



## **ENVIRONMENTAL FEATURE CODES**

**September 2025**

## TDOT Environmental Feature Codes

TRANSPORTATION FEATURES		
Feature Code	Description	IN DTM
LAK	Lake or Reservoir	NO
MISC_ENV	Miscellaneous Line or Polygon	NO
PND	Pond	NO
PSK	Potential Sinkhole	NO
SPH	Specialized Habitat	NO
STR	Perennial/Intermittent Stream	NO
TOB	Top of Bank	NO
WTL	Wetland	NO
WWC	Wet Weather Conveyance	NO
WWC/EPH	Wet Weather Conveyance/Ephemeral Stream	NO
WWC/UDF	Wet Weather Conveyance/Upland Drainage Feature	NO
XBF	Bank Full Point	NO
XCAV	Cave	NO
XCK_ENV	Check Shot on known control point	NO
XCP_ENV	Control Point	NO
XENV	Environmental Office Point	NO
XMISC_ENV	Miscellaneous Point	NO
XOHWM	Ordinary High-Water Mark	NO
XRKH	Rock House	NO
XSEEP	Seep	NO
XSPB	Spring Box	NO
XSPR	Spring	NO
XSPUR_ENV	Temporary Survey Point	NO
XWEL	Well	NO
XWFL	Waterfall	NO

The term “feature” refers to any “material object” or “item” or “thing” that exists in the field. Features are typically at ground level, in the middle of the streams, or at various locations on environmental items.

The term “locate” refers to using GNSS RTK equipment to obtain the position of a feature.

All Environmental Features in a project should be located in the field. This data is imported into a Field Book in OpenRoads Designer (ORD). Data that is imported into a Field Book is automatically drawn in ORD. The ORD files are used by roadway designers, bridge designers, hydraulics designers, ROW personnel, utilities personnel, and others.

Environmental “Points” are used to create the environmental drawings.

- Points’ names are alphanumeric and begin with an “E” (for Environmental), followed by either a number (Example: E101), or by other letters and a number (Example: EMP101), where the letters are typically the environmental field collector’s initials.
- Point numbers are in ascending order, like the ASCII Points list below.

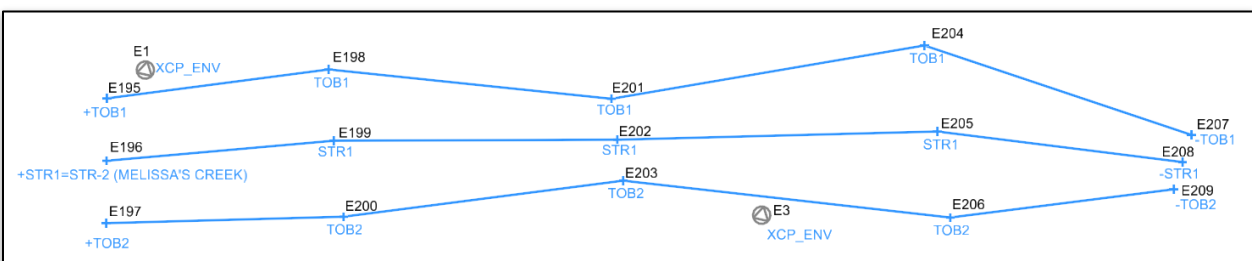
```
E1,672532.2814,1838924.1512,560.4512,XCP_ENV  
E3,672528.3153,1839240.6231,562.7226,XCP_ENV  
E195,672514.3544,1838908.442,561.9164,+TOB1=LDB  
E196,672483.9524,1838914.9835,555.212,+STR1=STR-2(MELISSA'S CREEK)  
E197,672453.5505,1838921.525,562.9664,+TOB2=RDB  
E198,672552.396,1839013.561,559.5164,TOB1=LDB  
E199,672518.2823,1839023.7772,549.933,STR1  
E200,672482.3607,1839036.681,560.7564,TOB2=RDB  
E201,672568.6996,1839154.755,558.1164,TOB1=LDB  
E202,672549.4123,1839162.0090,543.564,STR1  
E203,672530.1251,1839169.263,558.9464,TOB2=RDB  
E204,672588.0211,1839317.3370,536.291,STR1  
E205,672628.4793,1839301.768,557.4764,TOB1=LDB  
E206,672547.5628,1839332.906,558.5664,TOB2=RDB  
E207,672613.8358,1839441.727,555.7964,-TOB1=LDB  
E208,672599.6534,1839440.3490,530.590,-STR1  
E209,672585.471,1839438.971,557.0764,-TOB2=RDB
```

## TDOT Environmental Feature Codes

- Every point should be given a TDOT Feature Code, along with a descriptor as required.
- A Feature Code for a point will result in drawing one of two things
  - A Symbol
  - A Line
- Symbol: When any Feature Code starts with the letter “X”, a symbol will be drawn. Example: XCAV draws a red point for the cave location ●.
- Line: When any Feature Code does not start with the letter “X”, a line will be drawn.
  - The starting point on a line has to include a “Linking Code”. We use “+” (Example: +WWC)
  - The ending point on a line has to include a different “Linking Code”. We use “-” (Example: -WWC)
  - Any middle points on a line have just the code. (Example: WWC)
  - To close a figure, we use “\*” (Example: \*PND)
  - Other Line Linking Codes, for Begin Curve, Point on Curve, End Of Curve, etc. are not covered in this document.
  - After a line is ended, that same code can be used again. Even the next point is okay.

```
E1505,733911.6775,1979036.72,512.62,+STR
E1506,733998.0164,1979154.794,509.98,-STR
E1507,733978.7291,1979162.048,506.61,+STR
E1508,733959.4419,1979169.302,510.81,STR
E1509,734057.7961,1979301.807,509.34,STR
E5010,734017.3379,1979317.376,505.64,-STR
```

- More than one line can be “open” at a time, as in the example below.













- A point may need a descriptor, which will be “drawn” as text in MicroStation/ORD. To add a descriptor, a delimiter character is placed after the Feature Code, and the descriptor is typed after that. Use “=”. For lines, the descriptor should be recorded on only one point on the line. If it is recorded for every point on the line, many text elements would be drawn and would have to be erased. Adding the descriptor to the first point on a line is expected.  
Examples: +STR=STR-2 (BOBBY’S CREEK); XCK\_ENV=71-24-02
- For most Feature Codes, if a solid or a dashed line is to be drawn by the code, there should be text on the drawing to describe what it is, so it should have a descriptor.
- If a Feature has a formal name, use it in the descriptor. This includes lakes, ponds, streams, wetlands, etc.
- Most symbols will require a descriptor.


### **The Feature Codes**

The following is a listing of:

- Each Feature Code
- What the code represents
- An example of what to type in the data collector
- What it will draw in MicroStation/ORD
- Samples of possible descriptors, in square-brackets
- Photos showing the feature and where to locate it
- Any other general information about the code.

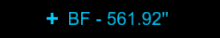

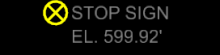
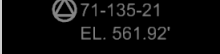
In the MicroStation/ORD drawing examples for lines, just one straight line and any text for it is shown.








ENVIRONMENTAL LINEAR FEATURES			
Feature Code	Description	Descriptor (if applicable)	Graphic(s)
<b>LAK**</b>	Lake or Reservoir	LAK=OLD HICKORY LAKE	
<a href="#">See Example Photo 1</a> [OLD HICKORY LAKE] Locate the edge of the water.			
<b>MISC_ENV***</b>	Miscellaneous Line or Polygon	MISC=MISC ITEM	
<i>[MISC ITEM] The solid line will be drawn with the Non-Transportation Features.</i>			
<b>PND**</b>	Pond	PND=JOE'S POND	
<a href="#">See Example Photo 2</a> [JOE'S POND] Locate the edge of the water.			
<b>PSK**</b>	Potential Sinkhole	PSK=PSK-3	
<a href="#">See Example Photo 3</a> [PSK-3] Locate all around the boundary of the potential sink hole.			
<b>SPH**</b>	Specialized Habitat	SPH=SPH-7	
<b>STR**</b>	Perennial/Intermittent Stream	STR=STR-1	
<a href="#">See Example Photo 4</a>			
<b>TOB**</b>	Top of Bank	TOB=STR-2 LDB	
<a href="#">See Example Photo 5</a>			
<b>WTL**</b>	Wetland	WTL=WTL-6	
<a href="#">See Example Photo 6</a>			
<b>WWC**</b>	Wet Weather Conveyance	WWC=WWC-3	
<a href="#">See Example Photo 7</a>			
<b>WWC/EPH**</b>	Wet Weather Conveyance / Ephemeral Stream	WWC/EPH=WWC/EPH-4	
<a href="#">See Example Photo 7</a>			

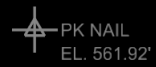


ENVIRONMENTAL LINEAR FEATURES			
Feature Code	Description	Descriptor (if applicable)	Graphic(s)
<b>WWC/UDF**</b>	Wet Weather Conveyance/Upland Drainage Feature	WWC/UDF=WWC/UDF-5	
<a href="#">See Example Photo 7</a>			

\*Miscellaneous feature code (*MISC\_ENV*) can be used for features needed to be collected that do not fit into the specific codes listed above.

\*\*A descriptor is required.

ENVIRONMENTAL POINT FEATURES			
Feature Code	Description	Descriptor (if applicable)	Graphic(s)
<b>XBF</b>	Bank Full Point	N/A	
<a href="#">See Example Photo 8</a>			
<b>XCAV**</b>	Cave	XCAV=HIDDEN CAVE	
<a href="#">See Example Photo 9</a>			
<b>XCK_ENV**</b>	Check Shot on known control point	XCK_ENV=STOP SIGN	
<b>XCP_ENV**</b>	Control Point	XCP_ENV=71-135-21	

ENVIRONMENTAL POINT FEATURES			
Feature Code	Description	Descriptor (if applicable)	Graphic(s)
<b>XENV</b>	Environmental Office Point	N/A	
<b>XMISC_ENV***</b>	Miscellaneous Point	XMISC_ENV=WET AREA?	 WET AREA?
<b>XOHWM</b>	Ordinary High-Water Mark	N/A	 OHW - 599.92"
<a href="#">See Example Photo 10</a>			
<b>XRKH**</b>	Rock House	XRKH=ROCKHOUSE-1	 ROCKHOUSE-1
<a href="#">See Example Photo 11</a>			
<b>XSEEP**</b>	Seep	XSEEP=SEEP-2	 SEEP-2
<a href="#">See Example Photo 12</a>			
<b>XSPB**</b>	Spring Box	XSPB=SPRING BOX-1	 SPRING BOX-1
<a href="#">See Example Photo 13</a>			
<b>XSPR**</b>	Spring	XSPR=SPRING-4	 SPRING-4
<a href="#">See Example Photo 14</a>			

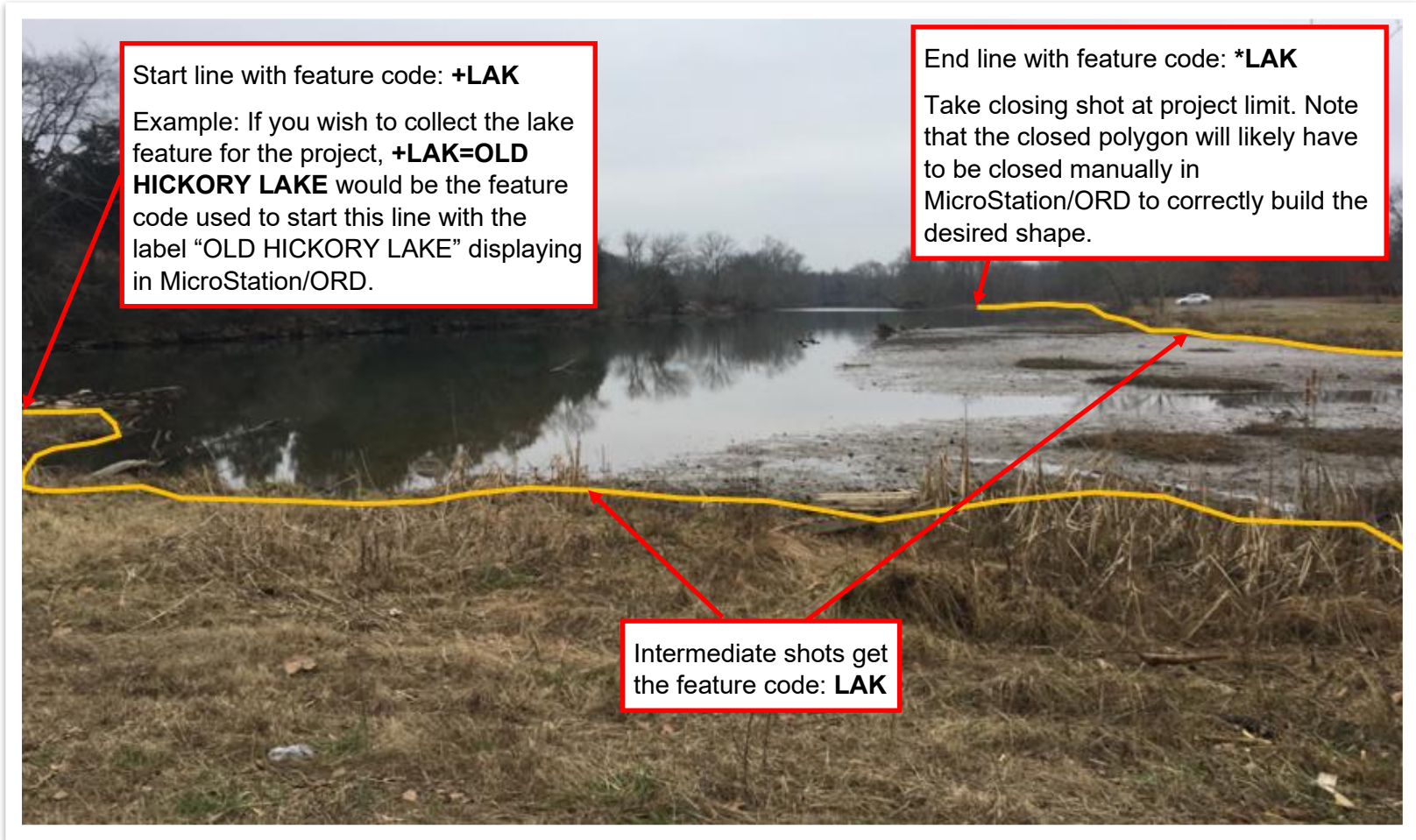
ENVIRONMENTAL POINT FEATURES			
Feature Code	Description	Descriptor (if applicable)	Graphic(s)
<b>XSPUR_ENV**</b>	Temporary Survey Point	XSPUR_ENV=PK NAIL	
<b>XWEL**</b>	Well	XWEL=WELL-2	
<a href="#">See Example Photo 15</a>			
<b>XWFL**</b>	Waterfall	XWFL=WATERFALL-3	
<a href="#">See Example Photo 16</a>			

\*Miscellaneous feature code (**XMISC\_ENV**) can be used for features needed to be collected that do not fit into the specific codes listed above.

\*\*A descriptor is required.

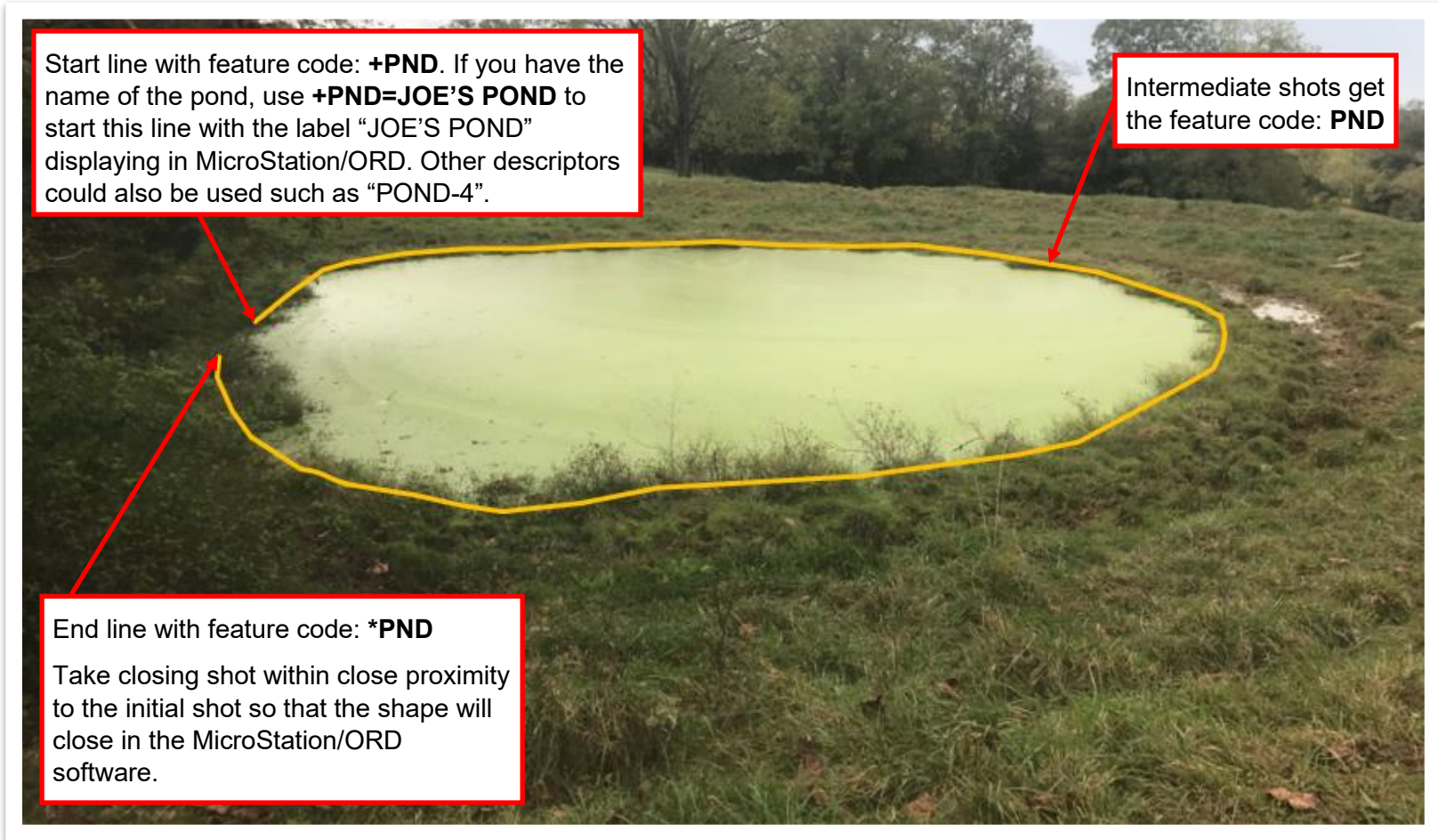
**Example Photo 1**

- **LAK\*\*** – Lake or Reservoir



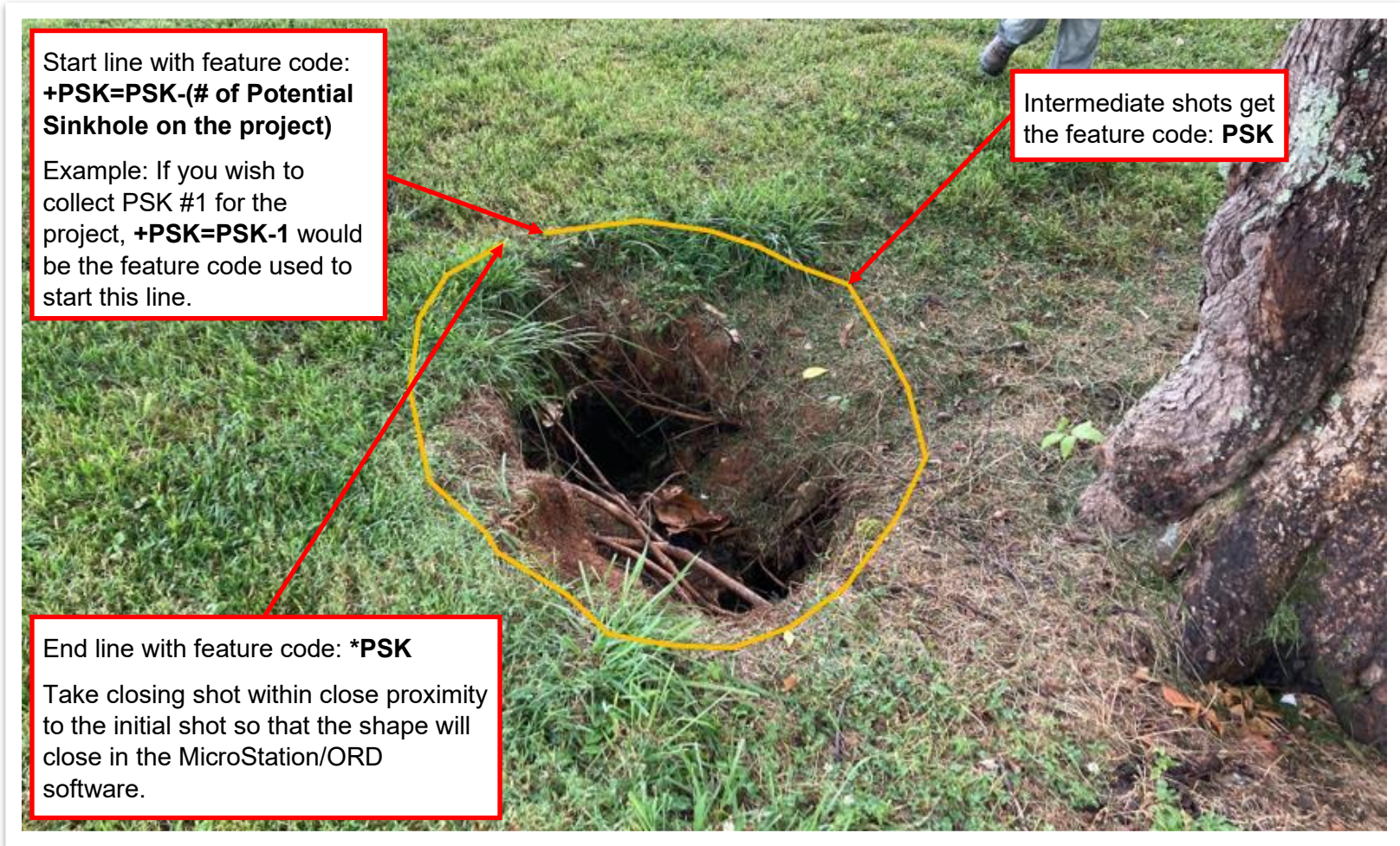
**Example Photo 2**

- **PND\*\*** – Pond



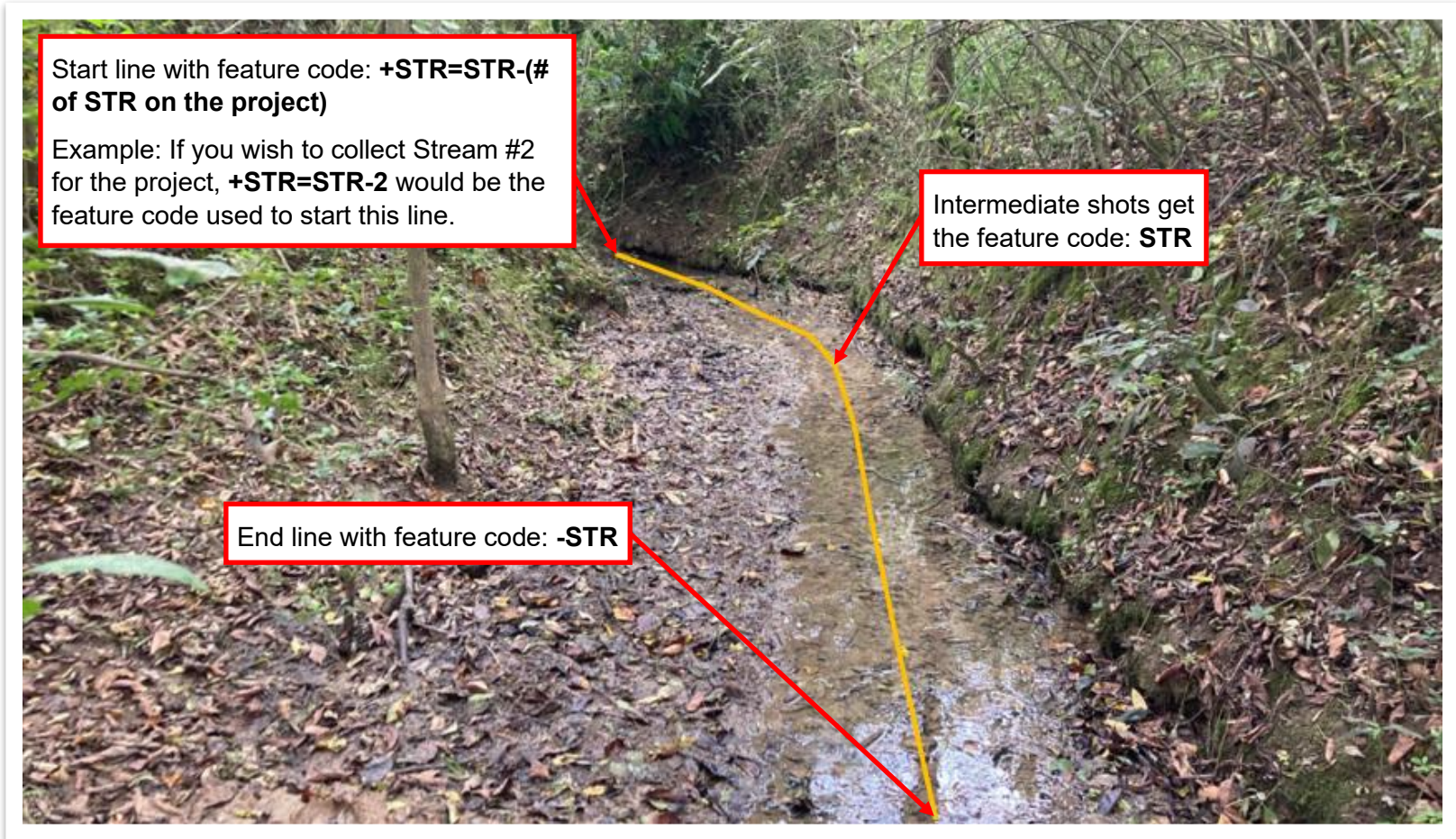
**Example Photo 3**

- **PSK\*\*** – Potential Sinkhole



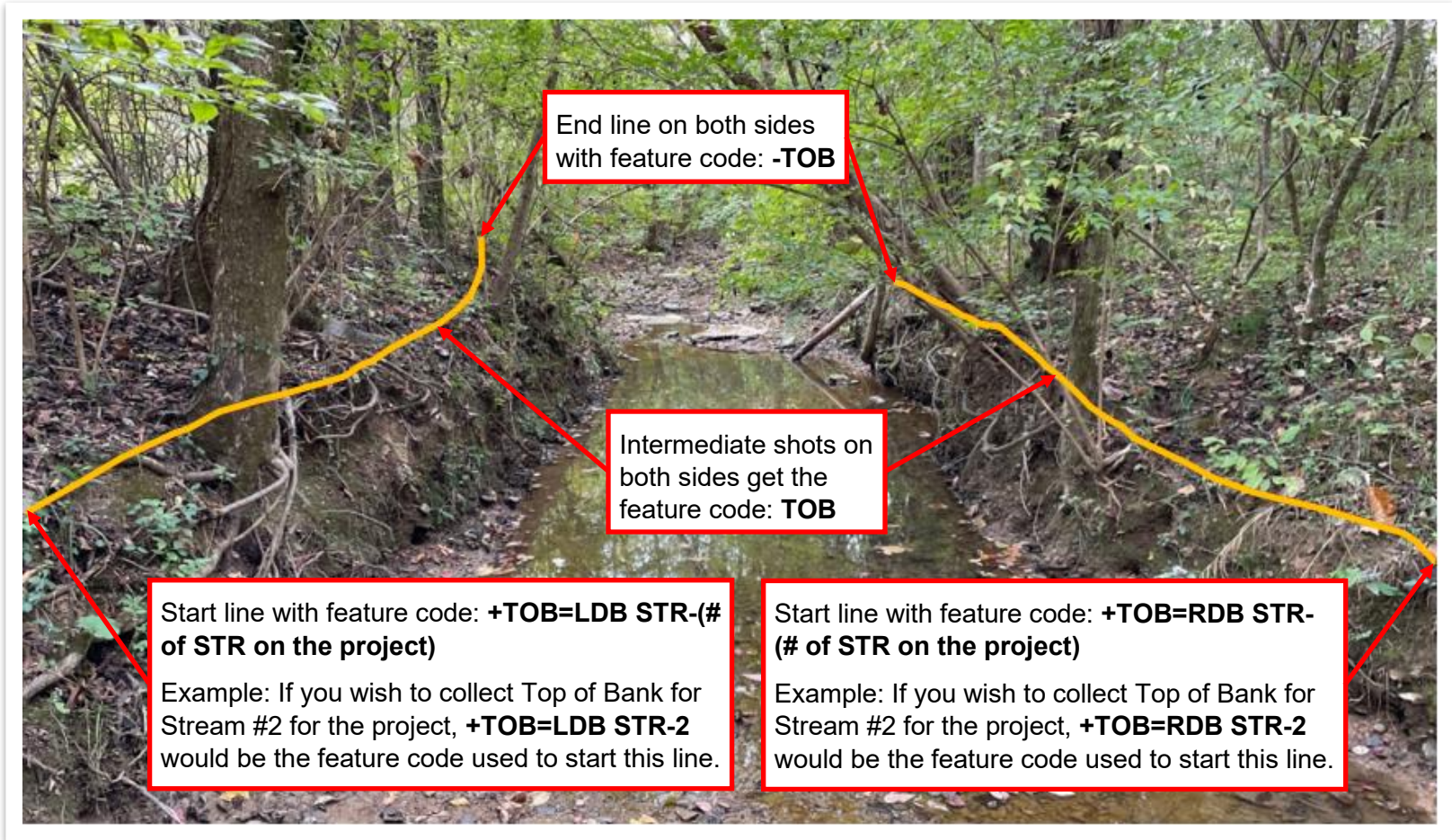
**Example Photo 4**

- **STR\*\*** – Perennial/Intermittent Stream



**Example Photo 5**

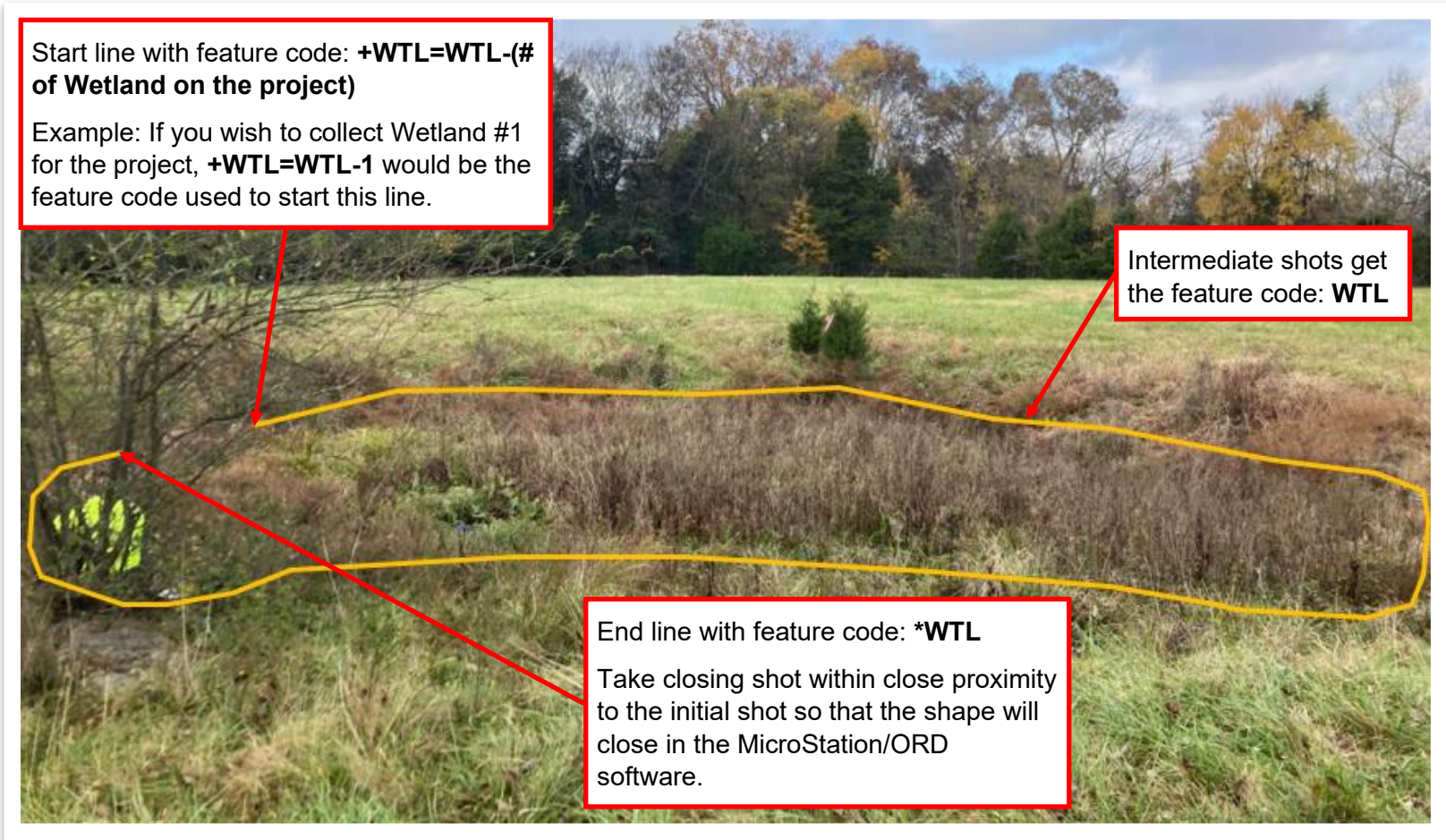
- **TOB\*\*** – Top of Bank



\*Left Descending Bank (LDB) and Right Descending Bank (RDB) based on looking downstream.

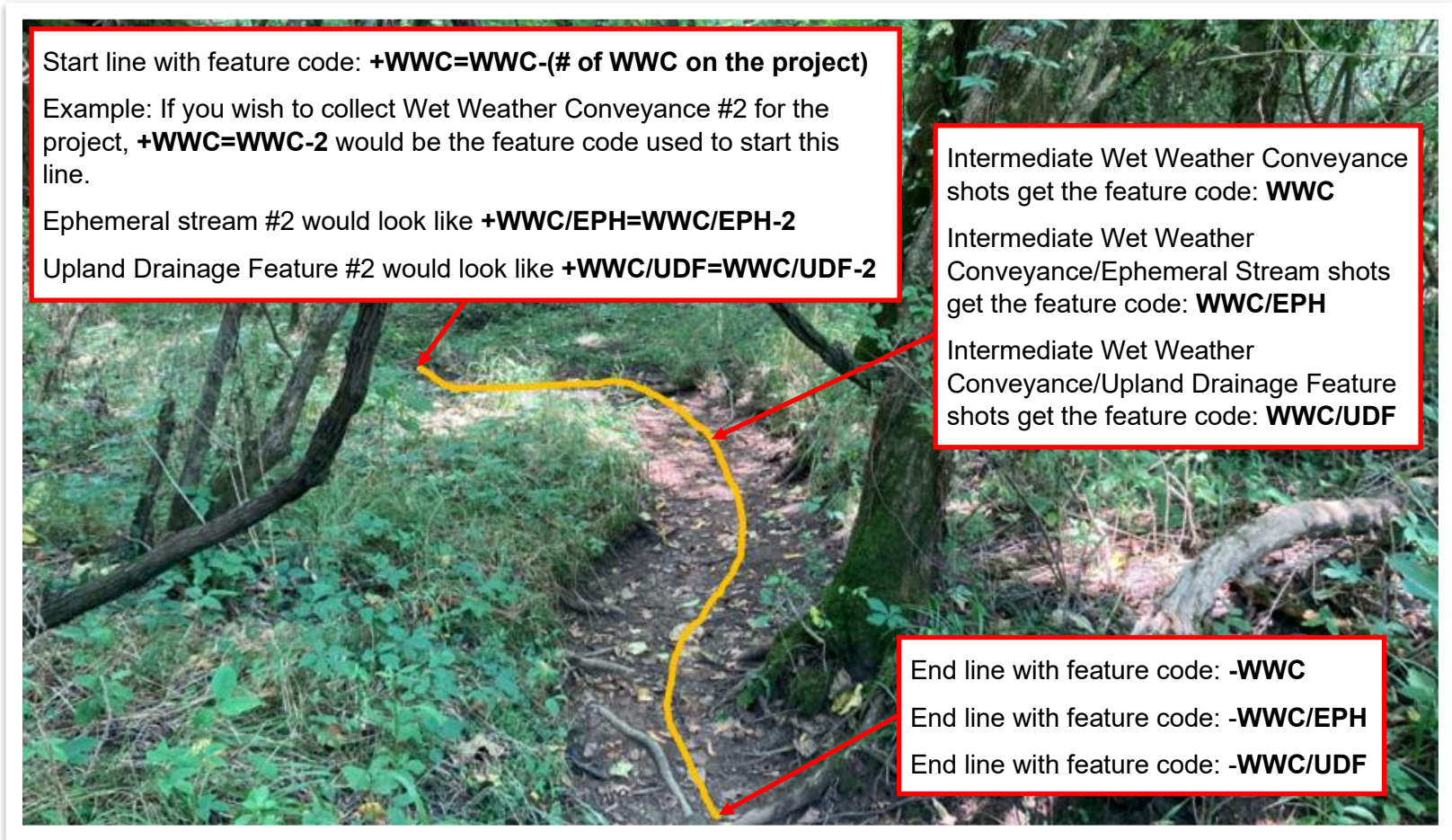
**Example Photo 6**

- **WTL\*\*** – Wetland



**Example Photo 7**

- **WWC\*\***, **WWC/EHP\*\***, **WWC/UDF\*\*** – Wet Weather Conveyance, Ephemeral Stream, Upland Drainage Feature



**Example Photo 8**

- **XBF** – Bank Full Point



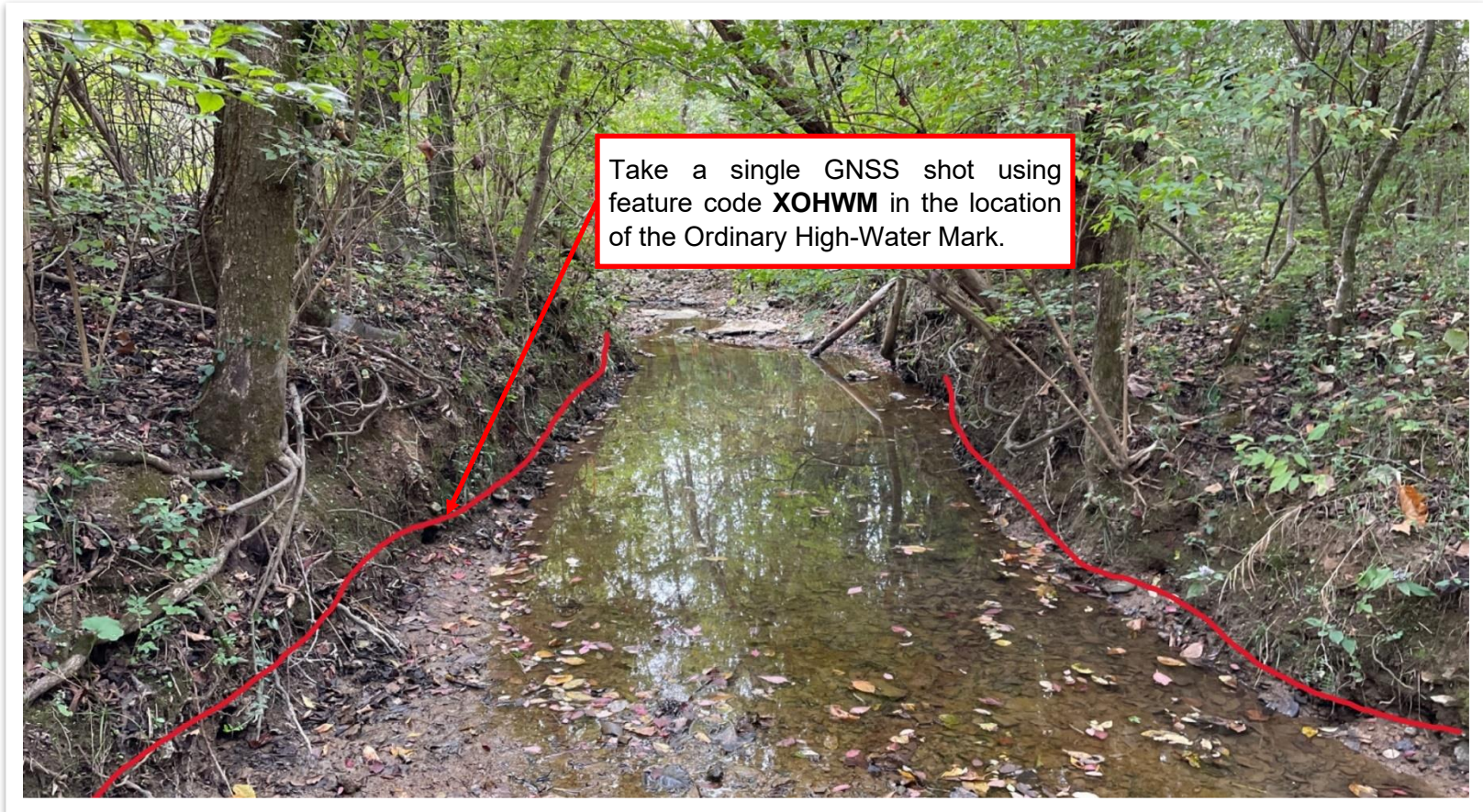
**Example Photo 9**

- **XCAV\*\*** – Cave



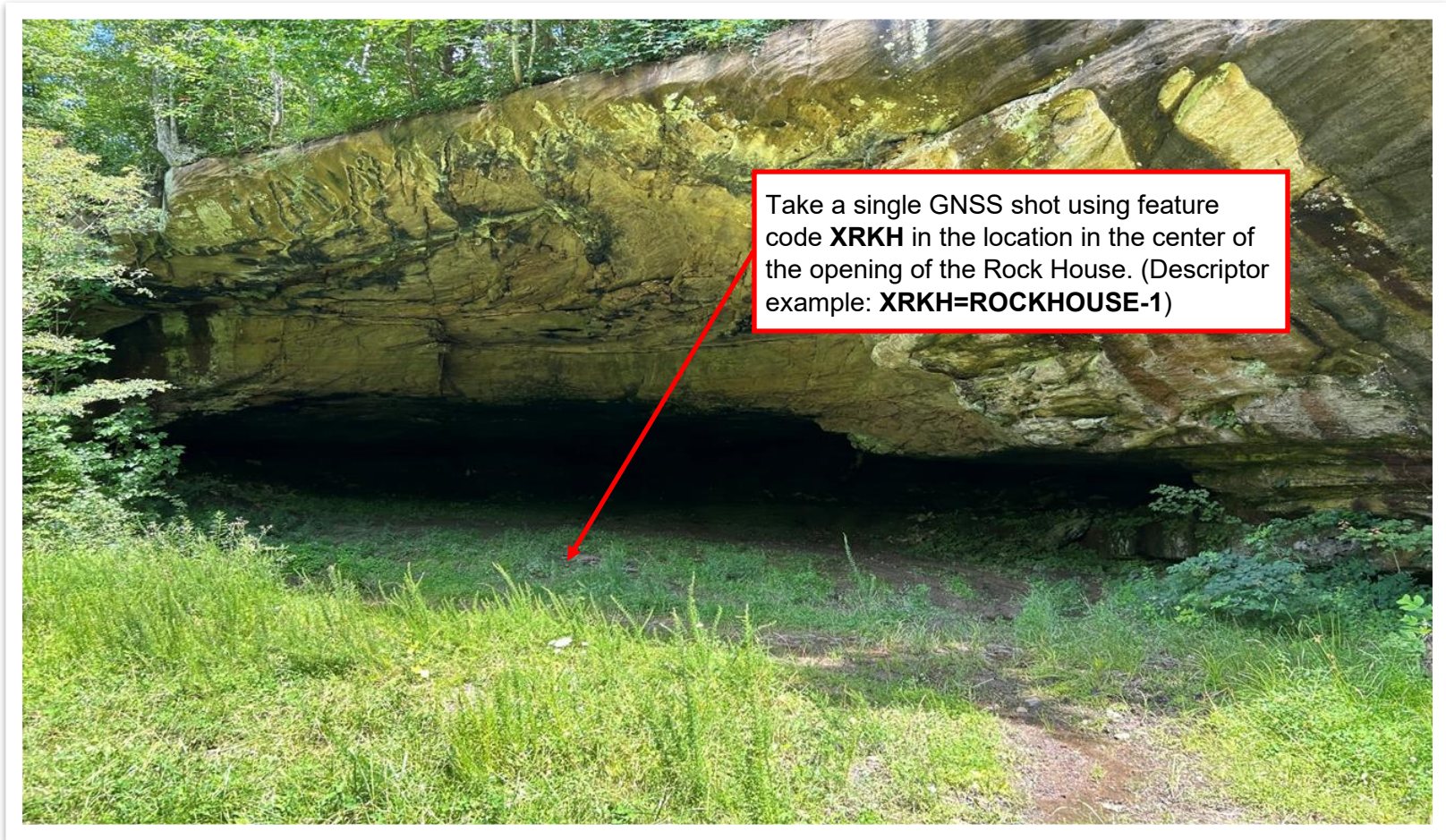
**Example Photo 10**

- **XOHWM** – Ordinary High-Water Mark



**Example Photo 11**

- **XRKH\*\*** – Rock House



Take a single GNSS shot using feature code **XRKH** in the location in the center of the opening of the Rock House. (Descriptor example: **XRKH=ROCKHOUSE-1**)

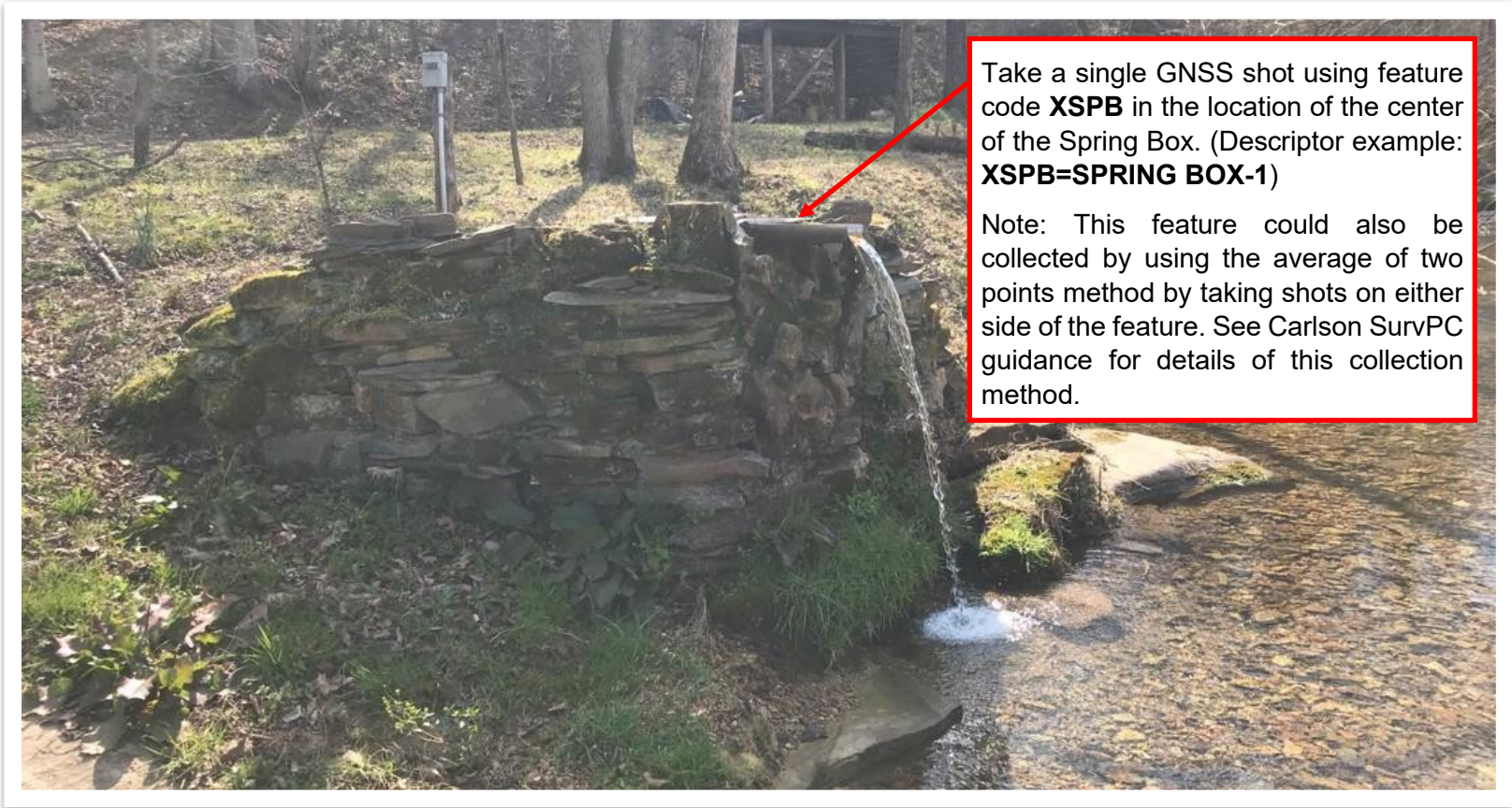
**Example Photo 12**

- **XSEEP\*\*** – Seep



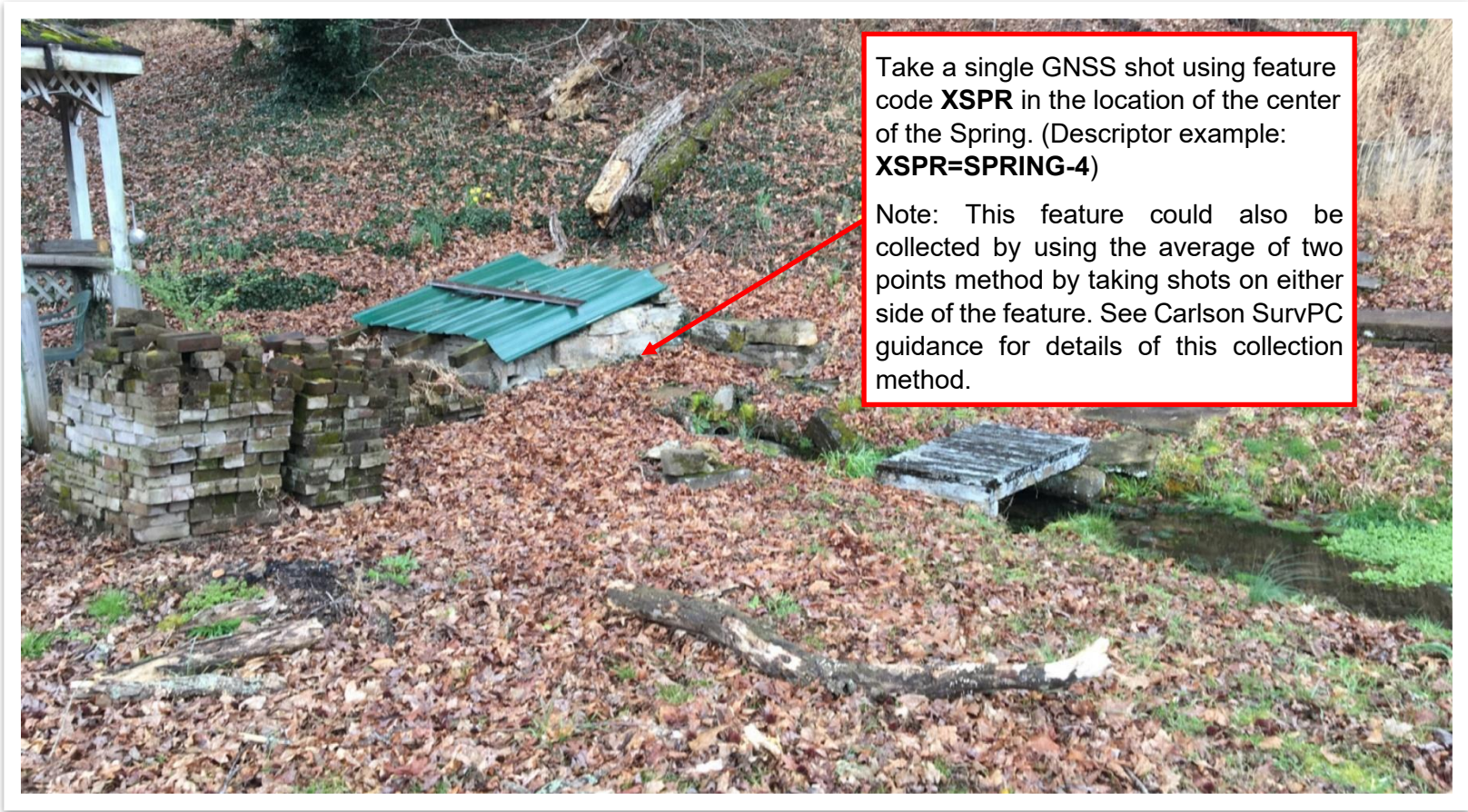
**Example Photo 13**

- **XSPB\*\*** – Spring Box



**Example Photo 14**

- **XSPR\*\*** – Spring

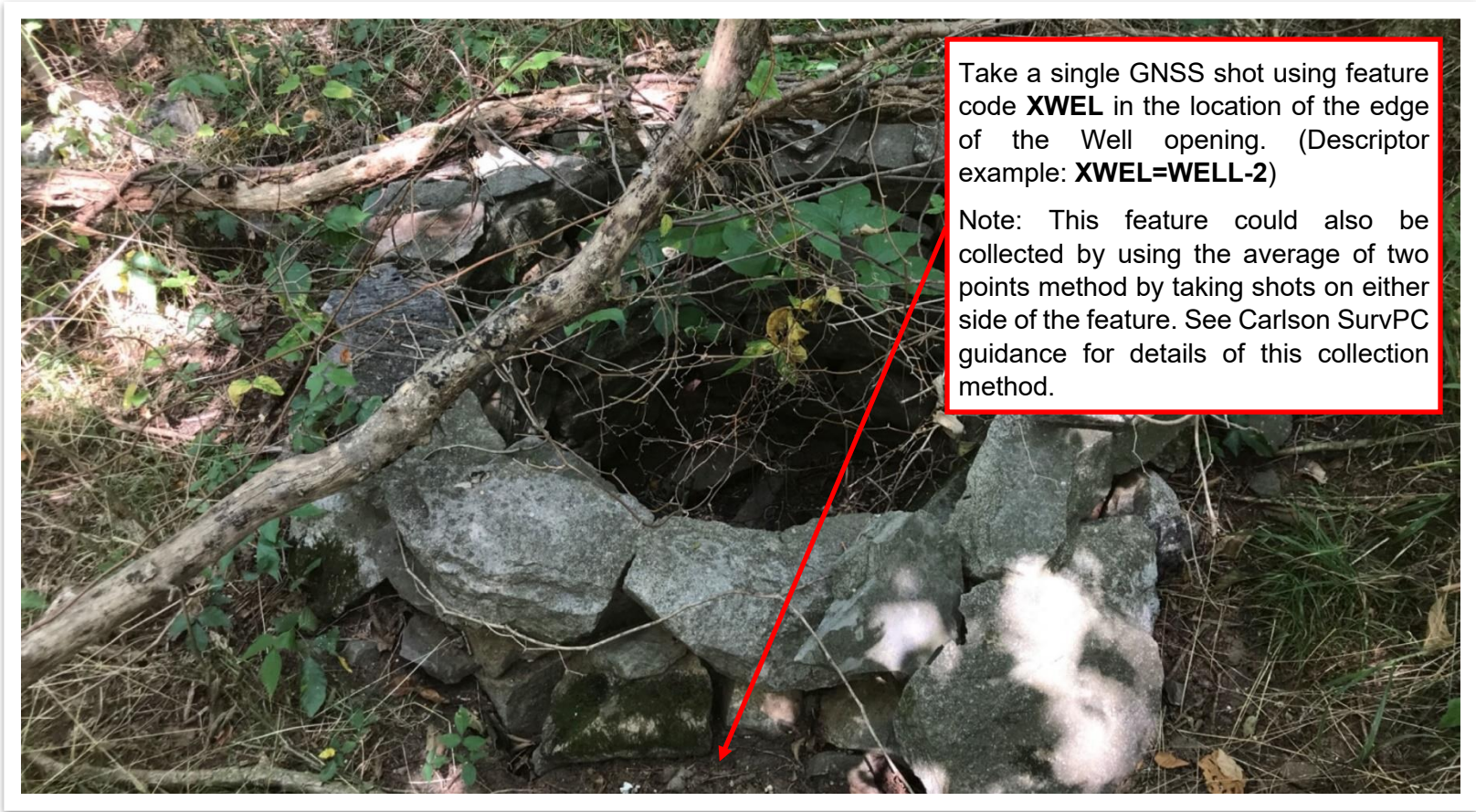


Take a single GNSS shot using feature code **XSPR** in the location of the center of the Spring. (Descriptor example: **XSPR=SPRING-4**)

Note: This feature could also be collected by using the average of two points method by taking shots on either side of the feature. See Carlson SurvPC guidance for details of this collection method.

**Example Photo 15**

- **XWEL\*\*** – Well



Take a single GNSS shot using feature code **XWEL** in the location of the edge of the Well opening. (Descriptor example: **XWEL=WELL-2**)

Note: This feature could also be collected by using the average of two points method by taking shots on either side of the feature. See Carlson SurvPC guidance for details of this collection method.

**Example Photo 16**

- **XWFL\*\*** – Waterfall

