00	12:00	12:00	18:00	18:00	20:00	17:00	12:00	12:00	-	-	-	-	12:00	18:00
Vol.	5	4	4	4	4	6	5	3	4	1	-	-	-	-	3	3
Comb. Total	67		64		65		58		27		0		0		55	
ADT	ADT 56		AADT 56													

Conditions:

- The Town of Halifax will research the possibility and procedures for imposing a truck speed limit. If a speed change is made or warning signs posted, applicant to pay for signs.
- Trucks use lowest gear and grade signs posted at the top
- Truck traffic signs on both ends of this road.

Additional Information

Using a three-year average (FY13-FY15), the Town of Halifax has budgeted **\$15,878 per mile** for all town Highway and Bridge expenses. The budget figures are used rather than actuals because it would not seem fair to include the additional expenses from Tropical Storm Irene repairs, which were largely borne by Federal and State tax dollars, in recent fiscal years.

This number includes labor, equipment costs, garage costs, maintenance, supplies and engineering as needed. We try to be frugal; but realistic budgeting is vital when infrastructure and equipment have been in “deferred maintenance” mode for a long time. We cannot ignore safety and standards for resilient town operation. It should also be noted that this figure includes expenses paid by local and state tax dollars. We cannot always rely upon state grants, although we try to obtain them when possible, of course.

A challenge for the town seems to be that we must prove or disprove any expected damage and associated cost for repair to the roads for consistent overweight traffic.

Calculations used by AASHTO (American Association of State Highway and Transportation Officials) indicate that increased usage by heavy vehicles increases the strain to the town road by a power of 4 over the strain from standard passenger cars. Using estimates with the following variables: 10 axle truck; max load 58,000 lbs (MA. State Limit), we ran calculations bring us to the incredible figure that there may be an equivalency of the quarry traffic to 2.9M cars. We find this difficult to believe, but we are not civil engineers. It also does not factor in the general capacity of the roads in the first place. Therefore, we are struggling with any additional information that the District 2 Environmental Commission needs from the town to calculate the size of the impact these trucks will have beyond the current traffic. We do believe that gravel roads would have an increased strain impact than paved roads would.

Dates of Operation as related to road conditions: As a note, the Town of Halifax posted its roads for mud season between 3/18/2014 and 5/15/2014. The applicants should be advised that their interest in starting work April 1 may result in a large backlog of material ready for hauling. Despite weather delays, the permit conditions should not be allowed to exceed the maximum plan of 2 loaded trucks per day. The additional wear and tear of even standard pickup trucks on the road during mud season would ideally be minimized. Please note that the applicants will need to abide by all local road restrictions given by the road commissioner and Halifax Selectboard.

Proposed Conditions for all Class 3 and above roads:

- The Highway Department Supervisor shall inspect the roads for damage weekly, specific damage shall be documented, sent to property owner/quarry operator and repaired by the town with the applicant to pay for the repair costs.

General:

- Trucks limited to operation at 2 loaded trucks per day, with hours of traffic limited to within 1 hour of quarry operating hours.