

How to drain a 22 million gallon lake for a highway project.

“The Natcher Parkway Extension”

District 3 Bowling Green
Warren County
Item No. 3-53.00

Purpose & Need



Alleviate congestion on US 231 (Scottsville Road) by providing better and safer access to southeastern Warren County and beyond.

Enhance the Level of Service (LOS) of US 231 (Scottsville Road), per *1993 US 231 Corridor Study*.

“20% of existing traffic at US 231 was bound for points south of Bowling Green, including Scottsville and Allen County.”



- US 231: 15,400 vpd (2004)
- Interstate 65: 60,800 vpd (2007)
- Natcher Pkwy: 18,000 vpd (2027)

Relief Valve

Quick Facts



- Natcher Parkway extended south of Interstate 65 to US 231
- 2.125 mile extension
- Reconstructed interchange at I-65, new interchange at KY 622
- EA/FONSI
- Rural Arterial classification
- 70 mph design speed
- 27 parcels, 6 utility companies
- Prime Design Consultant
- KYTC Project Manager, Jim Hudson, P.E.



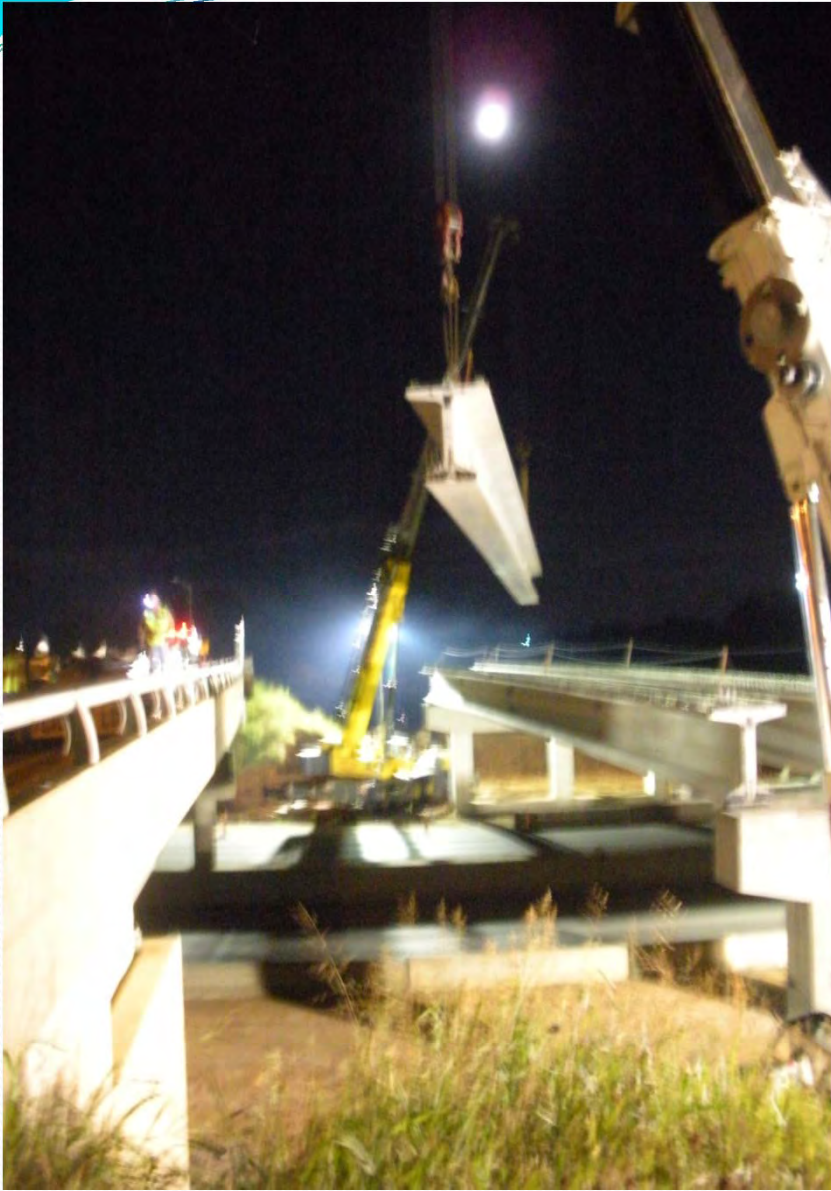
Authorized Funds

Phase	Year		Amount
Design	1996	NH	\$ 2,790,000
Right of Way	2004	NH	\$ 5,300,000
Utilities	2004	NH	\$ 2,340,000
Construction*	2009	STP	\$ 32,243,548
Total			\$ 42,673,548

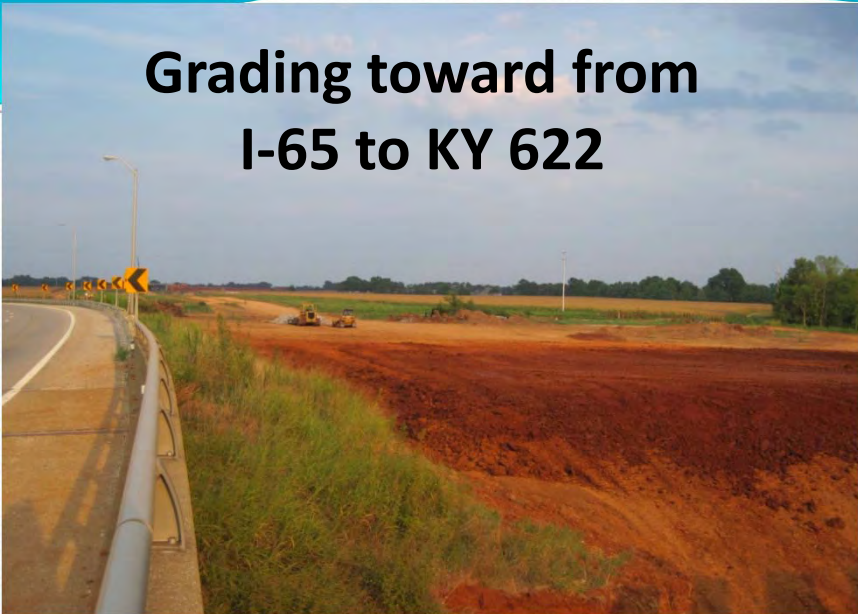
*Grade, Drain, & Incidental Surfacing Let Nov. 20, 2009
Surfacing Letting scheduled for April 2010; Estimated \$12m-\$14m

Construction Progress

Fixed Completion Date: Aug. 1, 2011



**Grading toward from
I-65 to KY 622**



Prime Contractor
Scotty's Contracting & Stone



Ramp 5 paving

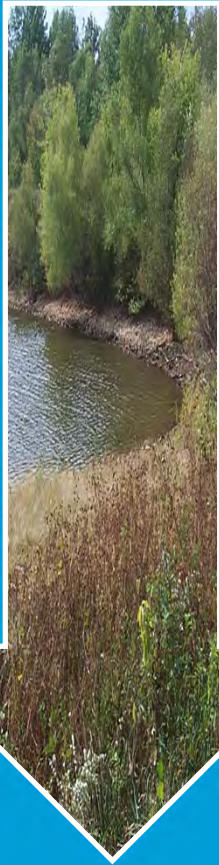


S.P.U.I. at KY 622 08/04/2010

Dewey Lake

- 15 acre lake
- 22 million gallons of water
- Dam was classified a Moderate B Hazard
- Built in 1960's

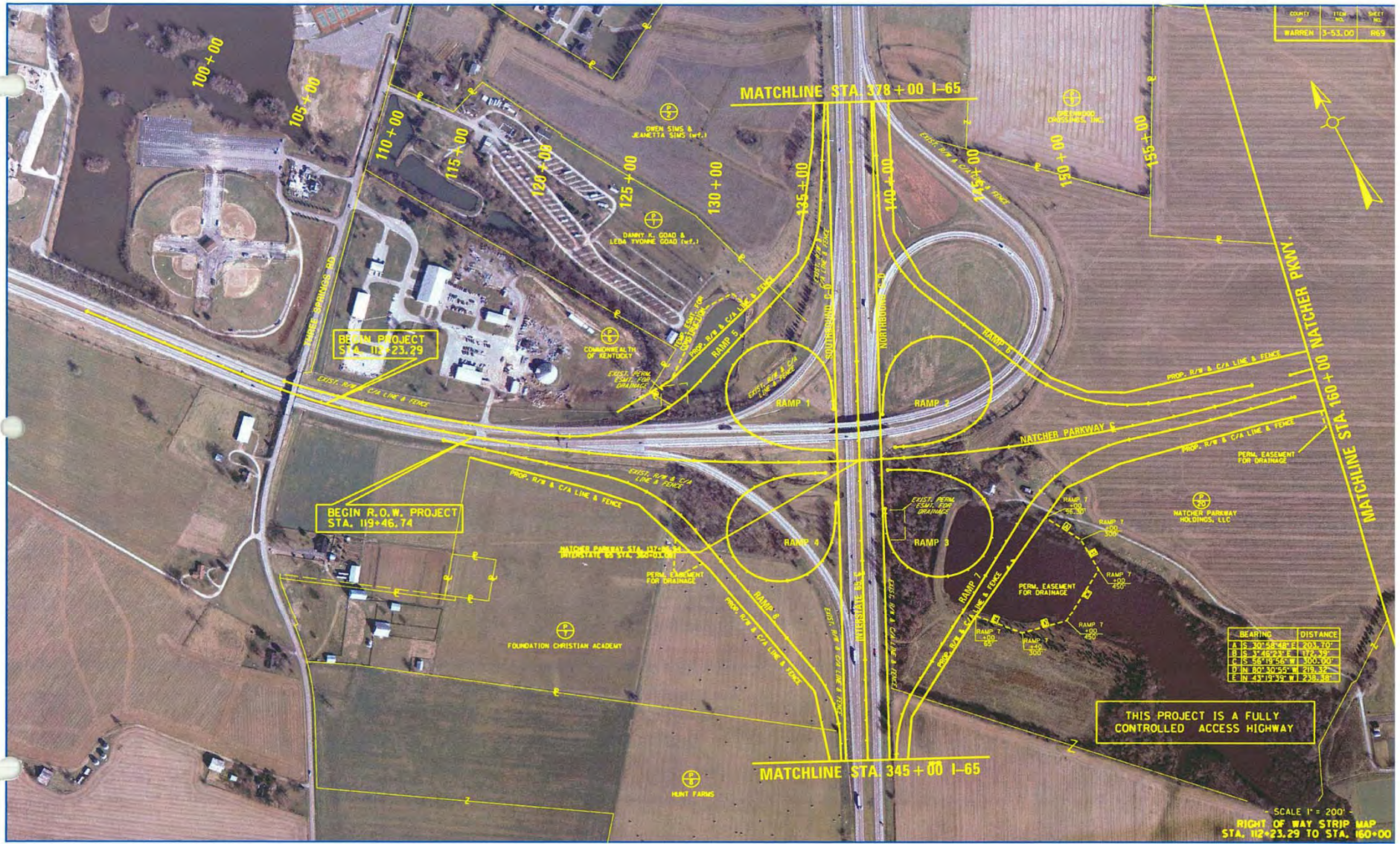




Why Drain the Lake?

- AT&T fiber optic line needed to be relocated in this area.
- I-65 Ramps 3 and 7 cross thru Dewey Lake and Dam.

COUNTY	ITEM	SHEET
WARREN	3-53.00	169



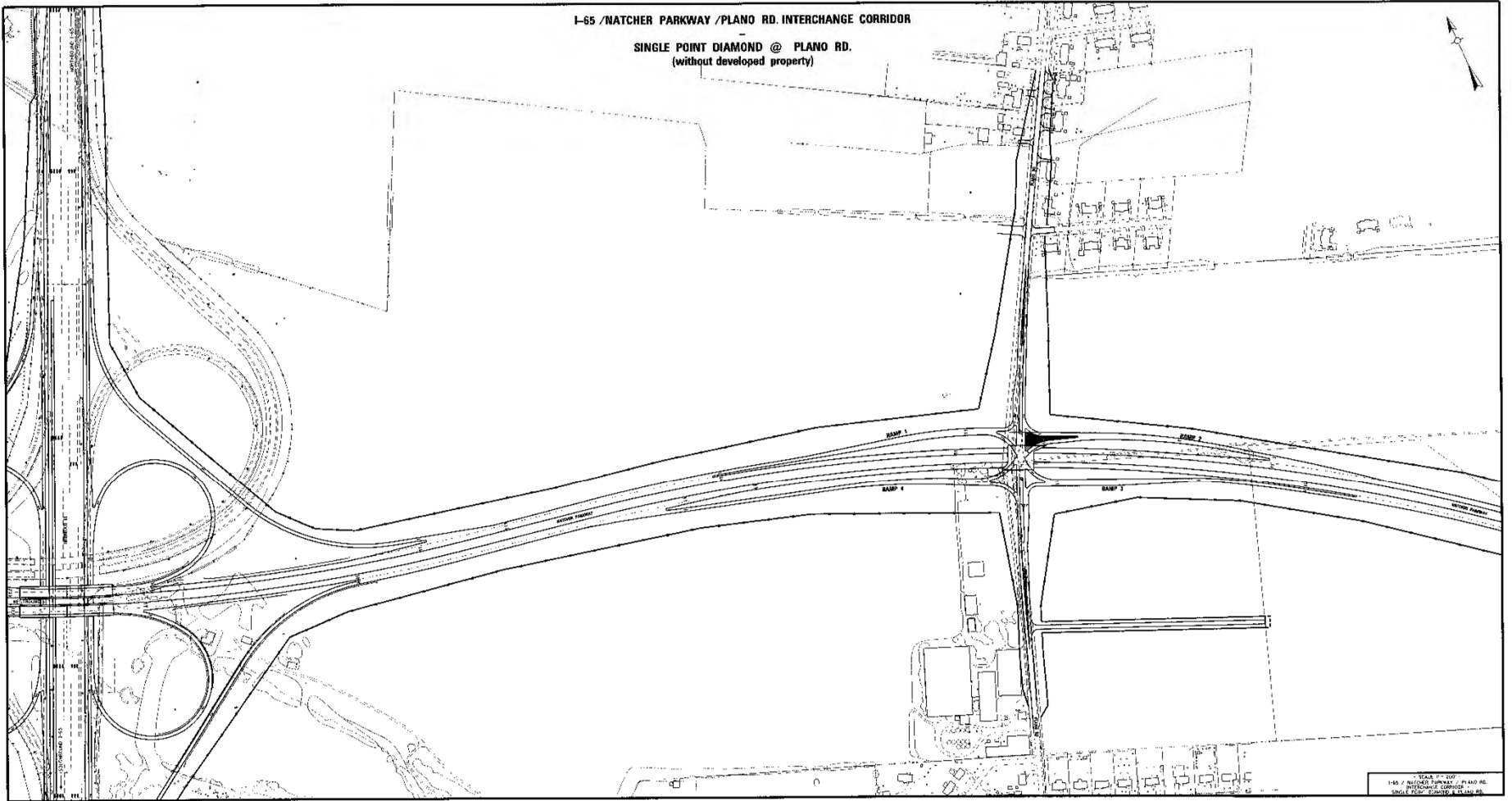
BEARING	DISTANCE
A IS 30°58'48" E	203.70'
B IS 47°15'33" E	172.35'
C IS 87°41'42" E	300.00'
D IS 80°30'55" E	219.37'
E IS 43°13'35" W	239.48'

THIS PROJECT IS A FULLY CONTROLLED ACCESS HIGHWAY

SCALE 1" = 200'
 RIGHT OF WAY STRIP MAP
 STA. 112+23.29 TO STA. 160+00

I-65 / MATCHER PARKWAY / PLANO RD. INTERCHANGE CORRIDOR

SINGLE POINT DIAMOND @ PLANO RD.
(without developed property)



SCALE: 1" = 40'

SCALE: 1" = 20'
142 / MATCHER PARKWAY / PLANO RD.
INTERCHANGE CORRIDOR
ENCL. 2 - PLAN - 04/10/08



Coordinating Challenge

- What impacts are there associated with draining the lake?
- Where does the water flow?
- How do we pay for draining Dewey Lake?
- Who will drain the lake?



Impacts

- Impacts to Gray and Indiana Bat Habitat.
- Fish
- Three Springs Lake.

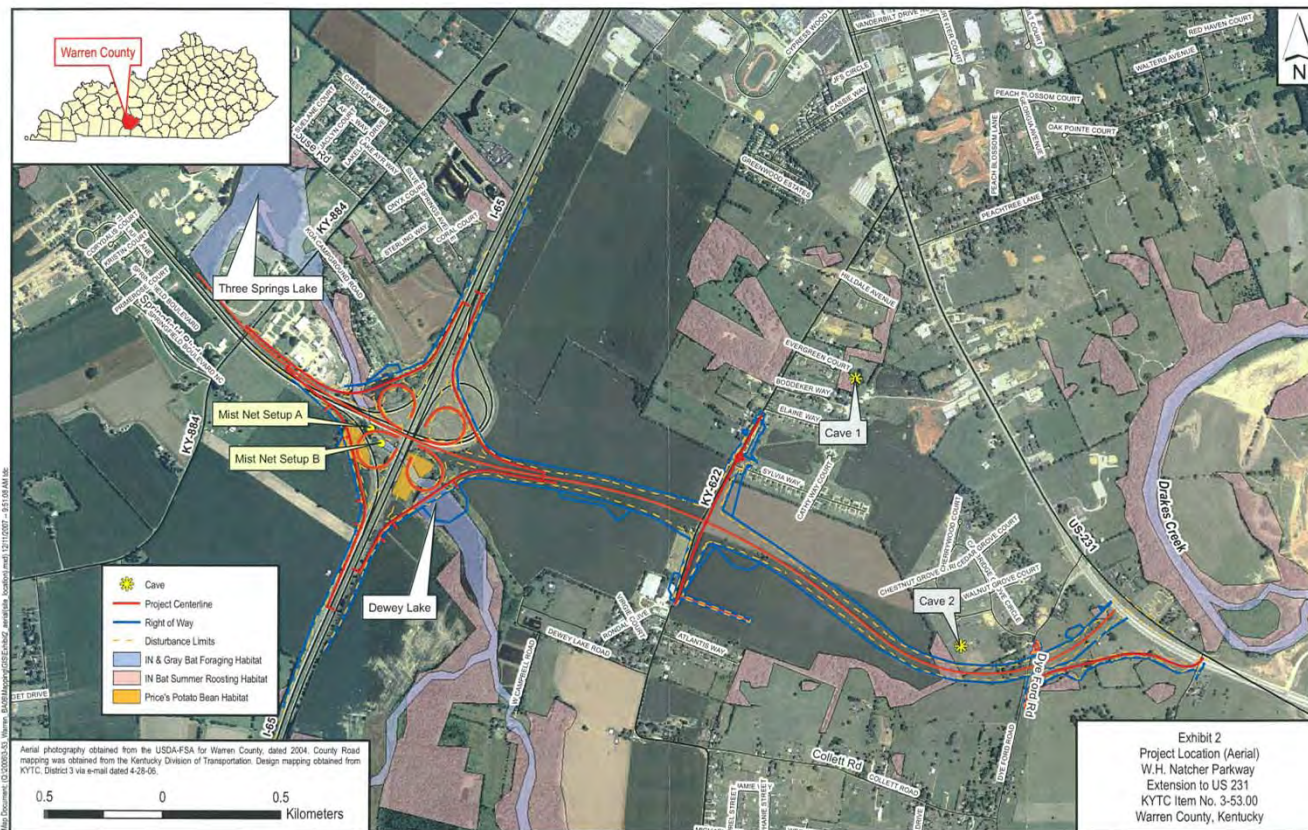
Gray Bat



Indiana Bat



Bat Foraging and Roosting Habitat



Bat Foraging Habitat Dewey Lake



Where does the water go?



Sampling Sites

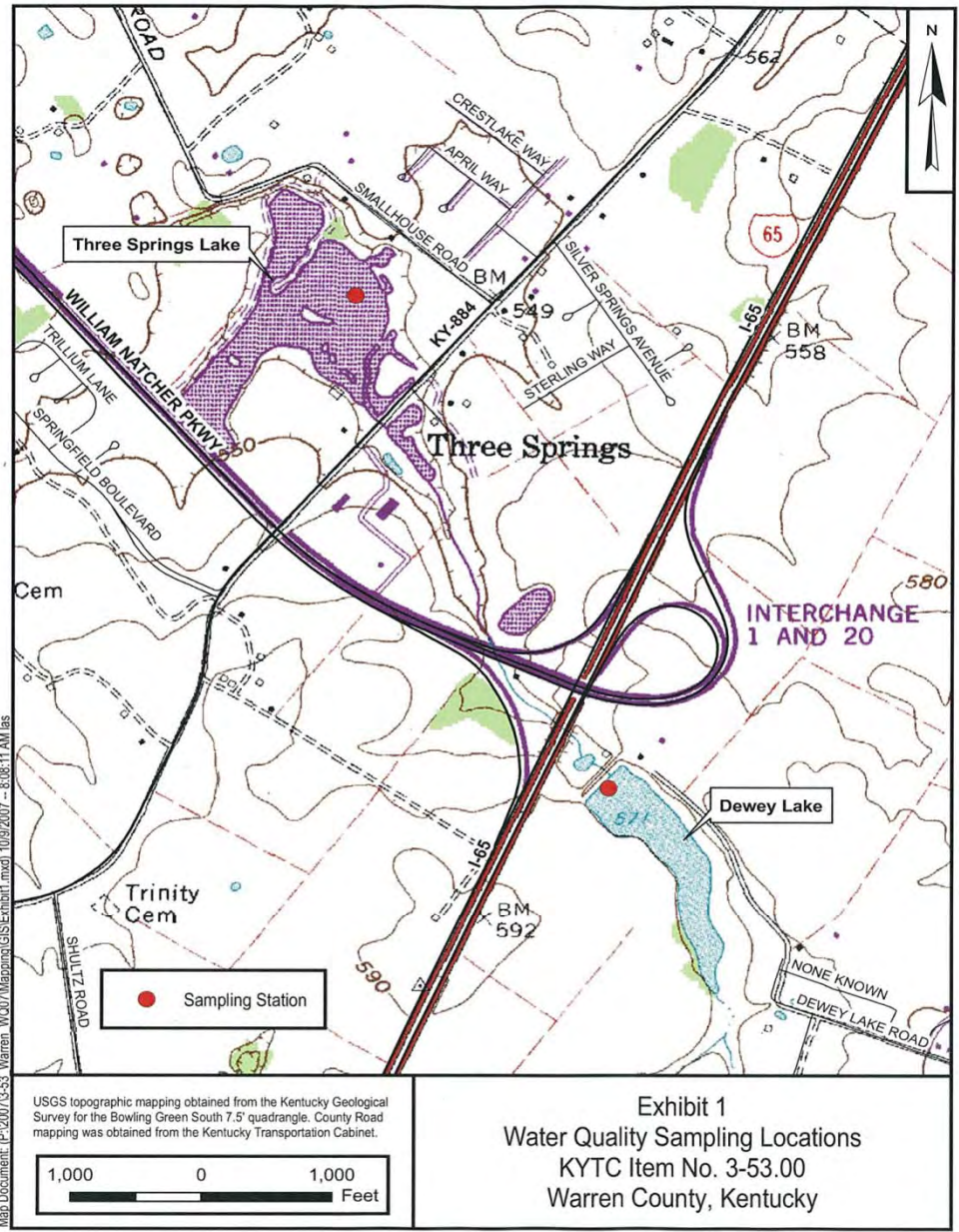


Table 1. Three Springs Lake Vertical Profile Measurements (9/25/07 1300)

Depth (ft)	Dissolved Oxygen (mg/L)	PH (Standard Units)	Specific Conductance (μS/cm)	Turbidity (NTU)	Temperature (F)
Surface	7.2	7.7	351	13.7	85.1
1	7.1	7.7	351	14.0	85.1
2	7.1	7.7	351	20.7	84.9
3	5.8	7.6	350	21.8	83.6
4	4.5	7.6	352	21.5	80.6
5	3.6	7.5	353	22.5	80.2

Table 2. Dewey Lake Vertical Profile Measurements (9/25/07 1700)

Depth (ft)	Dissolved Oxygen (mg/L)	PH (Standard Units)	Specific Conductance (μS/cm)	Turbidity (NTU)	Temperature (F)
Surface	13.6	9.4	101	24.0	85.9
1	13.3	9.5	100	26.6	85.5
2	12.9	9.4	99.5	29.2	84.7
3	11.8	9.2	95.6	26.3	78.8
4	5.8	8.7	94.1	24.2	76.1
5	1.5	8.3	93.3	21.8	74.8
6	0.5	7.9	107	14.1	73.6
7	0.4	7.7	132	10.5	71.8
8	0.3	7.4	191	11.7	69.9
9	0.3	7.3	252	12.1	68.6
10	0.3	7.2	396	17.1	66.0
10.5	0.3	7.2	400	18.1	65.7

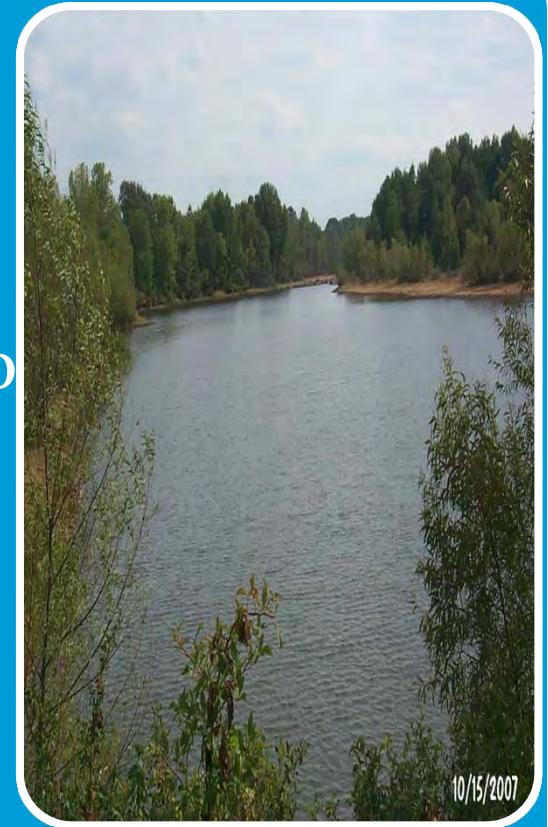
Solutions



- Contacted Kentucky Fish and Wildlife Bowling Green Office to relocate fish.
- KY Division of Water ask we lower the water slowly to avoid water quality impacts that would lead to violations.
- The contract specified the Lake had to be drained between December 1st and end of February.
- ROW funds were used to pay for the cost of draining Dewey Lake because utilities were involved.
- We hired a contractor thru the ROW Property Management Process of Solicitation for Removal of Improvements Process.

Timeline

- October 2007 dewatering management assigned to District 3.
- December 2008 contract awarded to Scotty's Contracting to drain the lake.
- February 2009 Lake was drained.



In the beginning...



10/15/2007







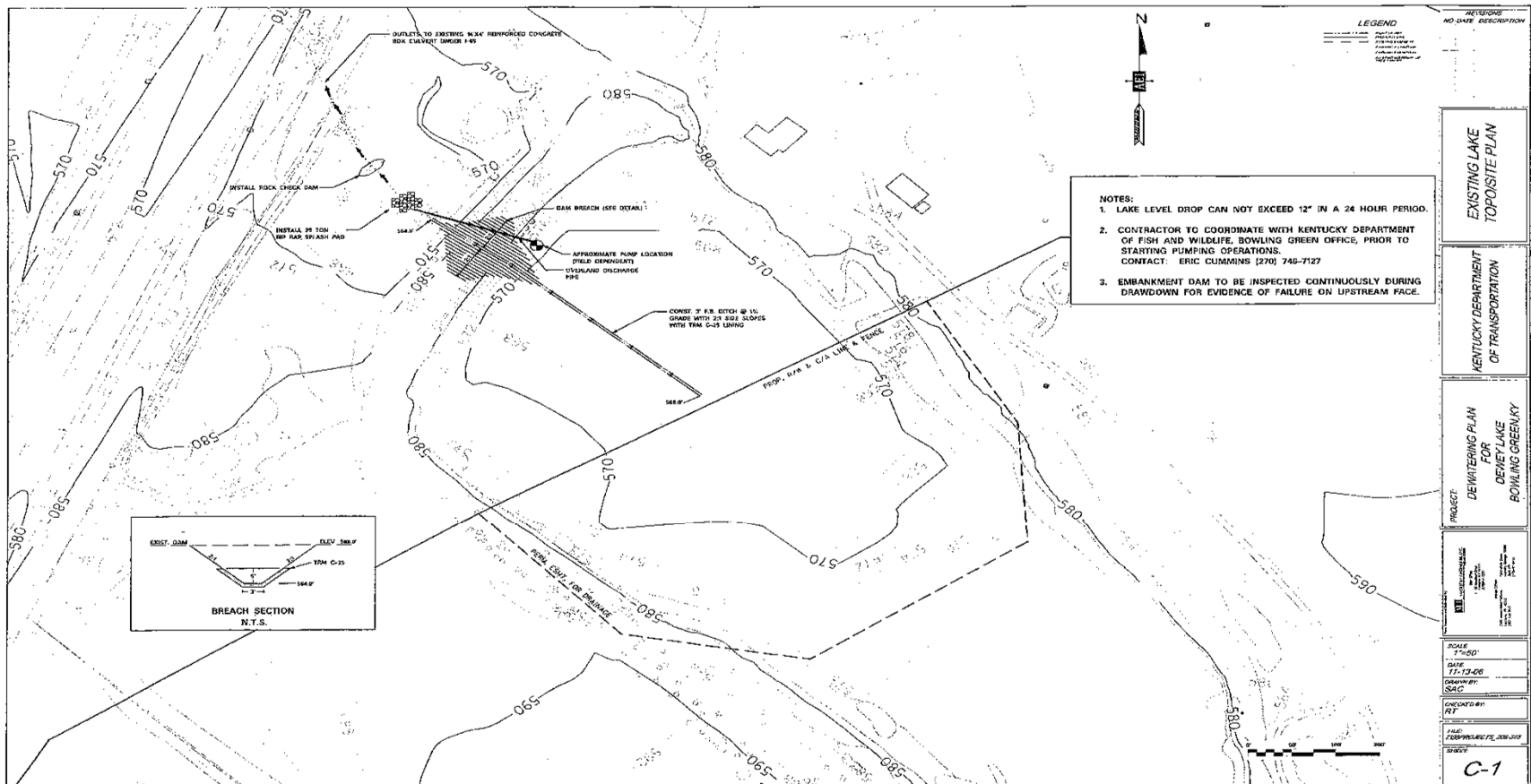




Lost River Cave



Dewatering Plan





1/26/2009



1/8/2009







The End is Near



The Great Flood of 2009





1/30/2009







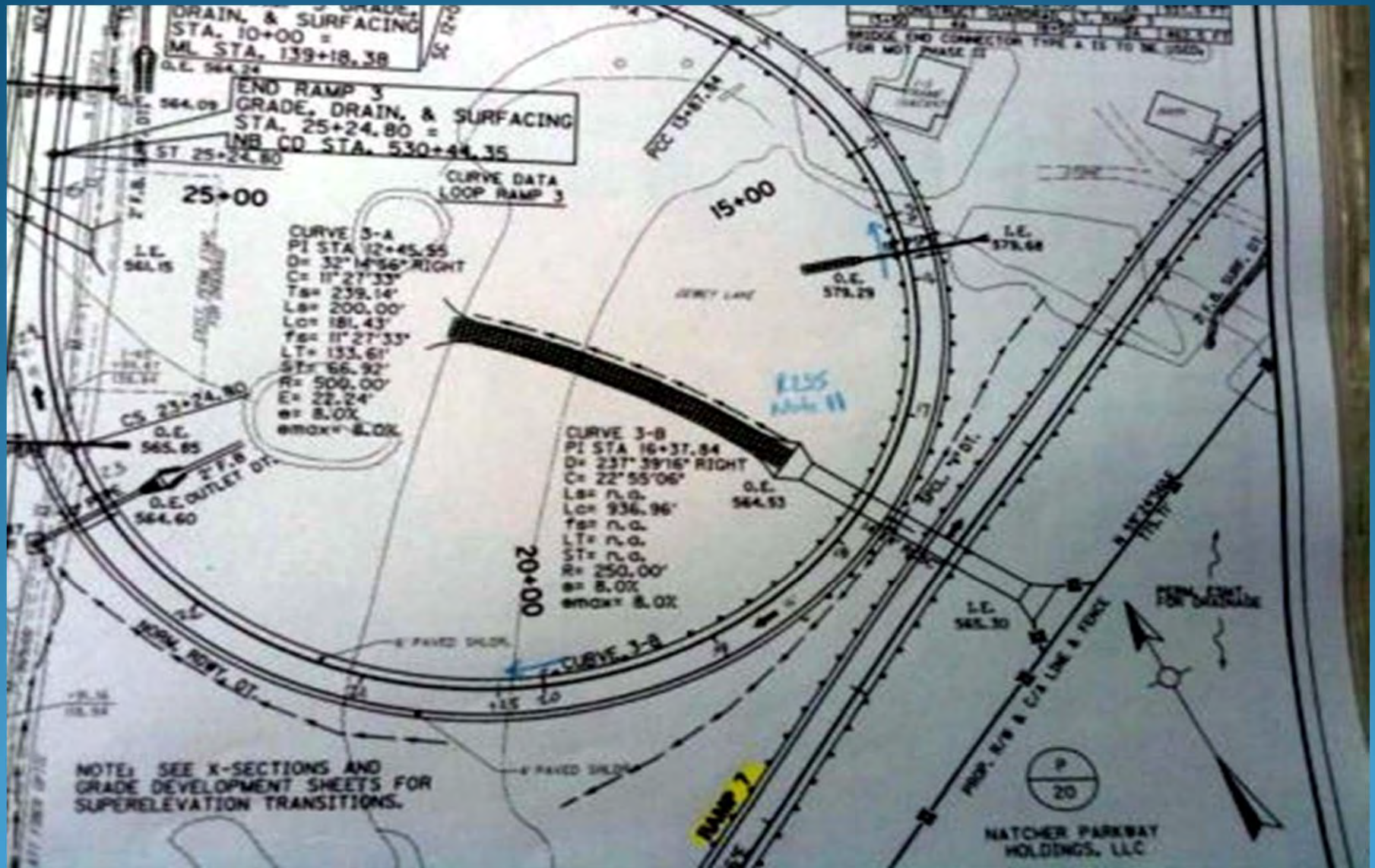
Breaching the Dam















*Renee Slaughter, D-3 Environmental Coordinator
Allen Arnold, D-3 Right of Way Unit Leader
Joe Plunk, D-3 Project Development*



*August 11, 2010
2010 Partnering Conference
Louisville, Kentucky*