



MEMORANDUM

TO: Linda Guerrero, Chair, Environmental Commission
FROM: Pamela Abee-Taulli, Environmental Review, DSD
DATE: October 21, 2020
SUBJECT: Albert H. Ullrich Water Treatment Plant, Revision 2 Variances

Dear Chair Guerrero,

Ullrich Water Treatment Plant, operated by Austin Water Utility, is critical to providing the City with safe drinking water. The site plan under review is a revision to the original site plan, which was approved in 2003.

The plan includes multiple projects and will require seven Environmental variances, largely due to the site's location in an environmentally sensitive area with numerous environmental constraints. Because of the unusually high number of variances, I have taken the uncommon step of providing a single set of findings for all the variances, rather than one set of findings for each variance. Additionally, I am including this memo to introduce the list of proposed projects.

The overall purpose of the plan revision under review is to improve operator and environmental safety by eliminating potential hazards and to upgrade miscellaneous plant processes to ensure the plant can reliably deliver drinking water.

The sludge change-over structure replaces existing structures that require confined space entry. Other improvements provide safety washdown areas and a looped, potable water supply to the facility. The spill containment structure will contain fugitive spills that may enter the existing storm drain system from chemical delivery areas and will prevent their discharge into Little Bee Creek. The Low Service Pump Station Electrical Feed Renewal project includes construction of a new electrical building, retaining walls, electrical and mechanical equipment, parking areas, access road, and duct bank routing.

Thank you for your consideration.

Sincerely,

Pamela Abee-Taulli, DSD
Radmon Rice, WPD



ITEM FOR ENVIRONMENTAL COMMISSION AGENDA

COMMISSION MEETING DATE: November 4, 2020

NAME & NUMBER OF PROJECT: Albert H. Ullrich Water Treatment Plant, Revision 2
SPC-03-0005C(R2)

NAME OF APPLICANT OR ORGANIZATION: Shari Pape, MWM Design Group

LOCATION: 3602 ½ Redbud Trail, Austin, TX, 78746

COUNCIL DISTRICT: District 8

ENVIRONMENTAL REVIEW STAFF: Pamela Abee-Taulli, Environmental Review Specialist Senior, Development Services Department, 512-974-1879, pamela.abee-taulli@austintexas.gov.
Radmon Rice, Environmental Specialist, Watershed Protection Department, 512-974-3429, radmon.rice@austintexas.gov.

WATERSHED: Bee Creek, Little Bee Creek, and Lake Austin watersheds are classified Water Supply Rural.
Lady Bird Lake watershed is classified Water Supply Suburban.
Drinking Water Protection Zone

REQUEST:

1. LDC 25-8-261 to allow development in the Critical Water Quality Zone, and by extension in the Water Quality Transition Zone of a Water Supply Rural watershed in the Edwards Aquifer Recharge Zone South [LDC 25-8-452] for:
 - a. Phase 2: switchgear enclosure, duct bank and access drive, and
 - b. Phase 3: containment basin, electric building and related duct banks, sludge changeover facility, 6" water line.
2. LDC 25-8-281 to allow construction within a rimrock Critical Environmental Feature buffer for:
 - a. Phase 2: duct bank and access drive.
3. LDC 25-8-301 to allow construction of a driveway on a slope with a gradient of more than 15 percent for:

- a. Phase 2: duct bank and access drive.
4. LDC 25-8-302(A)(1) to allow construction of a building on a slope with a gradient of more than 25 percent for
 - a. Phase 2: switchgear enclosure, and
 - b. Phase 3: sludge change-over facility.
5. LDC 25-8-341 to allow cut to sixteen (16) feet for:
 - a. Phase 3: containment basin.
6. LDC 25-8-342 to allow fill to twelve (12) feet for:
 - a. Phase 2: duct bank and access drive.
7. 25-8-453(D)(1)(a) to allow impervious cover to exceed the 20 percent limit for development in the uplands of a Water Supply Rural watershed.

**STAFF
RECOMMENDATION:**

Staff recommends these variances, having determined the findings of fact to have been met.

STAFF CONDITION:

1. Applicant has designed permanent diversion and dissipation for the existing concentrated flow from the electric station.
2. Applicant has designed the rain gardens to avoid and preserve significant trees and has agreed to revegetate the rain gardens with native plants.
3. Applicant has redesigned the proposed road to preserve the wetland at the base of the rimrock.



Development Services Department
Staff Recommendations Concerning Required Findings

Project Name: Albert H. Ullrich Water Treatment Plant, Revision 2
Ordinance Standard: Watershed Protection Ordinance
Variance Request: Applicant requests to vary the following regulations:

1. LDC 25-8-261 to allow development in the Critical Water Quality Zone, and by extension in the Water Quality Transition Zone of a Water Supply Rural watershed in the Edwards Aquifer Recharge Zone South [LDC 25-8-452] for:
 - a. Phase 2: switchgear enclosure, duct bank and access drive, and
 - b. Phase 3: containment basin, electric building and related duct banks, sludge changeover facility, 6" water line.
2. LDC 25-8-281 to allow construction within a rimrock Critical Environmental Feature buffer for:
 - a. Phase 2: duct bank and access drive.
3. LDC 25-8-301 to allow construction of a driveway on a slope with a gradient of more than 15 percent for:
 - a. Phase 2: duct bank and access drive.
4. LDC 25-8-302(A)(1) to allow construction of a building on a slope with a gradient of more than 25 percent for:
 - a. Phase 2: switchgear enclosure, and
 - b. Phase 3: sludge change-over facility.
5. LDC 25-8-341 to allow cut to sixteen (16) feet for:
 - a. Phase 3: containment basin.
6. LDC 25-8-342 to allow fill to twelve (12) feet for:
 - a. Phase 2: duct bank and access drive.
7. 25-8-453(D)(1)(a) to allow impervious cover to exceed the 20 percent limit for development in the uplands of a Water Supply Rural watershed.

A. Land Use Commission variance determinations as required by Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

Yes The project site is an existing Austin Water Utility water treatment plant. The variances are necessary to allow critical upgrades to replace old and outdated equipment, provide improved environmental controls, and increase safety for plant staff. The upgrades are necessary for Austin Water Utility to continue to provide clean drinking water for its customers. Owners of similarly situated utilities with approximately contemporaneous development subject to similar code requirements have been allowed to develop with commensurate variances.

2. The variance:

- a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

Yes All proposed improvements have been located and sized as necessary to provide their designed functions. The site is in an environmentally sensitive area, in the Drinking Water Protection Zone, and has multiple environmental constraints, including slopes, wetland and rimrock Critical Environmental Features, Heritage trees, and creek and lake buffers. The applicant considered multiple design alternatives to achieve code compliance but was not able to design all of the upgrades without variances.

- b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

Yes All projects have been designed to be the minimum deviation from code and still provide the functions for which they are intended. Moreover, the applicant does not have the option to provide these functions on another site. In the absence of reasonable opportunities to build elsewhere, location of these projects on this site is the minimum deviation.

- c) Does not create a significant probability of harmful environmental consequences.

Yes During construction, the project will use the maximum erosion and sedimentation controls necessary and should have no harmful environmental consequences. Additionally, the project will improve existing environmental conditions by providing a control to contain and treat contaminated runoff and by diverting and dispersing concentrated flow that currently causes erosion.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes The project will increase water quality by providing a control to contain and treat contaminated runoff that currently drains untreated into Little Bee Creek, and by diverting and dispersing existing concentrated flow that drains into Lake Austin and causes erosion.

- B. The Land Use Commission may grant a variance from a requirement of Section 25-8-422 (*Water Supply Suburban Water Quality Transition Zone*), Section 25-8-452 (*Water Supply Rural Water Quality Transition Zone*), Section 25-8-482 (*Barton Springs Zone Water Quality Transition Zone*), Section 25-8-368 (*Restrictions on Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long*), or Article 7, Division 1 (*Critical Water Quality Zone Restrictions*), after determining that::

1. The criteria for granting a variance in Subsection (A) are met;

Yes All criteria in Subsection A are met.

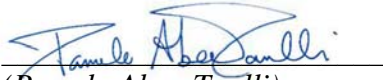
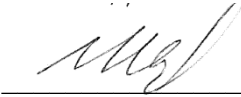
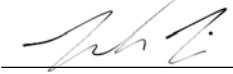

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

Yes Without the variances, the requirements would prevent improvements that are necessary for the continued operations of this Austin Water Utility. Moreover, given the existing investment in infrastructure on the site, development without the variances would prevent a reasonable, economic use of the property.

3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.

Yes All projects have been designed to be the minimum deviation from code and still provide the functions for which they are intended.

Staff Determination: Staff determines that the findings of fact have / have not been met.
Staff recommends the following condition:

Environmental Reviewer (DSD)	 (Pamela Abee-Taulli)	Date <u>10/21/20</u>
Environmental Review Manager (DSD)	 (Mike McDougal)	Date <u>10-14-2020</u>
Hydrogeologist Reviewer (WPD)	 (Radmon Rice)	Date <u>10/19/2020</u>
Environmental Officer (WPD)	 (Chris Herrington)	Date <u>10/26/2020</u>



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October 9, 2020

Development Services Department
City of Austin
505 Barton Springs Road
Austin, Texas 78704

Zebra Mussel Mitigation Techniques (8207.009)
Ullrich LSPS Electrical Feed Renewal Project (5335.016)

Attn: Environmental Commission

Subject: Environmental Variance Application – Ullrich Low Service Pump Station Electrical Feed Renewal Project (Phase II) & Ullrich WTP PD&SSI Project (Phase III)

CAS Consulting & Services, Inc. is submitting an environmental variance application for the Ullrich Low Service Pump Station Electrical Feed Renewal Project (referred to as the Phase II Project) at the City of Austin's Ullrich Water Treatment Plant for Austin Water. Black & Veatch is submitting an environmental variance application for the Process Drain and Support Systems Improvements Project (referred to as the Phase III Project) at City of Austin's Ullrich Water Treatment Plant for Austin Water. The two projects are being submitted together as separate phases in the same site plan revision application. The case number for this application is SP-03-005C (R2).

The water treatment plant provides drinking water for much of south and central Austin. The Low Service Pump Station (LSPS) provides the conveyance of water to be treated by the main water treatment plant. The Phase II project is located north of Red Bud Trail near the LSPS. The Phase III Project is located at the main water treatment plant south of Red Bud Trail. In this submittal, improvements are made to the plant to address specific process and maintenance issues required by plant operations.

The locations below are labeled as #.A, the number will be either 2 or 3 and refers to the applicable project phase.

Location 2.A: Electrical Equipment Enclosure, Access Drive with Duct Bank, and Equipment Pads (Phase II Project)

Proposed Structure: The proposed electrical equipment enclosure will be constructed on piers and will house electrical equipment. The existing private access drive is filled with existing utilities; therefore, the new large primary duct banks must be routed elsewhere, and must remain above the Lake Austin normal pool elevation. To minimize disturbance, the new access drive is proposed to be located over the new primary duct banks. The access drive will provide a looped route for large maintenance vehicles to access the existing Low Service Pump Station (LSPS). New concrete



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equipment pads will also be constructed around the proposed enclosure for condensers and transformers.

Watershed: Lake Austin classified as Water Supply Rural

Type of Development: Upgrading aged electrical equipment infrastructure essential to providing reliable power to the LSPS in order to minimize the likelihood of power outages that could prevent water intake resulting in the disruption of water service to many Austin Water customers.

Project Phasing: None

Storm Water Run-off: The runoff from the proposed electrical enclosure will be treated with a proposed partial sedimentation filtration pond adjacent to the structure. The design initially included a water quality pond to treat the proposed access drive impervious cover, but the pond was removed at the request of project reviewers due to environmental restrictions and the proposed access drive's proximity to Lake Austin. Instead, three rain gardens will treat an equivalent amount of existing impervious cover within the northern parcel of the plant site.

Effect structure will have on existing and future drainage: Currently, there are no water quality controls within the northern parcel of the plant site. This project will improve the quality of stormwater runoff by treating more existing impervious cover within the northern parcel of the plant site than is being added with the project.

Impact on Water Quality: This project will improve water quality once construction is complete by treating more impervious cover than is being added with the proposed improvements. To minimize the potential for sediment laden stormwater runoff from leaving the site during construction, a double row of perimeter erosion and sedimentation controls are proposed during construction. The City inspector will ensure that these erosion control devices are implemented correctly and maintained through the duration of construction. To maintain the natural drainage patterns at the base of the rimrock, the proposed culverts under the access drive and primary duct banks was raised by a foot to allow runoff upstream of the limits of construction to pond before draining out the Lake Austin through the culverts.

Justification for exemption from the watershed protection regulations: The proposed enclosure and access drive are essential to maintaining reliable power for the operation of the City's water treatment plant.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-342 of the Land Development Code): We are requesting a variance to construct the access drive using fill over 4'.

Variance Request (Section 25-8-301 of the Land Development Code): We are requesting a variance to construct the access drive and primary duct banks on a slope with a gradient of more than 15%.



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Variance Request (Section 25-8-302 of the Land Development Code): We are requesting a variance to construct the electrical enclosure on a slope with a gradient of more than 25%.

Variance Request (Section 25-8-261 of the Land Development Code): We are requesting a variance to construct the access drive and primary duct banks within in the Critical Water Quality Zone (CWQZ).

Variance Request (Section 25-8-281 of the Land Development Code): We are requesting a variance to construct the access drive and primary duct banks within the rim rock CEF buffer zone.

Variance Request (Section 25-8-423(C)(1)(a) of the Land Development Code): We are requesting a variance to exceed the allowable 20% impervious cover in a Water Supply Rural watershed by constructing the access drive and primary duct banks as well as the electrical enclosure.

Location 2.B: Water Quality Controls - Rain Gardens to treat existing access road and Austin Energy Bee Creek Substation (Phase II Project)

Proposed Structure: Existing Asphalt Access road with concrete laydown curb.

Watershed: Town Lake/Lady Bird Lake classified as Water Supply Suburban

Type of Development: Water

Project Phasing: None

Storm Water Run-off: The runoff from the existing private access drive will be treated with two proposed rain gardens, associated drainage swales to convey runoff from the road to the ponds, and interceptor swales and bypass culverts to divert upstream flow around the impervious cover and rain gardens and discharge through level spreaders. Runoff from a portion of the AE Bee Creek substation will also be treated with a rain garden and discharged through a level spreader. This alternative for treating existing impervious cover on the site was recommended by the reviewers in order to remove a water quality pond adjacent to Lake Austin in an environmentally sensitive area. Instead, the rain gardens will treat more than an equivalent amount of existing impervious cover compared to the impervious cover proposed with the project.

Effect structure will have on existing and future drainage: The existing access road currently has no existing water quality controls. This project will improve the quality of stormwater runoff by treating the most heavily traveled existing impervious cover on the northern parcel of the plant site. Also, concentrated flows from the Austin Energy Bee Creek substation are currently causing erosion at the site. With the project these flows will be captured at the edge of the substation fence before erosion can occur and routed to a rain garden for water quality treatment and through a level spreader to discharge in a non-erosive way.



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Impact on Water Quality: This project will improve water quality once construction is complete by treating more impervious cover than is being added with the proposed improvements. The cross culverts will also route upstream impervious cover under the existing access drive which further enhances water quality at the site. Also, concentrated flows from the Austin Energy Bee Creek substation are currently causing erosion at the site. With the project these flows will be captured at the edge of the substation fence before erosion can occur and routed to a rain garden for water quality treatment and through a level spreader to discharge in a non-erosive way.

To minimize the potential for sediment laden stormwater runoff from leaving the site during construction, a double row of perimeter erosion and sedimentation controls are proposed during construction. The City inspector will ensure that these erosion control devices are implemented correctly and maintained through the duration of construction.

Justification for exemption from the watershed protection regulations: Water quality controls will be provided to treat more than an equivalent amount of impervious cover proposed with the project.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-341 of the Land Development Code): We are requesting a variance to construct the rain gardens using cuts over 4'.

Location 3.A: Containment Basin (Phase III Project)

Proposed Structure: The proposed stormwater containment basin will capture stormwater from areas of the plant that are likely to contain contaminants that get washed into the storm drains. The basin will capture the stormwater and contain it long enough that the plant operators can review the water quality and determine if the water can be released to the outfall. If not, operators arrange to have the water disposed of per state and local regulations.

Watershed: Little Bee Watershed classified as water supply rural

Type of Development: Water infrastructure essential to protect the Bee Creek from receiving contaminated runoff.

Project Phasing: None

Storm Water Run-off: The existing stormwater drainage system will be used.

Effect structure will have on existing and future drainage: This project will improve the quality of the stormwater runoff but will not limit overall capacity to drain to the outfall.

Impact on Water Quality: This project will not impact water quality once installation is complete. During construction, silt fences, mulch socks, inlet protection and filter dikes will prevent sedimentation from contaminating the stormwater runoff. The City inspector will ensure that these erosion control devices are maintained and implemented correctly.



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Justification for exemption from the watershed protection regulations: The basin will protect the adjacent waterway from contaminants from a plant that already exists in the watershed.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-341 of the Land Development Code): We are requesting a variance to construct the containment basin using cuts over 4'.

Variance Request (Section 25-8-302 of the Land Development Code): We are requesting a variance to construct the containment basin on a slope > 25%.

Variance Request (Section 25-8-452 of the Land Development Code): We are requesting a variance to construct the containment basin in the WQTZ that lies over the South Edwards Aquifer Recharge Zone in a Water Supply Rural Watershed.

Location 3.B: 6-inch Waterline (Phase III Project)

Proposed Structure: A 6-inch waterline will be installed in the northwest access roadway (beneath asphalt pavement) in order to provide potable water to the Centrifuge Building and to provide a complete loop for the plant waterline.

Watershed: Little Bee Watershed classified as water supply rural

Type of Development: Water infrastructure essential to efficient and effective plant operation and safety.

Project Phasing: None

Storm Water Run-off: The existing stormwater drainage system will be used.

Effect structure will have on existing and future drainage: None.

Impact on Water Quality: This project will not impact water quality once installation is complete. During construction, silt fences, mulch socks, inlet protection and filter dikes will prevent sedimentation from contaminating the stormwater runoff. The City inspector will ensure that these erosion control devices are maintained and implemented correctly.

Justification for exemption from the watershed protection regulations: The waterline is essential to the operation of the City's water treatment plant.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-452 of the Land Development Code): We are requesting a variance to construct the 6-inch waterline in the WQTZ that lies over the South Edwards Aquifer Recharge Zone in a Water Supply Rural Watershed.



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Location 3.C: Sludge Change-Over Facility (Phase III Project)

Proposed Structure: The proposed sludge change-over facility will relocate the sludge change-over valves from an underground vault in middle of the plant road to a safe-from-traffic, off-road location. Currently the plant staff face traffic risk just to be able to enter the vault and redirect sludge flow.

Watershed: Little Bee Watershed classified as water supply rural

Type of Development: Water infrastructure essential to the safe operation of the water treatment plant.

Project Phasing: None

Storm Water Run-off: The existing stormwater drainage system will be used.

Effect structure will have on existing and future drainage: Approximately 700 SF of impervious area will be added to the site. Stormwater flow will be directed around the facility via a concrete gutter, dissipate on a rock splash pad and infiltrate into the grassy area to the east of the proposed facility.

Impact on Water Quality: This project will not impact water quality once installation is complete. During construction, silt fences, mulch socks, inlet protection and filter dikes will prevent sedimentation from contaminating the stormwater runoff. The City inspector will ensure that these erosion control devices are maintained and implemented correctly.

Justification for exemption from the watershed protection regulations: The sludge change-over facility is essential to the safe operation of the water treatment plant.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-341 of the Land Development Code): We are requesting a variance to construct the sludge change-over facility using cuts over 4'.

Variance Request (Section 25-8-302 of the Land Development Code): We are requesting a variance to construct the sludge change-over facility on a slope >25%.

Variance Request (Section 25-8-452 of the Land Development Code): We are requesting a variance to construct the sludge change-over facility in the WQTZ that lies over the South Edwards Aquifer Recharge Zone in a Water Supply Rural Watershed.

Location 3.D: New Electrical Building and related Ductbanks (Phase III Project)



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Proposed Structure: A proposed electrical building will be constructed adjacent to the Sludge Thickener and across from the Sludge Handling Facility. The electrical building will house a new motor control center (MCC) needed to accommodate the new pumps proposed for the Sludge Handling Facility. The new electrical building needs to be close to the Sludge Handling Facility because the new MCC will become the primary control center for the entire Sludge Handling Facility.

Watershed: Little Bee Watershed classified as water supply rural

Type of Development: Water infrastructure essential to efficient and effective plant operation and safety.

Project Phasing: None

Storm Water Run-off: The existing stormwater drainage system will be used.

Effect structure will have on existing and future drainage: None.

Impact on Water Quality: This project will not impact water quality once installation is complete. During construction, silt fences, mulch socks, inlet protection and filter dikes will prevent sedimentation from contaminating the stormwater runoff. The City inspector will ensure that these erosion control devices are maintained and implemented correctly.

Justification for exemption from the watershed protection regulations: The new electrical building and ductbanks are essential to the safe and useful operation of the water treatment plant.

Dam Safety and Landfill Certification Requirements: None

Variance Request (Section 25-8-452 of the Land Development Code): We are requesting a variance to construct the electrical building and ductbanks in the WQTZ that lies over the South Edwards Aquifer Recharge Zone in a Water Supply Rural Watershed.

If any further information regarding the projects is required, please feel free to contact the following engineers for each project:

- Phase II Project – Thomas Rohlack, PE at either (512) 222-1264 or Thomas.rohlack@casengineers.com
- Phase III Project – Monica Stiggins, PE at either (512) 402-5930 or stigginsm@bv.com.

Very Truly Yours,
Black & Veatch Corporation and CAS Consulting & Services, Inc.

Monica Stiggins, P.E.
Engineering Manager

Thomas Rohlack, P.E.
Senior Engineer



ENVIRONMENTAL COMMISSION VARIANCE APPLICATION FORM

PROJECT DESCRIPTION

Applicant Contact Information

Name of Applicant	Robyn Haasch (Phase II) & Nick Sybille (Phase III), Austin Public Works
Street Address	6800 Burleson Road, Building 312, Ste 200
City State ZIP Code	Austin, Texas 78744
Work Phone	Robyn (Phase II): 512-974-2624 Nick (Phase III): 512-673-8791
E-Mail Address	Robyn.haasch@austintexas.gov Nicholas.sybille@austintexas.gov

Variance Case Information

Case Name	Ullrich Low Service Pump Station Electrical Feed Renewal Project (Phase II of the site plan revision) Ullrich WTP Process Drain & Support Systems Improvements Project (Phase III of the site plan revision)
Case Number	SPC-03-0005C (R2)
Address or Location	1000 Forest View Drive
Environmental Reviewer Name	Pamela Abee-Taulli
Environmental Resource Management Reviewer Name	Liz Johnston (Wetland Biologist) and Radmon Rice (Hydrogeologist)
Applicable Ordinance	Watershed Protection Ordinance LDC 25-8-301; LDC 25-8-341; LDC 25-8-452
Watershed Names	Lake Austin, Bee Creek, Little Bee Creek (Water Supply Rural) Lady Bird Lake (Water Supply Suburban)

Watershed Classification	<input type="checkbox"/> Urban <input type="checkbox"/> Suburban <input checked="" type="checkbox"/> Water Supply Suburban <input checked="" type="checkbox"/> Water Supply Rural <input type="checkbox"/> Barton Springs Zone
Edwards Aquifer Recharge Zone	<input checked="" type="checkbox"/> Barton Springs Segment <input type="checkbox"/> Northern Edwards Segment <input type="checkbox"/> Not in Edwards Aquifer Zones
Edwards Aquifer Contributing Zone	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Distance to Nearest Classified Waterway	Phase II is adjacent to the waterways. Phase III is 500 ft to the nearest waterway.
Water and Waste Water service to be provided by	City of Austin
Request	<p>The variance request for Phases II & III projects are as follows (Cite code references):</p> <ol style="list-style-type: none"> 1. LDC 25-8-261 to allow development in the Critical Water Quality Zone (CWQZ), and by extension in the Water Quality Transition Zone (WQTZ) of a Water Supply Rural watershed in the Edwards Aquifer Recharge Zone South [LDC 25-8-452]. <ol style="list-style-type: none"> a. Ph II: switchgear enclosure, duct bank and access drive b. Ph III: containment basin, electric building & related duct banks, sludge changeover facility, 6" water line 2. LDC 25-8-281 to allow construction within a rimrock CEF buffer <ol style="list-style-type: none"> a. Ph II: duct bank and access drive 3. LDC 25-8-301 to allow construction of a roadway or driveway on a slope with a gradient of more than 15 percent, <ol style="list-style-type: none"> a. Ph II: duct bank and access drive 4. LDC 25-8-302(A)(1) to allow construction of a building or parking lot on a slope with a gradient of more than 25 percent <ol style="list-style-type: none"> a. Ph II: switchgear enclosure b. Ph III: sludge change-over facility 5. LDC 25-8-341 to allow cut to sixteen (16) feet <ol style="list-style-type: none"> a. Ph III: containment basin

	<p>6. LDC 25-8-342 to allow fill to twelve (12) feet</p> <p>a. Ph II: duct bank and access drive</p> <p>7. 25-8-423(C)(1)(a) to allow impervious cover to exceed the 40 percent limit for development in the uplands of a Water Supply Suburban watershed.</p> <p>8. 25-8-453(D)(1)(a) to allow impervious cover to exceed the 20 percent limit for development in the uplands of a Water Supply Rural watershed.</p>
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	Q1/Q2 Table	Total Imp Cover	Total Imp Cover	Gross Imp Cover	Net NSA Imp Cover
		(Acres)	(Sq Feet)	%	%
Impervious cover	Little Bee Creek	4.19	182,516.40	5.71%	37.41%
square footage:	Lady Bird Lake (Town Lake)	4.30	187,308.00	7.95%	10.91%
acreage:	Lake Austin	0.99	42,931.70	11.2%	87.39%
percentage:	Bee Creek	0.31	13,503.60	6.2%	30.67%
	Total	9.79	426,259.70	6.9%	18.55%

Phase II – Ullrich Low Service Pump Station Electrical Feed Renewal Project	
Provide general description of the property (slope range, elevation range, summary of vegetation / trees, summary of the geology, CWQZ, WQTZ, CEFs, floodplain, heritage trees, any other notable or outstanding characteristics of the property)	<p>The following general description is for the portion of the property where the proposed project improvements will be taking place (near the low service pump station).</p> <p>Slopes in the area vary between 0-35%. Proposed improvements as part of the electrical feed renewal project are constructed on slopes ranging from 0-25%, see attached Slope Map exhibit. Elevations range from approximately 492 feet MSL at the existing low service pump station where the proposed project will take place, to 820 feet MSL at the main treatment plant south of Redbud Trail.</p> <p>Per the 2003 expansion report, the non-developed areas of the property contain primarily native vegetation and dense tree cover. There are a variety of hardwood trees as well as Cedar (Juniper) trees. Class 1 hardwood species include live oak, cedar elm, red oak, and Spanish oak</p>

	<p>trees. Other species include hackberry, cottonwood, Arizona ash, and chinaberry. A tree list detailing trees to be removed and retained within and adjacent to the project limits is included in the construction plan set.</p> <p>Soils in the area are generally characterized by thin surface layers of clay and loam overlying weathered limestone and marl. The underlying material is generally limestone rock. The valleys and canyons are dominated by Tarrant soils, according to USDA Soil Survey of Travis County.</p> <p>The limits of construction lie within the CWQZ, WQTZ, and 100-year floodplain.</p>
Phase III – Process Drain and Support Systems Improvements (PD&SSI)	
Provide general description of the property (slope range, elevation range, summary of vegetation / trees, summary of the geology, CWQZ, WQTZ, CEFs, floodplain, heritage trees, any other notable or outstanding characteristics of the property)	<p>Location 1 – Containment Basin: The site terrain slopes (~22%) from the plant access road on the northwest side of the plant site in the Little Bee Watershed, WQTZ and Edwards Aquifer Recharge Zone. The terrain slopes towards Little Bee Creek. The first 6” of soil is a dark brown, soft fat clay fill that is moist with organics. The next 18” are brown, dense clayey gravel fill that is moist with abundant limestone fragments. Limestone was encountered at 2’ of depth.</p> <p>The basin will be located against the access road at the top of the slope. The work includes three new manholes, one replacement manhole and replacement of stormwater lines. The purpose of the basin is to capture storm water runoff from the plant site that may be contaminated with lime or other site contamination. The operators will have the opportunity to review the water for contaminants before releasing the water to the outfall. If contaminants are identified in the basin water, the plant staff will arrange to have the contaminated water removed and disposed of per state and local regulations.</p> <p>Location 2 – 6-inch Waterline: A 6” waterline will be installed in the northwest access roadway (beneath the asphalt pavement) in the Little Bee Watershed, WQTZ and Edwards Aquifer Recharge Zone. The first 6” of soil is a dark brown, soft fat clay fill that is moist with organics. The next 18” are brown, dense clayey gravel fill that is moist with abundant limestone fragments. Limestone was encountered at 2’ of depth.</p> <p>The line will provide potable water to the Centrifuge Building and will loop the potable waterline in the plant. The line will also improve plant fire safety by adding 2 fire hydrants. The waterline’s route represents the shortest, least disruptive path.</p> <p>Location 3 – Sludge Change-Over Facility: The site terrain slopes (~39%) from a central plant access road towards the sludge holding tanks in the Little Bee Watershed, WQTZ and Edwards Aquifer Recharge Zone. The first 12” of soil is a dark brown, stiff gravelly lean clay fill that is moist</p>

	<p>with organics. The next 12" are brown, dense clayey gravel fill. Limestone was encountered at 2' of depth.</p> <p>The proposed sludge change-over facility will attach to the existing Sludge Thickener Pump Station and be constructed into the limestone slope. The backwall of the structure will be incorporated into the existing retaining wall of the access road. The facility replaces a sludge change over vault whose access hatch is in the middle of the access road, creating a safety hazard for operations staff. Work includes a new water meter vault west of the Sludge Handling Facility.</p> <p>No work is proposed in the 100-year floodplain.</p> <p>Location 4 – New Electrical Building and related Ductbanks: A site is a concrete apron on the west side of the Sludge Thickener. The ductbanks will be installed beneath the concrete pavement and beneath the asphalt access road. The work will be installed in the Little Bee Watershed, WQTZ and Edwards Aquifer Recharge Zone. The terrain is 8" of concrete over 3' of silty, clayey gravel with sand over limestone.</p> <p>The building will provide power to the new pumps in the Sludge Handling Facility, the Containment Basin gates and improve motor controls capacity for the plant.</p>
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<p>Phase II – Ullrich Low Service Pump Station Electrical Feed Renewal Project</p> <p>Clearly indicate in what way the proposed project does not comply with current Code (include maps and exhibits)</p>	<ul style="list-style-type: none"> Structures will be constructed in the CWQZ in the Edwards Aquifer Recharge Zone South. Construction within a rimrock CEF buffer. Construction of a roadway or driveway on a slope with a gradient of more than 15 percent. Construction of a building or parking lot on a slope with a gradient of more than 25 percent. Construction will cut more than 4' into the existing terrain. Construction will fill more than 4' into the existing terrain. Impervious cover will exceed 40% in the Water Supply Suburban watershed. Impervious Cover will exceed 20% in the Water Supply Rural watershed. <p>Maps and exhibits are included as attachments to this form.</p>
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<p>Phase III – PD&SSI Project</p> <p>Clearly indicate in what way the proposed project does not comply with current Code (include maps and exhibits)</p>	<ul style="list-style-type: none">• Construction will cut more than 4’ into the existing terrain.• Structures will be constructed on slopes that exceed 25%.• Structures will be constructed in the WQTZ that lies over the South Edwards Aquifer Recharge Zone in a Water Supply Rural watershed.• Impervious cover will exceed 40% in the Water Supply Suburban watershed.• Impervious Cover will exceed 20% in the Water Supply Rural watershed.
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FINDINGS OF FACT

As required in LDC Section 25-8-41, in order to grant a variance the Land Use Commission must make the following findings of fact:

Include an explanation with each applicable finding of fact.

Project: **Ullrich LSPS Electrical Feed Renewal Project (Phase II) & Ullrich WTP Process Drain & Support Systems Improvements Project (Phase III)**

Ordinance: **Watershed Protection Ordinance; LDC 25-8-302; LDC 25-8-341; LDC 25-8-452**

A. Land Use Commission variance determinations from Chapter 25-8-41 of the City Code:

1. The requirement will deprive the applicant of a privilege available to owners of similarly situated property with approximately contemporaneous development subject to similar code requirements.

Yes Phase II – All Proposed Improvements: The WTP requires immediate upgrades to its critical electrical service and equipment that provides power to the plant's Low Service Pump Station. New equipment must be installed at a new location due to an increased footprint and code requirements to provide climate control and protection from the environment. The development is necessary for the health and safety for the citizens of the City of Austin. The denial of requested variances for the proposed project will preclude construction of facilities necessary to efficiently power, operate and maintain the raw water pumping station. The raw water pumping station is critical to divert source water for treatment and delivery to Austin Water customers. The variance is being requested for Reasonable Use and Access of the site for continued maintenance and operation.

Yes Phase III – Containment Basin: The basin must be directly located downstream of the plant stormwater drains but before the outfall in order to intercept contaminated flows for capture, evaluation and proper disposal.

Yes Phase III – 6" Waterline: The best way to provide potable water to the Centrifuge Building is to extend the existing waterline to the building and connect to the waterline on the opposite side of the plant, creating a looped waterline system.

Yes Phase III – Sludge Change-Over Facility: The facility must be located adjacent to the vault in order to connect to all the existing sludge piping.

Yes Phase III – New Electrical Building: The facility must be located adjacent to the existing MCC and the new raw water pumps in order to provide power to all the new services.

2. The variance:

a) Is not necessitated by the scale, layout, construction method, or other design decision made by the applicant, unless the design decision provides greater overall environmental protection than is achievable without the variance;

Yes Phase II – New Electrical Equipment Enclosure: The WTP requires immediate upgrades to its critical electrical service and equipment that provides power to the plant's Low Service Pump Station. New equipment must be installed at a new location due to an increased footprint and code requirements to provide climate control and protection from the environment. The development is necessary for the health and safety of the citizens of the City of Austin. The enclosure will be built on drilled piers to minimize impact to the environment. Due to environmentally sensitive areas at the LSPS , the location of the enclosure could was moved south near the AE Bee Creek Substation. The building could not be located any further south or west of the existing road due to both topographical constraints and existing underground utility corridors preventing the installation of connecting duct banks (service) to the Low Service Pump Station.

Yes Phase II – Proposed Access Drive and Duct Banks: The existing private access drive is filled with existing utilities; therefore, the new primary duct banks must be routed elsewhere, and must remain above the Lake Austin normal pool elevation. To minimize disturbance, the new access drive is proposed to be located over the new primary duct banks. The access drive will provide a looped route for large maintenance vehicles to access the existing Low Service Pump Station (LSPS). The access drive and duct banks have been redesigned to minimize impacts to the surrounding environment, including adjacent wetlands, rimrock, and heritage trees. The original project design included a water quality pond adjacent to Lake Austin to treat the impervious cover of the proposed access drive. However, this pond was eliminated to minimize impacts to the shoreline and nearby heritage trees. Instead, the project provides water quality treatment of existing impervious cover on the northern parcel of the plant using rain gardens.

Yes Phase III – Containment Basin: The basin will protect Little Bee Creek from contaminated stormwater runoff, representing greater environmental protections than is achievable without the variance. The basin must be located between the stormwater lines and the plant outfall.

- Yes** **Phase III – 6" Waterline:** Locating the waterline in the access road limits excavation in grassy areas and is the shortest, feasible waterline route.
- Yes** **Phase III – Sludge Change-Over Facility:** The facility will protect plant operations staff from having to access a vault in a busy roadway every day to direct sludge flow. The facility must be located next to the sludge lines that are valve-controlled by the facility.
- Yes** **Phase III – New Electrical Building:** The WTP requires on-going upgrades to its motor control centers and electrical service to provide the power to the existing and new equipment at the plant.

b) Is the minimum deviation from the code requirement necessary to allow a reasonable use of the property;

]

- Yes** **Phase II – All Proposed Improvements:** The means by which the property was originally developed was necessary and unavoidable given the use of the facilities on the property, i.e., the pumping of source water to one of the City's largest drinking water production facilities. Deviation from the code requirement is necessary to allow for replacement of aging facilities necessary to efficiently power, operate and maintain the raw water pumping station.. Significant redesigns to limit the electrical equipment expansion, roadway alignments, and locations of all facilities and underground infrastructure were attempted and evaluated. Due to the site topography and requirements to maintain properly operating electrical equipment during all phases of construction, the final locations were chosen to minimize the overall environmental impact to the site while maintaining the critical functionality of the equipment and infrastructure.
- Yes** **Phase III – All Proposed Improvements:** The facilities were sized specifically to provide their designed function.

c) Does not create a significant probability of harmful environmental consequences.

- Yes** **Phase II – Proposed Electrical Enclosure, Duct Banks, and Access Drive:** The proposed improvements have been specifically designed to minimize impacts to and the probability of harming the environment during and after construction. The proposed improvements provide essential operation and maintenance requirements for the raw water pumping station. The proposed enclosure will be constructed on piers to minimize impacts to the environment. The drive alignment has been optimized to avoid impacting nearby heritage trees and to

minimize impacts to the wetland. Wetlands mitigation is being provided to compensate from the unavoidable impacts to wetland adjacent to Lake Austin. The mitigation will include removal of invasive and exotic species, removal of trash and debris, and the replanting of native trees and vegetation. Additionally, the proposed culverts under the access have been designed to maintain the natural drainage patterns at the base of the rimrock by raising the flowline one foot to allow runoff upstream of the limits of construction to pond before draining out to Lake Austin through the culverts.

Yes **Phase III – All Proposed Improvements:** None of the proposed improvements have a significant probability of harming the environment. The containment basin protects Little Bee Creek from contaminated runoff and the new sludge change-over facility protects workers from an unsafe facility access. The proposed 6" waterline adds 2 fire hydrants, improving access to water to fight fires.

3. Development with the variance will result in water quality that is at least equal to the water quality achievable without the variance.

Yes **Phase II – All Proposed Improvements:** The project includes providing a diversion berm and level spreader to reduce erosion caused by existing concentrated flow flowing from the Bee Creek Substation toward the proposed access drive. A sedimentation filtration pond and rain garden will also be provided to improve water quality in the Lake Austin watershed.

The project will treat greater than an equal impervious cover to the proposed enclosure and access drive with rain gardens along the existing access road. The cross culverts will also route upstream impervious cover under the existing access drive which further enhances water quality at the site. The existing site does not currently include water quality controls, whereas the proposed improvements will include multiple rain gardens and a sedimentation filtration pond to treat impervious cover on the most heavily traveled impervious cover on the norther parcel of the site. This will improve water quality in the Town Lake watershed.

Yes **Phase III – All Proposed Improvements:** The proposed containment basin is designed to improve water quality in Little Bee Creek. Neither the proposed 6" waterline or the sludge change-over facility will change the site's water quality. During construction, SWPPP best practices will be employed to prevent construction sediment and debris from entering stormwater runoff.

- B. Additional Land Use Commission variance determinations for a requirement of Section 25-8-422 (Water Quality Transition Zone), Section 25-8-452 (Water Quality Transition Zone), Article 7, Division 1 (Critical Water Quality Zone Restrictions), or Section 25-8-368 (Restrictions on Development Impacting Lake Austin, Lady Bird Lake, and Lake Walter E. Long):

1. The criteria for granting a variance in Subsection (A) are met;

- Yes Phase II – All Proposed Improvements:** The WTP requires immediate upgrades to its critical electrical service and equipment that provides power to the plant’s Low Service Pump Station. New equipment must be installed at a new location due to an increased footprint and code requirements to provide climate control and protection from the environment.
- Yes Phase III – Containment Basin:** Construction of the proposed containment basin is permitted per Article 11 Section 25-8-452 A.1 (Article 7 Division 1) as an in-channel detention basin designed in accordance with the ECM. The basin is also a water quality control facility in accordance with Article 11 Section 25-8-452 A.2.
- Yes Phase III – 6” Waterline:** Installing a utility line in the WQTZ is permitted per Article 7 Division 1 (D) as long as the utility line follows the most direct path to minimize disturbance, which is true for the proposed waterline.
- Yes Phase III – Sludge Change-Over Facility:** Construction of the proposed sludge-change over facility is permitted per Article 11 Section 25-8-452 A.2 – a water quality control facility that does not modify or impact the floodplain.
- Yes Phase III – New Electrical Building:** Construction of the proposed sludge-change over facility is permitted per Article 11 Section 25-8-452 A.2 – a water quality control facility that does not modify or impact the floodplain.

2. The requirement for which a variance is requested prevents a reasonable, economic use of the entire property;

- Yes Phase II – All Proposed Improvements:** The WTP requires immediate upgrades to its critical electrical service and equipment that provides power to the plant’s Low Service Pump Station. New equipment must be installed at a new location due to an increased footprint and code requirements to provide climate control and protection from the environment. The means by which the property was originally developed was necessary and unavoidable given the use of the facilities on the property, i.e., the pumping of source water to one of the City’s water production facilities. The denial of requested variances for the proposed project will preclude construction of facilities necessary to efficiently operate and maintain the raw water pumping station. The

- location of the raw water pumping station is critical to divert source water for treatment and delivery to Austin Water customers.
- Yes** **Phase III – Containment Basin:** The proposed containment basin will be used to protect the plant outfall from receiving contaminated stormwater runoff.
 - Yes** **Phase III – 6" Waterline:** The waterline is needed to provide potable water to the Centrifuge Building and improve plant fire safety.
 - Yes** **Phase III – Sludge Change-Over Facility:** The proposed sludge-change over facility will protect the safety of plant operations staff from having to access the facility through a hatch on a busy plant access roadway. The proposed facility will be located out of the roadway.
 - Yes** **Phase III – New Electrical Building:** The WTP requires on-going upgrades to its motor control centers and electrical service to provide the power to the existing and new equipment at the plant. New MCCs must be installed at a second location before upgrades can be made to the existing one.
3. The variance is the minimum deviation from the code requirement necessary to allow a reasonable, economic use of the entire property.
- Yes** **Phase II – All Proposed Improvements:** The proposed access drive was designed to minimize impacts to nearby heritage trees and the existing wetlands. The access drive was designed on the flattest slopes available in the area, where possible. The access drive is critical to delivering and accessing the equipment at the Low Service Pump Station and associated duct bank. Water quality treatment is being provided for more impervious cover than is proposed and is provided on the portion of the site with the heaviest traffic volume. An existing concentrated flow causing erosion is being routed through a level spreader to minimize future erosion. Upstream undeveloped flows are being routed around existing impervious cover. Existing site drainage patterns at the base of the rimrock are being maintained. Improvements have been designed to preserve all of the heritage trees within the limits of construction, decompaction of tree critical roots zones for preserved trees is required, along with a remedial tree care program. A double barrier of erosion and sediment controls are proposed to control stormwater runoff during construction. Wetlands mitigation is included to remove invasive species, trash and debris, and new plantings are proposed within the disturbed and undisturbed areas.
 - Yes** **Phase III – Containment Basin:** The proposed basin was designed with the minimum footprint required to reasonably protect the plant from contaminated stormwater runoff. The basin was designed to contain the maximum anticipated spill volume plus the runoff volume from a 5-year storm event.

- Yes** **Phase III – 6" Waterline:** The waterline route is the shortest, feasible route to close the loop of the plant and connect to the Centrifuge Building.
- Yes** **Phase III – Sludge Change-Over Facility:** The proposed sludge change-over facility was designed to house only the sludge valve and piping being relocated out of the roadway.
- Yes** **Phase III – New Electrical Building:** The new electrical building is sized only for the equipment it houses.

****Variance approval requires all above affirmative findings.**

Exhibits for Commission Variance

- Aerial photos of the site
- Site photos
- Aerial photos of the vicinity
- Context Map—A map illustrating the subject property in relation to developments in the vicinity to include nearby major streets and waterways
- Topographic Map - A topographic map is recommended if a significant grade change on the subject site exists or if there is a significant difference in grade in relation to adjacent properties.
- For cut/fill variances, a plan sheet showing areas and depth of cut/fill with topographic elevations.
- Site plan showing existing conditions if development exists currently on the property
- Proposed Site Plan – full size electronic or at least legible 11x17 showing proposed development, include tree survey if required as part of site or subdivision plan
- Environmental Map – A map that shows pertinent features including Floodplain, CWQZ, WQTZ, CEFs, Setbacks, Recharge Zone, etc.
- An Environmental Resource Inventory pursuant to ECM 1.3.0 (*if required by 25-8-121*)
- Applicant's variance request letter

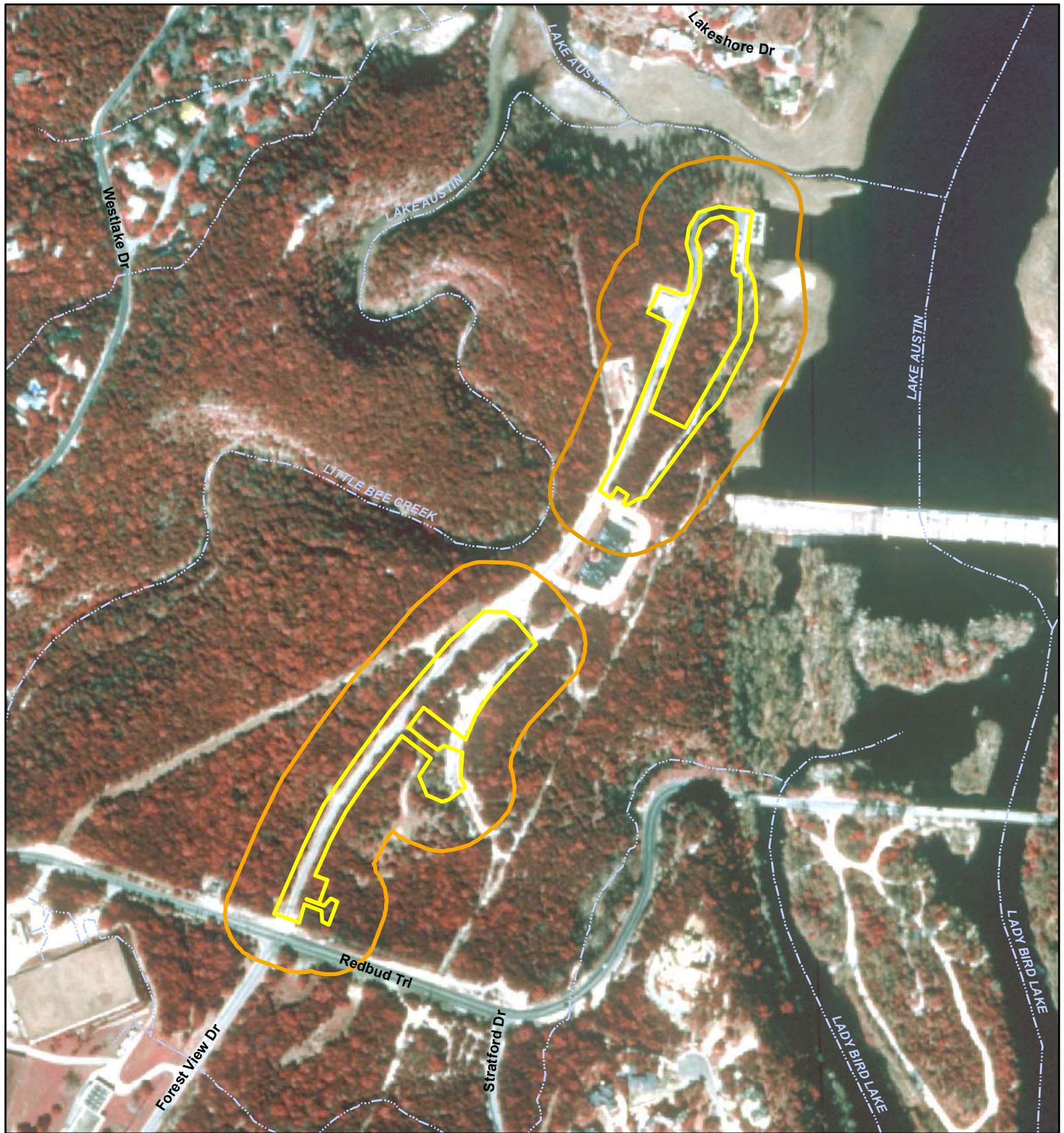
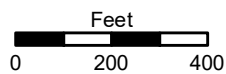


Figure 2
Historical Aerial Photograph

Ullrich Water Treatment Plant
Low Service Pump Station Improvements
1000 Forest View Drive Austin, Texas 78746

- Limits of Construction
- Assessment Area (150-ft)



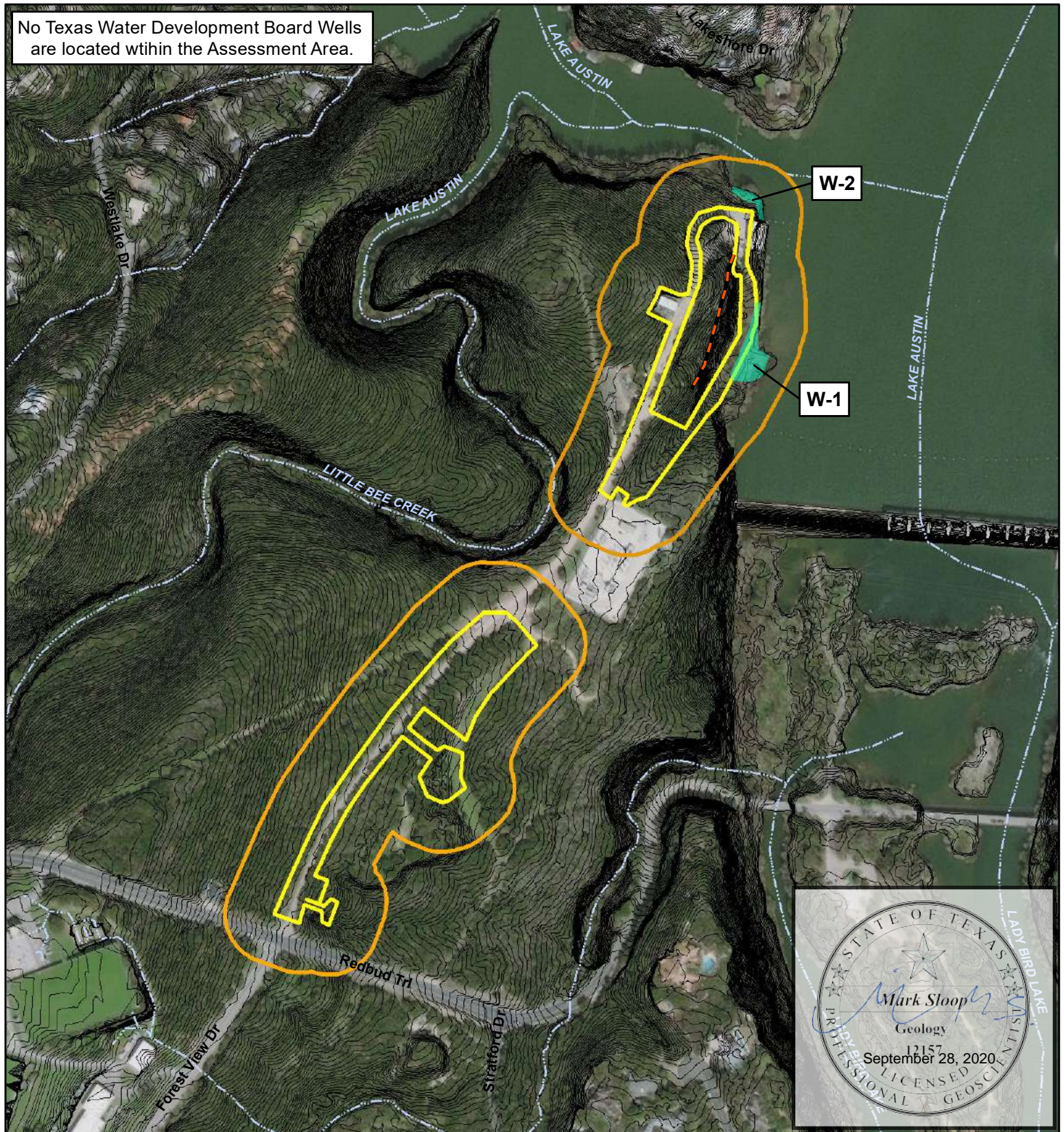
Baer Project No. 172081.02
Date: September 25, 2020

TBPE Firm No. F-3181 TBPG Firm No. 50030
Base Map: Austin West SE 1996



Baer Engineering
and Environmental Consulting, Inc.

No Texas Water Development Board Wells are located within the Assessment Area.



- Baer-identified Rimrock
- COA Elevation Contour (2-ft)
- Baer-identified Wetland (W-#)
- Limits of Construction
- Assessment Area (150-ft)



Feet
0 200 400

Baer Project No. 172081.02
Date: September 25, 2020

TBPE Firm No. F-3181 TBPG Firm No. 50030

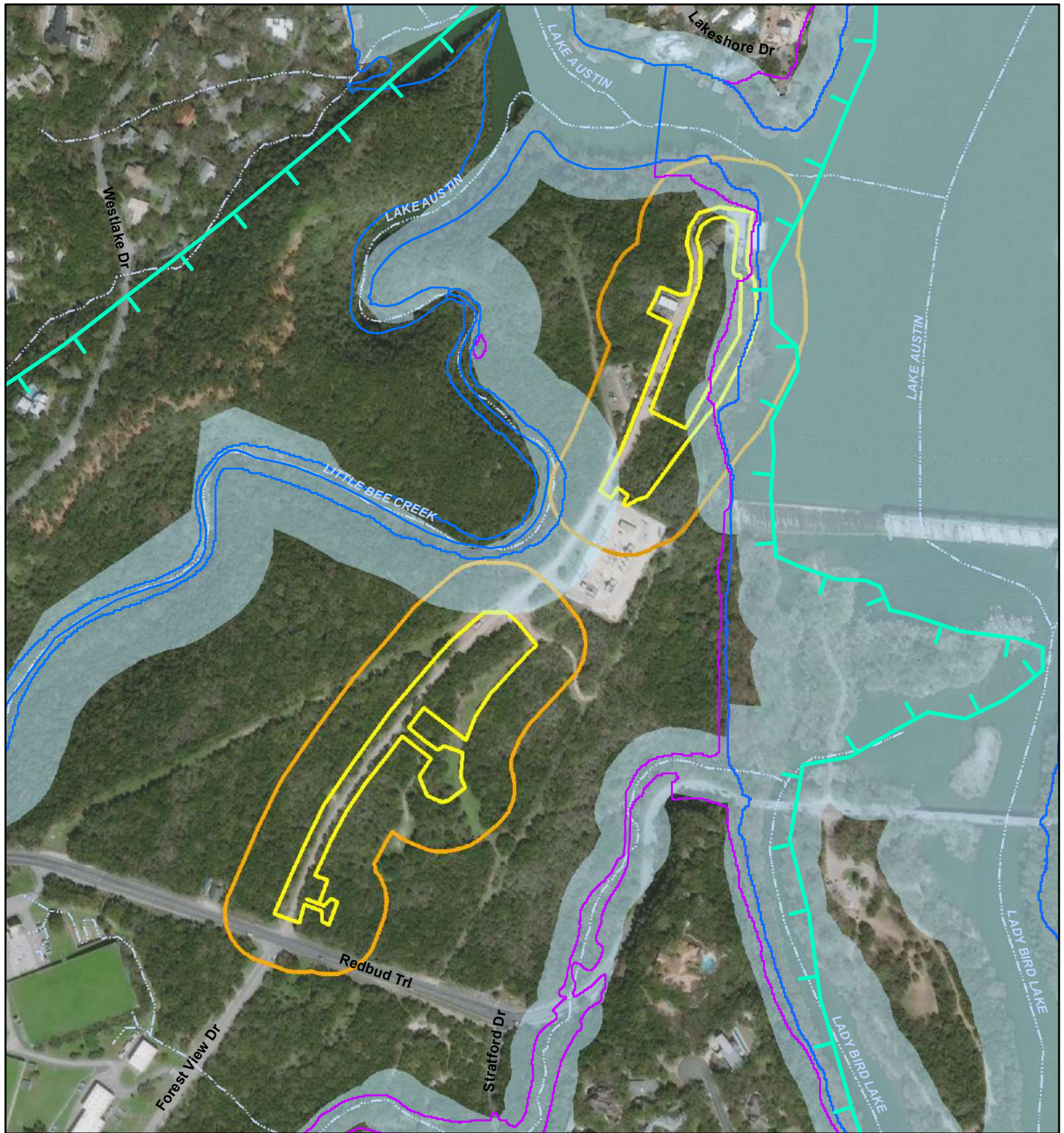
Base Map: World Imagery

Figure 4
Critical Environmental Features and Well Location Map with 2-ft Topography

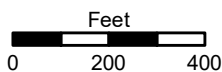
Ullrich Water Treatment Plant
Low Service Pump Station Improvements
1000 Forest View Drive Austin, Texas 78746



Baer Engineering
and Environmental Consulting, Inc.



- FEMA 100-year Floodplain
- FEMA 500-year Floodplain (Atlas 14)
- Critical Water Quality Zone
- TCEQ Edwards Aquifer Recharge Zone
- Limits of Construction
- Assessment Area (150-ft)



Baer Project No. 172081.02
Date: September 25, 2020

TBPE Firm No. F-3181 TBPG Firm No. 50030

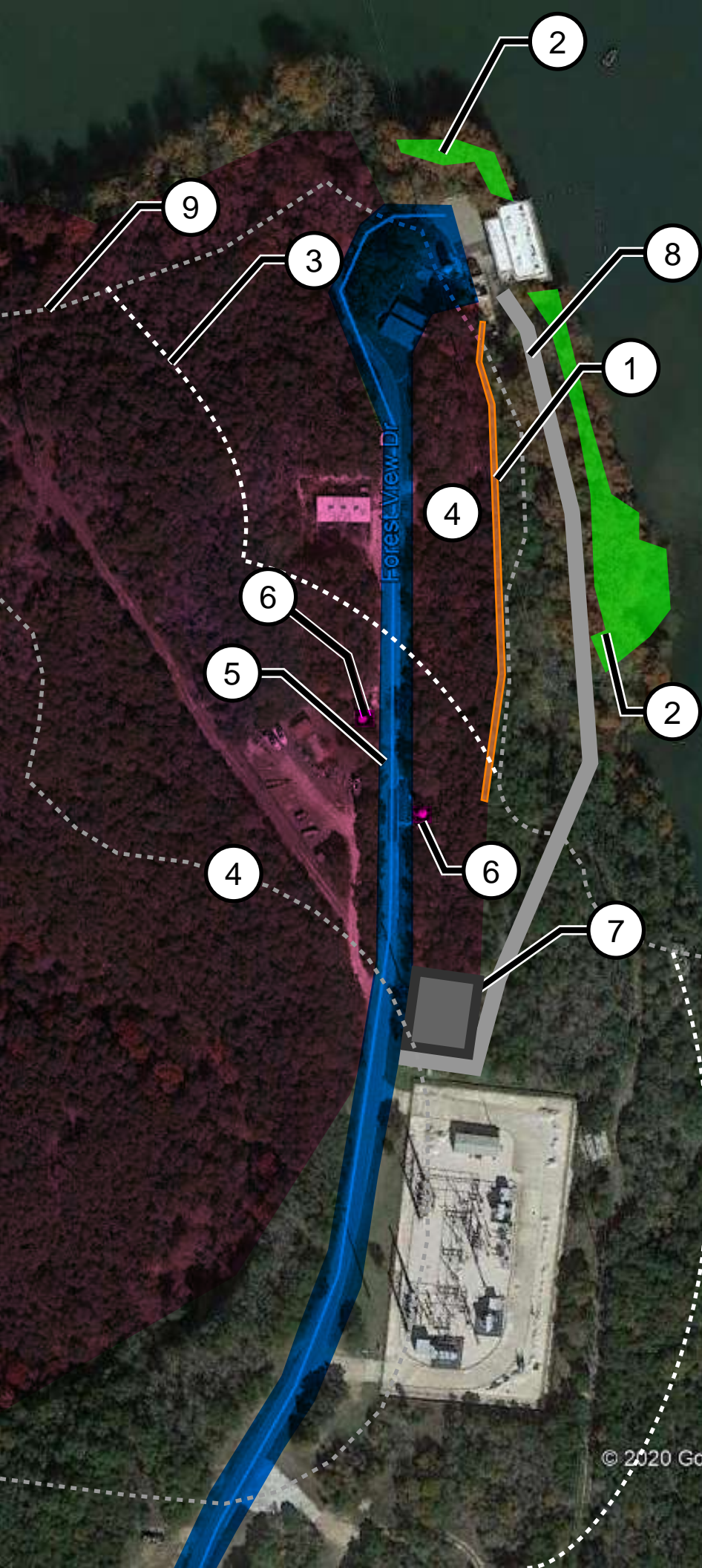
Base Map: World Imagery

Figure 5
Critical Water Quality Zone, Floodplains
and Edwards Aquifer Recharge Zone.

Ullrich Water Treatment Plant
Low Service Pump Station Improvements
1000 Forest View Drive Austin, Texas 78746



Baer Engineering
and Environmental Consulting, Inc.



SITE RESTRICTIONS AND CONSTRAINTS

1 - CRITICAL ENVIRONMENTAL FEATURE (RIM ROCK)

2 - CRITICAL ENVIRONMENTAL FEATURE (WETLANDS)

3 - CRITICAL WATER QUALITY ZONE

4 - STEEP SLOPE AREA

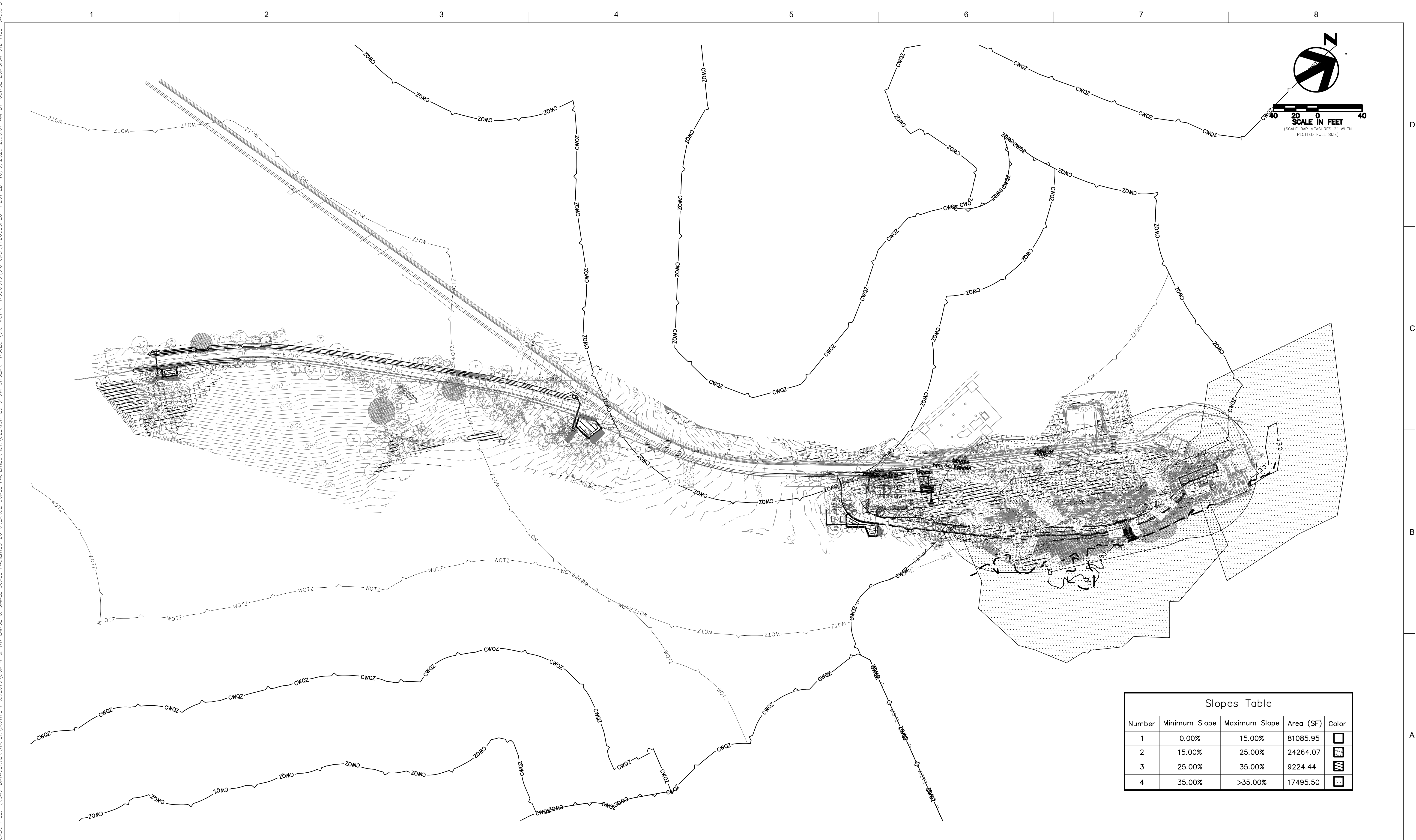
5 - UTILITY COORIDOR

6 - EXISTING SURGE TANKS

7 - PROPOSED LSPS SWITCHGEAR ENCLOSURE

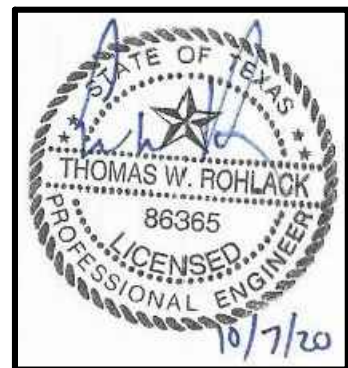
8 - PROPOSED DUCTBANK AND ROAD

9 - WATER QUALITY TRANSITION ZONE



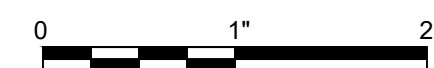
B	10/09/2020	ADDENDUM 3
A	07/09/2020	ISSUE NO. 3 BIDS
ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	DG
DRAWN BY	DCH
CHECKED BY	DG
DATE	Oct. 9, 20
PROJECT NUMBER	1126



ULLRICH WTP
LOW SERVICE PUMP STATION
ELECTRICAL FEED RENEWAL

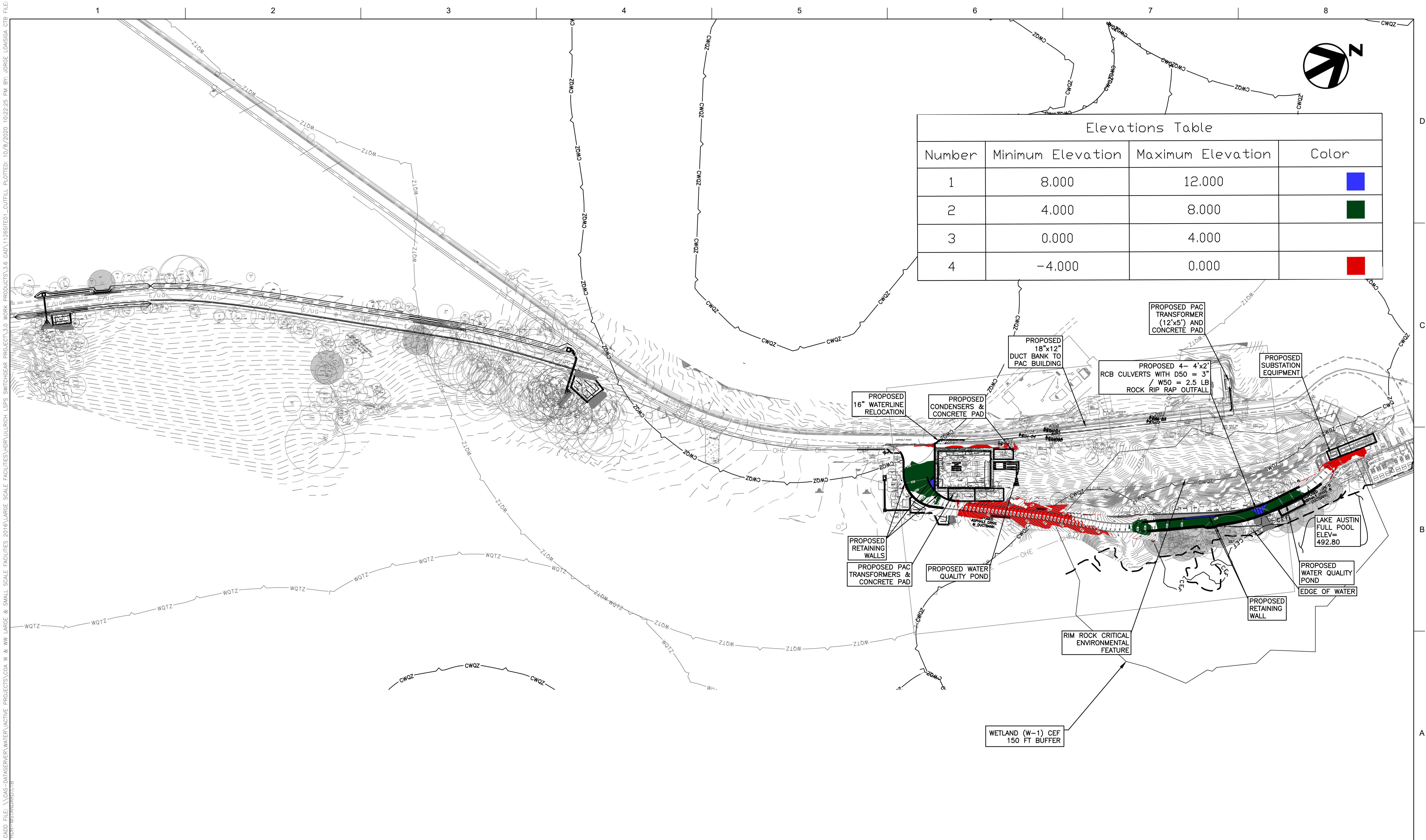
SLOPE MAP



FILENAME	1126SLOPE01
SCALE	1"=40'

SHEET
C05-106

CADD FILE: \\CAS-DATASERVER\WATER\ACTIVE PROJECTS\COA W & WM LARGE & SMALL SCALE FACILITIES\HULLRICH LSPS SWITCHGEAR PROJECT\3.0 WORK PRODUCTS\3.6 CAD\1126SITE01_CUTFILL_PLOTTED: 10/8/2020 10:22:25 PM BY: JORGE LOAISIGA CTE FILE: HULLRICH\STANDARD\CTB



CAS CONSULTING & SERVICES, INC.
CIVIL ENGINEERING | PROGRAM MANAGEMENT | CONSTRUCTION MANAGEMENT
7908 Cameron Road | Austin, TX 78754 | REG. NO. F-003572
Main: 512.835.1388 | Fax: 512.835.4515

HDR
Texas P.E. Firm
Registration No. F-754

ISSUE	DATE	DESCRIPTION
1	Oct. 8, 20	

PROJECT MANAGER	
DESIGNED BY	TR
DRAWN BY	JC
CHECKED BY	TR
DATE	
PROJECT NUMBER	1126

ULLRICH WTP
LOW SERVICE PUMP STATION
ELECTRICAL FEED RENEWAL

CUT & FILL MAP

0 1" 2"
SCALE 1" = 80'

FILENAME 1126SITE01_CUTFILL
SHEET C05-107
88 OF 174
SPC-03-005C (R2)

Photograph 1: Wetland W-1 – A view of the wetland, dominated by bald cypress along the bank of the Colorado River.



Photograph 2: Wetland W-1 – Photo through perimeter fence of taro at river bank.



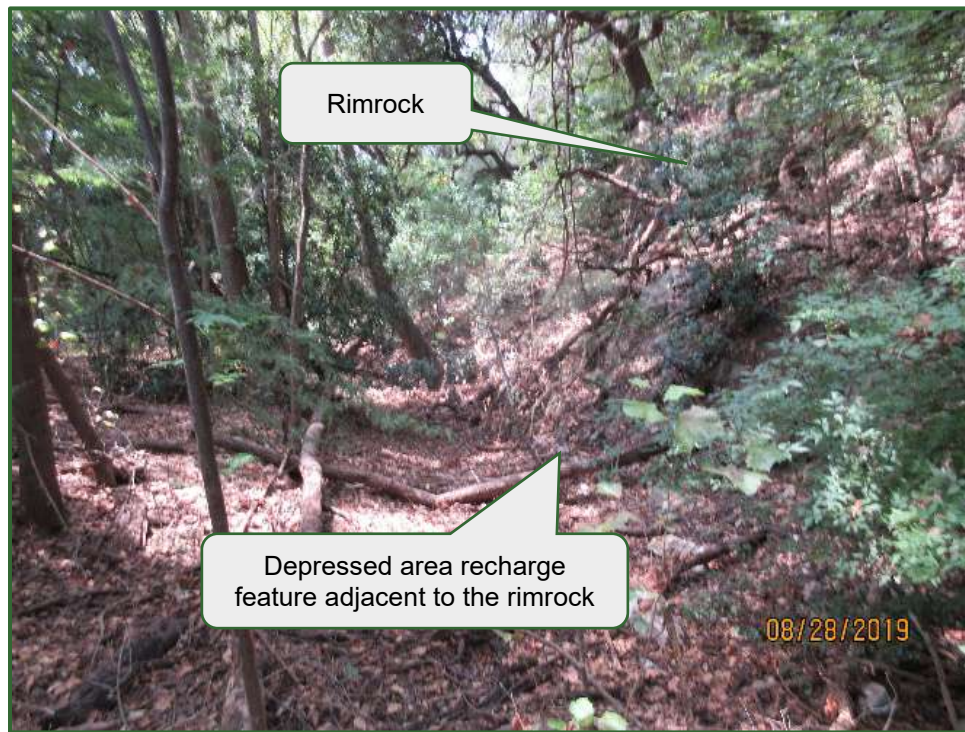
Photograph 3: Wetland W-2 – Wetland observed on northern side of assessment area along bank of the Colorado River, outside of perimeter fence. Bald cypress and American sycamore can be seen.



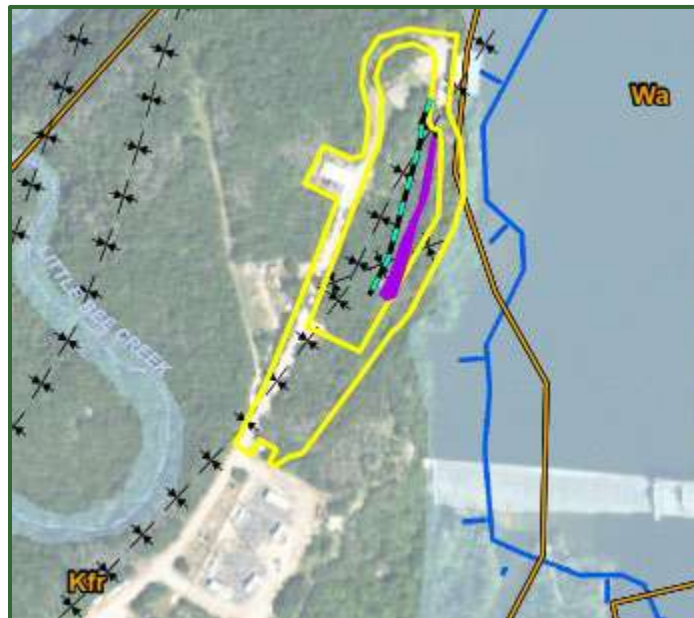
Photograph 4: Wetland W-2 – View of wetland vegetation at the river bank outside of perimeter fence, including sedges and shortspike false nettle.



Photograph 5: Ullrich Rimrock, Solution Recharge Feature – This depression was observed east of the paved driveway and at the foot of the rimrock.



Photograph 6: Ullrich Rimrock, Solution Recharge Feature – The figure below depicts the location of the feature in blue.



Photograph 7: Example of **Juniper Woodland**, west of paved driveway.



Photograph 8: Example of **Juniper Woodland**, east of paved driveway and above floodplain bluff.



Photograph 9: Grassy opening in **Juniper Woodland**, east of paved driveway.



Photograph 10: Example of **Deciduous Floodplain Forest** between the river bank and Ullrich Rimrock.



Photograph 11: Example of **Mowed Grasses** along paved driveway.

