DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
2000 FORT POINT ROAD
GALVESTON, TEXAS, 77550

SWG-RD-P 11 FEB 2024

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Pre-2015 Regulatory Regime Approved Jurisdictional Determination in Light of *Sackett v. EPA*, 143 S. Ct. 1322 (2023) ,[1] SWG-2022-00341

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[2] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[3] For the purposes of this AJD, we have relied on section 10 of the Rivers and Harbors Act of 1899 (RHA),[4] the Clean Water Act (CWA) implementing regulations published by the Department of the Army in 1986 and amended in 1993 (references 2.a. and 2.b. respectively), the 2008 *Rapanos-Carabell* guidance (reference 2.c.), and other applicable guidance, relevant case law and longstanding practice, (collectively the pre-2015 regulatory regime), and the *Sackett* decision (reference 2.d.) in evaluating jurisdiction.

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. The features addressed in this AJD were evaluated consistent with the definition of "waters of the United States" found in the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. This AJD did not rely on the 2023 "Revised Definition of 'Waters of the United States,'" as amended on 8 September 2023 (Amended 2023 Rule) because, as of the date of this decision, the Amended 2023 Rule is not applicable in Texas due to litigation.

1. SUMMARY OF CONCLUSIONS.

[1] While the Supreme Court's decision in *Sackett* had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.
[2] 33 CFR 331.2.
[3] Regulatory Guidance Letter 05-02.
[4] USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

a. Provide a list of each individual feature within the review area and the jurisdictional status of each one (i.e., identify whether each feature is/is not a water of the United States and/or a navigable water of the United States).

Project has 2 review areas: Kuykendahl Road Segment (KRS), and IH-45 Segment (I45S).

Kuykendahl Road Segment (KRS) Aquatic Resources

i. KRS Stream 1, Cypress Creek, TNW, jurisdictional, Section 10/404, 30.024149, -95.476396. 3,086 LF/4.22 ac.

ii. KRS Stream 1A, Unnamed RPW tributary, jurisdictional, Section 404, 30.022019, -95.478913, 333LF/0.13 ac.

iii. KRS Wetland 1, PEM, adjacent, jurisdictional, Section 404, 30.023905, -95.477833, 0.08 ac.

iv. KRS Wetland 2, non-adjacent, non-jurisdictional, 30.022463, -95.478590, 0.02 ac.

v. KRS Wetland 3, PFO adjacent wetland, jurisdictional, Section 404, 30.021882, -95.479538. 0.03 ac.

vi. KRS Gully 2, non-RPW, non-jurisdictional, 110 LF, 30.021623, -95.478504.

vii. KRS Pond 1, Stock Pond, non-jurisdictional, 0.02 ac., 30.023899, -95.47798.

viii. KRS Ditch 1 (HCFCD K149-00-00), 119 LF, non-RPW, non-jurisdictional. 30.021949, -95.479192.

IH-45 Segment (I45S) Aquatic Resources

ix. I45S Stream 1, Cypress Creek, TNW, jurisdictional, Section 10/404, 6137LF/12.18ac. 30.035561, -95.424363.

x. I45S Stream B, Senger Gully, RPW, jurisdictional, Section 404, 468 LF, 30.037698, -95.417314.

xi. I45S Stream C, Lemm Gully, RPW, jurisdictional, Section 404, 385 LF, 30.037929, -95.416964.

xii. I45S Wetland B, PFO adjacent wetland, jurisdictional, Section 404, 0.05 ac, 30.037543, -95.417299.

xiii. I45S Wetland A, PEM, non-adjacent wetland, non-jurisdictional, Section 404, 0.06 ac., 30.036652, -95.418975.

xiv. I45S Wetland C, 0.04 ac., PFO, adjacent wetland, jurisdictional, 30.035138, -95.427049.

xv. I45S Wetland D, 0.06 ac, PEM, non-adjacent wetland, non-jurisdictional, 30.036630, -95.419296.

xvi. I45S Ditch A, 79 LF, non-RPW, non-jurisdictional. 30.035117, -95.421460.

xvii. I45S Ditch B, 33 LF, non-RPW, non-jurisdictional. 30.035053, -95.421620.

xviii. I45S Ditch C, 127 LF, non-RPW, non-jurisdictional. 30.035219, -95.421778.

xix. I45S Gully A, 294 LF, non-RPW, non-jurisdictional, 30.036141, -95.427023.

xx. I45S Gully D, 130 LF, non-RPW, non-jurisdictional, 30.034378, -95.431174.

2. REFERENCES.

a. Final Rule for Regulatory Programs of the Corps of Engineers, 51 FR 41206 (November 13, 1986).

b. Clean Water Act Regulatory Programs, 58 FR 45008 (August 25, 1993).

c. U.S. EPA & U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (December 2, 2008)

d. Sackett v. EPA, 598 U.S. 651, 143 S. Ct. 1322 (2023)

e. 2008 Rapanos guidance: "In addition, ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water are generally not waters of the United States because they are not tributaries, or they do not have a significant nexus to downstream traditional navigable waters."

f. 2003 SWANCC guidance

g. 1980s preamble language (including regarding waters and features that are generally non-jurisdictional) (51 FR 41217 (November 13, 1986) and 53 FR 20765 (June 6, 1988)).

h. 24 July 2020 Memo, "Joint Memorandum to the Field Between the U.S. Department of the Army, Corps of Engineers and the U.S. Environmental Protection Agency Concerning Exempt Construction or Maintenance of Irrigation Ditches and Exempt Maintenance of Drainage Ditches Under Section 404 of the Clean Water Act".

3. REVIEW AREA. The project area is comprised of two segments of the Cypress Creek channel and banks. The western segment is approximately 3,000 linear feet along Cypress Creek at Kuykendahl Road within a corridor ranging in width between 200-400 ft and totaling 22 acres (Kuykendahl Rd Segment, 30.024375, -95.476412), in northwest Houston, Harris County, Texas. The eastern segment is approximately 6,000 linear feet along Cypress Creek (K100-00-00) at IH-45 within a corridor ranging in width between 300-500 ft totaling 69 acres and Cypress Creek Greenway 42.6 ac (IH-45 Segment, 30.03576, -95.424325) in north Houston, Harris County, Texas. The location of each review areas can be found in Section 6.

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), INTERSTATE WATER, OR THE TERRITORIAL SEAS TO WHICH THE AQUATIC RESOURCE IS CONNECTED. Cypress Creek is a traditional navigable water extending approximately 17 miles upstream from its confluence with the Spring Creek. This traditional navigable water portion of Cypress Creek extends past both segments of the project area to near Stuebner Airline Road, near Louetta, Harris County, Texas. The traditional navigable water portion of Cypress Creek is determined based on the Districts' Section 10 navigable waters list.

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, INTERSTATE WATER, OR THE TERRITORIAL SEAS: Aquatic resources flow into Cypress Creek, a TNW.

6. SECTION 10 JURISDICTIONAL WATERS[5]: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic resource or other feature within the review area and how it was determined to be

[5] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce or is presently incapable of such use because of changed conditions or the presence of obstructions.

jurisdictional in accordance with Section 10.[6] Cypress Creek is listed on the 2 September 1971 Galveston District Navigable Waters List. Cypress Creek is a traditional navigable water extending approximately 17 miles upstream from its confluence with Spring Creek. The traditional navigable water portion of Cypress Creek extends past both **KRS Stream 1, Cypress Creek** and **I45S Stream 1, Cypress Creek** to near Stuebner Airline Road, near Louetta, Harris County, Texas. **KRS Stream 1, Cypress Creek** is 3,086 linear feet and 4.22 acres (30.024149, -95.476396). **I45S Stream 1, Cypress Creek** is 6,137 linear feet and 12.18 acres (30.035561, -95.424363).

7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the pre-2015 regulatory regime. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.

   a. TNWs (a)(1):

      Cypress Creek is listed on the 2 September 1971 Galveston District Navigable Waters List. Cypress Creek is a traditional navigable water extending approximately 17 miles upstream from its confluence with Spring Creek. The traditional navigable water portion of Cypress Creek extends past both **KRS Stream 1, Cypress Creek** and **I45S Stream 1, Cypress Creek** to near Stuebner Airline Road, near Louetta, Harris County, Texas. **KRS Stream 1, Cypress Creek** is 3,086 linear feet and 4.22 acres (30.024149, -95.476396). **I45S Stream 1, Cypress Creek** is 6,137 linear feet and 12.18 acres (30.035561, -95.424363).

   b. Interstate Waters (a)(2): N/A

   c. Other Waters (a)(3): N/A

[6] This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.

d. Impoundments (a)(4): N/A

e. Tributaries (a)(5):

KRS Stream 1A, is unnamed RPW tributary based on the Lidar contours and 2018 DEM. Stream 1A is a backwater channel of Cypress Creek, an RPW that extends from the Cypress Creek channel, across the northern bank of Cypress Creek and connects back to Stream 1 within the Kuykendahl Rd Segment. OHWM of approximately 12 feet. Stream 1A is a relatively permanent water with year-round flows based on historical aerial photos and field observations (14 FEB 22 and 15 MAR 23).

I45S Stream B, Senger Gully. Senger Gully is an RPW, based on historical USGS Topography, 2018 DEM, and Lidar contours, which flows into Cypress Creek, a TNW. Stream B is a relatively permanent water with year-round flows based on historical aerial photos and field observations (14 FEB 22 and 15 MAR 23).

I45S Stream C, Lemm Gully is a RPW based on historical USGS Topography, 2018 DEM, and Lidar contours, which flows into Cypress Creek, a TNW. Stream C is a relatively permanent water with year-round flows based on historical aerial photos and field observations (14 FEB 22 and 15 MAR 23).

f. The territorial seas (a)(6): N/A

g. Adjacent wetlands (a)(7):

KRS Wetland 1, PEM, Adjacent Wetland, Jurisdictional, Section 404. 2018 DEM contours connect with Pond 1 to the west off the project boundary. DEM shows Wetland 1 having a continuous surface connection via a 75-foot gully that cuts to the northwest thru the natural berm of Stream 1 (TNW). Wetland 1 does not abut jurisdictional Stream 1 but is connected via a discrete 75-foot gully. The 75-foot gully is a natural erosional feature that has cut thru the natural berm of Stream 1. The gully is shallow feature that conveys water from the surrounding uplands and KRS Wetland 1 with low frequency and low volume. Based on Lidar contours, the elevation from Wetland 1 extends into the gully and decreases by 2-4 feet until it reaches the OHWM of Stream 1. As a basis for this finding, Wetland 1 exhibits a continuous surface connection to Stream 1 (TNW) via a non-relatively permanent gully (NAP-2023-01223 and POH-2023-00187). Wetland 1 is adjacent to Stream 1.

KRS Wetland 3, PFO, Adjacent Wetland, Jurisdictional, Section 404. 2018 DEM shows Wetland 3 is part of a larger wetland extending southwest off the project

boundary with a continuous surface connection via a 320-foot-long gully south of the project site connecting back to Stream 1 (TNW). Wetland 3 does not abut jurisdictional Stream 1 but is connected via a discrete 320-foot-long gully. The gully is shallow feature that conveys water from the surrounding uplands and KRS Wetland 3 with low frequency and low volume. The gully is a natural erosional feature that connects to Stream 1 (TNW) of outside the project boundary. The gully is considered a non-RPW tributary, that carries flow after a precipitation event to the relatively permanent water, Stream 1 (TNW) (NAP-2023-01223 and POH-2023-00187). Wetland 3 is adjacent to Stream 1 (TNW).

I45S Wetland B, PFO, Adjacent Wetland, Jurisdictional, Section 404. 2018 DEM and LIDAR contour map indicate a continuous surface connection via 100-foot-long, non-RPW gully to Stream B, Senger Gully (RPW). Wetland B does not abut Stream B, Senger Gully (RPW), but has continuous surface connection via a discrete 100-foot-long gully. The gully is a natural erosional feature that connects to Wetland B (outside the project boundary) to the RPW, Senger Gully. The gully is considered a non-RPW tributary, that carries flow after a precipitation event to the relatively permanent water, Senger Gully (NAP-2023-01223 and POH-2023-00187). Wetland B is adjacent to Stream B, Senger Gully (RPW).

I45S Wetland C, PFO, Adjacent Wetland, Jurisdictional, Section 404. 2018 DEM shows Wetland C extending southeast off the project boundary abutting an oxbow that is a relatively permanent water that connects to Stream 1 (TNW). The LiDAR Digital Elevation Model shows Wetland C connecting to the Stream 1 through the oxbow. Wetland C is a fringe wetland within the oxbow. The oxbow is a RPW tributary to Stream 1 (TNW). Thus, Wetland C does abut the oxbow, which is relatively permanent and flows directly into Stream 1, the TNW. Wetland C meets the definition of adjacent under the pre-2015 regulatory regime post-Sackett.

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

a. Describe aquatic resources and other features within the review area identified as “generally non-jurisdictional” in the preamble to the 1986 regulations (referred to as “preamble waters”).[7] Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA as a preamble water. N/A

b. Describe aquatic resources and features within the review area identified as “generally not jurisdictional” in the *Rapanos* guidance. Include size of the aquatic

[7] 51 FR 41217, November 13, 1986.

resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA based on the criteria listed in the guidance.

KRS Ditch 1 (HCFCD K149-00-00), 119 LF, non-RPW based on historical USGS Topography, historical aerials, site visits (14 FEB 22 and 15 MAR 23), 2018 DEM, Lidar contours, and information referenced in Section 9. An upland excavated stormwater drainage ditch located north of Cypress Creek, which runs from north to south through the western portion of the KRS. KRS Ditch 1 only flows in response to precipitation. Based on historical aerials and topos, KRS Ditch 1 does not have continuous flow. Excavated in 1973 at the time the residential developments adjacent to the east and west were constructed. KRS Ditch 1 was constructed wholly out of uplands, drains only dry land, is not a rerouted tributary, has non-relatively permanent flow, and does not extend the ordinary high-water mark (OHWM) of a Water of the United States. Therefore, the ditch meets the generally not jurisdictional category for certain ditches under the Rapanos guidance. Therefore, meets the generally not jurisdictional category for certain ditches under the Rapanos guidance.

KRS Gully 2, non-RPW based on historical USGS Topography, historical aerials, site visit (14 FEB 22 and 15 MAR 23), 2018 DEM, Lidar contours, and information referenced in Section 9. DEM show contours with a direct connection (via 59-foot-long culvert) to a TNW. Historical aerials and field evidence indicates KRS Gully 2 as a swale or erosional feature characterized by low volume, with infrequent and short duration of flow. This non-RPW gully is located above the OHWM of Cypress Creek. The USGS topo 2022 does not indicate Gully 2 existing.

KRS Pond 1, Stock Pond, non-jurisdictional, 0.02 ac. Pond 1 abuts Wetland 1. Based on a review of historical aerial imagery and information referenced in Section 9, the pond was excavated from uplands in 1979 and does not drain wetlands. Wetland 1 developed after the pond was constructed and the suspect tributary to the north appears to have developed after the pond was constructed. The pond was unvegetated and the vegetation community along the banks of the pond was dominated by southern live oak, loblolly pine, and yaupon. The pond is used exclusively for stock water purposes. Therefore, the pond is not jurisdictional per the 1986 preamble category for artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.

I45S Ditch A, 71 LF, is a non-RPW based on historical USGS Topography, historical aerials, site visits (14 FEB 22 and 15 MAR 23)' 2018 DEM, Lidar contours, and information referenced in Section 9. Ditch a is an upland drainage

ditch that originates offsite to the south from an excavated stormwater basin and connects to Cypress Creek. Ditch A was excavated in 2016 and is not depicted on USGS or topographic maps. I45S Ditch A was constructed wholly out of uplands, drains only dry land, is not a rerouted tributary, has non-relatively permanent flow, and does not extend the ordinary high-water mark (OHWM) of a Water of the United States. Therefore, the ditch meets the generally not jurisdictional category for certain ditches under the Rapanos guidance. Therefore, meets the generally not jurisdictional category for certain ditches under the Rapanos guidance.

I45S Ditch B, 22 LF, non-RRW based on historical USGS Topography, historical aerials, site visits (14 FEB 22 and 15 MAR 23), 2018 DEM, Lidar contours and information referenced in Section 9. An upland drainage ditch that originates offsite to the south from an approximately 10-foot-wide outfall structure from an offsite excavated stormwater basin and connects to Cypress Creek. Ditch B was excavated in 1979 and is not depicted on USGS topographic maps. I45S Ditch B was constructed wholly out of uplands, drains only dry land, is not a rerouted tributary, has non-relatively permanent flow, and does not extend the ordinary high-water mark (OHWM) of a Water of the United States. Therefore, the ditch meets the generally not jurisdictional category for certain ditches under the Rapanos guidance. Therefore, meets the generally not jurisdictional category for certain ditches under the Rapanos guidance.

I45S Ditch C, 127 LF, non-RPW based on historical USGS Topography, historical aerials, site visits (14 FEB 22 and 15 MAR 23), 2018 DEM, Lidar contours, and information referenced in Section 9. An upland drainage ditch that originates offsite to the south from an offsite excavated stormwater basin and connects to Cypress Creek. Ditch C was excavated in 2016 and is not depicted on USGS or topographic maps. I45S Ditch C was constructed wholly out of uplands, drains only dry land, is not a rerouted tributary, has non-relatively permanent flow, and does not extend the ordinary high-water mark (OHWM) of a Water of the United States. Therefore, the ditch meets the generally not jurisdictional category for certain ditches under the Rapanos guidance. Therefore, meets the generally not jurisdictional category for certain ditches under the Rapanos guidance.

I45S Gully A, 294 LF, non-RPW based on historical USGS Topography, historical aerials, 2018 DEM, Lidar contours, and information referenced in Section 9. DEM show contours with a direct connection to Stream 1 Cypress Creek, a TNW. Historical aerials and field evidence indicates I45S Gully A is a swale or erosional feature characterized by low volume, with infrequent and short duration of flow and only flows in response to precipitation. This non-RPW gully is located above the OHWM of Cypress Creek. Gully A extends north off the

project boundary. The USGS topo and 2022 NWI does not indicate Gully A existing.

I45S Gully D, 130 LF, non-RPW based on historical USGS Topography, 2018 DEM, Lidar contours, and information referenced in Section 9. Gully D originates offsite to the south from an offsite excavated drainage feature. Historical aerials and field evidence indicates I45 Gully D as a swale or erosional feature characterized by low volume, with infrequent and short duration of flow and only flows in response to precipitation. DEM show contours with a direct connection to Stream 1 Cypress Creek, a TNW. This non-RPW gully swale is located above the OHWM of Cypress Creek. The USGS topo and 2022 NWI does indicate Gully D existing.

c. Describe aquatic resources and features identified within the review area as waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA. Include the size of the waste treatment system within the review area and describe how it was determined to be a waste treatment system. N/A

d. Describe aquatic resources and features within the review area determined to be prior converted cropland in accordance with the 1993 regulations (reference 2.b.). Include the size of the aquatic resource or feature within the review area and describe how it was determined to be prior converted cropland. N/A

e. Describe aquatic resources (i.e. lakes and ponds) within the review area, which do not have a nexus to interstate or foreign commerce, and prior to the January 2001 Supreme Court decision in "*SWANCC*," would have been jurisdictional based solely on the "Migratory Bird Rule." Include the size of the aquatic resource or feature, and how it was determined to be an "isolated water" in accordance with *SWANCC*. N/A

f. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the pre-2015 regulatory regime consistent with the Supreme Court's decision in *Sackett* (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).

KRS Wetland 2: Based on desk review and data sources listed in #9, Wetland 2 does not have any known continuous surface connection to Stream 1A (approximately 80 feet to the south) nor Cypress Creek (approximately 90 to the southeast), or any other water of the United States. The 2018 bare-earth digital elevation model (DEM) depicts Wetland 2 extending west off the project

boundary then fades out. The DEM shows no ditch, culvert, or ephemeral swale connecting Wetland 2 to Stream 1A or Cypress Creek or any other water of the U.S. The DEM indicates no significant elevation change that would indicate the presence of a ditch, culvert, or ephemeral swale exiting the wetland and connecting it to Stream 1A or Cypress Creek. KRS Wetland 2 is surrounded by uplands and is documented as upland data point SP24. The 2022 NWI map does not show Wetland 2 existing. KRS Wetland 2 does not meet the definition of adjacent as defined in the pre-2015 regime post Sackett guidance and is not a water of the United States.

I45S Wetland A: Based on desk review and data sources listed in #9, Wetland A does not have any known continuous surface connection to Stream 1 Cypress Creek (approximately 100 feet to the southeast), or any other water of the United States. Wetland A extends west beyond the project boundary. The 2018 bare-earth digital elevation model (DEM) and the DEM with contours, shows Wetland A does not have a continuous surface connection to Cypress Creek. The DEM shows no ditch, culvert, or ephemeral swale connecting Wetland A to Cypress Creek or any other water of the U.S. The DEM indicates no significant elevation change that would indicate the presence of a ditch, culvert, or swale exiting the wetland and connecting it to Cypress Creek. I45A Wetland A is surrounded by uplands and is documented as upland data point SP19. The 2022 NWI map does show Wetland A existing as PUBHx. I45S Wetland A does not meet the definition of adjacent as defined in the pre-2015 regime post Sackett guidance and is not a water of the United States.

I45S Wetland D: Based on desk review and data sources listed in #9, Wetland D does not have any known continuous surface connection to Stream 1 Cypress Creek (approximately 150 feet to the south), or any other water of the United States. Wetland D is contained wholly within the project boundary. The 2018 bare-earth digital elevation model (DEM) and the DEM with contours, shows Wetland D does not have a continuous surface connection to Cypress Creek. The DEM shows no ditch, culvert, or ephemeral swale connecting Wetland D to Cypress Creek or any other water of the U.S. The DEM indicates no significant elevation change that would indicate the presence of a ditch, culvert, or ephemeral swale exiting the wetland and connecting it to Cypress Creek. I45A Wetland D is surrounded by uplands and is documented as upland data point SP41. The 2022 NWI map does show Wetland D existing as PUBHx. I45S Wetland D does not meet the definition of adjacent as defined in the pre-2015 regime post Sackett guidance and is not a water of the United States.

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

a. Office evaluation(s) were conducted on 15 MAR 22, 18 MAY 2023, 13 NOV 23, and 20 Aug 24. Site visits: 14 FEB 22 and 15 MAR 23.

b. Wetland Delineation Report: Cypress Environmental Consulting, LLC. HCFCD Project ID K100-00-00-G002, Batch 5 Cypress Creek, Houston, Harris County, Texas, April 28, 2022.

c. Wetland Delineation Report: Cypress Environmental Consulting, LLC. H-45 Stormwater Detention Basin, Spring, Harris County, Texas, 77373. HCFCD Project IDS K500-31-00-E001/K100-00-00-X114 for the Cypress Creek, CDBG-MIT Detention Basins and CDBG-DR K100-00-00-X114 Project, February 21, 2024.

d. USGS. Historical Topographic Maps: Spring, TX 7.5-minute USGS quadrangle sheet (1916, 1919, 1920, 1937, 1942, 1949, 1956, 1958, 1962, 1967, 1969, 1970, 1973, 1982, 1983, 1999, 2000, 2013, 2016, 2019).

e. U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. RDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

f. U.S. Fish and Wildlife Service. 2022. National Wetland Inventory (NWI) Wetlands Mapper. Available online at https://www.fws.gov/wetlands/data/mapper.html. Accessed January 17, 2022.

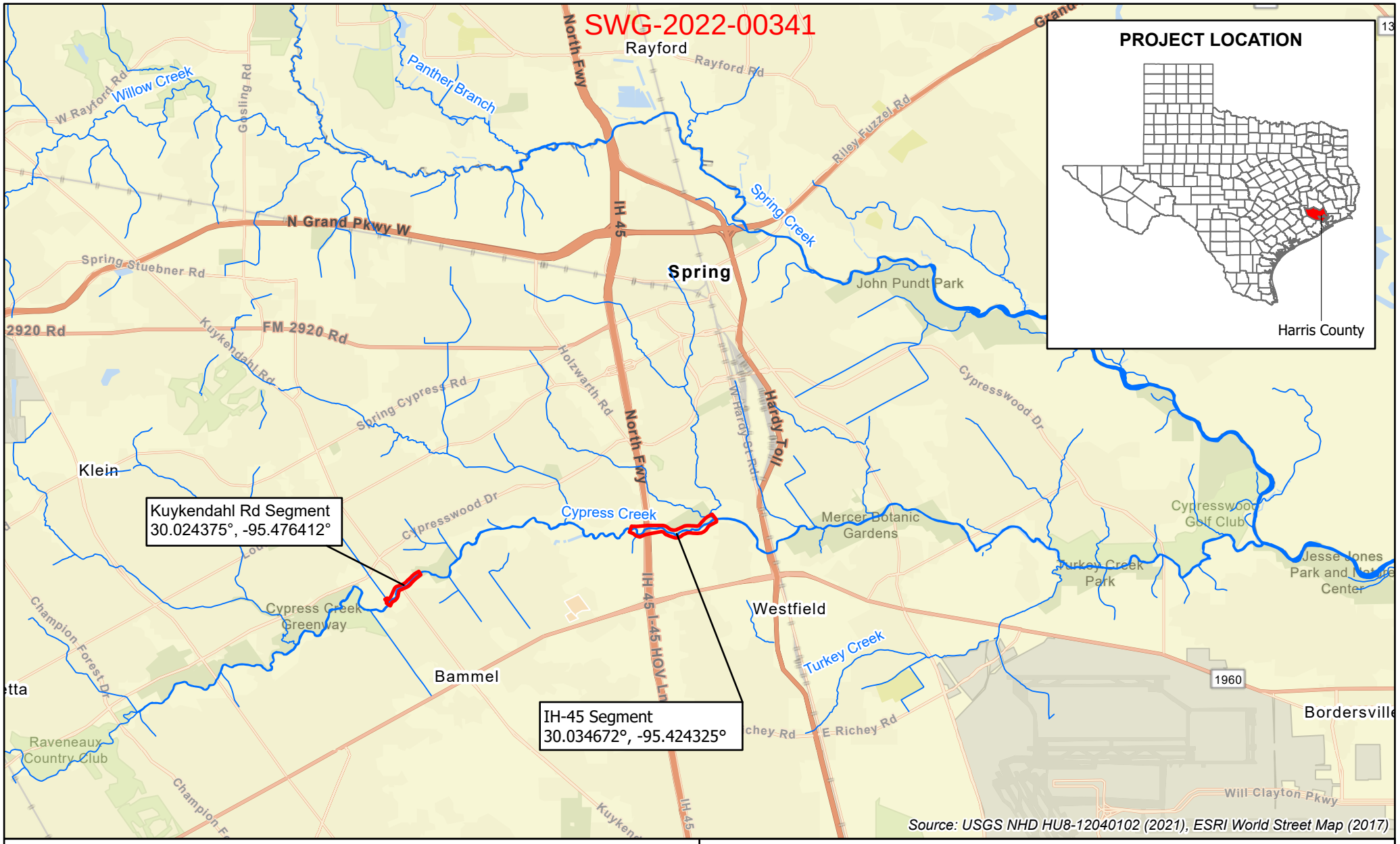
g. United States Geological Survey. 2022a. Texas Natural Resources Information System [TNRIS], Bureau of Economic Geology. Available at: https://txpub.usgs.gov/txgeology/. Accessed January 17, 2022.

h. Texas Parks and Wildlife Department. Texas Ecological Analytical Mapper. 2022. Available online at https://tpwd.texas.gov/gis/team/. Access January 17, 2022.

i. EDR Lightbox. 2022. Historic Topographic Maps and Historic Aerial Imagery Decade Package Database Report. Received February 15, 2022. Historical aerial dates: 1930, 1944, 1953, 1956, 1964, 1972, 1984, 1989, 1995, 2002, 2010 and 2016.

10. OTHER SUPPORTING INFORMATION. EPA HQ and Office of Assistant Secretary of the Army of Civil Works Policy memos: NAP-2023-01223, MVR-2023-0828, LRB-2021-01386, POH-2023-00187.

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.



Legend

- Project Area
- Streams

N

0 0.5 1 2 3 4 Miles

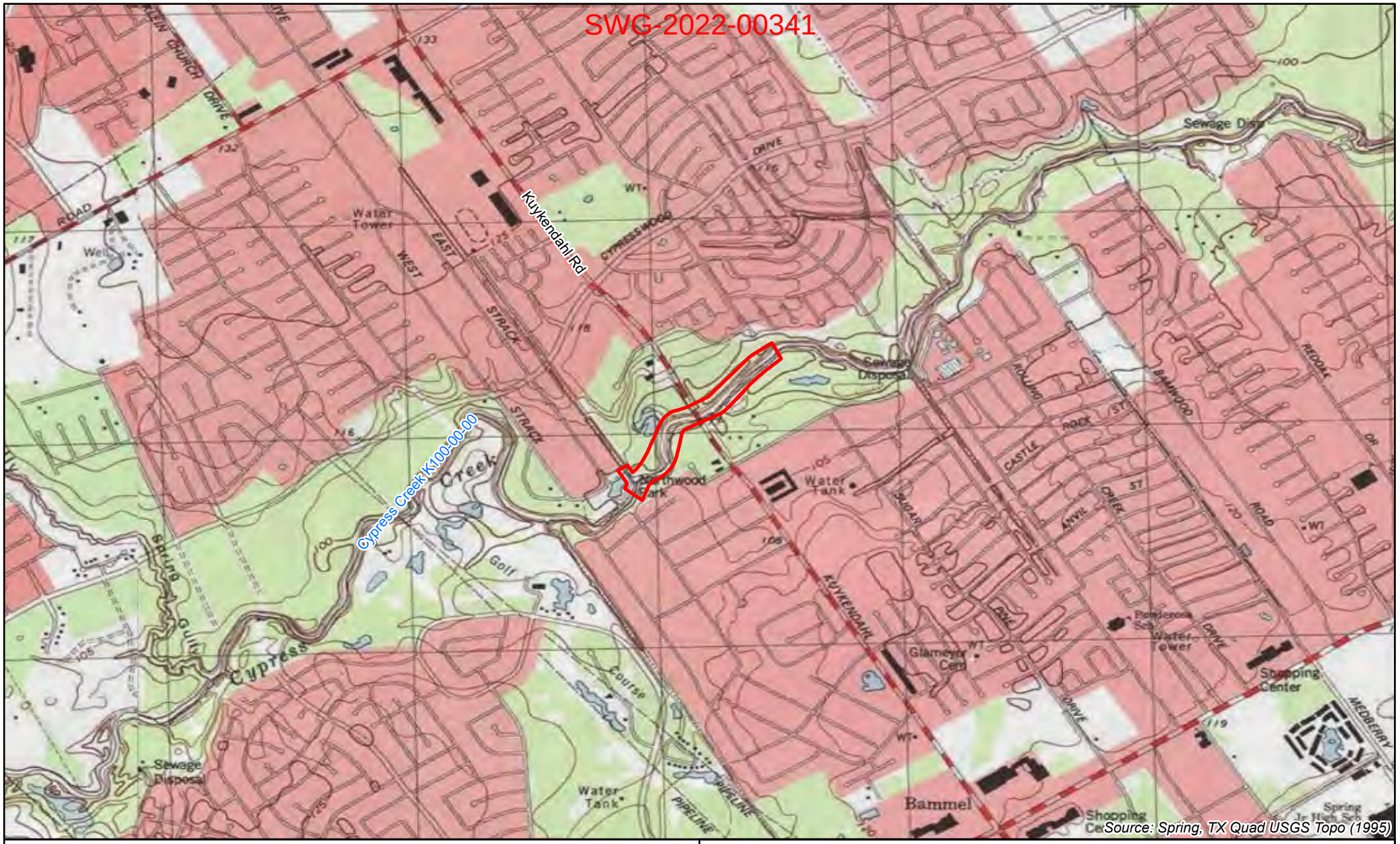
Scale: 1:96,000

FIGURE 1
VICINITY MAP

BATCH 5 CYPRESS CREEK
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 04/14/2022



Legend

Project Area

N

0 1,000 2,000 4,000 Feet

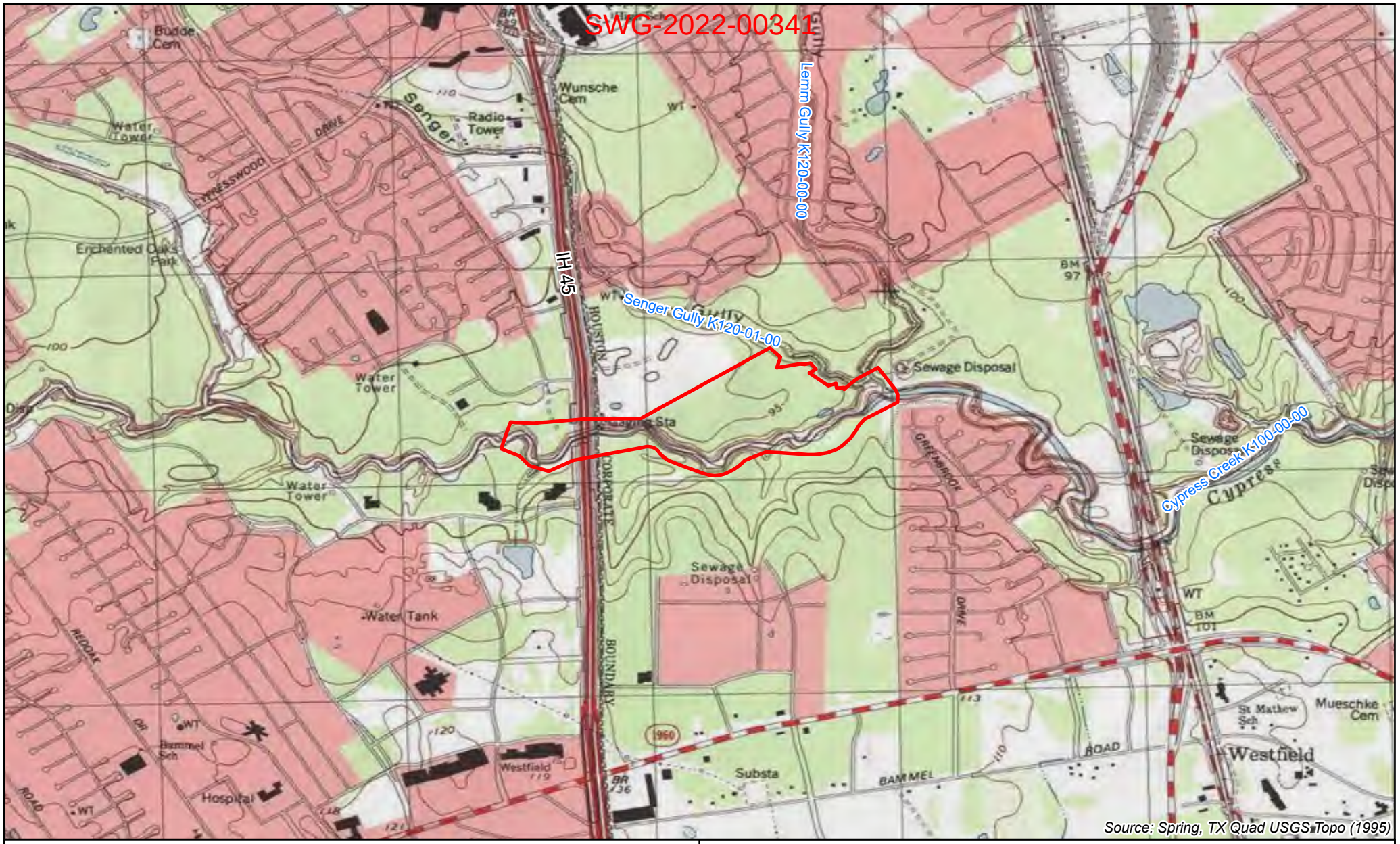
1 inch = 2,000 feet

FIGURE 2A
TOPOGRAPHIC MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

Project Area

N

0 1,000 2,000 4,000 Feet

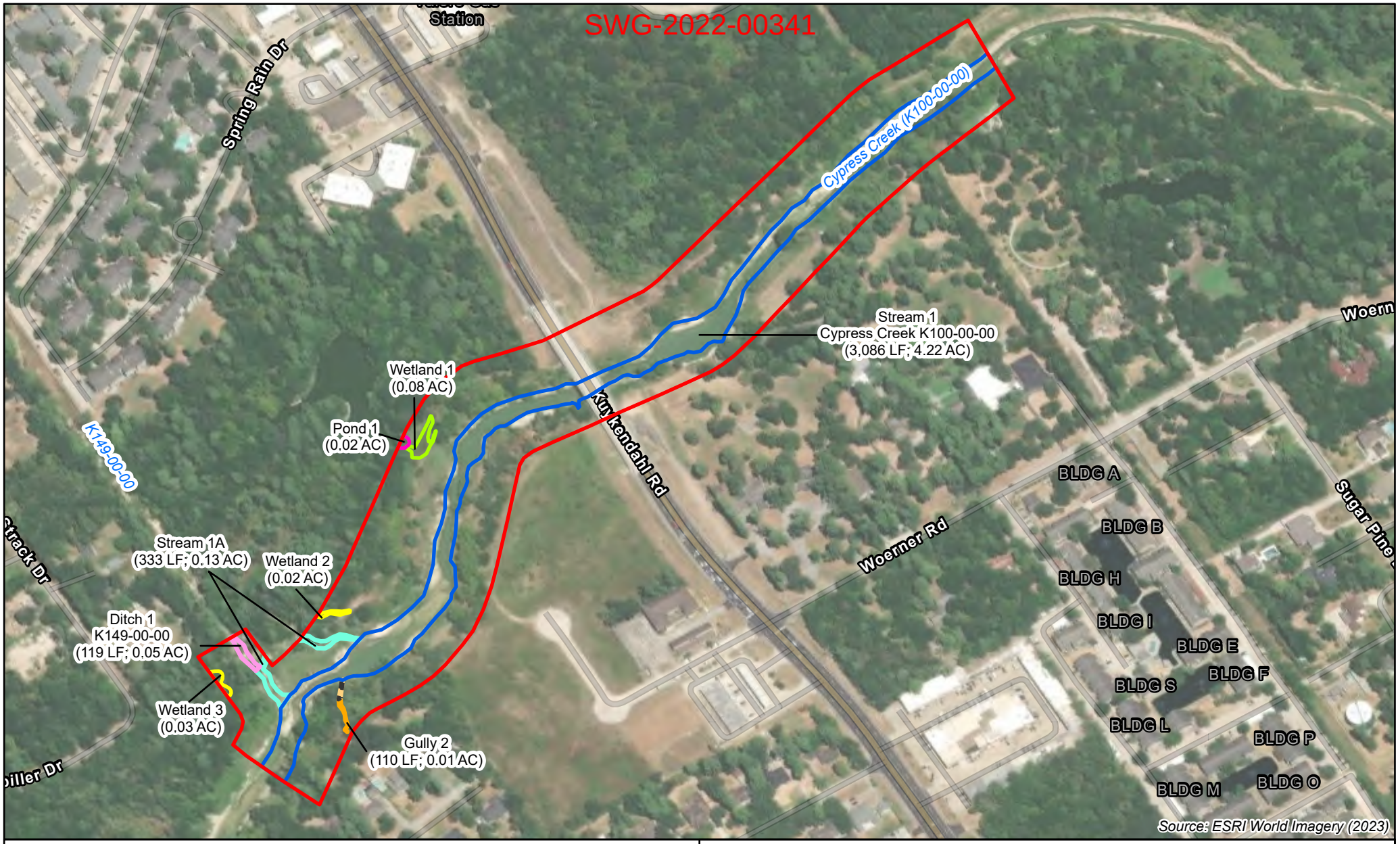
1 inch = 2,000 feet

FIGURE 2B
TOPOGRAPHIC MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT AND SWDB
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- Delineated Feature
  - Culvert
  - Drainage Ditch
  - Gully
  - Intermittent Stream
  - PEM Wetland
  - PFO Wetland
  - Perennial Stream
  - Pond

N

0 250 500 1,000 Feet

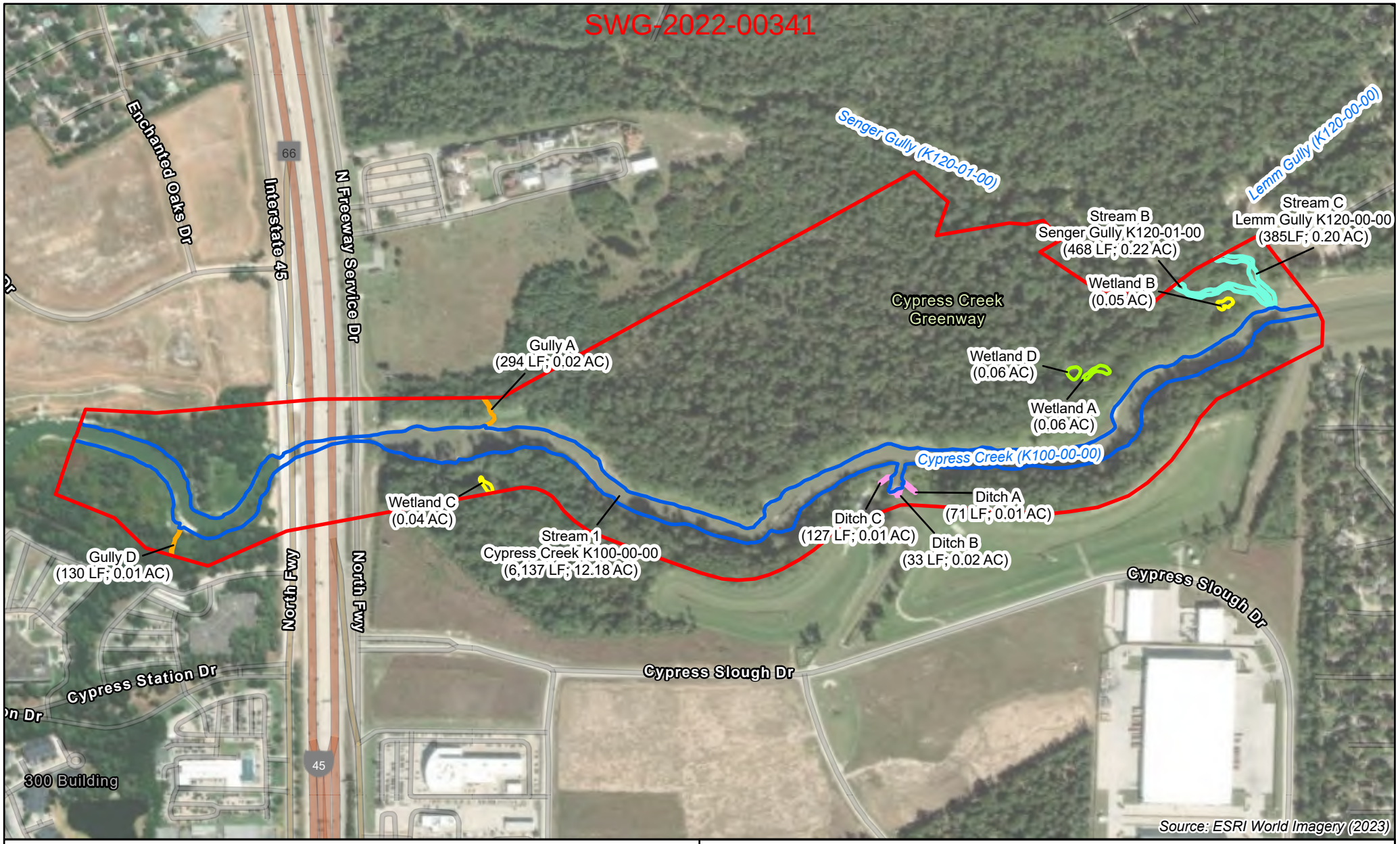
Scale: 1:4,800

DELINEATED FEATURES MAP
AUGUST 16, 2023 AERIAL IMAGERY

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- Delineated Feature
- Drainage Ditch
- Gully
- Intermittent Stream
- PEM Wetland
- PFO Wetland
- Perennial Stream

N

0 250 500 1,000 1,500 2,000 Feet

Scale: 1:7,500

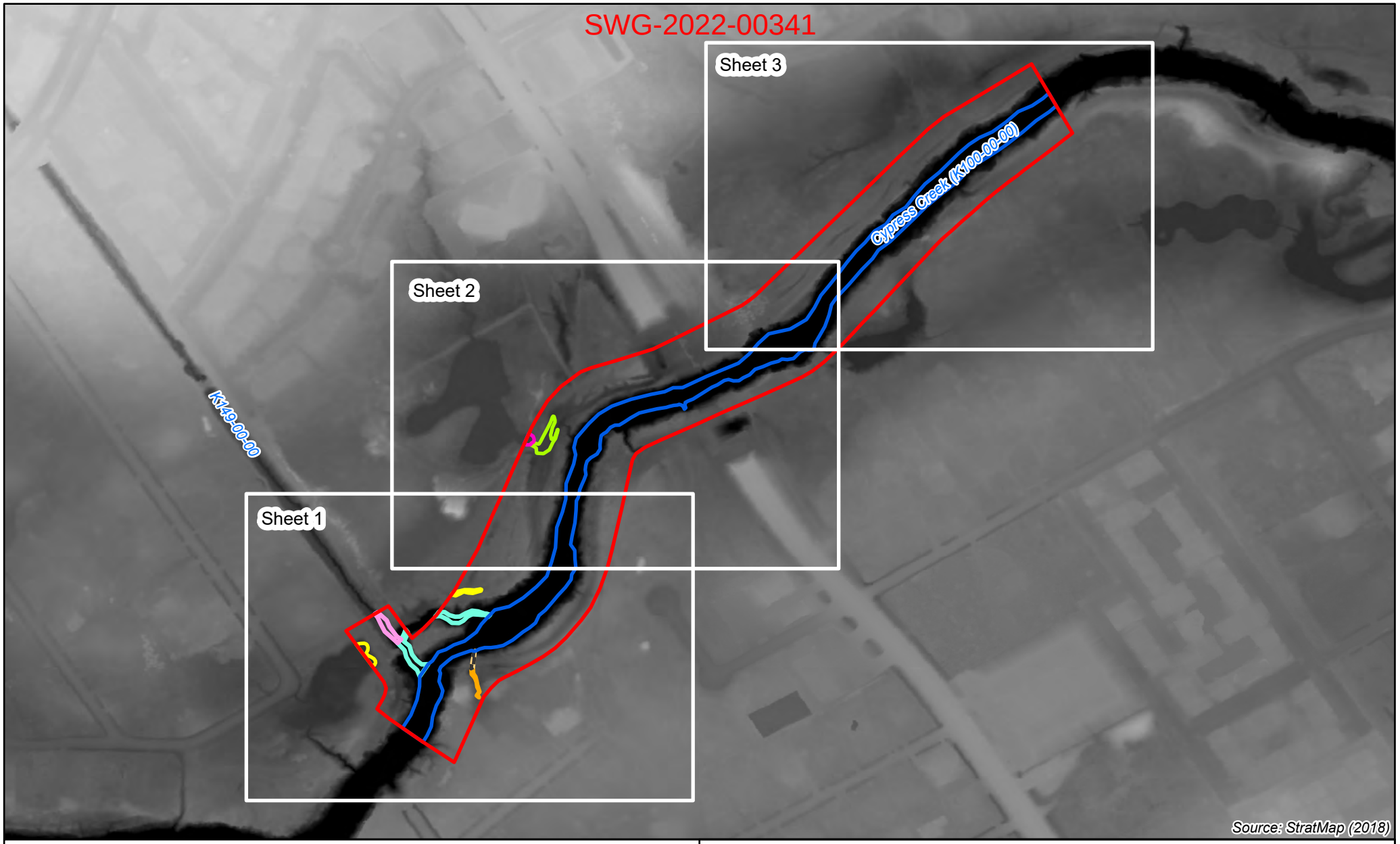
DELINEATED FEATURES MAP
AUGUST 16, 2023 AERIAL IMAGERY

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024

SWG-2022-00341



Legend

- Project Area

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Culvert
- Drainage Ditch
- Gully
- Intermittent Stream
- PEM Wetland
- PFO Wetland
- Perennial Stream
- Pond

N

0 225 450 900 Feet

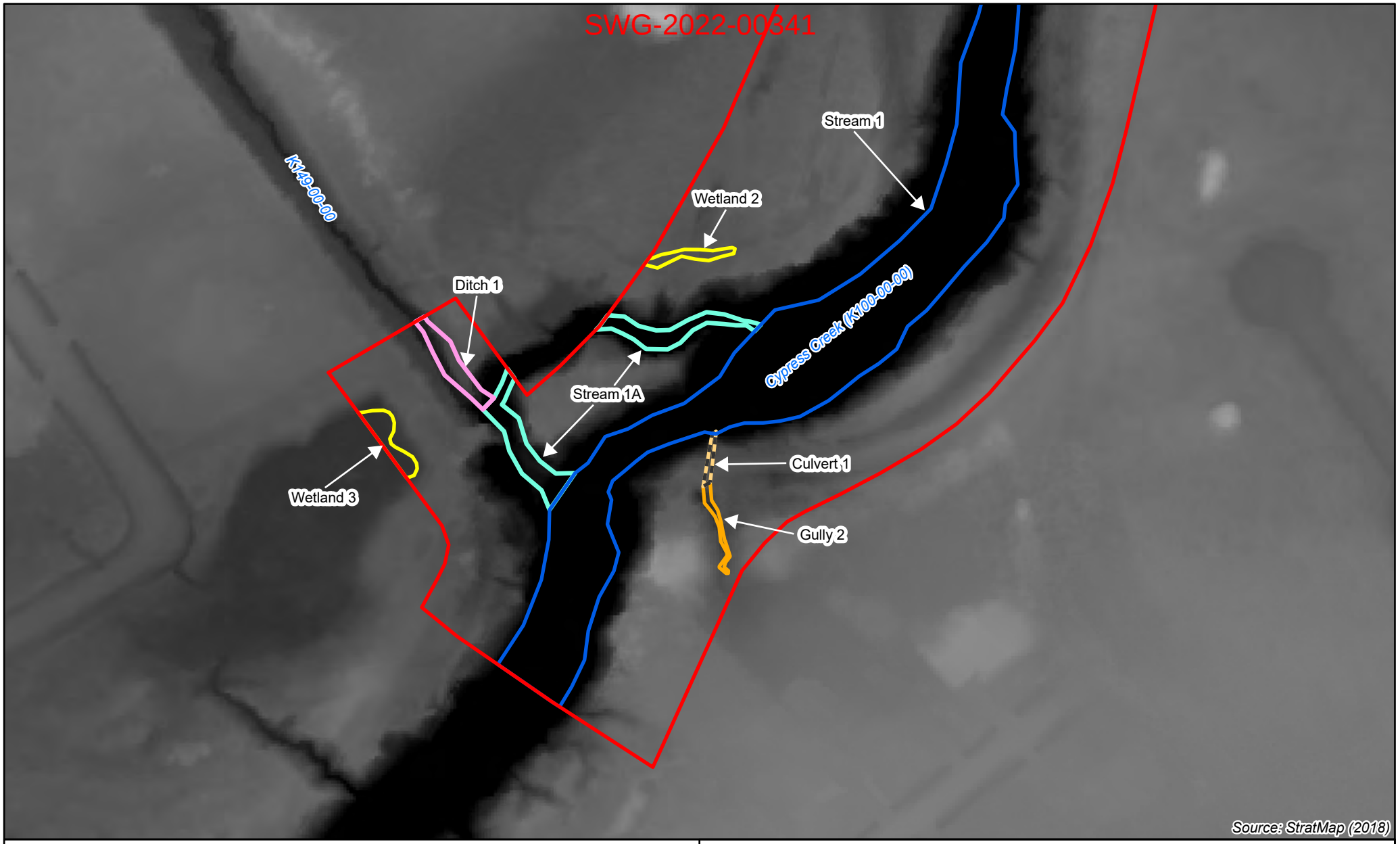
1 inch = 450 feet

OVERVIEW
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- Elevation
  - High: 135 feet
  - Low: 55 feet
- Delineated Feature
  - Culvert
  - Drainage Ditch
  - Gully
  - Intermittent Stream
  - PFO Wetland
- Perennial Stream

0 75 150 300 Feet

1 inch = 150 feet

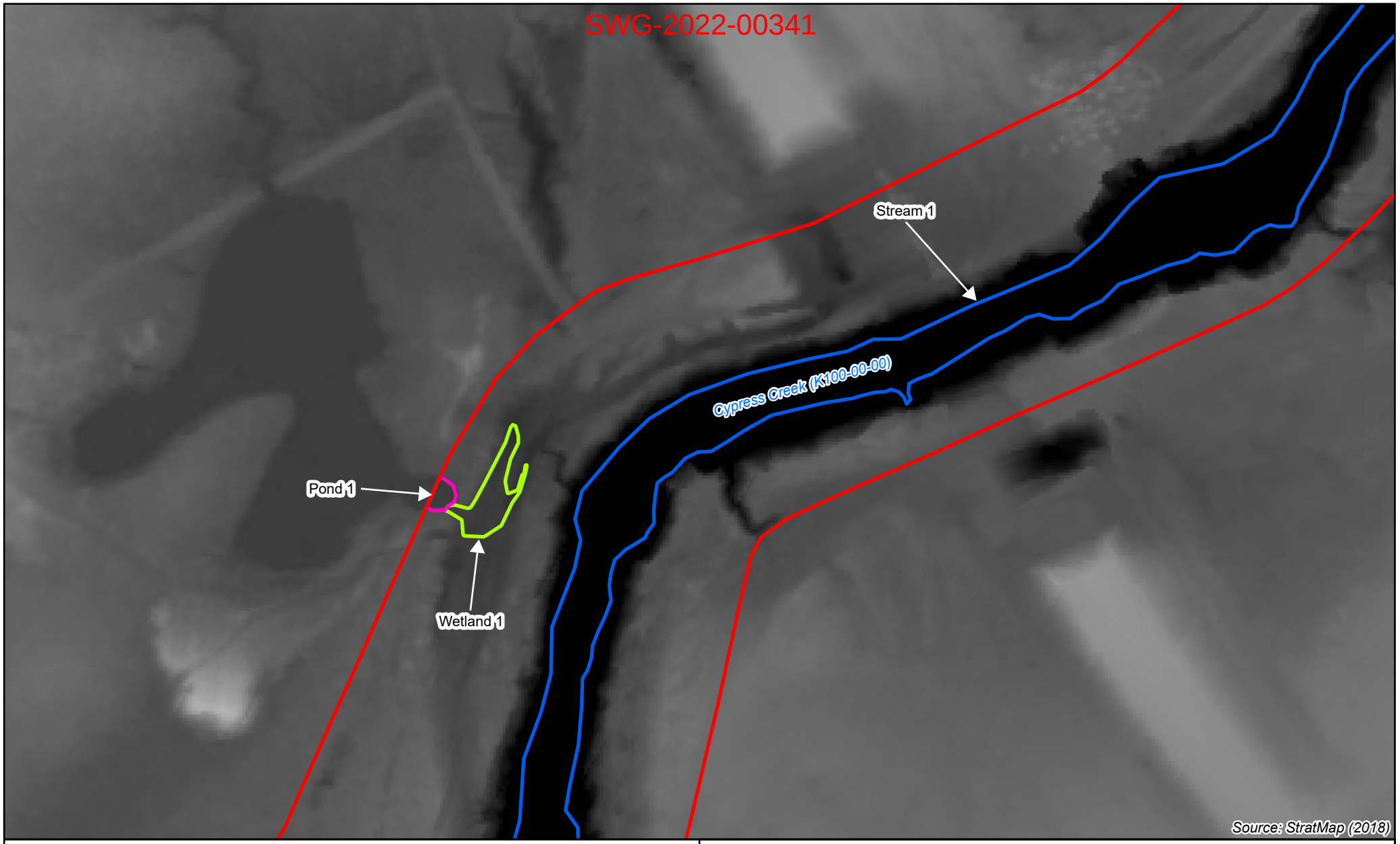
N

SHEET 1
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

Project Area

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

PEM Wetland

Perennial Stream

Pond

0 75 150 300 Feet

1 inch = 150 feet

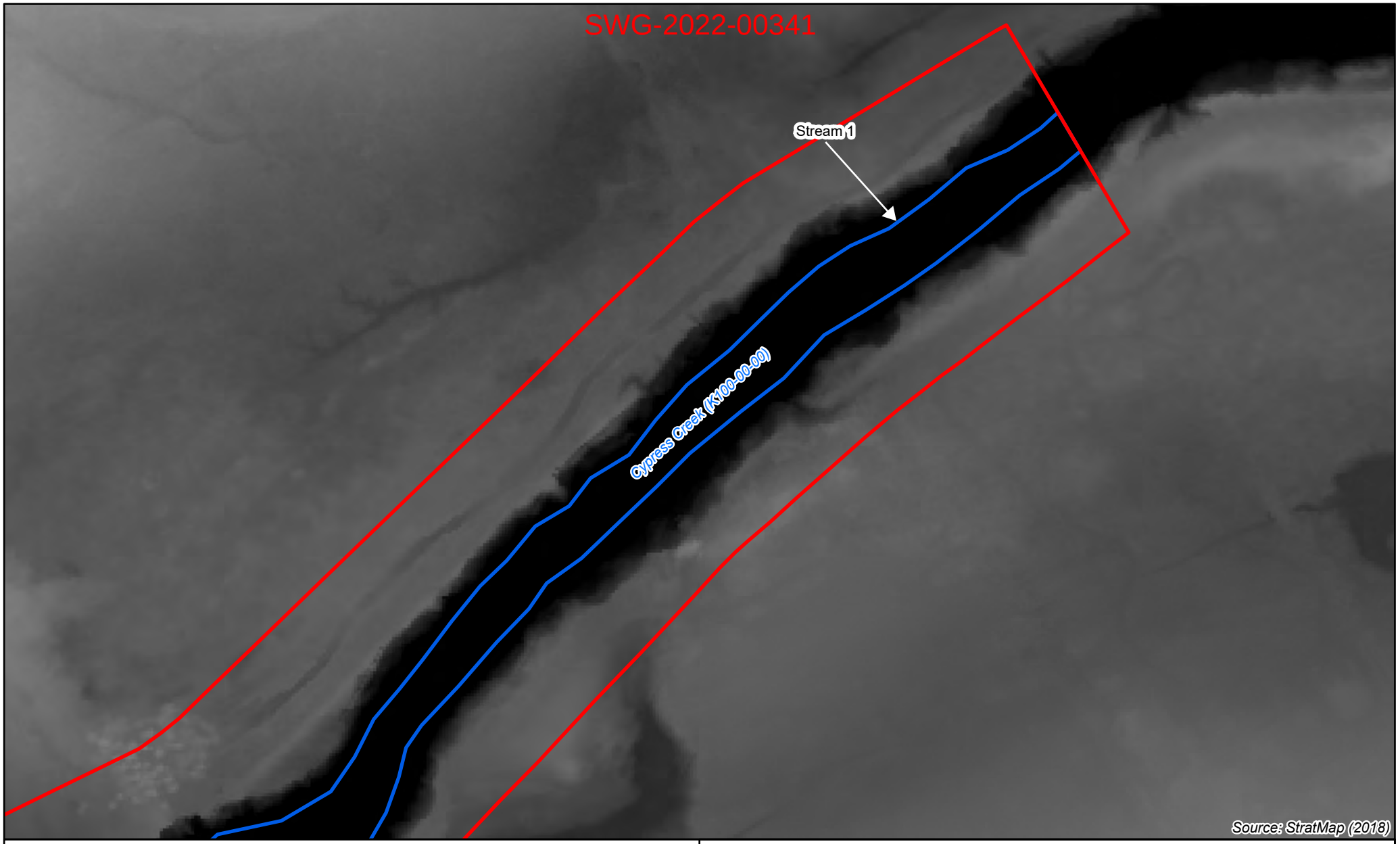
N

SHEET 2
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

Project Area

Delineated Feature

Perennial Stream

Elevation

High: 135 feet

Low: 55 feet

0 75 150 300 Feet

1 inch = 150 feet

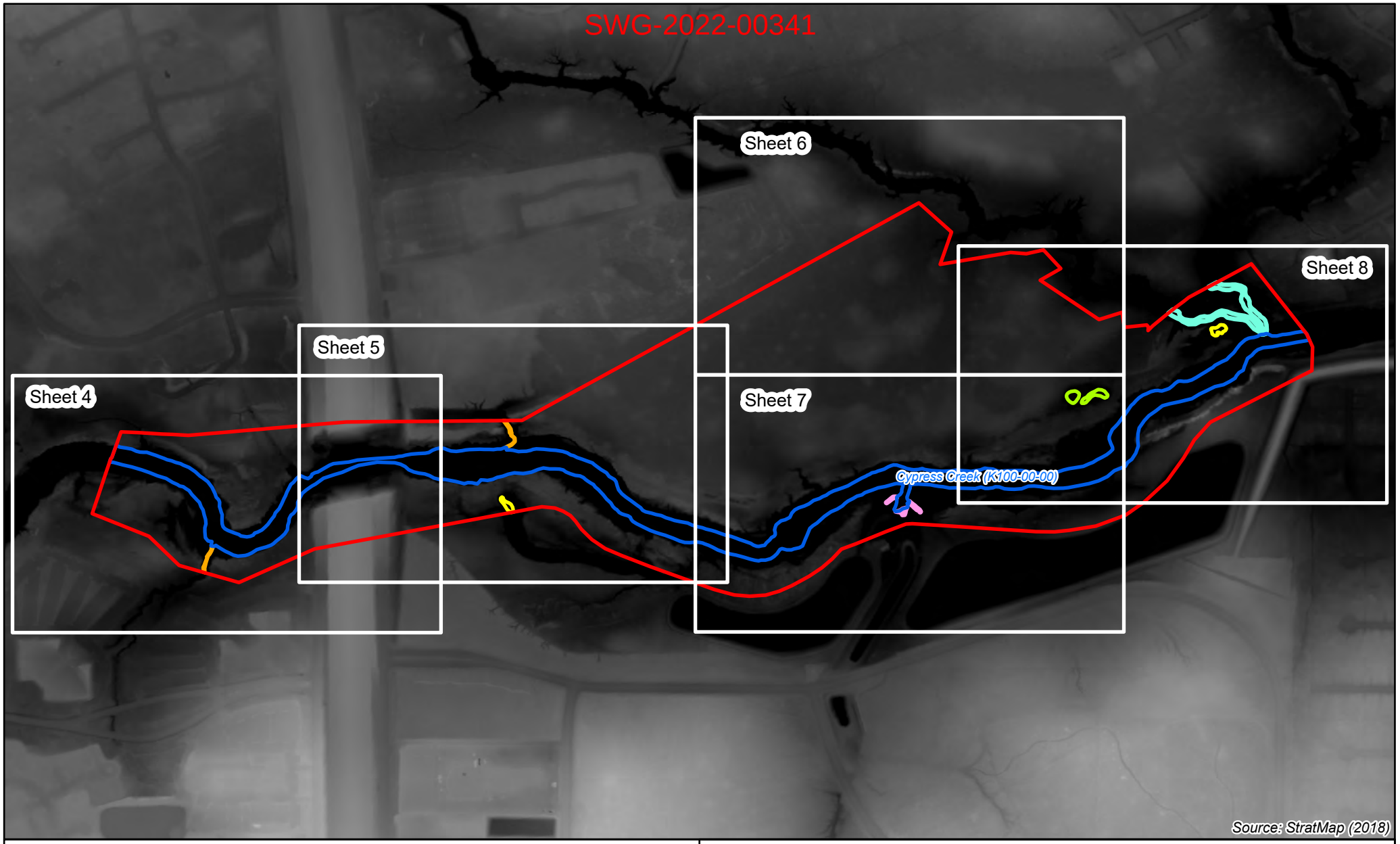
N

SHEET 3
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- Elevation
  - High: 135 feet
  - Low: 55 feet
- Delineated Feature
  - Drainage Ditch
  - Gully
  - Intermittent Stream
  - PEM Wetland
  - PFO Wetland
  - Perennial Stream

N

0 325 650 1,300 1,950 Feet

1 inch = 650 feet

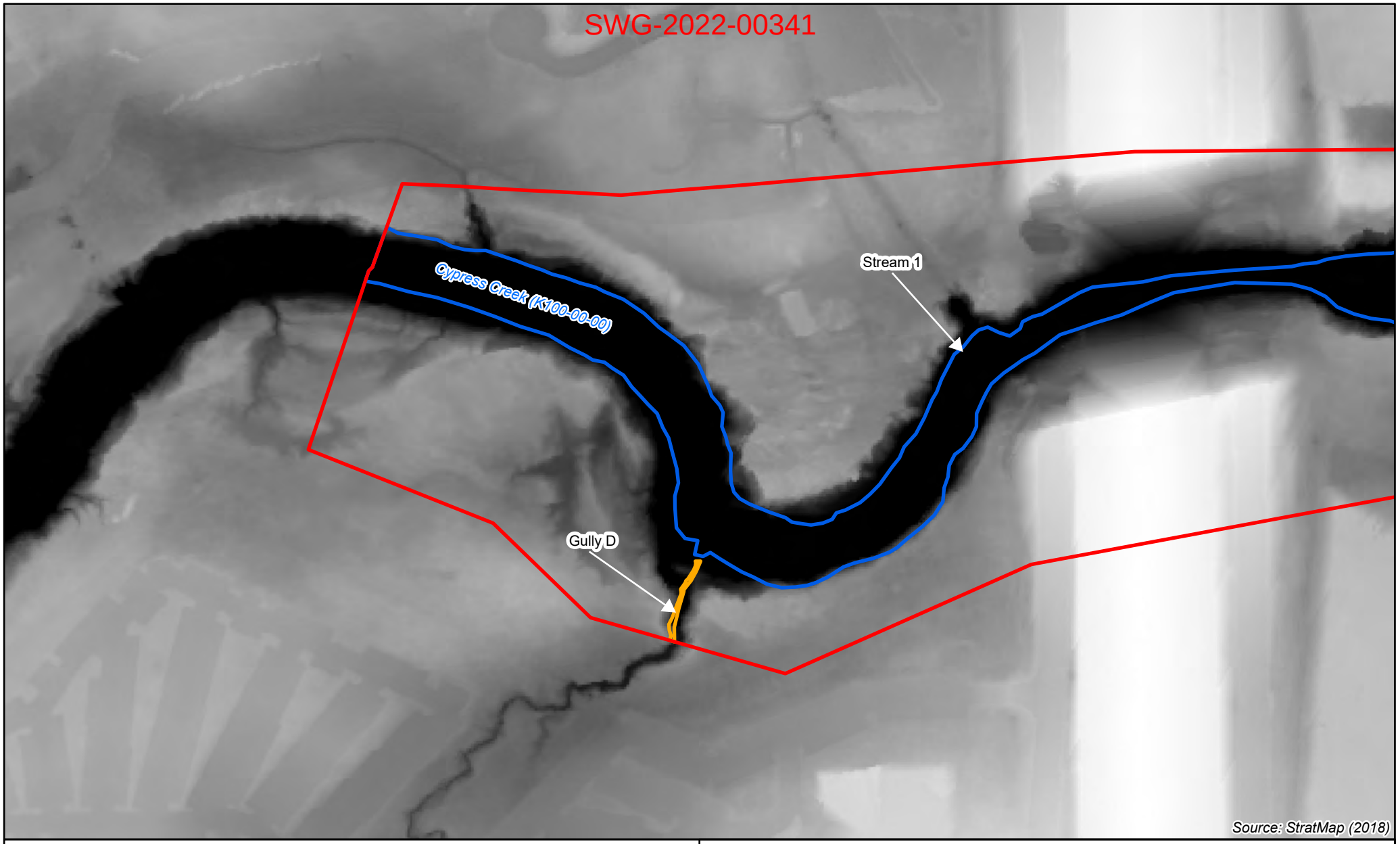
OVERVIEW
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024

SWG-2022-00341



Legend

Project Area

Delineated Feature

Gully

Perennial Stream

Elevation

High: 135 feet

Low: 55 feet

0 100 200 400 Feet

1 inch = 200 feet

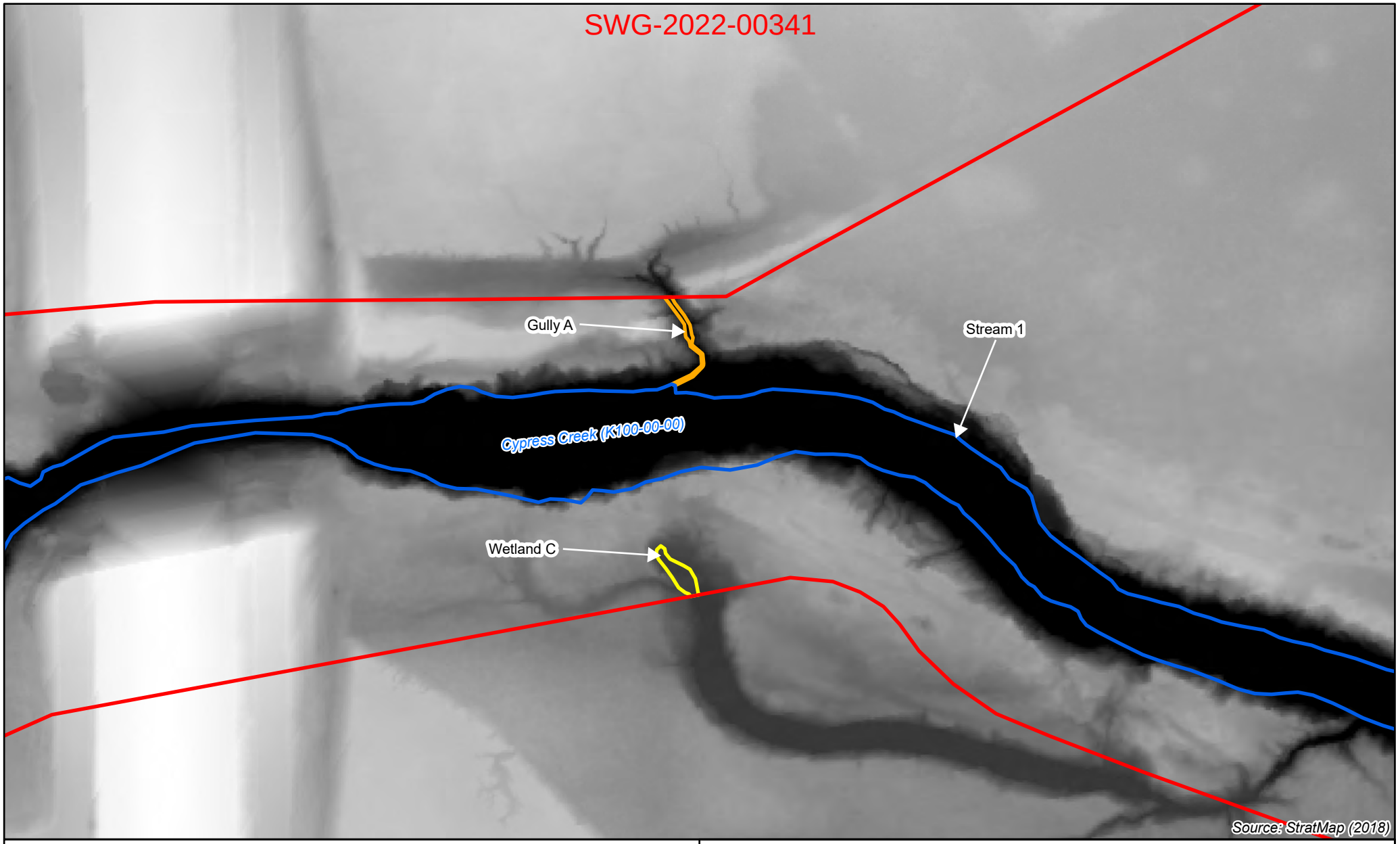
N

SHEET 4
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

Project Area

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

Gully

PFO Wetland

Perennial Stream

0 100 200 400 Feet

1 inch = 200 feet

N

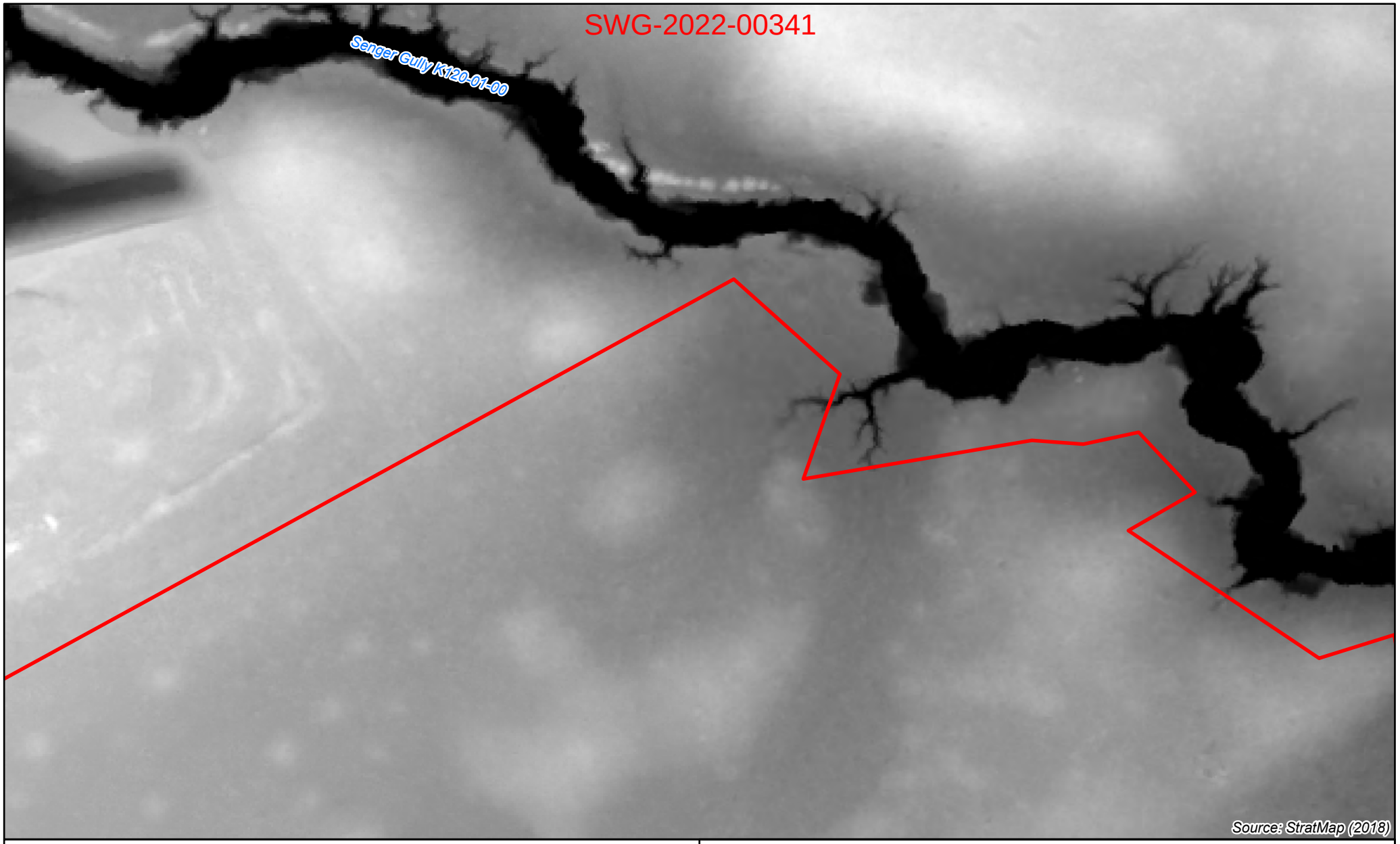
SHEET 5
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024

SWG-2022-00341



Legend

Project Area

Elevation

High: 135 feet

Low: 55 feet

0 100 200 400 Feet

1 inch = 200 feet

N

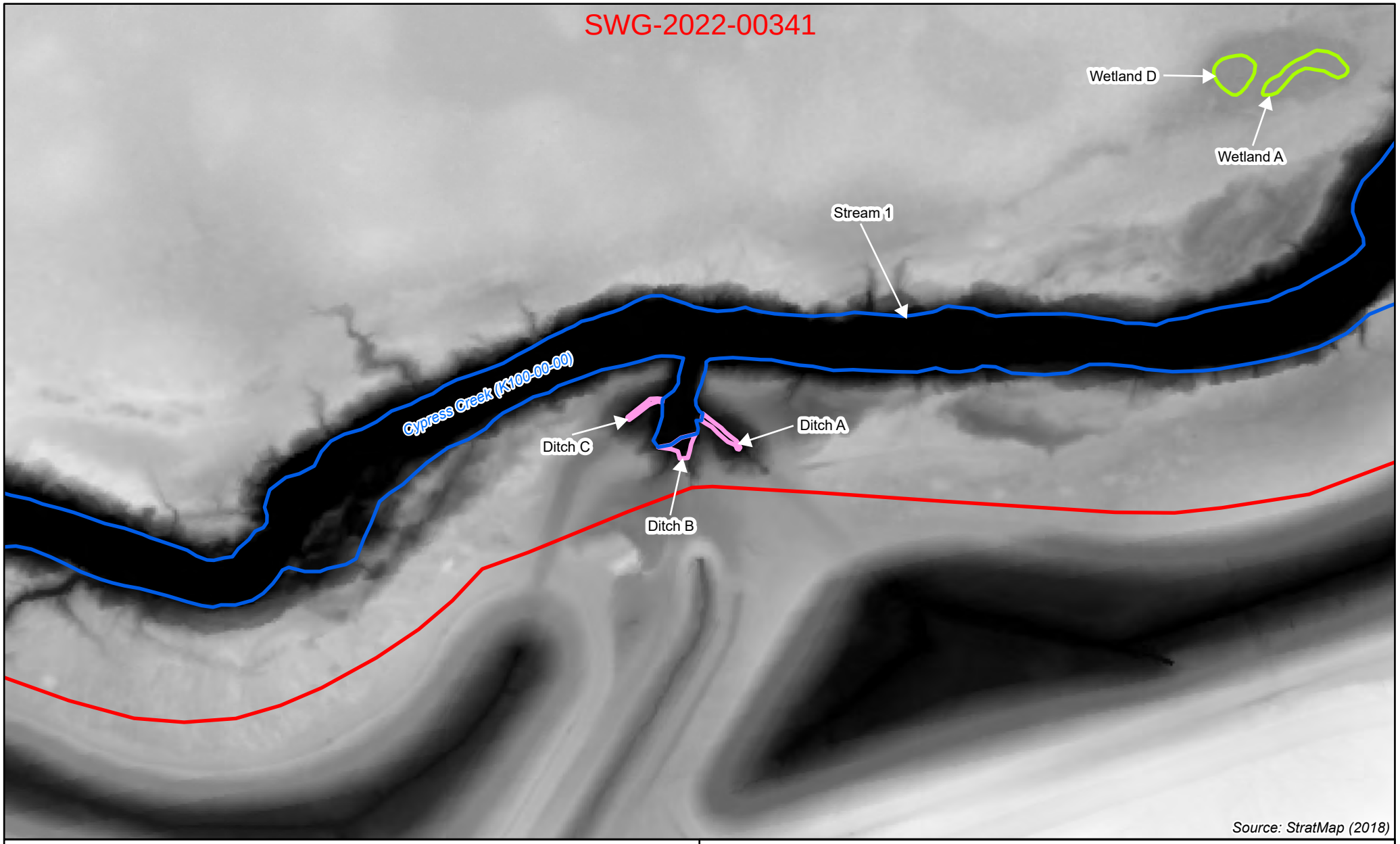
SHEET 6
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024

SWG-2022-00341



Legend

Project Area

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

Drainage Ditch

PEM Wetland

Perennial Stream

0 100 200 400 Feet

N

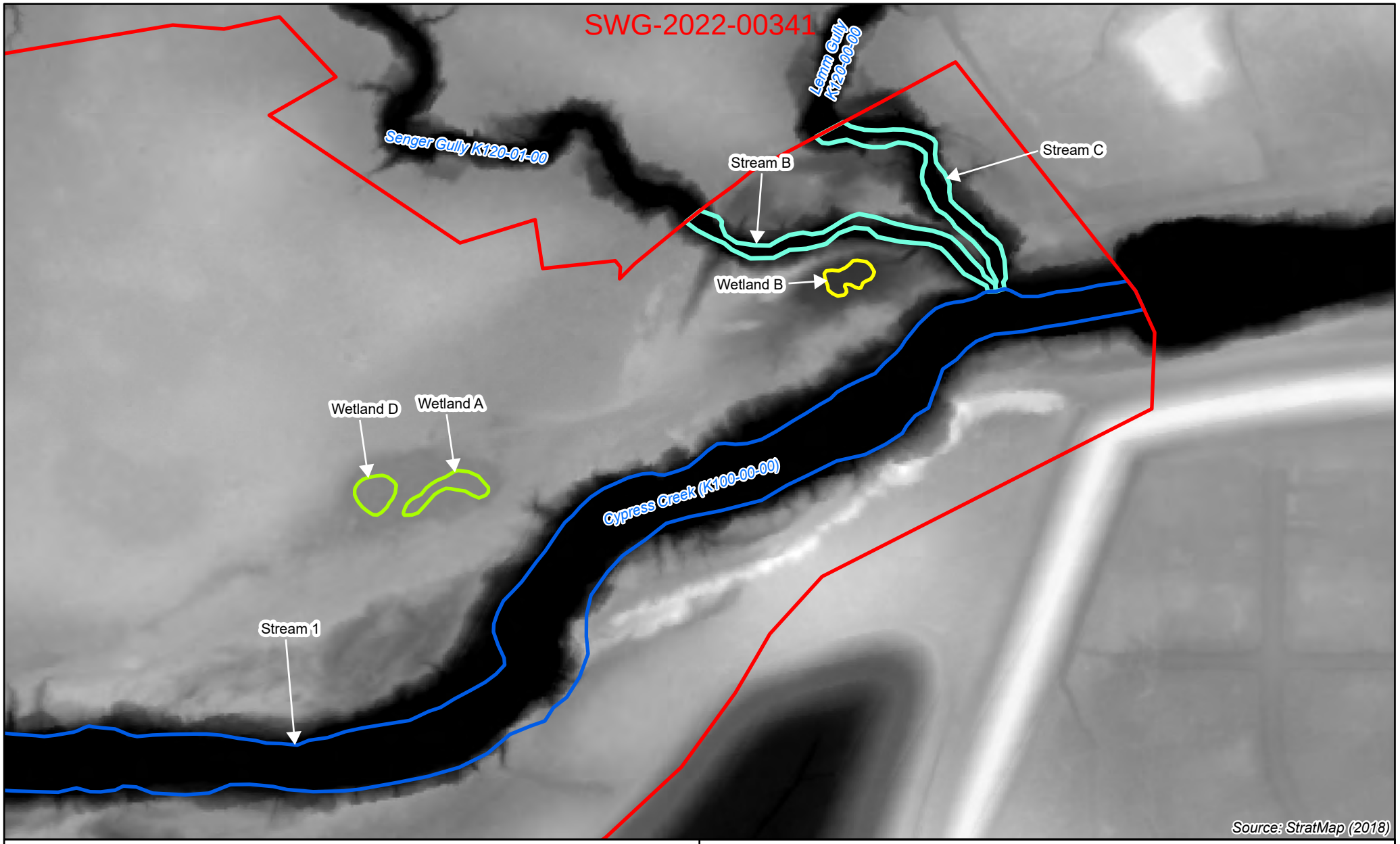
1 inch = 200 feet

SHEET 7
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

Project Area

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

Intermittent Stream

PEM Wetland

PFO Wetland

Perennial Stream

0 100 200 400 Feet

N

1 inch = 200 feet

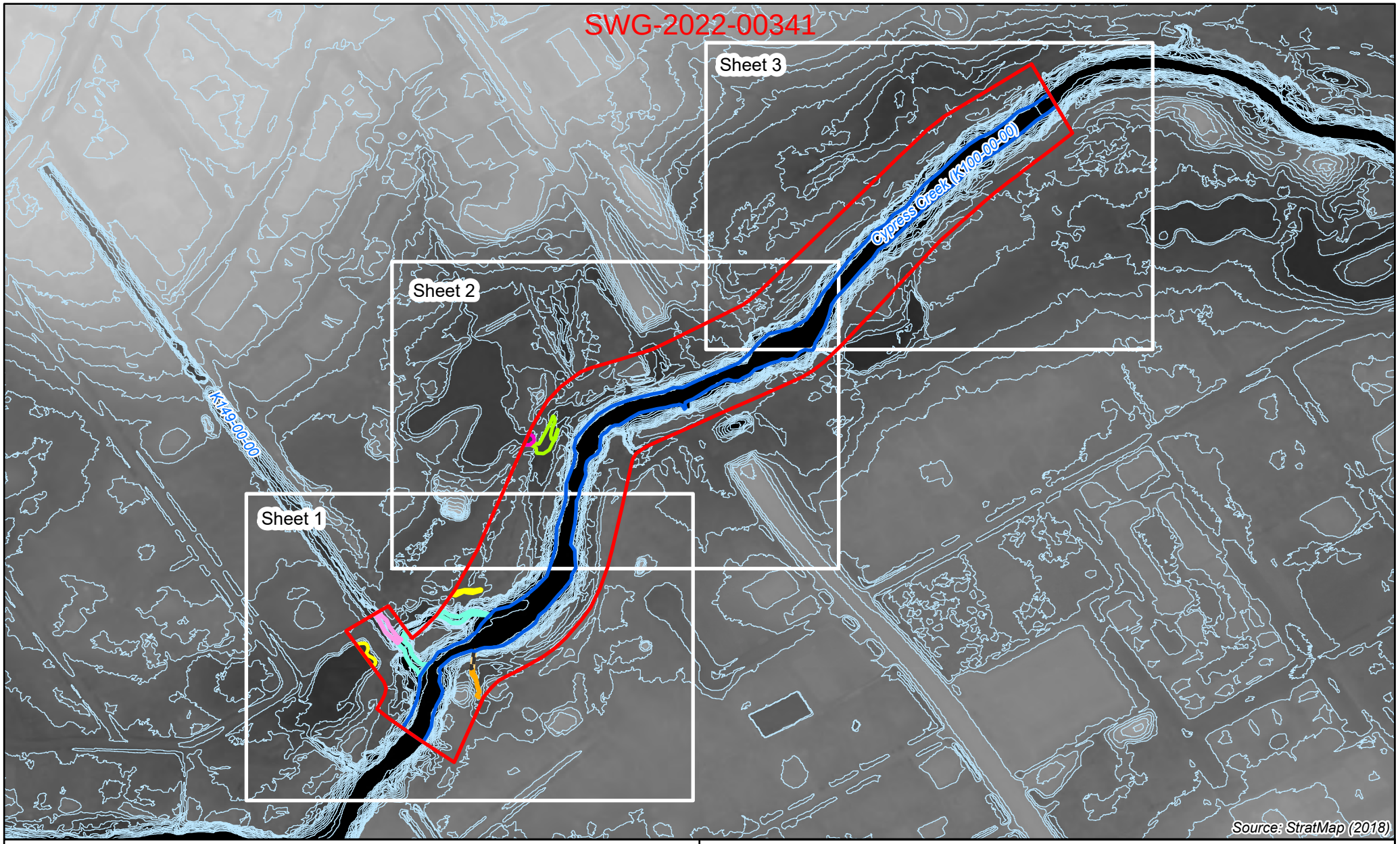
SHEET 8
DIGITAL ELEVATION MODEL MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024

SWG-2022-00341



Legend

- Project Area
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Culvert
- Drainage Ditch
- Gully
- Intermittent Stream
- PEM Wetland
- PFO Wetland
- Perennial Stream
- Pond

N

0 225 450 900 1,350 Feet

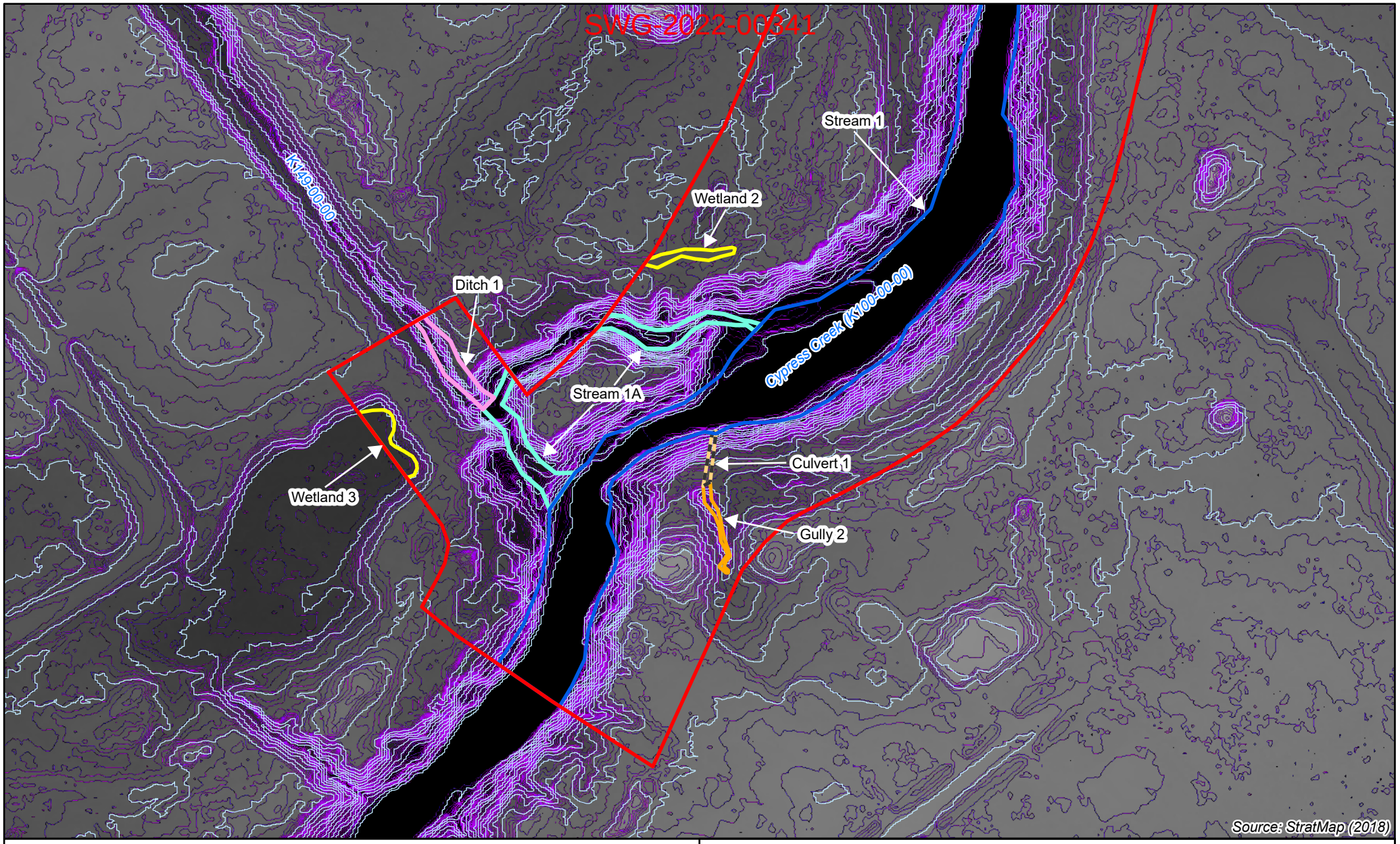
1 inch = 450 feet

OVERVIEW
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

- Culvert
- Drainage Ditch
- Gully
- Intermittent Stream
- PFO Wetland
- Perennial Stream

0 75 150 300 Feet

1 inch = 150 feet

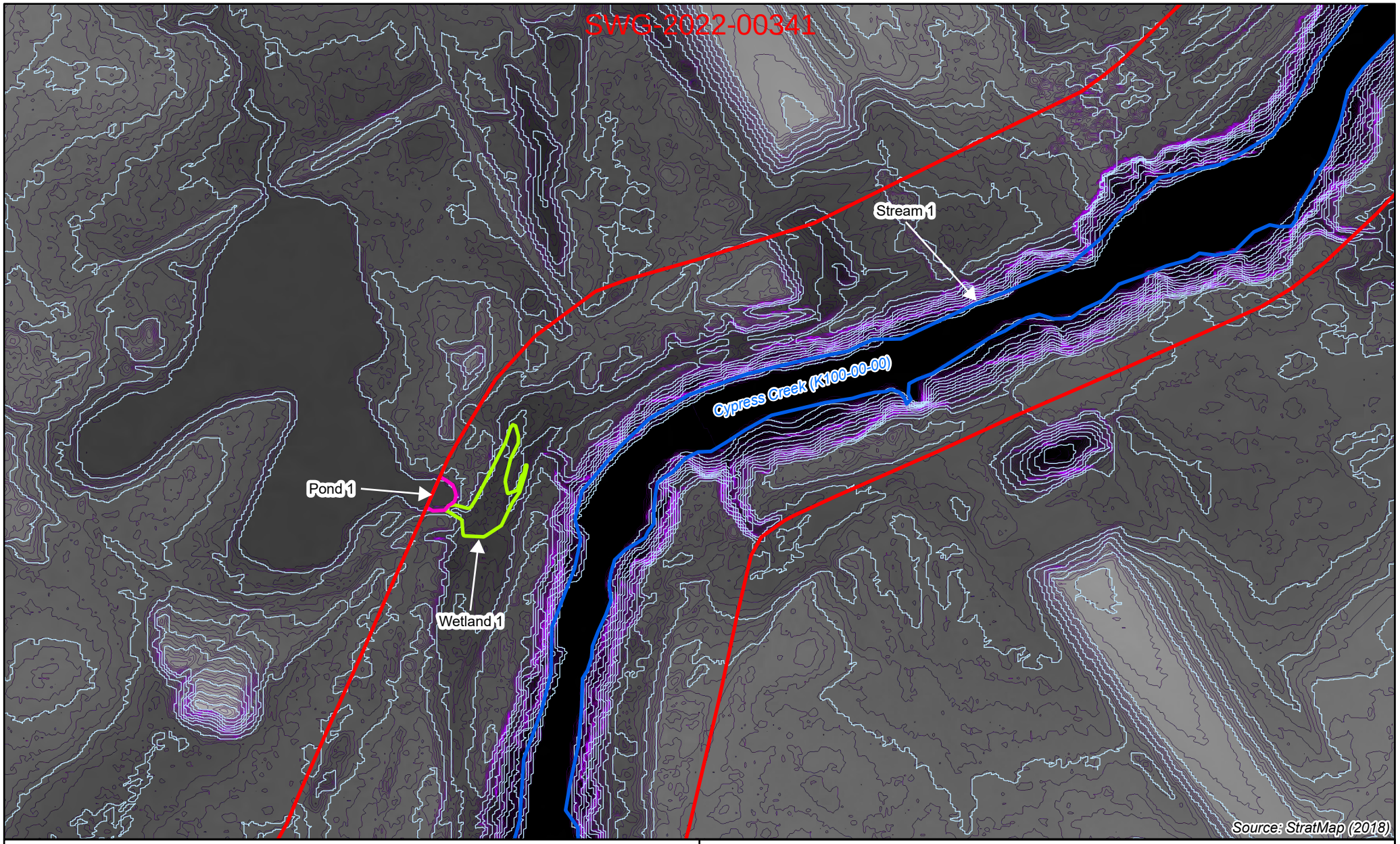
N

SHEET 1
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation
- High: 135 feet
- Low: 55 feet

Delineated Feature
- PEM Wetland
- Perennial Stream
- Pond

N

0 75 150 300 Feet

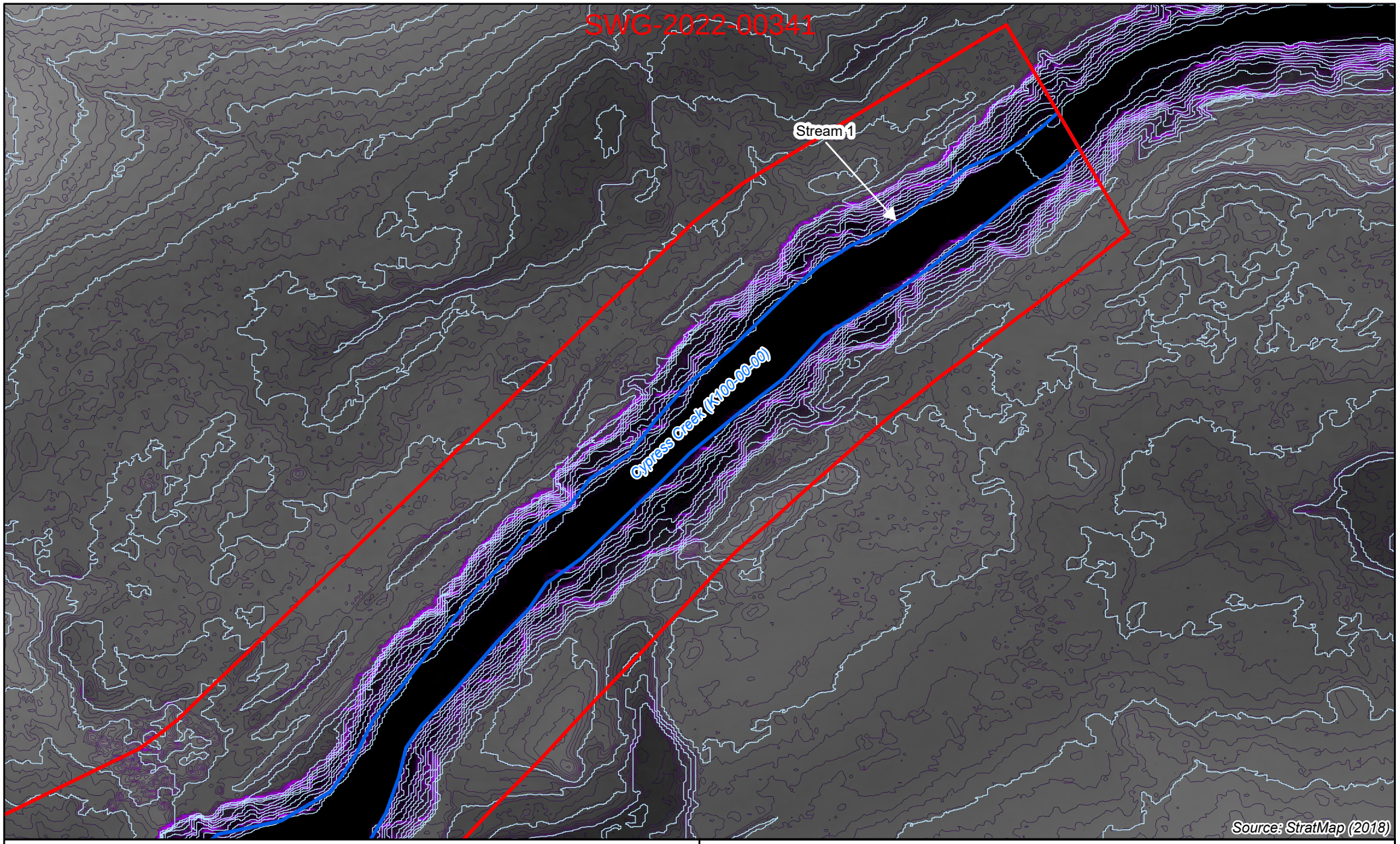
1 inch = 150 feet

SHEET 2
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Perennial Stream

N

0 75 150 300 Feet

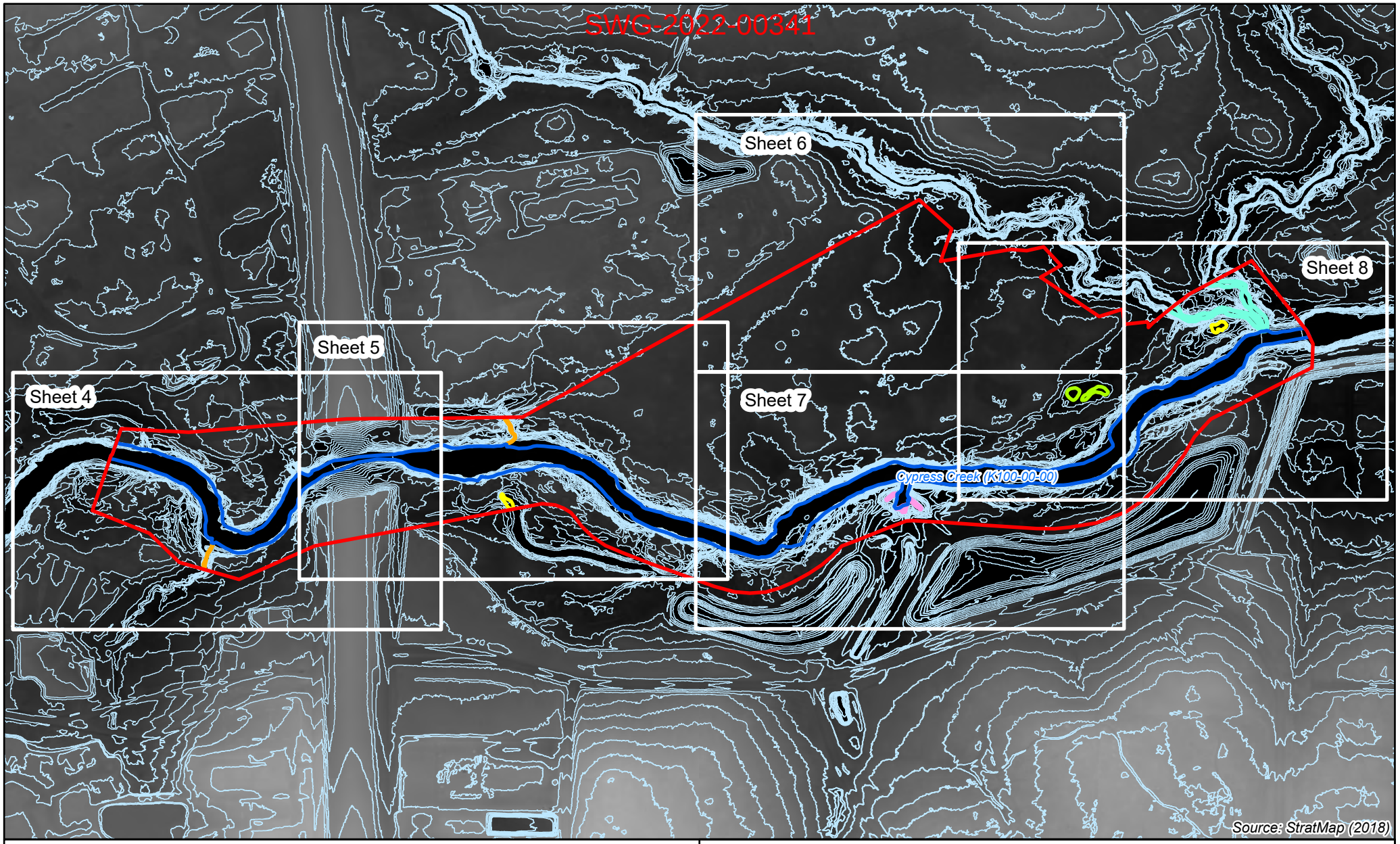
1 inch = 150 feet

SHEET 3
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Drainage Ditch
- Gully
- Intermittent Stream
- PEM Wetland
- PFO Wetland
- Perennial Stream

N

0 325 650 1,300 1,950 Feet

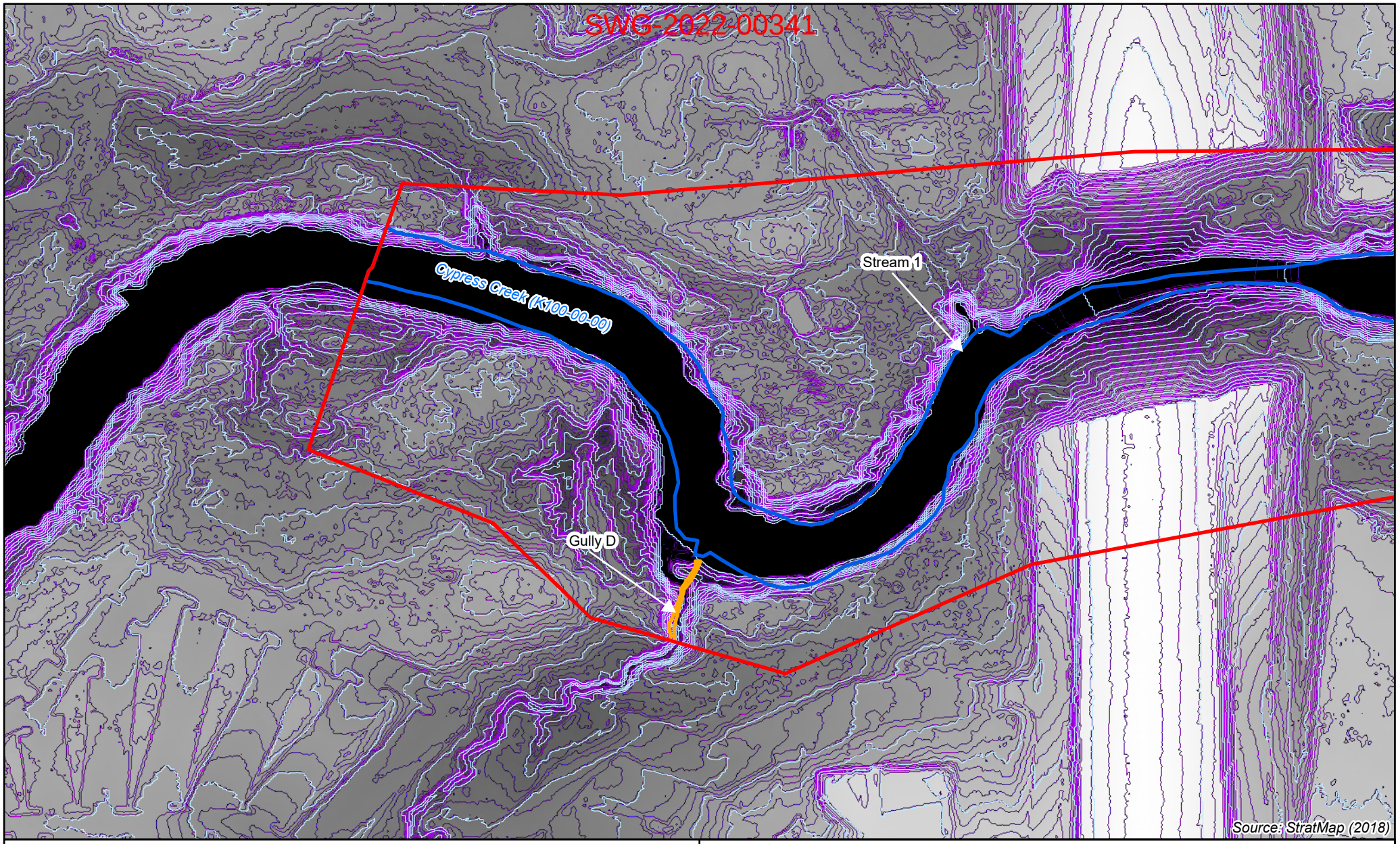
1 inch = 650 feet

OVERVIEW
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

High: 135 feet

Low: 55 feet

Delineated Feature

- Gully
- Perennial Stream

N

0 100 200 400 Feet

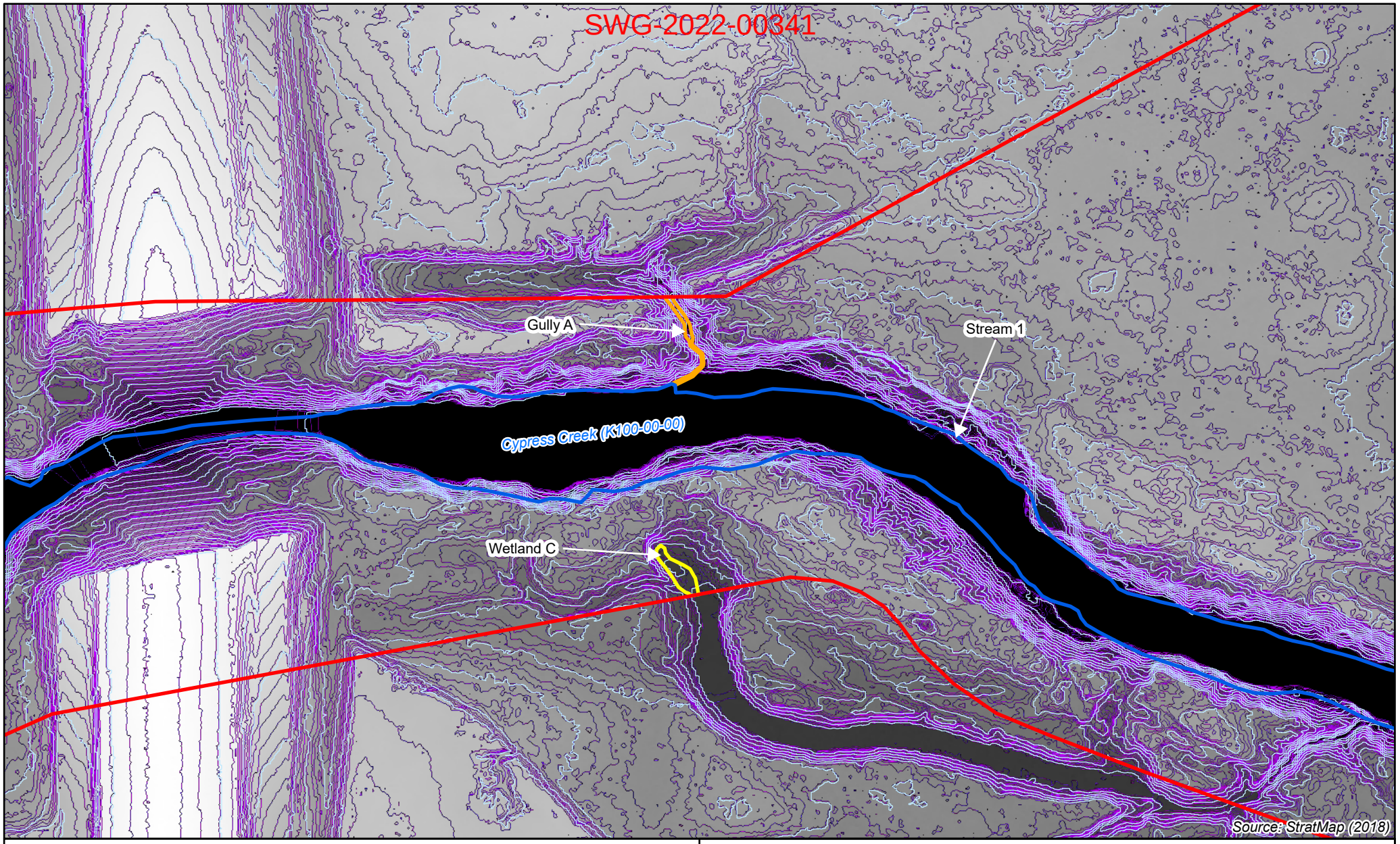
1 inch = 200 feet

SHEET 4
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Gully
- PFO Wetland
- Perennial Stream

N

0 100 200 400 Feet

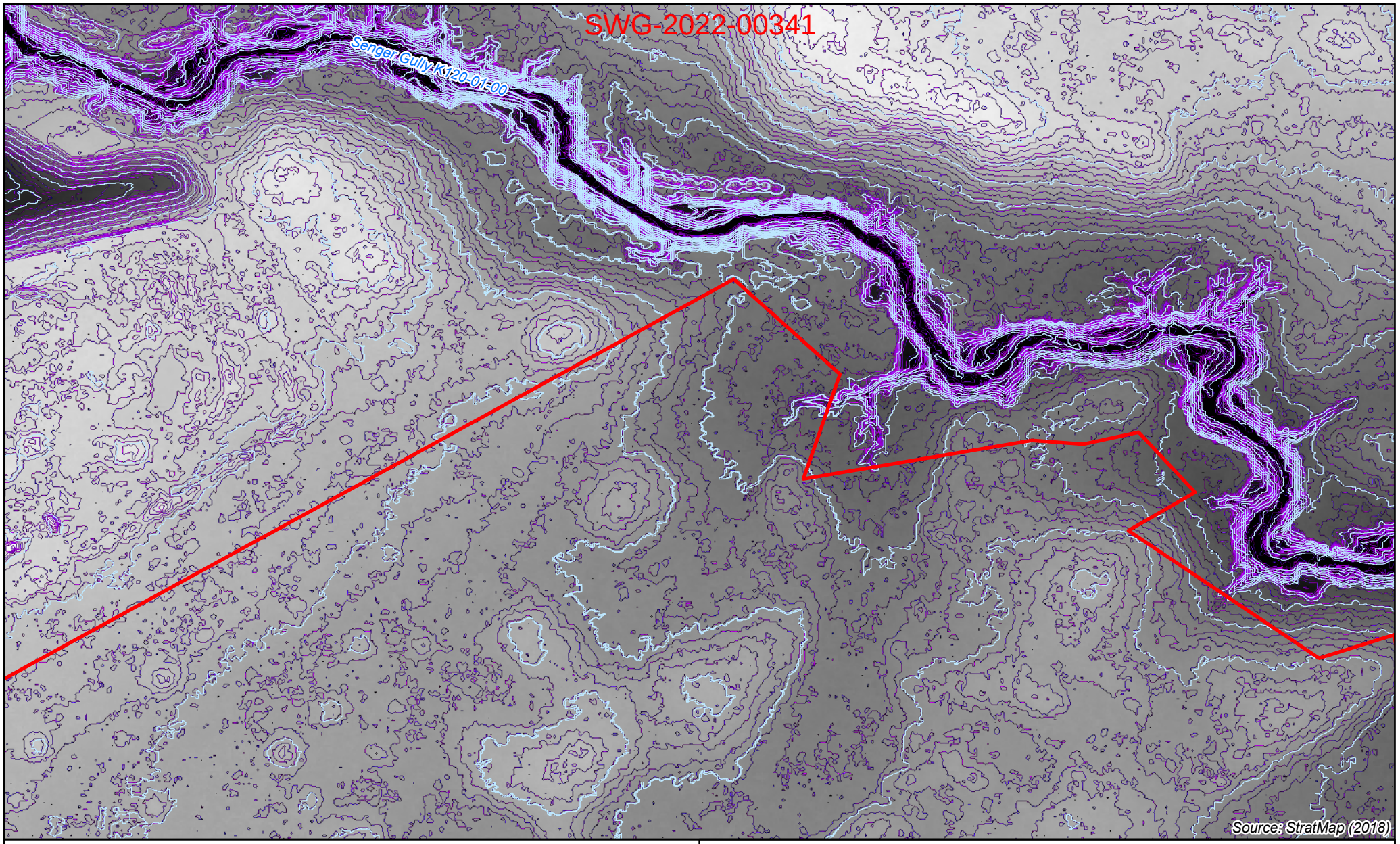
1 inch = 200 feet

SHEET 5
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

High: 135 feet

Low: 55 feet

0 100 200 400 Feet

1 inch = 200 feet

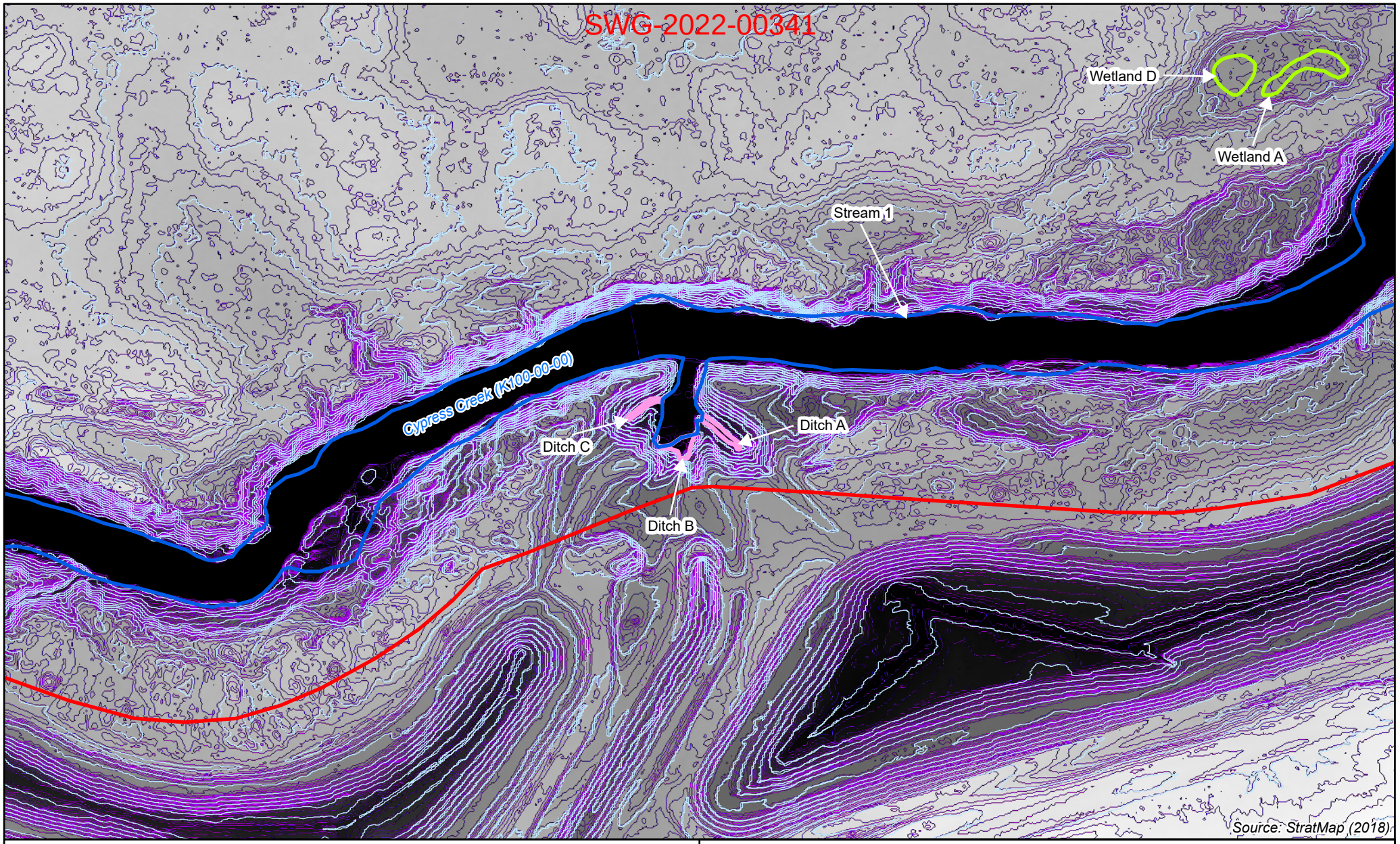
N

SHEET 6
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Drainage Ditch
- PEM Wetland
- Perennial Stream

N

0 100 200 400 Feet

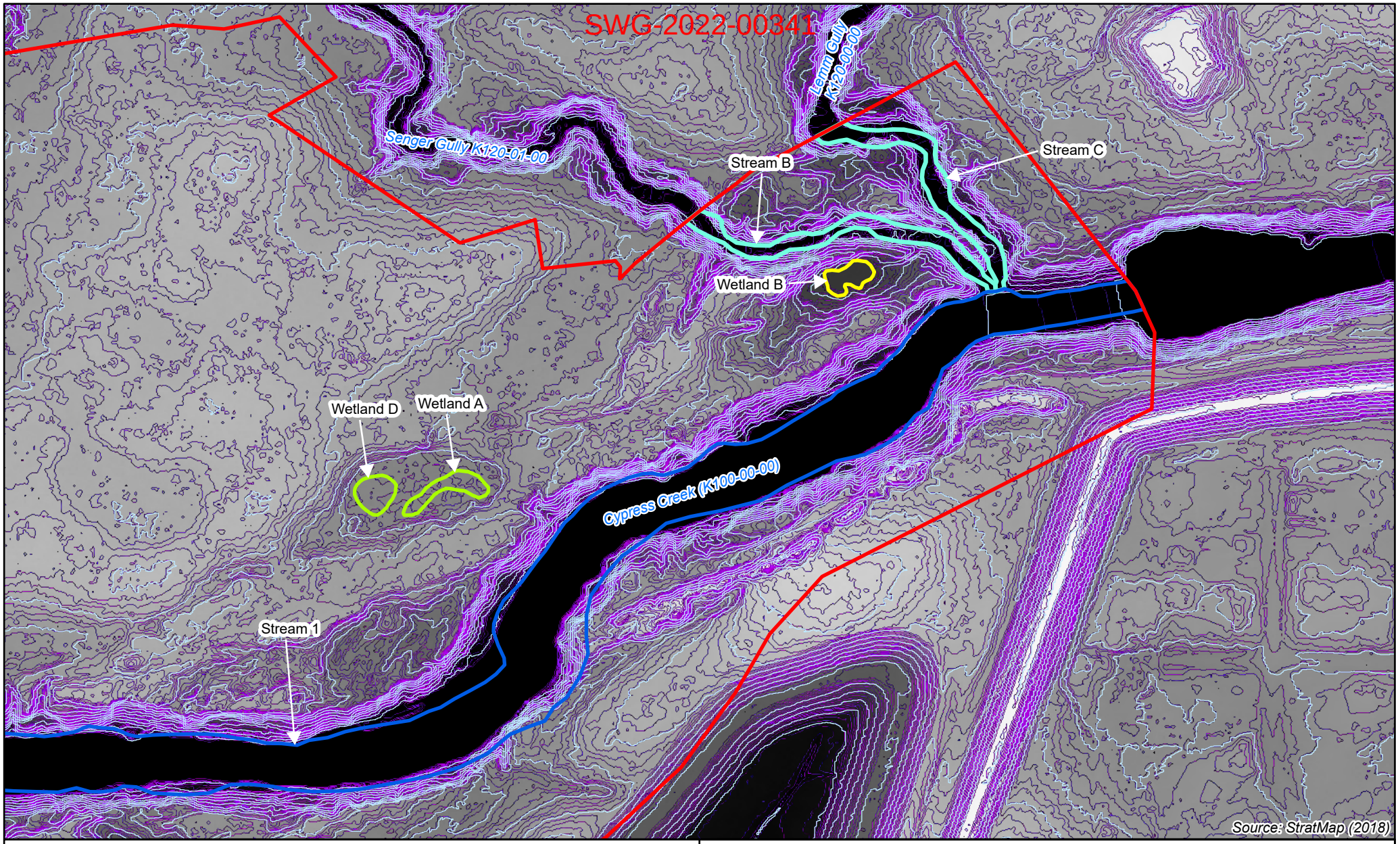
1 inch = 200 feet

SHEET 7
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- 6-inch Contour
- 2-foot Contour

Elevation

- High: 135 feet
- Low: 55 feet

Delineated Feature

- Intermittent Stream
- PEM Wetland
- PFO Wetland
- Perennial Stream

N

0 100 200 400 Feet

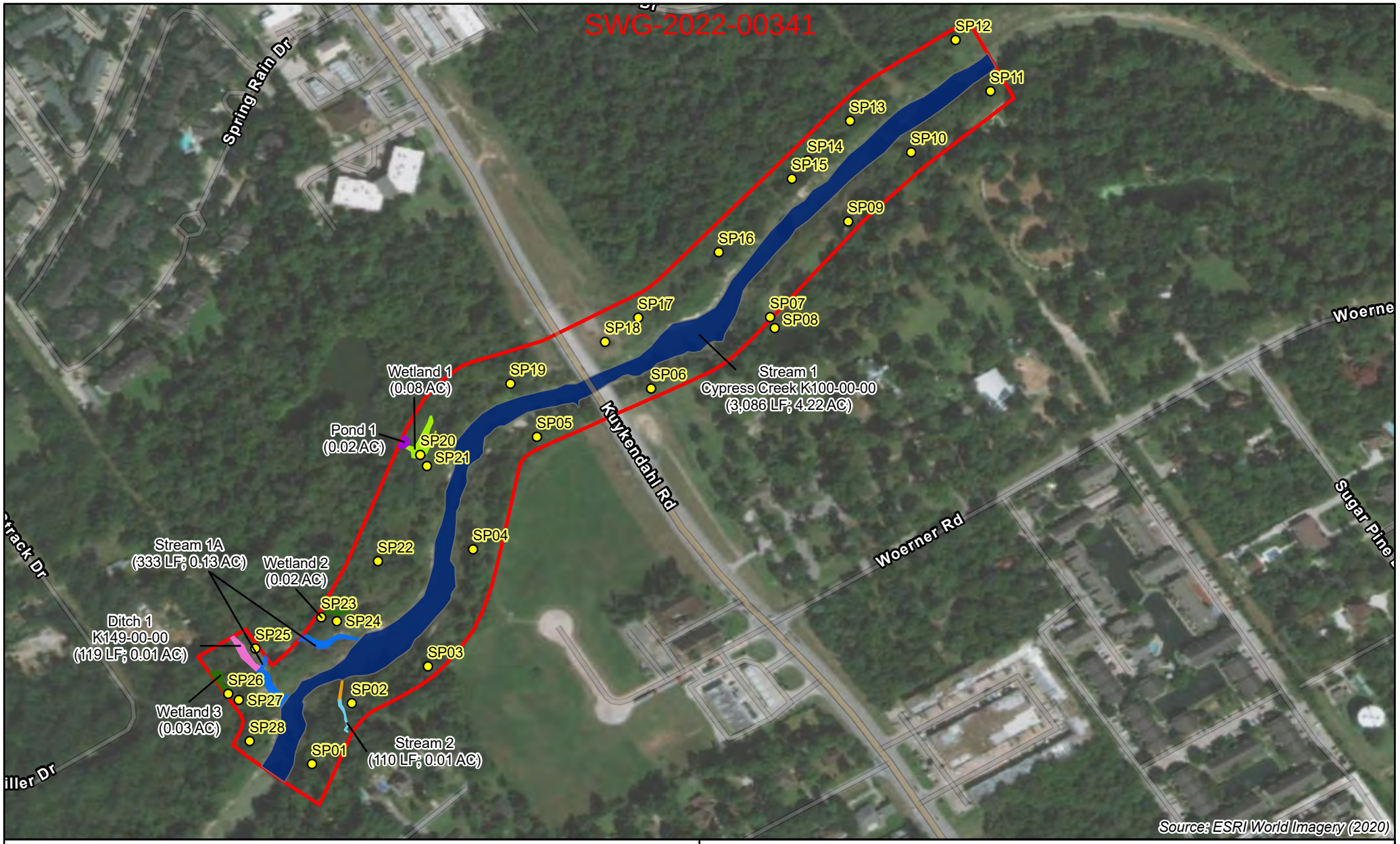
1 inch = 200 feet

SHEET 8
DIGITAL ELEVATION MODEL MAP WITH CONTOURS

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 5/1/2024



Legend

- Project Area
- Sample Point

Delineated Feature

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- PEM Wetland
- PFO Wetland
- Pond
- Drainage Ditch
- Culvert

0 250 500 1,000 Feet

N

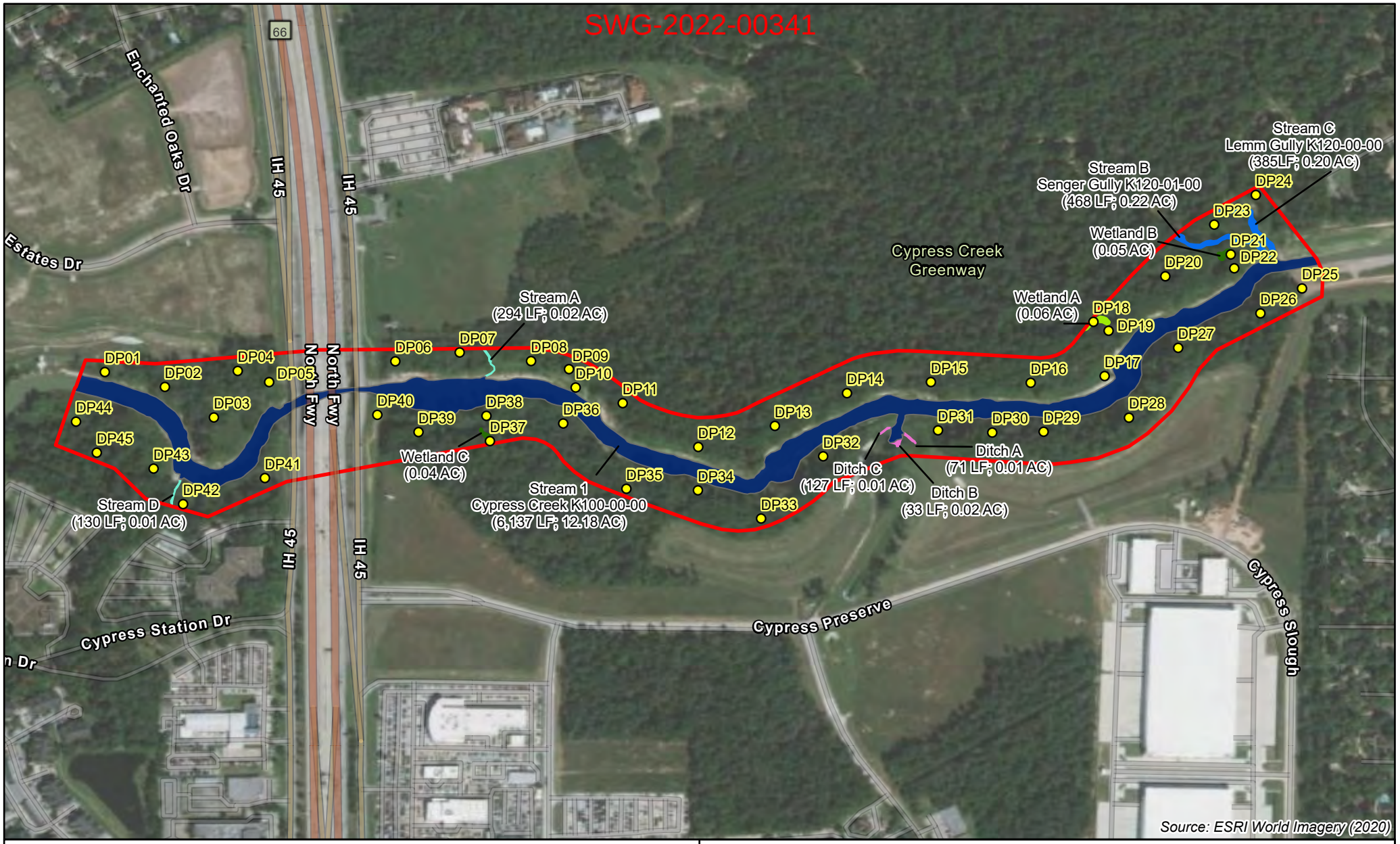
Scale: 1:4,800

FIGURE 8A
SAMPLE POINT LOCATION MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 04/22/2022



Legend

- Project Area
- Sample Point

Delineated Feature

- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- PFO Wetland
- PEM Wetland
- Drainage Ditch

N

0 250 500 1,000 1,500 2,000 Feet

Scale: 1:7,500

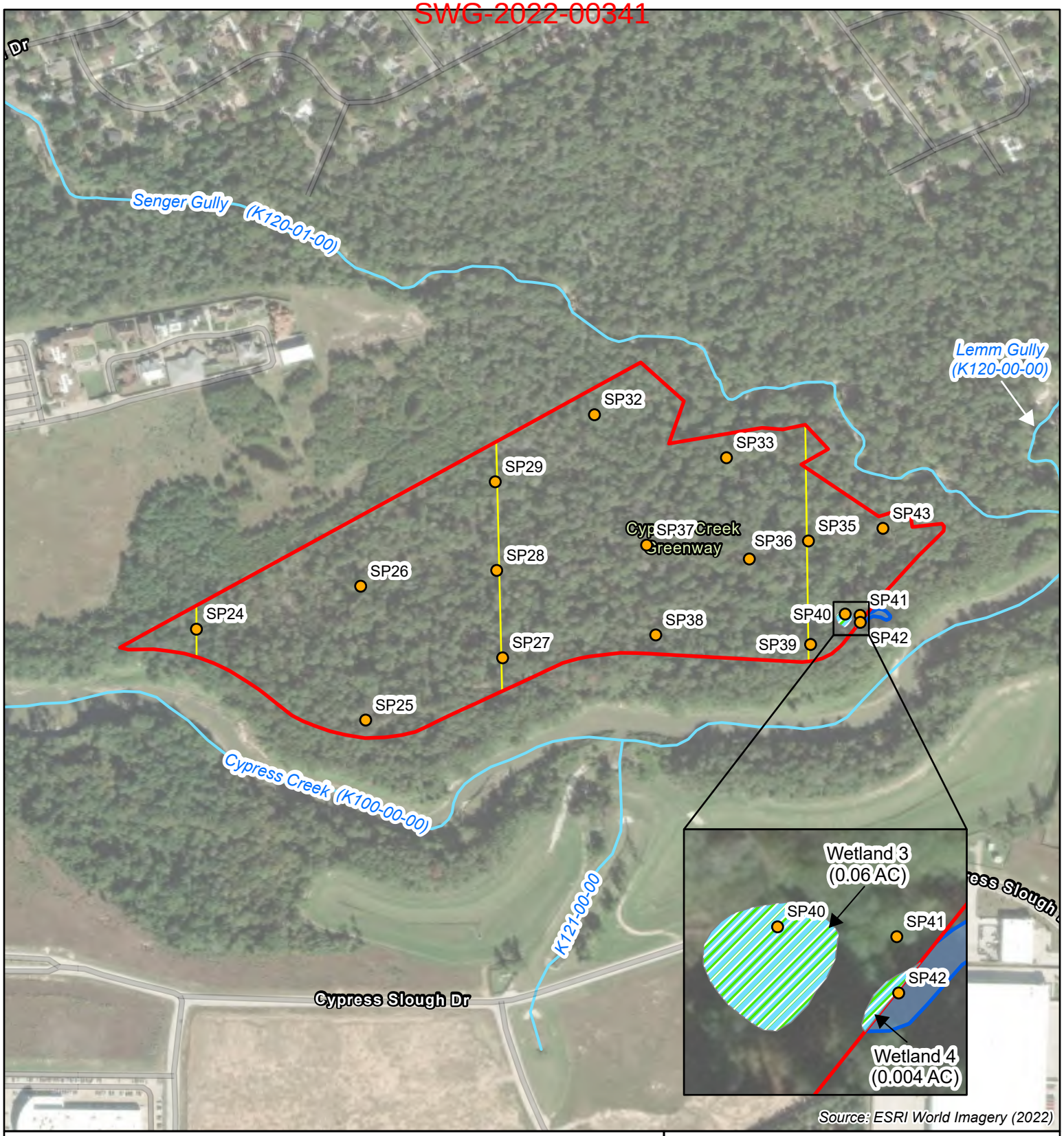
FIGURE 8B
SAMPLE POINT LOCATION MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 04/14/2022

SWG-2022-00341



Legend

- Project Area
- NHD Feature
- Sample Point
- Transect

Delineated Feature

- PEM Wetland

0 250 500 1,000 1,500 Feet

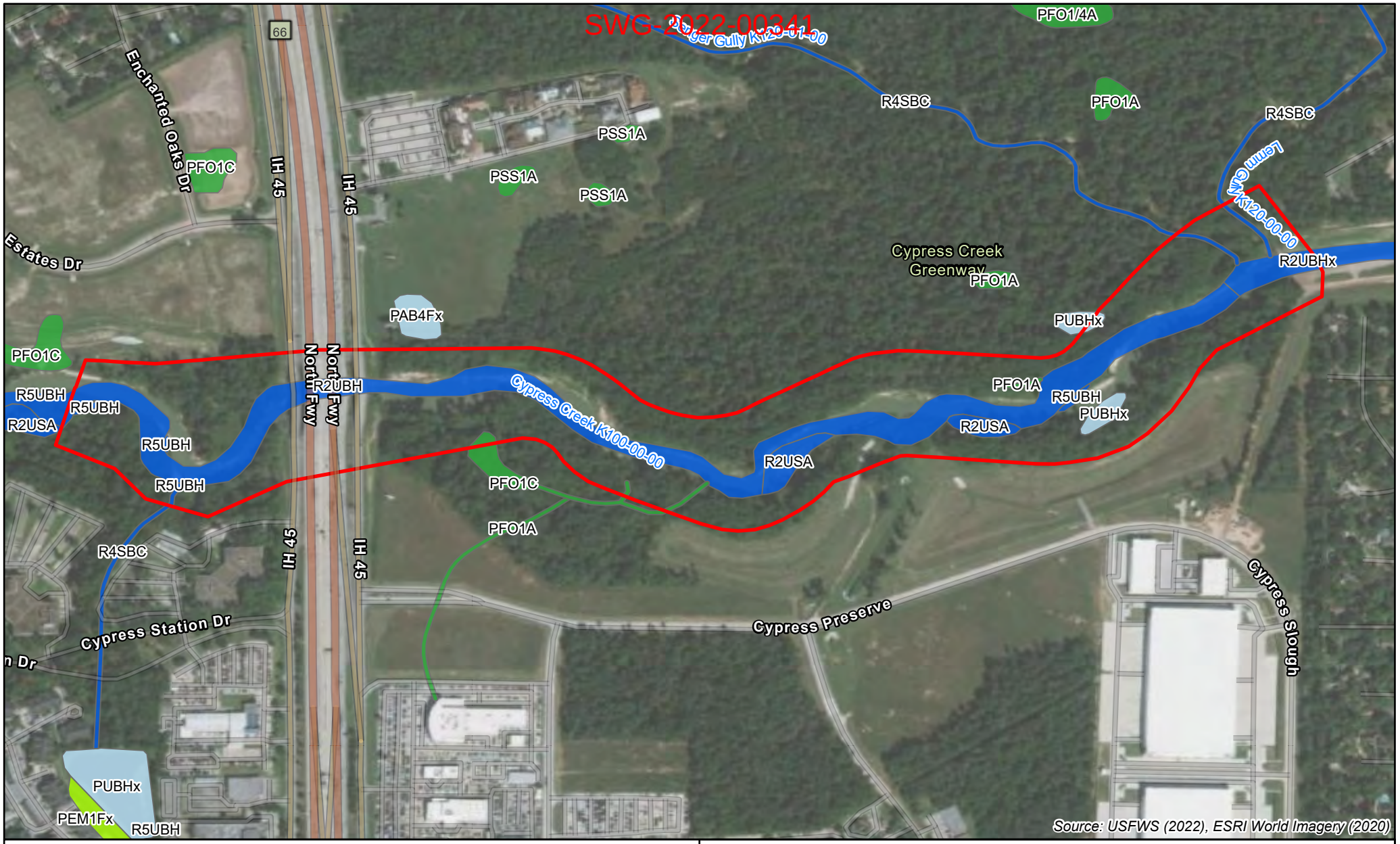
1 inch = 500 feet

N

FIGURE 9
SAMPLE POINT LOCATION MAP

CYPRESS CREEK CDBG-MIT DETENTION BASINS &
CDBG-DR CHANNEL IMPROVEMENTS
K500-31-00-E001 & K100-00-00-X114
SPRING, HARRIS COUNTY, TEXAS 77373

Prepared By: Cypress Environmental Consulting LLC
Project Number: 024442
Date: 2/13/2024



Legend

- Project Area

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

0 250 500 1,000 1,500 2,000 Feet

Scale: 1:7,500

N

FIGURE 5B
NWI MAP

BATCH 5 CYPRESS CREEK
IH-45 SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 04/14/2022

Legend

- Project Area

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

0 250 500 1,000 Feet

N

Scale: 1:4,800

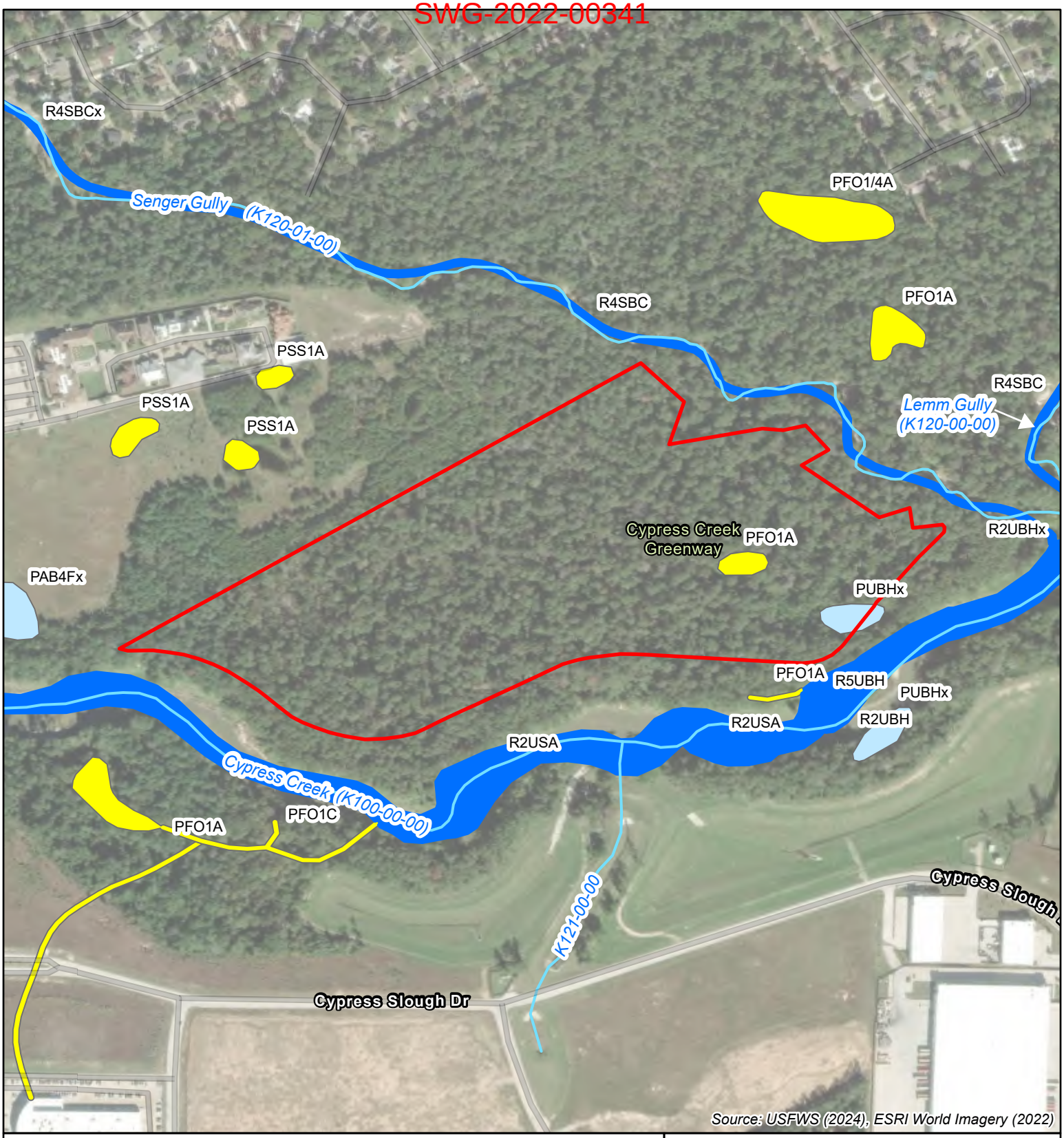
FIGURE 5A
NWI MAP

BATCH 5 CYPRESS CREEK
KUYKENDAHL RD SEGMENT
HCFCD PROJECT ID K100-00-00-G002
HOUSTON, HARRIS COUNTY, TEXAS

CYPRESS ENVIRONMENTAL CONSULTING

Prepared by: Cypress Environmental Consulting LLC
Project No.: 022223
Date: 04/14/2022

SWG-2022-00341



Legend

- Project Area
- NHD Feature
- Freshwater Pond
- Riverine

NWI Feature Type

- Freshwater Forested/Shrub Wetland

0 250 500 1,000 1,500 Feet

1 inch = 500 feet

N

FIGURE 5
NATIONAL WETLAND INVENTORY MAP

CYPRESS CREEK CDBG-MIT DETENTION BASINS &
CDBG-DR CHANNEL IMPROVEMENTS
K500-31-00-E001 & K100-00-00-X114
SPRING, HARRIS COUNTY, TEXAS 77373

Prepared By: Cypress Environmental Consulting LLC
Project Number: 024442
Date: 2/13/2024