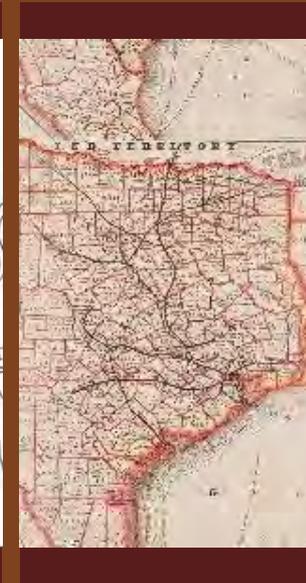


HOUSTON & TEXAS CENTRAL WATER STATION ALLEN, TEXAS

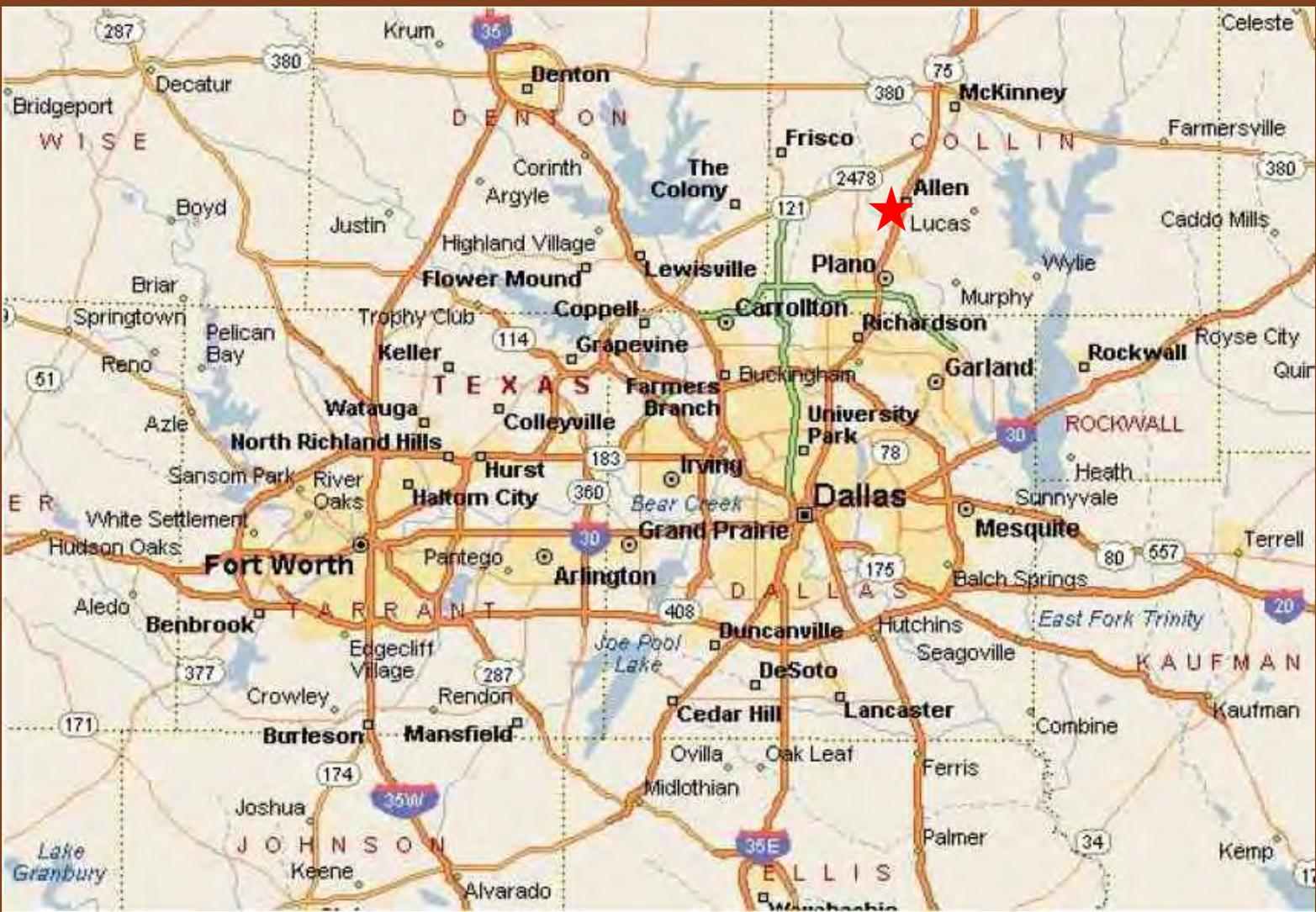


BRIAN BRISTOW
Assistant Director of
Parks and Recreation



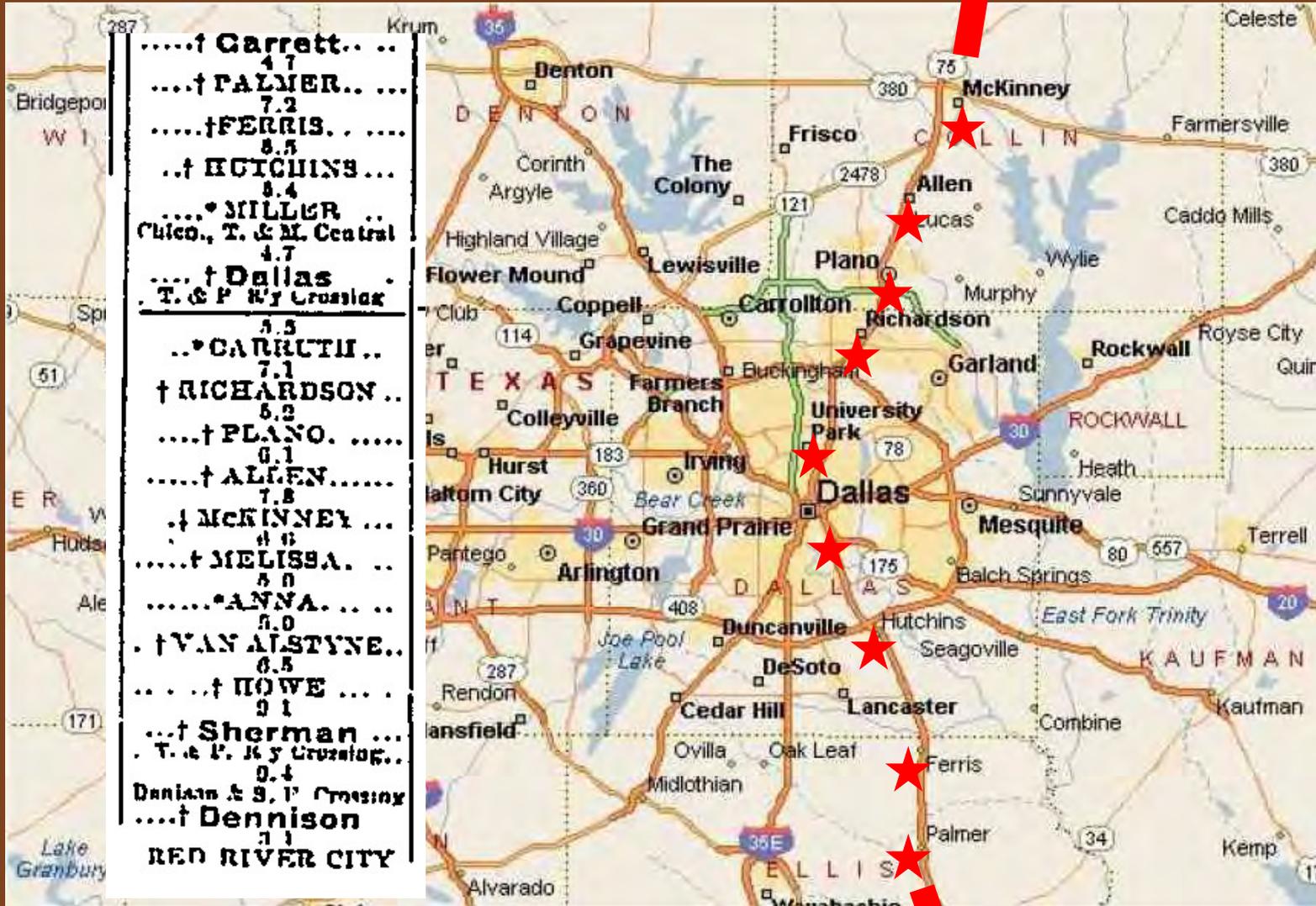
INTRODUCTION

Where is Allen?



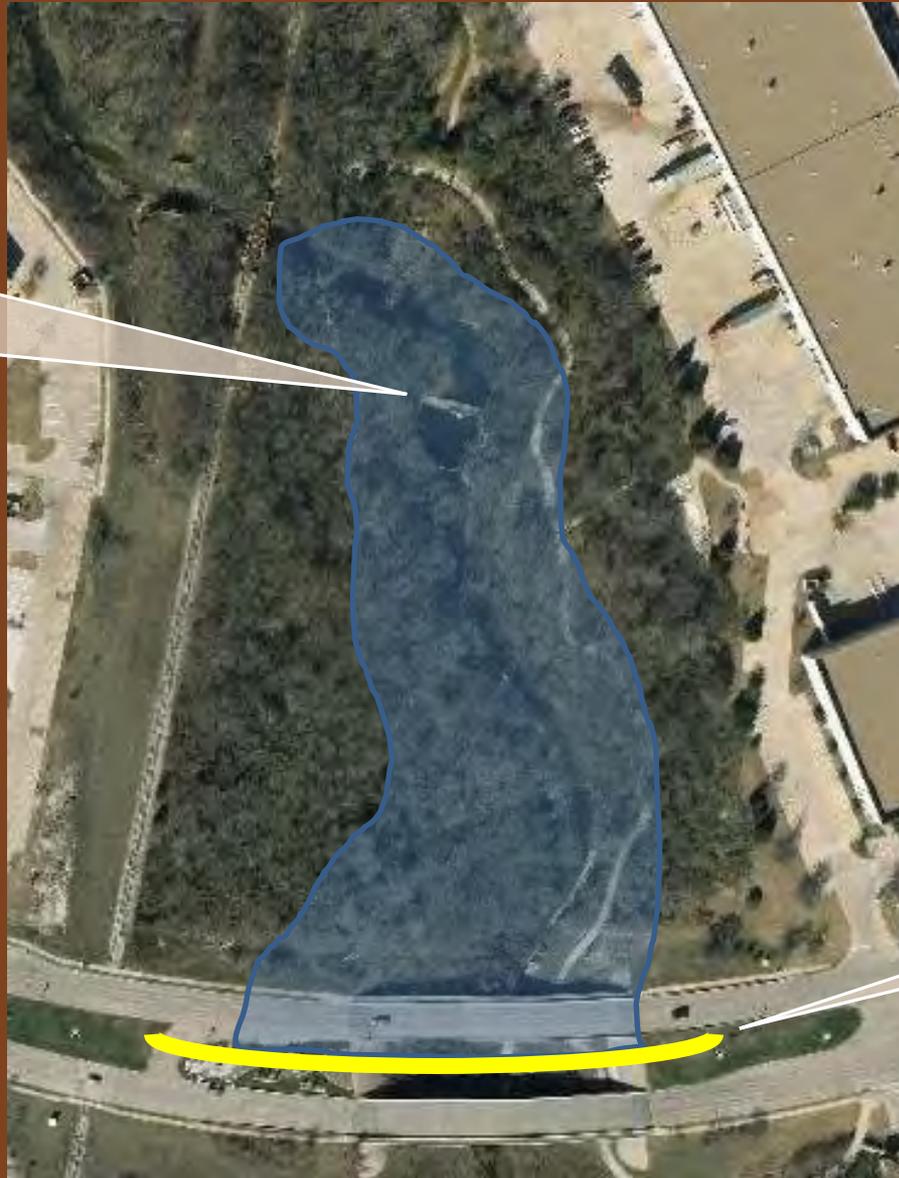
1874-1999

Beginnings - The HT&C Railroad



Hidden Treasure

1874 Dam
inundated by
1912 dam
impoundment of
Cottonwood
Creek



1912 Dam

2000-2002

Hidden Treasure



ca. 2000

Flood of 2001



Early Conservation Efforts



Archaeologist Alan Skinner, PhD,
former Parks Director Don Horton
looking on

Archaeological
dig January
2002, west
creek bank





Views of piping system and second generation pump facility ruins. Water was pumped from the reservoir to the water tank to refill tender cars for steam engines.



Archaeologist Alan Skinner conducting an exploratory dig of stonework at west end of 1874 dam, found to extend approximately 40 feet outside creek channel

Early Conservation Efforts



City
“historian”
Tom Keener
with Allen
school kids at
1874 Dam site
2002

Early Conservation Efforts



Early Conservation Efforts



Early Conservation Efforts



Early Conservation Efforts



Privately built trailhead dedicated to City of Allen

Trammel Crow Office Warehouse Development

Early Conservation Efforts



Upstream storm water dissipation basin

2003-2009

Allen's H & T C Railway Water Station Site

Prepared

By Kelly McGinnis, GPC

for the

Allen Heritage Guild

November 5, 2008



H & TC Railway Water Station, Allen, Texas National Register Nomination

The Allen Water Station (H&TC Railway Water Station) in Allen is a historic district containing structures and ruins of structures built by the Houston & Texas Central (H&TC) Railway Company beginning in 1874. Typical of 19th century water stations maintained by railroad companies, the Allen Water Station featured a dependable water source, a pump facility, a network of water pipes, and a rail-side water tank. The district today contains the archaeological and architectural remains of all its former facilities and is currently open to the public as a local heritage park that highlights the important role that the H&TC railroad played in late 19th century commerce, transportation and settlement in North Texas. The most visible component today is its 1874 stone dam extended across Cottonwood Creek, which created the water supply critical for operating the station. Other recognizable components in the immediate vicinity are the stone masonry architectural footings of a rail-side water tank and the brick and concrete ruins of a second-generation pumping facility. The site retains a good degree of integrity, despite the loss of some of its wooden structures, because enough archeological components remain to provide information about the site's original layout and use.

Historic Railroad Water Station Site



City of Allen

★ Water station location



1910
Railroad
Bridge

Pumping
Facility
Ruins

1874
Stone
Dam

Water
Tank
Ruins

Dallas Area Rapid Transit Property

Allen Station Park Property

Location of water
station
remains

Trail with
SAL
Marker
Signage

Remains of 1912
Concrete Dam

City of Allen
Trail Head

E EXCHANGE PKWY

ANGE PKWY

1874 Stone Dam on Cottonwood Creek prior to installation of erosion control gabions

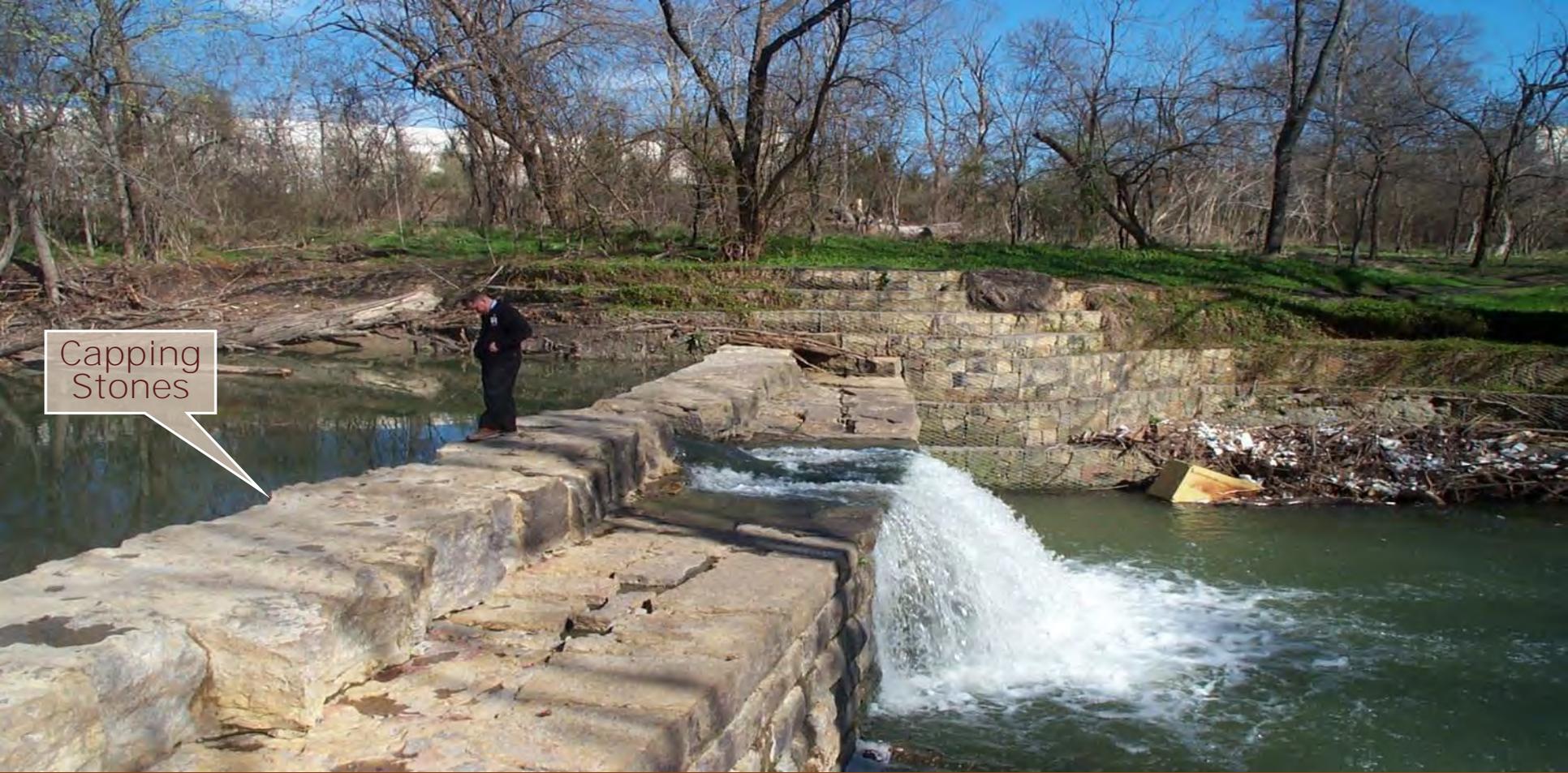


The 1874 stone dam is more accurately called an *overflow dam* or *weir*, as its crest can be completely topped by water because it has no spillway, and tail water washes up against its downstream face (Bligh 1916). A true bulkhead dam would be free of water along its downstream face and would dispose of excess water through a spillway or smaller waste water weir while maintaining a crest that is never overtopped. On maps depicting the 100 year flood plain, the old structure is labeled a “weir.”



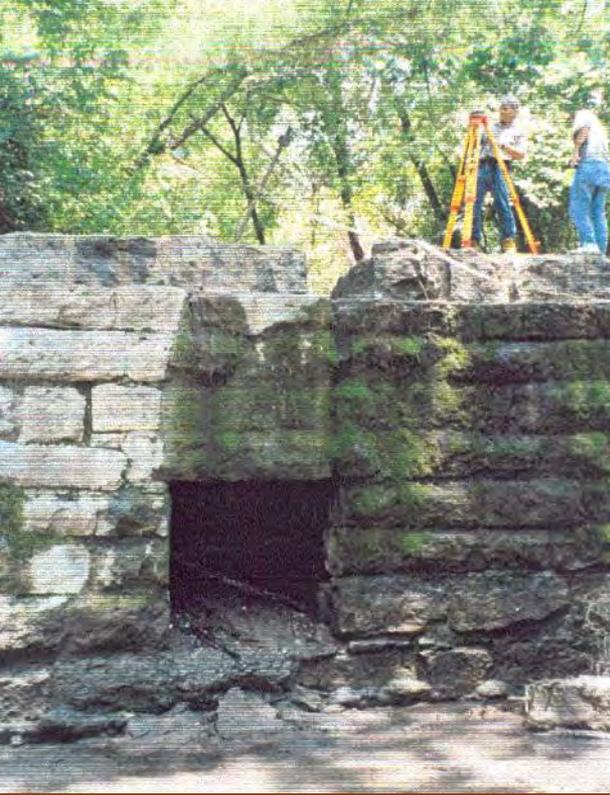
Erosion Control
gabions
constructed in
2002

The 1874 stone dam probably was the largest structure on the immediate water station premises until the 1912 dam (demolished) was built by Southern Pacific Railway. The central section of the 1874 dam is about 100 feet long and 10 ft.-8 inches wide at its widest part. It forms a large bulkhead made from six courses of large stone blocks currently above the water level of the plunge pool. The courses raise the dam about 8.5 ft above the plunge pool at its flanks and only about 7.8 ft in center, indicating that the broad top of the structure slopes inward toward the middle.



Capping
Stones

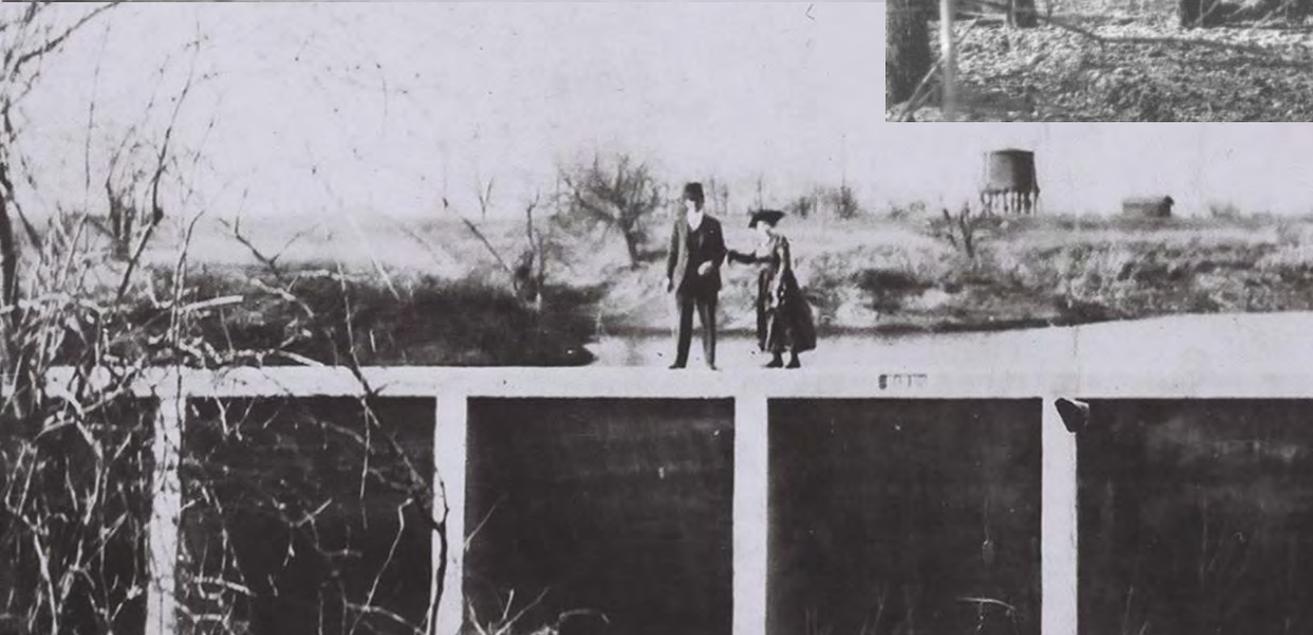
The dam appears to consist of two stages of masonry construction. Most of it is made from large roughly shaped sandstone blocks about 15 inches thick used to construct the bulkhead. There are six courses of these blocks showing above the plunge pool's waterline. On top of the dam is a single row of large and thicker blocks, called capping stones that were used to raise the height of the dam sometime after it was originally constructed. These blocks form a straight topped crest while the more massive section of the dam was sloped to drain toward the center. One of the capping stones was removed years ago and the water flowing over the dam in these photos is passing through this gap in the capping stones.



The sluice gate is an opening five feet wide and four feet tall toward the bottom center of the dam. The gate works similar to a frame window and is made of wood. It would have been raised to empty the water from the reservoir to clean out the silt and then lowered again. Wooden framework fragments (clear cypress?) are behind the sluice gate on the upstream side of the dam. Each piece of wood has one bolt, nut and washer which are very similar in size, texture and color to other artifacts found downstream. The threaded metal rod extending approximately 6' above the dam was used to operate the wheel which opened the sluice gate. The nut on the rod is 3.5 inches thick.



In March 2008, the threaded metal rod was reported as missing. It may be in the reservoir and possibly be recovered for preservation.

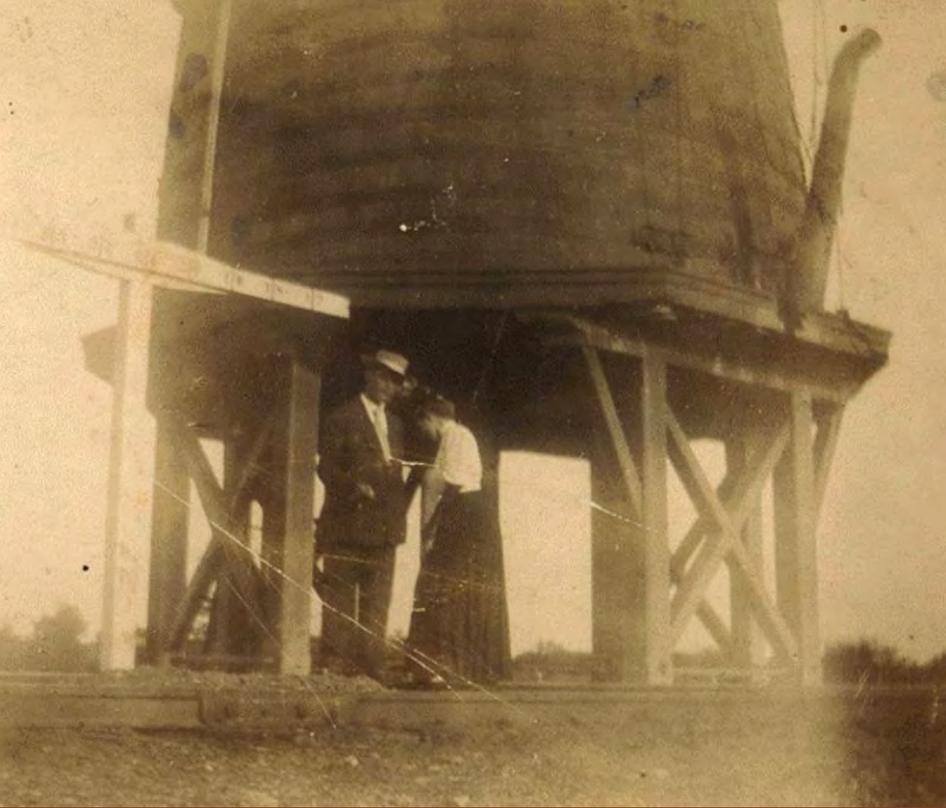


1912 concrete dam
constructed by Southern
Pacific Railroad with water
tank and section house
in background
(photos courtesy of Allen
Heritage Guild).

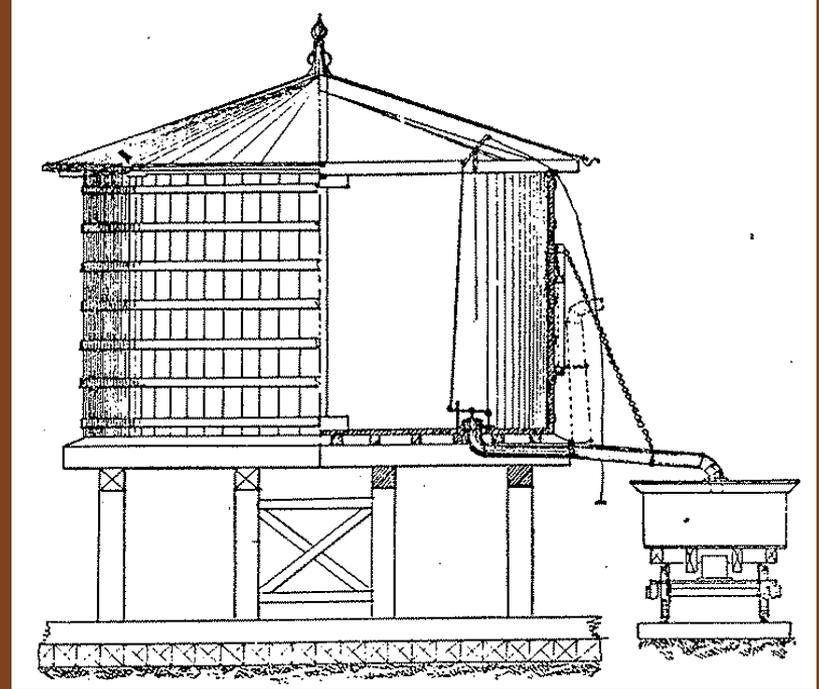
The larger reservoir created by the 1912 concrete dam submerged the 1874 stone dam and created a recreational swimming hole for local youth. The 1912 concrete dam was breached in the 1960's and demolished in the mid-1990's.



Upstream or back side of the 1874 stone dam (view from northwest to southeast). Archaeological boring tests indicate that sediment (foreground) from the 1912 dam buried approximately 30 feet of the west side of the 1874 stone dam, which remains buried today.

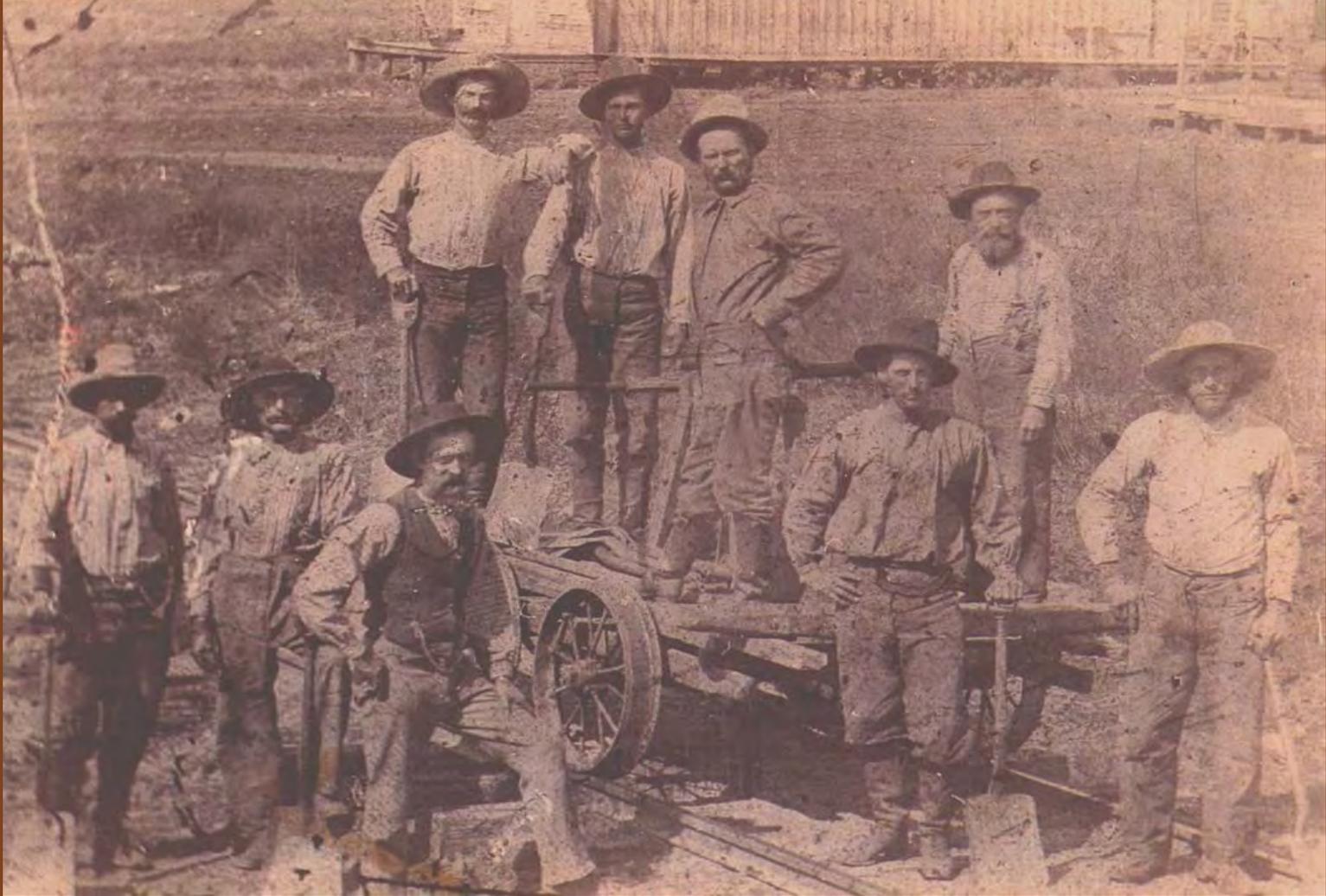


ABOVE: Allen Water Tank (photo courtesy of Allen Heritage Guild). Right: Remains of three rows of twelve stone piers from the 1874 rail side water tank with rail tracks in background. The base required two center rows of four piers each flanked on both east and west sides by a row of two piers each. Piers closest to the track are now partially covered by Southern Pacific Railway's newer rail embankment.

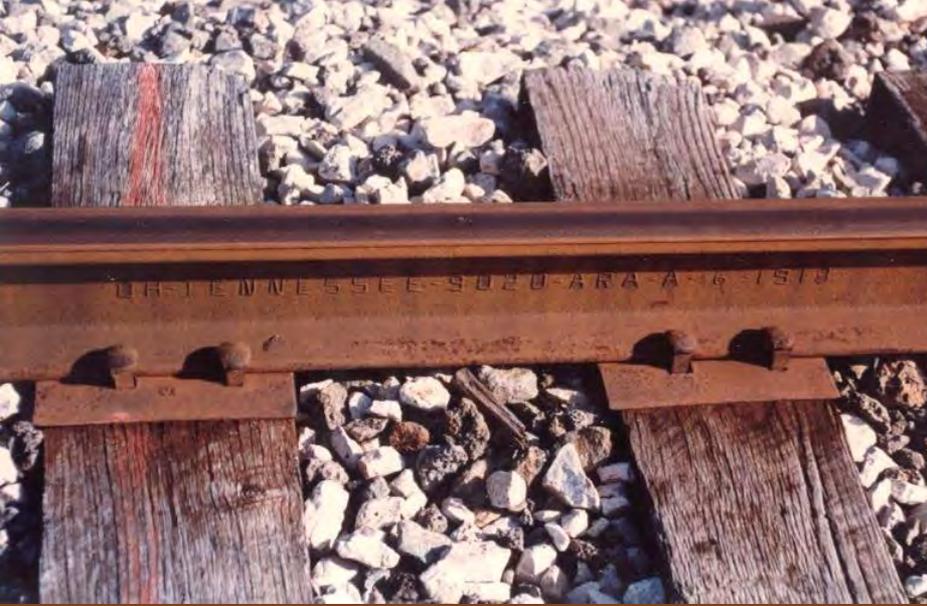


1880's water tank common to warmer climates showing internal workings of the gooseneck delivery spout and interior levered lid-valve for letting water flow down the spout (Berg 1893:119)





Late 19th century photograph of railroad laborers in foreground and Section House in background provided by a local descendent of Hawk Peters, Section Foreman (shown in foreground, third from left, died 1890). U.S. Census records indicate railroad laborers originating from Ireland, Germany, Switzerland, and the United States lived in the railroad camp in 1880 and 1900. The camp was occupied by railroad personnel until diesel engines replaced steam engines in the late 1940's, although one attendant remained until 1950.



Railroad tracks with lettering

"OH - TENNESSEE - 9020 - ARA - A - 6 - 1918"
According to the SPHS Archivist, the rail was produced in June, 1918 by the Tennessee Coal, Iron and Railroad Company in Birmingham, Alabama.

Railroad tracks with water tower foundation piers just to the east of the tracks.
View southwest to northeast.



View from south to north along
railroad tracks.



1910 rail bridge over Cottonwood Creek. This is an early 20th century replacement of the original H&TC rail bridge. Note the older stone masonry abutment that today serves as a retaining wall. The top of the wall and adjacent ground surface were covered by concrete to prevent erosion.

Set back from the edge of the wall are large wood timbers and wooden blocks used to seat the south end of the iron bridge carrying the tracks. Three courses of specially stacked timbers distribute the weight of passing trains. The older sandstone retaining wall shows some major fractures that can be traced through five courses where the east side of the bridge would have distributed its load when the bridge sat on top of the wall. Today the bridge is set back from the top of the wall about 4 to 6 feet and its weight is redistributed over the concrete surface well back from the stone abutment.

"CENTRAL ROUTE."

HOUSTON

—AND—

TEXAS CENTRAL RAILWAY.

SCHEDULE OF

FREIGHT AND PASSENGER TIME.

In Effect November 9th, 1879.

DAILY THROUGH EXPRESS TRAINS

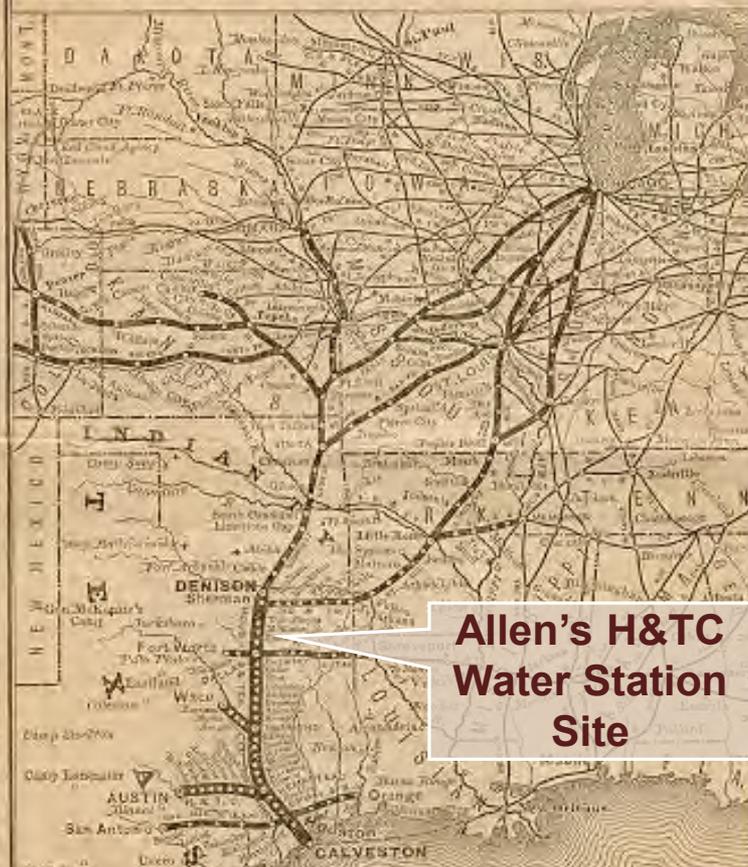
—AND—

DAILY FAST FREIGHT TRAINS, EACH WAY!

Passengers have Choice of the Three Favorite Routes to St. Louis and Chicago and the East, via the

Short Line to all Points between KANSAS CITY and SAN FRANCISCO!

HOUSTON & TEXAS CENTRAL RAILWAY.



SHORT LINE TO HANNIBAL AND ALL POINTS NORTH

**Allen's H&TC
Water Station
Site**

Front and back cover of a Houston and Texas Central Railway train schedule pamphlet dated November 7, 1879, courtesy the Texas State Library and Archives Commission. On the back cover, the map depicts the significance of Allen's Water Station Site. Destinations in the East, West and South can be reached by passing through

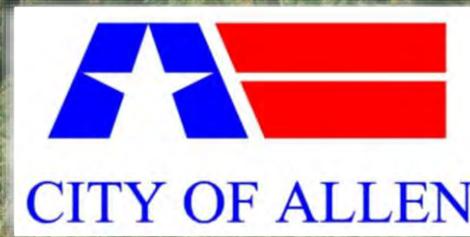
Allen's H&TC Water Station Site.

State Board of Review – Sept. 20, 2008

Fort Worth Botanical Gardens



Saturday, September 20, 2008. Nomination of Allen's water station site to the National Register of Historic Places. Gregory Smith, National Register Coordinator with the Texas Historical Commission, presented our nomination to members of the State Board of Review. The Board made special note of our detailed information and voted unanimously to nominate Allen's Water Station Site to the National Register. The site was listed on the National Register on December 3, 2009



Old Stone Dam Gabion Enhancement Project

Funded by the Allen Community
Development Corporation

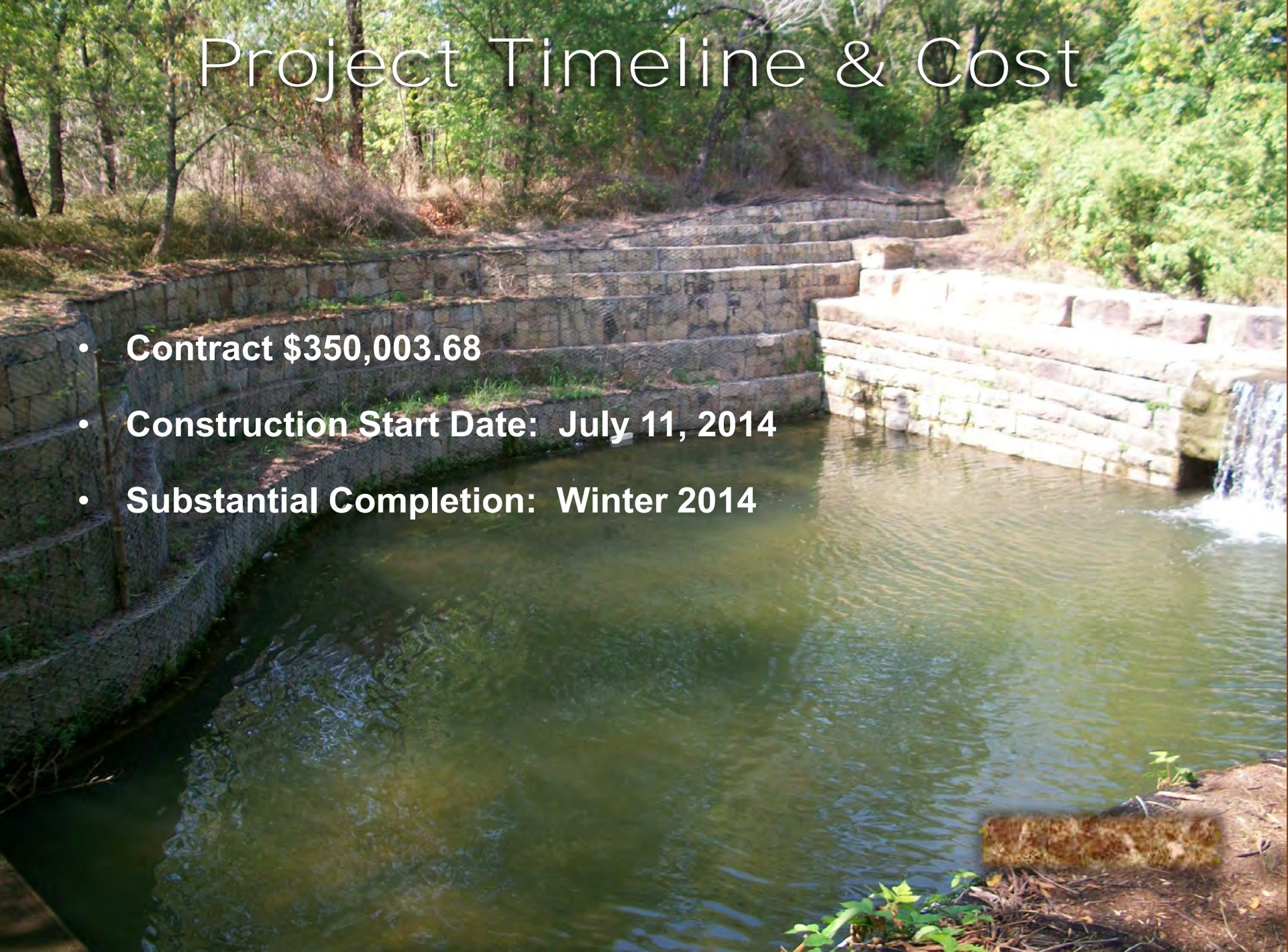
August 18, 2014

Goals for Construction

- **Repair existing gabions**
- **Protect banks immediately downstream of existing gabions**
- **Anchor gabions to provide improved stability**
- **Widen constrictive area**
- **Match existing gabions**

**Photo Taken:
Oct. 2012**

Project Timeline & Cost

A photograph of a stone retaining wall with a waterfall. The wall is constructed from large, rectangular stone blocks and runs along a body of water. The water flows over the wall, creating a small waterfall on the right side. The background is filled with lush green trees and foliage, suggesting a natural, wooded setting.

- **Contract \$350,003.68**
- **Construction Start Date: July 11, 2014**
- **Substantial Completion: Winter 2014**

Gabion Construction Overview



2015

Flood of 2015



Rolling Stones In Cottonwood Creek



Rolling Stones In Cottonwood Creek



Rolling Stones In Cottonwood Creek



Rolling Stones In Cottonwood Creek



Historic Dam Repairs

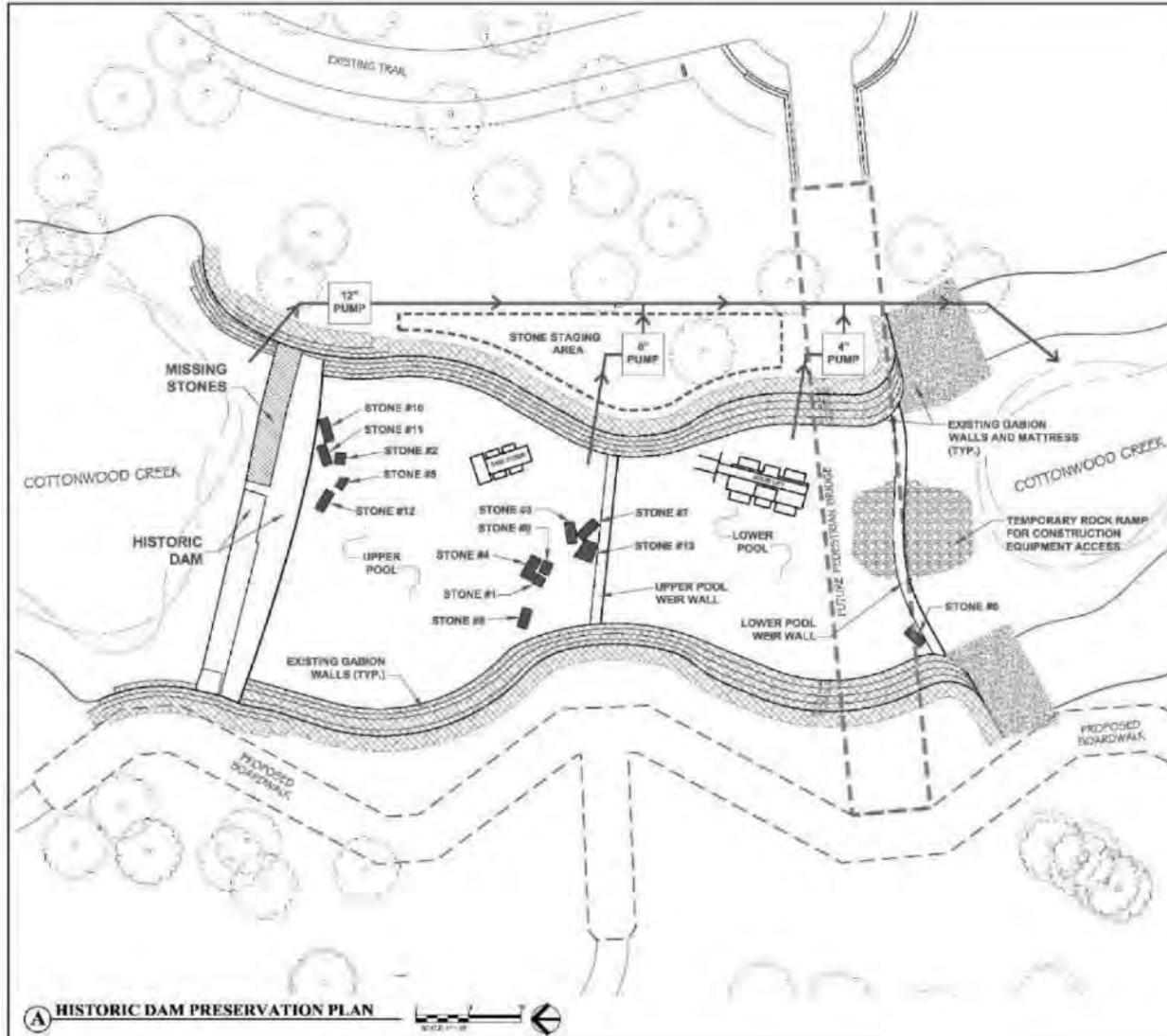


Includes:

- Permitting through Texas Historical Commission
- Plan and specification generation
- Retrieval of stones
- Cleaning and preparing stones for reinstallation
- Stone identification
- Mortar testing and identification
- Documentation of construction activities
- Final completion report to THC



Historic Dam Repairs



CONTRACTOR MEANS & METHODS FOR STONE RECOVERY & PLACEMENT:

1. CONTRACTOR TO MOBILIZE ONSITE. UPON MOBILIZATION THEY WILL SECURE THE SITE AND SETUP A PUMP SYSTEM TO DRAW WATER DOWN IN THE UPPER-STREAM CREEK POOL AND BOTH THE UPPER AND LOWER WEIR POOLS BELOW THE HISTORIC DAM. THE WATER WILL BE PUMPED AROUND AND BYPASSED JUST BELOW THE LOWER WEIR WALL. THIS WILL HELP FACILITATE PROPER WORKING CONDITIONS IN ORDER TO GAIN ENTRY TO RECOVER THE STONES.
2. ONCE THE WATER IS DRAINED OF THE WEIR POOLS THE CONTRACTOR WILL DEPOSIT LOSE STONE ROUGHLY 6" - 8" DIAMETER IN SIZE AT THE WEIR WALL THAT FORMS THE LOWER POOL. THIS STONE WILL BE SHAPED AND TAPERED BOTH ON THE NORTH AND SOUTH SIDES OF THE LOWER POOL WEIR WALL IN ORDER TO FORM A TEMPORARY RAMP. THE TEMPORARY RAMP WILL FACILITATE ACCESS OR ENTRY INTO THE LOWER POOL FOR A SKID STEER AND A BOOM LIFT WITH FORKS.
3. ONCE ENTRY IS GAINED TO THE LOWER POOL THE BOOM LIFT WILL LIFT THE SKID STEER OVER AND INTO THE UPPER POOL. THE SKID STEER WILL RETRIEVE THE STONES WITHIN THE UPPER POOL AND SET THESE IN PROXIMITY TO THE UPPER POOL WEIR WALL. ONCE STONES ARE NEAR UPPER POOL WEIR WALL AND IN REACH OF THE BOOM LIFT, WHICH WILL OPERATE OUT OF THE LOWER POOL, THE BOOM LIFT WILL RETRIEVE AND LIFT THE STONES TO THE EAST TOP OF CREEK BANK AS LABELED AS THE STONE STAGING AREA. STONES WILL BE PLACED ON WOOD PALLET'S TO FURTHER FACILITATE REINSTALLATION UPON THE HISTORIC DAM.
4. ONCE ALL STONES HAVE BEEN PLACED WITHIN STAGING AREA THE CONTRACTOR WILL LIGHTLY WASH AND REMOVE THE ALGAE AND MOSS BUILDUP FROM THE STONES. THIS WILL ALLOW FOR FURTHER IDENTIFICATION AND NECESSARY EXAMINATION OF STONES IN COMPARISON TO PHOTOGRAPHIC DOCUMENTATION ON FILE THAT WILL BE USED AS A GUIDE FOR PLACEMENT. REMOVAL OF THE ALGAE AND MOSS WILL ALSO ALLOW IDENTIFICATION OF ANY REMAINING REMNANTS OF MORTAR, WHICH WILL PROVIDE INSIGHT TO PREVIOUS STONE ORIENTATION. IN ADDITION NATURAL VARIATIONS AND CHARACTERISTICS OF EACH STONE WILL AID IN IDENTIFICATION WHEN COMPARED TO PHOTOGRAPHS, WHICH WILL INSURE PROPER PLACEMENT.
5. ONCE STONES HAVE BEEN CAREFULLY WASHED CITY OF ALLEN PARKS STAFF WILL EXAMINE EXISTING PHOTOGRAPHIC DOCUMENTATION ON FILE TO INSURE PROPER PLACEMENT AND ORIENTATION OF THE STONES IS MET.
6. PRIOR TO THE RESETTING AND INSTALLATION OF THE STONES, THE HISTORIC DAM WILL BE PREPARED TO RECEIVE STONES BY PUMPING THE UPPER-STREAM CREEK POOL DOWN JUST ENOUGH TO PREVENT WATER FROM FLOWING OVER THE DAM. AS MENTIONED EARLIER IN ITEM #1 ABOVE THE WATER WILL BE PUMPED AND BYPASSED AROUND THE DAM, BUT THIS TIME ONLY INTO THE UPPER POOL. ONCE THE WATER IS LOWERED BELOW THE TOP OF DAM, THE DAM WILL BE CAREFULLY CLEANED REMOVING ALGAE, MOSS AND ANY DIRT THAT MAY JEOPARDIZE SUCCESSFULLY ADHESION OF NEW MORTAR.
7. ADDITIONALLY THE CITY OF ALLEN PARKS DEPARTMENT HAS HIRED AN OUTSIDE MATERIALS TEST FIRM TO CONDUCT A SERIES OF TESTS ON THE EXISTING MORTAR. TESTS HAVE INCLUDED STRENGTH (PSI) AS WELL AS MATERIAL COMPOSITION AND MAKE-UP. RESULTS RENDERED WILL INSURE THE NEW MORTAR IS THE CLOSEST MATCH TO THE OLD IN ALL ASPECTS (COLOR, STRENGTH AND CHEMICAL MAKE-UP OR COMPOSITION).
8. DURING THE DURATION OF THE ABOVE TASKS THE CONTRACTOR AND THE CITY OF ALLEN WILL USE EXTREME CAUTION WHEN HANDLING AND WORKING WITH THE STONES. ADDITIONALLY THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING HIS/HER OWN WORK FROM DAMAGE AND SECURING THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO WEATHER EVENTS AND VANDALISM.
9. CONTRACTOR SHALL NOTIFY OWNER OF ANY CONFLICTS AND SHALL DIRECT ALL INQUIRIES TO PROJECT MANAGER. (MATTHEW D. M.COMB @ 214-399-4721).



ALLEN HISTORIC WATER STATION

REVISION	
NO.	DESCRIPTION

HISTORIC PRESERVATION PLAN

HP2.0

2016

Site Plan



Includes:

- New trailhead
- Existing trailhead improvements
- Pedestrian bridge w/ overlook
- Raised observation boardwalk
- Pedestrian plazas for educational opportunities
- Interpretive signage
- Soft surface trail
- Trail replacement & repairs
- Train themed site furnishings
- Historic Dam repairs

Grants

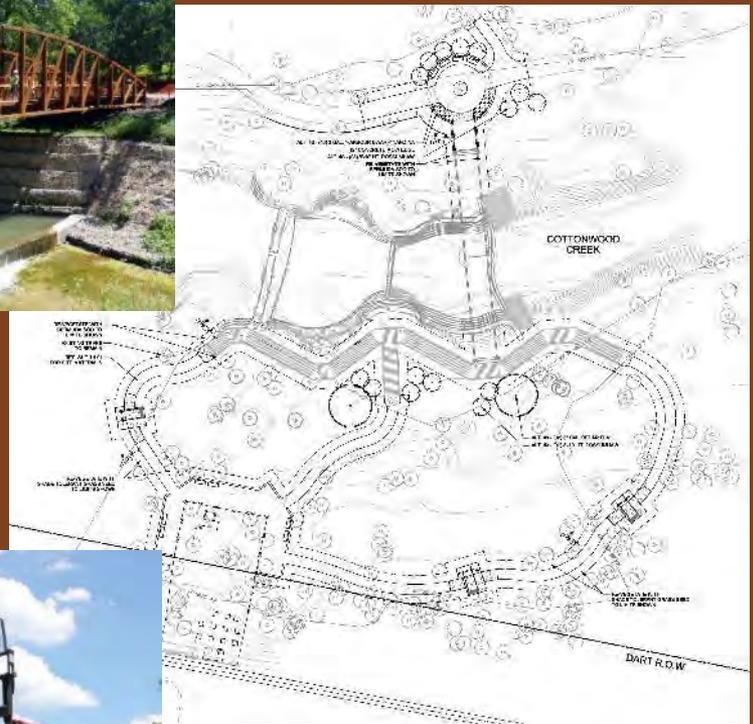
Grant funds =	\$ 312,682 (Collin County Parks and Open Space Program)*
	\$ 2,500 (Collin County Historical Commission)**
CDC trail funds =	<u>\$ 1,043,132</u>
Total Budget =	\$ 1,358,314

* Bridge and concrete trail

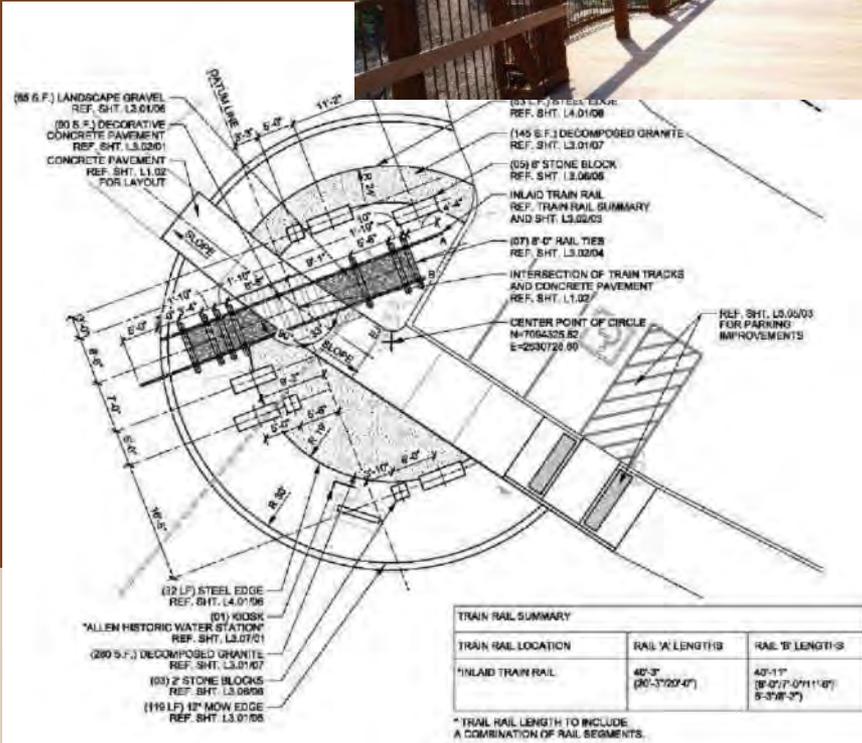
** Protective fencing at ruins of elevated tank



Pedestrian Bridge



New Trailhead



Boardwalk

Historic Dam Site Improvements

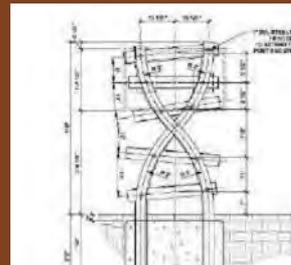
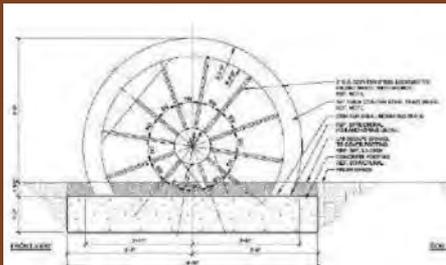
Other Site Elements



Soft Surface Trail



Train Themed Site Furnishings



Other Site Elements



Beginnings - The HT&C Railroad

HOUSTON & TEXAS CENTRAL RAILROAD

EXCURSION TICKETS AT REDUCED RATES

HOUSTON & TEXAS CENTRAL STATIONS

WOOTAN WELLS

YOUR ROUTES TO TEXAS

HOUSTON & TEXAS CENTRAL R.R.



TEXAS

CONTAINS NEARLY

180,000,000 Acres

OF LAND,

The natural Agricultural and Pastoral value of which renders it undeniably the most favorable location in America for actual settlers.

Expanding West

In the 1820's, a few missions and trading posts were scattered across the vast landscape of Texas while Native American tribes dominated the open plains. In 1845, Texas was annexed by the United States. Land grants were offered to attract settlers to the region and increase the population. One such colony was Peters Colony, headed by W.S. Peters. The emigration company advertised, primarily in Kentucky, Tennessee, Illinois, Indiana and Missouri, offering headrights (the right of an individual to receive land). The colonists could receive 640 acres of land for families and 320 acres for single men. The requirements for receiving the land including building a cabin, fence, and cultivating a minimum of 15 acres. Although an attractive offer, the greatest obstacles remained for inducing potential settlers to make the move, including the treacherous journey and difficulty with which resources were transported.

From the inception of the railroad in Texas, the relationship between the railway and the surrounding communities emerged quickly and significantly contributed to growth across the expanse of Texas. Texas needed trade to grow successfully. The original route envisioned by Ebenezer Allen would have extended from Galveston, a significant sea port, to Coffee's Station, an important trading post along the Red River. Growth in Texas over the next few years abruptly changed the course of the railroad and shifted the main line from Houston to Denison. Commerce and trade in Dallas, Houston, Austin, Galveston, Waco, and numerous other small cities stimulated the growing need for moving goods across the state, and provided ample appeal for new settlers. More towns emerged because the H&TC simplified access to new land. With the train already making regular stops to refill at the water station, the City of Allen was established by a purchasing agent from H&TC in 1876, establishing a permanent station and providing support for the growing agricultural community. Within 10 years, an active little town emerged sporting a school, churches, gristmill, and a chair factory. Agriculture in Allen was the largest industry until the end of the 20th century when expanding highways created greater accessibility for businesses and commuters seeking to flee the bustle of Dallas.

H & TC Railway

The Houston & Texas Central Railway was originally christened Galveston and Red River Railroad Company in 1848 when Ebenezer Allen was granted a charter by the State of Texas; the name was later changed to Houston & Texas Central Railway Company in the 1850's. Construction on a rail line from south to north Texas began in 1853 with the groundbreaking at Houston, and progressed slowly over the next few years before the first track was laid. The constructed railroad reached Millican by 1861, almost 90 miles northwest of Houston, but was quickly halted by the start of the American Civil War. Following the War, the H&TC Railway was the first railroad company to resume construction on new lines trekking across the state.

By 1873, construction of the railroad reached from Houston to the Red River at Denison where the rail lines would transition to another railroad company, the Missouri, Kansas, and Texas Railway (MK&T). This route formed the central spine of the H&CT Railway, and a collaborative effort with the MK&T to provide service extending north throughout the mid-west and to the eastern United States.

The H&TC Railway was purchased by Charles Morgan in 1877 and acquired by Southern Pacific in 1883. The H&TC Railway was under the control of Southern Pacific, but continued to operate under the name H&TC Railroad Company and added more tracks. The company reported significant earnings from freight and passenger traffic. Success of the railroad and access to Texas oil led to H&TC making technological strides when they transitioned from a steam/coal burning engine to an oil burning engine. The H&TC lines spread out across Texas from Bremond to Ross (near Waco), Austin to Hempstead, Garrett to Fort Worth, and Austin to Marble Falls and Llano. When H&TC was leased by Texas and New Orleans Railway (T&NO) in 1927, the railroad had grown to include 872 miles of track. By the mid-1930's, the nature of the industry and organizational structure had changed so significantly that the H&TC had been largely disbanded as a result of Southern Pacific abandoning or selling off portions of track with the largest portion being absorbed by T&NO. Some of the tracks laid by H&TC Railway are still in use. Many lines are still owned and operated by a more modern Southern Pacific, and some local lines are in use by DART.

The 1874 Dam

CREW LOADING STONES ON A TRAIN



ORIGINAL STONE DAM DISCOVERY EFFORTS

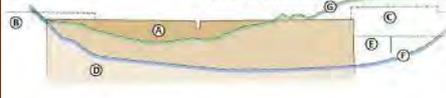


ORIGINAL STONE DAM FROM 1874 PRIOR TO 2002 RESTORATION



STONE DAM ELEVATION

- A) Stone Dam
- B) East Abutment
- C) West Abutment
- D) Bottom of Stone Structure
- E) Older Dam Repair
- F) Existing Downstream Face Natural Grade
- G) Existing Upstream Face Natural Grade



WOODEN SLUICE GATE

Sluice Gate - A sliding gate and tunnel that was used to keep sediment from filling the upstream pool too quickly. The picture shown is a representation of a sluice gate that differs from the Allen Historic Dam sluice gate, which was constructed of iron and wood.

The dam has a sluice gate and tunnel that was used to keep sediment from filling the upstream pool too quickly. The picture shown is a representation of a sluice gate that differs from the Allen Historic Dam sluice gate, which was constructed of iron and wood.



Written Deeds for Old Stone Dam - 1874

(Transcriptions provided by the Allen Heritage Guild and the Itasca Guild Library)

Deeds Vol. X, p.462
Plano Texas August 8th, 1874

I, L.M. Oglesby this day agree and give my consent and permission that the Houston and Texas Central Railway may build and erect a dam across Branch known as Cottonwood Creek. This consent relates to my interest in said Creek my land running to the bed of said creek. Said dam to be built below the crossing of said creek north of James W. Franklin's house.

Respectfully,
L.M. Oglesby

State of Texas
County of Collin

Before me J.M. Wilcox a notary public in and for Collin county personally appeared L.M. Oglesby of the aforesaid State & County to me well known and acknowledged that he executed the foregoing instrument of writing for the purposes and designs thereto expressed.

Witness my hand and official seal and signature at office in Plano this 26th day of September 1874.
J.M. Wilcox notary public

Collin Co., Texas
Filed for record & recorded Dec. 31st at 11 o'clock AM 1874
J.O. Straughan clerk
By W.H. Taylor Dep

TRANSCRIPTION

*Deeds Vol. X, p. 462
Plano Texas August 8th, 1874
I, L.M. Oglesby this day agree and give my consent and permission that the Houston and Texas Central Railway may build and erect a dam across Branch known as Cottonwood Creek. This consent relates to my interest in said Creek my land running to the bed of said creek. Said dam to be built below the crossing of said creek north of James W. Franklin's house.
Respectfully,
L.M. Oglesby
State of Texas
County of Collin
Before me J.M. Wilcox a notary public in and for Collin county personally appeared L.M. Oglesby of the aforesaid State & County to me well known and acknowledged that he executed the foregoing instrument of writing for the purposes and designs thereto expressed.
Witness my hand and official seal and signature at office in Plano this 26th day of September 1874.
J.M. Wilcox notary public
Collin Co., Texas
Filed for record & recorded Dec. 31st at 11 o'clock AM 1874
J.O. Straughan clerk
By W.H. Taylor Dep*

Deeds Vol. X, p.461
State of Texas
County of Collin

Whereas the Houston & Texas Central Railway company desire to construct a dam across Cottonwood Creek in Collin County below and near the crossing of their line of Rail Way over said creek for the purpose of securing water to supply a tank at that point. Now therefore be it known that J.W. Franklin do hereby give grant and release unto the said Houston & Texas Central Railway Company that portion of the bed of said creek on our land which said company may select for the purpose above set forth, together with the perpetual use thereof and our full permission to erect said dam. In witness whereof put here unto sign our names this the 16th day of September AD 1874

J.W. Franklin

Deeds Vol. X, p. 461
State of Texas
Collin County

Before me personally appeared J.W. Franklin of the aforesaid State & County and acknowledged the written article of writing for the purpose thereof as expressed witness my hand & office this 26th day of Sept. 1874.

J.O. Straughan, clerk
By W.G. Taylor Dep
Filed and recorded Dec. 31st at 10 o'clock am 1874

TRANSCRIPTION

*Please Deeds August 8th 1874
I, L.M. Oglesby this day agree and give my consent and permission that the Houston and Texas Central Railway may build and erect a dam across Branch known as Cottonwood Creek. This consent relates to my interest in said Creek my land running to the bed of said creek. Said dam to be built below the crossing of said creek north of James W. Franklin's house.
Respectfully,
L.M. Oglesby
State of Texas
County of Collin
Before me J.M. Wilcox a notary public in and for Collin county personally appeared L.M. Oglesby of the aforesaid State & County to me well known and acknowledged that he executed the foregoing instrument of writing for the purposes and designs thereto expressed.
Witness my hand and official seal and signature at office in Plano this 26th day of September 1874.
J.M. Wilcox notary public
Collin Co., Texas
Filed for record & recorded Dec. 31st at 11 o'clock AM 1874
J.O. Straughan clerk
By W.H. Taylor Dep*

1874 Dam

The Water Station

WATER TOWER WHILE STILL IN USE



NAT'L RAILWAY TRAIN ENGINE #135



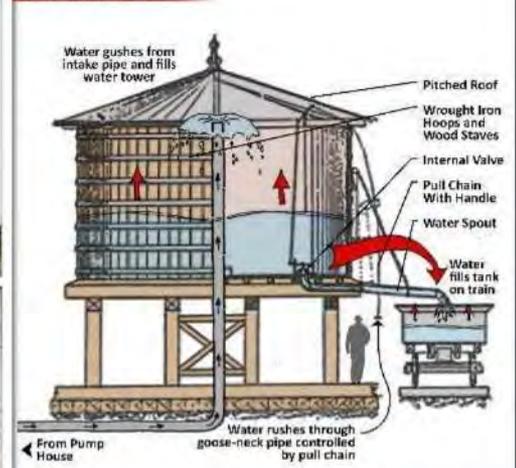
CLOSE-UP OF A STONE PIER



ORIGINAL ENGINEER'S SKETCH OF WATER TOWER (ISSUE)



LANDMARK OF WATER TANK



Water Tower

The Allen Water Station, built in 1874, is located approximately 200 feet west of the Old Stone Dam and served as a "water stop" for trains running on the H&T.C. Railway. The Town of Allen would eventually become a true station in 1876 two years after the water stop was built. Allen Water Station's water tank photo (above) was taken in the early 20th century and acquired by the Allen Heritage Guild from a local resident (copy courtesy Allen Heritage Guild). The photograph shows Allen's circular wooden water tank with slightly conical sides rather than a true cylinder making the tank's base wider than its top. The tank sits on an octagonal wooden platform that is supported by the 12 large wooden posts that have cross braces to strengthen them. The tank has at least 10 wrought iron hoops holding its wooden staves together. They are spaced more closely together at the bottom to handle the additional weight. Documentary information of the Allen Water Station Tank construction has not been located but by cross referencing historical photos, as seen above, with Berg's Buildings and Structures of American Railroads: A Reference Book, 1893 a historically approved reference, the

tank's design, construction and features can be understood. The Allen Water Tank was designed much like many of the ones depicted in late nineteenth century. According to Berg, water tanks commonly incorporated octagonal shapes to make floors and roofs. Iron hoops were used to join the wooden staves and provide structural support. A goose-neck delivery spout dispensed water from the tank into tender cars, which were large storage vessels on the train.

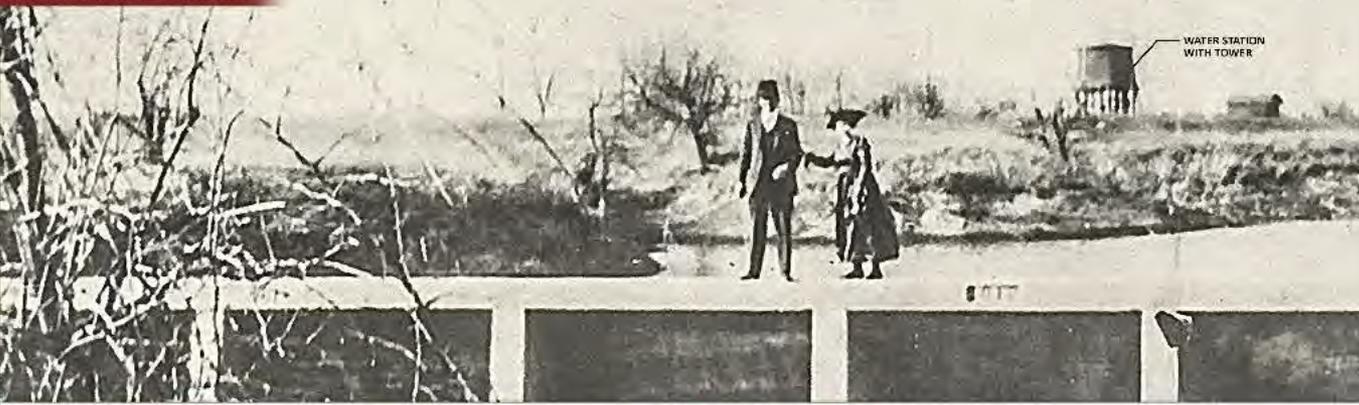
The Allen photograph does not show enough of the top of the water tank to determine the roof pitch but the use of an octagonal floor, iron hoops, and a goose-neck spout are clearly visible. All that remains today are the twelve stone piers that once supported the water tank. The stone piers are about 26 inches square and covered by 30 inch square capping stones seated on top. The piers vary from 6 inches to more than 3 feet above the gravel slope of the raised embankment.

The above illustration shows a typical railroad water tank with many characteristics similar to the Allen Station water tank. The image shows how the simple lever system opens an internal valve in the tub to let water flow down the goose-neck spout and into tender cars.

Research of the Railroad valuation records of the Interstate Commerce Commission's Bureau of Valuation from November 17, 1919 held by the National Archives and Records Administration identify Allen's water tank to have been 16 feet high and 24 feet diameter, with a 10 inch Fairbanks Morse tank spout, a 34 foot wooden ladder, and 45 feet of iron piping. The tank was supported on a tower of 12 - 13 feet long posts which were supported on 12 piers of coarse cut stone. Historians believe that with a 5 foot roof, typical of tanks, and the wooden support structure, the entire tower stood about 30 to 35 feet tall with the goose-neck spout about 12 feet above the tracks.

The 1912 Dam

LOCAL RESIDENTS WALKING ON THE DAM



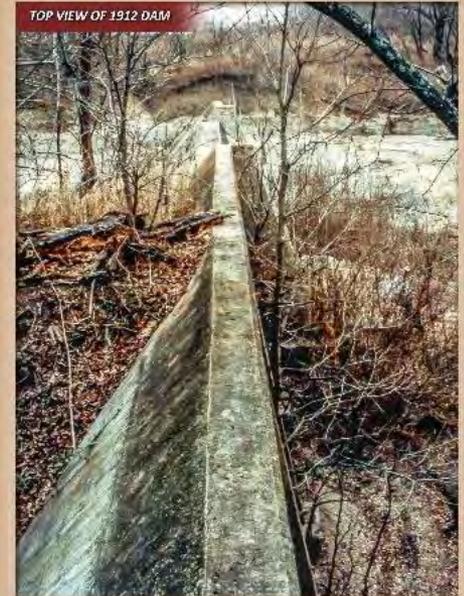
LOCAL RESIDENT CANOEING ON THE DAM RESERVOIR



WING WALL OF 1912 DAM



TOP VIEW OF 1912 DAM



When Exchange Parkway was in design in the 1990's, it was originally aligned in the direct path of the 1874 stone dam. A long time resident brought their concern for Allen's historic 1874 stone dam to the City's attention. City staff realigned Exchange Parkway south of the 1874 stone dam and worked with the Texas Historical Commission to list the 1874 stone dam and water station as a State Archaeological Landmark. The remains of the 1912 concrete dam were removed with the construction of Exchange Parkway in the late 1990's.

DOWNSTREAM VIEW OF 1912 DAM



1912 Dam

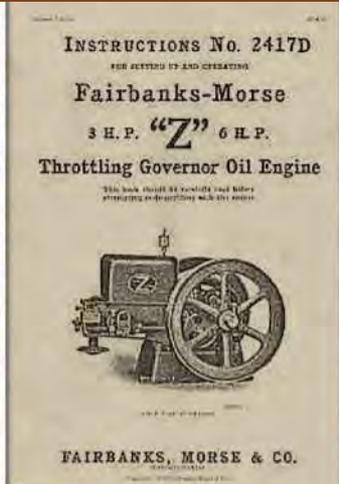
It is thought that Cottonwood Creek is spring-fed, and provided a reliable source of water needed for steam locomotives. According to local historians, the 1874 stone dam began to fill with sediment causing a reduction in clean water. As the need for clean water for locomotives increased, the H&TC Railroad constructed a large concrete dam in 1912 at the approximate location of today's Exchange Parkway. The 1912 dam created a larger reservoir which submerged the 1874 stone dam. The reservoir created was a benefit enjoyed by the entire community who used it for boating, fishing and swimming. The installation of the larger dam, which significantly increased the water supply, is a testament to the importance of the Allen Water Station to the railroad.

With the 1874 dam being submerged, one local informant, who grew up only 1,000 feet southeast of the 1874 stone dam in the 1930's and 1940's,

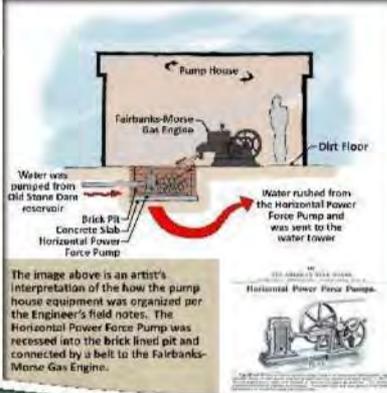
recalled that the 1874 stone dam was forgotten and was never sufficiently exposed to be recognized. Apparently, the 1874 stone dam had been submerged long enough that younger residents did not know it ever existed.

The 1912 dam was eventually breached in the 1960's, and this breaching lowered the remaining reservoir such that the 1874 stone dam was exposed. Additional down cutting on the west side of the 1912 dam eventually brought Cottonwood Creek's channel back to its natural elevation. As the larger reservoir drained, the long submerged 1874 stone dam rose from the floodwaters and began to function once again. Water passing over the 1874 stone dam carried away the sediment that had clogged it since the 1912 reservoir was constructed and the creek returned to its original channel sometime in the 1970's.

The Water Station



There are no records to confirm how water from Cottonwood Creek was initially pumped to the tower prior to use of gas engines. Historic records (Engineers Report 11-17-19) indicate that a 5 horse power gas engine was on site and in the pump house in 1919.



HERCULES ELECTRIC CO. "HIZARD" MAGNETO, PATENTED 1904

Significance of the Ignition Magneto

The combustion engine from 1680 to 1800 would change over many years but one problem remained: a constant source of spark to ignite gasoline to make the combustion engine run efficiently. In 1831, Michael Faraday, an English scientist, designed the magneto motor that created an artificial source of electricity, but it was simple and impractical. In 1887, Engineers Fredrick Richard Simms and Robert Bosch adapted a later model magneto created by Dautz AG, attached it to an automotive engine, and successfully ran an engine with a viable source of a high voltage spark. Two years later, a mass produced Ignition Magneto was introduced to the automotive industry by Daimler Motors Corporation (now Mercedes-Benz), ringing in the era of the modern day automotive engine. With the successful combination of the engine and magneto, the combustion engine became successful, viable, feasible, and marketable allowing many motor companies, not just automotive, to mass produce gasoline fueled combustion engines.

Pump House

Located just 113 feet west of the west end of the dam are the ruins of a pump house facility. It consists of concrete slabs and brick and cement footings covering a 10 by 20 foot area. A small depression about 6 by 5 feet is very evident on the eastern side of the ruins. The age of the bricks used in the foundation of one section of the ruins date from after 1900 and were possibly from the reservoir expansion in 1912. The iron intake pipe noted below was probably installed about the same time that the pump facility was upgraded.

Railroad records of the Interstate Commerce Commission's Bureau of Valuation from November 17, 1919, held by the National Archives and Records Administration, identify the pump house as being 12' x 16'2" x 12' high, painted outside and inside, with a shingled roof, one flue, rustic walls, one 6'6" x 8' door, and three 2'10" x 3' windows with hinged shutters. These records also reflect one 2'6" x 3'8" x 4' deep pit outside of the pump house building, with a shingled roof shed above the 9" brick walls, a dirt floor, with a pit extension into the pump house. These records also indicate that water

pumped from the creek to the water tank by a 6 horsepower Fairbanks Morse gas engine with a 24" diameter x 36" long galvanized gas tank, and a 950 rpm single stage horizontal pump by American Well Works. Piping included 44' of water pipes, 19' of gas pipes, and 12' of exhaust pipes.

Water Intake Pipe

The iron intake pipe that drew water from the reservoir and carried it to the pump house was visible along the west side of the dam, prior to installation of the erosion control gabions. The pipe was made of iron and five inches in diameter. It likely originated from the 1912 reservoir facility since it appears to be placed above the dam proper and would be sitting in a very vulnerable place in relation to the 1874 stone dam. The iron intake pipes were removed in the 2003 restoration and are now in storage for future exhibit.

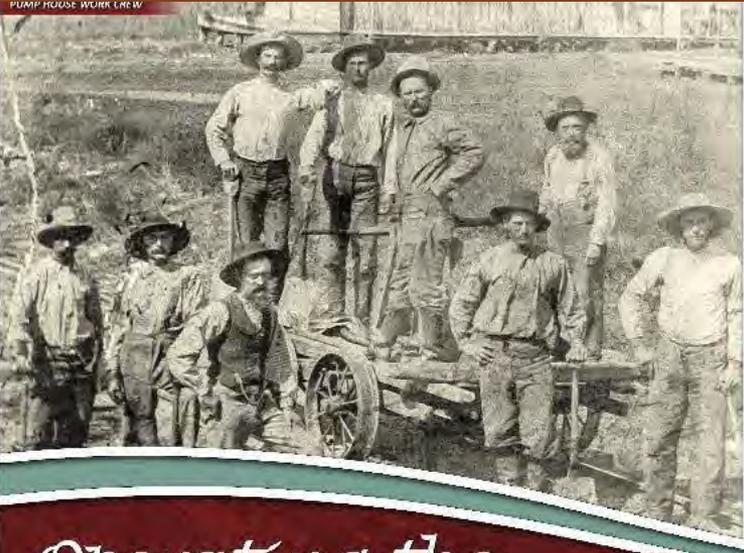
INTERSTATE COMMERCE COMMISSION
BUREAU OF VALUATION

No. 8. Edward C. L. Fitzhatter

No.	Description	Quantity	Unit	Value
1	Fairbanks-Morse Gas Engine	1	hp	100.00
2	Horizontal Power Force Pump	1	hp	150.00
3	Galvanized Gas Tank	1	unit	20.00
4	Water Pipes	44	ft	132.00
5	Gas Pipes	19	ft	57.00
6	Exhaust Pipes	12	ft	36.00
7	Concrete Slab	1	unit	10.00
8	Brick Pit	1	unit	10.00
9	Horizontal Power Force Pump	1	hp	150.00
10	Fairbanks-Morse Gas Engine	1	hp	100.00
11	Galvanized Gas Tank	1	unit	20.00
12	Water Pipes	44	ft	132.00
13	Gas Pipes	19	ft	57.00
14	Exhaust Pipes	12	ft	36.00
15	Concrete Slab	1	unit	10.00
16	Brick Pit	1	unit	10.00
17	Horizontal Power Force Pump	1	hp	150.00
18	Fairbanks-Morse Gas Engine	1	hp	100.00
19	Galvanized Gas Tank	1	unit	20.00
20	Water Pipes	44	ft	132.00
21	Gas Pipes	19	ft	57.00
22	Exhaust Pipes	12	ft	36.00
23	Concrete Slab	1	unit	10.00
24	Brick Pit	1	unit	10.00
25	Horizontal Power Force Pump	1	hp	150.00
26	Fairbanks-Morse Gas Engine	1	hp	100.00
27	Galvanized Gas Tank	1	unit	20.00
28	Water Pipes	44	ft	132.00
29	Gas Pipes	19	ft	57.00
30	Exhaust Pipes	12	ft	36.00
31	Concrete Slab	1	unit	10.00
32	Brick Pit	1	unit	10.00
33	Horizontal Power Force Pump	1	hp	150.00
34	Fairbanks-Morse Gas Engine	1	hp	100.00
35	Galvanized Gas Tank	1	unit	20.00
36	Water Pipes	44	ft	132.00
37	Gas Pipes	19	ft	57.00
38	Exhaust Pipes	12	ft	36.00
39	Concrete Slab	1	unit	10.00
40	Brick Pit	1	unit	10.00
41	Horizontal Power Force Pump	1	hp	150.00
42	Fairbanks-Morse Gas Engine	1	hp	100.00
43	Galvanized Gas Tank	1	unit	20.00
44	Water Pipes	44	ft	132.00
45	Gas Pipes	19	ft	57.00
46	Exhaust Pipes	12	ft	36.00
47	Concrete Slab	1	unit	10.00
48	Brick Pit	1	unit	10.00
49	Horizontal Power Force Pump	1	hp	150.00
50	Fairbanks-Morse Gas Engine	1	hp	100.00
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52	Water Pipes	44	ft	132.00
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54	Exhaust Pipes	12	ft	36.00
55	Concrete Slab	1	unit	10.00
56	Brick Pit	1	unit	10.00
57	Horizontal Power Force Pump	1	hp	150.00
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63	Concrete Slab	1	unit	10.00
64	Brick Pit	1	unit	10.00
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84	Water Pipes	44	ft	132.00
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86	Exhaust Pipes	12	ft	36.00
87	Concrete Slab	1	unit	10.00
88	Brick Pit	1	unit	10.00
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90	Fairbanks-Morse Gas Engine	1	hp	100.00
91	Galvanized Gas Tank	1	unit	20.00
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- Engineer's Report
- 1 - F. M. (Fairbanks Morse) gas engine horizontal simplex
 - 6 HP with fittings
 - Flywheel 2 1/2" face X 40" diameter
 - 250 RPM
 - Steel pulley 8" face X 27" diameter
 - Battery ignition and also magneto-Hercules Electric Company
 - type A1. Shop No. F99483
 - Belt-canvas 6" X 17" X 28"

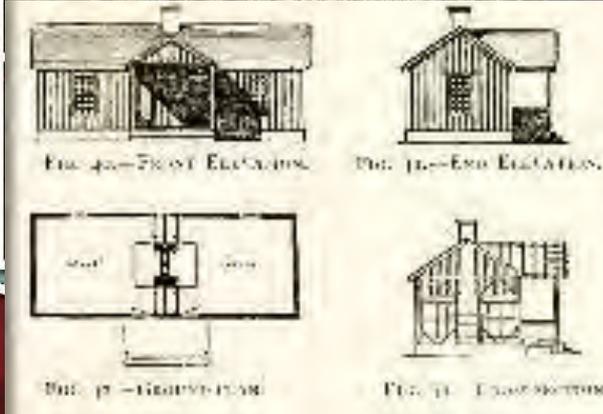
The Water Station



Operating the Allen Water Station

Above is a late 19th century photograph of railroad laborers in foreground provided by a local descendent of Hawk Peters, Section Foreman (shown in foreground, third from left, died 1890). U.S. Census records indicate railroad laborers originating from Ireland, Germany, Switzerland, and the United States lived at the Allen water station in 1880 and 1900. The camp was occupied by railroad personnel until diesel engines replaced steam engines in the late 1940's. The photograph clearly depicts the section house and bunk house in the background.

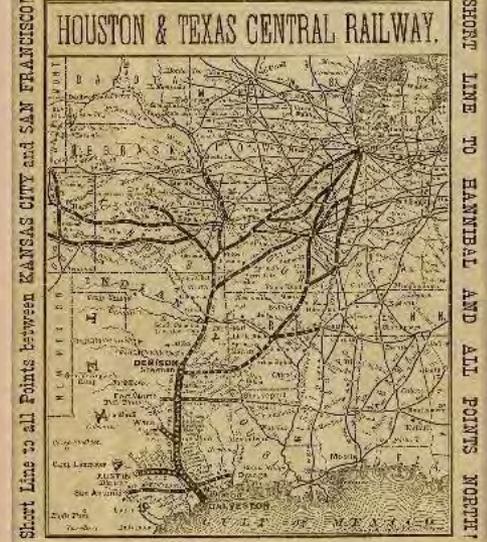
Railroad valuation records of the Interstate Commerce Commission's Bureau of Valuation from November 17, 1919 held by the National Archives and Records Administration identify a Section House, Bunk House and Privy were provided for the



men by the railroad. The Section House was 16' H x 48' L x 11' W with porches, 9 windows and 7 screen doors. The section house was occupied by the Section foreman and his family.

The Bunk House was 10'3" H x 12' L x 8' W with 1 door and 1 window. The Bunk house was occupied by the railroad laborers who operated and maintained the water station and provided the needed water to trains headed north to Denison or south to Dallas.

Passengers have Choice of the Three Favorite Routes to St. Louis and Chicago and the East, via the



According to "Destination America" by Charles A. Wills, between 1815 and 1915 some 30 million Europeans arrived in the United States. Immigrants typically began their journey by contacting a shipping company agent, often a local cleric or teacher, who arranged their pass for departure. Local Allen historians explained that some agents of the White Star Line, the National Line, Anchor Line, Inman Line, Cunard Line, North German Lloyd Steamship Company, and Morgan's Steamship Line not only sold tickets to individuals but to parties, and even allowed immigrants to pre-pay travel arrangements for friends and family traveling from "Great Britain and the Continent" to America.

Although many of us think of New York's Ellis Island as the premier immigration gateway to America, Texas Historians at the Houston Museum of Natural Science state that the Port of Galveston played a major role in immigration. Immigrants, most of whom left their homes voluntarily to seek freedom, land, and a new life, came from Mexico, Central and South America, Europe, Asia, and Africa entered Texas and the American Midwest through Galveston. Immigrants who disembarked in the Port of Galveston were assigned to one of several railroad companies, but those who traveled north on the H&TC to settle throughout the United States likely passed through Allen's H&TC Water Station Site to settle in the United States.

2017

Open to the Public



Pre-ribbon cutting site detailing

Open to the Public



TEXAS HISTORICAL COMMISSION
TEXAS
1876

ALLEN WATER STATION

ON MARCH 11, 1848, EBENEZER ALLEN, FORMER REPUBLIC OF TEXAS ATTORNEY GENERAL, OBTAINED A CHARTER FOR THE GALVESTON AND RED RIVER RAILWAY. THIS CONSTRUCTION BEGAN IN EARLY 1856, AND THE COMPANY WAS RENAMED HOUSTON & TEXAS CENTRAL (H&TC) RAILWAY COMPANY IN SEPTEMBER OF THAT SAME YEAR. CONSTRUCTION ON THE LINE BEGAN IN HOUSTON AND REACHED CORPUSCHRISTE, TEXAS, IN 1871 AND DENISON IN 1872 WHERE THE CONNECTION WAS MADE WITH THE MISSOURI, KANSAS AND TEXAS RAILROAD TO FORM THE FIRST ALL-RAIL ROUTE FROM TEXAS TO ST. LOUIS AND THE EAST, ALLOWING GRAIN, COTTON AND CATTLE TO REACH ITS DESTINATION OVERNIGHT.

IN 1874, THE H&TC RAILWAY ACQUIRED LAND FROM J.W. FRANKLIN IN COLLIN COUNTY TO CONSTRUCT A STONE DAM ACROSS CEDARWOOD CREEK AND A WATER STATION TO PROVIDE WATER FOR ITS STEAM ENGINES. THE WATER STATION INCLUDED A PUMP HOUSE, AN ELEVATED WATER STORAGE TANK, A BRICK FOR THE RAILROAD WORKERS WHO OPERATED THE WATER STATION AND OTHER FACILITIES. THE WORKERS WERE AMERICANS AND IMMIGRANTS FROM IRELAND, GERMANY, AND SWITZERLAND. H&TC RAILWAY COMPANY SURVEYOR THEODORE KOSSA CREATED THE TOWN OF ALLEN IN 1876 BY PLATTING THE JAMES REED SURVEY. THE STATION AND TOWN ESTABLISHED CENTERS FOR COMMERCE FOR LOCAL FARMERS AND PROVIDED BETTER EQUIPMENT AND BROADER MARKETS FOR AGRICULTURAL PRODUCTION. THE ALLEN WATER STATION REMAINED IN OPERATION UNTIL DIESEL ENGINES REPLACED STEAM ENGINES IN THE LATE 1940s AND EARLY 1950s. THE STATION IS RECORDED AS A STATE ANTIQUITIES LANDMARK AND IS LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES. THE 1874 STONE DAM AND FOUNDATIONS FOR THE WATER TOWER AND PUMP HOUSE, STILL VISIBLE TODAY, HIGHLIGHT THE IMPORTANT ROLE THAT THE H&TC RAILROAD PLAYED IN LATE 19TH CENTURY COMMERCE, TRANSPORTATION AND SETTLEMENT.

H&TC PLAYED AN IMPORTANT ROLE IN THE DEVELOPMENT OF THE FUTURE STATE OF TEXAS.

MARKER IS PROPERTY OF THE STATE OF TEXAS. ©2018



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Open to the Public



Open to the Public



Open to the Public



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Open to the Public



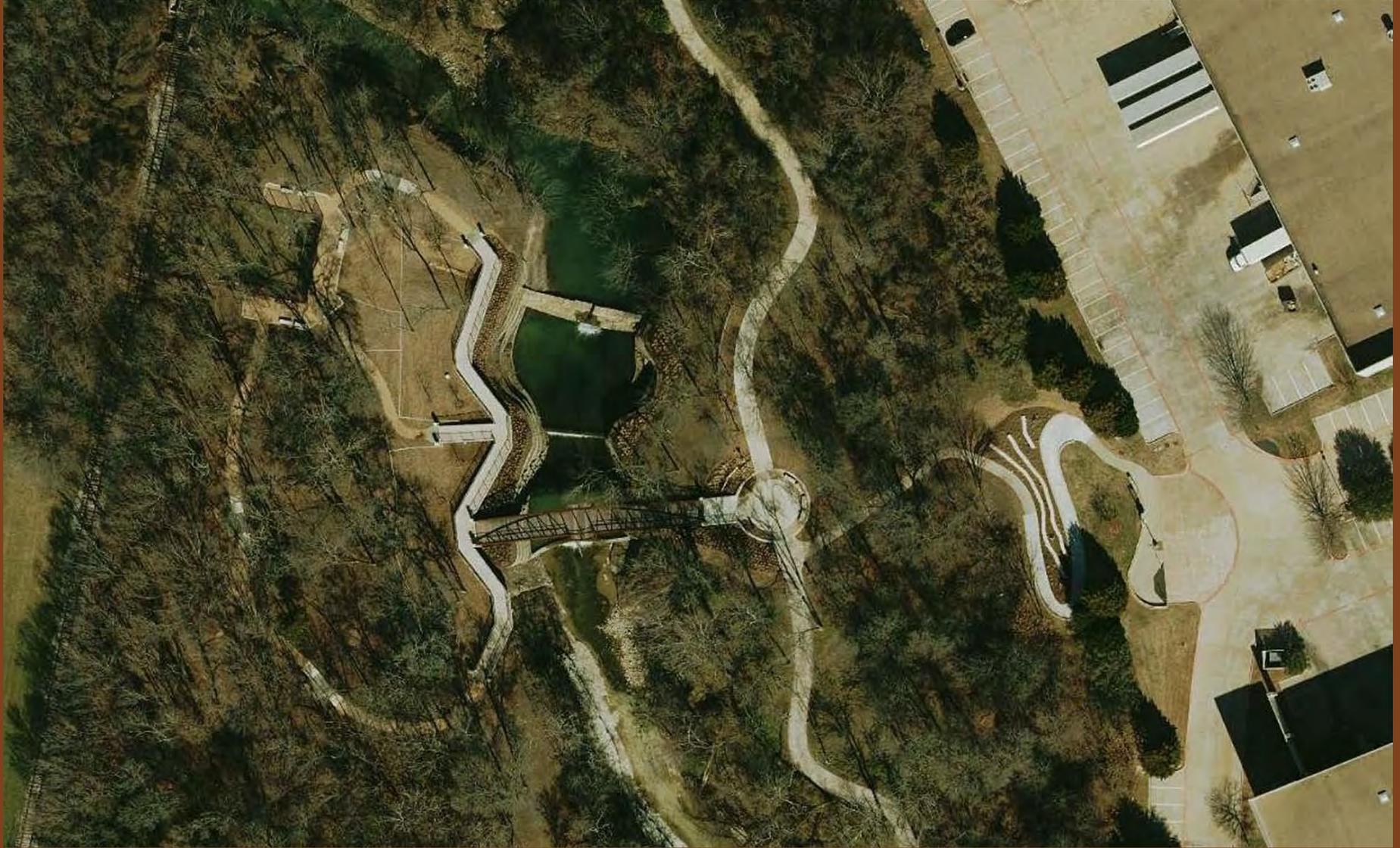
Open to the Public



Open to the Public



Today



Today



Vandalism

- Security cameras are worth the expense!
- 3 motion sensing post-mounted cameras at Allen Historic Water Station cost about \$25,000 (turnkey)



Vandalism



Lessons Learned...so far

- Its never too soon to take action
- Build your “old-timers” network as early as possible....people die
- Hire and direct consultants in archaeology, history at critical times
- Form a heritage guild or citizen advocates group
- Partnerships with private development can be a very good thing
- Celebrate your history to the max with the public!
- Push historic preservation/conservation toward bond elections, grants and other funding sources
- Build a relationship with the Texas Historical Commission
- Ruins and relics don't get prettier over time
- Identify and build staff interest in your heritage
- Punks do not care about history
- Invest in cameras and monitoring in critical areas

Thanks!

Questions?

2002-2016 and 2017 to date

