

TOWN OF TEMPLE, NH

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BRIDGE INVENTORY

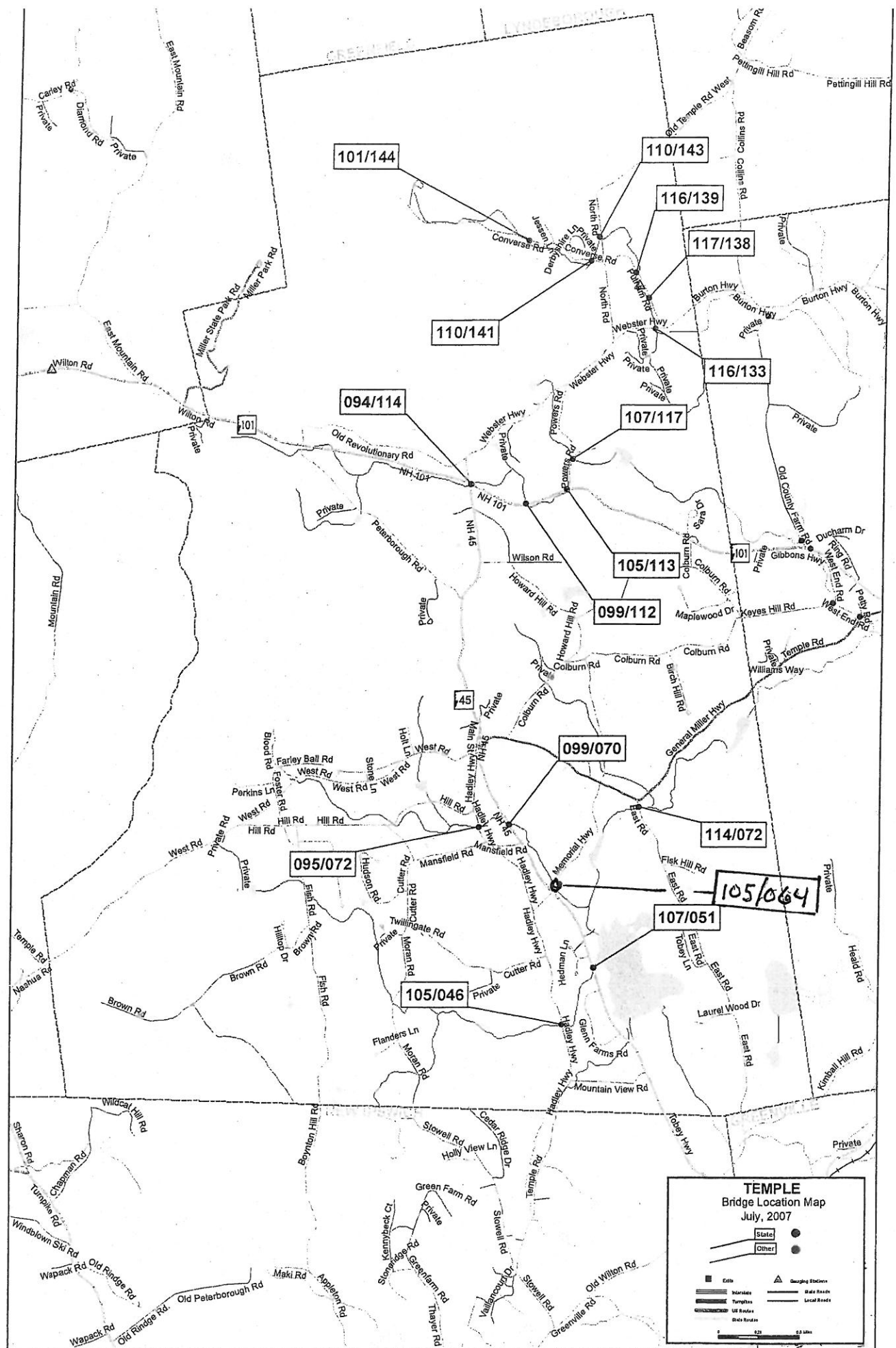
Developed by Tim Fiske, Road Agent
Compiled by Betsy Perry

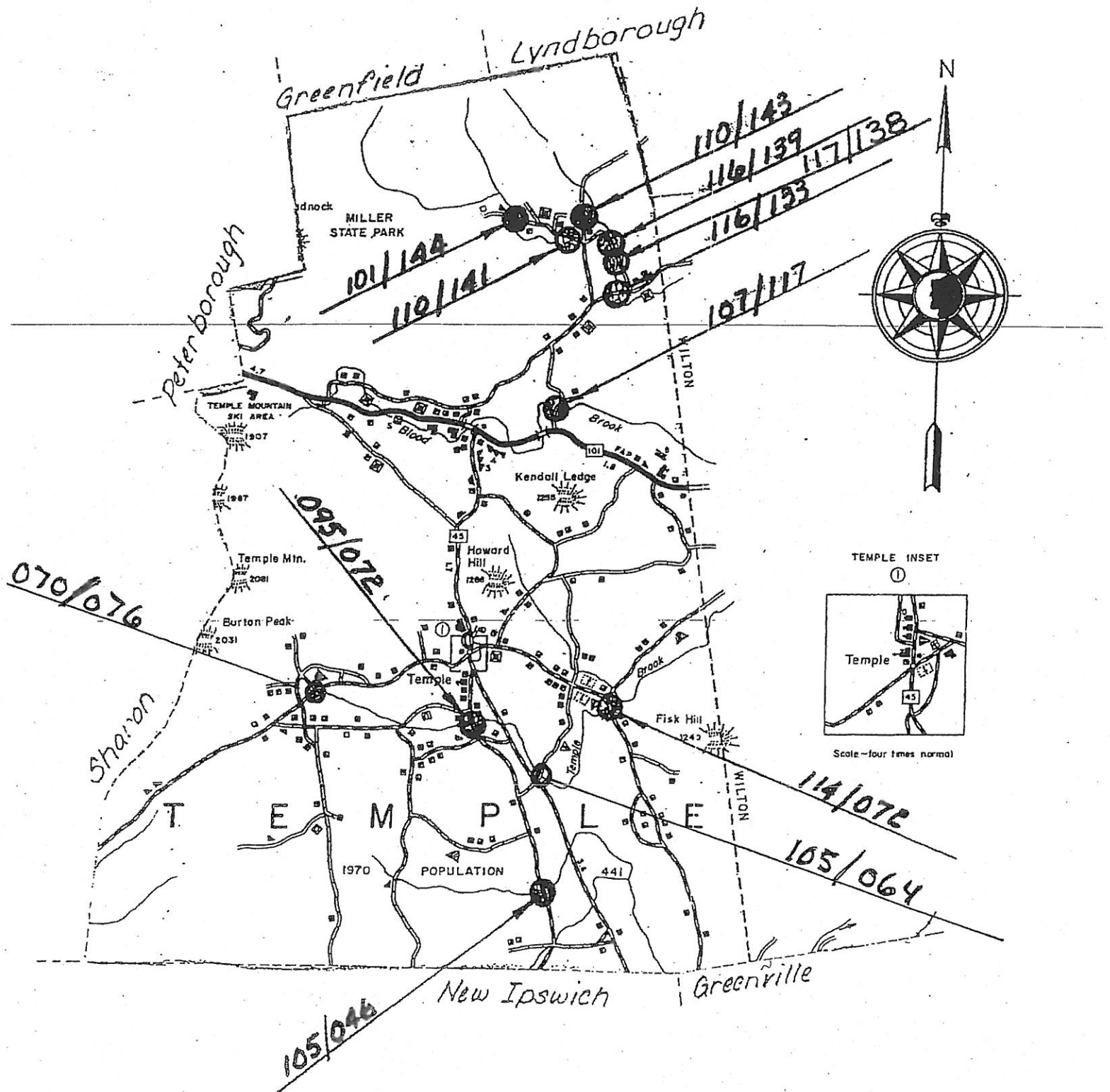
(Rev. Dec 2010)
(Rev. Feb 2016)
(Rev. Nov 2016)

BRIDGE SUMMARY SHEET

ROAD NAME	TRAFFIC VOLUME CARS/DAY	YEAR BUILT	EXPECTED LIFE SPAN	WEIGHT RATING	PREDICTED REPLACEMENT COST
Converse Road #1	50	2014	75-100 years	none	N/A
Converse Road #2	20-30	deck 1980 abutments 2013 & 2014	30 years	E2	\$800,000
East Road	200	1981	10 years	E2	\$600,000
Hadley Highway #1	1,000	1984 cement bottom installed 2016	30 years	E2	\$800,000
Hadley Highway #2	500	1997	75 years	none	N/A
Memorial Highway	100	2007	75 years	E2	N/A
North Road	100	1940	30 years	15 ton	\$800,000
Powers Road	30-50	1930's	5-10 years	3 ton	\$600,000
Putnam Road	20-30	1930's	closed	---	\$800,000
Webster Road	300	1999	75 years	none	N/A
West Road	1,300	2006	75 years	none	N/A

(Rev. Nov 2016)





Scale : 1" = 1 mile

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 110/141

ROAD LOCATION: Converse Road – 400' west of North Road

BROOK CROSSING: Whiting Brook

LOAD RATING: None

TYPE OF BRIDGE: Precast cement arch, and wing walls. Footings were cast in place.

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Width at bottom of arch 24', height in middle 8', road width 24'.

TYPE OF RAILINGS: Galvanized beam rail

ROAD SURFACE: Gravel

PREVIOUS HISTORY OF BRIDGE: No written history. I'm estimating that this bridge was done in the 1950's. I have placed many large rocks (1/2 yd. to 1 yd.) on the outfall side over the years to stop the brook scouring. We also placed many yards of stone tailings in under the bridge to try to protect the exposed foundations. Existing opening is large enough, has never flooded over or even come near to it.

PRESENT CONDITION: Excellent, rebuilt in 2014.

EXPECTED LIFE SPAN: 100 years

TRAFFIC VOLUME: 50 cars/day

SUGGESTIONS FOR FUTURE: Maintain area surrounding bridge to protect it.

ACTUAL COST OF CONSTRUCTION: \$580,000.

COMMENTS: Part of the reason for such a high cost of replacement is that this is a dead end road, so a temporary bridge was built as a detour while the new bridge was built.

(Rev. Feb 2016)

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 101/144

ROAD LOCATION: Converse Road - .5 miles west of North Road

BROOK CROSSING: Whiting Brook

LOAD RATING: E2, not rated for certified loads

TYPE OF BRIDGE: Cement abutments poured against old dry stone abutments; cement deck.

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 15', road width is 16', bridge height is 8'

TYPE OF RAILINGS: Ribbon rail (galvanized steel)

ROAD SURFACE: Gravel

HISTORY OF EXISTING BRIDGE: This bridge was originally a wood plank bridge deck on dry stone abutments. In 1980 the deck was ripped off and a new cement deck was poured on the existing abutments. New cement abutments were poured in 2013 & 2014.

CONDITION: Bridge deck is very good. Abutments are in very good condition.

EXPECTED LIFE SPAN: 30-50 years

TRAFFIC VOLUME: 20-30 cars/day

SUGGESTIONS FOR FUTURE: Use existing bridge until end of lifespan.

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: To replace \$800,000

COMMENTS: When this bridge is rebuilt, it should be built in a new location, beside the existing bridge on the south side. This would eliminate the need to close the road and would also straighten out the bad curves in the road. The big question with the existing bridge is how long the dry stone abutments hold together. I already had one stone fall out in 1990, so we poured the hole full of cement from the back side. If they start to all fall apart we will be in an emergency situation.

Now that we have poured the new cement abutments, I feel this bridge will last for many years. Maybe then it will have to be replaced. Otherwise it should be good for another 50 years.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 114/072

ROAD LOCATION: East Road, 200' from intersection of General Miller Highway.

BROOK CROSSING: Miller Brook.

LOAD RATING: E2, not rated for certified loads.

TYPE OF BRIDGE: Asphalt coated/steel culvert.

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Culvert size is 12' wide by 8' high in the middle of the arch and 30' length.

TYPE OF RAILINGS: None, but has granite curbing.

ROAD SURFACE: Asphalt.

HISTORY OF EXISTING BRIDGE: This culvert was installed in 1981. Thomas Mazza was Road Agent. The contractor was Hanson Construction Company. It replaced a bridge that was cement and railroad rail deck on dry stone abutments. Granite block headers came from a quarry in Mason, NH. No railings were ever installed. There is nothing to attach them to.

CONDITION: Unknown/probably fair.

EXPECTED LIFE SPAN: 10-20 years, should last until 2020 to 2030.

TRAFFIC VOLUME: 200 cars/day

SUGGESTIONS FOR FUTURE: Probably the best way to rebuild this bridge would be to leave the existing culvert there for the water to pass through while you build the new bridge around it. Put cast in place abutments on both sides and either a cast in place deck put over it or precast cement planks.

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: Predicted cost approximately \$600,000 if done with N.H.D.O.T., or \$250,000 if done privately.

COMMENTS: Bottom half of culvert is always under water so it is hard to tell what the condition is. Brook bed on downstream side should be cleaned out as there is a large amount of sediment build-up that is hindering the flow of water. Brook overtops the road during flooding situations, but area is so flat it does little damage.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 095/072

ROAD LOCATION: On Hadley Highway between intersections with Hill Road and Mansfield Road.

BROOK CROSSING: Goes over Barnes Brook, sometimes called Temple Brook or Kid's Brook.

LOAD RATING: Has a load rating of E2, which means it is not rated for certified loads.

TYPE OF BRIDGE: This bridge is actually a galvanized steel arched culvert with stone headers.

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Culvert size is 12' wide by 8' high in the middle of arch, and 50' in length.

TYPE OF RAILINGS: Bridge railings are made from telephone poles. These are considered sub-standard guardrails.

ROAD SURFACE: Asphalt.

HISTORY OF EXISTING BRIDGE: This culvert was installed in September of 1984. It replaced a bridge that was cement and railroad rail deck on dry stone abutments. There is a stone culvert or sluiceway parallel to it that originally fed water to an old mill. Designed by Tim Fiske, installed by Hanson Construction Company. Cement bottom and sides installed by D.S.L. Concrete Co. in 2016.

CONDITION: The condition of this culvert now is very good.

EXPECTED LIFE SPAN: 30 plus years, with some minor repairs to the stone headers.

TRAFFIC VOLUME: 1,000 cars/day

SUGGESTIONS FOR FUTURE:

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: Repair cost: \$20,000. Rebuild cost: \$600,000.

(Rev. Nov 2016)

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 105/046

ROAD LOCATION: Hadley Highway, located .4 miles south of intersection with Cutter Road

BROOK CROSSING: Gambol Brook

LOAD RATING: No posting required

TYPE OF BRIDGE: Cast in place concrete

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 16', road width is 24', bridge height is about 6'

TYPE OF RAILINGS: Steel ribbon rails

ROAD SURFACE: Asphalt

HISTORY OF EXISTING BRIDGE: This bridge was rebuilt in Sep-Oct of 1997. Engineering firm was McFarland-Johnson. Construction company was Whitcomb Construction. Old bridge was cast in place cement abutments with a cement and railroad rail deck. This was all ripped out and replaced with new cast in place cement. The span was lengthened from 14' to 16', we kept the height the same so that we wouldn't have to change the road, and we widened the road from 18' to 24'. Hadley Highway was closed for about 8 weeks during construction.

CONDITION: Excellent

EXPECTED LIFE SPAN: 50-75 years

TRAFFIC VOLUME: 500 cars/day

SUGGESTIONS FOR FUTURE: Clean and treat concrete surfaces periodically

ACTUAL COST OF CONSTRUCTION: Engineering costs \$52,000, construction costs \$140,000

COMMENTS: The town got lucky this time and received a very low bid for construction. F. W. Whitcomb Construction Company did a very good job for the price.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 105/064

ROAD LOCATION: On Memorial Highway near the intersection of Route 45

BROOK CROSSING: Goes over Kid's Brook

LOAD RATING: Bridge is posted 6 ton, but has never been technically rated

TYPE OF BRIDGE: Stone arch with cement culvert overflow

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Stone arch is 9'6" wide at the bottom and about 5' high at the peak of arch, cement culvert is 48" in diameter, 24' long deck is 16' wide, but loses 4' due to bridge rails

TYPE OF RAILINGS: Wood/steel, built by Ironwood Structures

ROAD SURFACE: Gravel to cement to asphalt

HISTORY OF EXISTING BRIDGE: This bridge was rebuilt in Sep & Oct of 2007. The old bridge got wiped out by flood on April 16, 2007. It was built the same size and shape as the old one on the existing footing stones, using all of the existing arch stones. Masons Steve Cullinan, Jon Pearson, and helper Will Cullinan worked with the highway crew on this project. A 12" cement slab was poured in the bottom to prevent scouring of the stream bed and to lock the footings stones together. A 48" cement culvert was installed parallel to the bridge for added capacity. A 12" thick slab of cement was poured over the culvert and arch with 2 layers of reinforcement rod in it, running in both directions, 12" apart. Anchor bolts for the railings were set into the cement deck.

CONDITION: Excellent

EXPECTED LIFE SPAN: Minimum of 50-75 years

TRAFFIC VOLUME: 100 cars/day

SUGGESTIONS FOR FUTURE: Regular maintenance, should be paved over with asphalt to protect cement slab

ACTUAL COST OF CONSTRUCTION: Reconstruction cost was \$73,985.57 in 2007, including all town labor and equipment.

COMMENTS: Bridge is very narrow.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 110/143

ROAD LOCATION: North Road

BROOK CROSSING: Whiting Brook

LOAD RATING: 15 ton

TYPE OF BRIDGE: Cast in place concrete

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 20', bridge height is 7', road width is 16'

TYPE OF RAILINGS: Wooden plank (substandard)

ROAD SURFACE: Gravel

HISTORY OF EXISTING BRIDGE: N.H.D.O.T. has it listed as being built in 1940, and they base the load rating on the fact that they don't know how much steel is in the deck. This bridge is in the same shape now as it was when I started in 1984.

CONDITION: Good

EXPECTED LIFE SPAN: 30-50 years

TRAFFIC VOLUME: 75-100 cars/day

SUGGESTIONS FOR FUTURE: Bridge has a crack in the southwest corner that should be repaired.

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: To replace existing bridge - \$800,000

COMMENTS: N.H.D.O.T. engineers mention fine cracks in the deck many times in their report. Nothing has developed from these in the last 25 years, so I'm really not concerned with them at this time. The bridge is narrow, but has very good visibility approaching from both sides. I feel that with some repair work and new railings this bridge could last for many years.

(Rev. Feb 2016)

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 107/117

ROAD LOCATION: Powers Road - .55 miles from Webster Road and .2 miles from Route 101

BROOK CROSSING: Blood Brook

LOAD RATING: 3 ton – passenger cars only

TYPE OF BRIDGE: Cement and RR rail deck, dry stone abutments

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 18', bridge height is 8', road width is 12'

TYPE OF RAILINGS: Wood plank and telephone pole (substandard)

ROAD SURFACE: Gravel

HISTORY OF EXISTING BRIDGE: No written history. Probably the abutments are original (1800's). The deck was probably done in 1930's or 1940's.

CONDITION: Fair

EXPECTED LIFE SPAN: 10-15 years

TRAFFIC VOLUME: 30-50 cars/day

SUGGESTIONS FOR FUTURE: Cast in place cement bridge abutments and deck. Road could be closed and traffic detoured.

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: \$600,000

COMMENTS: Not a bridge of great importance. Road is really just a shortcut and only affects one house. When we have severe flooding this bridge goes underwater because it is lower than the spillway for the flood control dam that is just beyond it. The road and bridge could be raised higher, but I'm not sure that it would be worth the expense.

(Rev. Feb 2016)

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 116/139 & 117/138 overflow

ROAD LOCATION: Putnam Road, located .4 miles from Webster Road

BROOK CROSSING: Whiting Brook

LOAD RATING: 6 ton

TYPE OF BRIDGE: RR rails and concrete deck, dry stone abutments

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 21', bridge height is 10', road width is 14'

TYPE OF RAILINGS: Wooden plank (substandard)

ROAD SURFACE: Gravel

HISTORY OF EXISTING BRIDGE: There are two structures now, the main bridge and an overflow. The overflow has only had water in it a couple times that I know of. The decks of these two existing bridges were probably done in the 1930's or 1940's. The abutments are original, but had some concrete added to them also at that time.

CONDITION: Both decks and abutments are poor.

EXPECTED LIFE SPAN: Bridge is closed and gated.

TRAFFIC VOLUME: 0

SUGGESTIONS FOR FUTURE: It has been suggested by many people that we just close the road. If we do rebuild, I feel the overflow bridge could be replaced with a 48" concrete culvert. The main bridge should be completely rebuilt including the abutments.

ACTUAL COST OR PREDICTED COST OF CONSTRUCTION: \$800,000

COMMENTS: All the preliminary engineering work has been done at this time. We need to decide if we are going to proceed with construction or not. The town has decided to not rebuild at this time and just keep the bridge closed.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 116/133

ROAD LOCATION: Webster Highway – near intersection of Putnam Road

BROOK CROSSING: Whiting Brook

LOAD RATING: No posting required

TYPE OF BRIDGE: Pre-cast cement arch

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: Span is 28', road width is 24', bridge arch height is 12'

TYPE OF RAILINGS: Steel ribbon rail

ROAD SURFACE: Asphalt

HISTORY OF EXISTING BRIDGE: This bridge was rebuilt in Oct-Nov of 1999 by Park Construction Co. The engineering firm was Hoyle-Tanner Co. The old bridge was dry stone abutments with a cement and railroad rail deck. The new bridge has cast in place footings with pre-cast arch sections, wing walls and headers. The underground drainage that goes up the hill on the southwest side and the retaining wall on the southeast side were put in by the Highway Dept. The granite veneer was done by Steve Cullinan.

CONDITION: Excellent

EXPECTED LIFE SPAN: 50-75 years

TRAFFIC VOLUME: 300 cars/day

SUGGESTIONS FOR FUTURE: Keep track of any problems that may appear and maintain properly.

ACTUAL COST OF CONSTRUCTION: Total cost for bridge including the granite veneer \$310,000. Engineers \$60,000. Bridge construction company \$240,000. Masons for granite veneer \$10,000.

COMMENTS: Original bids came in too high, so we took out a few projects to get the price down and did them ourselves.

TOWN OF TEMPLE, NEW HAMPSHIRE
HIGHWAY DEPARTMENT
BRIDGE INVENTORY

N.H.D.O.T. BRIDGE #: 070/076

ROAD LOCATION: West Road at intersection of Blood Road.

BROOK CROSSING: Goes over Barnes Brook

LOAD RATING: No load rating – no posting required

TYPE OF BRIDGE: Bottomless pre-cast cement box culvert

SIZE OF BRIDGE OPENINGS, SPAN & WIDTH: 13'9" wide by 5' high

TYPE OF RAILINGS: Steel ribbon rail.

ROAD SURFACE: Asphalt.

HISTORY OF EXISTING BRIDGE: This bridge was not on the state's inventory prior to 2003. At this time we had Hoyle, Tanner & Associates, an engineering firm, do a hydraulic study. It was determined that the bridge opening, which was 9' 6" wide by 4' 9" high, was inadequate and should be changed to 13' 9" wide by 5' high. This made it eligible for state aid.

In 2004 & 2005 we had Hoyle, Tanner & Associates do the engineering design for a replacement bridge. It was determined we should put in a "bottomless" pre-cast cement culvert and widen the road surface from 18' to 24'. We also decided to do the construction work ourselves rather than put it out for bids.

All the sections were pre-cast by Michie Corp. in Henniker, N.H. in the spring of 2006. We hired an excavator and ten-wheel dump truck from Haskell Construction, and the Ford backhoe from T. Fiske Landscaping, all of which were paid for by the hour.

On June 15th of 2006 we closed West Road for 2 weeks, dug out the old bridge, which consisted of a cement and railroad rail deck and dry stone abutments, prepared the site, diverted the water through a 36" steel culvert, set the bridge sections in place with a crane, backfilled, compacted, took out diversion culvert and re-opened the road on June 30th. Over the course of July and August we finished all the slope and drainage work, had the bridge and road paved, and put in the guardrails.

CONDITION: Excellent

EXPECTED LIFE SPAN: 50-75 years, with minor maintenance to be done through the years.

TRAFFIC VOLUME: 1,300 cars/day

SUGGESTIONS FOR FUTURE: Keep track of any problems that appear and maintain properly.

ACTUAL COST OF CONSTRUCTION: \$251,000

COMMENTS: About \$36,000 of the \$251,000 to rebuild was for town labor and equipment. This was used as part of the town's 20% share of total cost.

(Rev. Dec 2010)