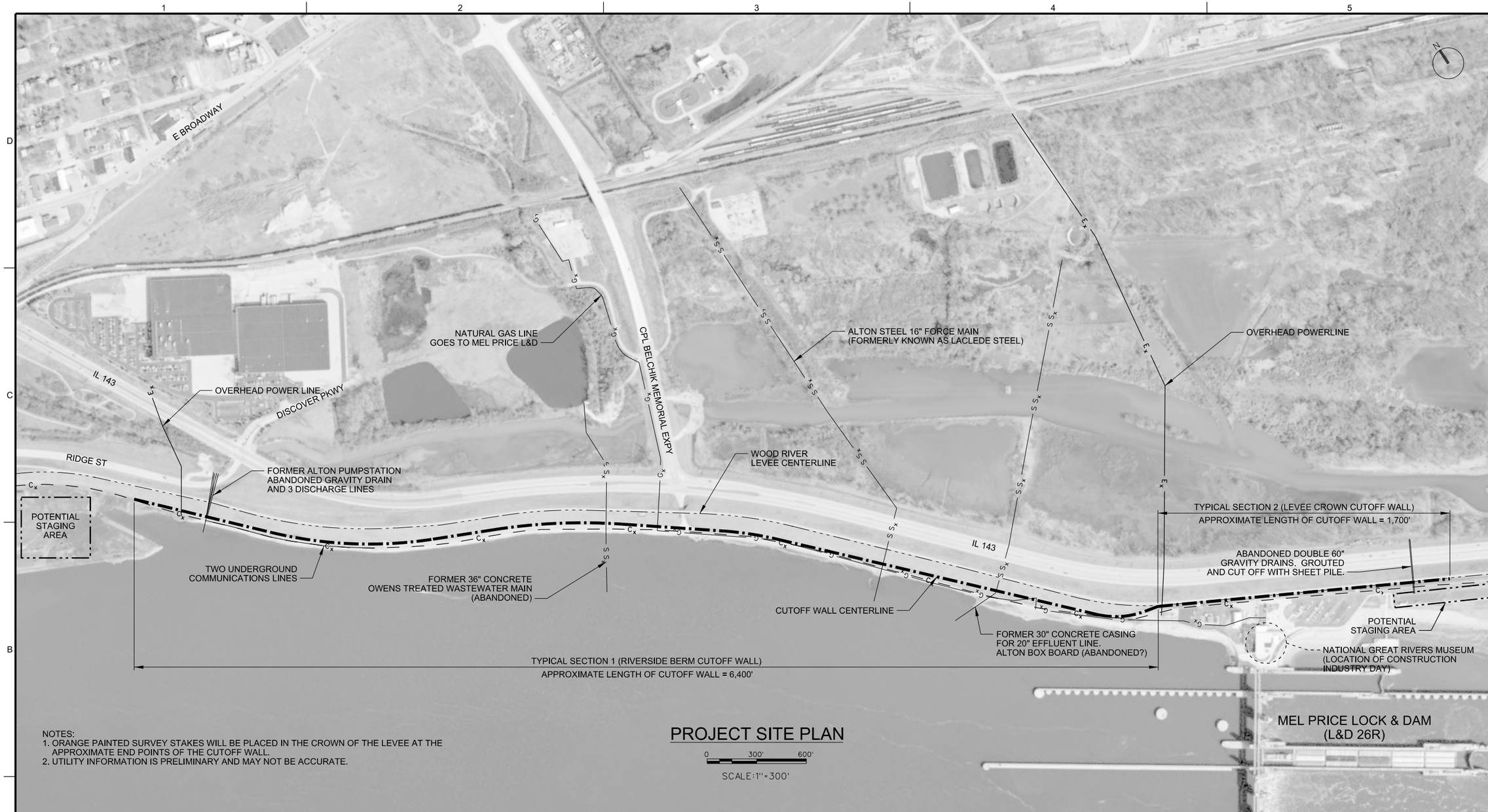
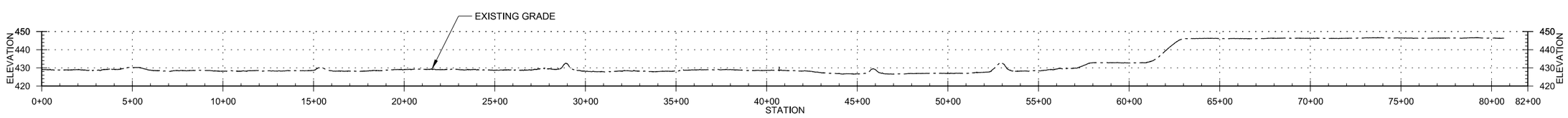


NOTES:
1. ORANGE PAINTED SURVEY STAKES WILL BE PLACED IN THE CROWN OF THE LEVEE AT THE APPROXIMATE END POINTS OF THE CUTOFF WALL.
2. UTILITY INFORMATION IS PRELIMINARY AND MAY NOT BE ACCURATE.

PROJECT SITE PLAN

0 300' 600'

SCALE:1"=300'



0 300' 600'

HOR. SCALE:1"=300'

0 30' 60'

VERT. SCALE:1"= 30'

PROFILE ALONG CUTOFF WALL CENTERLINE

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

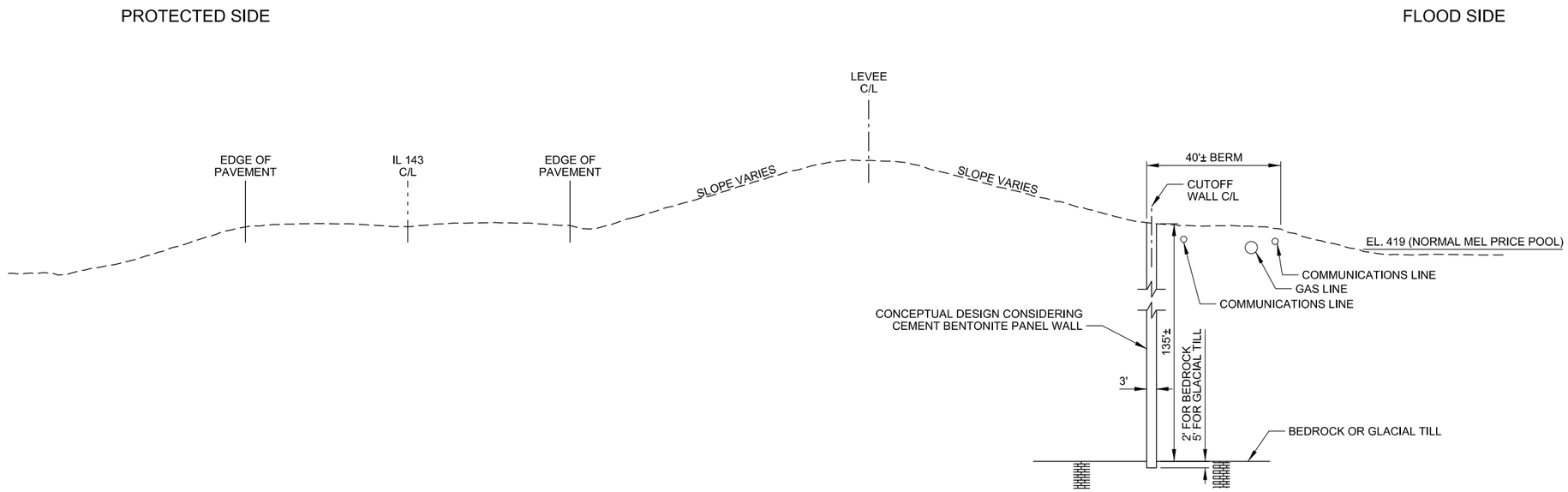
U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XX
DWN BY: XXX
CKD BY: XXX
SUBMITTED BY: XXX
PLOT SCALE: 1:1
PLOT DATE: ####
DATE: ##/##/##
SOLICITATION NO.: W912P9-X-##-####
CONTRACT NO.: W912P9-X-##-####
FILE NUMBER: ######
SIZE: ANSI D
FILE NAME: 1-Site Plan.dgn

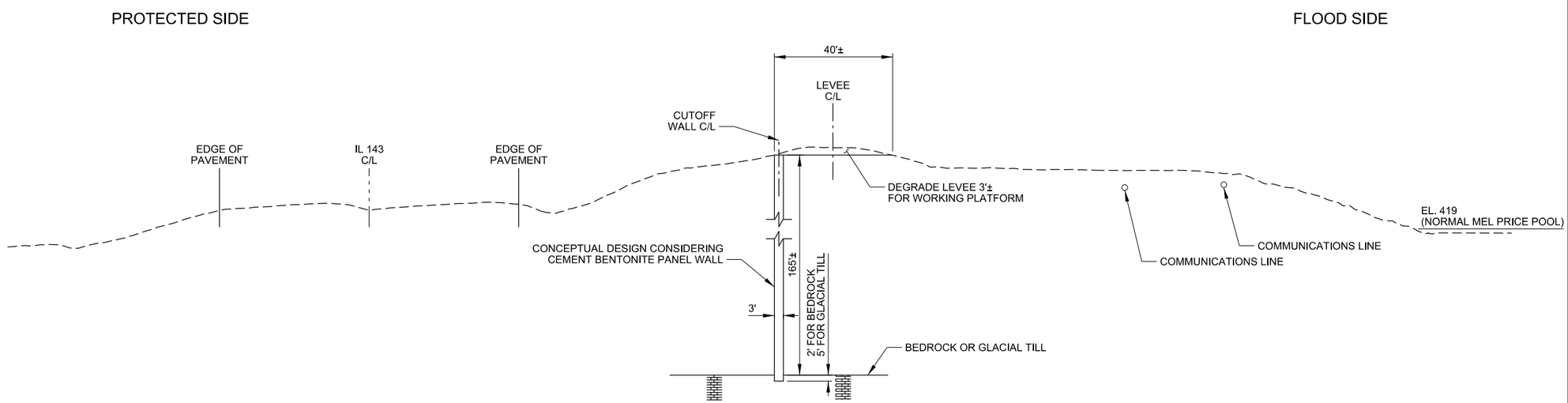
WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

PROJECT SITE PLAN

SHEET IDENTIFICATION
1



TYPICAL SECTION 1 (RIVERSIDE BERM CUTOFF WALL)



TYPICAL SECTION 2 (LEVEE CROWN CUTOFF WALL)

NOTES:
1. UTILITY INFORMATION IS PRELIMINARY AND MAY NOT BE ACCURATE. NO INFORMATION ON DEPTH OR LOCATION WITHIN BERM IS CURRENTLY AVAILABLE.

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX | DATE: ##/##/## | DWN BY: XXX | CKD BY: XXX | SOLICITATION NO.: W912P5-X-##-#### | SUBMITTED BY: XXX | CONTRACT NO.: W912P5-X-##-#### | PLOT SCALE: NTS | PLOT DATE: ## | FILE NUMBER: ###### | SIZE: ANSI D | FILE NAME: 2-Typical Sections.dgn

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

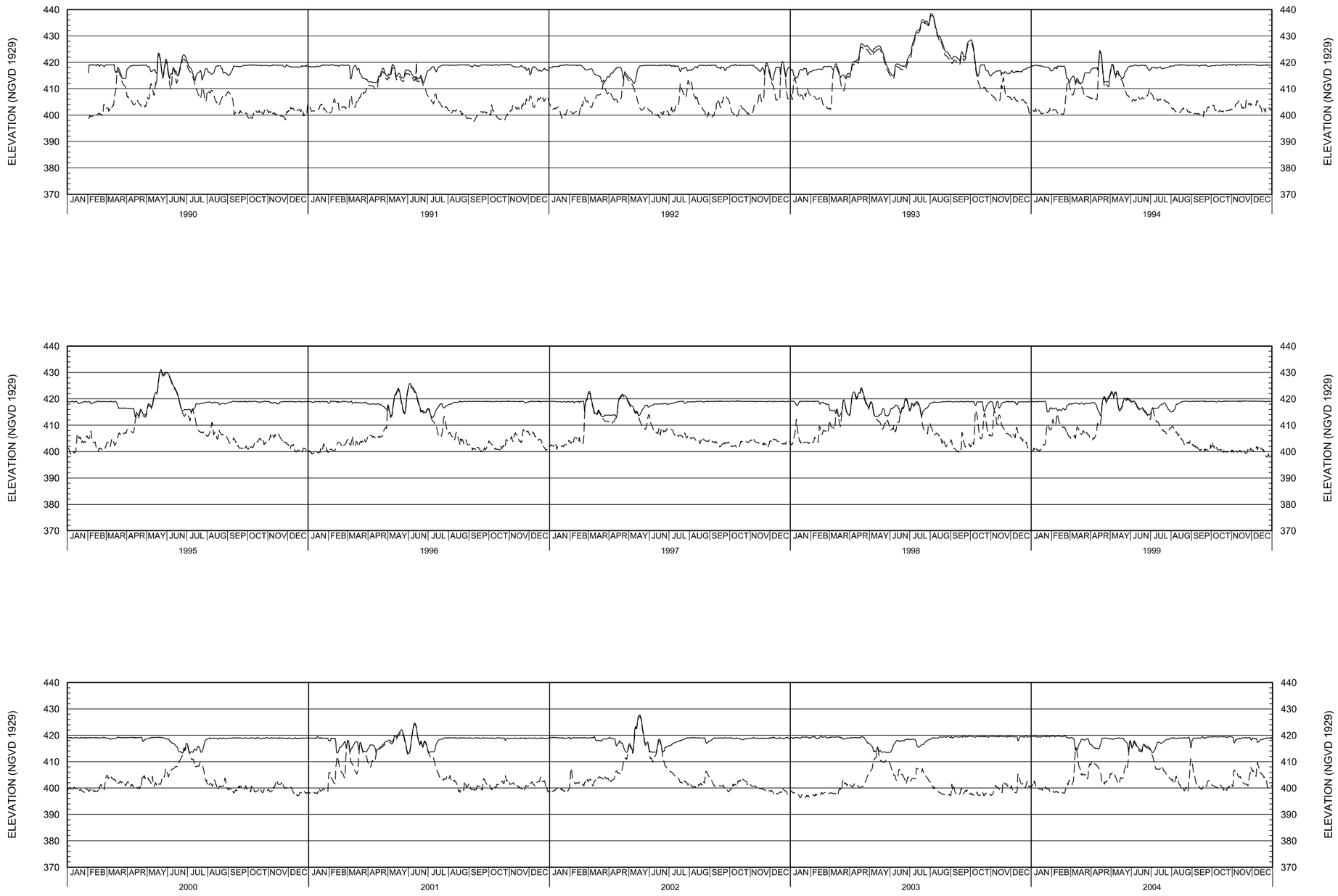
TYPICAL SECTIONS

SHEET IDENTIFICATION
2

SHEET LEGEND:

MEL PRICE POOL ELEVATION ————

MEL PRICE TAIL ELEVATION - - - - - - - - -



DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX
DWN BY: XXX
CKD BY: XXX
SUBMITTED BY: XXX
PLOT SCALE: NTS
PLOT DATE:
SIZE: ANSI D
FILE NAME: 3-Hydrographs.dgn
DATE: ##/##/##
SOLICITATION NO.: W912P5-X-##-####
CONTRACT NO.: W912P5-X-##-####
FILE NUMBER: ######

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

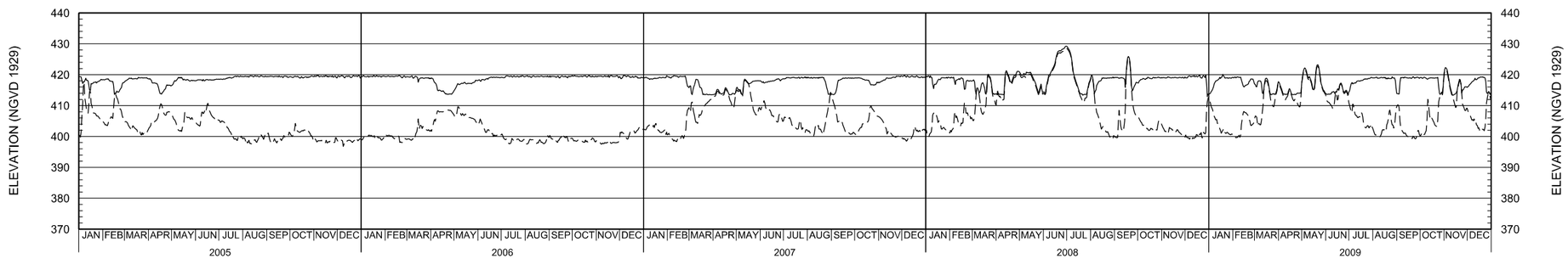
HYDROGRAPHS
MEL PRICE POOL & TAIL WATER
SHEET 1 OF 2

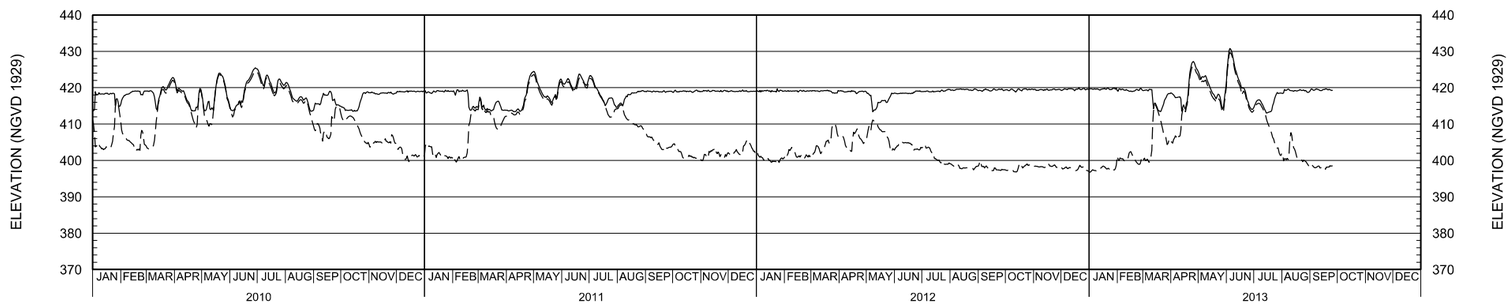
SHEET IDENTIFICATION
3

SHEET LEGEND:

MEL PRICE POOL ELEVATION ————

MEL PRICE TAIL ELEVATION - - - - - - - - -





DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX | DATE: ####
DWN BY: XXX | CKD BY: XXX | SOLICITATION NO.:
SUBMITTED BY: XXX | CONTRACT NO.:
PLOT SCALE: 1:1 | PLOT DATE: ####
SIZE: ANSI D | FILE NAME: 4-Hydrographs.dgn | FILE NUMBER:

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

HYDROGRAPHS
MEL PRICE POOL & TAIL WATER
SHEET 2 OF 2

SHEET IDENTIFICATION
4

MEL PRICE SEEPAGE AREA NEW EXPLORATION BORINGS

XX

SCALE 1" = 300'

0 300 600'

SCALE: 1" = 300'

N

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI

DESIGNED BY:
DWN BY: TJD
CKD BY:
SUBMITTED BY:
PLOT SCALE:
PLOT DATE:
SIZE:
FILE NAME:
DATE: JUNE 2013
SOLICITATION NO.:
CONTRACT NO.:
FILE NUMBER:

WOOD RIVER LEVEE DISTRICT
MEL PRICE SEEPAGE AREA

NEW EXPLORATION BORING LAYOUT

SHEET IDENTIFICATION
B-001

UNIFIED SOIL CLASSIFICATION ASTM D 2487

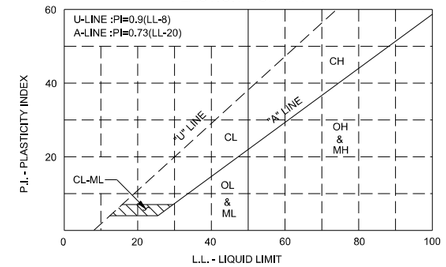
MAJOR DIVISION		TYPE	LETTER SYMBOL	SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS More than half of material is larger than No. 200 sieve size	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size	CLEAN GRAVEL (Little or No fines)	GW		GRAVEL, Well Graded, gravel-sand mixtures, little or no fines
			GP		GRAVEL, Poorly Graded, gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES (Appreciable Amount of Fines)	GM		SILTY GRAVEL, gravel-sand-silt mixtures
			GC		CLAYEY GRAVEL, gravel-sand-clay mixtures
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size	CLEAN SAND (Little or No fines)	SW		SAND, Well-Graded, gravelly sands
			SP		SAND, Poorly-graded, gravelly sands
		SAND WITH FINES (Appreciable Amount of Fines)	SM		SILTY SAND, sand-silt mixtures
			SC		CLAYEY SAND, sand-clay mixtures
FINE-GRAINED SOILS More than half the material is smaller than No. 200 sieve size		SILT AND CLAYS (Liquid Limit < 50)	ML		SILT & very fine sand, silty or clayey fine sand or clayey silt with slight plasticity
			CL		LEAN CLAY; Sandy Clay; Silty Clay; of low to medium plasticity
			OL		ORGANIC SILTS and organic silty clays of low plasticity
		SILT AND CLAYS (Liquid Limit > 50)	MH		SILT, fine sandy or silty soil with high plasticity
			CH		FAT CLAY, inorganic clay of high plasticity
			OH		ORGANIC CLAYS of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt		PEAT, and other highly organic soil
WOOD			Wd		WOOD
SHELLS			Sl		SHELLS

NOTE: Soil possessing characteristics of two groups are designated by combinations of group symbols

CLASSIFICATION AND DESCRIPTION OF ROCK

GROUP	LETTER SYMBOL	SYMBOL	ROCK CLASSIFICATION
SEDIMENTARY ROCKS	CON		CONGLOMERATE
	SAN		SANDSTONE
	GRA		GRAYWACKE
	CLA		CLAYSTONE OR SILTSTONE
	SHA		COMPACTION SHALE
	CEM		CEMENTED SHALE
	COA		COAL
	LIM		LIMESTONE
	DOL		DOLOMITE
	CHA		CHALK (OR MARL)
	CT		CHERT
	CA		CAVITY
	GRN		GRANITE

PLASTICITY CHART



For classification of fine-grained soils
Reference: ASTM D 2487, Figure 3

BORING SUFFIX

LETTER SYMBOL	DESCRIPTION
A	Angle Core Boring
B	Bag Samples-Soil-Borings
C	Core Boring
O	Observation Boring
P	Piezometer
U	Undisturbed Sample-Soil-Boring

FIGURES TO LEFT OF BORING UNDER COLUMN "W OR D_{10}"

Are natural water content in percent dry weight (FW denotes Free Water) ASTM D 2216

When underlined denotes D_{10} size in mm - ASTM C 136 *

FIGURES TO RIGHT OF BORING UNDER COLUMNS "LL" AND "PL"

Are liquid and plastic limits, respectively - ASTM D 4318

SYMBOLS TO LEFT OF BORING

- ▽ Groundwater surface and date observed
- Ⓒ Denotes location of consolidation test **
- Ⓢ Denotes location of consolidation-drained direct shear test **
- Ⓡ Denotes location of consolidation-undrained triaxial compression test **
- Ⓠ Denotes location of unconsolidation-undrained triaxial compression test **
- Ⓣ Denotes location of sample subjected to consolidation test and each of the above three types of shear tests **
- 5-50 Pressure Test Results Shown as 5 gals/min at 50 psi
- ○— Denotes proposed channel grade

* The D_{10} size of a soil is the grain diameter in millimeters of which 10% of the soil is finer, and 90% coarser than size D_{10} - ASTM C 136.

** Results of these tests are available for inspection in the U.S. Army Engineer District Office, if these symbols appear beside the boring logs on the drawings.

FIGURES TO RIGHT OF BORING

Are values of cohesion in lbs./sq. ft. from unconfined compression tests

In parenthesis and not underlined are driving resistance in blows per foot determined with a standard split spoon sampler (1⅜" I.D., 2 " O.D.) and a 140 lb. driving hammer with a 30 " drop - ASTM D 1586. In parenthesis and underlined are for a 2 ½" I.D., 3 " O.D. split spoon sampler and 350 lb. driving hammer with an 18 " drop.

Where underlined with a solid line denotes laboratory permeability in centimeters per second of undisturbed sample.

Where underlined with a dashed line denotes laboratory permeability in centimeters per second of sample remolded to the estimated natural void ratio.

SYMBOLS TO RIGHT OF BORING

- Ⓐ Denotes classification determined by process of drilling, no representative sample obtained.

DESCRIPTIVE SYMBOLS

MODIFICATIONS	
MODIFICATION	SYMBOL
Traces	Tr-
Fine	F
Very Fine	vF
Medium	M
Coarse	C
Calc. Concretions	cc
Rootlets	rt
Lignite fragments	lg
Shale fragments	shs
Sandstone fragments	sds
Shell fragments	slf
Organic matter	O
Clay strata or lenses	CS
Silt strata or lenses	SIS
Sand strata or lenses	SS
Sandy	S
Gravelly	G
Boulders	B
Slickensides	SL
Wood	Wd
Oxidized	Ox
Decomposed Limonite Concretions	DLC
Began use of drilling mud	B.D.M. →
Began use of casing	B.Ca. →
Beginning of Specified Core Size	NX Core →
Ground Surface Elev.	G.S.E.
Water Surface Elev.	W.S.E.

COLORS	
COLOR	SYMBOL
TAN	T
YELLOW	Y
RED	R
BLACK	BK
GRAY	Gr
LIGHT GRAY	lGr
DARK GRAY	dGr
BROWN	Br
LIGHT BROWN	lBr
DARK BROWN	dBr
BROWNISH-GRAY	BRG
GRAYISH-BROWN	GYB
GREENISH-GRAY	GNG
GRAYISH-GREEN	Gyg
GREEN	Gn
BLUE	Bl
BLUE-GREEN	BLG
WHITE	Wh
MOTTLED	Mot
REDDISH	RD

APPLICABLE PUBLICATIONS

American Society for Testing and Materials (ASTM) Standards
ASTM C 136 Method for Sieve Analysis of Fine and Coarse Aggregates.
ASTM D 1586 Method for Penetration Test and Split-Barrel Sampling of Soils.
ASTM D 2166 Test Methods for Unconfined Compressive Strength of Cohesive Soil.
ASTM D 2216 Method for Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures.
ASTM D 2487 Classification of Soils for Engineering Purposes.
ASTM D 2488 Description and Identification of Soils (Visual-Manual Procedure).
ASTM D 4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

U.S. Army Engineer Manual (EM)

EM 1110-2-1906
Engineering and Design, Laboratory
Soils Testing, 30 November 1970
Revised 20 August 1986

CONSISTENCY FOR COHESIVE SOILS

CONSISTENCY	COHESION IN LBS./SQ.FT. FROM UNCONFINED COMPRESSION TEST	SYMBOL
VERY SOFT	< 250	vSo
SOFT	250-500	So
MEDIUM	500-1000	M
STIFF	1000-2000	St
VERY STIFF	2000-4000	vSt
HARD	> 4000	H

GENERAL NOTES :

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND, IF ENCOUNTERED, SUCH VARIATIONS WILL NOT BE CONSIDERED AS DIFFERING MATERIALLY WITHIN THE PURVIEW OF THE CONTRACT CLAUSE ENTITLED "DIFFERING SITE CONDITIONS."

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACE ENCOUNTERED IN SUCH BORINGS ON THE DATE SHOWN. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS INDICATES THAT NO GROUNDWATER DATA ARE AVAILABLE FROM THE BORING BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THE LOCATIONS OR WITHIN THE VERTICAL REACHES OF SUCH BORINGS. GROUNDWATER ELEVATION CAN VARY FROM THAT SHOWN ON THE LOGS WITH SEASONAL WEATHER CHANGES AND DEPENDING ON THE LENGTH OF TIME THE BORE HOLE IS LEFT OPEN.

CONSISTENCY OF COHESIVE SOIL SHOWN ON THE BORING LOGS IS BASED ON DRILLER'S LOG AND VISUAL EXAMINATION AND IS APPROXIMATE, EXCEPT WITHIN THOSE VERTICAL REACHES OF THE BORING WHERE SHEAR STRENGTHS FROM UNCONFINED COMPRESSION TESTS ARE SHOWN.

DRILLING AND SAMPLING EQUIPMENT

AUG-AUGER
BKH-BACKHOE
CPT-CONE PENETROMETER
HDA-HAND AUGER
HSA-HOLLOW STEM AUGER
HSP-HAND SAMPLE PROBE
RB- ROLLER BIT
SSS-STANDARD SPLIT SPOON
VST-VACCUM SHELBY TUBE (5")
WB- WING BIT

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX | DATE: ##/##/### | DWN BY: XXX | CKD BY: XXX | SOLICITATION NO.: W912P5-X-##-#### | SUBMITTED BY: XXX | CONTRACT NO.: W912P5-X-##-#### | PLOT SCALE: 1:1 | PLOT DATE: ##/##/### | SIZE: ANSI D | FILE NAME: M-MP-21 B-002LGN.dgn

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

BORING LOGS
LEGEND AND NOTES

SHEET IDENTIFICATION
B-002

auto_time

auto_time

13-MPST-119

N 805161.25 E 2298326.64
19 AUG 13
37°52'40.512" 90°9'38.052"

ELEVATIONS IN N.A.V.D. 88

G.S.E. 427.90

SPT	D10	W	LL	PL	Description	NOTES
						6 1/4" HSA
					PAVEMENT AT SURFACE.	pushed shelby tube @ 7.5' bgs .11 sec@1100psi no recovery hammered spt.
					CLAY FILL WITH RIP RAP (CL).	spt=2'o.d. standard splitspoon 140lbs autohammer w/30" drop
					LEAN CLAY (CL).	pulled 6 1/4 hsa advanced 4 1/4 hsa to 7.5' bgs
	0.202	19	37 / 48	18 / 18	LEAN CLAY (CL), about 100% fines, medium plasticity; black dark gray, moist, medium stiff, medium plasticity.	advanced augers to 15ft setup for mud rotary
5	0.188	22	44 / 39	17 / 18	LEAN CLAY (CL), about 100% fines, low plasticity; black dark gray, moist, medium stiff to very stiff, low plasticity.	mixed 275 gal water sourced from river. 75lbs barold quickgel, 3.5lbs barold quicktrol.
20	0.129		39	21	POORLY GRADED SAND (SP), about 2.2% fines; about 94.5% sand, fine to medium; about 3.3% gravel, fine; tan, moist, loose.	switched to 3 7/8" rollerbit switched to pushing 3"x 30" shelby tubes
13	0.113				POORLY GRADED SAND (SP), about 3.5% fines; about 96% sand, fine to medium; about 0.4% gravel, fine; tan, moist, medium dense.	
08/19/13 9	0.116				POORLY GRADED SAND (SP), about 2.7% fines; about 97% sand, fine to medium; about 0.2% gravel, fine; tan, moist, medium dense.	switched to SPT
5		33	58	21	POORLY GRADED GRAVEL (SP), about 4.6% fines; about 95% sand, fine to medium; about 0.4% gravel, fine; gray, wet, loose.	
					FAT CLAY (CH); about 90% fines; dark gray, moist, medium stiff; 10% silt.	
			34	18	LEAN CLAY (CL).	
	0.214	30	47	20	LEAN CLAY (CL), about 80% fines; dark gray, moist, medium stiff, 20% silt. FAT CLAY (CH).	
10	0.178				POORLY GRADED SAND (SP), about 1.7% fines; about 98% sand, fine; gray, wet. WELL GRADED SAND WITH SILT (SW-SM), about 10.3% fines; about 89.4% sand, fine; about 0.2% gravel, fine; gray, wet, loose.	
13	0.214				POORLY GRADED SAND (SP), about 2.1% fines; about 97.4% sand, fine to medium; about 0.5% gravel, fine; brown, wet, medium dense.	
16	0.207				POORLY GRADED SAND (SP), about 3.2% fines; about 95% sand, fine to medium; about 1.2% gravel, fine; brown, wet, medium dense.	
17	0.240				POORLY GRADED SAND (SP), about 1.6% fines; about 98.1% sand, fine to medium; about 0.2% gravel, fine; gray, wet, loose.	
18	0.184				POORLY GRADED SAND (SP), about 2.7% fines; about 97% sand, fine to medium; about 0.2% gravel, fine; gray, wet, medium dense.	
14	0.227				POORLY GRADED SAND (SP), about 1.8% fines; about 96.7% sand, fine to medium; about 0.6% gravel, fine; gray, wet, medium dense.	
21	0.154				POORLY GRADED SAND (SP), about 4.2% fines; about 95.7% sand, fine to medium; about 0.1% gravel, fine; gray, wet, medium dense.	
15	0.196				POORLY GRADED SAND (SP), about 4.3% fines; about 9.2% gravel, fine; about 86.5% sand, fine to medium; gray, wet, medium dense.	
21	0.242				POORLY GRADED SAND (SP), about 1.7% fines; about 84.8% sand, fine to coarse; about 12.8% gravel, fine to coarse; gray, wet, medium dense.	
16	0.238				POORLY GRADED SAND (SP), about 1.7% fines; about 98.2% sand, fine to medium; about 0.1% gravel; gray, wet, medium dense.	
17	0.170				WELL GRADED SAND (SW), about 4.2% fines; about 9.1% gravel, fine to coarse; about 86.8% sand, fine to medium; gray, wet, medium dense.	
13	0.231				POORLY GRADED SAND WITH GRAVEL (SP), about 3.8% fines; about 66.3% sand, fine to coarse; about 29.9% gravel, fine; gray, wet, medium dense.	gradual loss of 175 gals of mud. cleaned out mud tanks mixed new mud, 275 gals water sourced from mississippi river 75lbs barold quickgel, 3.5lbs barold quicktrol
9	0.437				POORLY GRADED SAND (SP), about 2.3% fines; about 90.5% sand, medium to coarse; about 7.2% gravel, fine; gray, wet, loose.	rough drilling rough drilling
12	0.431				POORLY GRADED SAND (SP), about 2% fines; about 93.2% sand, medium to coarse; about 4.9% gravel, fine; gray, wet, medium dense.	loss of ~150gal mud 75' to 85' stopped drilling 8/19/13, mixed new mud 275gal water sourced from river, 75lbs barold quickgel, restarted drilling 8/20/2013 .
10	0.351				POORLY GRADED SAND (SP), about 1.9% fines; about 96.1% sand, medium; about 2% gravel, fine; gray, wet, loose.	groundwater :10.6' fallin:5'
14	0.295				POORLY GRADED SAND WITH GRAVEL (SP), about 2.2% fines; about 77.9% sand, fine to coarse; about 19.9% gravel, fine to coarse; gray, wet, medium dense, trace of lignite/organic matter.	
23	0.225				POORLY GRADED SAND (SP), about 2.7% fines; about 95.5% sand, fine to medium; about 1.8% gravel, fine; gray, wet, medium dense.	loss of ~175gal mud 90' to 100' cleaned out mud tanks, mixed new mud; 275gal water sourced from mississippi river, 75lbs barold quickgel, 8lbs barold quicktrol
17	0.215				POORLY GRADED SAND (SP), about 3.9% fines; about 94.8% sand, fine to medium; about 1.3% gravel, fine; gray, wet, medium dense.	
77	0.079				WELL GRADED SAND WITH SILT (SW-SM), about 9.6% fines; about 88.8% sand, fine to medium; about 1.6% gravel, fine; gray, wet, very dense.	rough drilling
50/5"					POORLY GRADED SAND WITH SILT (SP-SM), about 10.5% fines; about 89.5% sand, fine; gray, wet, very dense.	
						rough drilling.
76	0.114				POORLY GRADED SAND WITH SILT (SP-SM), about 7.3% fines; about 92.4% sand, fine to medium; about 0.2% gravel, fine; gray, wet, very dense.	restarted drilling 8/21/2013 ground wtaer 13.0' bgs rough drilling...bit refusal spt-50 blows in< 1" set 3" casing to 123.9' measured depth: 123.9'. Set up for rock coring. Driller noted soft coring and stopped at 126'. Pulled core barrel and recovered 1.0' of limestone rock core. Pulled everything out and advanced casing to 127' re-started rock coring, but had intermittent high and low fluid pressure with complete loss of return, and hard and soft drilling. Pulled core barrel after 4.2' of coring (depth now 131.2), and recovered only 0.5' of limestone rock and gravel.
56	0.136				POORLY GRADED SAND WITH SILT (SP-SM), about 6.9% fines; about 91.7% sand, medium to coarse; about 1.4% gravel, fine; gray, wet, very dense.	switched to 2 15/16" rollerbit- mixed mud cleaned out tanks 275 gal water sourced from river, 75lbs barold quickgel, 4lbs barold quicktrol, 8/22/2013 redrill w/4 1/8" rollerbit to 131', lost drilling fluid @ 131' to 132' mix tub drilling fluid 150lbs barold quickgel 9lbs barold quicktrol. 275lbs gallons water 1340-1355 loss entire tub of drilling fluid termonate boring per coe.. 8/23/2013 0700 water level12.07bgs hole open to 127' tremie grout backfill through ew rods cement, 16-94lbs sack cement
92	0.078				WELL GRADED SAND WITH SILT (SW-SM), about 9.7% fines; about 84.9% sand, medium to coarse; about 5.3% gravel, fine; gray, wet, very dense.	

295.90

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

SHEET IDENTIFICATION B-119	WOOD RIVER D&LD MEL PRICE CUTOFF WALL MISSISSIPPI RIVER MADISON COUNTY, IL BORING LOGS 13-MPST-119	U.S. ARMY CORP OF ENGINEERS ST. LOUIS DISTRICT ST. LOUIS, MISSOURI 63103	DESIGNED BY: XXX; DATE: #####	
			DWN BY: XXX; CKD BY: XXX; SOLICITATION NO.: W912P9-X-##-####	
			SUBMITTED BY: XXX; CONTRACT NO.: W912P9-X-##-####	
			PLOT SCALE: 1:1; PLOT DATE: NO; FILE NUMBER: ######	
			SIZE: ANSI D; FILE NAME: M-MP-21_B-119BOR.dgn	

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers

auto_time

13-MPST-132

N 803371.44 E 2300149.74
21 OCT 13
38°52'22.764" 90°9'15.012"

G.S.E. 432.30

ELEVATIONS IN N.A.V.D. 88

SPT	D10	W	LL	PL		NOTES
	0.159				POORLY GRADED GRAVEL (GP), 14in minus limestone gravel.	6 1/4" HSA, ST-5"x30" SHELBY TUBE, SPT=2"OD STANDARD SPLIT SPOON, 140LB AUTO HAMMER W/30" DROP, WOH=WEIGHT OF HAMMER
25	0.173				POORLY GRADED SAND WITH SILT (SP-SM), about 6.5% fines; about 92.4% sand, fine to medium; about 1.1% gravel, fine; brown, moist, medium dense.	
11	0.214				POORLY GRADED SAND (SP).	
					POORLY GRADED SAND (SP), about 4.1% fines; about 93.3% sand, fine to medium; about 2.6% gravel, fine; brown, moist, medium dense.	
					LEAN CLAY (CL).	
		24	47	19	LEAN CLAY (CL), dark brown, moist, very stiff.	
					LEAN CLAY (CL), brown, moist.	
	0.084				WELL GRADED SAND WITH SILT (SW-SM), about 9.1% fines; about 89.7% sand, fine to medium; about 1.2% gravel, fine; brown, moist,	
18	0.180				POORLY GRADED SAND (SP), about 1.6% fines; about 98.4% sand, fine to medium; brown tan, moist, medium dense.	ADVANCED 6 1/4" HSA TO 13.0 BGS BEGIN MUD ROTARY USING 300 GALS OF FRESH WATER FROM THE MISSISSIPPI RIVER AND 75 LBS OF SUPER GEL-X
26	0.150				POORLY GRADED SAND (SP), about 3.8% fines; about 96.1% sand, fine to medium; about 0.1% gravel, fine; brown tan, moist, medium dense.	
16	0.149				POORLY GRADED SAND (SP), about 3.2% fines; about 96.2% sand, fine to medium; about 0.6% gravel, fine; brown tan, moist, medium dense.	
23	0.132				POORLY GRADED SAND (SP), about 4% fines; about 96% sand, fine to medium; brown, saturated, medium dense.	
23	0.100				POORLY GRADED SAND WITH SILT (SP-SM).	
					POORLY GRADED SAND WITH SILT (SP-SM), about 5.4% fines; about 94.1% sand, fine to medium; about 0.5% gravel, fine; brown, saturated, medium dense.	
16	0.080				POORLY GRADED SAND WITH SILT (SP-SM), gray, saturated, medium dense.	
10		32	40	18	LEAN CLAY (CL).	
					LEAN CLAY (CL), dark gray, wet, stiff.	3"X30" SHELBY TUBE, PP=N/A, TORVANE=N/A
	0.227				POORLY GRADED SAND (SP), about 1.5% fines; about 97.6% sand, fine to medium; about 0.8% gravel, fine; gray, saturated.	
22	0.166				POORLY GRADED SAND (SP), about 3.2% fines; about 96.1% sand, fine to medium; about 0.6% gravel, fine; gray, saturated, medium dense.	
24	0.207				POORLY GRADED SAND (SP), about 2.8% fines; about 97% sand, fine; about 0.2% gravel, fine; gray, saturated, medium dense.	
25	0.163				POORLY GRADED SAND (SP), about 3.5% fines; about 96.4% sand, fine; about 0.1% gravel, fine; gray, saturated, medium dense.	
29	0.185				POORLY GRADED SAND (SP), about 3.8% fines; about 96.1% sand, fine to medium; about 0.1% gravel, fine; gray, saturated, medium dense.	
24	0.175				POORLY GRADED SAND (SP), about 4.1% fines; about 92.6% sand, fine to coarse; about 3.2% gravel, fine; gray, saturated, medium dense.	
16	0.215				POORLY GRADED SAND (SP), about 2.8% fines; about 91.5% sand, fine to coarse; about 5.7% gravel, fine; gray, saturated, medium dense.	
					WELL GRADED SAND (SW).	
11	0.191				WELL GRADED SAND (SW), about 2.5% fines; about 9.1% gravel, fine; about 88.4% sand, fine to coarse; gray, saturated, medium dense.	
					POORLY GRADED SAND WITH GRAVEL (SP).	
37	0.158				POORLY GRADED SAND WITH GRAVEL (SP), about 3.7% fines; about 80% sand, fine to coarse; about 16.3% gravel, fine; gray, saturated, dense.	
					POORLY GRADED SAND (SP).	
34	0.163				POORLY GRADED SAND (SP), about 4.2% fines; about 95.5% sand, fine; about 0.3% gravel, fine; gray, saturated, dense.	
					WOOD (Wd).	DRILLED THROUGH WOOD 70.0~74.0, MIXED NEW MUD USING 300 GALS OF WATER AND 75LBS OF SUPER GEL-X
					POORLY GRADED SAND (SP).	
8	0.332				POORLY GRADED SAND (SP), about 2.5% fines; about 89.2% sand, fine to coarse; about 8.3% gravel, fine; gray, saturated, loose.	
						MILDLY ROUGH DRILLING
20	0.254				POORLY GRADED SAND (SP), about 3.1% fines; about 85.3% sand, fine to coarse; about 11.5% gravel, fine; gray, saturated, medium dense.	
18	0.272				POORLY GRADED SAND (SP), about 2.5% fines; about 9.9% gravel, fine; about 1.339% sand, fine to coarse; gray, saturated, medium dense.	MIXED NEW MUD USING 300 GALS OF WATER AND 75LBS OF SUPER GEL-X
22	0.315				POORLY GRADED SAND (SP), about 3% fines; about 89.8% sand, fine to coarse; about 7.2% gravel, fine; gray, saturated, medium dense.	ROUGH DRILLING
						NO RECOVERY ON FIRST ATTEMPT, GRAVEL IN JAR 28 ON SECOND ATTEMPT ROUGH DRILLING VERY ROUGH DRILLING
30	0.240				POORLY GRADED SAND (SP), about 3.4% fines; about 93.5% sand, medium; about 3.1% gravel, fine; gray, saturated, medium dense.	
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM).	
50	0.184				WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), about 5.7% fines; about 78.8% sand, fine to coarse; about 15.5% gravel, fine; gray, saturated, very dense, powdered piece of limestone in shoe.	50/0.2'
					POORLY GRADED SAND (SP).	
29	0.191				POORLY GRADED SAND (SP), about 5% fines; about 93.2% sand, fine to medium; about 1.8% gravel, fine; gray, saturated, medium dense.	
					LEAN CLAY (CL).	
31		13	23	12	LEAN CLAY (CL), gray, wet, hard.	
87		10	24	13	LEAN CLAY (CL), gray, wet, hard.	
50		10	24	16	LEAN CLAY (CL), gray, wet, hard.	50/0.5'
					WELL GRADED SAND WITH SILT (SW-SM).	50 BLOWS FOR ALMOST EXACTLY 0.5". ON THE FIRST INTERVAL
90	0.141				WELL GRADED SAND WITH SILT (SW-SM), about 7.2% fines; about 89.5% sand, fine to coarse; about 3.3% gravel, fine; gray, saturated, very dense.	50/0.4'
94	0.167				POORLY GRADED SAND WITH SILT (SP-SM).	
					POORLY GRADED SAND WITH SILT (SP-SM), about 6.2% fines; about 93.8% sand, fine to medium; gray, saturated, very dense.	
					WELL GRADED SAND WITH GRAVEL (SP).	
50	0.187				WELL GRADED SAND WITH GRAVEL (SP), about 4.1% fines; about 84.7% sand, fine to coarse; about 11.2% gravel, fine; gray, saturated, very dense.	50/0.5'MIXED NEW MUD USING 300 GALS OF WATER AND 100 LBS OF SUPER GEL-X
					SILTY SAND WITH GRAVEL (SM).	
50/5"					SILTY SAND WITH GRAVEL (SM), about 19.2% fines; about 59% sand, fine to coarse; about 21.1% gravel, fine; gray, wet, very dense.	50/0.4'
					LEAN CLAY (CL).	
50/1"		15	34	15	LEAN CLAY (CL), gray, wet, hard.	50/0.1'
					100% LIMESTONE, unweathered, fossiliferous, medium hard, Few styolites.	10-29-13 -SET CASING TO 139.3', 10-30-13 - W.L. = 2.0', 50 BLOWS AT 139.8', T.D.P.RUN 1 139.3 9.1' MD=139.3. TOP OF ROCK REMOVED 3 7/8" ROLLER BIT AND REDRILLED ENTIRE HOLE WITH A 6 1/4" ROLLER BIT RUN 1 9.L' 0749, 0759, 0803, 0812, 19 MIN. FLUID:WATER. FLUID PRESSURE:50PSI. FEED PRESSURE:450PSI MD=148.3 BOTTOM OF HOLE, GROUTED 10-30-13

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

SHEET IDENTIFICATION B-132

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

BORING LOGS
13-MPST-132

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX		DATE: #####
DWN BY: XXX	CKD BY: XXX	SOLICITATION NO.: W912P9-X-##-####
SUBMITTED BY: XXX		CONTRACT NO.: W912P9-X-##-####
PLOT SCALE: 1:1	PLOT DATE: NO	FILE NUMBER: #####
SIZE: ANSI D	FILE NAME: M-MP-21_B-132BOR.dgn	

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers

auto_time

13-MPST-136

N 802995.883 E 2300884.052
01 OCT 13
38°52'18.8544" 90°9'5.7024"

G.S.E. 445.90

SPT	D10	W	LL	PL	Description	NOTES
					FAT CLAY (CH), grass at surface.	
		17	55	18	FAT CLAY (CH), brown, moist, hard, blocky, roots.	spt=2"od standard split spoon, 140lb, autohammer with 30" drop,correction factor=1.45
		14	45	19	LEAN CLAY (CL).	6 5/8"hsa 0-5'-5" shelby tubes
			46	18	LEAN CLAY (CL), brown, moist, hard, blocky.	could not push tube past 5.0'
10	0.214				POORLY GRADED SAND (SP).	
6	0.254				POORLY GRADED SAND (SP), about 4.8% fines; about 89.6% sand, fine to medium; about 5.6% gravel, fine; brown, moist, loose, homogeneous, with coarse sands and fine gravel.	
3	0.284				POORLY GRADED SAND (SP), about 1.3% fines; about 88.9% sand, fine to medium, subangular to subrounded; about 10.4% gravel, fine to coarse; brown, moist, very loose, homogeneous, traces coarse sand and gravel.	
5	0.240				POORLY GRADED SAND WITH GRAVEL (SP), about 2.3% fines; about 81.3% sand, fine to coarse, subangular to subrounded; about 16.4% gravel, fine to coarse; brown, moist, very loose, homogeneous, with coarse sand and gravel.	
7	0.256				POORLY GRADED SAND (SP).	
8	0.294				POORLY GRADED SAND (SP), about 1.3% fines; about 83.8% sand, fine to coarse, subangular to subrounded; about 14.9% gravel, fine to coarse; brown, moist, very loose, homogeneous, with coarse sand and gravel.	
10	0.272				POORLY GRADED SAND (SP), about 1.8% fines; about 9.7% gravel, fine; about 88.5% sand, fine to medium, subangular to subrounded; brown, moist, very loose, homogeneous, with coarse sand and gravel.	
22	0.225				POORLY GRADED SAND (SP), about 1.1% fines; about 97.8% sand, fine to medium; about 1.1% gravel, fine; brown, moist, loose, homogeneous, trace coarse sand.	
19	0.242				POORLY GRADED SAND WITH GRAVEL (SP).	
20	0.219				POORLY GRADED SAND WITH GRAVEL (SP), about 2.7% fines; about 74.4% sand, fine to coarse, subangular to subrounded; about 23% gravel, fine; brown, moist, loose, homogeneous, with coarse sand and gravel.	
10/01/13 17	0.232				POORLY GRADED SAND WITH GRAVEL (SP), about 78.8% sand, fine to coarse, subangular to subrounded; about 3.1% fines; about 18% gravel, fine; brown, moist, medium dense, homogeneous, with coarse sand and gravel.	
11	0.235				POORLY GRADED SAND WITH GRAVEL (SP); about 2.5% fines; about 71.4% sand; fine to coarse; subangular to subrounded; about 26% gravel, fine to coarse; brown, moist, medium dense, homogeneous, with coarse sand and gravel.	
					POORLY GRADED SAND (SP).	
					POORLY GRADED SAND (SP), about 1.8% fines; about 97.9% sand, fine to medium, subangular to subrounded; about 0.3% gravel, fine; brown, moist, medium dense, homogeneous, trace coarse sand.	
					POORLY GRADED SAND (SP), about 1.8% fines; about 96% sand, fine to coarse, subangular to subrounded; about 9.6% gravel, fine to coarse; brown, moist, medium dense, homogeneous, with coarse sand.	
					POORLY GRADED SAND (SP), about 1.3% fines; about 97.9% sand, fine to medium, subangular to subrounded; about 0.8% gravel, fine; brown, saturated, medium dense, homogeneous, with coarse sand and organic matter from 34'-35.5'....gray from 34'-34.5'.	spt shoe 1/2 full of carbonized wood in tip. wood not included in sample
			43	19	LEAN CLAY (CL).	advanced 6 5/8" hsa to 35.5...began mud
		31	53	21	FAT CLAY (CH).	rotary with 3 7/2" roller bit and mud mix of
			54	19	LEAN CLAY (CL), gray, wet, stiff, homogeneous.	180 gal. tap water and 50lbs. cetco super
			33	21		gel+x
13	0.146		44	20	POORLY GRADED SAND (SP).	shelby tube was overpushed
19	0.091	28	42	19	POORLY GRADED SAND (SP), about 4.9% fines; about 95% sand, fine to medium, subangular to subrounded; gray, saturated, medium dense, homogeneous.	pushed shelby tube from 41'-42' where it
21	0.198		38	19	FAT CLAY (CH), gray, wet, stiff, homogeneous.	stopped.sample fell out during retrieval,
17	0.100		52	17	POORLY GRADED SAND WITH SILT (SP-SM), about 7.8% fines; about 92% sand, fine to medium, subangular to subrounded; about 0.1% gravel, fine; gray, saturated, medium dense, homogeneous, with coarse sand.	followed with split spoon.
20	0.160				POORLY GRADED SAND (SP).	
24	0.188				POORLY GRADED SAND (SP), about 4.4% fines; about 95.5% sand, fine, subangular to subrounded; about 0.1% gravel, fine; gray, saturated, medium dense, homogeneous, with coarse sand.	
27	0.127				POORLY GRADED SAND (SP), about 4.8% fines; about 95.2% sand, fine, subangular to subrounded; gray, saturated, medium dense, homogeneous.	
42	0.140				POORLY GRADED SAND (SP), about 4.3% fines; about 95.1% sand, fine, subangular to subrounded; about 0.6% gravel, fine; gray, saturated, medium dense, homogeneous.	
35	0.146				POORLY GRADED SAND (SP), about 4.5% fines; about 95.1% sand, coarse, subangular to subrounded; about 0.4% gravel, fine; gray, saturated, medium dense, homogeneous.	
31	0.090				POORLY GRADED SAND (SP-SM).	
12	0.151				POORLY GRADED SAND WITH SILT (SP-SM), about 5.2% fines; about 94% sand, fine, subangular to subrounded; about 0.8% gravel, fine; gray, saturated, medium dense, homogeneous.	
34					POORLY GRADED SAND WITH SILT (SP-SM), about 6.1% fines; about 92.5% sand, fine, subangular to subrounded; about 1.4% gravel, fine; gray, saturated, dense, homogeneous.	
16	0.232				POORLY GRADED SAND WITH SILT (SP-SM), about 5.2% fines; about 81.2% sand, fine to coarse, subangular to subrounded; about 13.6% gravel, fine; gray, saturated, dense, homogeneous, with coarse sand and gravel.	
13	0.310				POORLY GRADED SAND WITH SILT (SP-SM), about 5.8% fines; about 93.7% sand, coarse, subangular to subrounded; about 0.5% gravel, fine; gray, saturated, dense, homogeneous, trace coarse sand.	
11	0.210				POORLY GRADED SAND (SP).	moderately rough drilling
12	0.380				POORLY GRADED SAND (SP), about 4.3% fines; about 93.3% sand, fine to coarse, subangular to subrounded; about 2.4% gravel, fine; gray, saturated, medium dense, homogeneous, trace coarse sand.	
51	0.240				SILTY SAND (SM).	
15	0.160				SILTY SAND (SM), about 12.6% fines; about 83% sand, fine to medium, subangular to subrounded; about 4.3% gravel, fine; gray, saturated, dense, homogeneous, trace coarse sand, trace organic matter.	
31	0.230				WOOD (Wd).	
33	0.212				POORLY GRADED SAND (SP), about 0.2% fines; about 97.9% sand, fine to medium, subangular to subrounded; about 1.9% gravel, fine to coarse; gray, saturated, medium dense, homogeneous, trace coarse sand.	lost recirculation of mud after 83.5' sample. mud losses noted between each drill interval. lost approx. 45gal. of mud between 83.5' and 88.5
27	0.151				POORLY GRADED SAND (SP), about 2.7% fines; about 83.3% sand, fine to medium, subangular to subrounded; about 14.1% gravel, fine; gray, saturated, medium dense, homogeneous, with coarse sand and gravel.	lost approx.45gal. of mud between 88.5' and 93.5
13	0.366				WELL GRADED SAND WITH GRAVEL (SW).	
11	0.629				WELL GRADED SAND WITH GRAVEL (SW), about 3.1% fines; about 77.4% sand, fine to coarse, subangular to subrounded; about 19.5% gravel, fine; gray, saturated, medium dense, homogeneous, with coarse sand and gravel, trace organic matter.	lost approx. 60gal. of water mud
22	0.155				POORLY GRADED SAND (SP).	
32	0.158				POORLY GRADED SAND (SP), about 2.2% fines; about 93.6% sand, fine to coarse, subangular to subrounded; about 4.2% gravel, fine; gray, saturated, medium dense, homogeneous, with fine sand, trace gravel.	rough drilling lost approx.45 gal of mud
62		13	24	15	POORLY GRADED SAND WITH GRAVEL (SP), about 1.5% fines; about 80% sand, fine to coarse, subangular to subrounded; about 18.5% gravel, fine; gray, saturated, very dense, homogeneous, with gravel.	lost approx. 60 gal of mud
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM).	discontinued drilling at 105' on 10/1/2013 resumed drilling on 10/2/2013...rough drilling
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), about 7.7% fines; about 72.5% sand, fine to coarse, subangular to subrounded; about 19.8% gravel, fine; gray, saturated, medium dense, homogeneous.	rough drilling
					WELL GRADED SAND WITH GRAVEL (SW).	
					WELL GRADED SAND WITH GRAVEL (SW), about 4.6% fines; about 78% sand, fine to coarse, subangular to subrounded; about 17.4% gravel, fine; gray, saturated, dense, homogeneous, with gravel.	rough drilling.....lost approx .60 gal of mud between 113.5'- 118.5'
					POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM).	
					POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), about 5.3% fines; about 55% sand, fine to coarse, subangular to subrounded; about 39.7% gravel, fine to coarse; gray, saturated, dense, homogeneous, with gravel.	lost approx 60 gal of mud rough drilling...
					WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM).	
					WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM), about 7.1% fines; about 48.8% gravel, fine to coarse; about 44.1% sand, fine to coarse, subangular to subrounded; gray, saturated, medium dense, homogeneous, with gravel.	rough drilling....lost approx. 50 gal of mud between 123.5 and 128.5'
					WELL GRADED SAND WITH GRAVEL (SW).	
					WELL GRADED SAND WITH GRAVEL (SW), about 4.2% fines; about 58% sand, fine to coarse, subangular to subrounded; about 37.8% gravel, fine; gray, saturated, medium dense, homogeneous, with gravel.	rough drilling....lost aprox 50 gal of mud between 128.5' and 133.5'
					WELL GRADED SAND WITH GRAVEL (SW), about 2.5% fines; about 63.3% sand, fine to coarse, subangular to subrounded; about 34.2% gravel, fine; gray, saturated, medium dense, homogeneous, with fine gravel.	rough drilling....lost approx 45 gal of mud between 133.5' and 138.5'
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM).	
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), about 7.1% fines; about 51.6% sand, fine to coarse, subangular to subrounded; about 41.3% gravel, fine to coarse; gray, saturated, medium dense, homogeneous, with gravel.	lost aprox 45 gal of mud
					FAT CLAY (CH).	
					POORLY GRADED SAND WITH SILT (SP-SM), about 6.2% fines; about 89.7% sand, fine to coarse, subangular to subrounded; about 4.1% gravel, fine; gray, saturated, dense, homogeneous, with coarse sand and gravel.	rough drilling...lost approx 45 gal of mud between 143.5 and 148.5'
					SILTY SAND WITH GRAVEL (SM).	
					SILTY SAND WITH GRAVEL (SM), about 12.9% fines; about 49.4% sand, fine to coarse; about 37.7% gravel, fine to coarse; gray, saturated, very dense, with cobbles and sand.	lost approx 45 gal of mud...advanced nq casing to 153.3' began nq2 core with #6 impregnated bit...measured depth before coring 153.3
					LEAN CLAY (CL), gray, wet, hard, homogeneous, with sand and gravel.	
					100% SANDSTONE, slightly weathered, medium bedded, fine grained, wet, trace of pyrite.	
					100% SANDSTONE, unweathered, medium bedded, fine grained, hard, with limestone clasts and shale filled fracture.	
					60% SANDSTONE, unweathered, medium bedded, fine grained, hard, dry, w/occasional clay and shale laminations and tr of thin beds; trace of pyrite; tr of interbedded sandstone and shale.	
					100% SHALE, highly weathered, dry, weathered shale, almost completely clay.	
					100% LIMESTONE, unweathered, thickly bedded, finely crystalline, hard, damp, Natural breaks are infilled with shale or calcite, some stylolites.	
					273.70	grouted upon completion. 9 bags portland cement with 2-3lbs bentonite per bag of cement. 7gal of water per bag of cement. tremie pipe set at 85'

ELEVATIONS IN N.A.V.D. 88

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

SHEET IDENTIFICATION
B-136

WOOD RIVER D&LD
MEL PRICE CUTOFF WALL
MISSISSIPPI RIVER
MADISON COUNTY, IL

BORING LOGS
13-MPST-136

U.S. ARMY CORP OF ENGINEERS
ST. LOUIS DISTRICT
ST. LOUIS, MISSOURI 63103

DESIGNED BY: XXX		DATE: #####
DWN BY: XXX	CKD BY: XXX	SOLICITATION NO.: W912P3-X-##-####
SUBMITTED BY: XXX		CONTRACT NO.: W912P3-X-##-####
PLOT SCALE: 1:1	PLOT DATE: NO	FILE NUMBER: ######
SIZE: ANSI D	FILE NAME: M-MP-21_B-136BOR.dgn	

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers

auto_time

13-MPST-142

N 802433.46 E 2301950.23

23 SEP 13

G.S.E. 446.20

SPT	D10	W	LL	PL	Description	NOTES
			33	18	LEAN CLAY (CL), grass covered clay at surface.	spt=2"od standard split spoon with 140lb auto drop hammer
		14	35	18	LEAN CLAY (CL), brown, dry, hard.	
14	0.249	16	48	18	FAT CLAY (CH), brown, dry, hard, with silt, with pockets of fine to coarse sand.	
8	0.151		53	19	POORLY GRADED SAND (SP), about 2.3% fines; about 9.3% gravel, fine; about 88.4% sand, fine to medium, subangular to subrounded; dry, medium dense, homogeneous, with coarse sand trace fine gravel.	
	0.238				WELL GRADED SAND WITH SILT (SW-SM). WELL GRADED SAND WITH SILT (SW-SM), about 8.5% fines; about 82.6% sand, fine to medium, subangular to subrounded; about 8.9% gravel, fine; brown, dry, loose, homogeneous, with coarse sand trace fine gravel.	spt shoe blocked by rock cobble
4	0.273				POORLY GRADED SAND (SP). POORLY GRADED SAND (SP), about 2.9% fines; about 97.1% sand, fine to medium, subangular to subrounded; dry, loose, homogeneous.	
4	0.247				POORLY GRADED SAND (SP), about 0.8% fines; about 88.6% sand, fine to coarse, subangular to subrounded; about 10.6% gravel, fine; brown, dry, loose, with course sand..trace fine gravel.	
8	0.255				POORLY GRADED SAND (SP), about 0.8% fines; about 98.5% sand, fine to medium, angular to subrounded; about 0.8% gravel, fine; dry, loose, homogeneous, with course sand... POORLY GRADED SAND (SP), about 1.1% fines; about 91.2% sand, fine to medium, angular to subrounded; about 7.7% gravel, fine; brown, dry, medium dense, homogeneous.	
7	0.222				POORLY GRADED SAND (SP), about 0.8% fines; about 98.9% sand, fine to medium, subangular to subrounded; about 0.3% gravel, fine; brown, dry, medium dense, homogeneous.	
6	0.170				POORLY GRADED SAND (SP), about 2.4% fines; about 97.3% sand, fine to medium, subangular to subrounded; about 0.3% gravel, fine; brown, dry, medium dense, homogeneous.	
9	0.202				POORLY GRADED SAND (SP), about 2.4% fines; about 92.6% sand, fine to medium, subangular to subrounded; about 5% gravel, fine; brown, dry, medium dense, homogeneous.	
41	0.214				POORLY GRADED SAND (SP), about 3.4% fines; about 83.8% sand, fine to coarse, subangular to subrounded; about 12.8% gravel, fine to coarse; brown, dry, dense, homogeneous.	
17	0.201				POORLY GRADED SAND WITH GRAVEL (SP). POORLY GRADED SAND WITH GRAVEL (SP), about 2% fines; about 80.6% sand, fine to coarse, subangular to subrounded; about 17.4% gravel, fine to coarse; brown, dry, medium dense, homogeneous, with course sand and fine gravel.	
14	0.168				POORLY GRADED SAND (SP), about 2.3% fines; about 71.2% sand, fine to coarse, subangular to subrounded; about 26.5% gravel, fine to coarse; brown, moist, medium dense, homogeneous, with course sand and trace fine gravel..trace wood w/gravel.	
7	0.151	16	31	13	POORLY GRADED SAND WITH SILT (SP-SM). POORLY GRADED SAND WITH SILT (SP-SM), about 5.1% fines; about 94.1% sand, fine to medium, subangular to subrounded; about 0.8% gravel, fine; brown, moist, loose, homogeneous.	
			50	19	LEAN CLAY (CL), gray, homogeneous, with beds of fine sand interbedding.	
09/23/13			49	19	POORLY GRADED SAND (SP), fine to medium, subangular to subrounded; brown, moist, loose, homogeneous.	
6		31	54	19	FAT CLAY (CH).	
		29	54	19	LEAN CLAY (CL).	drilling method changed; began mud rotary at 41' using 25lb of quick-gel and 80 gal water with 2 15/16" roller
3		30	31	17	FAT CLAY (CH).	
			36	17	FAT CLAY (CH), gray, moist, homogeneous.	
14	0.139				LEAN CLAY (CL). LEAN CLAY (CL), gray, wet, soft, homogeneous, with sand and silt...interbedded thin beds of fine gray sand.	
4		32	44	19	LEAN CLAY (CL), gray, wet, soft, homogeneous, trace sand. POORLY GRADED SAND (SP).	
27	0.105				POORLY GRADED SAND (SP), about 4.5% fines; about 95.2% sand, fine, subangular to subrounded; about 0.3% gravel, fine; gray, saturated, medium dense, homogeneous. LEAN CLAY (CL).	
27		34	36	18	LEAN CLAY (CL), gray, wet, soft, homogeneous. POORLY GRADED SAND WITH SILT (SP-SM).	
	0.144				POORLY GRADED SAND WITH SILT (SP-SM), about 6.3% fines; about 93.7% sand, fine to medium, subangular to subrounded; gray, saturated, medium dense, homogeneous.	
25	0.105				LEAN CLAY (CL).	
20	0.170				LEAN CLAY (CL), gray, wet, medium stiff, homogeneous. POORLY GRADED SAND WITH SILT (SP-SM), about 5.7% fines; about 94.3% sand, fine to medium, subangular to subrounded; brown, saturated, medium dense, homogeneous.	
27	0.170				POORLY GRADED SAND (SP). POORLY GRADED SAND (SP), about 3.9% fines; about 96.1% sand, fine, subangular to subrounded; gray, saturated, medium dense, homogeneous.	
17	0.168				POORLY GRADED SAND (SP), about 4% fines; about 95.5% sand, fine to medium, subangular to subrounded; about 0.5% gravel, fine; gray, saturated, medium dense, homogeneous.	
32	0.110				POORLY GRADED SAND (SP), about 4.4% fines; about 95.6% sand, fine to medium, subangular to subrounded; gray, saturated, medium dense, homogeneous. POORLY GRADED SAND (SP), about 3.5% fines; about 82.6% sand, fine to coarse, subangular to subrounded; about 13.9% gravel, fine to coarse; gray, saturated, medium dense, homogeneous.	
47	0.109				WELL GRADED SAND WITH SILT (SW-SM). WELL GRADED SAND WITH SILT (SW-SM), about 6.4% fines; about 91.9% sand, fine to medium, subrounded; about 1.7% gravel, fine; gray, saturated, dense, homogeneous, with coarse sand..trace fine gravel. POORLY GRADED SAND WITH SILT (SP-SM).	
30	0.078				POORLY GRADED SAND WITH SILT (SP-SM), about 5.7% fines; about 93.9% sand, fine to medium, subrounded; about 0.4% gravel, fine; gray, saturated, dense, with coarse sand trace of fine gravel. POORLY GRADED SAND WITH SILT (SP-SM), about 8.3% fines; about 86.2% sand, fine to coarse, subrounded; about 5.5% gravel, fine; gray, saturated, dense, with coarse sand.	
					WELL GRADED SAND WITH GRAVEL (SW).	
23	0.221				WELL GRADED SAND WITH GRAVEL (SW), about 4.2% fines; about 79.4% sand, medium to coarse, subrounded; about 16.4% gravel, fine; gray, saturated, medium dense, homogeneous, with fine gravel.	
					POORLY GRADED SAND (SP).	
27	0.274				POORLY GRADED SAND (SP), about 2.7% fines; about 85.1% sand, medium to coarse, subrounded; about 12.2% gravel, fine to coarse; gray, saturated, medium dense, homogeneous, with fine gravel.	
29	0.213				POORLY GRADED SAND (SP), about 4.4% fines; about 86.9% sand, fine to coarse, subrounded; about 8.7% gravel, fine; gray, saturated, medium dense, homogeneous, with fine gravel.	
					WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM).	
33	0.162				WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), about 6.2% fines; about 77.1% sand, fine to coarse, subrounded; about 16.7% gravel, fine; gray, saturated, dense, homogeneous, with fine gravel.	rough drilling start
					POORLY GRADED SAND WITH GRAVEL (SP).	
13	0.291				POORLY GRADED SAND WITH GRAVEL (SP), about 2.8% fines; about 80.3% sand, fine to coarse, subrounded; about 16.9% gravel, fine; gray, saturated, medium dense, homogeneous, with fine gravel.	
31	0.299				POORLY GRADED SAND WITH GRAVEL (SP), about 3.8% fines; about 61.6% sand, coarse, subrounded; about 34.6% gravel, fine to coarse; gray, saturated, dense, homogeneous, medium sand and fine gravel.	
					WELL GRADED SAND WITH GRAVEL (SW).	
27	0.251				WELL GRADED SAND WITH GRAVEL (SW), about 4.2% fines; about 75.8% sand, coarse, subrounded; about 19.9% gravel, fine; gray, medium dense, homogeneous, with medium to fine sand...and fine gravel.	
					POORLY GRADED SAND (SP).	
23	0.184				POORLY GRADED SAND (SP), about 3.3% fines; about 94.1% sand, fine to coarse, subrounded; about 2.6% gravel, fine; gray, saturated, medium dense, homogeneous, with trace fine gravel.	
33	0.167				POORLY GRADED SAND (SP), about 4.1% fines; about 95.7% sand, fine to medium, subrounded; about 0.2% gravel, fine; gray, saturated, dense, homogeneous.	
					POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM).	
57	0.123				POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), about 7% fines; about 75.8% sand, fine to medium, subrounded; about 17.2% gravel, fine; gray, saturated, dense, homogeneous, with fine gravel.	rough drilling end
					POORLY GRADED SAND WITH SILT (SP-SM).	
44	0.096				POORLY GRADED SAND WITH SILT (SP-SM), about 8.2% fines; about 91.5% sand, fine, subrounded; about 0.3% gravel, fine; gray, saturated, dense, homogeneous.	
38					WELL GRADED SAND WITH SILT (SW-SM). WELL GRADED SAND WITH SILT (SW-SM), about 11.4% fines; about 84.5% sand, fine to coarse, subrounded; about 4.1% gravel, fine; gray, saturated, dense, homogeneous.	
22					SILTY SAND (SM).	
27		19	23	14	SILTY SAND (SM), about 12.3% fines; about 75.1% sand, coarse, subrounded; about 12.5% gravel, fine; gray, saturated, medium dense, homogeneous.	
					LEAN CLAY (CL).	
26		16	25	14	LEAN CLAY (CL), about 61.9% fines; about 8.8% gravel, fine; about 29.4% sand, coarse, subrounded; gray, wet, very stiff, homogeneous, sand and rock fragments....glacial till.	
64		16	23	13	SANDY LEAN CLAY (CL). SANDY LEAN CLAY (CL), about 56.5% fines; about 33.5% sand, coarse, subrounded; about 10% gravel, fine; gray, wet, very stiff, homogeneous, sand and rock fragments.	
					SANDY LEAN CLAY (CL), about 65.4% fines; about 32.7% sand, coarse, subrounded; about 1.9% gravel, fine; gray, wet, very stiff, homogeneous, with fine gravel.	stopped drilling 9/25/2013 at 152' resume drilling at 9/30/2013
46		15	35	14	LEAN CLAY (CL). LEAN CLAY (CL), about 100% fines; gray, wet, very stiff, homogeneous, with rock fragments.	
					100% LIMESTONE, slightly weathered, fossiliferous, hard.	rough drilling start began rock core at 158.7 using pq core barrel with wireline and water
					278.20	boring grouted using 15 bag of 94 lb portland cement mixed with 10 gal h20 per bag and trimmed to a depth of 100'

ELEVATIONS IN N.A.V.D. 88

DISCLAIMER: NOT FOR CONSTRUCTION. This is for planning purposes only and is subject to change. This information is not to be relied upon when preparing a bid package in response to any solicitation for work.

SHEET IDENTIFICATION B-142	WOOD RIVER D&D MEL PRICE CUTOFF WALL MISSISSIPPI RIVER MADISON COUNTY, IL BORING LOGS 13-MPST-142	U.S. ARMY CORP OF ENGINEERS ST. LOUIS DISTRICT ST. LOUIS, MISSOURI 63103	DESIGNED BY: XXX; DATE: ##### ; DWN BY: XXX; CKD BY: XXX; SOLICITATION NO.: W912P9-X-##-#### ; SUBMITTED BY: XXX; CONTRACT NO.: W912P9-X-##-#### ; PLOT SCALE: 1:1; PLOT DATE: NO; FILE NUMBER: ##### ; SIZE: ANSI D; FILE NAME: M-MP-21_B-142BOR.dgn

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

US Army Corps of Engineers®