

## 13 - Blue Hills History - Quincy Granite Quarries

When the Pilgrims landed in 1620, they built with wood, as it was readily available, and easily worked. For the next 100+ years that was pretty much the only option.

In 1749-1754 King's chapel was built out of granite, one of the first major buildings so built. But at that time granite was made into smaller, useful, pieces by heating up large boulders and dropping heavy weights on them. Needless to say, this was not an exact science, and the size and shape of the resultant pieces varied.

But by 1800 things were changing. Cities were growing, and the desire for more permanent, fireproof, buildings was growing. There was a need and the granite processing industry fulfilled that need.

Charles Bulfinch was an architect, and in 1803-1805 he was designing the new prison in Charlestown, and he wanted it built from granite. Lieutenant Governor Edward H. Robbins, one of the prison's commissioners, set out looking for a source of inexpensive granite. When he traveled through Salem, he saw a building built of granite, and he could tell it had been processed differently. He asked around and was directed to a Mr. Tarbox of Danvers. It turned out that Mr. Tarbox had developed a new way of processing granite, splitting it with 'feathers and wedge'. Mr. Tarbox, no one seems to have bothered recording his first name, was brought to Quincy to train others in his method.

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### Splitting Granite

While granite can be 'cut' today with diamond tipped blades or wire saws, and drilled with carbide tipped bits, these weren't options in the 1800s. Mr. Tarbox's method used feathers and wedges to split the granite. It's really quite simple. All you need is a hammer, a 'star drill' to drill some holes, and some 'feathers and wedges'. Let's look at the tools and technique.

(Note: Others had *split* granite before this, by filling holes with water and letting it freeze, or driving in wooden stakes, then soaking them in water. But the 'feather and wedge' approach was faster and easier.)

#### **The Star Drill:**



The star drill is a simple steel drill bit with the cutting edge formed into an 'X'. Drilling a hole in granite requires only this tool, a hammer (No, not a big 10 or 20 lb., long handled, sledge hammer, just a 4 or 5 lb. hammer with a short handle will do fine.) ... and a lot of patience. Well, after the hole reaches a certain depth you'll also benefit from a spoon. The spoon is just that, a spoon with a very small bowl, and a very long handle. You'll use this to scoop the stone dust out of the hole to make drilling easier. But you don't need just one hole... you need a row of holes spaced several inches apart, from one end of your piece of granite to the other.

### Feather and Wedge:<sup>i</sup>



You can still buy these if you want to try it. This picture is actually from the Home Depot website. You might not find them in *your* local store... but then again near Quincy you just might. 40 years ago, I bought a set at a hardware store in Cambridge. Once you have your series of holes drilled all you have to do is drop in the two 'feathers' and then insert the wedge between them. (Oriented as shown below, so the wedge pushes your two pieces apart.) Do this for all your holes, then go get that hammer again. Start at one end and tap. Move to the next until you get to the other end. Go back and do it again. Repeat until you start to hear a cracking noise, and the hammer makes a different sound. That is your warning to make sure you don't have your toes underneath, because soon that one block of granite is going to become two separate blocks.



OK, reading about this is 'interesting' (I hope!) but seeing it all happen is much better. Go to <https://www.youtube.com/watch?v=ZMsCMBjXSA> you don't have to watch the whole video. **The fun part is 2 minutes, from 9:00 to 11:00.** (This is a modern video, so they drill the holes with an electric drill, etc. But *splitting* the granite... No one has found a better way than the feathers and wedge.) Also note that granite, like wood, has a grain direction. You can't easily split it just any direction you want.



Splitting granite this way leaves a half hole on each piece, a sign that the rock has been split, not sawn. The front steps of my house? I bought recycled, hand split, granite. 😊

And now back to our story...

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Using this new method of splitting granite into useable blocks reduced the cost of granite by about half.

In 1823, the Bunker Hill Monument Association was founded to choose a design for a commemorative structure. Solomon Willard submitted a design for a 200-foot-tall granite obelisk, and it was chosen as the winner.



Photo via Wikimedia Commons

November 16, 1825, an advertisement in Boston's Columbian Centinel, called for 9,000 tons of "The best Quincy granite" to be delivered to Charlestown for the construction of the Bunker Hill Monument.<sup>iii</sup> This set in motion the growth of the granite industry in Quincy, and led to Quincy becoming known as "The Granite City."

Today the granite obelisk stands at the end of the Freedom Trail, marking the site of the first major battle in in the Revolutionary War.

Bunker Hill Monument

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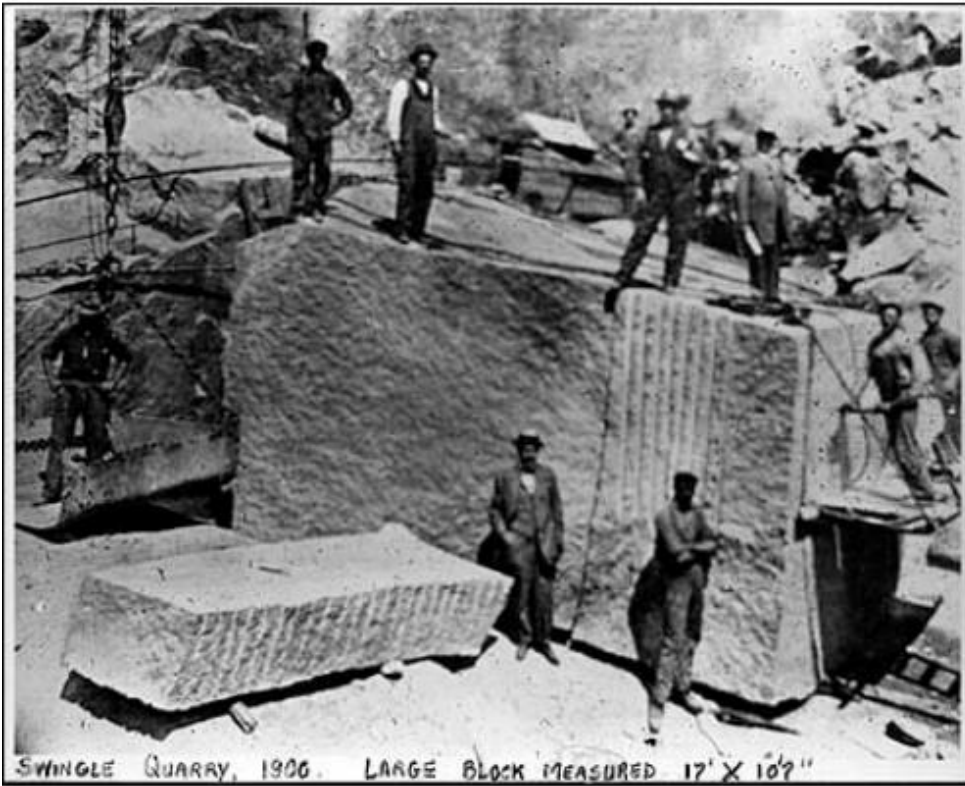
Over the next 140 years a total of over 50 quarries would open in Quincy. It would also lead to Quincy becoming a city of diverse nationalities, as stone masons from Finland, Italy, Scandinavia, Sudan, and more moved to West Quincy to work in the quarries and related industries.<sup>iv</sup>



Hardwick Quarry

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Note the wire braced derricks. When hiking there we still see some of the fastenings where these wires were attached to the cliffs.

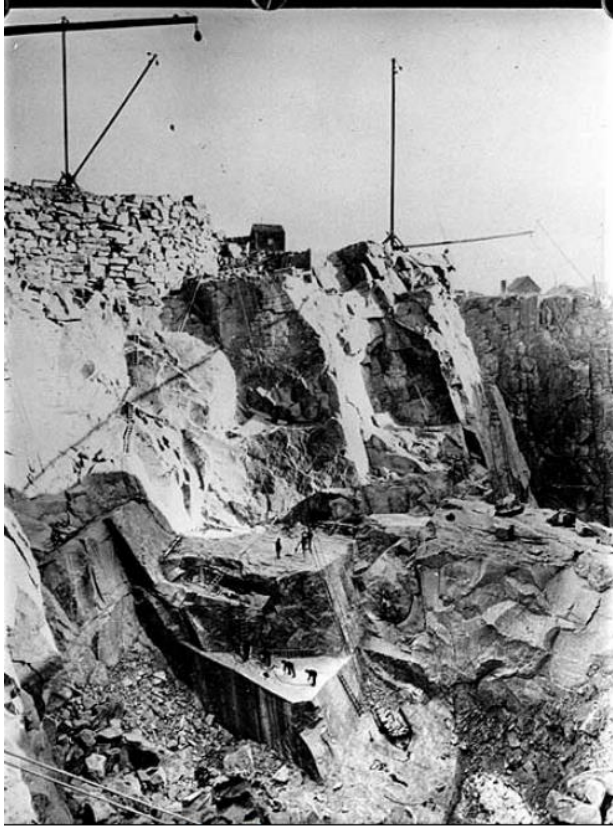


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Clark's Quarry looking north

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**Granite Railway Company Quarry**

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**Elcock's Quarry looking south**

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Granite became a mainstay building material for government buildings, as well as monuments. In addition, the whole gravestone industry grew up.

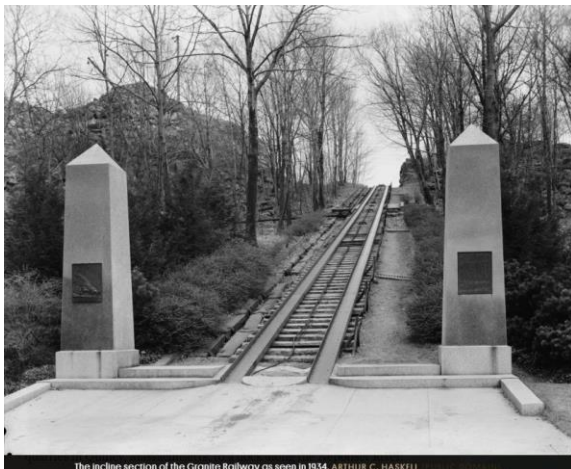
In the late 1860s machinery was developed for the polishing of the granite slabs. Polishing helped protect the surface, and brings out the beauty of the granite structure. This made reading carvings in the granite much easier.<sup>x</sup>

(Aside: “Headstones”: On my property in NH there is a cemetery. It is small, with a half dozen headstones scattered around in the woods. But the records of the cemetery also show other graves, marked only by a ‘large stone’. The funeral business hasn’t always been what it is today. In the 1700’s, if you were poor and you died, your relatives dug a hole and buried you. And put a big boulder there. Thus, while my cemetery contains several headstones with names and dates, it also contains earlier graves marked only by a boulder. Slate is the other material that has traditionally been used for gravestones, but we won’t get sidetracked too far today!)

### ***The Railroad***

One indirect result of the granite industry was the development of the railroad in America. You know that 9,000 tons of granite that they wanted for the Bunker Hill Monument... they wanted it, obviously, in Charlestown. But how to get it there from Quincy in the 1820s? Roads back then were... primitive. And heavy granite blocks would sink wagon wheels in the mud. The Neponset River is ‘close’, and if you could just get the granite there it could be loaded on ships and delivered to Charlestown<sup>xi</sup>. But how to get it to the Neponset? Enter Mr. Gridley Bryant. He devised the idea of a railway to transport the heavy stone. The railroad began construction on April 1, 1826, and on Oct. 7 the first car passed over its entire length.<sup>xii</sup> Over the years the railroads have made some improvements. That first railroad was built using steel rails on blocks of granite as the ties. But it was found that the granite, being so rigid, had no give, and the resultant ride was very bumpy, which shook the cars excessively. Wooden ties were found to be much more forgiving, and replaced the granite ties.

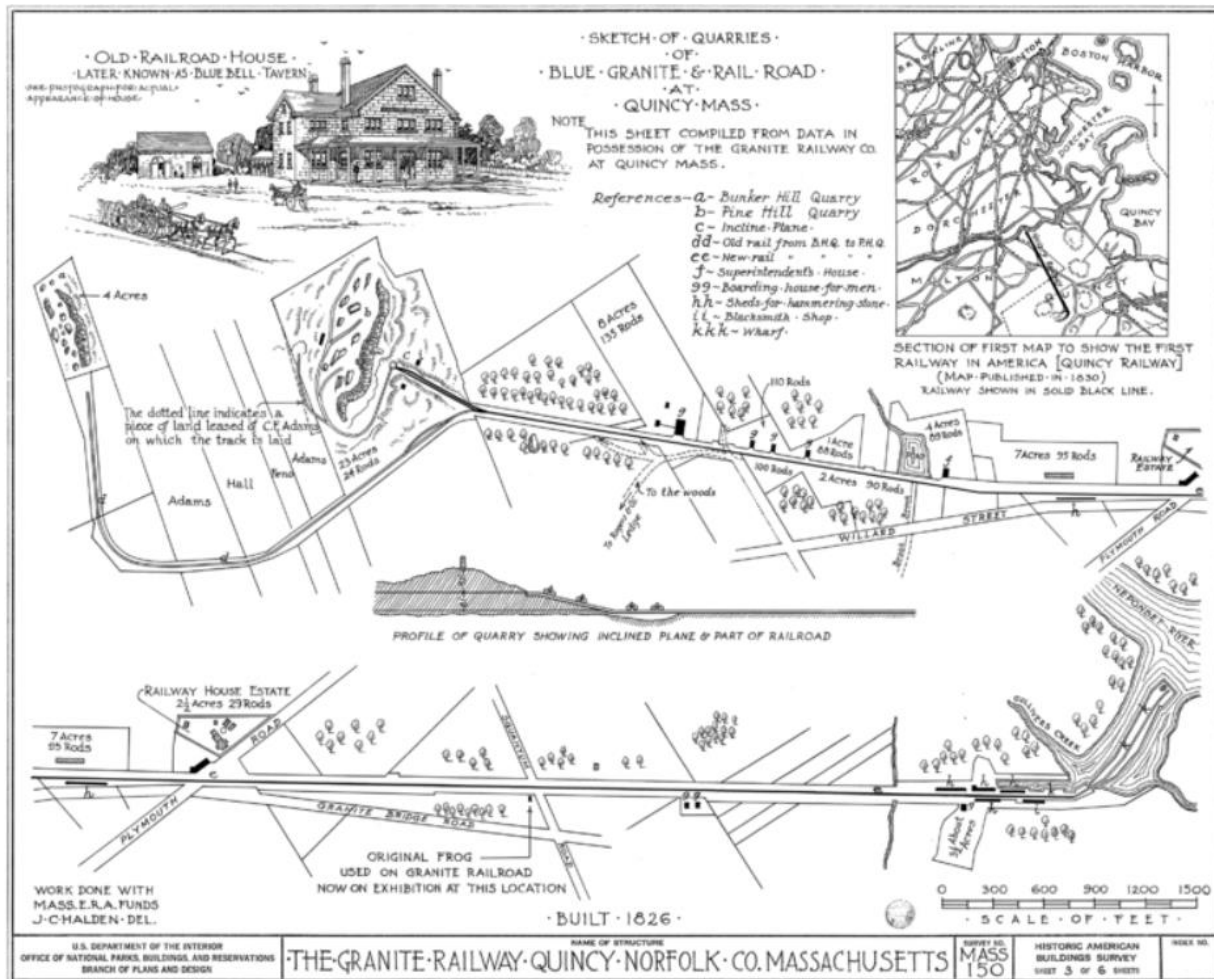
There were actually two components to the quarry railroad. There was the Incline, which we see when we hike near the Quarries on Ricciuti Drive. And there was the railroad which carried the granite across to the Neponset River. A small section of this can be seen when hiking the trail at the end of Bunker Hill Lane.



The incline section of the Granite Railway as seen in 1954. ARTHUR C. HASKELL



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### Lyons Turning Mill

So, what if you didn't want all rectangles of granite... say your idea was for a couple round columns 3 ft in diameter, by 22 feet tall to go beside the front door of your new building. Or maybe you need a few 6-foot diameter granite balls. Where did you turn? Well, until they closed in 1907 the answer might well have been Lyons Turning Mill. They had the equipment and expertise to mount these huge granite blocks in a lathe and turn them.<sup>xv</sup> Today the Lyons Mill site is listed in the National Register of Historic Places, and is the proposed home of the recently formed Quincy Quarry & Granite Workers Museum.<sup>xvi</sup> See: <http://www.quincyquarrymuseum.org/virtual-museum.html> if you are interested in the museum.



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Sample turned column at remains of Lyons Turning Mills on Ricciuti Drive.

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After WW II the development of new building materials, and the construction of steel skyscrapers, led to a decline in the granite industry. Slowly the quarries closed, with the last one closing in 1963<sup>xviii</sup>. Quarries always collect rainwater; and if there are cracks in the walls below the water table, ground water also seeps in. During their operating years this water was pumped out, but once abandoned the water collected and filled the quarries up to the water table. This made the quarries a favorite, if illegal, swimming and diving spot for local teenagers.



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However, there were sometimes ledges just below the water, and some teens couldn't resist jumping from excessive heights, so this led inevitably to drownings. At least a dozen deaths are known. The

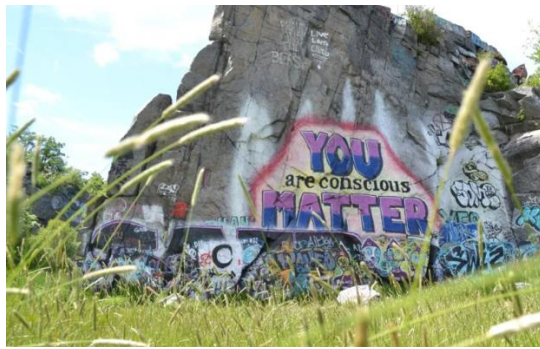


water filled quarries were also, reputedly, the dumping ground for a few who were wearing cement overshoes at the time. And cars. If you had a car you needed to ditch, and wanted to make sure no one found your fingerprints on it? Into the quarry it went, or so I've heard<sup>xx</sup>. All this led the authorities to wish the quarries would 'go away'. But how do you make a bunch of holes 'go away'... you fill them. And the Big Dig just happened to come along and need to dispose of a lot of dirt. It was, as they would say, a marriage made in heaven. (Unless you lived along the path of the 900,000 truckloads of dirt.)



Today some of the filled-in quarries are beneath portions of the Granite Links Golf Course, and others provide rock climbing opportunities on the portions of the walls that still project above ground.

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They also have become a 'tagging' location, with graffiti covering most ever surface. Is this vandalism, or 'Art'? The debate goes on. The "What the Heck Kind of a Hiking Series is *This*?" crew decided we'd call it 'Colorful', and let it go at that. For a related story, see: <https://www.bostonglobe.com/2020/03/25/arts/quincy-deadly-quarries-became-beautiful-graffiti-haven/>

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When we hike there these days, we don't see much of the actual quarries themselves. Even the graffiti covered ones we see when we hike near the parking lot on Ricciuti Drive are just the tops, most of the quarry itself was filled in with the dirt from the Big Dig.

But, even today, if you look up businesses in Quincy you may well find one called "Granite City \_\_\_\_", because, even though the granite industry died out in the 1960s, Quincy will *always* be "The Granite City."

Bob Vogel

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<sup>i</sup> [https://www.homedepot.com/p/Bon-Tool-Stone-Splitting-Wedge-and-Shims-11-848/302568541?mtc=Shopping-B-F\\_D25T-G-D25T-25\\_1\\_HAND\\_TOOLS-Multi-NA-Feed-PLA-NA-NA-HandTools\\_PLA&cm\\_mmc=Shopping-B-F\\_D25T-G-D25T-25\\_1\\_HAND\\_TOOLS-Multi-NA-Feed-PLA-NA-NA-HandTools\\_PLA-71700000034127224-58700003933021546-92700049573927173&gclid=Cj0KCQjwiYL3BRDVARIsAF9E4GeRYyPkjUS83qTxNTgVUIDVbJHKSD8LO2ICly1C9Vr3PdI4yj9IcYaAltREALw\\_wcB&gclidsrc=aw.ds](https://www.homedepot.com/p/Bon-Tool-Stone-Splitting-Wedge-and-Shims-11-848/302568541?mtc=Shopping-B-F_D25T-G-D25T-25_1_HAND_TOOLS-Multi-NA-Feed-PLA-NA-NA-HandTools_PLA&cm_mmc=Shopping-B-F_D25T-G-D25T-25_1_HAND_TOOLS-Multi-NA-Feed-PLA-NA-NA-HandTools_PLA-71700000034127224-58700003933021546-92700049573927173&gclid=Cj0KCQjwiYL3BRDVARIsAF9E4GeRYyPkjUS83qTxNTgVUIDVbJHKSD8LO2ICly1C9Vr3PdI4yj9IcYaAltREALw_wcB&gclidsrc=aw.ds)

<sup>ii</sup> <https://www.harvardmagazine.com/1997/11/stone2.html>

<sup>iii</sup> [https://commons.wikimedia.org/wiki/File:Bunker\\_hill\\_monument.jpg](https://commons.wikimedia.org/wiki/File:Bunker_hill_monument.jpg)

<sup>iv</sup> <https://www.bostonmagazine.com/news/2017/11/16/quincy-granite/>

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<sup>v</sup> <http://thomascranelibrary.org/granitephotos/index.html>

<sup>vi</sup> <http://thomascranelibrary.org/granitephotos/index.html>

<sup>vii</sup> <http://thomascranelibrary.org/granitephotos/index.html>

<sup>viii</sup> <http://thomascranelibrary.org/granitephotos/index.html>

<sup>ix</sup> <http://thomascranelibrary.org/granitephotos/index.html>

<sup>x</sup> <http://thomascranelibrary.org/legacy/gems/gem.htm>

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<sup>xi</sup> [https://www.atlasobscura.com/places/granite-railway-](https://www.atlasobscura.com/places/granite-railway-incline#:~:text=The%20Granite%20Railway%20was%20built,the%20U.S.%20first%20commercial%20railroad.)

[incline#:~:text=The%20Granite%20Railway%20was%20built,the%20U.S.%20first%20commercial%20railroad.](https://www.atlasobscura.com/places/granite-railway-incline#:~:text=The%20Granite%20Railway%20was%20built,the%20U.S.%20first%20commercial%20railroad.)

<sup>xii</sup> <http://thomascranelibrary.org/legacy/gems/gem.htm>

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<sup>xiii</sup> <https://picryl.com/media/granite-railway-pine-hill-quarry-to-neponset-river-quincy-norfolk-county-ma-5>

<sup>xiv</sup> [https://commons.wikimedia.org/wiki/File:Granite\\_Railway\\_map.png](https://commons.wikimedia.org/wiki/File:Granite_Railway_map.png)

<sup>xvi</sup> [https://en.wikipedia.org/wiki/Lyon%27s\\_Turning\\_Mill](https://en.wikipedia.org/wiki/Lyon%27s_Turning_Mill)

<sup>xvii</sup> [https://en.wikipedia.org/wiki/Lyon%27s\\_Turning\\_Mill#/media/File:Lyons\\_Turning\\_Mill\\_Quincy\\_MA\\_02.jpg](https://en.wikipedia.org/wiki/Lyon%27s_Turning_Mill#/media/File:Lyons_Turning_Mill_Quincy_MA_02.jpg)

<sup>xviii</sup> [https://en.wikipedia.org/wiki/Quincy\\_Quarries\\_Reservation](https://en.wikipedia.org/wiki/Quincy_Quarries_Reservation)

<sup>xix</sup> <https://www.patriotledger.com/photogallery/WL/20190930/NEWS/930009990/PH/1>

<sup>xx</sup> <https://www.nytimes.com/1997/12/07/us/in-quarry-s-dark-water-grim-tales-of-danger-and-despair.html>

<sup>xxi</sup> <https://www.youtube.com/watch?v=e9larqCWIk>

<sup>xxii</sup> <http://www.therefresh.co/2017/08/11/the-quincy-quarries-where-history-art-and-nature-meet/>

<sup>xxiii</sup> <https://www.pinterest.com/pin/229472543498378968/visual-search/>