

**FOX ISLAND DIVISION
INSPECTION OF COMPLETED WORKS
2020**

I. PROJECT

Fox Island Division Habitat Rehabilitation and Enhancement Project (HREP)

II. AUTHORITY

Upper Mississippi River Restoration (UMRR) Program

III. LOCATION

Pool 20, Upper Mississippi River, Miles 353.6 – 358.5, Clark, Missouri

IV. PREVIOUS REPORTS

Reports listed below are posted at this website:

<https://www.mvr.usace.army.mil/Missions/Environmental-Protection-and-Restoration/Upper-Mississippi-River-Restoration/Habitat-Restoration/Rock-Island-District/Fox-Island/>

U.S. Army Corps of Engineers, Rock Island District, Upper Mississippi River System, Habitat Rehabilitation and Enhancement Program, Definite Project Report with Integrated Environmental Assessment, Fox Island Division Habitat Rehabilitation and Enhancement, February 2008.

U.S. Army Corps of Engineers, Rock Island District Upper Mississippi River System , Operation and Maintenance Manual, Fox Island Division, March 2016.

U.S. Army Corps of Engineers, Rock Island District, Upper Mississippi River System, Habitat Rehabilitation and Enhancement Program, Post Construction Initial Performance Evaluation, June 2016.

V. PROJECT GOAL & OBJECTIVES:

The project goals and objectives were outlined in the original Definite Project Report and are summarized in Table 1 below.

Table 1: Project Goals and Objectives

Goals	Objectives	Restoration Measures
Rehabilitate and Enhance Wildlife Habitat	Increase quality and quantity of existing wetlands	Construct channels connecting discrete sloughs, ponds, & swales Install 2 high flow wells Construct water control structures
	Reduce forest fragmentation and enhance species diversity	Plant 215 acres of container grown stock Plant 60 acres of direct seeding Allow natural reforestation in low lying areas
	Restore native grassland	Seed part of Logsdon Tract with native grasses and forbs

VI. MONITORING PLAN EVALUATION CRITERIA:

Table 2 was copied from the following report: U.S. Army Corps of Engineers, Rock Island District, Upper Mississippi River System, Habitat Rehabilitation and Enhancement Program, Definite Project Report with Integrated Environmental Assessment, Fox Island Division Habitat Rehabilitation and Enhancement, February 2008.

No changes or discussion of this table was made during this site assessment.

Table 2 Performance Evaluation and Monitoring Schedule

Objective	Feature	Unit	Year 1	Year 10	Year 50 Target	Feature Measurement
Increase quality & quantity of existing wetlands	Enhance water supply, distribution, and control	Acres	78	76	70	LIDAR Pump/seep analysis Sedimentation Rate Invasive Species assessment
Reduce forest fragmentation and enhance species diversity	Tree Planting	Percent Survival	95	60	40	Tree Count/HEC-EFM Invasive Species Assessment
	Direct seed	Percent Survival	65	30	4	Tree Count/HEC-EFM Invasive Species Assessment
	Natural Reforestation	Stems/Acre	NA	75	100	Aerial photos, HEC/EFM
	Bank Protection	Recent intact riprap	98	80	0	Inspection/Surveys of RR areas

VII. SIGNIFICANT EVENTS SINCE LAST INSPECTION

Recent significant high water events since 2015 are compiled in Table 3 below. The flood stage levels expressed in Table 3 are in reference to the Mississippi River Gauge at Gregory Landing, Missouri. Flood stage at this location is 15 feet. Years not listed from 2015 to 2020 only experienced minor flooding.

Table 3: Recent Significant Events at the Site

2018	Above flood stage from 6/28 to 7/20 and 9/7 to 11/11. Highest peak reaching 27.6 ft on 6/18.
2019	Above flood stage from 2/5 to 3/2, from 3/5 to 7/12, and 9/30 to 11/2. Highest peak for the year reaching 26.97 ft on 6/2.

VIII. PROJECT SPONSOR UPDATES

There are no project sponsor updates at this time.

IX. DATE OF FIELD VISIT: July 23, 2020

X. ATTENDEES

Table 4: 2020 Site Visit Attendees

Name	Office	Title	Number
Kara Mitvalsky	USACE – Rock Island	Environmental Engineer	(309) 794-5623
Ben Vandermyde	USACE – Rock Island	Forester	(309) 794-4522
Kelsey Hoffman	USACE – Rock Island	Biologist	
Max Abbott	USACE – Rock Island	Student Intern	
Jared Nance	US FWS – Middle Mississippi River NWR	Assistant Refuge Manager	(573) 754-2431
Floyd Truetken	US FWS – Middle Mississippi River NWR	Refuge Manager	(573) 543-9279
Bruce Henry	US FWS – Middle Mississippi River NWR	Forest Ecologist	(573) 754-2566

XI. OBSERVATIONS

Access Roads

Site access to operate and maintain the project is challenging. The access road leading the project has been frequently submerged over the past several years, and no repairs to the road have been completed to improve site access. When the Mississippi River stage at Gregory Landing is above 17 feet, the access road is not passable. Despite these challenges, the site appears well maintained with little damage observed.

Streambank Stabilization

Cemented riprap holding up very well despite frequent high-water conditions.

Wells and Pumps (Wells G & H)

Performing as expected. Due to site access, it is challenging to get fuel truck and personnel to the site during high water conditions.

Diesel Engines/Trailer

Engines are functioning, but not consistently used because it is very difficult to get a trailer on site.

Water Control Structures (Stoplogs A, B, C, D, E)

Stoplog Structure A. No concerns. FWS prefers the aluminum stoplogs. Vandalism and theft are not a concern as can be noted with stoplogs remaining unsecured next to the water control structure.

Stoplog Structure B. Significant erosion noted adjacent to the structure. Prolonged erosion could create a connection between the channels and eliminate the ability for water level management in this location. Recommend that riprap be placed along this bank to match the slope on the opposite side of the structure. If trucks carrying riprap cannot access the site, at a minimum, recommend excavating the fill in the channel and placing that fill in the eroded location. Seed the fill. Note that this is a temporary fix, and erosion in the future would be expected with this temporary repair.

Stoplog Structure D. Minimal erosion noted adjacent to the structure, but the integrity of the structure was not a concern.

Fox Island Stoplog Structure (C). Fox River Structure: No concerns with the structure, however, the channel opposite the river was significantly sediment in and should be cleared out.

Channels (A, B, C, D, F)

Limited erosion noted, but channels are filling with sediment. Each culvert had noticeable sedimentation. It is recommended that these areas are excavated to maintain adequate flow through all culverts.

Ponds (Coin, Slim Slough, Old Lake)

No concerns were noted.

Containerized Tree Planting

Overcup oak, swamp white oak, pin oak, bur oak, and northern pecan were observed species surviving from the planting efforts. Green ash, eastern cottonwood, black willow, sandbar willow, boxelder, American elm, and silver maple were observed as tree species that have naturally regenerated into the planted areas. Overall, the survival rate appears to now be less than a quarter of the total trees planted; based on observing less surviving trees during this visit in comparison to what was observed during the spring of 2016, which at that time survivorship

was only 33% of total planted trees. Natural regeneration is establishing very well and capturing the planting areas at desirable densities.

Additional Comments

Diverse vegetation noted throughout, with several pollinator species observed. Very few invasive species were noted, with the exception of Yellow Sweet Clover near the pump platform, Giant Ragweed at the entrance to the project, dodder throughout the area, and a few patches of reed canary grass. Native species observed included aster, wild grape, swamp milkweed, milkweed, greenbriar, bindweed, and smartweed. Multiple butterflies and other diverse insects were noted, including monarchs.

XII. SUMMARY

Overall the Fox Island Division HREP appears to be generally meeting its goals and objectives through continued operation and maintenance by the US FWS.

XIII. RECOMMENDATIONS

- Removing sediment building around and in channel culverts.
- Place riprap near eroding berms surrounding stoplog structures B and D.

XIV. LESSONS LEARNED

Access to the site is extremely difficult. If the roads could have aggregate placed on top, or could be elevated, management of the interior would be significantly increased.

Attachment A
2020 Site Inspection Photos

PDT



Access Road

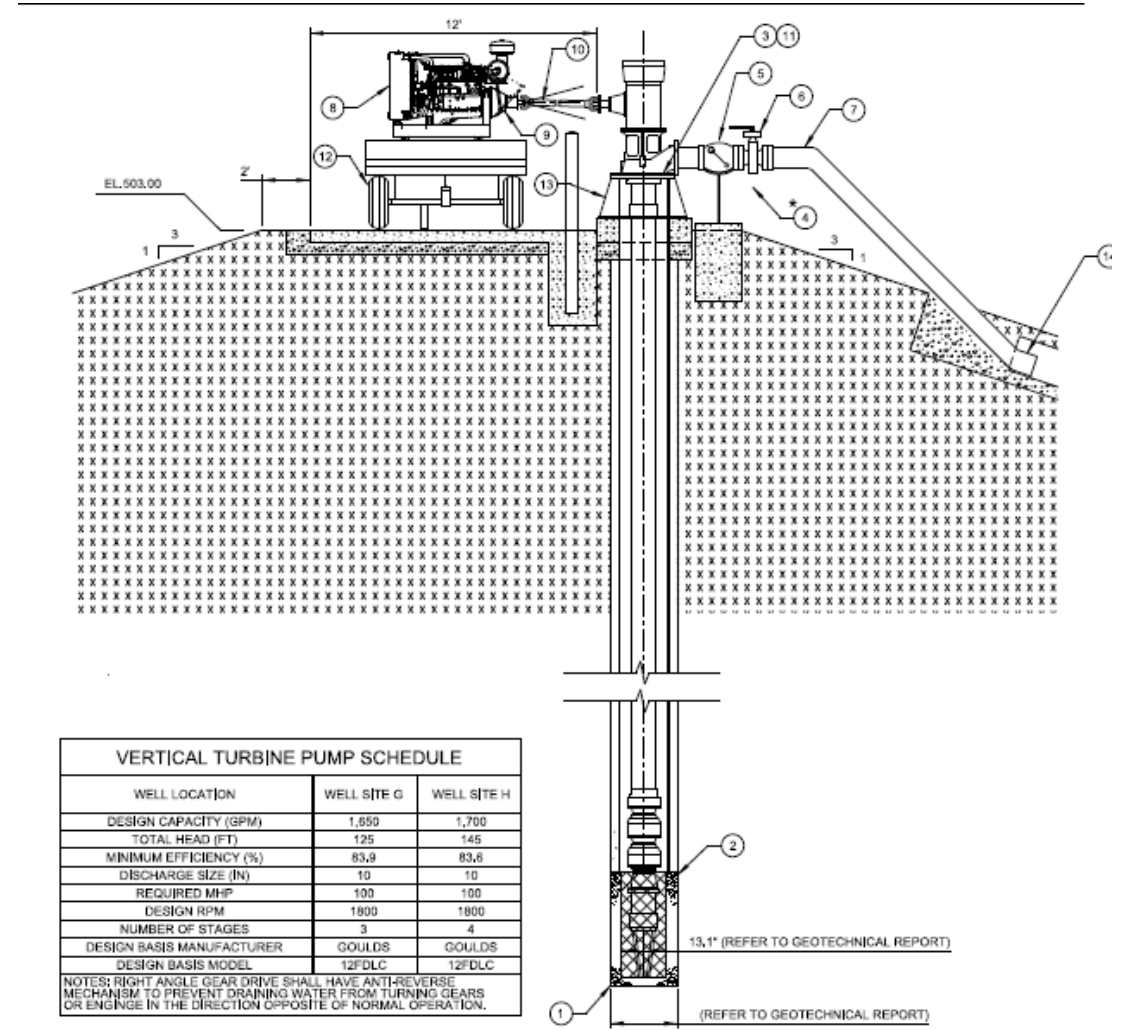
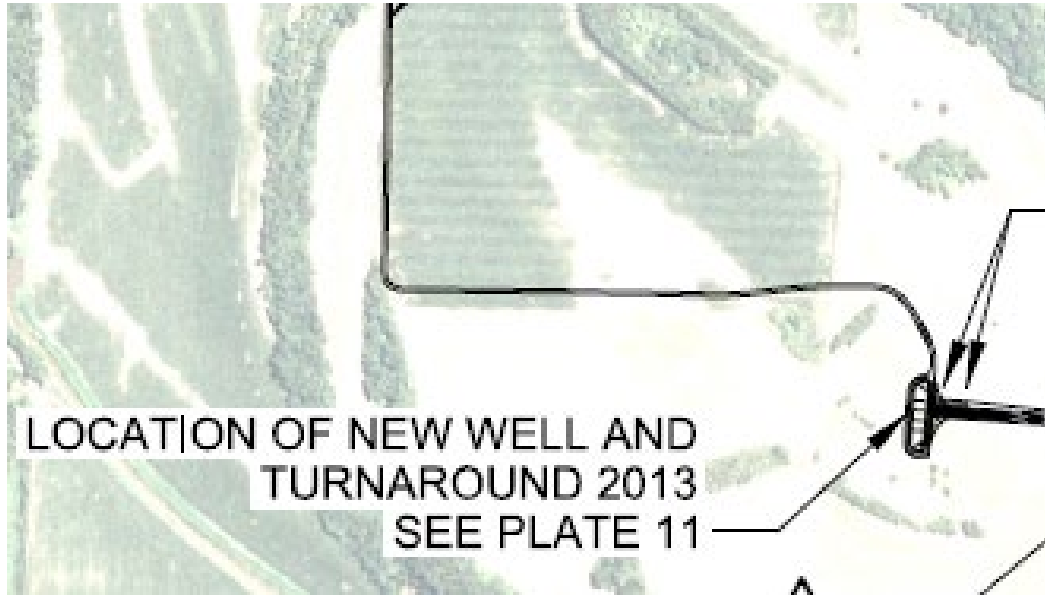


Access Road





Well



VERTICAL TURBINE PUMP SCHEDULE		
WELL LOCATION	WELL SITE G	WELL SITE H
DESIGN CAPACITY (GPM)	1,850	1,700
TOTAL HEAD (FT)	125	145
MINIMUM EFFICIENCY (%)	83.9	83.6
DISCHARGE SIZE (IN)	10	10
REQUIRED MHP	100	100
DESIGN RPM	1800	1800
NUMBER OF STAGES	3	4
DESIGN BASIS MANUFACTURER	GOULDS	GOULDS
DESIGN BASIS MODEL	12FDLC	12FDLC

NOTES: RIGHT ANGLE GEAR DRIVE SHALL HAVE ANTI-REVERSE MECHANISM TO PREVENT DRAINING WATER FROM TURNING GEARS OR ENGINE IN THE DIRECTION OPPOSITE OF NORMAL OPERATION.

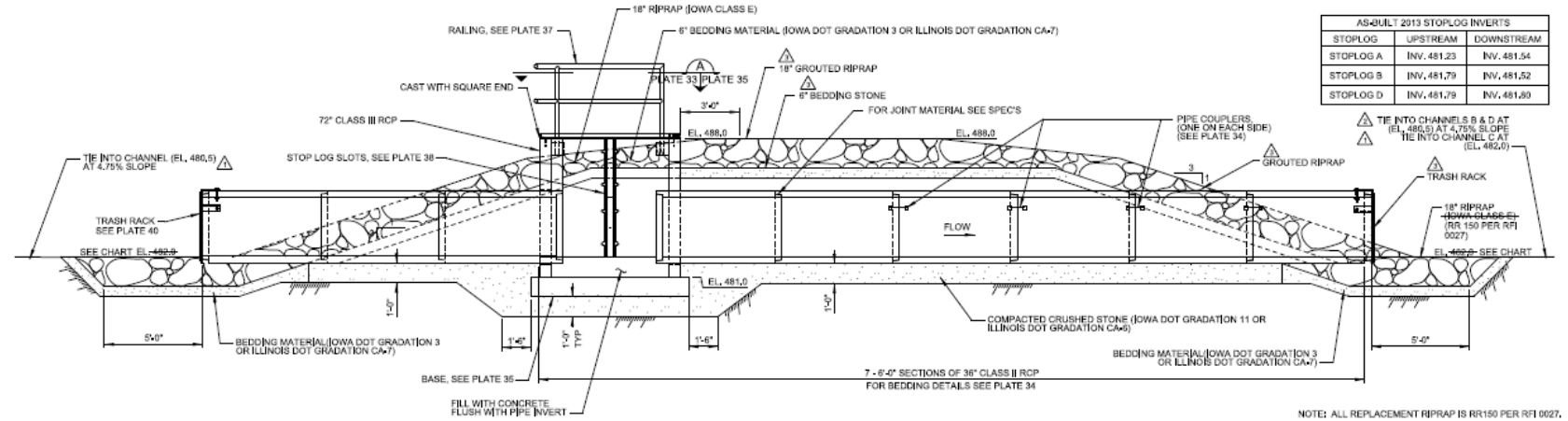
Well



Well Pump

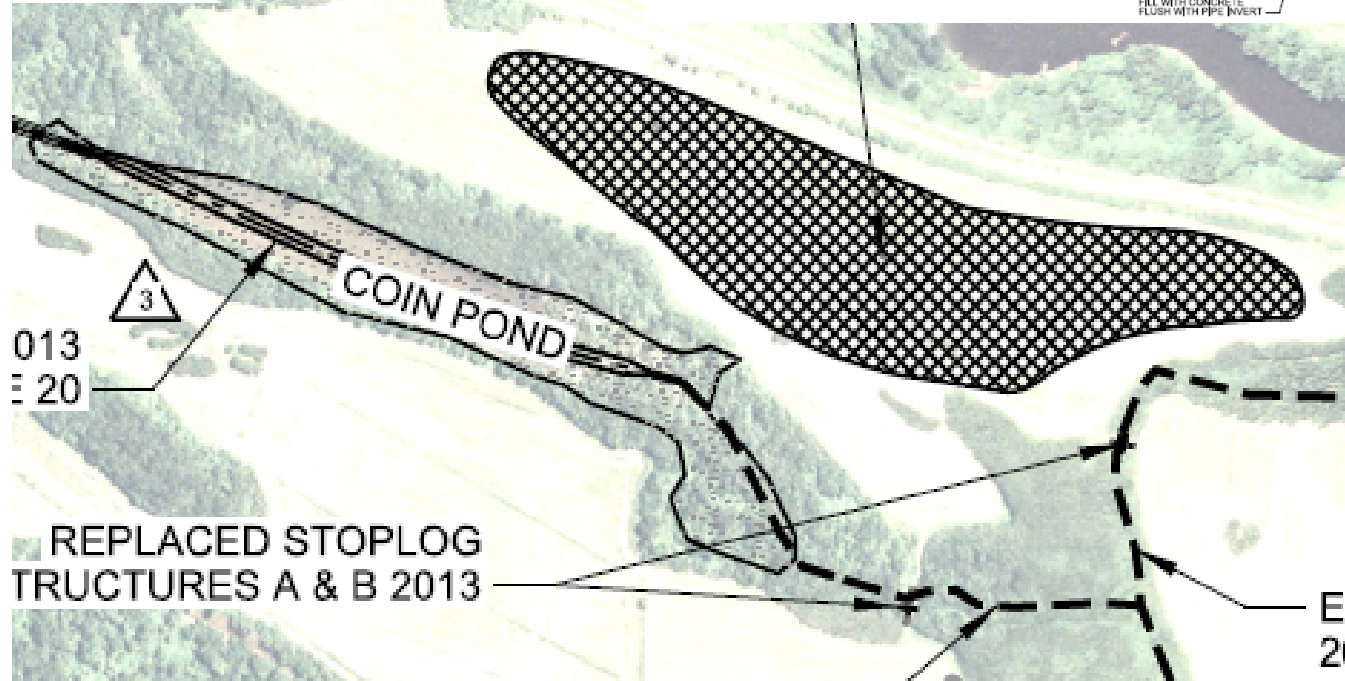


Stoplog Structure A



AS-JUL7 2013 STOPLOG INVERTS		
STOPLOG	UPSTREAM	DOWNSTREAM
STOPLOG A	INV. 481.23	INV. 481.54
STOPLOG B	INV. 481.79	INV. 481.52
STOPLOG D	INV. 481.79	INV. 481.80

AVATED CHANNEL A 2013
PLATE 14



Stoplog Structure A



Stoplog Structure A



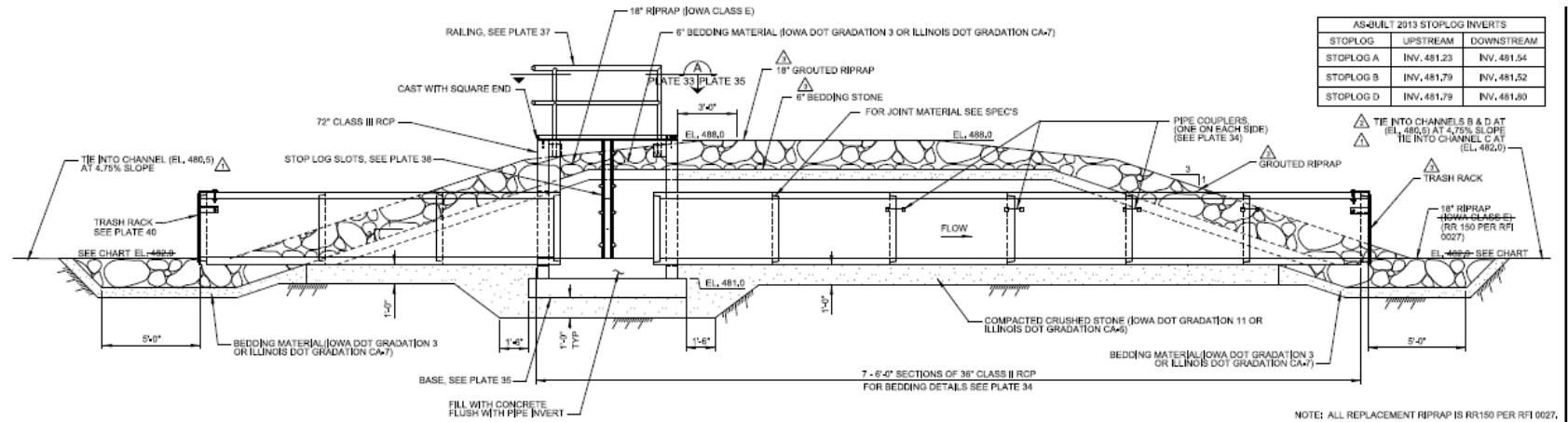
Stoplog Structure A



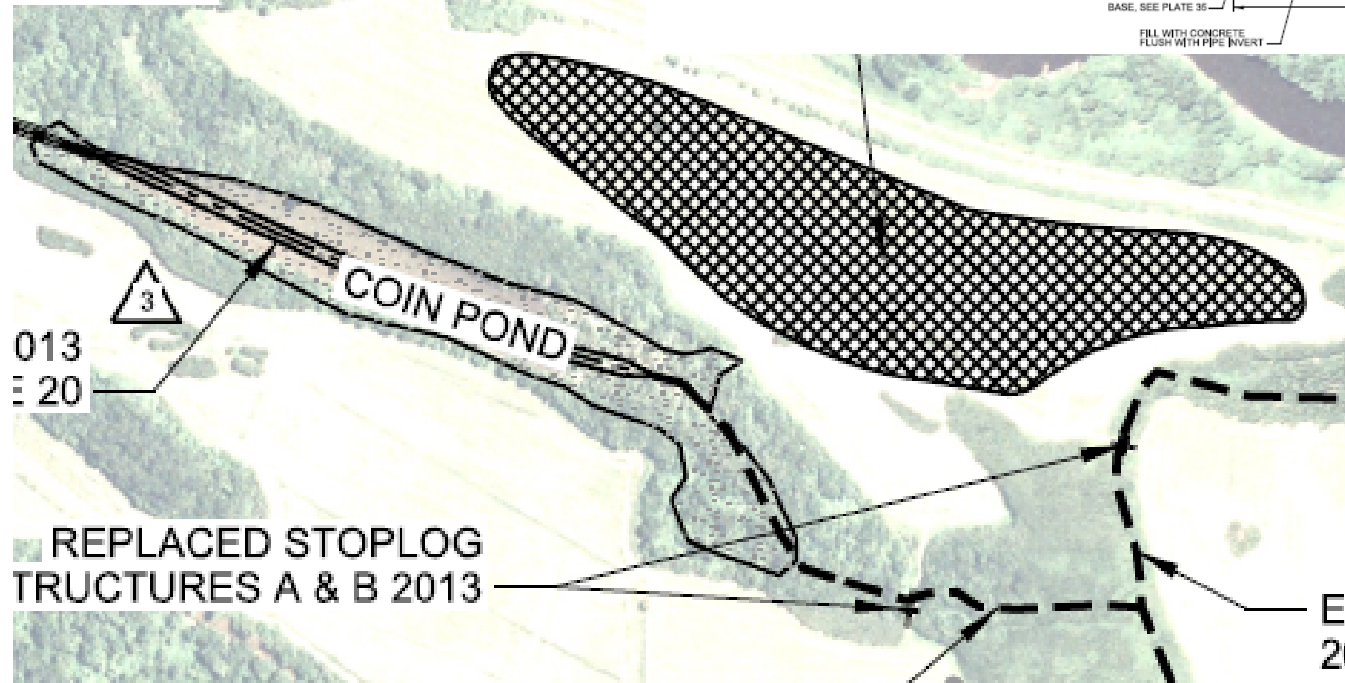
“Road” between Stoplog A and B



Stoplog Structure B



AVATED CHANNEL A 2013
PLATE 14



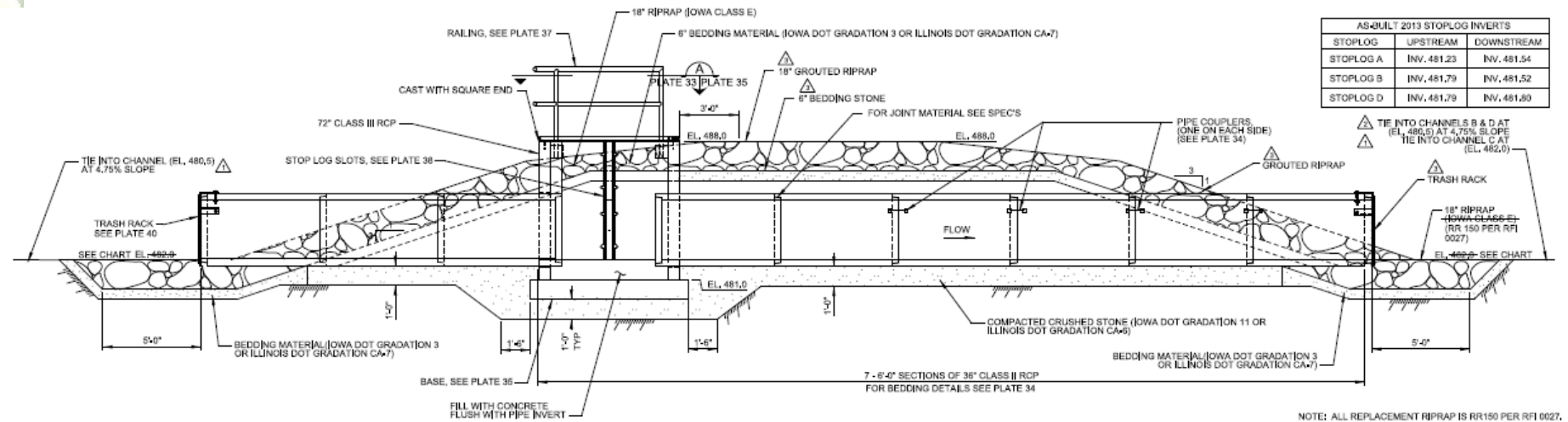
Erosion by Road



Stoplog Structure B



Stoplog Structure D



AS-BUILT 2013 STOPLOG INVERTS		
STOPLOG	UPSTREAM	DOWNSTREAM
STOPLOG A	INV. 481.23	INV. 481.54
STOPLOG B	INV. 481.79	INV. 481.52
STOPLOG D	INV. 481.79	INV. 481.80

NOTE: ALL REPLACEMENT RIPRAP IS RR150 PER RFI 0027.

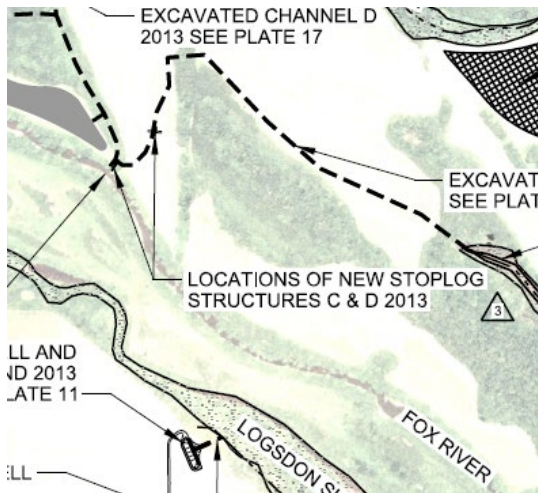
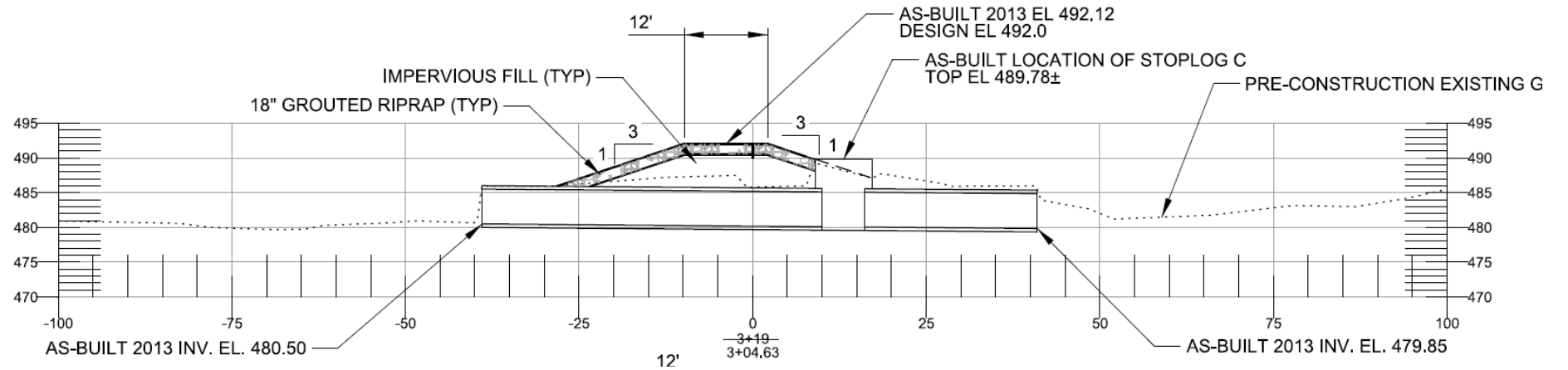
Stoplog Structure D



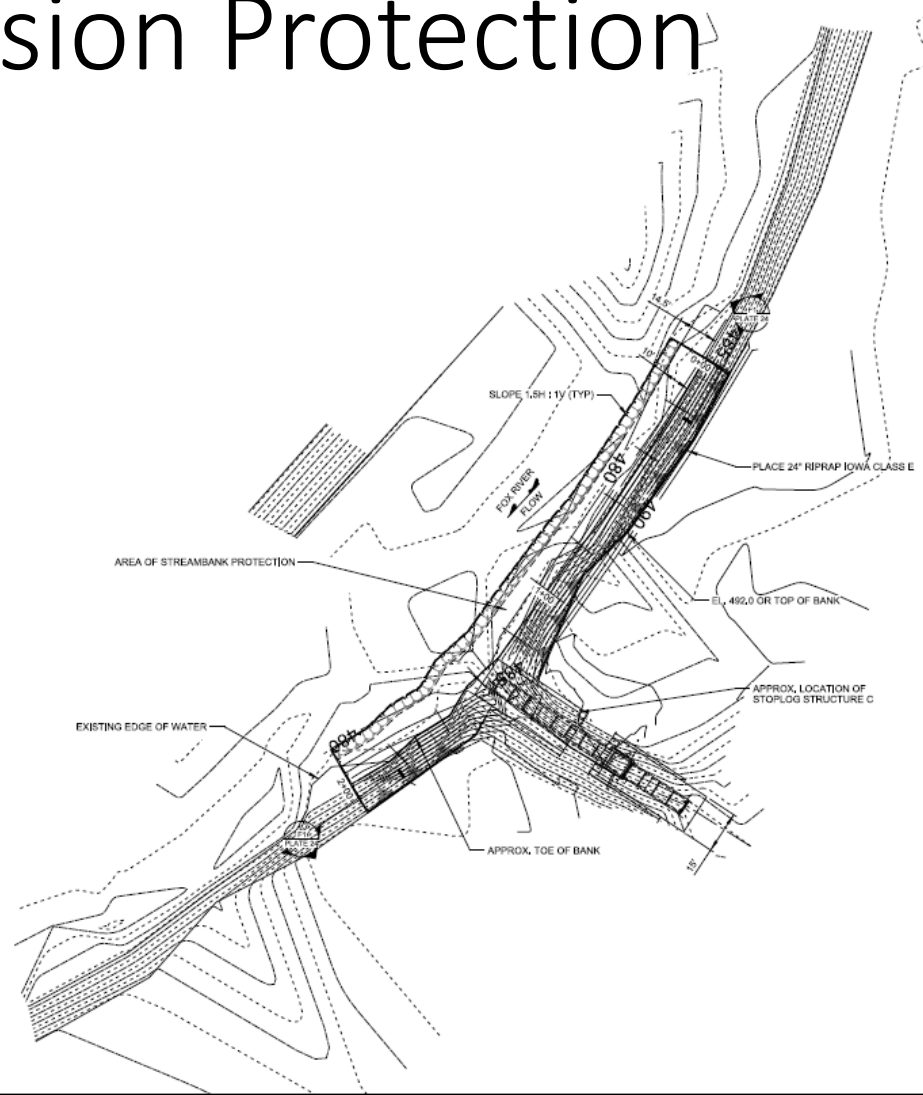
Stoplog Structure D



Stoplog Structure C (Fox River Structure)



Fox River Erosion Protection



Fox River Structure



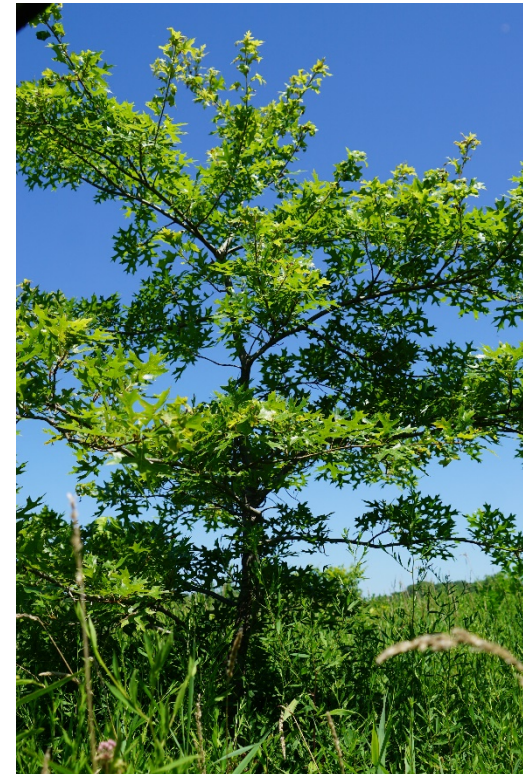
Fox River Stucture



Channel leading into Fox River Structure



Trees!





Swamp Milkweed and Monarch







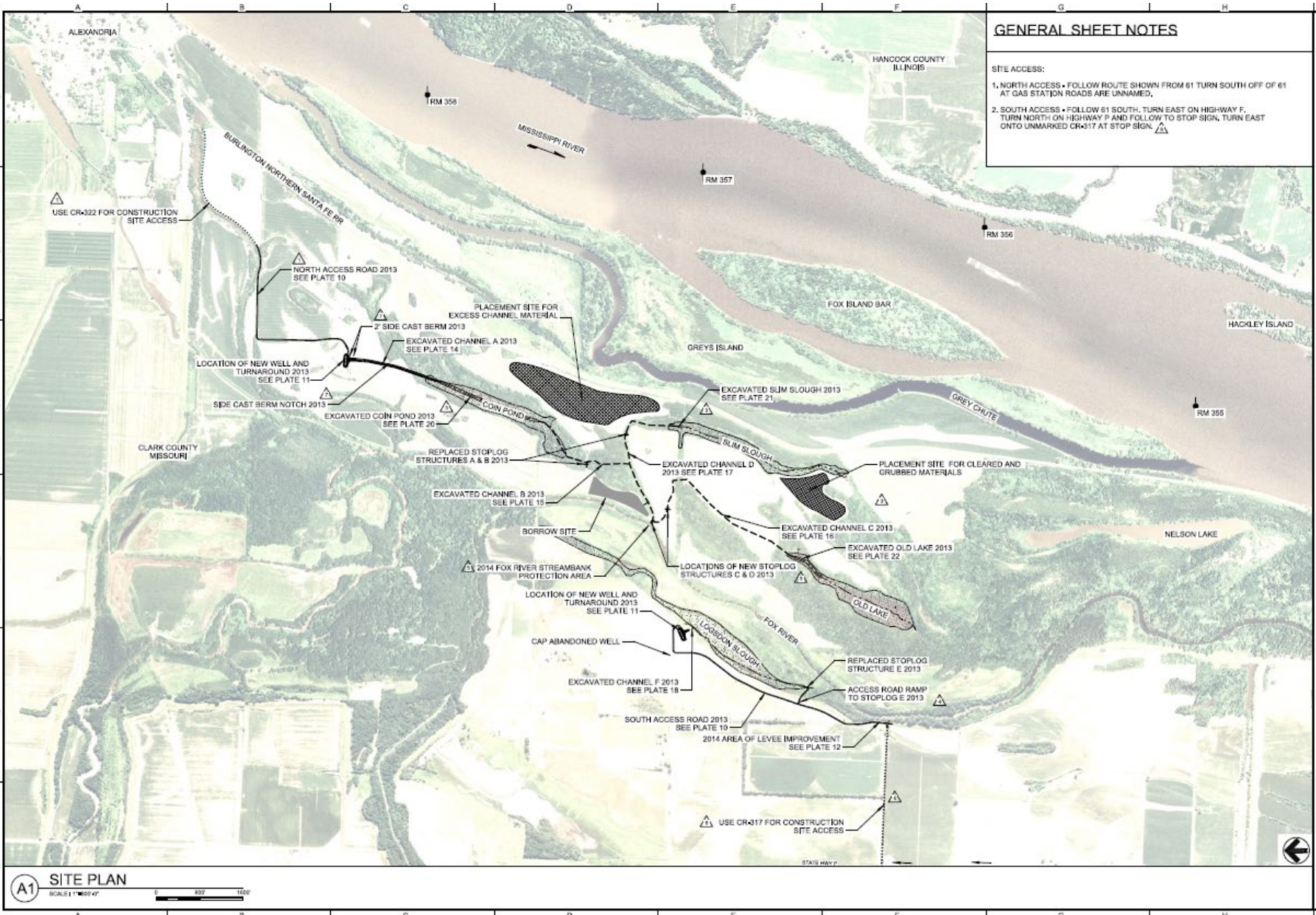




Best Tree Out there



Attachment B
Site Plan



GENERAL SHEET NOTES

SITE ACCESS:

1. NORTH ACCESS - FOLLOW ROUTE SHOWN FROM 61 TURN SOUTH OFF OF 61 AT GAS STATION ROADS ARE UNNAMED.
2. SOUTH ACCESS - FOLLOW 61 SOUTH, TURN EAST ON HIGHWAY F, TURN NORTH ON HIGHWAY P AND FOLLOW TO STOP SIGN, TURN EAST ONTO UNMARKED CR#317 AT STOP SIGN.



NO.	DATE	BY	DESCRIPTION
1	10/1/13	AS	ISSUED FOR CONSTRUCTION
2	10/1/13	AS	ISSUED FOR CONSTRUCTION
3	10/1/13	AS	ISSUED FOR CONSTRUCTION
4	10/1/13	AS	ISSUED FOR CONSTRUCTION
5	10/1/13	AS	ISSUED FOR CONSTRUCTION
6	10/1/13	AS	ISSUED FOR CONSTRUCTION
7	10/1/13	AS	ISSUED FOR CONSTRUCTION
8	10/1/13	AS	ISSUED FOR CONSTRUCTION
9	10/1/13	AS	ISSUED FOR CONSTRUCTION
10	10/1/13	AS	ISSUED FOR CONSTRUCTION
11	10/1/13	AS	ISSUED FOR CONSTRUCTION
12	10/1/13	AS	ISSUED FOR CONSTRUCTION
13	10/1/13	AS	ISSUED FOR CONSTRUCTION
14	10/1/13	AS	ISSUED FOR CONSTRUCTION
15	10/1/13	AS	ISSUED FOR CONSTRUCTION
16	10/1/13	AS	ISSUED FOR CONSTRUCTION
17	10/1/13	AS	ISSUED FOR CONSTRUCTION
18	10/1/13	AS	ISSUED FOR CONSTRUCTION
19	10/1/13	AS	ISSUED FOR CONSTRUCTION
20	10/1/13	AS	ISSUED FOR CONSTRUCTION
21	10/1/13	AS	ISSUED FOR CONSTRUCTION
22	10/1/13	AS	ISSUED FOR CONSTRUCTION
23	10/1/13	AS	ISSUED FOR CONSTRUCTION
24	10/1/13	AS	ISSUED FOR CONSTRUCTION
25	10/1/13	AS	ISSUED FOR CONSTRUCTION
26	10/1/13	AS	ISSUED FOR CONSTRUCTION
27	10/1/13	AS	ISSUED FOR CONSTRUCTION
28	10/1/13	AS	ISSUED FOR CONSTRUCTION
29	10/1/13	AS	ISSUED FOR CONSTRUCTION
30	10/1/13	AS	ISSUED FOR CONSTRUCTION

U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS ROCK ISLAND, ILLINOIS	PROJECT NO. 20130714	DATE 2013/07/14	BY AS SHOWN
DESIGNED BY RCF	CHECKED BY RCF	PROJECT CODE ETR98	SCALE 1"=100'
DRAWN BY H.A.	PROJECT NO. 20130714	DATE 2013/07/14	BY AS SHOWN

MISSISSIPPI RIVER
POOL 2013
FOX ISLAND REEF & M MANUAL
SITE PLAN

Sheet Reference Number
PLATE 07

A1 **SITE PLAN**
SCALE 1"=800'
0 800 1600