



Research Paper

Ditches, urban scars in Ciudad Juarez, Chihuahua

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ABSTRACT: Mexico's border area with the United States is a space in constant mobility and diversification. Its construction is part of uneven rhythms and different significance. This region was known as Paso del Norte, which belonged to the septentrion of New Spain and was later fragmented by an international war between Mexico and the United States. However, they share a primary element for human survival: the water. The water that unites them belongs to the Rio Bravo and from it, split the ditches that shaped the first settlement of the village. In addition, they, with their water, transformed the desert into small vergels that supplied food through cultivation in this inhospitable land. Today, these ditches are in partial abandonment, but still, they continue to divide the city with scars from a forgotten heritage.

Keywords:

KEYWORDS: Border, construct, culture, ditches, heritage.

Received 24 November, 2020; Accepted 08 December, 2020 © The author(s) 2020.

Published with open access at www.questjournals.org

I. INTRODUCTION

The peoples from the beginning are a document, which day by day change in their own historical development, this is because there is a continuous process of influences, exchanges, or oppositions in their social and urban construct. It is, in the village itself, a manuscript in which the experiences of its inhabitants accumulate, that, as it goes through its spaces, the construct of the village tries to show the transformations in space that arise due to the different influences within the cultural processes in the region.

The intention of this investigation is undoubtedly a glimpse of the history of a border town. Established as a space of passage, it manifests itself and leaves its mark with the architectural expressions that shaped the ditches. These elements give it a character and are specific, which can be discovered through observation of space itself. It is a historical look of a city that does not seek to recreate a story, but to recognize the processes that impacted the materiality and symbolism that encloses the region and that involve considering it as a product, but the "conditions", which make this an urban conformation of a city of passage on the border.

And it is here, where the objective of this document is to demonstrate the importance of ditches as a cultural and urban heritage of the history of the border region of northern Mexico. To define them as an important component of the development and growth of the city from its beginnings to the present day.

II. DEVELOPMENT AND STRUCTURE

As far as the development of this research is concerned, urban space was used as an instrument to learn about the history of those who inhabited this place. Where man appropriated, developed, and transformed it, according to his precepts of identity, but which is also parallel to the sociocultural environment in which it develops. All this is the result of a work that served the individual at a certain time and today remains an invaluable witness to its history, which is part of the urban heritage of the region.

This is how this situation was analyzed, from a historical study where all those habitable objects built by man for their service, comfort and development are included. Such objects are first categorized as architectural objects by belonging to the field of architecture and secondly as cultural objects by their human fabrication.

So, a temporary space cut was worked, where a review of related files was given to three important moments; one is the initial community population. The second, the ditches as shapers of urban space to this day.

And finally, the division of the town in 1848 with the border division, all to understand how they influenced the construct of what is now the urban space on the border of Ciudad Juarez, Chihuahua, Mexico

Thus, on this border of Ciudad Juarez with the United States, there are different social aspects defined by choline, which manifest themselves as inequalities and contrasts, but also accentuate similarities and "mergers". This is how creative transculturation spaces are centered alongside the border, where people intersect in multiple identities. This social, cultural, and commercial exchange flows naturally, and can go unnoticed by visitors from both cities. Separated by a river, by a dividing line while delimiting sovereignty, however, without separating them, it joins them in the same territory.

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III. A BIT OF HISTORY

Before the arrival of European colonizers in North America, it is possible that between 25 and 40 thousand indigenous people lived in this region, which would later become the border of the countries Mexico and the United States. There were linguistic groups among the many indigenous nations, distributed throughout the territory. Some were sedentary and other nomadic groups; sown, hunted animals, collected wild plants and fruits to survive.

Stories about El Paso del Norte go back more than 400 years of history, when the Spanish in 1521 passed through these lands to New Mexico. Cabeza de Vaca and his companions traveled through the Chihuahua Desert, then Juan de Oñate in 1528 crossed the Chihuahua desert, camped on the bank of the Bravo River and on April 30, 1598 took formal possession of what we now know as the center of El Paso Texas, this land was called El Paso del Río del Norte. During the four hundred and a half years that have passed since then, the mystical and variopinte collectivity form of the Juarez City of our day was tilled. [2]

During these centuries, the trade had united the indigenous people of the north of the Bravo River, with other groups from Chihuahua (New Biscay) and further south. Then came the Spaniards, the Creole and Americans who came from the north and thus came the imposition of political limits, all completely alien to the ethnic nations of the north, generating many conflicts. From 1581, the entrance to New Mexico began to take place through the province of Nueva Vizcaya. "Travelers crossed the depopulated one north of *Parral* and *Santa Barbara* until they reached the Bravo River, then followed it upriver to the Indian-occupied villages" [3]

Many natives died because of the encounter with the Europeans, others ended up segregated, some joined the population and the rest of the indigenous inhabitants of El Paso del Norte migrated elsewhere. Between 1656 and 1657 catechization efforts began in the area, but it was not until the end of 1659 that permanent evangelizing work was initiated.

Ciudad Juárez originally called Mission of Our Lady of Guadalupe of El Paso del Rio del Norte was founded on December 8, 1659 by Fray García de San Francisco (Francisco García Jimenez). "At the beginning of 1668 shortly after the consecration of the missionary Church, there were in the isolated population about four hundred inhabitants" [3], where much of them were indigenous people who had already been evangelized. The friars taught the cultivation of the land, for the planting of the main foods such as corn, bean, and potato. In addition to the care of fruit trees such as apple, pear, quince, and fig, but above all the vine, hence the agricultural vocation of the region was born.

In 1680 Spanish colonizers settled, in the towns of San Lorenzo and Senecú south of the Rio Bravo. North of the river, the Corpus Christ Mission, the Mission of Isleta and the Mission of Our Lady of the Conception of Relief were founded from 1682 onwards. Meanwhile, in Santa Fe, he began the rebellion of indigenous peoples in the septentrion of New Spain against the Spanish, their culture, and their religion. The inhabitants of New Mexico, Spaniards and evangelized Indians had to flee south. These refugees from the revolt, Native peoples of New Mexico, including the Tiguas, settled in Isleta, Socorro and San Elizario.

Most of the new settlers settled south of the river, only a few decided to cross to the north side, where the main reason for this migration was the search for water. As in all civilizations this element is paramount to the birth of new settlements, in this region, the Bravo River was decisive for the establishment of the colony by the Spanish friars. The inhabitants of the lands that today occupy the region of Ciudad Juárez and El Paso pointed out that the birth of this region was where the Bravo river bends to the east to run towards the Gulf of Mexico. And that's how in that place, they opened the sandy ground to create a dam from which they pulled water through a system of ditches that were spread according to the needs of the settlers, now those marks on the earth remain as the roots of a thirsty tree. The dam, ditches and farmland were the trigger for the growth of the

new community of Paso del Norte, which managed to survive the adversities of the inhospitable terrain and thus turn threats into opportunities. Ditches are a symbol of the values of the inhabitants of this region, of a culture of austerity and work that characterizes them.

Don Juan María Ponce de León, one of the few who dared to cross the river to settle down, was a Mexican of Spanish descent who denounced some land north of the Bravo River, believed to have built the first house in what is now the center of El Paso and opened a ditch for irrigation of his land. On downtown Historic Walking Tour, El Paso Texas, it is mentioned that "... In 1827, Juan María Ponce de León, well-known resident of El Paso del Norte (Ciudad Juárez) obtained a 211-acre land concession on the north bank of the Rio Grande. Then it acquired an additional area, ... began to build a ranch in what is now the Plaza Theater and the Mills Building."

The region continued to grow, now travelers from the northern United States arrived, "... as the mid-19th century approached. Some Americans settled across the river, facing Paso del Norte around a small community founded by Ponce de León" [4]

IV. NEW BORDER BOUNDARY

The development of this site in its first phase after the territorial division focused on agricultural activity, using slave labor on the north side of the river. The owners of the unexplored territories were immigrants, other outlaws, and more adventurous fortune-hunting. The population that came from the northern United States of America, with the slogan of settling in the territory and generating dividends with the exploitation of this.

Two models of colonization are given in the United States: English and Spanish. The Spaniards came from the south, conquering and occupying new territories. While to the north in the seventeenth century land was given away to come and populate the new English colony, in America. The first settlers in the north of the Americas had neither the capacity nor the resources to work the land and encountered the resistance of the Amerindians.

4.1 DITCHES AS PART OF THE BORDER CONSTRUCT

The construction of the dam, ditches and farmland was the trigger for the growth of the new community of Paso del Norte, which managed to survive the adversities of the inhospitable terrain and thus turn threats into opportunities. The ditches are a symbol of the values of the inhabitants of this region, of a culture of austerity and of hard work that characterizes them. Ditches are a self-sustaining and comprehensive system composed of natural environments in interaction with important urban nodes. A system that enables the best quality of life for the inhabitants around them [4] The inhabitants of the region, in each mission, village or military prison, tried as far as possible to produce what was necessary to survive. This was due to the great distance that separated them with the center of the country, this situation made the region self-sufficient thanks to the ditches.

Then it should be appreciated that The Mission of El Paso del Norte, was originally founded as an agricultural project, where the Franciscans taught the native inhabitants to take advantage of the waters of the Bravo River through the construction of the ditches.

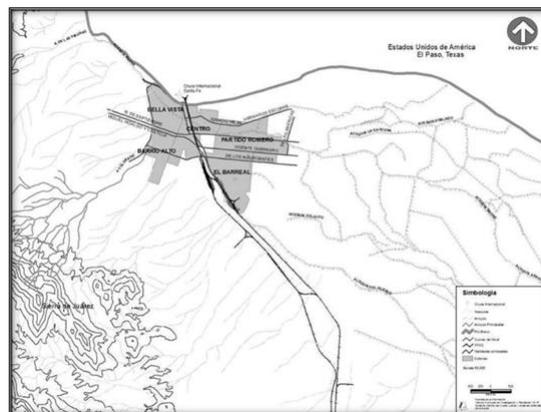


Image 1 Stroke of the ditches, by Guadalupe Santiago (1998) Changes and permanence of the structure of the earth 1884. 1935 p101

On the edge of the ditches multiplied the seedlings that defied the extreme and unpredictable climate, causing a verge to flourish in the middle of one of the most inhospitable deserts in North America, called the Chihuahua desert. This situation also served as a union between the inhabitants. In the analysis of the Municipal

Historical Archive of Ciudad Juárez (AHMCJ) lists of what were called "fatigues" were found, which was the number of working days to clean the ditches, which each parcel had to perform according to the size of their lands.

This irrigation system has given life to the Region of Paso del Norte, even to this day. It marked the physiognomy to the two cities, because the ditches, born of the Bravo, are the first antecedent of water distribution in the region. Today they survive as scars of the urban landscape, as a testament to the generosity and life that ran to the skin.

Together, the division of the earth was based on the channel of the ditches, once again, these were the protagonists in the history of the region. The lands closest to the river or ditches were the best, the greenest and most productive. Guadalupe Santiago mentions in "Property of the land in Ciudad Juárez, 1888 to 1935" ..., the population had performed an irregular and unequal occupation of the soil and although much of the inhabitants had settled in an area close to the population center, others followed the course of the Bravo River.

From the Mother Ditch that is the main one, others were derived, such as that of the Indians or the People, which is born from what is the historic center of the city to what is now the cruise of Oscar Flores Avenue with López Mateos. Currently it is ditch, it continues to pass through these avenues, it was so called because in that area was located a population of Indians and that is why in this place was built what is the temple of San José, which today is in restoration. Of these divisions generated by the ditches for each of the matches such as: Playa Vieja and Playa Nueva. Also for municipal sections such as the Senecú Ditch and many others that bore names such as: La Cajera, Duchene, Local, Valereña, Martínez, Domingueña, Garcideña, Azcareteña, Leticia and more whose names still hold the oral tradition (Sánchez, 1998, p. 28). The lateral or secondary ditches were called the back ditch or ditch vein. It can be said that ditches are witnesses of past glories, they are a link between past and present, they are tradition and through them this region was given life. For the missionaries it was the hope of achieving the settlement of a new population, for the natives it was the possibility of self-sufficiency and for the settlers it was the foundation on which the agricultural wealth of the region rested [5]

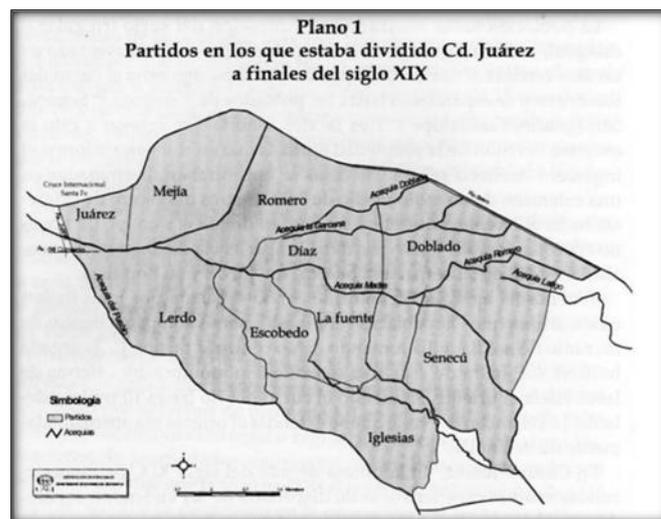


Image 2 Division by parties based on ditches, by Guadalupe Santiago (1998) Changes and permanence of the structure of the land 1884. 1935 p115

Victoriano Garza comments that the so-called "Mother Ditch" (see image 3), a channel built by settlers in the seventeenth century for the derivation of water from the Bravo River to the valley and for irrigation of its fields, serves as a recipient of the city's wastewater to lead them to the fields. [6].

The Mother Ditch currently receives water from the Bravo River according to the treaty that was signed in the 1940s between Mexico and the United States



Image 3 Image of the Chihuahua Desert and the Rio Bravo

4.2 THE DITCHES AGRICULTURAL HERITAGE.

The agricultural tradition of Paso del Norte was marked by the role of viticulture, brought to this region by Fray García de San Francisco where he brought wine for himself and for nearby convents. The popularity of The wines of Paso del Norte became international, by traders and travelers passing by the way to Santa Fe, this was a must stop, the fame of the wines ... caused its price to go up and they were even considered a unit of change (González de la Vara 2009, p.72). The grape with which the wine was prepared in this region was known as the "mission grape". In addition to grapes, wine and brandy, pears, peaches, figs, apples, melons, and pomegranates were harvested, among others. Production exceeded consumption. According to data taken by AHMCJ, there is talk that crews were organized for the cleaning and mobility of causes that were controlled by torrential rains very characteristic of the desert. With each rain the channel had to be reformulated. [7]

The impact of these works on the supply of water in the village Paso del Norte was decisive by becoming a center of services and marketing of local agricultural products, for this reason the surplus was sold along the Camino Real or Camino a Santa Fe, So the surplus harvest was also preserved by making nuts as grapes passed , pruning, dates, dried figs and eardies. At that time, the Bravo River was not a figure defining the boundaries between the Anglo-Saxons and the Mexicans and both cultures lived cordially together.

The region continued to grow, now travelers arrived from the northern United States and when settling on the border, thus the region was constituted: To the south the Villa Paso del Norte and to the north the Franklin Villa, where segregated houses were highlighted, with regular traces and to the south the Rio Bravo marking the new boundary. The appearance of the place among travelers describing the village of El Paso del Norte as follows: ... the houses are made of adobe and have a single floor with its flat roof. They are very comfortable both in summer and winter and are said to be very durable... [3]

V. CURRENT DITCH SITUATION

This ancient irrigation system was the backbone of the city's development, however, the unmeasured growth, pollution and forgetfulness of authority and the community itself caused those miles of water and trees to disappear (Gamboa, 2015). The most important were and remain since then, the Mother Ditch and People's Ditch, which together gathered about 300 kilometers. La Acequia Madre, transports water to the south of the town of Zaragoza carrying water to the Juarez Valley. And in 1920, they joined the irrigation district, playing an important role for this city, as a structure dedicated to the driving of rolling water from the Rio Bravo, whose service was maintained until 2001.



Figure 5 The Mother and People's ditches, as well as drains 1 and 2 and the receiving Dren. Image obtained on Google, by the Municipal Board of Waters and Sanieamiento de Ciudad Juárez. 08/2020

The Madre ditch transports the flow to the east of the city and the Del Pueblo does so on the west, but both canals re-join after Zaragoza to run parallel to the Rio Bravo.



Image 6 Ditch Mother, image obtained on Google, by the Municipal Water and Sanitation Board of Ciudad Juárez. 08/2020

There are numerous secondary ditches, however, with the advancement of urbanization, these are disappearing along with the flora that grew on its shores.



Image 7 Dren 1 and 2 supplying water to the city. Image obtained on Google, by the Municipal Water and Sanitation Board of Ciudad Juárez. 08/2020

Another important ditch is the "Dren Receiver", which today as its name says, serves as a recipient of the city's wastewater to lead them to the fields. [6] In the storm drain , (the ditch of the People), it has practically made it

impossible to evict stormwater in a timely manner, this is due to the urban consolidation that exists in its surrounding lands preventing or cutting off the flow of water.



Image 8 Receiver Dren. Image obtained on Google, by the Municipal Water and Sanitation Board of Ciudad Juárez. 08/2020

Ditches are on federal land and the occupation of these spaces has caused water not to run properly causing flooding that harms the community, not only the inhabitants close to them but rather the general population. Today, more than half of the branches and road rights of the Del Pueblo and Madre ditches that cross the city disappeared under invasions by the owners of surrounding land.



Image 9 Federal land surrounding the ditches invaded by its inhabitants. Own image 07/2020

The environmental benefits of ditches are many, as they have vegetation on their sides, which have a positive effect on the climate because they help lower the ambient temperature. However, there are large trunks of dry trees, some of them centenary, who have died from the lack of water when secondary canals are closed

Francisco Caballero, leader of the group *En Pro de las Acequias*, says that irrigation channels in the urban area should be preserved as green areas, as a cultural, historical, and integral part of an ecosystem typical of Ciudad Juárez.

The vegetation that surrounds them, helps to improve the environmental quality, breathes a better air, since the grove and vegetation help to have oxygen during thermal investments.



Image 10 Ditch taken advantage of in a fractionation to the south east of the city. Own image 07/2020

To date there are approximately 100 hectares of land attached to the ditches. These are being defended by environmentalists and coveted by their neighbors.

Some of the old irrigation channels (ditches) no longer carry water and have mostly been discontinued, being at the mercy of real estate ambition and pressure. (quoted in *El Diario de Juárez*). There is a large dispute of adjoining people and successors of former farmers for real estate speculation purposes, which harms not only the immediate environment, but the environment in general. [3]

The most regrettable thing is that now only the Mother Ditch and its branches drive water for seven months a year, while the Del Pueblo and its sides remain dry, becoming clandestine dumpsters. Leonel Soto, Head of the Irrigation District, says the ideal destination for ditches, now that many of them seem to have reached the end of their lives, would be to turn them into linear park throughout the city. This would allow the Municipality to do some projects of beautification of the city, which would help generate infrastructure against flooding, create a sculptural walk, with recreational and sports spaces, as part of the emerging needs of a growing city.

VI. CONCLUSION

The ditches are testament to the generosity and life that ran in full bloom on the border Ciudad Juárez, Chihuahua, and El Paso Texas. They marked the physiognomy of the two border towns, joining them with a single element and then dividing them into political and economic issues. It is still these times, there are agricultural land that could be sown, however, it is not the case because of the lack of water. Ditches should be defended as the historical, cultural, and ecological heritage of the region and prevent them from becoming dumpsters and prevent the colonies on the banks of the Madre and People's ditches from remain flood zones. It is urgent to develop the construction design of hydraulic works, which allow water control and management. To recover public spaces of family coexistence, such as pedestrian walkers and cycle routes. While on the other hand also should increase public safety and bonding with other colonies that are devoid of these spaces. Unfortunately, the ditches today survive as scars of the urban landscape, forget, nauseating, silent witnesses of struggles, battles, triumphs, and historical developments that no one seems to be considering.

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