

QU(TSF) P-Penet. L-Labor.	STANDARD PENETRATION TEST	Elev. 420.6
DEPTH	BLOWS/6"	
3.5	5-10-10	
8.5	3-5-7	
13.5	2-3-3	
18.5	1-2-2	
23.5	2-3-3	
28.5	5-5-5	
33.5	2-2-3	Elev. 388.6
38.5	7-10-16	Dark Gray, Loose, Sandy SILT, Wet, (ML) Elev. 383.6
43.5	10-15-18	
48.5	15-20-15	
53.5	6-7-9	Brown and Gray, Medium Dense to Dense, Fine SAND, Wet, (SP), Medium to Fine below 49.5ft., Fine to Coarse below 59.5 ft.
58.5	6-8-14	
63.5	9-12-21	
68.5	20-31-31	Elev. 353.6
73.5	11-16-23	
78.5	10-11-12	
83.5	25-21-27	Gray, Very Dense to Medium Dense, Fine to Medium SAND, Wet, (SP) - some gravel layers encountered from 72.0 to 82.0 ft. - Coarse to Medium SAND at 79.0 ft. - cherty gravel layer at 84.0 ft - rough drilling from 96.0 to 97.5, 103.0 to 104.0 and 106.0 to 108.5 ft.
88.5	15-19-19	
98.5	22-27-25	
108.5	38-20-14	Elev. 312.1
118.5	23-34-30	Gray to Brown, Dense to Very Dense, Coarse to Fine SAND, Wet, (SW), Little Fine Gravel, Trace Limestone Fragments
ROCK CORE		
DEPTH	REC%	RQD%
125.5	72	33
130.5	100	93
135.5	100	80
140.5	100	93
145.5	100	87
150.5	100	95
155.5	100	95
160.5	100	100
165.5	100	97
170.5	100	97
175.5	100	100
180.5	100	95
185.5	100	92
190.5	100	95
195.5	100	60

Brown, Medium Dense to Very Loose, Medium
to Fine Grained SAND, Moist, (SP)

Elev. 388.6

Dark Gray, Loose, Sandy SILT, Wet, (ML)
Elev. 383.6

Elev. 353.6

Gray, Very Dense to Medium Dense, Fine to Medium
SAND, Wet, (SP)
- some gravel layers encountered from 72.0
to 82.0 ft.
- Coarse to Medium SAND at 79.0 ft.
- cherty gravel layer at 84.0 ft
- rough drilling from 96.0 to 97.5, 103.0 to
104.0 and 106.0 to 108.5 ft.

Elev. 312.1

Gray to Brown, Dense to Very Dense, Coarse
to Fine SAND, Wet, (SW), Little Fine Gravel,
Trace Limestone Fragments

Elev. 297.6

DOLomite, dark gray, hard, finely crystalline,
thin bedded, slightly weathered
Elev. 292.9

LIMESTONE, dark gray to gray, hard, finely
to medium crystalline, thin to thick bedded,
slightly weathered to fresh
- fresh and thick bedded below 130.5 ft.
- thin bedded below 140.5 ft.
- thick bedded below 145.5 ft.
- medium to thick bedded and slightly weathered
below 155.5 ft.
- gray, finely to medium crystalline, and medium
to thick bedded below 175.5 ft.
- dark gray, dolomite, pitted to slightly pitted
from 163.2 to 164.4 and 167.8 to 169.5 ft.
- gray, soft, shale seams at 132.4, 134.3, and
135.0 ft.
- trace gray shale at 164.6 and 179.0 ft.
- 1.0" gray, soft, shale seams at 174.3 and
174.6 ft.
- dark blue shale seam from 181.5 to 181.6 ft.
- blue shale seams at 189.9 and 190.3 ft.
- cemented horizontal joints from 182.3 to
183.0 ft.
- 45 degree fracture at 171.0 ft.
- cemented vertical fracture from 179.0 to 179.8,
185.5 to 187.0 and 187.3 to 187.8 ft.
- chert nodules at 132.3 and 134.3 ft.
- 1.0" chert seam at 170.4 ft.
- chert lense at 172.9 ft.
- trace chert at 190.8 ft.
- 0.5" chert seams from 192.9 to 193.8 ft.

Elev. 225.1

QU(TSF) P-Penet. L-Labor.	STANDARD PENETRATION TEST	Elev. 415.7
DEPTH	BLOWS/6"	
3.5	4-4-6	
8.5	3-3-4	Brown, Loose, Medium to Fine SAND, Dry, (SW) Elev. 407.2
13.5	2-3-2	
18.5	1-2-2	
23.5	WOH-1-2	Brown to Dark Gray, Loose to Very Loose, Fine SAND, Dry to Wet, (SP)
28.5	3-3-2	
33.5	4-1-1	Elev. 381.9
38.5	6-3-2	Gray, Soft, Fat CLAY, Moist, (CH) Elev. 378.7
43.5	10-15-11	Dark Gray, Loose, Fine, Silty SAND, Wet, (SM) Elev. 372.2
48.5	11-9-10	Dark Gray, Medium Dense, Fine to Coarse SAND, Wet, (SW), Trace Gravel
53.5	11-10-9	Elev. 362.2
58.5	7-8-8	Dark Gray, Medium Dense, Fine, Silty SAND, Wet, (SM) Elev. 357.2
63.5	6-9-10	Dark Gray, Medium Dense, Fine SAND, Wet, (SP) Elev. 352.2
68.5	11-18-24	Gray, Medium Dense to Dense, Coarse SAND, Wet, (SW), Trace Gravel Elev. 346.9
73.5	14-16-22	Gray, Dense, Fine to Medium SAND, Wet, (SP), Trace Gravel Elev. 338.7
78.5	15-22-23	Gray, Dense, Fine, Silty SAND, Wet, (SM) - possible boulder at 81.0 ft. Elev. 333.7
83.5	35-42-45	
88.5	50/3"	
93.5	38-32-32	Gray to Dark Gray, Very Dense, Fine SAND, Wet, (SP), Some Gravel and Cobbles
98.5	14-14-21	Elev. 317.2
103.5	12-29-26	
108.5	31-30-32	Gray, Dense to Very Dense, Coarse SAND, Wet, (SW), Trace Gravel
113.5	18-20-24	Elev. 295.7
ROCK CORE		
DEPTH	REC%	RQD%
125	100	88
130	100	100
135	100	80
140	100	98
145	100	90
150	100	85
155	98	95
160	100	100
165	100	85
170	100	97

Brown, Loose, Medium to Fine SAND, Dry, (SW)
Elev. 407.2

Brown to Dark Gray, Loose to Very
Loose, Fine SAND, Dry to Wet, (SP)

Elev. 381.9

Gray, Soft, Fat CLAY, Moist, (CH)
Elev. 378.7

Dark Gray, Loose, Fine, Silty SAND, Wet, (SM)
Elev. 372.2

Dark Gray, Medium Dense, Fine to
Coarse SAND, Wet, (SW), Trace Gravel

Elev. 362.2

Dark Gray, Medium Dense, Fine, Silty SAND, Wet, (SM)
Elev. 357.2

Dark Gray, Medium Dense, Fine SAND, Wet, (SP)
Elev. 352.2

Gray, Medium Dense to Dense, Coarse
SAND, Wet, (SW), Trace Gravel
Elev. 346.9

Gray, Dense, Fine to Medium SAND, Wet,
(SP), Trace Gravel
Elev. 338.7

Gray, Dense, Fine, Silty SAND, Wet, (SM)
- possible boulder at 81.0 ft.
Elev. 333.7

Gray to Dark Gray, Very Dense, Fine
SAND, Wet, (SP), Some Gravel and Cobbles

Elev. 317.2

Gray, Dense to Very Dense, Coarse
SAND, Wet, (SW), Trace Gravel

Elev. 295.7

DOLomite, gray, hard, finely crystalline,
thin bedded, slightly weathered
- cemented fracture at 123.1 ft.
- medium hard, clay seam from 123.8 to 123.9 ft.
Elev. 291.8

LIMESTONE, gray, hard, finely crystalline,
thin to thick bedded, fresh
- medium bedded below 150.0 ft.
- thick bedded below 160.0 ft.
- dolomite from 135.8 to 139.0, 140.0 to 141.0,
159.1 to 160.3 and 163.7 to 165.0 ft.
- 1.0" hard, clay seam at 160.5 ft.
- cemented horizontal fractures from 126.2
to 129.4, at 132.2, 132.9, 133.6, from 145.0
to 147.7, at 155.3, 160.4, 160.7, and 163.3 ft.
- cemented fractures from 141.7 to 144.7 ft.
- horizontal fractures at 150.8 and 154.9 ft.
- cemented vertical fracture from 145.0
to 145.6 ft.
- chert lenses from 131.9 to 135.0, at 141.2,
165.9, 166.8, and 168.8 ft.
- 1.0" chert seam at 154.5 ft.

Elev. 245.7

Boring Number IL-1
Pier 14
Sta. 104+10.30, 42.99' Rt.

QU(TSF) P-Penet. L-Labor.	STANDARD PENETRATION TEST	Elev. 413.7
DEPTH	BLOWS/6"	
3.5	4-4-6	
8.5	2-2-2	
13.5	2-2-2	
18.5	3-2-4	
23.5	3-5-5	
28.5	6-6-5	
33.5	4-5-6	
38.5	4-3-3	Elev. 375.2
43		Gray, Soft to Firm, CLAY, Moist, (CH), With Sand
48.5	2-3-3	Elev. 365.2
53.5	3-3-3	Gray, Soft, Sandy, Clayey SILT, Moist, (ML)
58.5	14-23-26	Elev. 355.2
63.5	7-7-18	
68.5	17-28-18	
73.5	14-18-17	Gray, Dense to Medium Dense, Fine to Very Fine SAND, Wet, (SP) - rough drilling from 86.0 to 88.5 ft.
78.5	17-17-18	
83.5	9-14-14	
88.5	11-47-35	Elev. 325.2
93.5	9-10-15	
98.5	11-17-19	
103.5	20-20-18	Gray, Very Dense to Medium Dense, Fine to Coarse SAND, Wet, (SW), With Cobbles, Gravel - rough drilling from 106.0 to 108.0, 111.0 to 112.0, 113.0 to 113.5 and 114.0 to 116.0 ft.
108.5	24-36-39	
113.5	50-50/3"	Elev. 297.7
ROCK CORE		
DEPTH	REC%	RQD%
120	100	69
125	100	65
130	100	92
135	100	95
140	100	92
145	100	98
150	100	95
155	100	100
160	100	100
165	100	93

Brown to Gray, Loose to Medium Dense,
Fine SAND, Dry to Wet, (SP),
Trace Fine Gravel

Elev. 375.2

Gray, Soft to Firm, CLAY, Moist, (CH),
With Sand

Elev. 365.2

Gray, Soft, Sandy, Clayey SILT, Moist, (ML)

Elev. 355.2

Gray, Dense to Medium Dense, Fine to
Very Fine SAND, Wet, (SP)
- rough drilling from 86.0 to 88.5 ft.

Elev. 325.2

Gray, Very Dense to Medium Dense, Fine to
Coarse SAND, Wet, (SW), With Cobbles, Gravel
- rough drilling from 106.0 to 108.0, 111.0
to 112.0, 113.0 to 113.5 and 114.0 to 116.0 ft.

Elev. 297.7

DOLomite, gray to dark gray, hard, finely
crystalline, thin to medium bedded,
slightly weathered, slightly pitted
- dark gray, medium bedded below 125.0 ft.
- 0.12" gray, soft, shale seam at 118.1 ft.
- vertical fracture from 118.9 to 119.5 ft.
- multiple fractures from 123.1 to 123.3 ft.
- 1.0" void at 126.5 ft.
Elev. 287.0

LIMESTONE, gray to dark gray, hard, finely
crystalline, medium to very thick bedded,
slightly weathered
- thick bedded below 140.0 ft.
- dark gray to gray below 155.0 ft.
- thick to very thick bedded below 160.0 ft.
- calcite deposits at 136.1, 136.6 and 140.9 ft.
- dolomite from 138.2 to 140.8 ft.
- dolomite, pitted from 142.6 to 143.9 ft.
- gray, very soft, shale and clay seam from
163.1 to 163.5 ft.
- fractured from 131.2 to 131.4 ft.
- vertical fracture from 138.2 to 138.4 ft.
- chert nodules at 132.2 and 132.9 ft.
- 0.12" chert seam at 134.3 ft.
- cherty from 134.7 to 134.9, 135.0 to 138.2,
154.0 to 154.8, 159.3 to 159.6, 161.4 to 161.9 ft.
- 0.25" chert seam at 157.3 ft.
Elev. 248.7

Boring Number IL-2
Pier 15
Sta. 106+98.17, 44.54' Lt.

Note: For Typical Boring and General Notes, see Sheet No. 9.

Detailed JUL 2009
Checked JUL 2009

Boring No. EA-5
Anchor Pier 13
Sta. 102+54.85, 41.23' Rt.

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 11 of 152

BORING DATA (3 OF 7)

CONTRACT NO. 76D61	
F.A. ROUTE	SECTION
999	82-1B-2
FED. AID PROJECT	ILLINOIS
COUNTY	ST. CLAIR
USER NAME = jjo11:ff	
PLOT SCALE = #SCALE#	
PLOT DATE = 4/14/2010	
DESIGNED -	HNTB
CHECKED -	CMT
DRAWN -	CMT / HNTB
REVISED -	
REVISED -	
REVISED -	
REVISED -	
ILLINOIS APPROACH STRUCTURE FOR NEW I-70 MISSISSIPPI RIVER BRIDGE	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105 TELEPHONE (816) 472-1201 CERTIFICATE OF AUTHORITY NO. 001270	CMT CRAWFORD, MURPHY & TILLY, INC. 2750 WEST WASHINGTON STREET SPRINGFIELD, IL 62702 TELEPHONE (217) 787-8050 ENGINEERING CORPORATION - 000631