Attachment A Page 1





	NO SCALE
	DRAWING INDEX
SHEET NO.	DRAWING TITLE
1 OF 7	VICINITY MAP, SITE PLAN AND DRAWING INDEX
2 OF 7	EXISTING SITE, ALIGNMENT & SECTION LINE SAMPLING LOCATIONS
3 OF 7	EXISTING SITE PHOTOS
4 OF 7	EXISTING & PROPOSED ALIGNMENT PROFILE DETAILS
5 OF 7	EXISTING SITE SECTION LINE DETAILS
6 OF 7	PROPOSED SITE SECTION LINE DETAILS AT DAM
7 OF 7	MILL RACE GRADE CONTROL & EROSION CONTROL DETAILS
8 OF X	PLAN DETAILS
9 OF X	PLAN DETAILS
10 OF X	PLAN DETAILS
11 OF X	PLAN DETAILS
12 OF X	PLAN DETAILS
13 OF X	PLAN DETAILS
14 OF X	PLAN DETAILS

Do Sheets 8 thru 14 of Plan Details exist? If yes, may we have copies?



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This report was designed & drawn by W Stancill and checked by W Rice in a date that appears to be April 2016. We know from the TCEQ Information Sheet filed May 3, 2016 (see left) that Wayne Stancill is an 1) employee of/contractor to USFWS; and 2) lives in South Dakota. Why is a Pierre, South Dakota-based USFWS engineer being used on a Central Texas river? Does USFWS not employee a single engineer within Texas?

101 266

U.S. FISH & WILDLIFE SERVICE SAN MARCOS, TEXAS

CAPES DAM-BREACH & CHANNEL RESTORATION



Figure 1a. Project Area Map (above) as depicted in US Fish & Wildlife Service (USFWS) report dated April 2016.

This USFWS report was presented to 1) San Marcos Mayor & City Council on Aug 16, 2016; 2) Texas Parks and Wildlife Department (TPWD) as part of their Sand and Gravel Permit – filed on May 18, 2016 in order to remove Capes Dam; and 3) Texas Commission on Environmental Quality (TCEQ) filed on May 3, 2016 as part of the statutory requirements of Texas Administrative Code, Chapter 299, Dams and Reservoirs.

This project aerial photograph is deficient because 1) Mis-identifies the location of Capes Dam, the subject of the report, as being directly next to I-35; 2) is taken at such a high elevation that it doesn't show any detail; and 3) is mis-appropriately named "Capes Dam-Breach & Channel Restoration." This report is about *removing* Capes Dam, not channel restoration. The channel will be highly-disturbed, and not restored, for many years after, if Capes Dam is removed.



Figure 1b. Project Area Map (above) as depicted from Google Earth image, 12/16/2015.

This project aerial photograph remedies the deficiencies shown in Fig 1a -- 1) Capes Dam, the subject of the report, is correctly located; 2) Base photo image is taken at 4950' above ground, as well as offering two inset photos taken at 830' above ground. The photo inset (lower right) provides measurements for the three main lateral parts of Capes Dam, measuring from North to South: 72 ft in linear length, 54 ft, and 42 ft, <u>for Capes Dam having a total documented measured</u> <u>length of 168 feet</u>.

Capes Dam Measurements

Attachment A Page 4

Capes Dam was measured by Ben Kvanli and crew on Tuesday, August 16, 2016 at 3pm. From North to South, 3 segments were measured: 72 ft + 54 ft + 42 ft = $\frac{168 \text{ feet-Length of Capes Dam}}{168 \text{ feet-Length of Capes Dam}}$





EXISTING SITE

NOTES

ALL ELEVATIONS ARE REPORTED AS FEET TIED TO NGVD 88 DATUM.

DAM

1. DAM ELEVATION ~ 552.0 +/- 1' WITH PARTIAL BREACHES EVIDENT DUE TO PARTIAL FAILURE DURING FLOOD.

MILLRACE

- 1. MILLRACE WIDTH AT CONCRETE HEADWORKS ~ 20'
- 2. MILLRACE SILL-ELEVATION: 549.0 +/- 1'.

BENCH MARK

- 1. SEE EXISTING SITE PHOTOS
- 2. BM ELEVATION: 554.4' VD88

ALIGNMENT

1. ALIGNMENT ORIENTATED AT THE APPROXIMATE CHANNEL CENTERLINE LOCATION.

- 2. ALIGNMENT RUNS FROM STATION 0 + 00 (UPSTREAM LOCATION) TO
- 1 + 20 (DOWNSTREAM LOCATION).

3. ALIGNMENT SAMPLE POINTS ARE LOCATED AT P.I. POINTS AND DISPLAYED ON SHEET 4.

SECTION SAMPLE LINES

1. SECTION LINES WERE SAMPLED AT THREE LOCATIONS ALONG THE ALIGNMENT: UPSTREAM (0 + 12.30), CAPES DAM (0 + 73.38) AND DOWNSTREAM (1 + 17.38).

2. SECTION LINES ARE DISPLAYED ON SHEETS 5 & 6.

Use of outdated photograph; This area now occupied by 24-acre apartment complex with an estimated 80-90% impervious cover, all of which drains its rainwater run-off directly into the San Marcos River (2 drains) or the Mill Race (3 drains.)

SAN MARCO CAPES DAM CHANNEL R	-BREACH &	XISTING SECTION LI	SITE AL INE SAMPL	IGNMENT &	SUB-SHEET
DESIGNED	DRAWN	CHECKED	DATE	DRAWING NO.	SHEET

Photos are they appear in USFWS' April 2016 report

Attachment A Page 6

This page commented upon by Ben Kvanli, 16 year adjacent property owner to Capes Dam, former Olympian kayaker & owner-operator of a kayak school who paddles the river daily.



CAPES DAM, \sim 300 CFS, VIEW ACROSS DAM FROM MILLRACE INLET See pages 7-9 of this report for documented photos of 266 CFS, 630 CFS, and 400 CFS.



CAPES DAM, ~ 600 CFS, VIEW ACROSS DAM FROM MILLRACE INLET

These photos are dated April 2016 (see legend below); there was no recorded 600 cfs flow in April 2016.



MILLRACE INLET, VIEW DOWNSTREAM TO UPSTREAM The pediments of what once was the Mill Race headgate only begin to be visible when water discharge falls below approx. 280 cfs.



CAPES DAM, ~ 600 CFS, VIEW DOWNSTREAM TO UPSTREAM

If this were 600 cfs, the water would be much higher, covering the concrete apron on the north side of Thompson's Island. See pages 7-9 of this report for documented photos of 266 CFS, 630 CFS, and 400 CFS.



MILLRACE BENCH MARK CLOSEUP





MILLRACE ENTRANCE, VIEW LEFT BANK TO RIGHT BANK

SAN MARCO	DS, TEXAS	S	EXISTING SITE PHOTOS		
DESIGNED	DRAWN	CHECKED	DATE	DRAWING NO.	SHEET
W. STANCILL	W. STANCILL	W. RICE	4/2016	6R-TX-2016-002	3 OF 7

Photos of Capes Dam on Sept 18, 2016 USGS 08170500 San Marcos Rv at San Marcos, TX

USGS 08170500 San Marcos RV at San Marcos, TX



All photos taken when USGS measured discharge was 266 cfs



Contrast these photos with known measured CFS to undated photos in USFWS April 2016 report on the removal of Capes Dam entitled "Capes Dam-Breach & Channel Restoration" The vastly *over-estimated flow-rates* on the undated photos of the USFWS are incorrectly displayed on the order of 100-300 cfs.

Photos taken Monday, Sept 26, 2016 10:30am at 630 CFS

Photo taken 8/16/2016 at 280 CFS



Discharge, cubic feet per second

Most recent instantaneous value: 260 09-28-2016 11:45 CDT

3000 puc 2000 sec a 1000 feet 800 Photos taken 2016-600 09-26 at 630 CFS Photos taken 2016cubic 09-27 at 400 CFS 400 Discharge, 200 100 00:00 12:00 88:88 12:00 00:00 12:00 00:00 12:00 00:00 Sep 25 Sep 25 Sep 26 Sep 26 Sep 27 Sep 27 Sep 28 Sep 28 Sep 25 2016 2016 2016 2016 2016 2016 2016 2016 2016

USGS 08170500 San Marcos Rv at San Marcos, TX



Photo taken 9/18/2016 at 266 CFS

Attachment A Page 8

Monday Sept 26, 2016 10:30am at 630 CFS

Concrete pad covering Capes Dam which is visible in above photo is completely submerged at 600+ CFS

🛆 Median daily statistic (21 years) — Discharge

Photos taken Tuesday, Sept 27, 2016 1:00pm at 400 CFS

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Discharge, cubic feet per second

Most recent instantaneous value: 260 09-28-2016 11:45 CDT



USGS 08170500 San Marcos Rv at San Marcos, TX

🛆 Median daily statistic (21 years) — Discharge



Attachment A Page 10



Existing & Proposed Alignment Profile Details commentary

Because this Engineer's Drawing <u>lacks</u> a **Horizontal Scale**, no measurements can be made of the amount of sediment that will either 1) be removed and should be included in both TCEQ Info Sheet for Dam Removal and TPWD Sand and Gravel permits; **OR** 2) be removed by the river over time, and be sent downstream, greatly increasing sedimentation rates downstream from what once was Capes Dam.

This 3D volume of sediment taken away "Post Dam-Removal" must be able to be measured, quantified, and correctly described before any action to remove Capes Dam can occur.



Existing Site Section Line Details as appearing in USFWS' April 2016 report



Attachment A

Existing Site Section Line Details commentary





None of these drawings have a horizontal scale so measurements of the areas (2D) and volumes (3D) are not possible. Is this typical of the quality of work done by engineers employed or contracted to USFWS? The entire point of engineers' drawings are to have a certified measurements of physical structures. But when an organization assigns work to an engineer located over 1,000 miles away from the subject of his drawings, accuracy and useful data can be lacking.

8

Proposed Site, Section Line Details at Dam as appearing in USFWS' April 2016 report



Proposed Site, Section Line Details at Dam commentary

HEET



Question: What is being planned for the rainwater run-off drainage sewer pipes that drain the adjacent 24-acre apartment complex (which was omitted from these plans) of all rain-water? Three of these 5 drains empty into the Millrace. What will happen after the Millrace no longer receives fresh flows of water, and instead becomes a stagnant, Zika-mosquito-filled swamp? When it rains, and the 3 rainwater runoff sewage pipes dump their polluted water directly into the area formerly occupied by the Millrace, have any flood-studies been completed to show the effect on the now-damned Millrace?

"4. Excavated material deposited into the Millrace will be no larger than 8 cubic ft" Question: Will individual boulders be no larger than 8 cubic ft (which can be approximated by a 2 foot-square cube)? What if individual boulders are larger than 8 cubic feet? Where will these larger boulders be deposited?

"5. Rebar will not be removed from excavated material deposited in the Mill race." Question: Will concrete be removed from excavated material? Or will all materials, whether natural or man-made iron & concrete, be desposited into the natural-bank Millrace?

PROPOSED SITE		CAPES DAM-BREACH ASECTION LINE DETAILS AT DAM					
	DESIGNED W. STANCILL	DRAWN W. STANCILL	CHECKED W. RICE	DATE 4/2016	DRAWING NO. 6R-TX-2016-002	SHEET 6 OF 7	



ESIGNED DRAWN CHECKED DATE DRAWING NO. SHEET 7. STANCILL W. STANCILL W. RICE 4/2016 6R-TX-2016-002 7 0F 7