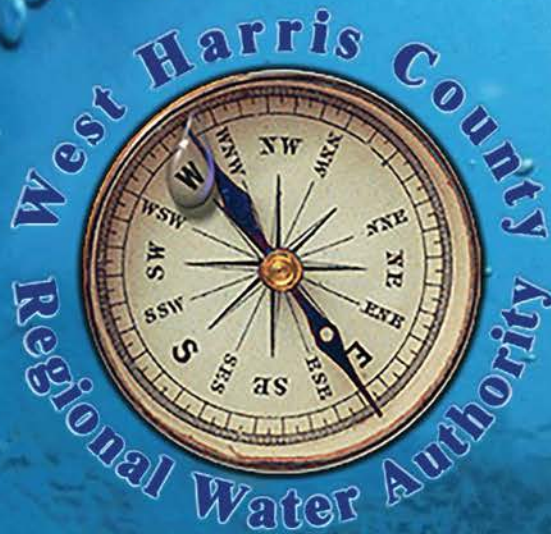


**Easements & Right-of-Way
Encroachments General Requirements**

**West Harris County
Regional Water
Authority**



**March, 2020 - Issued Date
May, 2021 - Revision Date**

TABLE OF CONTENTS

WELCOME!	2
A Few Words About Us	2
Overall System Map	3
Contact Information	3
DEFINITION OF TERMS	4
SAFETY	4
SIGNS OF A WATER LEAK	5
BEFORE BEGINNING A PROJECT	6
ACTIVITIES WITHIN AN EASEMENT	7
WATERLINE MARKERS	7
WHCRWA EASEMENT AGREEMENT	8
ENCROACHMENT ACTIVITIES	8
Utility Crossings	9
Railroad, Roadway, and Driveway Crossings	11
Landscaping	11
Fences	11
Structures	12
Erosion	12
Deep Plowing	13
Cover	13
Heavy Equipment Crossing	14
Burning	14
Overhead Lines	14
Ground Vibration	14
Excavation Activity	14
WHAT WE EXPECT OF YOU	15
WHAT YOU CAN EXPECT FROM US	16
ATTACHEMENT A	18
EASEMENT or RIGHT-OF-WAY	18
ENCROACHMENT APPLICATION FORM	18
ATTACHMENT B	20
ENGINEERING NOTES AND DETAILS	20
ATTACHMENT C	22
EASEMENT AND ENCROACHMENT GENERAL REQUIREMENTS FLOWCHART	22

WELCOME!

The purpose of this document is to provide general guidance for working with the West Harris County Regional Water Authority (WHCRWA), which is known as “the Authority”, on requests for crossings or encroachments on our right-of-way. Working with WHCRWA and following these guidelines will ensure that we operate a safe water system, and enable you to have the ability to use the land, while honoring our easement rights. This will allow us to maintain and operate our waterlines safely and efficiently.

A Few Words About Us

The Authority’s mission as stated in House Bill 1842 (HB 1842), passed by the 77th Texas legislature is to:

- Provide surface water and groundwater for various uses
- Reduce groundwater withdrawals
- Conserve, preserve, protect, recharge, and prevent waste of groundwater and groundwater reservoirs
- Control subsidence (sinking of land) caused by withdrawal of water from those groundwater reservoirs
- Other public purposes

The Authority has adopted an aggressive Capital Improvement Plan (CIP) for the design and construction of water transmission and distribution facilities to serve utility districts within the Authority’s service territory. The WHCRWA promotes water conservation education programs for use in public schools within its boundaries, as well as for area residents. The development, maintenance, and operation of water transmission and distribution facilities needed to serve the 232 square miles of service territory in the Authority, services approximately 300,000 people, and requires the use of land and various easements.

This booklet will explain under what circumstances the Authority will allow crossings or encroachments on our right-of-way and easements. It will describe our easements, land rights, and requirements that allow us to maintain and preserve the safety of our waterlines.

This booklet is also a guideline for landowners, land planners, engineers, surveyors, landscape and building architects, and any other interested parties, who may be working within, near, or approving work adjacent to the Authority’s easements.

Overall System Map

The map in Figure 1 offers a general representation of the WHCRWA waterlines.

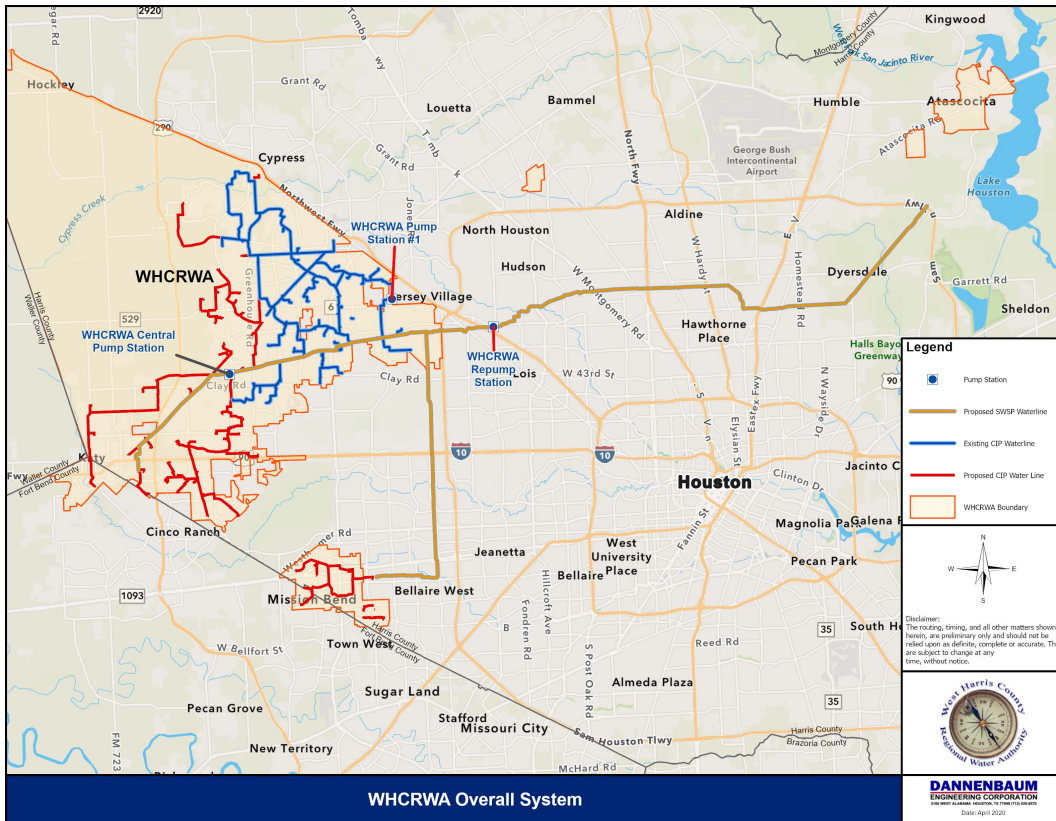


Figure 1: WHCRWA Overall System

Contact Information

To learn more about WHCRWA and waterlines in your community, visit:

- **WHCRWA - The Authority**
- Dial: 281-398-8211
- www.whcrwa.com
- WLine-InfoRequest.WHCRWA@decorp.com

- **Surface Water Supply Project**
- www.surfacewatersupplyproject.com

- **Call811 Before You Dig**
- www.call811.com
- Dial: 811

DEFINITION OF TERMS

Authority – West Harris County Regional Water Authority (WHCRWA), and its Board of Directors

Easement – The legal right, established by usage or grant, to pass along a specific route through grounds or property belonging to another; a right to cross or otherwise use someone else’s land for a specified purpose.

Encroachment – Any activity, or physical item, structure, etc. on, across, under, or within the Authority’s property or easement. Encroachments may also include crossing of the Authority owned facilities that could adversely impact such facilities.

Letter of No Objection (LONO) – Provided when your standard crossing request meets the WHCRWA’s requirements.

OSHA – Occupational Safety and Health Administration.

Utility - An organization supplying the community with electricity, gas, water, or sewage

SAFETY



Figure 2: Safety

The Authority’s waterlines provide wholesale water for municipal use for residents, including drinking water. Federal and State regulations outline the safe operation of our water systems, and we take these regulations seriously. Integrity of the water supply is a public health concern, and a top priority for WHCRWA. The use of properties crossed by our easements, are subject to our granted easement rights. Certain uses within the easement area can conflict with the safe operation of our waterlines.

If our employees observe an unsafe activity occurring that would compromise waterline integrity, then we require that activity to stop. If we need support enforcing this requirement, the local law enforcement authorities will be contacted for assistance. We request that you follow the guidelines in this booklet. The Authority will pursue entities that damage our facilities for appropriate repair cost. Please contact us to discuss your planned activities within our easement area. This will ensure your safety, and the safe operation of our waterlines.

Prior to excavating, please notify Call811 by phone or online request. Call811 is a clearinghouse for all utilities regarding excavation. This is not meant to add extra requirements to your project—it’s to keep you safe.



**Know what's below.
Call before you dig.**

Excavation activities can rupture our waterlines or damage the waterline coating, which, if left unrepaired, can lead to waterline corrosion. If you hit a buried waterline, and cause a leak or severely damage the waterline, creating an unsafe environment, move to a safe area and call 911, then call WHCRWA at 281-398-8211. If you do not have the WHCRWA number with you, contact Call811 and report an emergency ticket for your location.

We request that you work with us, following our rules and requirements, when excavating near our waterlines. Our employees are familiar with our restrictions and requirements, and are trained and qualified to locate, mark, and stand by, while you excavate across our waterlines. We will work to accommodate your approved project, as needed, for a smooth implementation process. Please help keep our waterlines safe.

SIGNS OF A WATER LEAK

Act Immediately If You Suspect a Leak. If the Authority's waterline is leaking, please **contact us immediately at 281-398-8211**.

The following signs are indications of a possible waterline leak:

- Water flooding in the street.
- Visible signs of water filling the hole excavated.
- A loud roar or hissing sound.
- Not all signs need to be present to indicate a leak.



Figure 3: Water Leak

BEFORE BEGINNING A PROJECT

Please use the following check list prior to beginning any project, to ensure safety and success:

- ✓ Read and understand this document, “Easements and Right-of-Way Encroachments General Requirements”.
- ✓ Request Record Drawings of the existing Authority waterlines during your planning and design phase.
- ✓ Show and label the Authority’s waterline and easements, including the recording information, on your plans.
- ✓ Complete the “Encroachment Application Form” included with these guidelines in Attachment A.
- ✓ Email request to WLine-InfoRequest.WHCRWA@decorp.com include:
 - Preliminary plans, including encroachment location map and description
 - Construction loads
 - Any excavation requirements
- ✓ Email the signed and sealed plans 90 days before construction starts.
- ✓ We will not provide final approval, until we review the final plans.
- ✓ Wait to receive your Letter of No Objection (LONO), or an Encroachment Agreement (EA).
- ✓ Always contact Call811 at least two or three working days prior to excavating, to have Authority waterlines located and marked. This is a **FREE** service.
- ✓ Follow our approval letter guidelines, and respect our rights to maintain and operate our waterlines.

If requested, the Authority will provide the requesting party a copy of the record drawings showing the Authority’s facilities located within our affected easement.

If your plans are not approved, you will need to submit a revised plan. After we have approved your development or encroachment activity, a copy of the executed approval document must be in the possession of any party performing construction activities within the Authority’s easements.

Our approval of your plan will be based upon our ability to safely maintain and operate our waterlines. For example, we must be able to respond quickly in an emergency.

ACTIVITIES WITHIN AN EASEMENT



Some activities are allowed within Authority easements without prior approval, such as walking across, lawn mowing, and watering a garden. Fencing can only cross the easement provided a 14-foot gate or wider is installed. An approval document is not

necessary for survey work on, or assessment of, the surface of the Authority's easement. For detailed information regarding activities within our easements that require prior approval, please see Attachment B.

For us to be able to access our easement, it must be free and clear of obstructions and woody vegetation. Planting trees and deep-rooted shrubs over the waterline is not allowed. We also must review plans to add fill or soil over the Authority waterlines. We will not allow any soil over the waterline to be removed. No permanent structures will be allowed within the easement.

WATERLINE MARKERS

Some easements include markers that identify the presence of Authority waterlines, and include our contact phone number (see Figure 4). However, not all waterlines are identified with pipeline markers. All markers include a 24-hour emergency contact number. These markers let you know how to get in touch with Authority personnel, and remind third-party contractors to contact the Authority prior to digging. These markers provide only a general representation of the location of Authority waterlines. They should not be used to identify the exact location of the buried waterline. Our markers must be visible along the corridor.



Figure 4: Waterline Marker

We regularly monitor our waterline easements for third-party damage and unauthorized excavation activity by aerial surveillance with the use of drones and by physically driving or walking the easements. Your communication and cooperation will enable us to work with you, while maintaining the safety of our waterline system.

WHCRWA EASEMENT AGREEMENTS

Our Easement Agreements with the property owner (individuals, businesses, or governmental entities) cover the Authority's rights to maintain and operate our waterlines across the owner's property.

Our Easement Agreements generally specifically state a person or entity shall not, without the prior written consent of the Authority:

- Construct, place, or allow to be constructed or placed any fences, pavement, or other above-ground improvements, whether temporary or permanent, on the surface of the Easement Tract
- Install or permit the installation of pipelines, or other above-ground or underground utilities or facilities, within the Easement Tract
- Construct or place or allow to be constructed or placed, any pipelines or other above-ground or underground utilities or facilities within the Easement Tract that run the length of the Easement Tract (as distinguished from across the Easement Tract)
- Dedicate other easements within the Easement Tract
- Change the grade over the facilities constructed under the Easement Tract

If a developer needs to construct or install any of the facilities described above, the steps in the check list section and as shown in the attached flow chart (Attachment C) must be followed. Owners should note that individual easement rights may vary and should be reviewed.

ENCROACHMENT ACTIVITIES

Your development or planned activity may involve one of the following encroachment activities. Although this list is not comprehensive, it summarizes the majority of activities that have historically impacted our easements and waterlines.



Utility Crossings

Generally the Authority allows utility crossings, as long as appropriate clearances are maintained. Utilities may cross above or below the Authority's waterline if they can maintain a 2-foot minimum clearance between your project line, and the Authority's waterline. The Texas Commission on Environmental Quality (TCEQ) may have additional requirements for sanitary lines. For trenchless construction crossings of the Authority's waterline, additional restrictions may apply.

Utilities must cross as close to 90 degrees as possible. In coordination with Call811, we will mark our waterlines prior to your planned construction activities.

The utility contractor/installer shall coordinate with the Authority regarding the use of heavy equipment on or across the waterline, within the Authority's easement, to prevent potential damage to the Authority's facilities.

For any open cut construction for a utility crossing above the Authority's waterline:

- Do not disturb soils within 12 inches of the Authority's line
- Weld a plate over the teeth of the utility's excavator bucket
- Remove the side cutters of the utility's excavator bucket

The utility shall probe to locate the Authority's waterline when excavator is 5 feet away from the waterline. Excavation taking place within 24 inches of the outside diameter of our waterline may only consist of hand digging, or vacuum excavation, and must have the approval of the Authority's on-site representative. In some cases the Authority will allow our waterline to be exposed and supported for utility installations under the waterline. This must be done with the supervision of the Authority's on-site representative. Excavations near some Authority waterlines may require the waterline to be temporarily removed from service. This may require excavations to take place during low demand periods.

Electric utility crossings, except low voltage ones used for residential services, must be encased in non-metallic conduit. The conduit must be covered with at least 3 inches of red colored concrete or red marking tape, and be at least 36 inches wide, centered on each conduit. Both the conduit and the concrete must extend across the full limits of the waterline easement. All buried conduit crossings shall be clearly and permanently marked with signs showing the location of the buried conduit, unless the Authority's on-site representative approves otherwise.

After construction, the surface over the Authority's easement must be restored to existing condition or better, to ensure positive drainage, without adversely affecting adjacent properties. (See Figure 5).

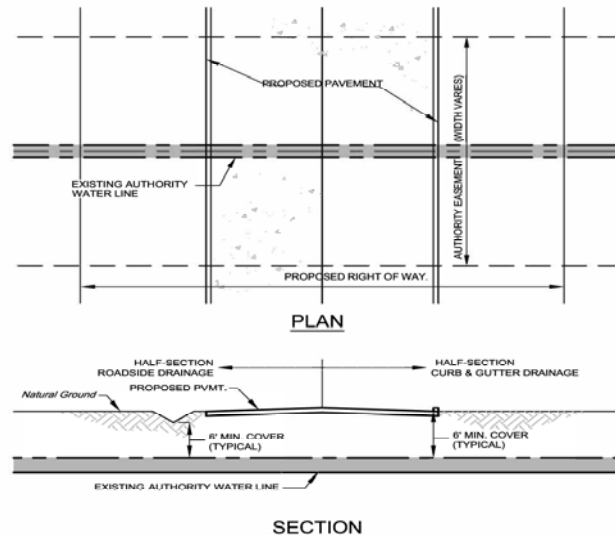


Figure 5: Plan and Section

The U.S. Department of Transportation (DOT) standard surface markers must be installed for all of your utility crossings, unless an on-site Authority representative approves otherwise. We must clearly know, without guessing, where your utilities cross the Authority's easement or waterline, in case excavation of our waterline is necessary. Guidelines for Uniform Marking of Underground Facilities have been developed by the Utility Location and Coordination Council of the American Public Works Association. These guidelines use a uniform color code to identify the type of underground facility.

The color code identifies a color used to designate a group of utilities of similar characteristics. The uniform color code adopted by members of APWA is listed as follows:

- Red - Electric power lines, cables, conduit, and lighting cables
- Yellow - Gas, oil, steam, petroleum, or gaseous materials
- Orange - Communications, alarm or signal lines, cable TV, or conduit
- Blue - Water, irrigation, and slurry lines.
- Green - Sewers and drain lines
- Pink - Temporary survey marking
- White - Proposed excavation

To increase visibility, color-coded vertical markers (temporary stakes or flags) are used to supplement the surface marks. All surface markers should indicate the name, initials, or logo of the company that owns or operates the line.

The utility may not store construction materials, including soil spoils and equipment, within the Authority's easement.

Railroad, Roadway, and Driveway Crossings



Figure 6: Easement Illustration

Our waterline was designed according to the surface use of the land at the time the easement was granted. Thereafter, if you want to change the use of the land's surface, you will be responsible for all the costs required to protect the waterline from increased loading from your proposed improvement, depending on the specific language in your Encroachment Agreement or Letter of No Objection. Any proposed pavement, regardless of the type of material, constructed over the Authority's existing

waterline shall maintain adequate clearance. Typically, the minimum cover required is 6 feet from the bottom of the pavement to the top of the Authority's waterline. Any drainage swales, ditches, or grading shall maintain a minimum of 6 feet of cover from the bottom of the drainage to the top of the existing Authority waterline and must be approved in advance in writing by the Authority.

If the Authority determines that the grade over the existing waterline is changed due to your construction activity, it may require the Authority's waterline to be re-bedded at your expense. This will be determined when we examine the existing back-fill material around the waterline. This re-bedding will accommodate the new loads placed upon the waterline by crossing vehicles. If the waterline design has to be adjusted to accommodate new crossing loads from cars, trucks, or other loads, it will be done at your expense. Most waterlines are designed to withstand typical residential streets and access drive loads but that will be evaluated by the Authority as part of the plan review process.

Landscaping

Landscaping can directly impact the safety of our waterlines, so we restrict placement of most landscaping in the easement. Roots can damage waterline coatings, which can lead to corrosion.

Plant growth obstructs our ability to monitor for leaks, erosion, and third-party activities. Plants being within the Authority's easements can also restrict our ability to respond in an emergency. Some shrubs may be permitted within the easement, provided the plantings do not interfere with the inspection of the waterline and facilities.

No trees or large, deep-rooted shrubs are permitted within the Authority's easement. Under no circumstances will mechanical equipment be allowed for planting shrubs within the easement. We must have open and clear visibility, with the unobstructed ability to access our easement.

Fences

Fence posts shall be placed a minimum of 3 feet from the outside of the Authority's waterline. Fences cannot obstruct the line of sight between waterline markers. The Authority's personnel (including contractors) must be able to access the Authority's facilities at all times. The land owner is responsible for the fence construction and maintenance, and shall provide a gate, minimum of 14 feet in width, of a type approved by the Authority, for access in sufficient number to ensure unhindered, continuous access to the Authority's easement.

Structures

No permanent structures are allowed within the easement (see Figure 7), including, but not limited to, sheds, garages, pools, septic systems, above-ground utility connections, wells, retaining walls, fire hydrants, light poles, driveway columns, wing walls, headwalls, spillways, retention ponds, and storm water and water management infrastructure.



—Figure 7: Easement

Erosion

Erosion includes any activities that create soil erosion. These activities must cease, and the area must be stabilized immediately.

Deep Plowing



Deep plowing can cause severe waterline damage. Please refer to the “Before Beginning A Project” section of these guidelines that contains the check list. We are happy to meet with you on-site to review your plowing needs.

Cover

You may not remove any cover from the easement area. If your encroachment will impact the easement, please include this information in your plan submitted for our review. Plans for roads and driveways must include a cross-section showing the existing and proposed grades, based upon our existing waterline. We will review your proposal based upon your plans, our engineering standards, and the waterline design. Maximum cover will also be evaluated when we review your proposal. Extra cover increases the load on the waterline.



Figure 8: Laying Waterlines

Heavy Equipment Crossing

Crossing the waterline with heavy equipment can compromise the safety of our waterline. Depending on the equipment's size, and type of tracks or wheels, the loads on the surface can place extra stress on the waterline. Contact our local office or notify Call811 before crossing with heavy equipment. We will meet with you on-site to determine the best crossing location, taking into account pipe depth and ground composition. Once we determine a suitable crossing location, please do not cross elsewhere. We may require additional padding or matting over the waterline (or waterlines) extending at least 15 feet outside each waterline. This matting material must be maintained throughout the job.



Burning

Do not burn any materials within the easement area.

Overhead Lines

All new poles must be located off the easement at least 15 feet from the waterline and not between multiple waterlines. At least 25 feet of clearance is required from the top of the ground to the overhead crossing. No guy-wire, appurtenances, above-ground cable towers or telephone cabinets are allowed within the easement.

Ground Vibration

Construction activities that generate ground vibrations, including pile driving, sheet driving, soil compaction work, tunneling, trenchless construction, jack hammering, ramming, boring, and jacking, shall be coordinated with, and approved by, the Authority's Engineer.

Excavation Activity

Excavation damage is one of the leading causes of damage to buried waterlines. That's why we provide the following specific excavation guidelines to help protect you and our waterlines.

Before excavating, the Authority's Engineering Department will:

- Determine the length of waterline that may be safely uncovered
- Positively locate the waterline
- Advise of approved excavation methods
- Provide on-site personnel for direction



Once the waterline has been exposed, the contractor can continue to excavate with the assistance of an observer provided at no cost to the Authority with the approval of the Authority representative. The waterline should remain exposed and clearly visible to the observer at all times during machine operation.

For excavations near a buried waterline, you must ensure the hoe bucket teeth are barred, side cutters are removed, or that you use approved paddle/flared teeth. If soil conditions require the removal of the bar, or the use of the side cutters for excavation, you must have included this information in your request to the Authority, outlining the locations for the exception, and the reasons the equipment is needed. Excavations involving removal of the bar, or the use of side cutters, should be done with an observer and under the direct supervision of the on-site Authority representative, or their designee.

If flowable fill is discovered during excavation, work must stop immediately. Prior to work resuming, the Authority's on-site representative will consult with our Engineering group to develop a plan for managing the situation to minimize any damage to the Authority's waterlines.

If the excavation requires entrance into a confined space, you must follow applicable OSHA standards.

If the excavation requires the use of ladders, or other temporary structures for ingress and egress, you must follow the OSHA standards.

WHAT WE EXPECT OF YOU

As we've stressed throughout this booklet, safety is our top priority. To ensure your safety, we strive to keep our waterlines safe. Please respect our rights to operate our waterlines safely. By planning your project according to the guidelines in this booklet, you can minimize impact to our waterline. We will strive to work with you throughout the process.

Please remember to follow these guidelines:

- Submit final plans for approval a minimum of 90 days prior to construction.
- Always contact Call811 at least two or three days before starting excavation.
- Notify the Authority prior to any work on or within the easement.
- We must review your project plans, and you must obtain our approval letter before starting work.
- Throughout your project, adhere to the guidelines included in your approval letter.
- Contact us if you see suspicious activity along or within our right-of-way.
- Contact us if you notice standing or flowing water or a large washout.
- Ensure your project meets Federal, State, and local regulatory requirements
- Requests for variance from these guidelines must be submitted to the Authority's Engineer for consideration on a case-by-case basis.

The variance should:

- Include an explanation of the need for the variance
- Be in accordance with generally accepted engineering practices in the Houston region
- Not create an unreasonable risk of harm to the Authority's facilities
- Not unreasonably restrict or interfere with the Authority's easement or facilities, or the construction, operation, or maintenance of the Authority's facilities

WHAT YOU CAN EXPECT FROM US

We will respond to your requests and review your plans within the 90-day period. We will provide clear, concise guidance that will ensure your project meets our safety standards. Communication and cooperation are vital. When you work with us, we promise to do our part to respond promptly to your inquiry and maintain Authority waterlines in a good, workmanlike condition to avoid adverse impacts to surrounding property. The language in some easements may warrant different handling of encroachments than contained in these general guidelines. Please contact the Authority Engineer to discuss, if you think the Authority's easement on your property has different requirements.

At the WHCRWA, we believe in working together with our partners and those we serve to deliver the highest quality water. By following procedures, and working with us using the guidelines contained in this Easement and Right-of-Way Encroachment General Requirements handbook, we can facilitate the successful and efficient review of projects, while assuring the safety of our water and waterlines.

ATTACHMENT A
EASEMENTS & RIGHT-OF-WAY
ENCROACHMENTS
APPLICATION FORM

Easement Encroachment Application

Dannenbaum Engineering Corporation
3100 West Alabama
Houston, TX 77098
Attn: WHCRWA

Email To: WLine-InfoRequest.WHCRWA@decorp.com

REQUESTOR INFORMATION: *(Print or Type Only)*

Date _____

Individual Name _____ Company Name _____ Phone Number _____

Address _____ City _____ State _____ Zip Code _____

Email Address _____ Site Location/Key Map (attach) _____

LEGAL NAME OF FACILITY OWNER REQUESTING PERMISSION TO ENCROACH:

Company Name _____ If pipeline, product(s) to be transported _____

Address _____ City _____ State _____ Zip Code _____

Authorized Representative: Name & Title _____

Authorizing Signature _____

SUBMITTAL REQUIREMENTS

All requestors must agree to comply with “WHCRWA Easement or Right-of-way Encroachment General Requirements”, as amended periodically. If WHCRWA facility relocation is required due to this request, the relocation(s) cost(s) will be borne by the requesting party and must be paid before the request is granted. The following documents will be issued per WHCRWA property rights:

- An easement: a Consent to Encroach will be issued after WHCRWA has received and approved the FINAL signed and sealed plans

It is the requestor’s responsibility to secure additional needed rights from parties where WHCRWA's rights are limited or less than a fee simple ownership. The requester must notify owners of other pipelines, communication lines or other third party facilities located within WHCRWA's grant to requestor.

REQUESTS SUBMITTED THAT DO NOT CONTAIN THE SPECIFIED INFORMATION, WILL NOT BE APPROVED. WHCRWA will review all preliminary plans to provide advance guidance within 90 days of receipt of the request.

Deficiencies will be identified and a revised package can be resubmitted. Providing the WHCRWA advance preliminary documents will expedite final plan approval.

The undersigned authorizes WHCRWA to contact the Surveying firm that prepared the attachments and certifies that the information provided with this application is accurate and acknowledges that incomplete information may delay processing or invalidate this application.

By: _____
Printed Name

Signature: _____

Title: _____



ATTACHMENT B

ENGINEERING NOTES AND DETAILS

NOTES:

1. "Call811" SYSTEMS REQUIRE 48-72 HOURS NOTICE PRIOR TO EXCAVATION. UTILITY MUST CHECK THE REQUIREMENTS IN THE VICINITY OF THE PROPOSED PROJECT. **NOTIFICATION IS THE LAW!**

2. UTILITY WILL CONTACT THE WEST HARRIS COUNTY REGIONAL WATER AUTHORITY'S ("AUTHORITY") OPERATOR (INFRAMARK 281-398-8211) TO LOCATE AND MARK THE AUTHORITY'S WATER LINE PRIOR TO ANY CONSTRUCTION. THE AUTHORITY ACCEPTS NO RESPONSIBILITY REGARDING THE LOCATION OF ANY OTHER FACILITIES WITHIN THE AUTHORITY'S EASEMENT.

3. UTILITY WILL COORDINATE WITH THE AUTHORITY REGARDING THE USE OF HEAVY EQUIPMENT ON OR ACROSS THE WATERLINE WITHIN THE EASEMENT TO PREVENT POTENTIAL DAMAGE TO THE AUTHORITY'S FACILITIES. THIS MAY INCLUDE THE USE OF MATS, PLATES, OR SPECIAL EQUIPMENT.

4. ANY OPEN CUT CONSTRUCTION FOR A UTILITY CROSSING ABOVE AN AUTHORITY WATERLINE WILL NOT DISTURB SOILS WITHIN 18 INCHES OF THE AUTHORITY'S LINE. UTILITY'S EXCAVATOR SHALL HAVE A PLATE WELDED OVER THE TEETH OF THE EXCAVATOR BUCKET, AND THE SIDE CUTTERS MUST BE REMOVED PRIOR TO EXCAVATION TO HELP PREVENT PIPELINE DAMAGE. ANY EXCAVATION TAKING PLACE WITHIN 24 INCHES OF THE OUTER EDGE OF THE WATERLINE SHALL BE DONE BY HAND EXCAVATION OR VACUUM EXCAVATION WITH THE APPROVAL OF THE AUTHORITY'S ON-SITE REPRESENTATIVE.

5. CONSTRUCTION ACTIVITIES THAT GENERATE GROUND VIBRATIONS, INCLUDING PILE DRIVING, SHEET DRIVING, SOIL COMPACTION WORK, TUNNELING, TRENCHLESS CONSTRUCTION, JACK HAMMERING, RAMMING AND BORING AND JACKING SHALL BE COORDINATED WITH AND APPROVED BY THE AUTHORITY'S ENGINEER.

6. A LETTER OF NO OBJECTION OR A CONSENT TO ENCROACHMENT AGREEMENT ("APPROVAL DOCUMENT") WITH THE AUTHORITY MUST BE OBTAINED PRIOR TO ANY WORK ACTIVITY WITHIN THE AUTHORITY'S EASEMENT. THE AUTHORITY MUST REVIEW AND APPROVE THE PROPOSED CONSTRUCTION DRAWING BEFORE AN APPROVAL DOCUMENT CAN BE ISSUED. A COPY OF THE APPROVAL DOCUMENT MUST BE IN THE POSSESSION OF UTILITY'S (AND ITS CONTRACTOR'S) WORK CREWS WHILE CONDUCTING CONSTRUCTION ACTIVITY WITHIN THE AUTHORITY'S EASEMENT. AN APPROVAL DOCUMENT IS NOT NECESSARY FOR SURVEY WORK ON OR ASSESSMENT OF THE SURFACE OF THE AUTHORITY'S EASEMENT.

7. UTILITY MUST NOTIFY THE AUTHORITY 48 HOURS IN ADVANCE OF UTILITY CONDUCTING CONSTRUCTION WITHIN THE AUTHORITY'S EASEMENT. THE AUTHORITY'S REPRESENTATIVE MAY BE PRESENT DURING CONSTRUCTION WITHIN THE AUTHORITY'S EASEMENT.

8. UTILITY MAY NOT STORE CONSTRUCTION MATERIALS, INCLUDING SOIL SPOILS, AND EQUIPMENT WITHIN THE AUTHORITY'S EASEMENT.

9. ALL PROPOSED CROSSINGS SHALL BE REASONABLY PERPENDICULAR TO THE AUTHORITY'S EASEMENT.

10. THE PROPOSED SURFACE GRADE OR ELEVATION WITHIN THE AUTHORITY'S EASEMENT MUST BE APPROVED BY THE AUTHORITY. NO CONSTRUCTION WILL BE ALLOWED THAT RESULTS IN THE EROSION OF SOILS OR EARTH FILL GREATER THAN TWELVE (12) INCHES WITHIN THE AUTHORITY'S EASEMENT. THE AUTHORITY'S EASEMENT MUST BE RESTORED TO EXISTING CONDITION OR BETTER TO ENSURE POSITIVE DRAINAGE WITHOUT ADVERSELY AFFECTING ADJACENT PROPERTIES.

11. NO TEMPORARY NOR PERMANENT CROSSINGS (RAILROADS, ROADWAYS, DRIVEWAYS, SIDEWALKS, PARKING LOTS, ETC.) SHALL BE CONSTRUCTED ACROSS THE AUTHORITY'S EASEMENT WITHOUT OBTAINING AN APPROVAL DOCUMENT. ALL CROSSINGS SHALL MAINTAIN A MINIMUM OF SIX (6) FEET COMPACTED COVER OVER THE WATERLINE.

12. NOT WITHSTANDING ANY PROVISION HEREOF, NO BUILDINGS NOR BUILDING FOUNDATION, HOUSES, BARNs, GARAGES, PATIOS, SWIMMING POOLS, LIGHT POLES, MASONRY, RETAINING WALLS OR OTHER PERMANENT OR TEMPORARY STRUCTURES ARE PERMITTED WITHIN THE AUTHORITY'S EASEMENT.

13. THE AUTHORITY MUST APPROVE PROPOSED FENCING PRIOR TO CONSTRUCTION WITHIN THE EASEMENT. FENCE POSTS SHOULD BE PLACED A MINIMUM OF THREE (3) FEET FROM THE OUTSIDE OF THE AUTHORITY'S PIPELINE. FENCES MAY NOT OBSTRUCT THE LINE OF SIGHT BETWEEN WATER LINE MARKERS. THE AUTHORITY'S PERSONNEL (INCLUDING CONTRACTORS) MAY ACCESS THE AUTHORITY'S FACILITIES AT ALL TIMES. THE LANDOWNER IS RESPONSIBLE FOR FENCE CONSTRUCTION AND MAINTENANCE AND SHALL PROVIDE GATES (A MINIMUM OF 14 FEET IN WIDTH) FOR ACCESS IN SUFFICIENT NUMBER TO ENSURE UNHINDERED, CONTINUOUS ACCESS TO THE AUTHORITY'S EASEMENT.

14. NO TREES OR LARGE, DEEP-ROOTED SHRUBS ARE PERMITTED WITHIN THE AUTHORITY'S EASEMENT. SOME SHRUBS MAY BE PERMITTED WITHIN THE EASEMENT PROVIDED THE PLANTINGS DO NOT INTERFERE WITH THE CONSTRUCTION, OPERATION, MAINTENANCE, AND INSPECTION OF THE WATERLINE AND APPURTENANT FACILITIES. UNDER NO CIRCUMSTANCES WILL MECHANICAL EQUIPMENT BE ALLOWED FOR PLANTING SHRUBS WITHIN THE EASEMENT.

15. REQUESTS FOR VARIANCE FROM THESE CROSSING GUIDELINES MAY BE SUBMITTED TO THE AUTHORITY'S BOARD OF DIRECTORS FOR CONSIDERATION ON A CASE-BY-CASE BASIS AND MUST: (i) PROVIDE AN EXPLANATION OF THE NEED FOR THE VARIANCE; (ii) BE IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN THE HOUSTON REGION; (iii) NOT CREATE AN UNREASONABLE RISK OF HARM TO THE GENERAL PUBLIC OR THE AUTHORITY'S FACILITIES; AND (iv) NOT UNREASONABLY RESTRICT OR INTERFERE WITH THE AUTHORITY'S EASEMENT OR FACILITIES, OR THE CONSTRUCTION, OPERATION OR MAINTENANCE OF THE AUTHORITY'S FACILITIES.



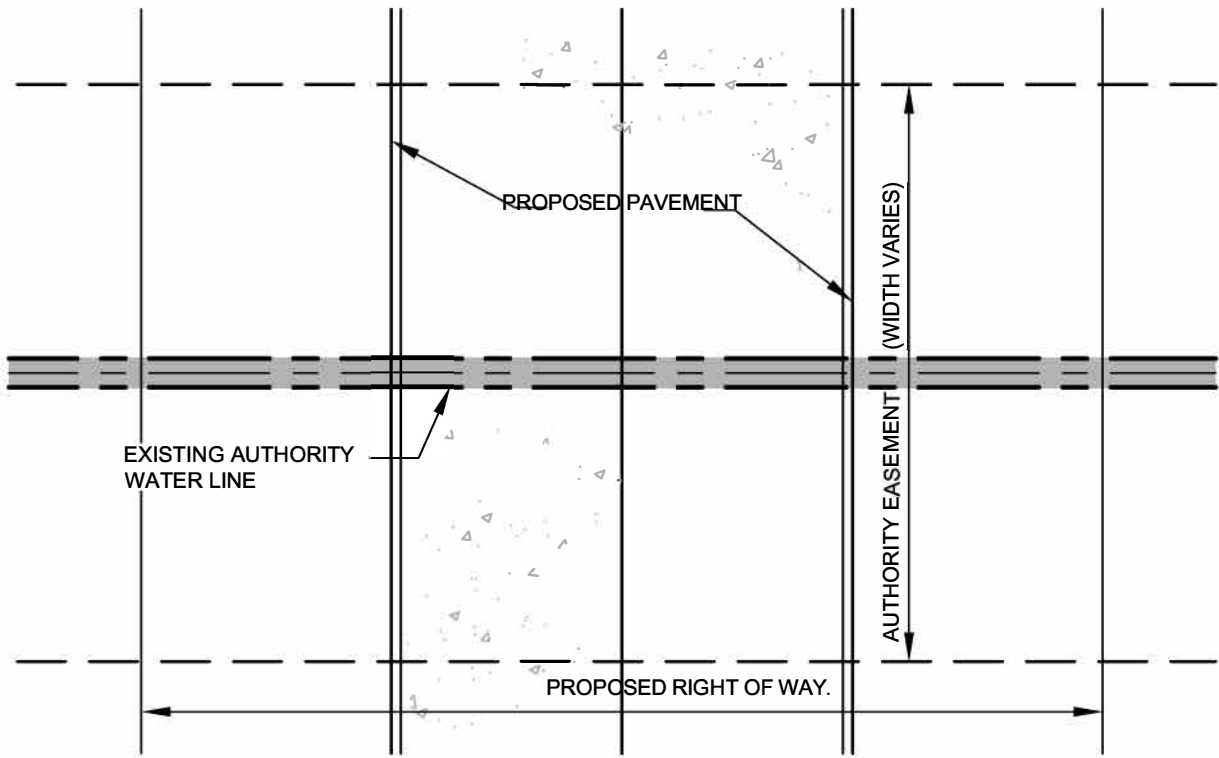
DANNENBAUM
ENGINEERING CORPORATION

T.B.P.E. FIRM REGISTRATION #392
3100 WEST ALABAMA HOUSTON, TX 77098 (713) 520-9570

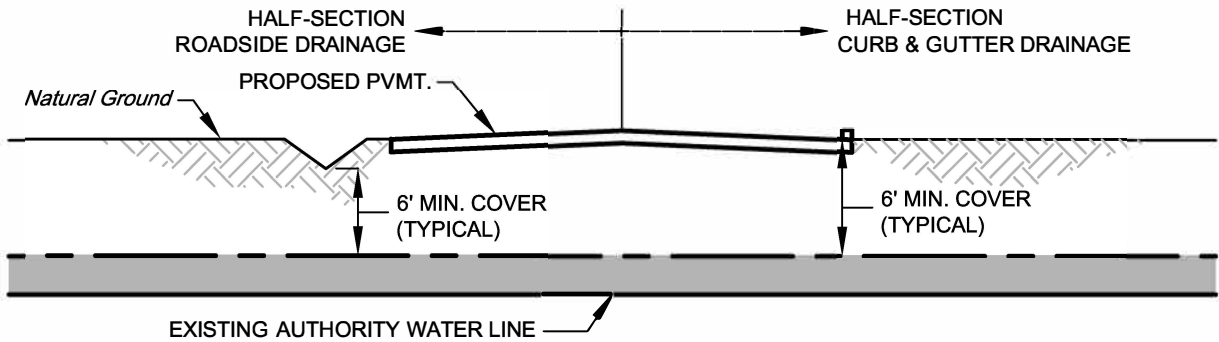
GENERAL NOTES
FOR CROSSING GUIDELINES

SCALE: NTS	JOB #: 3487-03	DATE: NOV, 2019
---------------	-------------------	--------------------

DANNENBAUM ENGINEERING CORPORATION
G:\1110\3487-03\Crossing Guidelines\WRCRWA_Crossing Guidelines\WRCRWA_General Notes.dwg Feb 14, 2017 - 8:27am rdph.lozano



PLAN



SECTION

NOTES:

1. ANY PROPOSED PAVEMENT, REGARDLESS OF THE TYPE OF MATERIAL, CONSTRUCTED OVER THE EXISTING AUTHORITY'S WATER LINE SHALL AT ALL TIMES MAINTAIN A MINIMUM OF SIX (6) FEET OF COVER FROM TOP OF PAVEMENT TO THE WALL OF THE AUTHORITY'S WATER LINE. ANY DRAINAGE SWALES/DITCHES OR GRADING SHALL MAINTAIN A MINIMUM OF SIX (6) FEET OF COVER FROM BOTTOM OF DRAINAGE TO TOP OF THE EXISTING AUTHORITY WATERLINE.
2. THE ELEVATION OF EXISTING APPURTENANCES CONFLICTING WITH PROPOSED PAVING CONSTRUCTION SHALL BE ADJUSTED UNDER THE DIRECTION OF AUTHORITY'S ENGINEER. CAUTIONARY MEASURES SUCH AS THE PLACEMENT OF BOLLARDS MAY BE REQUIRED.
3. PAVEMENT OVER AUTHORITY FACILITIES SHOULD INCORPORATE CONSTRUCTION JOINTS TO ALLOW FOR MAINTENANCE ACCESS.
4. SEE GENERAL NOTES FOR ADDITIONAL GUIDELINES.



DANNENBAUM
ENGINEERING CORPORATION

T.B.P.E. FIRM REGISTRATION #392
 3100 WEST ALABAMA HOUSTON, TX 77098 (713) 520-9570

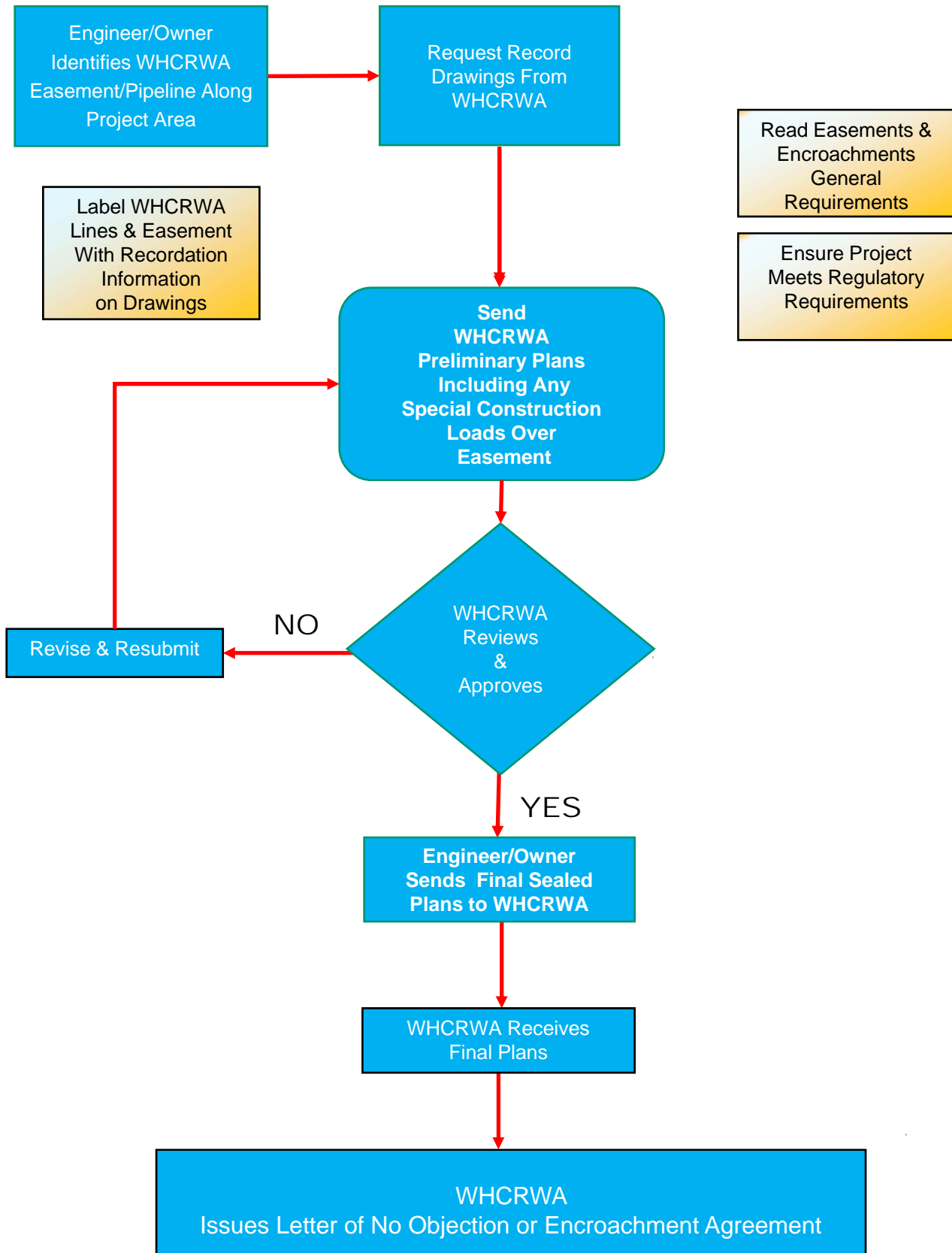
**SURFACE CROSSING
 GUIDELINES**

SCALE: NTS JOB #: 3487-03 DATE: NOV, 2019

ATTACHMENT C
EASEMENTS AND RIGHT-OF-WAY
ENCROACHMENTS GENERAL
REQUIREMENTS FLOWCHART

WEST HARRIS COUNTY REGIONAL WATER AUTHORITY (WHCRWA)

Easements & Right-of-Way Encroachments General Requirements



For more information about WHCRWA visit our website at www.WHCRWA.com,

Email to WLine-infoRequest.WHCRWA@decorp.com, or call 281-398-8211.



The Authority reserves the right to periodically update, amend, revise, and make changes to the guidelines and terms identified within this publication.