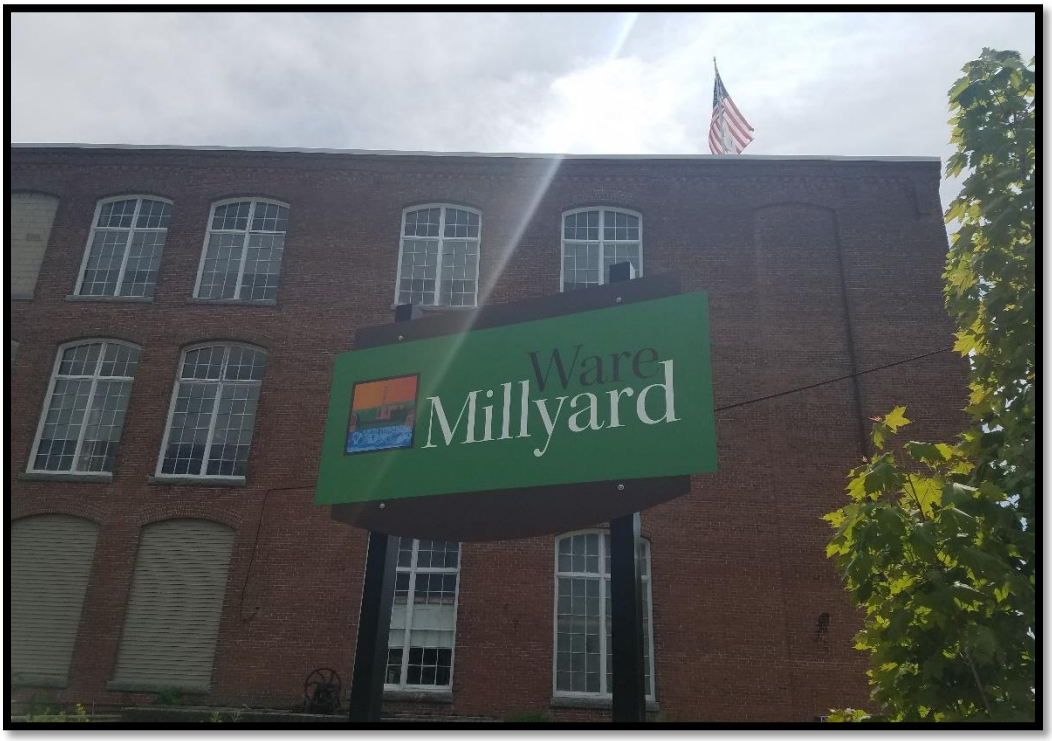
Ware Millyard Redevelopment:

Existing Site Utility Summary, East Main Street Millyard &

Existing Conditions Review of Building #9 – Turbine Room

Ware, MA



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Completed 2020-2021 by Tighe & Bond with assistance from the Town of Ware.

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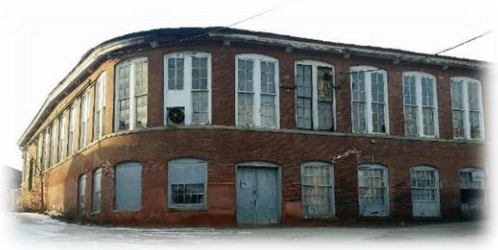
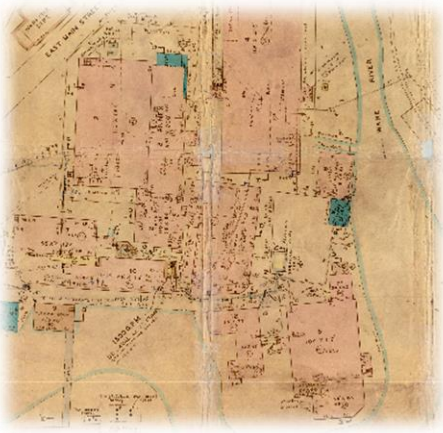




Acknowledgements:

Thank you to the team at Tighe & Bond for producing this report. Thank you to Gilbert St George-Sorel for his wisdom, knowledge, and experience in the Millyard, dating back over 50 years. This Phase I of the Millyard Redevelopment Project will help support the Town in cleanup, demolition, and future development of a historic place in Ware's downtown. Thank you to all the additional Town staff that participated in this report.

Existing Site Utility Summary, East Main Street Millyard - Ware, MA

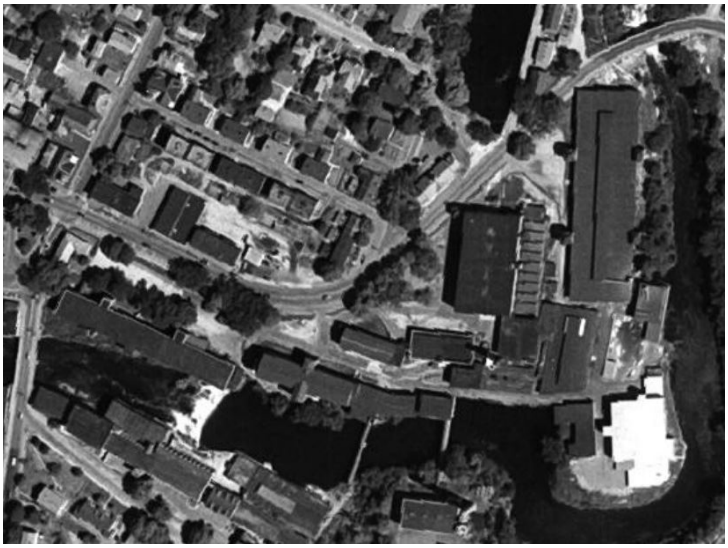
TO: Rebekah Cornell, Town of Ware Director of Planning & Community Development

FROM: Craig French, PE, Principal Structural Engineer

DATE: November 6, 2020

Background

The former Ware Industries Millyard is an approximately 10 acre lot, located adjacent to Main Street and East Main Street, in Ware, MA. The Ware River runs along the east and south sides of the site, and there is a small holding pond to the north, across East Main Street, that supplies the site with water power. The original main millyard site contained 12 buildings, with additional annexes and additions to several of the buildings. There are also several buildings on the east side of the Ware River, that are not currently part of this project. The original 12+ buildings, covered approximately 180,000 SF of area, with a gross floor area of around 415,000 SF. The millyard remained largely in full use until the mid-1980's when a fire destroyed one of the main buildings on site, and damaged several others.



Aerial View of millyard – c. 1952

Today, after years of deterioration and neglect, several buildings have already been demolished and removed from the site, and numerous others are in disrepair. From an initial review of the site, less than 50% of the original square footage of the mill would be useable today.

In addition to the building structures, the mill has an existing penstock system that at one time served most of the buildings on the site. Similar to the building structures on the site, several of the tunnels and penstocks have deteriorated and are potentially structurally deficient. However, at least two of the current tenants of the site continue to use water for power, therefore some of the tunnels remain active. Several tunnels carry utilities throughout the site, including water, sewer, electric and storm drainage.

Like many other municipalities, the Town of Ware is interested in redeveloping a once essential millyard site, back to a viable and successful part of the community, while also maintaining the historic aspects of the mill.

A significant factor to redeveloping the site, is the location and conditions of the existing tunnels and penstocks. As mentioned, there are believed to be numerous sections of the tunnels that are structurally deficient and potentially not suitable to support above-grade redevelopment. Potential investors and developers will need to understand if the site has limitations, based on the conditions of the tunnels. With assistance from the Massachusetts Executive Office of Energy and Environmental Affairs Planning and Assistance Grant Program, the Town was awarded funds to complete a study on the existing infrastructure of the millyard.

Description of Existing Conditions

Tighe & Bond has prepared this technical memorandum to provide the Town with information on the extent and conditions of existing utilities on the site. During our review, we reviewed documents already compiled by the Town, and researched additional historical documents of the site. These included assessors' maps, previously completed surveys, historical design drawings of the buildings on site, and research of existing Sanborn information.

As part of our investigation of the site, we also entered the existing underground tunnels to establish the extents of the tunnels and determine existing utilities within them. Two structural engineers and one licensed asbestos inspector entered the accessible portions of the tunnels. The structural engineers reviewed the current conditions of the tunnels and identified areas of apparent deterioration or potentially structurally deficient extents. The engineers gathered underground dimensional information on the tunnels to tie into the surface information to confirm locations and extents of the tunnels. The asbestos inspector visually reviewed the tunnels to identify suspected hazardous building materials, that would be affected by demolition or redevelopment activities.

Existing Documents Reviewed:

As part of our desktop review, we obtained an existing 1959 plan of the millyard from the Town. In addition to the plan, we were able to procure historical aerial photos and Sanborn Fire Insurance maps of the property. These documents are enclosed as part of **Appendix A**.

Existing Tunnels:

The underground tunnels have a wide range of construction materials and conditions. Portions of the tunnels are constructed of stone masonry, brick masonry, brick arches, cast-in-place concrete, cast iron and structural steel shapes. There are portions of all types of construction that are in at least fair condition, with isolated areas that could be classified as good. However, a significant portion of the tunnel structure is in poor condition.

The tunnel's westerly extent is approximately the midpoint of Building 1, it then runs east about 350 feet and turns 90 degrees to the North. This bend in the tunnel appears to generally align with the westerly side of Building 11. The tunnel then extends 190 feet North following the side

of Building 11, and then the remnants of the Building 2 annex. At the north end of the tunnel there is another 90 degree bend, turning the tunnel to the West. The limit of the accessible tunnel terminated approximately 85 feet west of the bend.

Tunnel exploration began from an entry point located at the northwest corner of an outside elevated concrete slab above the tunnel. The slab appeared to be a loading area for the building adjacent to it.

Heading west from the entry point the north and south walls of the tunnel were constructed of large field stones and granite blocks. Steel beams supporting brick segmented arches are typically embedded at the top of the stone walls. The ground throughout the tunnel was wet, and appeared to be predominately a silty sand, establishing the soil conditions were not part of this scope and not verified. Along the south wall there was low water flow, an inch or so in depth, running towards an approximately 10 foot diameter steel culvert exiting the tunnel south, towards the Ware River.

The culvert was approximately 95 feet from the entry point and was visually observed from the main tunnel and was not entered due to heavy section loss that was observed at the culvert inlet and active running water draining from the main tunnel into the culvert. Where the culvert connects to the main tunnel the overhead spandrel beam along the opening exhibited substantial section loss and structural failure. To support the load from the brick segmented arch roof assembly, that was once carried by the spandrel beam, heavy timber columns bearing on cylindrical concrete footings have been installed at the spandrel beam ends (**Photo 01**). Additionally, adjustable steel shoring posts have been positioned mid span of the roof beams to assist in supporting the masonry and steel roof assembly above.

The tunnel continues approximately another 20 feet to the west before terminating with a field stone and granite wall. A ductile iron pipe approximately 8 inches in diameter runs the entire length of the western end of the tunnel and continues through the tunnel's terminating wall.

Looking at the north wall of the tunnel, approximately 70 feet west from the entry point, another connecting stone tunnel heads north from the main tunnel. The stone tunnel was small in size, a few feet tall and similarly wide. At the time of observation, it was deemed unsafe to enter the tunnel, due its small confined size, and conditions (**Photo 02**). In addition, a 12-14" diameter pipe from within the main tunnel exits and heads north up through the stone tunnel. This pipe was believed to be asbestos pipe based on observations by Tighe & Bond's asbestos inspector. The stone header of this rubble tunnel and stones adjacent to it were observed to be heaving out of plane with the northern wall, towards the main tunnel.

East of the entry point the construction of the tunnel ceiling changed from brick segmented arches to tapered concrete piers supporting concrete beams and an elevated concrete slab for about 50 feet east of the entry point (**Photo 03**).

Concrete beams were spaced 8 feet on center spanning north to south. A floor to ceiling height of about 8 feet was measured. The floor conditions consist of a rocky / muddy base with active water flow draining towards the southern side of the tunnel. Evidence of plywood formwork on the underside of slab indicates this section of the tunnel was more recent construction. This area of concrete construction was visually observed to be in structurally sound condition.

An electrical conduit was observed running north to south through the tunnel ceiling near the entry point. The conduit was severely corroded and failed due to section loss and was sagging

into the tunnel. It appeared that the failed conduit was being supported by the cables originally held within it.

Continuing east the next 50 foot long section of the tunnel was constructed of concrete encased steel beams supporting an elevated concrete slab. A similar 8 foot floor to ceiling height was observed as well as the rocky / muddy ground base. The elevated concrete slab in this area had isolated areas of exposed reinforcement. Section loss of the encased steel members was also observed, causing the concrete encasement to spall off (**Photo 04**).

Water was observed flowing into this section of the tunnel from a small inaccessible tunnel about 3 feet high by 3 feet wide on the north side of the tunnel wall (**Photo 05**). Three other tunnel penetrations were observed in this area including a 24" diameter pipe entering the main tunnel, a vertical riveted steel open pipe draining into the tunnel as well as a small opening for an 8" pipe in the upper north eastern corner of the tunnel section. Water flowing from the northern tunnel was observed to be pooling at the southern end of the tunnel and draining west towards the previously observed culvert.

East of this point, the tunnel extends approximately 120 feet before it turns north. This portion of the tunnel was predominately brick segmented arch roof construction with field stone walls. There is a short section of concrete encased steel beams but roof construction changes back to segmented arches before the northern turn in the tunnel. This portion was likely a repair completed at some point.

Three ductile iron pipes run through this section of the tunnel. The northern most pipe enters the tunnel through the northern wall and elbows east where it meets up with the larger 24" diameter pipe through a reducing section near the primary water flow source described previously. Two other smaller diameter pipes, approximately 8", pass through this area from the northern most sections of the tunnel and lead down to the far western portion of the tunnel near the large steel culvert (**Photo 06**).

There were also smaller diameter conduits and piping observed in the tunnels; many were cut down, hanging from the ceiling or discontinued and therefore their extents were not documented. Through this section of tunnel all exposed structural steel elements exhibited significant corrosion, some of the spandrel beams supporting the segmented arches had visual section failure and excessive deflection.

As the tunnel turns North the main support beam across the tunnel is supported by two cast iron columns at mid span. At these bearings the beam had delaminating corrosion of the bottom flange (**Photos 07 & 08**). Brick segmented arch ceiling construction continues in the tunnel as it heads north, however the span of the roof is now east to west, perpendicular to the tunnel direction. In this area a built up beam section supported by cast iron columns supports the segmented arches at their midspan. The base of these columns was covered with a thick buildup of material that did not appear to be soil. The material was built up on top of the rocky / muddy tunnel floor base (**Photo 09**).

The segmented arches had many pipe penetrations through them and areas where bricks were missing around what appeared to be previous penetrations. The segmented arches at the ends of their spans bear on brick masonry knee walls that were built on top of the typical granite block walls. At the northwestern end of this tunnel section, about 90 feet from the turn, there is a 10 foot by 10 foot alcove. Within the alcove is a large riveted steel open drain, about 5 to 6 feet in

diameter orientated vertically and terminating a few feet above the ground surface. There was no flow out of this structure at the time of the inspection. The steel was heavily corroded and exhibiting delamination in large sheets (**Photo 10**).

The tunnel continues north past the alcove and large diameter drain, however the tunnel width narrows and the construction changes to dry stacked granite arches for approximately 60 feet. The 6" and 8" diameter ductile iron pipes observed throughout the tunnel continue through the granite arch portion on its east side while on the west side a new 12" DI pipe is observed that appeared to have been connected with one of the smaller lines near the large drain area but has since been disconnected (**Photo 11**).

In the tunnel a power wire of unknown origin was also observed, it was not tested if it was live or not. The wire lead to a single bulb hanging at the end of the granite tunnel where the ceiling construction changes again back to brick arches. There is active water flow through the center of the tunnel with very muddy ground on either side.

The tunnel roof transitions back to brick arch type construction approximately 60' north of the alcove. The roof in this section had numerous holes from either pipe penetrations or isolated partial failures. The west wall of this section was the typical granite and field stone while the east wall appeared to be bedrock. The 6" & 8" diameter pipes terminate into the east wall near the bedrock before the tunnel turns 90 degrees west (**Photo 12**).

This next section of the tunnel measured approximately 60 feet long and transitioned back to granite arch construction (**Photo 13**). There are isolated areas of dislodged stones in the arch face.

The granite arch tunnel opened up to a brick masonry space that featured a central brick tower. Water was making its way into this space through a crack in the northern wall with an active light flow (**Photo 14**). Water levels in this area around the tower appeared to be 1 foot or greater so observations of the tunnel were terminated at this point. An open hatch, with an old wooden ladder, to what was presumed to lead to the surface, was noted. The ladder was missing rungs and appeared severely deteriorated, therefore it was deemed unsafe to attempt to use it (**Photo 15**).

The 12" diameter pipe teed off and elbowed up into the floor above one north and one south of the central brick tower. There were also two large diameter steel riveted open drains in this location similar to those observed in other areas of the tunnel (**Photo 16**).

With no safe access to the hatch or around the tower, we concluded our review of the tunnel and proceeded back to the original entry point and exited the tunnels. A detailed description of the tunnel construction types, conditions and existing utilities observed is presented on the enclosed drawing C-101 in **Appendix B**.

Existing Utilities:

There are 12 buildings on the millyard site, several are occupied, some are abandoned, and some have either partially or fully collapsed, or been demolished from the site. We have generated a site plan identifying the building numbers referenced throughout this report, provided in **Appendix C.**

Water: The existing water systems that serve the millyard buildings originate in two distinct locations. An 8" water main enters the millyard property from East Main Street adjacent to Building 6 and also from across the Ware River adjacent to Building 8. The record drawings and field survey do not indicate material; however, based on the presumed age of the system it likely consists of cast iron, ductile iron, and potentially asbestos cement pipe.

A summary of the presumed water connections for the buildings reviewed is presented below.

- Building 1: Stone Mill Building
    - Building 1 appears the be subdivided into multiple tenant occupancies. The water services enter the building in three separate locations, the central building entrance and the eastern end of the building adjacent to the penstock entry location.

    - The central building entrance location indicated the presence of 4" and 6" services. Within the building, the 6" service splits into two 4" services that disperse within the building. The services at the eastern end of the building consist of 6" services, one with a post indicator valve (PIV). The water main from which all of these services are connected was replaced within the past twenty years and all connections are presumed to be reconnected.

- Building 2: G&G Medical Building
    - Building 2 has two connections, located at the south east corner and the north west corner of the building. The services are fed from the 8" water main branched from the 8" water main on East Main Street. The two services are assumed to provide fire suppression and potable water to the occupants of the building. The 8" water main continues to the north east, but the remaining pipe appears to continue to the footprint of Building 4, which has been demolished.

    - There is an abandoned annex portion of Building 2, known as the Picker House, which appears to have a 6" service fed from the same 8" water main as the services for the main Building 2.

- Building 3: Wilton Mill Building
    - Building 3 appears to be subdivided into multiple tenant occupancies. The water services enter at the eastern and western ends of the building. The 6" services located at the eastern and western ends of the building originate from the 8" water main located within the mill properties and is assumed to provide fire suppression and potable water. A 4" service located at the eastern end of the building is indicated to have been plugged and no longer supplies the building.

- Building 4: Former Shoe Factory
    - Building 4 has been demolished; however, the water main mapping indicates the existence of a 6" service and another service of unknown diameter. It is assumed that the services have been plugged or capped near the limits of the demolished building.

- Building 5: Former Knitting Dye House
    - Building 5 has also been demolished; however, the water main mapping indicates the existence of a 6" service. It is assumed that the service has been plugged or capped near the limits of the demolished building. The 6" service is fed from the 8" water main crossing the Ware River to the east of the mill yard.

- Building 6: Weir River Mill Building
    - Building 6 has two known connections, a 6" service at the western end of the building and a 4" service at the southwest of the building. Both services originate from the 8" water main located between building 1 and building 6, that was reconstructed within the past twenty years.

- Building 7: Fitness Factory Building
    - Building 7 has one known connection located on the north side of the building. The water main mapping indicates this is a 6" service that reduced down to a 4" service somewhere within the limits of the building. This service originates from the 8" water main that also feeds Building 2 and its abandoned annex.

- Building 8: Ware Machine Works
    - Building 8 has one known connection located on the south side of the building. The water main mapping indicates this is a 6" service and shares the branch with a PIV. The 6" service is fed from the 8" water main crossing the Ware River to the east of the mill yard. The 8" water main appears to be installed within the footprint of the building.

- Building 9: Turbine Room
    - Building 9 The water main mapping does not indicate an existing service to the building. The building is located on the banks of the river and is responsible for electricity generation.

- Building 10: Pilch's Machine Shop Annex
    - Building 10 has two connections, located at the south east corner and the south west corner of the building. The services are fed from the 8" water main located in between Building 1 and Building 6. The two services, 10" and 6" services, are assumed to provide fire suppression and potable water to the occupants of the building. The 8" water main continues to the north east and is located inside of the existing penstocks.

- Building 11: Pilch's Machine Shop
    - The location of services to Building 11 are not clear. Within the footprint of Building 11 and below penstocks, there are 8", 6", and 4" water mains. The 4" services at the southern portion of the building and the 4" service at the northwest corner are assumed to service the building directly.

- Building 12: Lower Millyard Building
    - Building 12 has one known connection located on the south side of the building. The water main mapping indicates this is a 6" service and shares the branch with a PIV. The 6" service is fed from the 8" water main crossing the Ware River to the east of the mill yard.

The existing conditions drawing C-100, that accompanies this report (**Appendix D**) provides an overall understanding of the existing water utility system. Each building appears to have at least one water service. The demolished buildings are assumed to have plugged or capped services outside the limits of the building footprint. The abandoned buildings are assumed to have active services that have been shutoff within the building or at the nearest curb stop or gate valve. The occupied buildings are assumed to be fully serviced for their current operational needs. Further investigations would be required to determine the exact location and extent of water services systems within the basements of the buildings.

Sanitary Sewer:

The sanitary sewer system within the millyard properties appears to flow from the eastern properties towards the western properties. The information obtained regarding the sanitary sewer from the field survey and the available record drawings is limited.

- Building 1: Stone Mill Building
    - The field survey and record drawings do not specifically indicate a location of the services for this building. The sanitary sewer likely discharges to one of the sewer trunk lines located between Building 1 and Building 6 or to the sanitary sewer pipe located south of Building 1. Each potential discharge location eventually connects to the South Street sewer.

- Building 2: G&G Medical Building
    - Building 2 appears to have several sanitary sewer services. The services located at the southern end of Building 2 consist of a 6" metal pipe and a 4" metal pipe. An additional 6" pipe is noted on the record drawings, but the location of the invert does not directly indicate that this is a separate service connection.

    - The service connection at the northern end of the building consists of a 6" vitrified clay pipe, flowing to the west.

- Building 3: Wilton Mill Building
    - Building 3 appears to have two services located on the south side of the building. The services consist of a 4" PVC service and a concrete encased 4" PVC service. Both services flow towards the sanitary sewer system on South Street.

- Building 4: Former Shoe Factory
    - Building 4 has been demolished and no abandoned services have been identified.

- Building 5: Former Knitting Dye House
    - Building 5 has been demolished and no abandoned services have been identified.

- Building 6: Weir River Mill Building
    - The field survey and record drawings do not specifically indicate a location of the services for this building. The sanitary sewer likely discharges to one of the sewer trunk lines located between Building 1 and Building 6. The survey also indicates a sewer service within the footprint of Building 6 that originates at Building 7. Each potential discharge location eventually connects to the South Street system.

- Building 7: Fitness Factory Building
    - The field survey and record drawings indicate a sewer service located on the west end of the building and connects into the South Street system.

- Building 8: Ware Machine Works
    - The field survey and record drawings do not specifically indicate a location of the services for this building. No sewer main is present in the area.

- Building 9: Turbine Room
    - The field survey and record drawings do not specifically indicate a location of the services for this building. The sanitary sewer likely discharges to the sewer main located within the penstocks below the building.

- Building 10: Pilch's Machine Shop Annex
    - The field survey and record drawings do not specifically indicate a location of the services for this building. The sanitary sewer likely discharges to the sewer main located within the penstocks below the building.

- Building 11: Pilch's Machine Shop
    - The field survey and record drawings do not specifically indicate a location of the services for this building. The sanitary sewer likely discharges to the sewer main located within the penstocks below the building.

- Building 12: Lower Millyard Building
    - The field survey and record drawings do not specifically indicate a location of the services for this building.

- Penstocks
    - A sanitary sewer was observed within the existing penstocks located adjacent to Building 2, underneath Building 10, and between Buildings 1 and 6. The sewer enters the penstocks with a 6" pipe east of Building 2 and increases to an 8" pipe under Building 10. The sewer is assumed to exit the penstocks at the western end and continue to a manhole downstream to the west.

    - A 12" sanitary sewer was also observed within the penstocks originating at Building 2 and terminating under Building 10. This 12" pipe has been disconnected from the sewer main and appears to have been abandoned.

- Two apparent sanitary sewer service connections are visible from within the penstocks located at the southeast corner of Building 10. These service connections may service Building 12 and Building 5 (demolished); however, no further information regarding these potential services are available.

Drainage:

The expanse of the drainage within the millyard is very limited and is not directly associated with individual buildings. In general, the surface drainage appears to flow from northeast to southwest towards the Ware River.

Stormwater collections systems are located throughout the site and were observed by the survey in the following locations:

- East Main Street
  - Stormwater flows collected between Pleasant Street and 200 feet west of Park Street on East Main Street are directed to the largest documented system within the mill yard properties. The system conveys stormwater flows from approximately 11 catch basins within the East Main Street right-of-way, and discharges through 18" RCP pipes located between Building 1 and Building 3. The exact outfall location is not confirmed but is assumed to discharge west of the dam adjacent to Building 3.
  - The pipe materials associated with these structures vary from HDPE, CMP, and RCP according to the field survey.
- Building 3: Wilton Mill Building
  - A single catch basin was observed in the parking lot with a potential outlet located west of the structure. The structure likely connects the stormdrain system on South Street.
  - The pipe material is described at vitrified clay according to the field survey.
- Building 1 (Stone Mill Building) & Building 6 (Weir River Mill Building)
  - Several catch basins were observed between Building 1 and Building 6 with no clear outlet location. The stormdrain system may discharge into the penstocks adjacent to Building 1. The penstocks in the basement of Building 1 had consistently flowing water, which may be a result of stormdrain systems being connected.
  - Two catch basins were observed at the western end of Building 6 with no known discharge location. The field survey indicates the outlet pipes discharge southerly, towards Building 1.
  - The pipe materials associated with these structures vary between PVC and metal.

- Building 12: Lower Millyard Building
    - A single catch basin was observed north of Building 12 with no specified outlet pipe.

    - The pipe material is described as vitrified clay according to the field survey.

The field survey and desktop survey revealed a limited stormwater system within the mill yard. A major observation in terms of site usage is that the surface drainage is not contained within the property boundaries. Stormwater runoff appears to bypass catch basins and travel onto adjacent properties. This may result in flooding or ponding within the properties at lower elevations within the mill yard. For a more complete understanding of the storm drain system, we recommend additional investigations including CCTV inspections.

Electrical Services:

There are nine occupiable buildings on the millyard site with electrical service. Four buildings, located on the south side of the site are currently subdivided into commercial tenant spaces. Four buildings on the east side of the site are owned by Ware River Group, LLC, one building, on the north side of the site is used for manufacturing.

The four subdivided commercial buildings include:

- Building (3): Wilton Mill Building
- Building (1): Stone Mill Building
- Building (6): Weir River Mill Building
- Building (7): Fitness Factory Building

The four Ware River Group buildings include:

- Building (x): Garage Building
- Building (8): Ware Machine Works
- Building (11): Pilch's Machine Shop
- Building (12): Lower Millyard Building

Building (2) is the manufacturing building, which currently holds G&G Medical.

Each of the electric services provided to the site, originate from the National Grid overhead transmission lines on the north side of East Main Street. The telephone services also originate from the same utility poles located on the north side of East Main Street. A summary of each building and where the electric service originates from is presented below:

- Building (3): Wilton Mill Building
    - Overhead line from Pole #4/3
- Building (1): Stone Mill Building
    - Underground from Pole #6-1/5 (originating on Pole #6/5)
- Building (6): Weir River Mill Building
    - Overhead line from Pole #7
- Building (7): Fitness Factory Building
    - Overhead line from Pole #9-4 (originating on Pole #9)
- Building (x): Garage
    - Overhead line from Pole #13-6 (originating on Pole #13)

- Building (8): Ware Machine Works
    - Overhead line from Pole #13-6 (originating on Pole #13)
- Building (11): Pilch's Machine Shop
    - Overhead line from Pole #13-8 (originating on Pole #13)
- Building (12): Lower Millyard Building
    - Overhead line from Pole #13-8 (originating on Pole #13)
- Building (2): G&G Medical Building
    - Overhead line from Pole #9-2 (originating on Pole #9)

Commercial Buildings:

Each of the four commercial buildings are 19th century mill buildings that have been converted into sub-dividable tenant spaces. The Wilton Mill Building, the Stone Mill Building, and the Fitness Factory Building are powered from a dedicated local pad mounted utility owned transformer. The Weir River Brick Mill is powered from a canister single phase transformer, mounted on Pole #7.

The Wilton Mill Building is a two-story, open floor plan, brick building. In front of the building is an unlabeled, pad mounted utility transformer. The electrical service enters the center of the building, on the main floor. The main electrical service is 480/277 volt, three-phase, four wire, with a 400 amp main disconnect switch. After the main disconnect switch the electrical service tapped with six tenant submeters. There three 200 amps taps, one 200 amp tap, one 60 amp tap, and one 30 amp. The only tenant service currently being used is a 200 amp tap for the Wilton's Children Clothing Outlet. There is no generator backup for the building.

The Stone Mill Building is a subdivided, four-story, stone building with a walk-in basement. In front of the building is a pad mounted utility transformer. The electric service enters the building at a dedicated electrical room located in the basement, towards the west end of the building. The main electrical service is 480/277 volt, three-phase, four wire, with a 400 amp main disconnect switch. After the main disconnect switch the electrical service tapped with six tenant submeters. There five 200 amps taps and one 60 amp tap.

The building has a pad mounted, residential-type, standby generator located on the north side of the building adjacent to the pad mounted transformer. This generator is much too small to power the entire building. It appears to power one of the tenants on the lower level. The automatic transfer switch was located behind a locked door. The generator itself was mounted in a locked weatherproof enclosure. Therefore, it was not possible to determine the size of the generator.

The Weir River Brick Mill Building is a subdivided, three-story, brick building. The electric service enters the building overhead at an electrical distribution space in a stairwell located in the northwest corner of the building. The main electrical service is 240/120 volt, single-phase, three wire, with a 400 amp main disconnect switch. After the main disconnect switch the electrical service tapped with six tenant submeters. However, one 200 amp tenant service, that is currently in use, is utilizing two taps. The remaining taps are two 200 amps and two 100 amps. The four remaining taps do not appear to be currently in use. There is no generator backup for the building.

The Fitness Factory Building is not structurally attached to the Weir River Building. However, there is a walkway that connects the buildings on the second floor. The Fitness Factory Building is an open floor plan, two-story, brick building. There are only two tenants in the building; a pet store on the lower level and a gym on the upper level.

The electric service enters the building underground at a dedicated electrical room located on the lower level, towards the east end of the building. The main electrical service is 480/277 volt, three-phase, four wire, with a 400 amp main disconnect switch. After the main disconnect switch the electrical service tapped with two 100 amp tenant submeters. One for the upper level and one for the lower level.

The upper level service to the gym is taped right after the submeter with two 100 amp disconnect switches. One disconnect switch powers a 15 kW transformer that provides 120/208 three-phase, four wire electrical distribution throughout upper level. The second disconnect switch is for the 480/277 volt three phase, four wire, roof top air conditioning units that cool the gym.

The lower level tenant service directly feeds a 25 kW transformer. The 25 kW transformer provides 120/208 three-phase, four wire electric service to a local panelboard. The panelboard provides power for the lower level. The 25 kW and the lower level panelboard are located within the dedicated electric room. There is no generator backup for the building.

Ware River Group Buildings:

There are four buildings located on the site owned by Ware River Group. This includes the Garage, the Ware Machine Works, Pilch's Machine Shop and the Lower Millyard Buildings.

Each of these buildings are fed from an overhead electrical distribution line that is tapped off Pole #13 on East Main Street. The power to each of the buildings is provided through a pole mounted transformer located adjacent to each building. Base on the number and taps of the transformer, the Garage and the Ware Machine Works have a single-phase electric service. Pilch's Machine Shop and the Lower Millyard Buildings have a three-phase service.

All four of the Ware River Group buildings were locked at the time of our site visit. We were unable to confirm the size or the location of the existing electrical services to the buildings. None of the buildings had a generator located outside. There may be a generator inside the Lower Millyard Building or Pilch's Machine Shop, but it could not be confirmed during our site visit. It is possible that the Ware Machine Works building may have electrical generation, but that also could not be confirmed.

Manufacturing Building:

The only building on site that is currently conducting manufacturing is the G&G Medical building. This building is a three-story, open floor plan, brick building. In front of the building is an unlabeled, pad mounted utility transformer. The electric service enters the building in an electrical shop room located on the first floor. The 480/277 volt, three-phase, four wire, main electrical service enters a 1200 amp rated, three section, switchboard with a 1200 amp main disconnect circuit breaker.

The switchboard has two panelboards, with one mounted in each section. In total the switchboard has eight three-phase circuit breakers for additional distribution throughout the building. There is one 300 amp circuit breaker, five 250 amp circuit breakers, one 200 amp circuit breaker, and one 150 amp circuit breaker. There are also multiple subpanels and transformers located throughout the building. There is no generator backup for the building.

Abandoned Buildings:

There are four abandoned buildings located on the site. Two abandoned buildings (Building 10 and 2B) are located between Pilch's Machine Shop and the Fitness Factory Building. Two additional abandoned buildings (Building 1A and 9) are located east of the Stone Mill Building. The electrical services to these abandoned buildings have been disconnected. However, in several locations the cut feeders are still visible exiting the building. Due to safety concerns, we did not enter the abandoned buildings.

Telephone and Cable Service

Each of the occupied buildings did have telephone and cable service entrances. These services originated form overhead pole on East Main street. The telephone and cable service for each building originates at the following poles:

- Building (3): Wilton Mill Building
  - Overhead Pole #5/4
- Building (1): Stone Mill Building
  - Overhead Pole #6/5
- Building (6): Weir River Brick Mill Building
  - Overhead Pole #7
- Building (7): Fitness Factory Building
  - Overhead line from Pole #9-4 (originating on Pole #9)
- Building (x): Garage Building
  - Overhead line from Pole #13-6 (originating on Pole #13)
- Building (8): Ware Machine Works
  - Overhead line from Pole #13-6 (originating on Pole #13)
- Building (11): Pilch's Machine Shop
  - Overhead line from Pole #13-8 (originating on Pole #13)
- Building (12): Lower Millyard Building
  - Overhead line from Pole #13-8 (originating on Pole #13)
- Building (2): G&G Medical Building
  - Overhead line from Pole #9-2 (originating on Pole #9)

Electrical Recommendations:

The following are our recommendations for the electrical and telephone services at each of the buildings on the Ware Millyard site:

- Wilton Mill Building
  - The electrical service is well suited for up to six commercial tenant spaces.
  - For more than six tenants, it is recommended to upgrade the electrical service

  - The 30 and 60 amp services may need to be upgraded depending on the type of tenants.
  - The telephone and cable services do not need to be upgraded.
  - Consider adding an onsite standby generator for the building

- Stone Mill Building
  - The electrical service is well suited for up to six commercial tenant spaces.
  - For more than six tenants, it is recommended to upgrade the electrical service.
  - The 60 amp service may need to be upgraded depending on the type of tenant.
  - The telephone and cable services do not need to be upgraded.
  - Consider adding a larger standby generator to provide backup power to the building.

- Weir River Brick Mill Building
  - Recommend bringing in a new 480 volt three-phase electrical service to the building
  - The telephone and cable services do not need to be upgraded.
  - Consider adding an onsite standby generator for the building

- Fitness Factory Building
  - The existing electrical service is very convoluted and hap hazard. Recommend that the electrical distribution be cleaned up and clarified.
  - Recommend clearly labeling the where each panelboard and transform is powered.
  - The telephone and cable services do not need to be upgraded.
  - Consider adding a larger standby generator to provide backup power to the building.

- G&G Medical Building
  - The electrical service is well suited for and industrial use space
  - The telephone and cable services do not need to be upgraded.
  - Consider adding a larger standby generator to provide backup power to the building.

- The Garage, Ware River Machine Works, Pilch's Machine Shop and Lower Millyard buildings were not able to be reviewed.

Hazardous Building Materials Survey:

Tighe & Bond conducted a preliminary and visual Hazardous Building Materials Assessment (HBMA) within the underground tunnels at the Millyard property in Ware, MA (the "Site").

Prior to any type of building demolition or renovation, a thorough investigation is required to identify and quantify regulated asbestos-containing materials (ACMs) which would be disturbed by proposed demolition or renovation activities. The survey is required by the United States Environmental Protection Agency (EPA) National Emissions Standard for Hazardous Air Pollutants

(NESHAP) regulations (Title 40 CFR, Part 61, Subpart M); Massachusetts Department of Environmental Protection (MassDEP) regulations (310 CMR 7.15); Massachusetts Department of Labor Standards (MassDLS) regulations, (453 CMR 6.00); as well as applicable portions of the Occupational Safety and Health Administration (OSHA) asbestos in construction regulations (CFR 1926.1101).

The visual assessment was performed within interior areas of the tunnels that were accessible at the time of the entry. The purpose was to determine the presence or absence of regulated suspect ACMs within the tunnels which would likely require abatement prior to renovations or demolition.

Suspect ACMs are divided into "homogeneous materials" which are building materials that are similar based on their color, texture, and age as determined by the inspector. Several suspect ACM were observed within the tunnel areas that would require sampling prior to activities that would impact these materials. These materials include the assumed asbestos transite water piping, former pipe insulating materials and gasketing. The insulating materials are in poor condition and co-mingled with the soils below.

MassDEP defines a material that contains greater than or equal to one percent (≥1%) asbestos as an ACM. Materials that are identified as "none detected" are specified as not containing asbestos. Materials containing less than one percent (<1%) asbestos are regulated to a degree by OSHA related to work practices, worker exposure, and waste containerization, and in Massachusetts materials containing <1% asbestos are considered asbestos-containing waste material (ACWM) and must be packaged and disposed of as ACWM in accordance with 310 CMR 7.15.

Tighe & Bond recommends the suspect asbestos containing materials identified within the tunnels be sampled and further delineated prior to any activity that has the potential to disturb these materials. Tighe & Bond also recommends the creation of a project specific asbestos abatement scope of work or technical specification for the removal of any ACM that was identified or assumed to be asbestos. The specification must be developed by a licensed asbestos designer and it should address such important issues as regulatory requirements, notification procedures, insurance considerations, air sampling needs and other pertinent information. Abatement activities should be monitored by a third-party asbestos monitoring firm and final air clearance samples must be collected by a licensed asbestos project monitor.

Renovation activities should be monitored by personnel capable of identifying suspect ACM and if encountered, these materials should be bulk sampled by a licensed inspector and disposed of in accordance with applicable regulations if discovered to be asbestos-containing.

PHOTOS

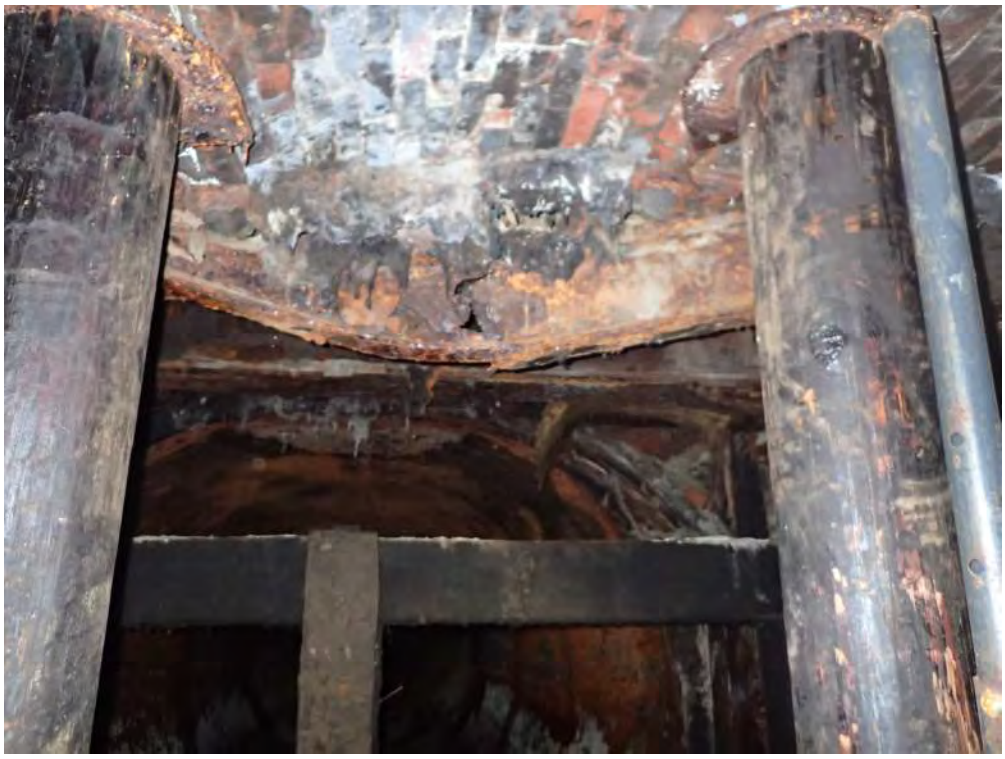


Photo 01: Supplemental Support at West End Culvert Intersection

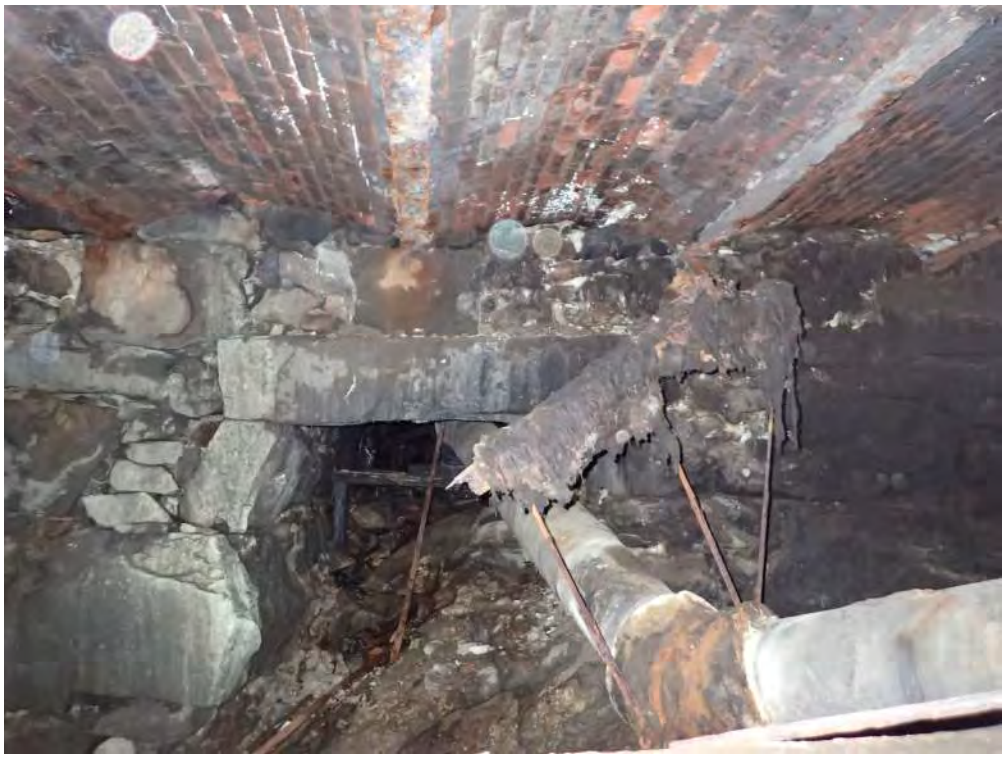


Photo 02: Stone Tunnel on Northern Wall, West of Entry Point

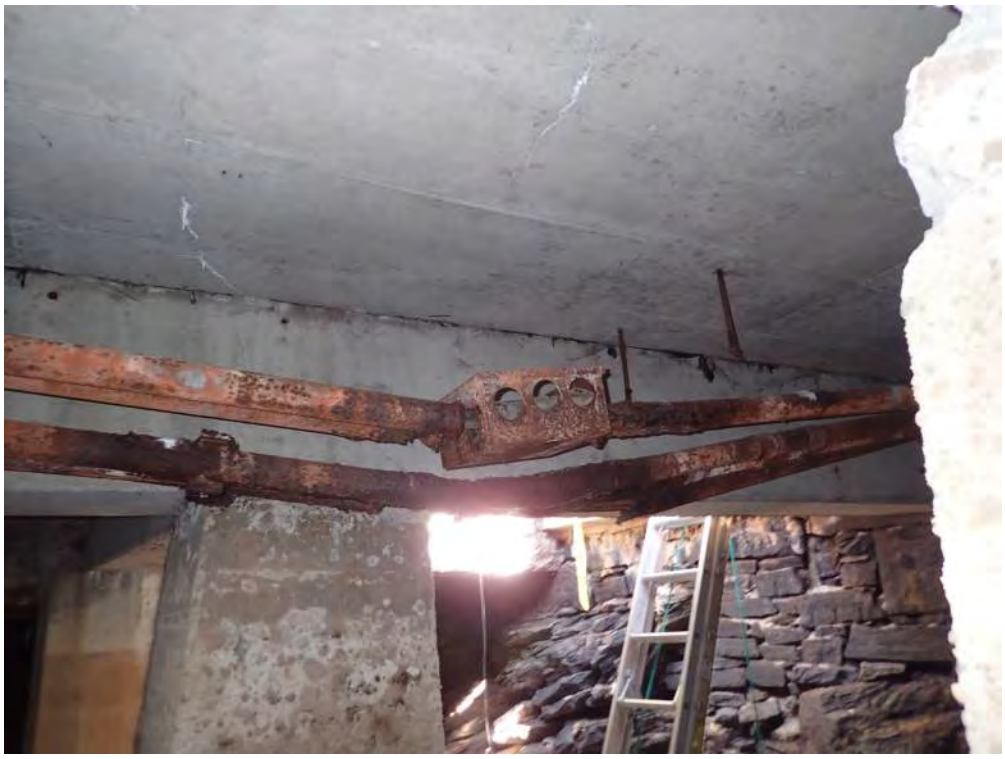


Photo 03: Tunnel Roof Construction – East of Entry Point with Electrical Conduit

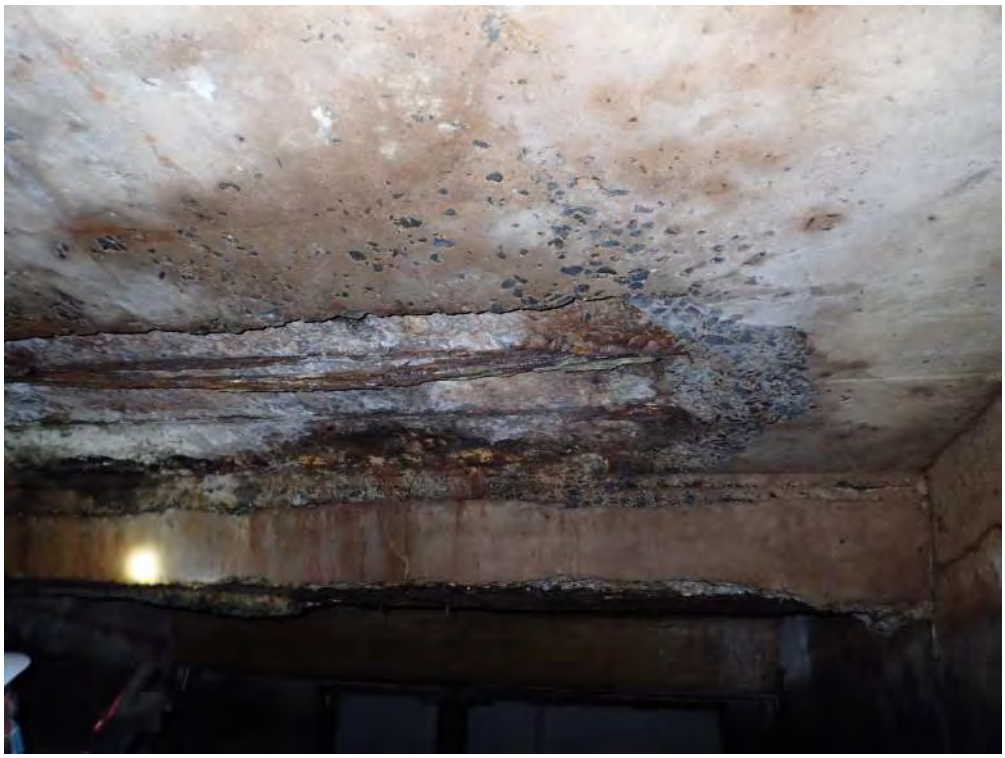


Photo 04: Exposed Concrete Reinforcing with Steel Beam Showing Section Loss

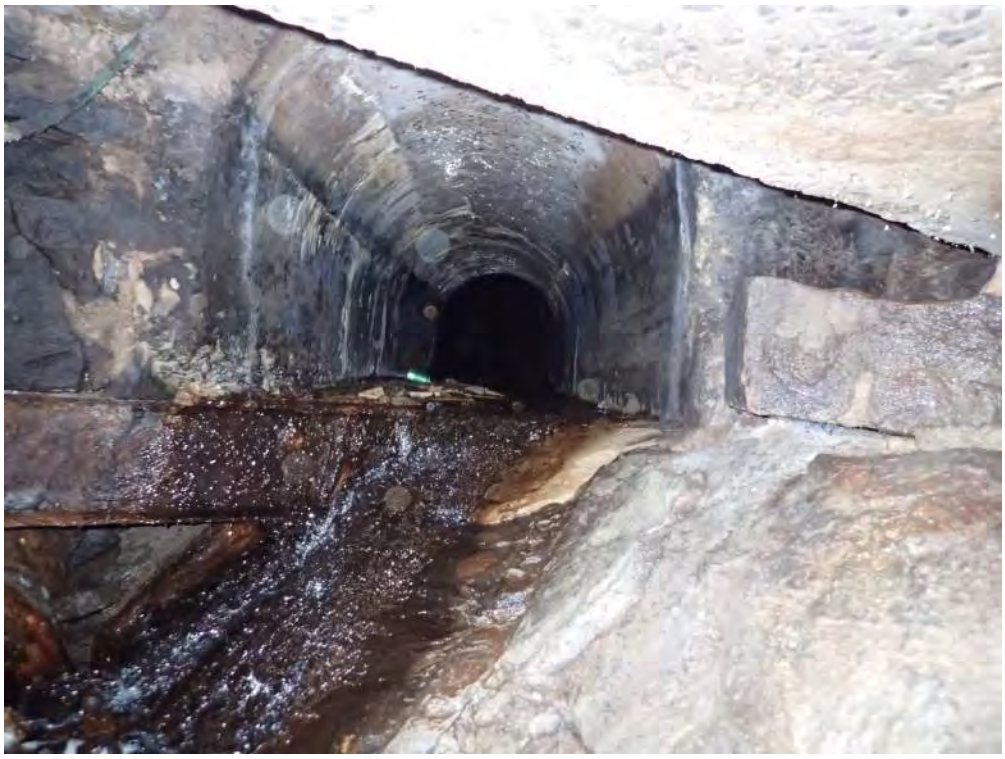


Photo 05: Formed Concrete Tunnel – North Side of Main Tunnel – Active Water Flow

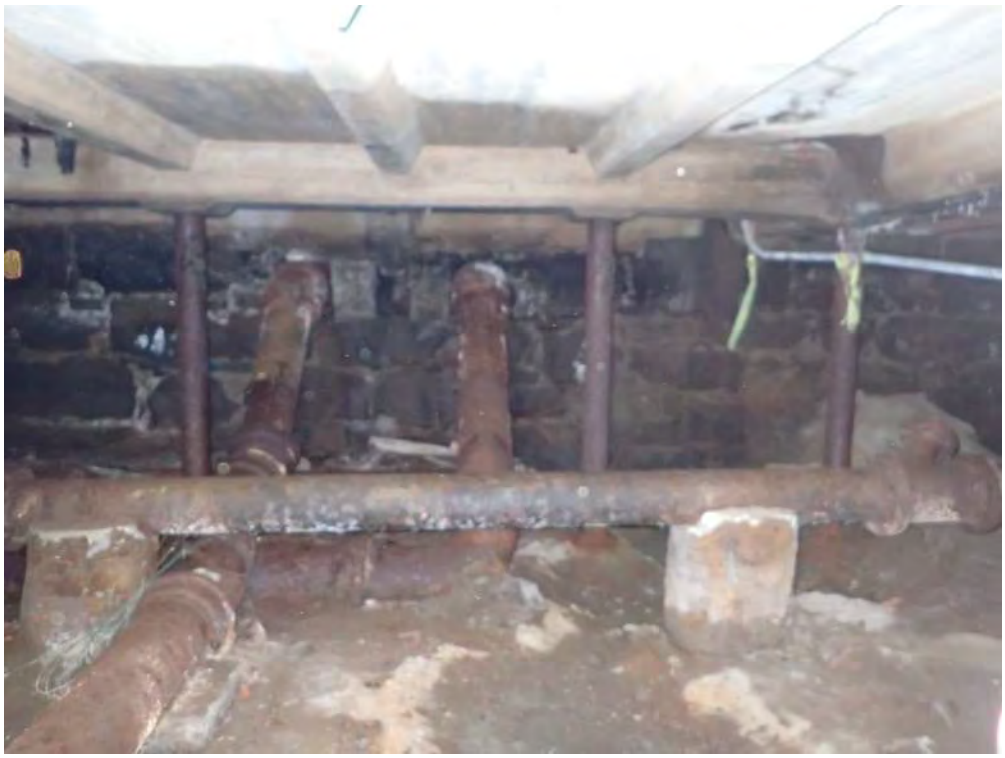


Photo 06: Existing Pipes in Tunnel (Approximately 50' West of Turn)

Photo 07: Support Beam and Columns at Tunnel Turn to the North

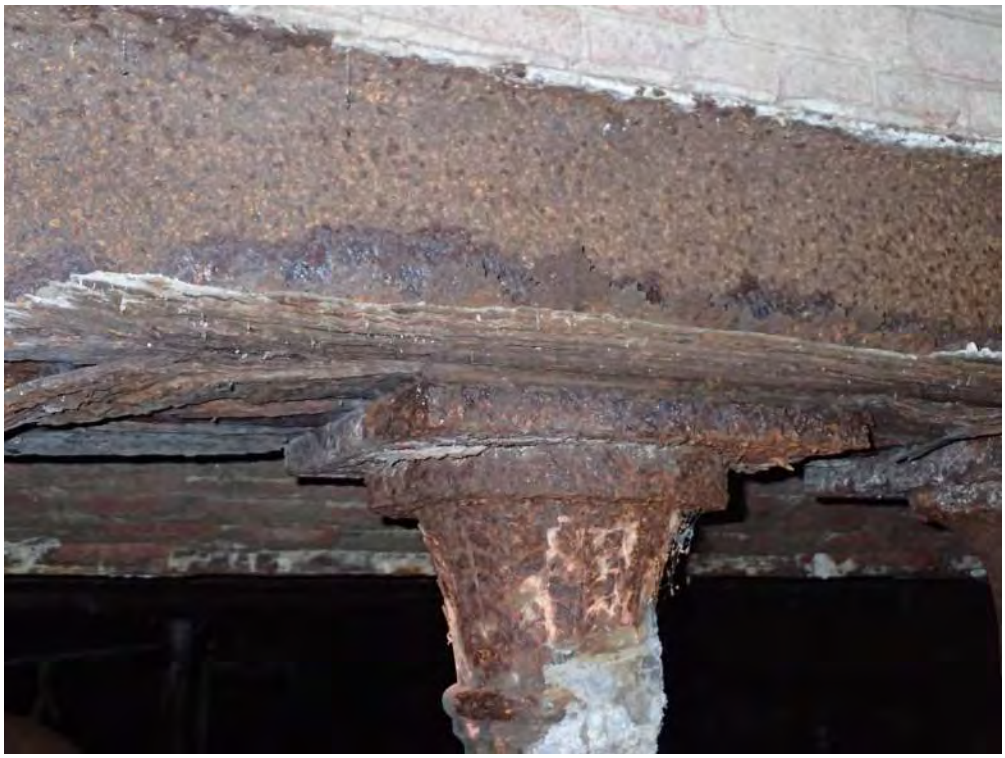


Photo 08: Support Column Deterioration at Tunnel Turn to the North

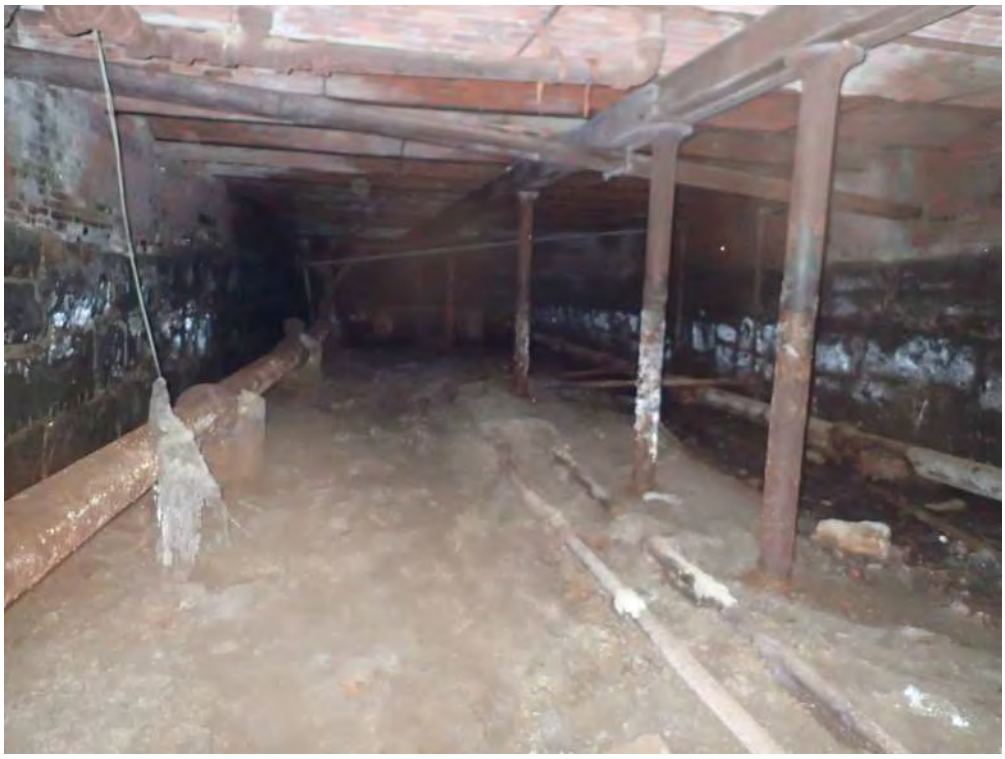


Photo 09: Center Line of Support Columns Along Northerly Portion of Tunnel

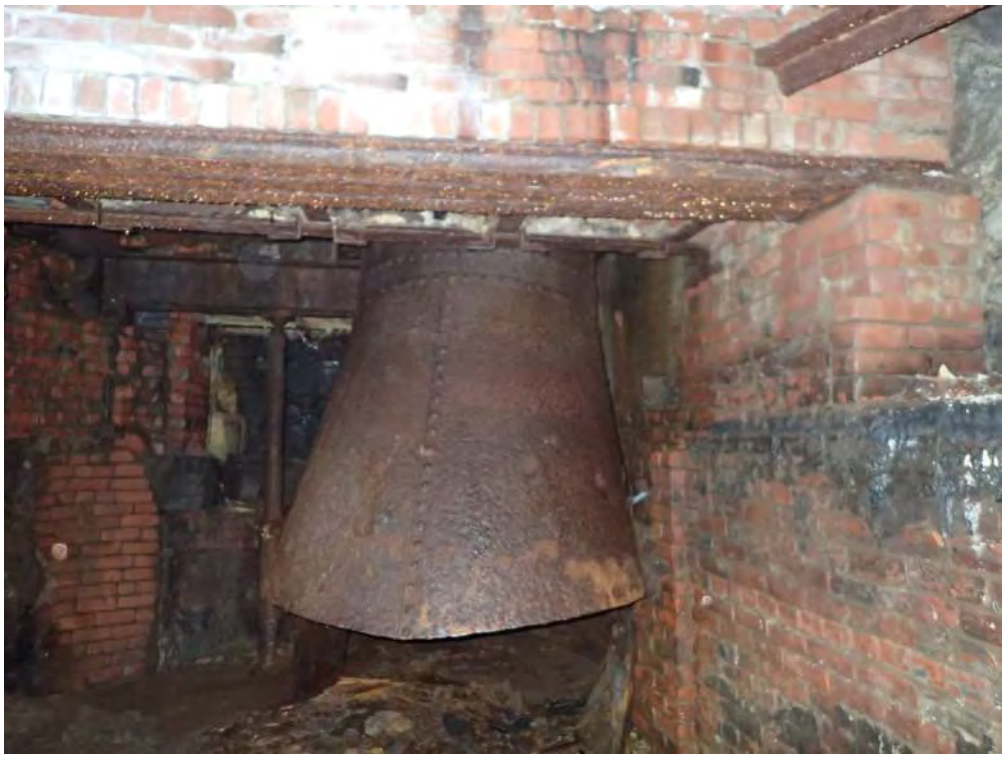


Photo 10: Alcove in Northern Portion of Tunnel with Steel Drain

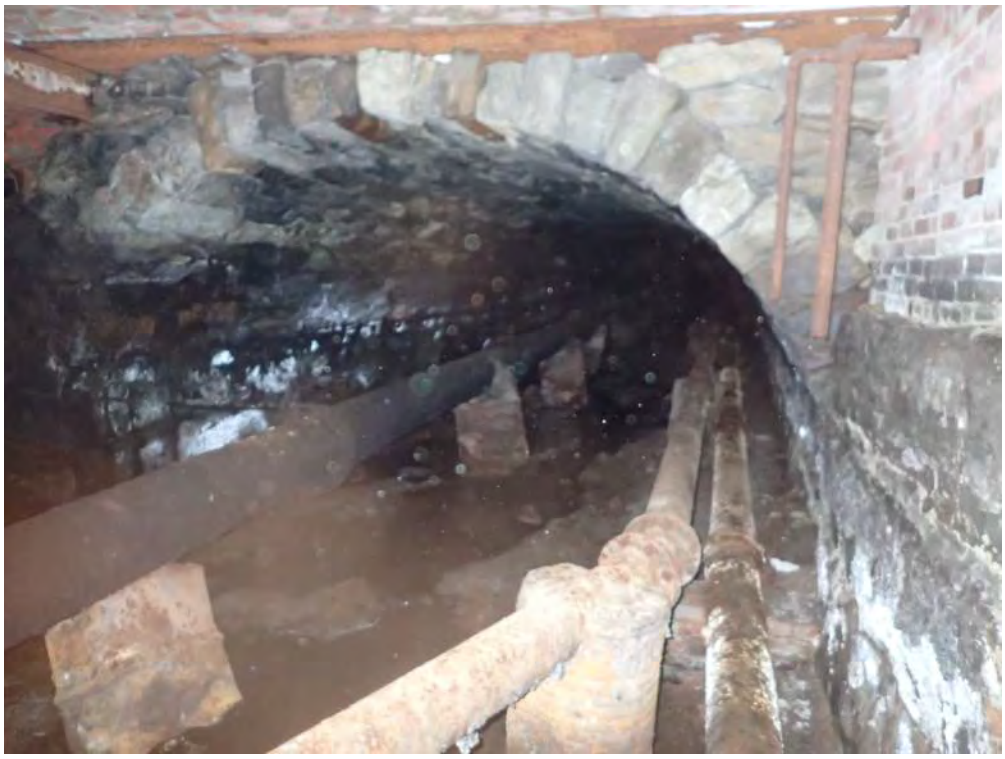


Photo 11: Granite Arch Portion of Tunnel

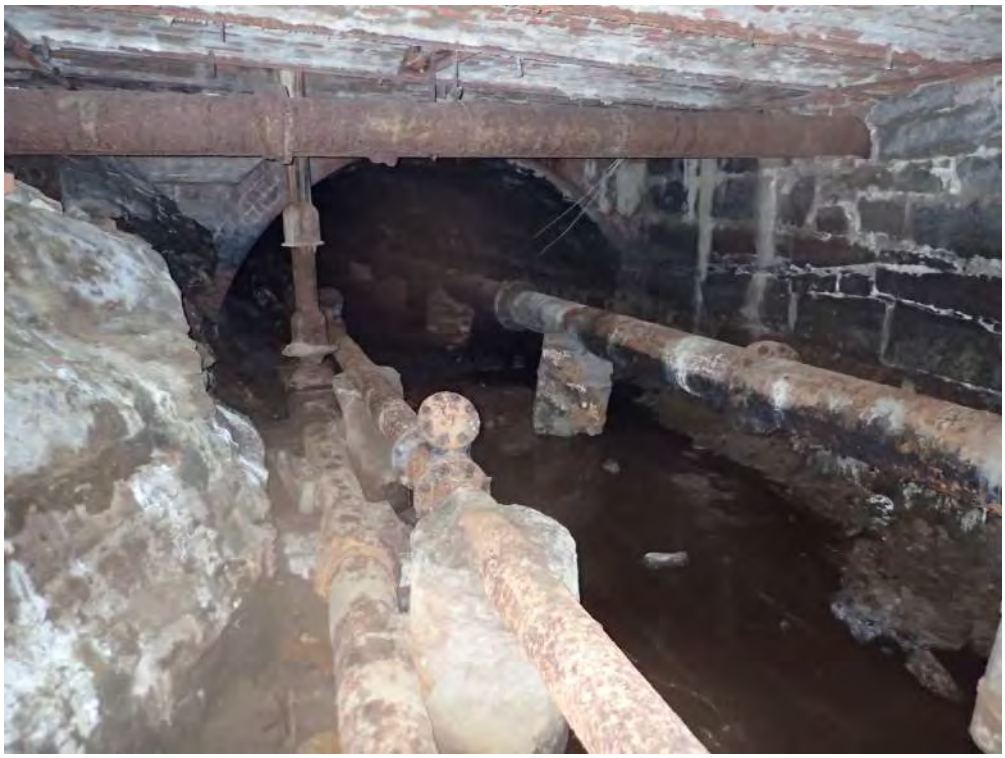


Photo 12: Bedrock Sidewall with Pipes Continuing Through Tunnel

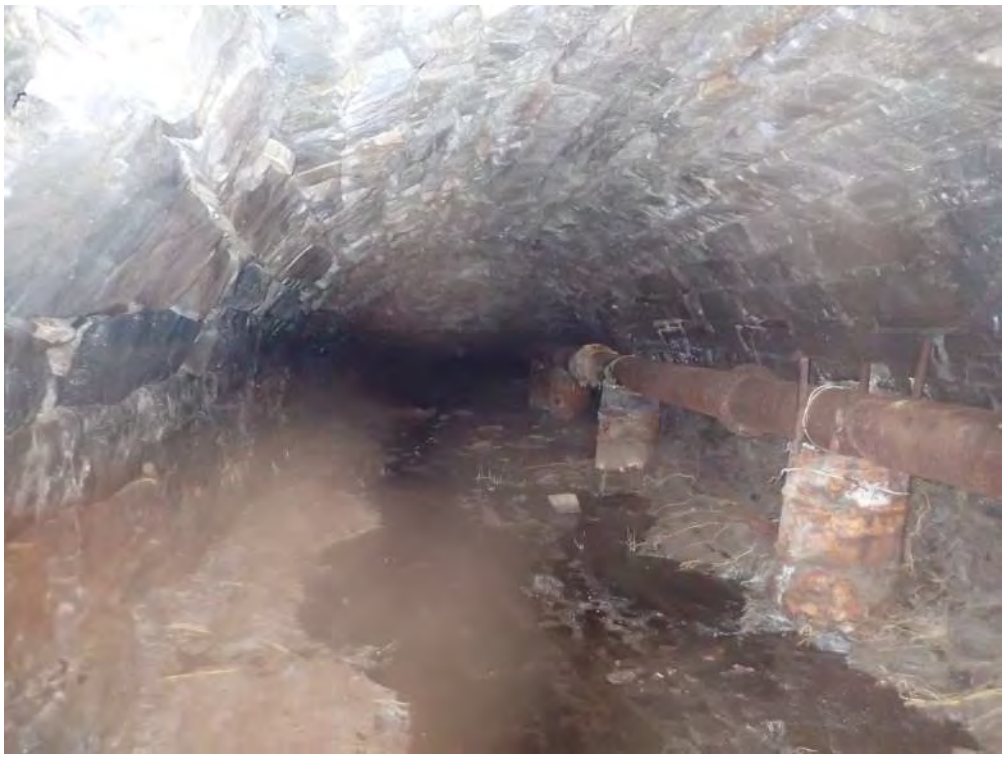


Photo 13: Second East – West Tunnel Portion – Stone Arch Construction

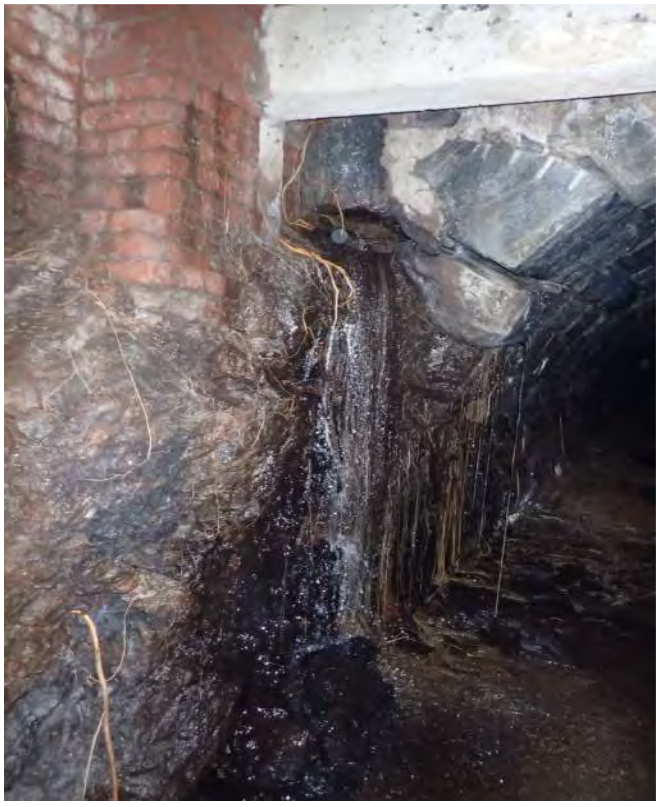


Photo 14: Transition from Stone Arch to Brick Masonry Construction – with Active Water Flow

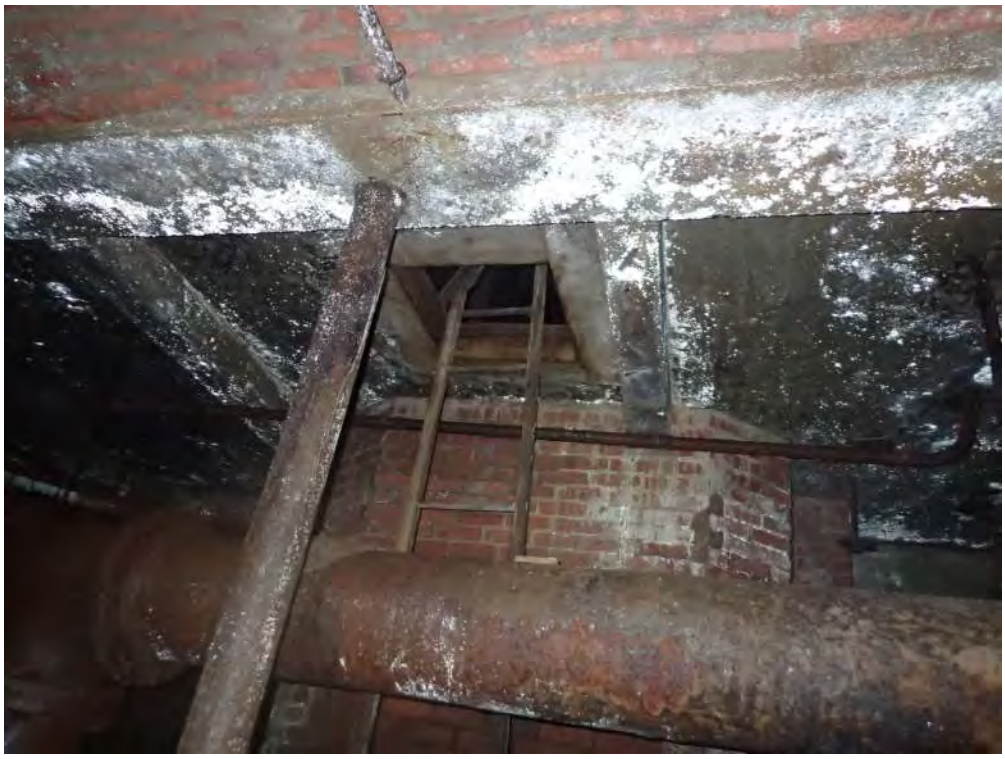


Photo 15: Open Hatch with Wooden Ladder at End of Tunnel

Photo 16: Pipe Extents and Brick Tower at End of Tunnel