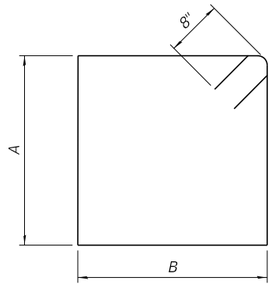
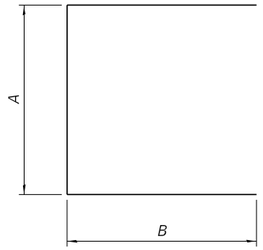


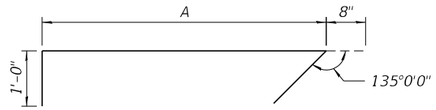
BARS s901(E) & s903(E)

Bars	A	B
s901(E)	7'-8"	7'-8"
s903(E)	11'-8"	9'-4"



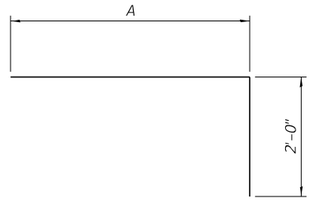
BARS s902(E) & s904(E) & s907(E)

Bars	A	B
s902(E)	7'-8"	5'-10"
s904(E)	11'-8"	6'-8"
s907(E)	4'-10"	5'-10"



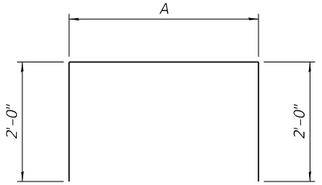
BARS s905(E) & s906(E)

Bars	A
s905(E)	7'-8"
s906(E)	11'-8"



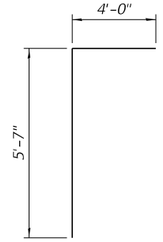
BARS p901(E) & p902(E)

Bars	A
p901(E)	22'-5"
p902(E)	51'-0"

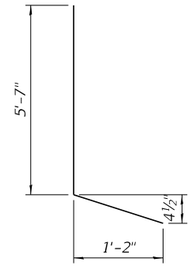


BARS p905(E) & p906(E)

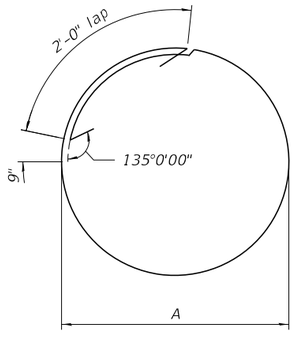
Bars	A
p905(E)	54'-0"
p906(E)	53'-6"



BARS u903(E)

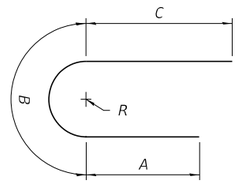


BARS u904(E)



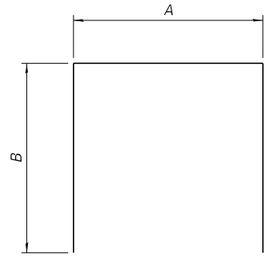
BARS hp901(E) & hp902(E)

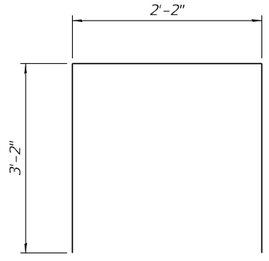
Bars	A
hp901(E)	8'-2"
hp902(E)	6'-8"



BARS u901(E) & u902(E)

Bars	A	B	C	R
u901(E)	5'-4"	11'-9⅜"	5'-4"	3'-9"
u902(E)	5'-9"	14'-5"	7'-9"	4'-7"

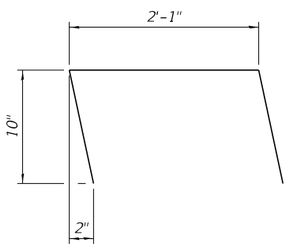




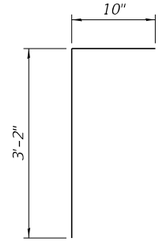
BARS u905(E) & s908(E)

Bars	A	B
u905(E)	11'-6"	4'-7"
s908(E)	7'-8"	2'-9"

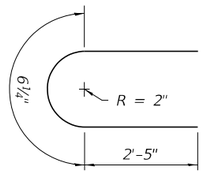
BARS s909(E)



BARS h906(E)



BARS n901(E)



BARS r901(E)

PIER 9
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h901(E)	20	#8	56'-0"	
	h902(E)	36	#9	38'-0"	
	h903(E)	13	#6	31'-8"	
	h904(E)	13	#6	10'-4"	
	h905(E)	5	#5	7'-5"	
	h906(E)	4	#5	3'-9"	
	hp901(E)	99	#7	29'-2"	
	hp902(E)	174	#7	24'-5"	
	n901(E)	6	#5	4'-0"	
	p901(E)	26	#11	24'-5"	
	p902(E)	26	#11	53'-0"	
	p903(E)	26	#11	57'-8"	
	p904(E)	26	#7	3'-0"	
	p905(E)	28	#11	58'-0"	
	p906(E)	28	#11	57'-6"	
	r901(E)	8	#5	5'-4"	
	s901(E)	86	#6	32'-0"	
	s902(E)	84	#6	19'-4"	
	s903(E)	66	#6	43'-4"	
	s904(E)	104	#6	25'-0"	
	s905(E)	86	#6	9'-4"	
	s906(E)	132	#6	13'-4"	
	s907(E)	48	#6	16'-6"	
	s908(E)	48	#6	13'-2"	
	s909(E)	15	#5	8'-6"	
**	sp901(E)	3	#7	25'-4"	
**	sp902(E)	3	#7	46'-3"	
**	sp903(E)	3	#7	17'-7"	
	u901(E)	22	#8	22'-5"	
	u902(E)	40	#9	27'-11"	
	u903(E)	12	#7	9'-7"	
	u904(E)	12	#7	6'-10"	
	u905(E)	20	#7	20'-8"	
	v901(E)	66	#14	45'-0"	
	v902(E)	66	#14	37'-10"	
	v903(E)	66	#14	42'-6"	
	v904(E)	66	#14	40'-4"	
	v905(E)	66	#14	40'-0"	
	v906(E)	66	#14	42'-10"	
	v907(E)	120	#11	36'-2"	

** Length is height of spiral.

PIER 9
BILL OF MATERIAL (CONT.)

Concrete Structures	Cu. Yd.	482.5
Reinforcement Bars, Epoxy Coated	Pound	277,780
Permanent Casing	Foot	145
Drilled Shaft in Soil	Cu. Yd.	326
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	215
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Testing	Each	0
Thermal Integrity Profile Data Collection	Foot	215

Note:
For bar details, see sheet 196 of 288 .

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HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - UVK	REVISED -	
	CHECKED - BTF	REVISED -	
PLOT SCALE =	DRAWN - EAT	REVISED -	
PLOT DATE =	CHECKED - JSR	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 9 BILL OF MATERIALS
STRUCTURE NO. 060-0351 (WB)
SHEET 197 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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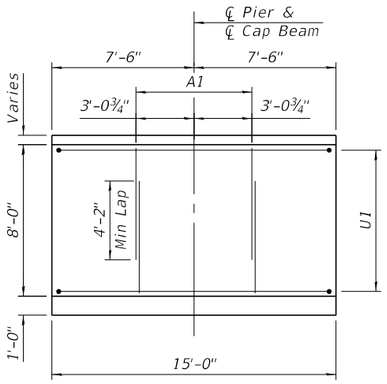
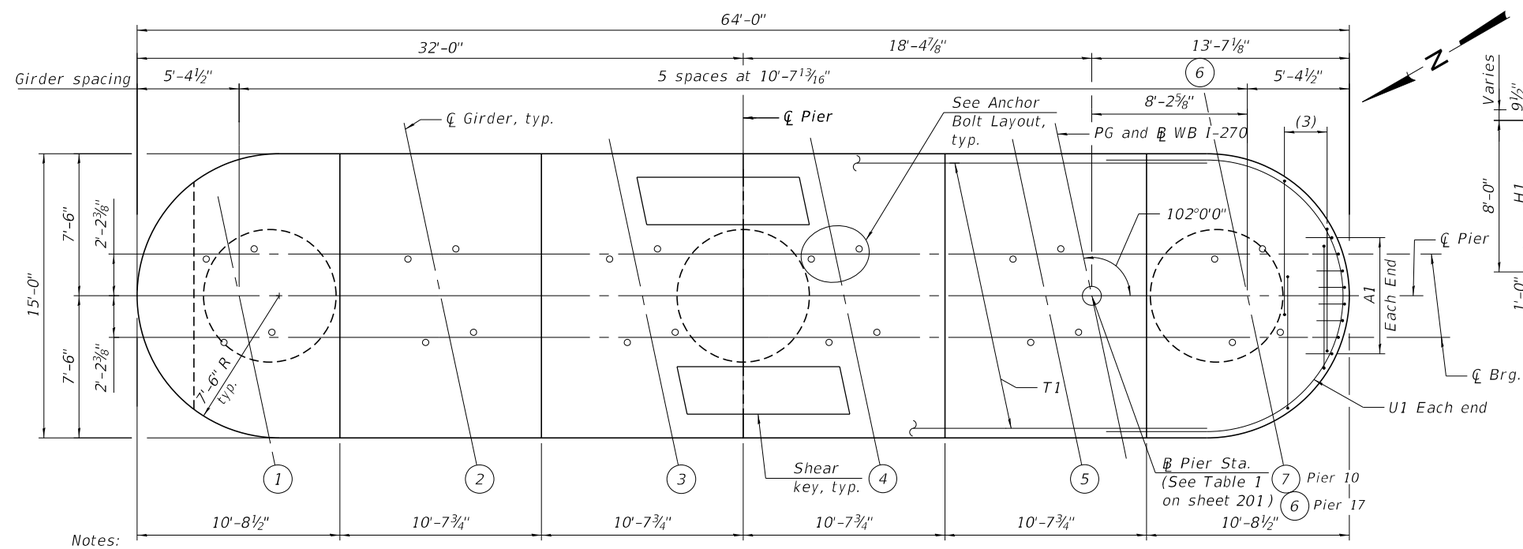
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		



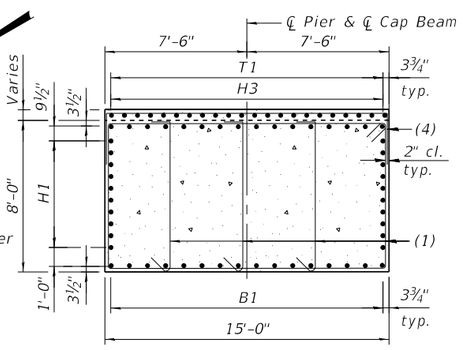
VIEW A-A

(T1 and (3) bars not shown for clarity)

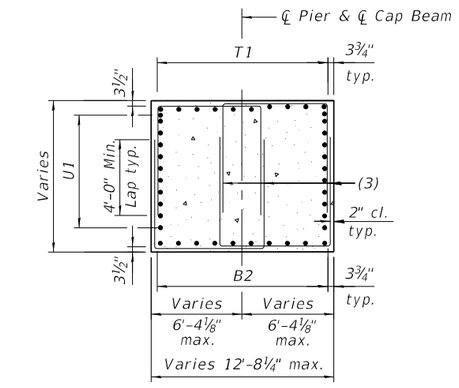


Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

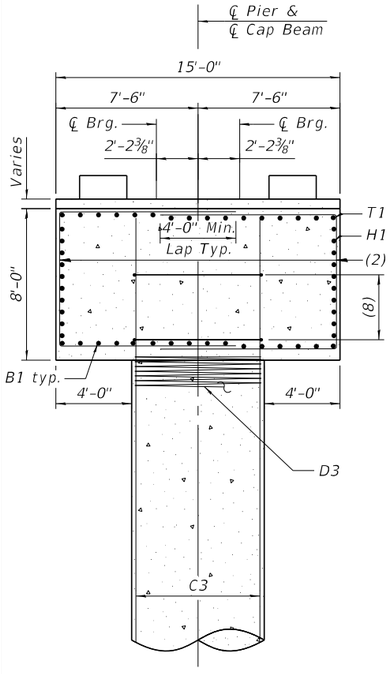
TOP PLAN



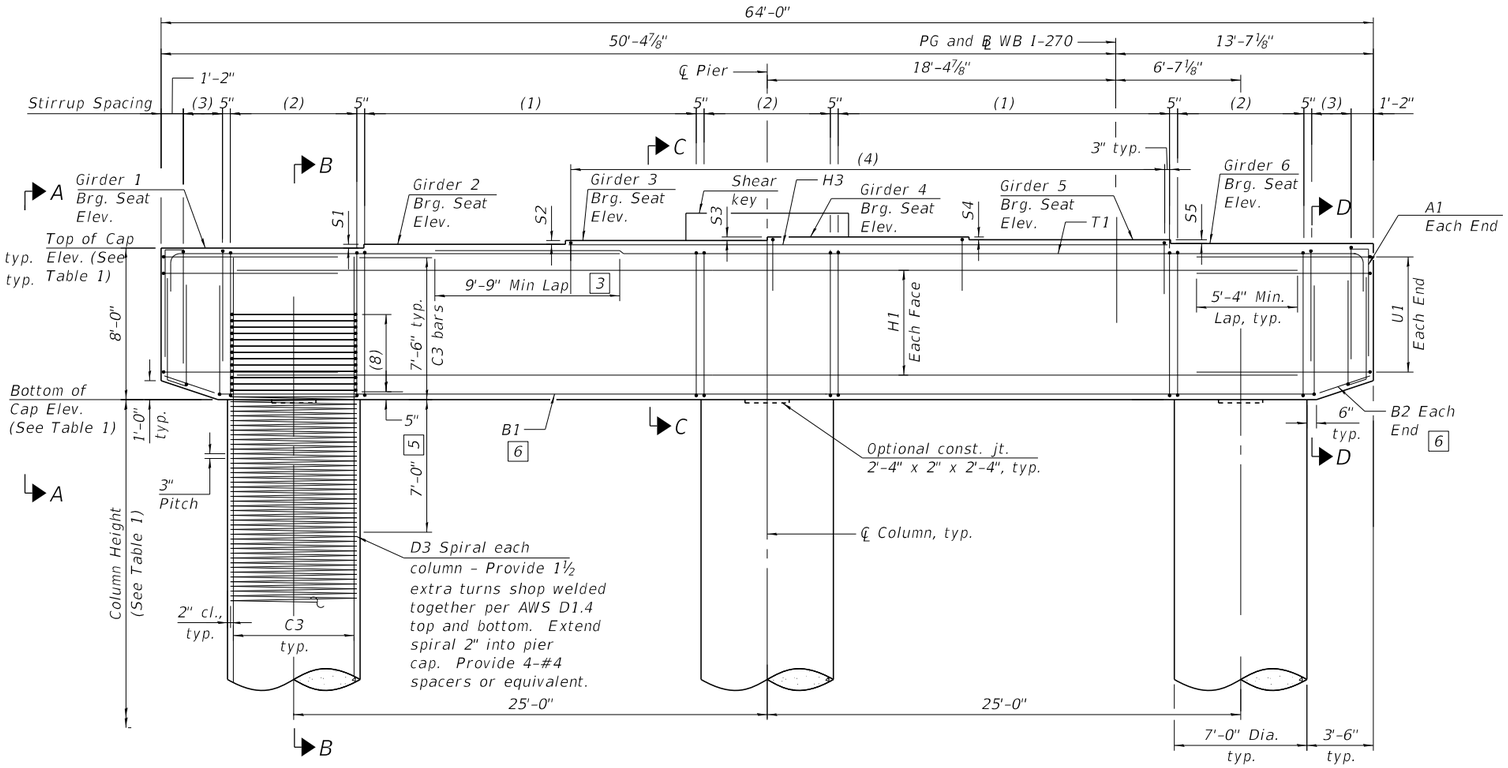
SECTION C-C



SECTION D-D

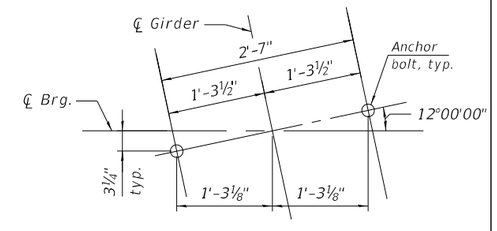


SECTION B-B



PART ELEVATION

(Looking East)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 202 and 203 of 288.
For column height, step height and all elevations, See Table 1 on sheet 201 of 288.
For bar callouts and shear key details, see sheet 201 of 288.
For bearing details, Unit 2, see sheet 154 of 288.
For bearing details, Units 3 & 4, see sheet 157 of 288.

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HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -
	CHECKED - TMB	REVISED -
PLOT SCALE =	DRAWN - JG	REVISED -
PLOT DATE =	CHECKED - TMB	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 & 17 PLAN AND ELEVATION - 1
STRUCTURE NO. 060-0351 (WB)
SHEET 198 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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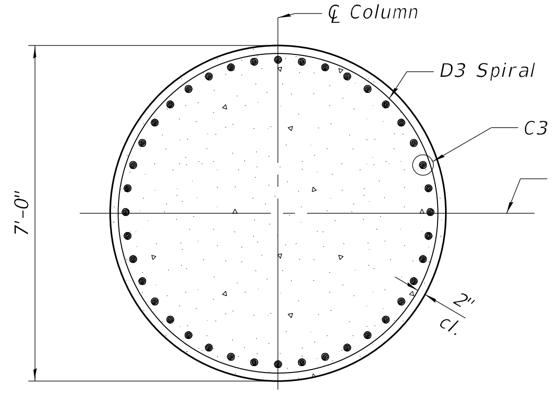
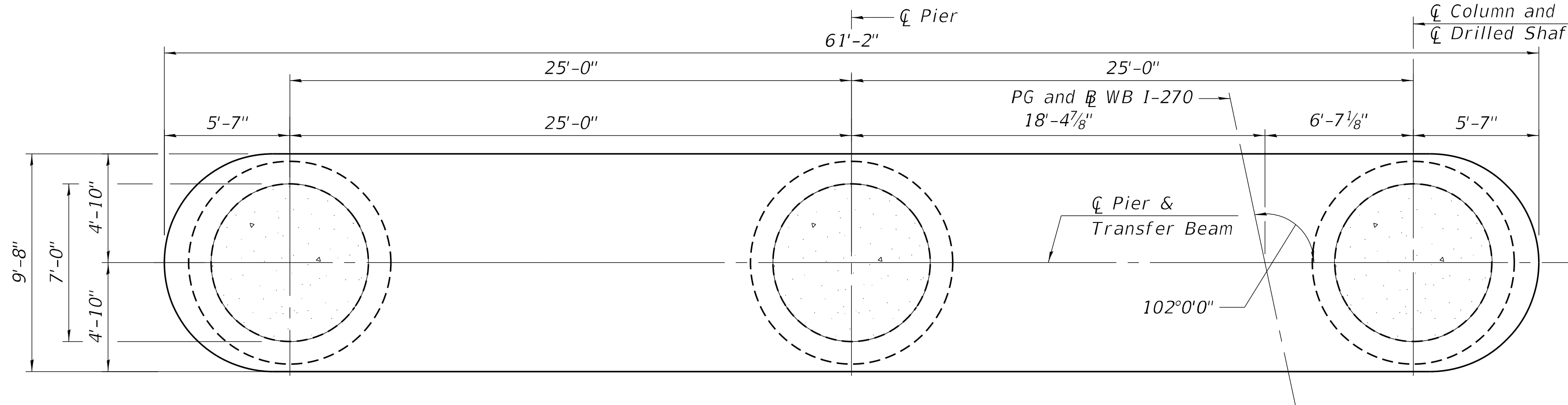
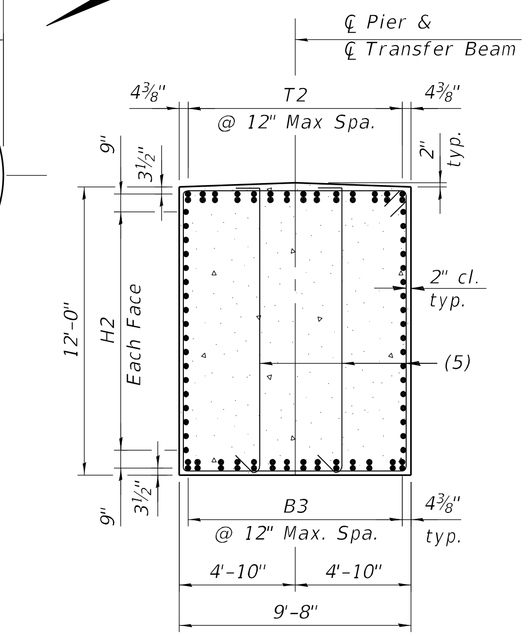
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	



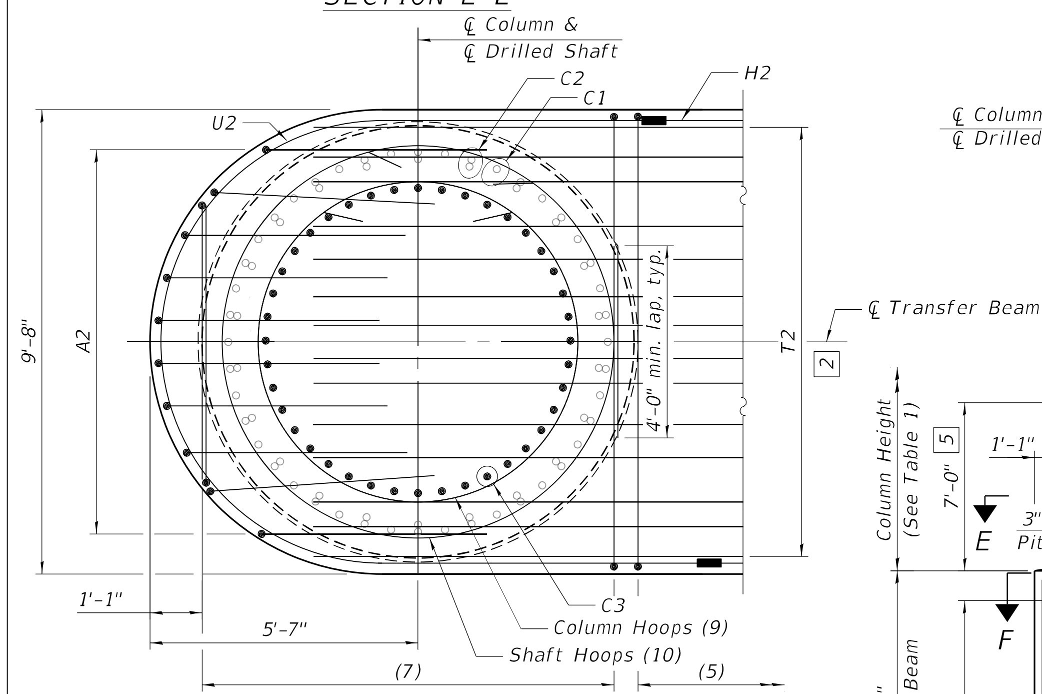
SECTION E-E



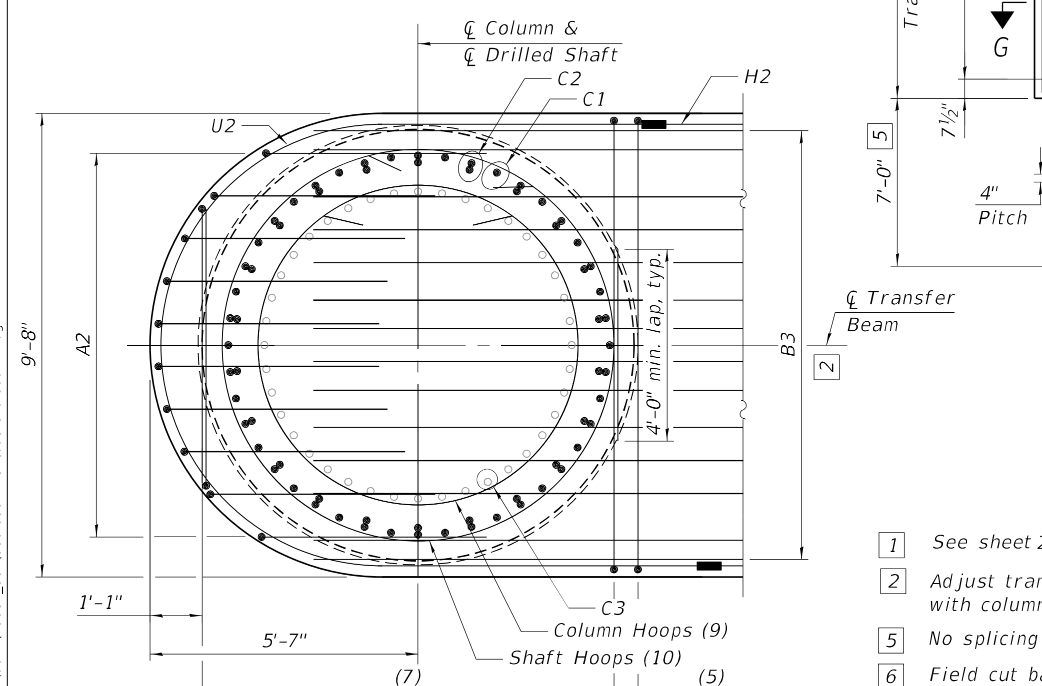
PLAN - TRANSFER BEAM



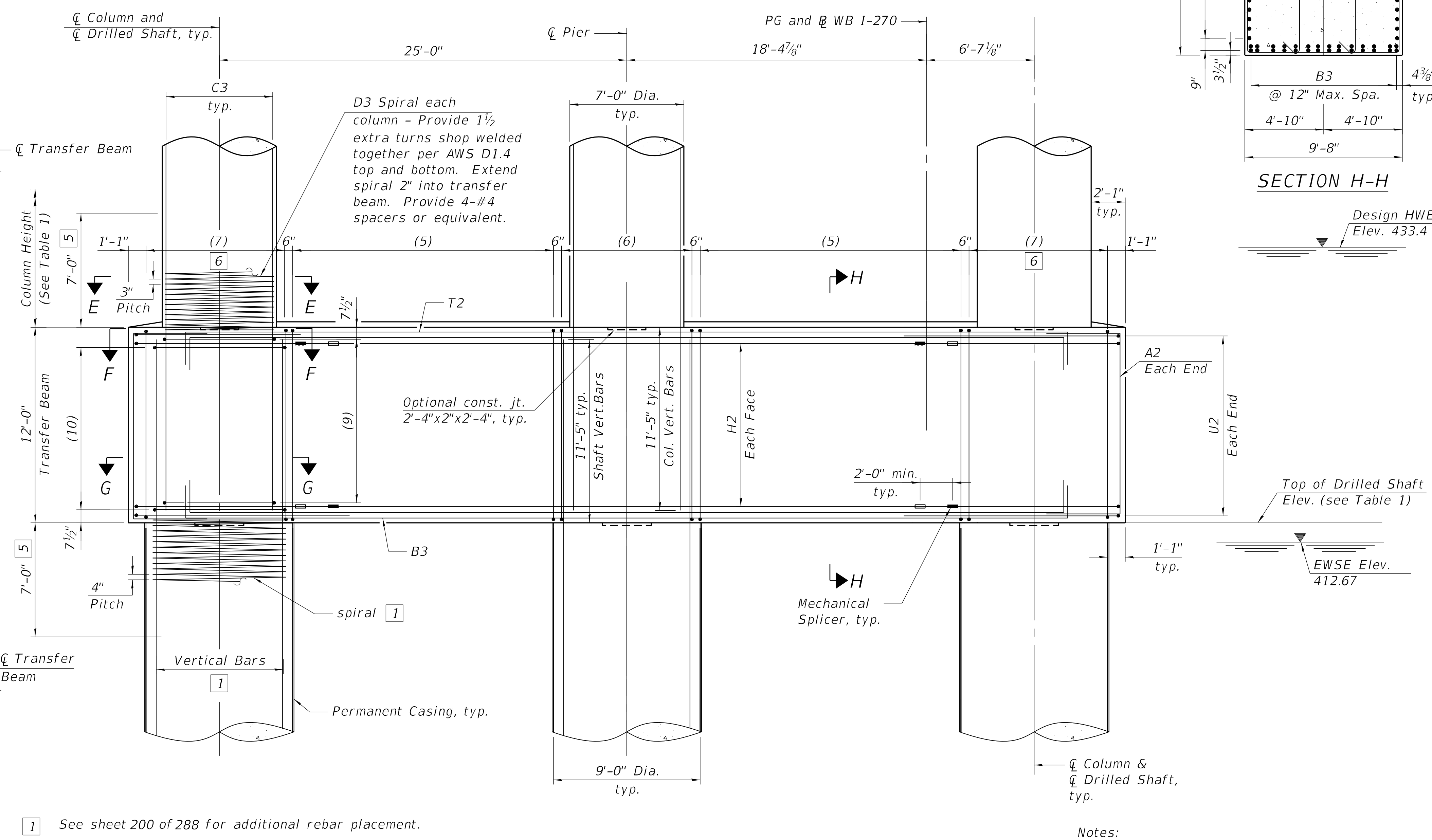
SECTION H-H



SECTION F-F



SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

1. See sheet 200 of 288 for additional rebar placement.
2. Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.
5. No splicing of bars allowed in this region.
6. Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevation, see sheet 198 of 288.
For Drilled Shaft Details, see sheet 200 of 288.
For additional notes, bar details, and Bill of Material, see sheets 201, 202 and 203 of 288.
For Table 1, see sheet 201 of 288.
For Mechanical Splicer details, see sheet 242 of 288.

HORNER SHIFRIN, Teaming with: PARSONS	USER NAME =	DESIGNED - GX	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 10 & 17 PLAN AND ELEVATION - 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - TMB	REVISED -		STRUCTURE NO. 060-0351 (WB)	270	60B-1	MADISON	875	704
	PLOT SCALE =	DRAWN - JG	REVISED -			CONTRACT NO. 76J90				
	PLOT DATE =	CHECKED - TMB	REVISED -		SHEET 199 OF 288 SHEETS	ILLINOIS FED. AID PROJECT				

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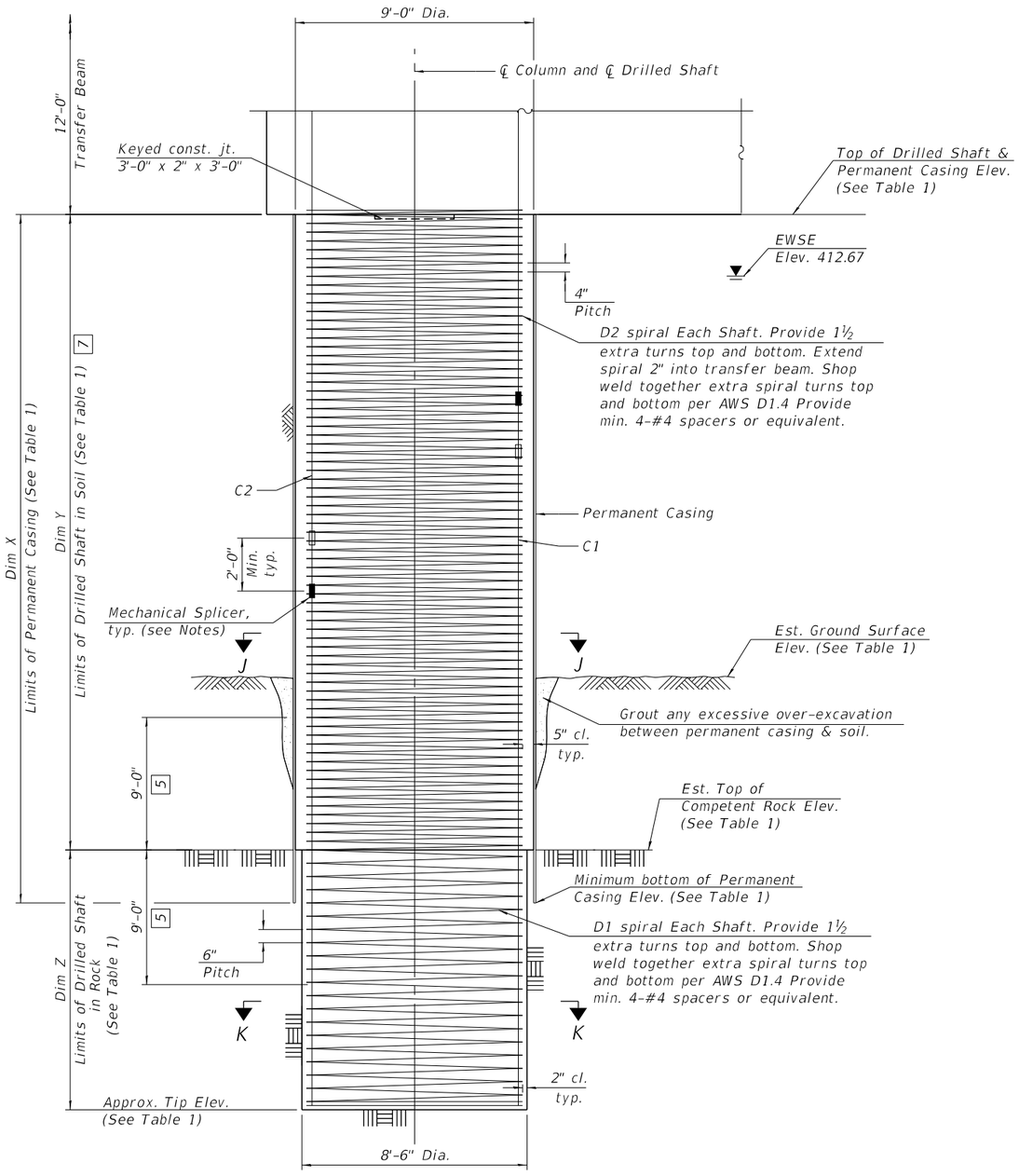
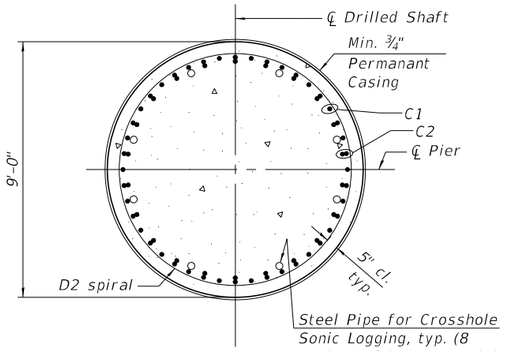
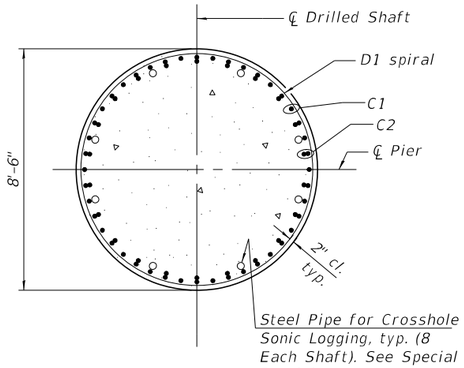


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 198 and 199 of 288 .

For additional notes, bar details, and Bill of Materials, see sheets 202 and 203 of 288 .

For Table 1, see sheet 201 of 288 .

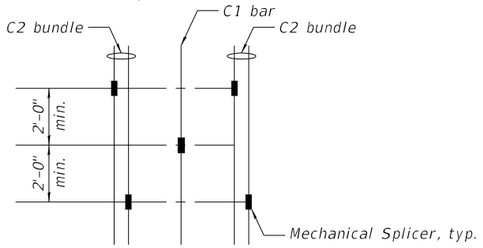
For Mechanical Splicer Details, see sheet 242 of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



ALTERNATE MECHANICAL SPLICERS LOCATION

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HORNER & SHIFRIN
Teaming with: PARSONS

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PLOT DATE =	CHECKED - TMB	REVISED -	

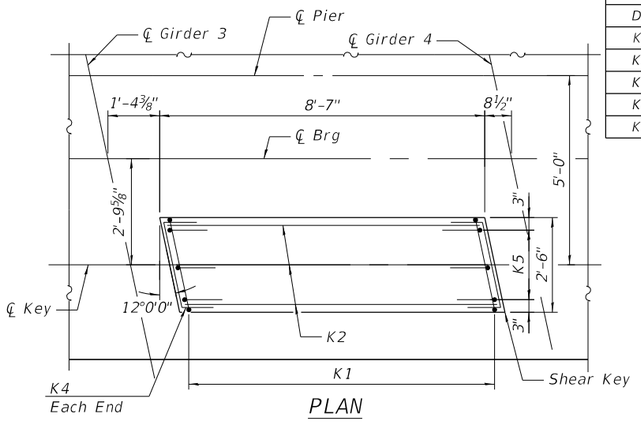
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 & 17 PLAN AND ELEVATION – 3
STRUCTURE NO. 060-0351 (WB)
SHEET 200 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	705
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

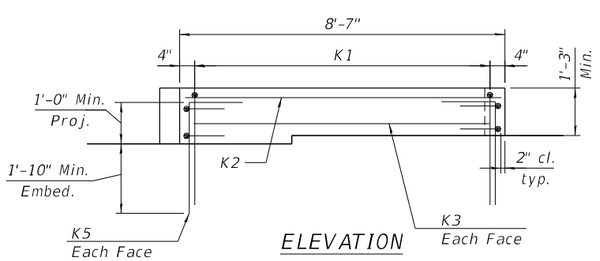
TABLE 1

		Pier 10	Pier 17
℄ Pier Station		2799+75.90	2815+44.90
Bearing Seat Elevation	Girder 1	453.92	452.62
	Girder 2	454.12	452.84
	Girder 3	454.32	453.06
	Girder 4	454.52	453.28
	Girder 5	454.33	453.12
	Girder 6	454.11	452.92
Top of Cap Elevation		453.92	452.62
Bottom of Cap Elevation		445.92	444.62
Column Height		18'-11"	17'-7⅜"
Top of Shaft Elevation		415.00	415.00
Approx. Tip Elevation		340.70	318.60
Est. Ground Surface Elevation		371.20	381.10
Est. Top of Rock Elevation		366.20	344.10
Min. bottom of Permanent Casing Elevation		364.20	342.10
Dim X		50'-9½"	72'-10¾"
Dim Y		48'-9½"	70'-10¾"
Dim Z		25'-6"	25'-6"
S1		2 ¼ "	2 ⅝ "
S2		2 ⅜ "	2 ⅝ "
S3		2 ⅜ "	2 ⅝ "
S4		2 ¼ "	1 ⅞ "
S5		2 ⅝ "	2 ⅜ "



PLAN

Down station key shown.
Up station key mirrored
about ℄ Pier and
opposite hand.



ELEVATION

SHEAR KEY DETAILS

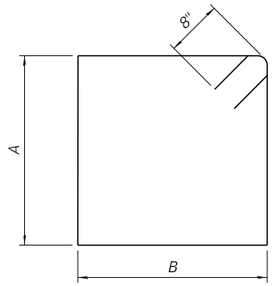
Pier 10

Mark	Bar Callouts
(1)	43 sets of 1-#6 s1001(E) and 3-#6 s1005(E) at 5" cts.
(2)	11 sets of 2-#6 s1002(E) at 8" cts.
(3)	6 sets of 4-#6 s1007(E) at 5" cts.
(4)	47-#6 s1008(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1003(E) and 2-#6 s1006(E) at 6" cts.
(6)	17 sets of 2-#6 s1004(E) at 6" cts
(7)	18 sets of 2-#6 s1004(E) at 6" cts.
(8)	14-#7 hp1002(E) hoops at 3"
(9)	44-#7 hp1002(E) hoops at 3"
(10)	33-#7 hp1001(E) hoops at 4"
T1	16-#11 p1001(E) or p1002(E) at 11½"
T2	14 bundles of 1-#11 p1005(E) (top) and 1-#11 p1006(E) (bot) at 12" max
B1	16-#11 p1003(E) at 11½"
B2	10-#7 p1004(E) at 11½"
B3	14 bundles of 1-#11 p1005(E) (bot) and 1-#11 p1006(E) (top) at 12" max
H1	10-#8 h1001(E) at 7½"
H2	18-#9 h1002(E) at 7"
H3	22-#6 h1003(E) at abt. 8¼"
A1	8 sets of 1-#7 u1003(E) & 1-#7 u1004(E) at 10½"
A2	10-#7 u1005(E) at 10¾"
U1	11-#8 u1001(E) space with h1001(E) and p1001(E)
U2	20-#9 u1002(E) splice with h1002(E) and space with p1005(E)
C1	22 sets of 1-#14 v1001(E) and 1-#14 v1002(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1003(E) and 2-#14 v1004(E) alternate eq. spa.
C3	40-#11 v1005(E) eq. spa.
D1	#7 sp1001(E) at 6" pitch
D2	#7 sp1002(E) at 4" pitch
D3	#7 sp1003(E) at 3" pitch
K1	20-#5 s1009(E) spa. at 5"
K2	3-#5 h1004(E) space with n1001(E)
K3	1-#5 h1004(E) ea. face
K4	2-#5 h1005(E) ea. face
K5	3-#5 n1001(E) at 12" ea. face

Pier 17

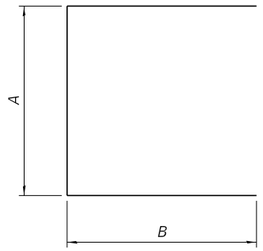
Mark	Bar Callouts
(1)	43 sets of 1-#6 s1701(E) and 3-#6 s1705(E) at 5" cts.
(2)	11 sets of 2-#6 s1702(E) at 8" cts.
(3)	6 sets of 4-#6 s1707(E) at 5" cts.
(4)	47-#6 s1708(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1703(E) and 2-#6 s1706(E) at 6" cts.
(6)	17 sets of 2-#6 s1704(E) at 6" cts
(7)	18 sets of 2-#6 s1704(E) at 6" cts.
(8)	14-#7 hp1702(E) hoops at 3"
(9)	44-#7 hp1702(E) hoops at 3"
(10)	33-#7 hp1701(E) hoops at 4"
T1	16-#11 p1701(E) or p1702(E) at 11½"
T2	14 bundles of 1-#11 p1705(E) (top) and 1-#11 p1706(E) (bot) at 12" max
B1	16-#11 p1703(E) at 11½"
B2	10-#7 p1704(E) at 11½"
B3	14 bundles of 1-#11 p1705(E) (bot) and 1-#11 p1706(E) (top) at 12" max
H1	10-#8 h1701(E) at 7½"
H2	18-#9 h1702(E) at 7"
H3	22-#6 h1703(E) at abt. 8¼"
A1	8 sets of 1-#7 u1703(E) & 1-#7 u1704(E) at 10½"
A2	10-#7 u1705(E) at 10¾"
U1	11-#8 u1701(E) space with h1701(E) and p1701(E)
U2	20-#9 u1702(E) splice with h1702(E) and space with p1705(E)
C1	22 sets of 1-#14 v1701(E) and 1-#14 v1702(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1703(E) and 2-#14 v1704(E) alternate eq. spa.
C3	40-#11 v1705(E) eq. spa.
D1	#7 sp1701(E) at 6" pitch
D2	#7 sp1702(E) at 4" pitch
D3	#7 sp1703(E) at 3" pitch
K1	20-#5 s1709(E) spa. at 5"
K2	3-#5 h1704(E) space with n1701(E)
K3	1-#5 h1704(E) ea. face
K4	2-#5 h1705(E) ea. face
K5	3-#5 n1701(E) at 12" ea. face

Notes:
For Pier Plan and Elevation, see sheets 198, 199 and 200 of 288 .
For bar details, see sheet 202 of 288 .
For Bill of Material, see sheet 203 of 288 .



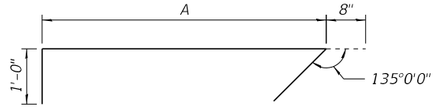
BARS s1001(E) & s1003(E)
BARS s1701(E) & s1703(E)

Bars	A	B
s1001(E) & s1701(E)	7' -8"	14' -8"
s1003(E) & s1703(E)	11' -8"	9' -4"



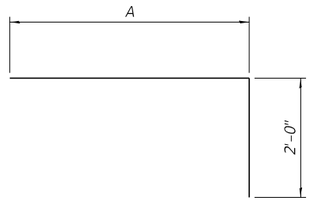
BARS s1002(E) & s1004(E) & s1007(E)
BARS s1702(E) & s1704(E) & s1707(E)

Bars	A	B
s1002(E) & s1702(E)	7' -8"	9' -4"
s1004(E) & s1704(E)	11' -8"	6' -8"
s1007(E) & s1707(E)	6' -6"	5' -10"



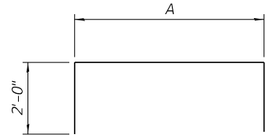
BARS s1005(E) & s1006(E)
BARS s1705(E) & s1706(E)

Bars	A
s1005(E) & s1705(E)	7' -8"
s1006(E) & s1706(E)	11' -8"



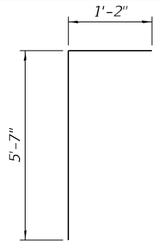
BARS p1001(E) & p1002(E)
BARS p1701(E) & p1702(E)

Bars	A
p1001(E) & p1701(E)	24' -0"
p1002(E) & p1702(E)	49' -5"

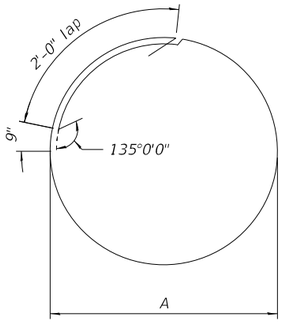


BARS p1005(E) & p1006(E)
BARS p1705(E) & p1706(E)

Bars	A
p1005(E) & p1705(E)	54' -2"
p1006(E) & p1706(E)	53' -8"

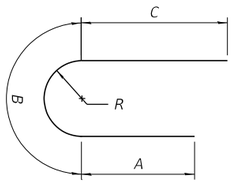


BARS u1003(E)
BARS u1703(E)



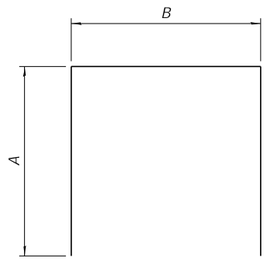
BARS hp1001(E) & hp1002(E)
BARS hp1701(E) & hp1702(E)

Bars	A
hp1001(E) & hp1701(E)	8' -2"
hp1002(E) & hp1702(E)	6' -8"



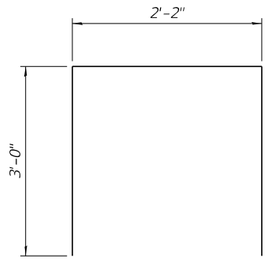
BARS u1001(E) & u1002(E)
BARS u1701(E) & u1702(E)

Bars	A	B	C	R
u1001(E) & u1701(E)	5' -4"	22' -9"	5' -4"	7' -3"
u1002(E) & u1702(E)	5' -9"	14' -5"	7' -9"	4' -7"

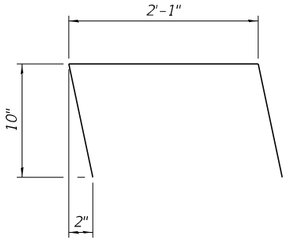


BARS u1005(E) & s1008(E)
BARS u1705(E) & s1708(E)

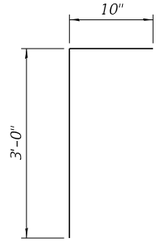
Bars	A	B
u1005(E) & u1705(E)	4' -7"	11' -6"
s1008(E) & s1708(E)	2' -9"	14' -8"



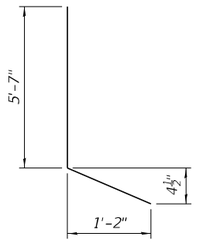
BARS s1009(E)
BARS s1709(E)



BARS h1005(E)
BARS h1705(E)



BARS n1001(E)
BARS n1701(E)



BARS u1004(E)
BARS u1704(E)

Pier 10

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1001(E)	20	#8	49'-2"	
	h1002(E)	36	#9	38'-0"	
	h1003(E)	22	#6	31'-7"	
	h1004(E)	10	#5	8'-3"	
	h1005(E)	8	#5	3'-11"	
	hp1001(E)	99	#7	29'-2"	
	hp1002(E)	174	#7	24'-6"	
	n1001(E)	12	#5	3'-10"	
	p1001(E)	16	#11	26'-0"	
	p1002(E)	16	#11	51'-5"	
	p1003(E)	16	#11	57'-9"	
	p1004(E)	20	#7	2'-11"	
	p1005(E)	28	#11	58'-2"	
	p1006(E)	28	#11	57'-8"	
	s1001(E)	86	#6	46'-0"	
	s1002(E)	66	#6	26'-4"	
	s1003(E)	66	#6	43'-4"	
	s1004(E)	106	#6	25'-0"	
	s1005(E)	258	#6	9'-4"	
	s1006(E)	132	#6	13'-4"	
	s1007(E)	48	#6	18'-2"	
	s1008(E)	47	#6	20'-2"	
	s1009(E)	40	#5	8'-2"	
***	sp1001(E)	3	#7	24'-6"	
***	sp1002(E)	3	#7	50'-0"	
***	sp1003(E)	3	#7	19'-3"	
	u1001(E)	22	#8	33'-5"	
	u1002(E)	40	#9	27'-11"	
	u1003(E)	16	#7	6'-9"	
	u1004(E)	16	#7	6'-10"	
	u1005(E)	20	#7	20'-8"	
	v1001(E)	66	#14	41'-6"	
	v1002(E)	66	#14	44'-1"	
	v1003(E)	132	#14	39'-0"	
	v1004(E)	132	#14	46'-7"	
	v1005(E)	120	#11	37'-10"	
	Concrete Structures		Cu. Yd.	618.2	
	Reinforcement Bars, Epoxy Coated		Pound	281,450	
	Permanent Casing		Foot	153	
	Drilled Shaft in Soil		Cu. Yd.	345	
	Drilled Shaft in Rock		Cu. Yd.	161	
	Concrete Sealer		Sq. Ft.	6,254	
	Crosshole Sonic Logging Access Ducts		Foot	223	
	Crosshole Sonic Logging Testing		Each	3	
	Thermal Integrity Profile Data Collection		Foot	223	
	Thermal Integrity Profile Testing		Each	0	

*** Length is height of spiral.

Pier 17

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1701(E)	20	#8	49'-2"	
	h1702(E)	36	#9	38'-0"	
	h1703(E)	22	#6	31'-7"	
	h1704(E)	10	#5	8'-3"	
	h1705(E)	8	#5	3'-11"	
	hp1701(E)	99	#7	29'-2"	
	hp1702(E)	174	#7	24'-6"	
	n1701(E)	12	#5	3'-10"	
	p1701(E)	16	#11	26'-0"	
	p1702(E)	16	#11	51'-5"	
	p1703(E)	16	#11	57'-9"	
	p1704(E)	20	#7	2'-11"	
	p1705(E)	28	#11	58'-2"	
	p1706(E)	28	#11	57'-8"	
	s1701(E)	86	#6	46'-0"	
	s1702(E)	66	#6	26'-4"	
	s1703(E)	66	#6	43'-4"	
	s1704(E)	106	#6	25'-0"	
	s1705(E)	258	#6	9'-4"	
	s1706(E)	132	#6	13'-4"	
	s1707(E)	48	#6	18'-2"	
	s1708(E)	47	#6	20'-2"	
	s1709(E)	40	#5	8'-2"	
***	sp1701(E)	3	#7	24'-6"	
***	sp1702(E)	3	#7	72'-1"	
***	sp1703(E)	3	#7	18'-0"	
	u1701(E)	22	#8	33'-5"	
	u1702(E)	40	#9	27'-11"	
	u1703(E)	16	#7	6'-9"	
	u1704(E)	16	#7	6'-10"	
	u1705(E)	20	#7	20'-8"	
	v1701(E)	66	#14	52'-7"	
	v1702(E)	66	#14	55'-1"	
	v1703(E)	132	#14	50'-1"	
	v1704(E)	132	#14	57'-7"	
	v1705(E)	120	#11	36'-7"	
	Concrete Structures		Cu. Yd.	614.1	
	Reinforcement Bars, Epoxy Coated		Pound	323,880	
	Permanent Casing		Foot	219	
	Drilled Shaft in Soil		Cu. Yd.	502	
	Drilled Shaft in Rock		Cu. Yd.	161	
	Concrete Sealer		Sq. Ft.	6,180	
	Crosshole Sonic Logging Access Ducts		Foot	289	
	Crosshole Sonic Logging Testing		Each	3	
	Thermal Integrity Profile Data Collection		Foot	289	
	Thermal Integrity Profile Testing		Each	1	

*** Length is height of spiral.

Notes:

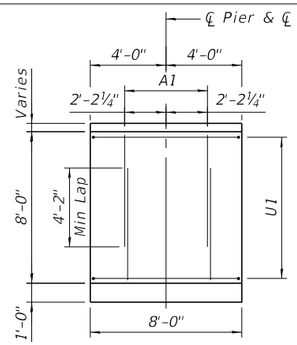
For Pier Plan and Elevation, see sheets 198 thru 200 of 288.

For additional bar details, see sheets 201 and 202 of 288.

Pier 10 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (11,843kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

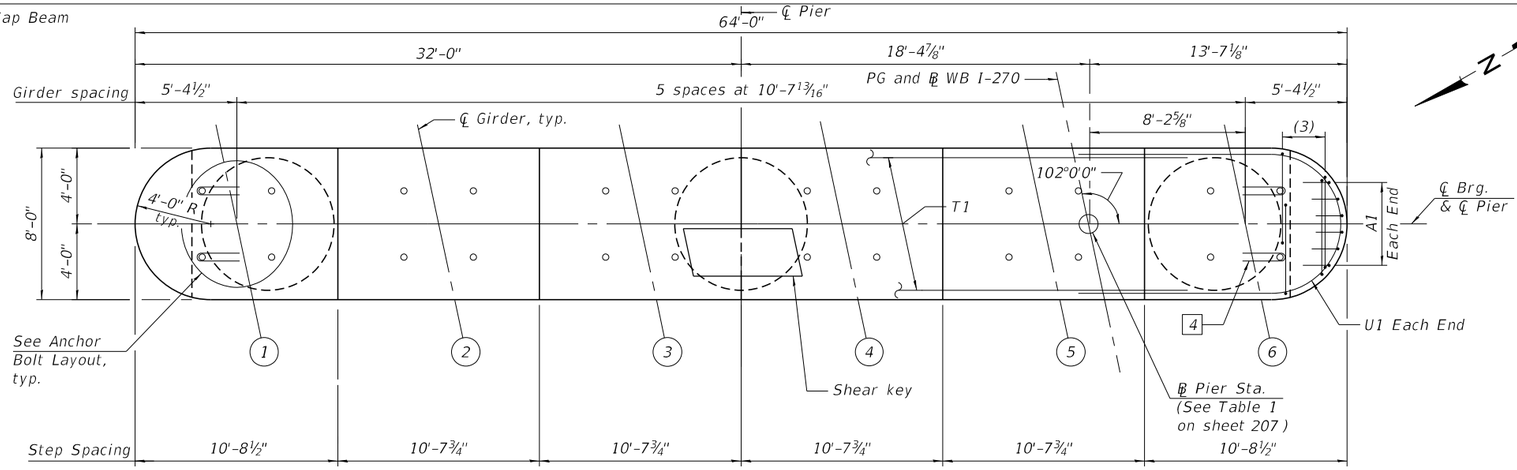
Pier 17 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (12,242 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.



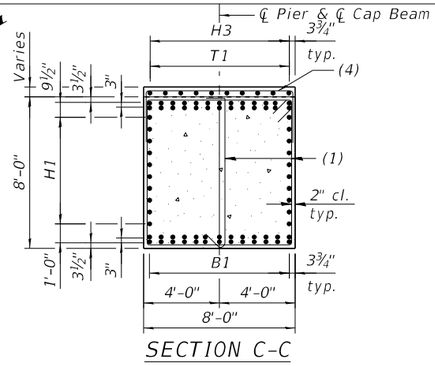
VIEW A-A

(T1 and (3) bars not shown for clarity)

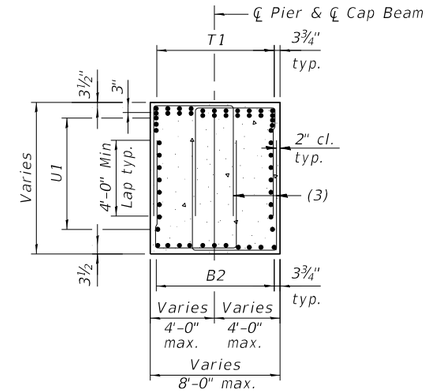


Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

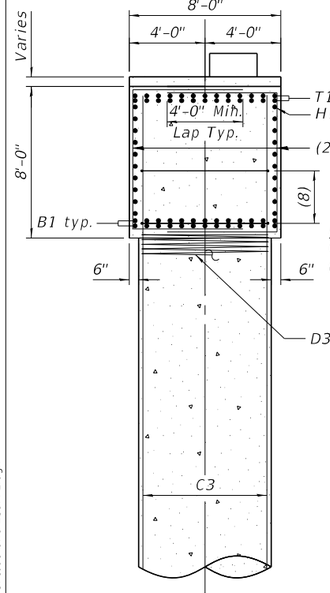
TOP PLAN



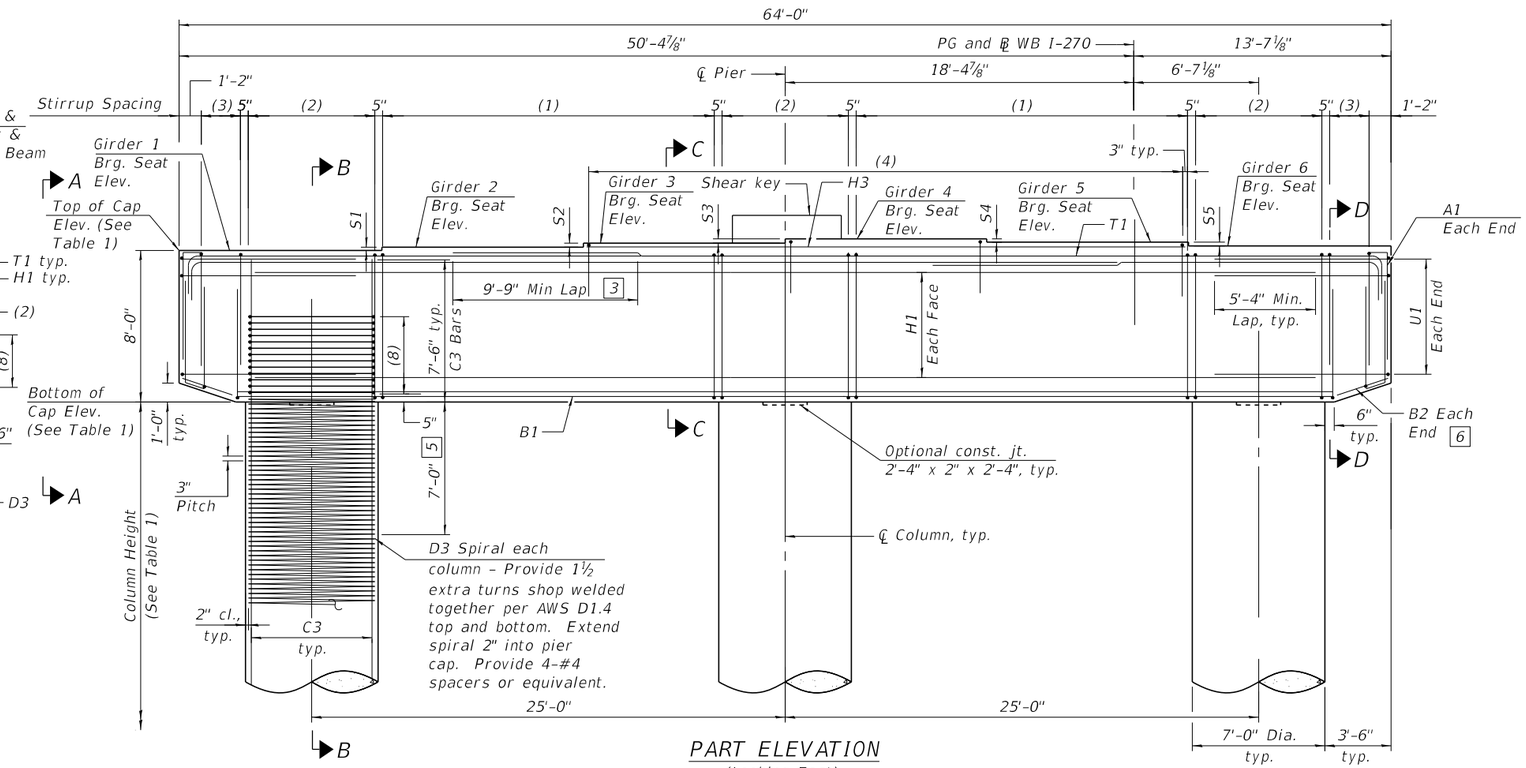
SECTION C-C



SECTION D-D

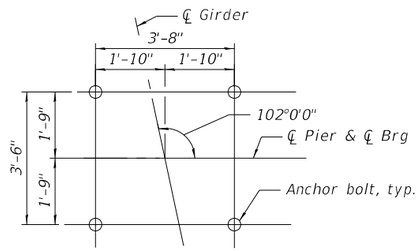


SECTION B-B



PART ELEVATION

(Looking East)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps

4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 208 and 209 of 288 .
For column height, step height and all elevations, See Table 1 on sheet 207 of 288 .
For bearing details, see sheet 158 of 288 .
For bar callouts and shear key details, see sheet 207 of 288 .
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

MODEL: Default
FILE NAME: C:\IC\S4PDF\116641\45087_296\060-0351-D876190-bwa-45aPPE.dgn
3/4/2022 8:43:53 AM

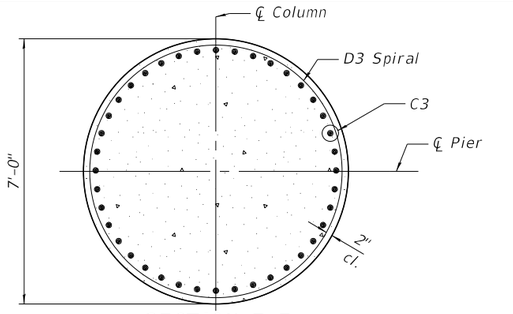
HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -	
	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

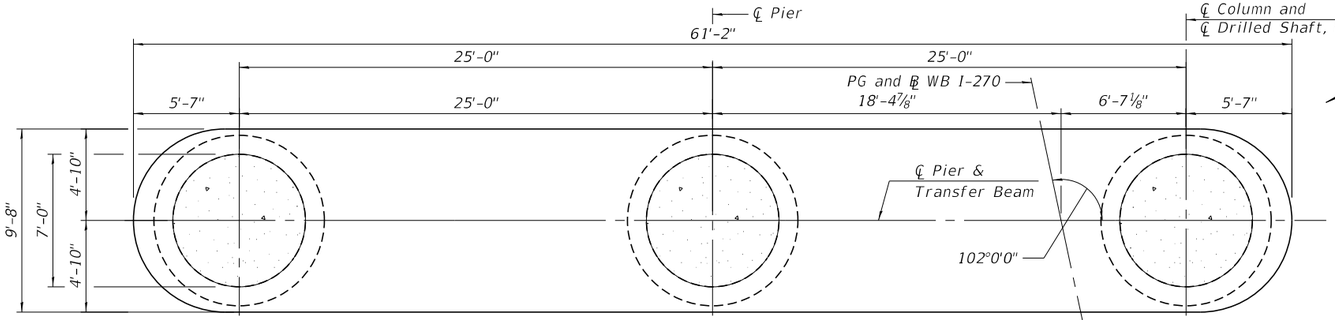
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 11 & 16 PLAN AND ELEVATION - 1
STRUCTURE NO. 060-0351 (WB)
SHEET 204 OF 288 SHEETS

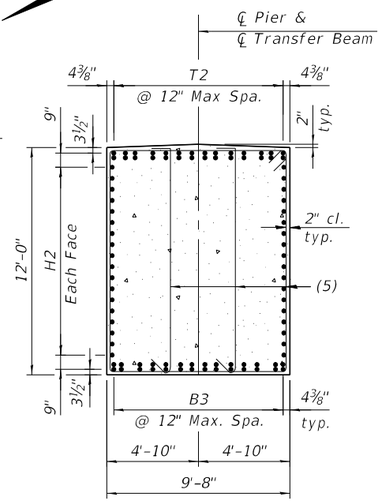
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	709
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			



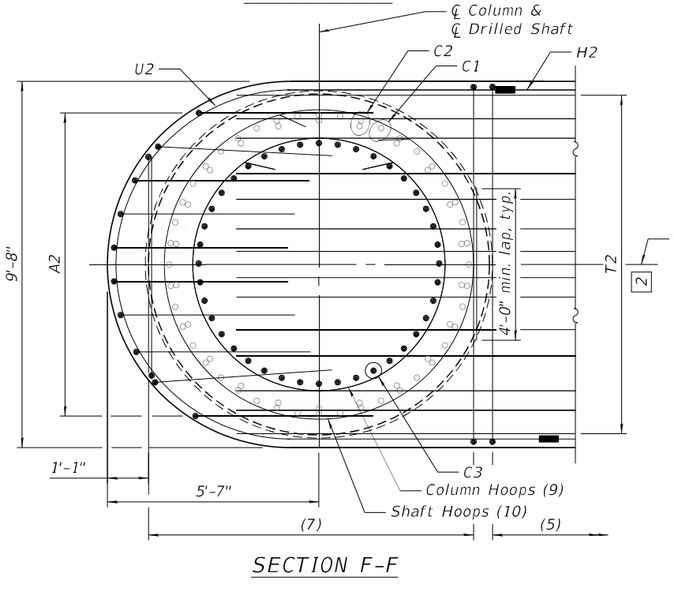
SECTION E-E



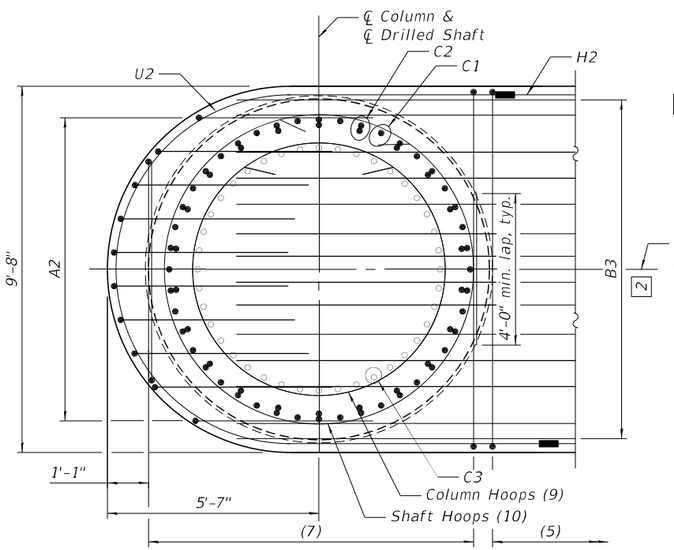
PLAN - TRANSFER BEAM



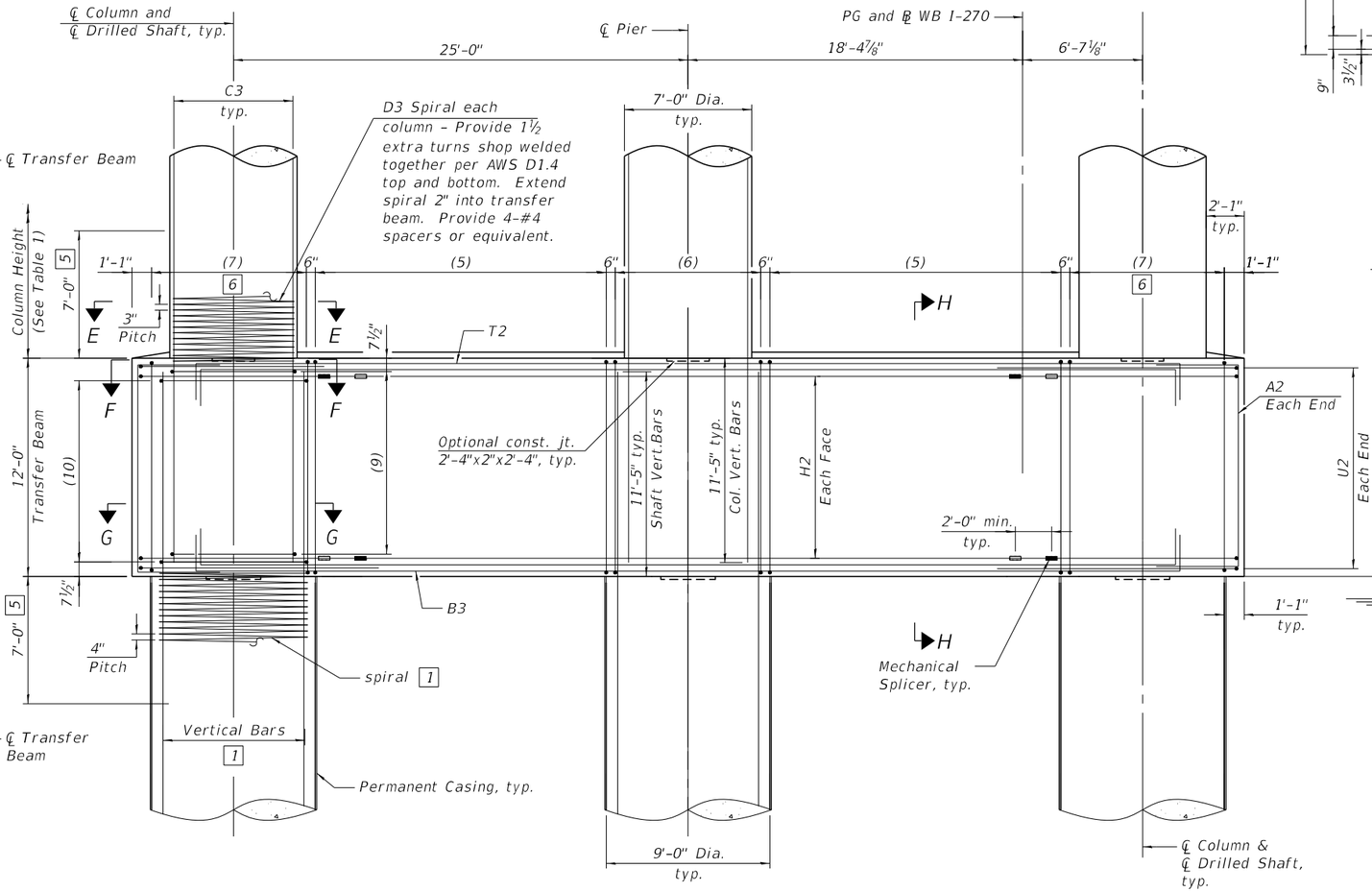
SECTION H-H



SECTION F-F



SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

1 See sheet 206 of 288 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevations, see sheet 204of 288.
For Drilled Shaft Details, see sheet 206of 288.
For additional notes, bar details, and Bill of Material, see sheets 208 and 209 of 288 .
For Table 1, see sheet 204of 288.
For Mechanical Splicer Details, see sheet 242of 288.

MODEL: Default
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9/10/2021 2:01:00 AM

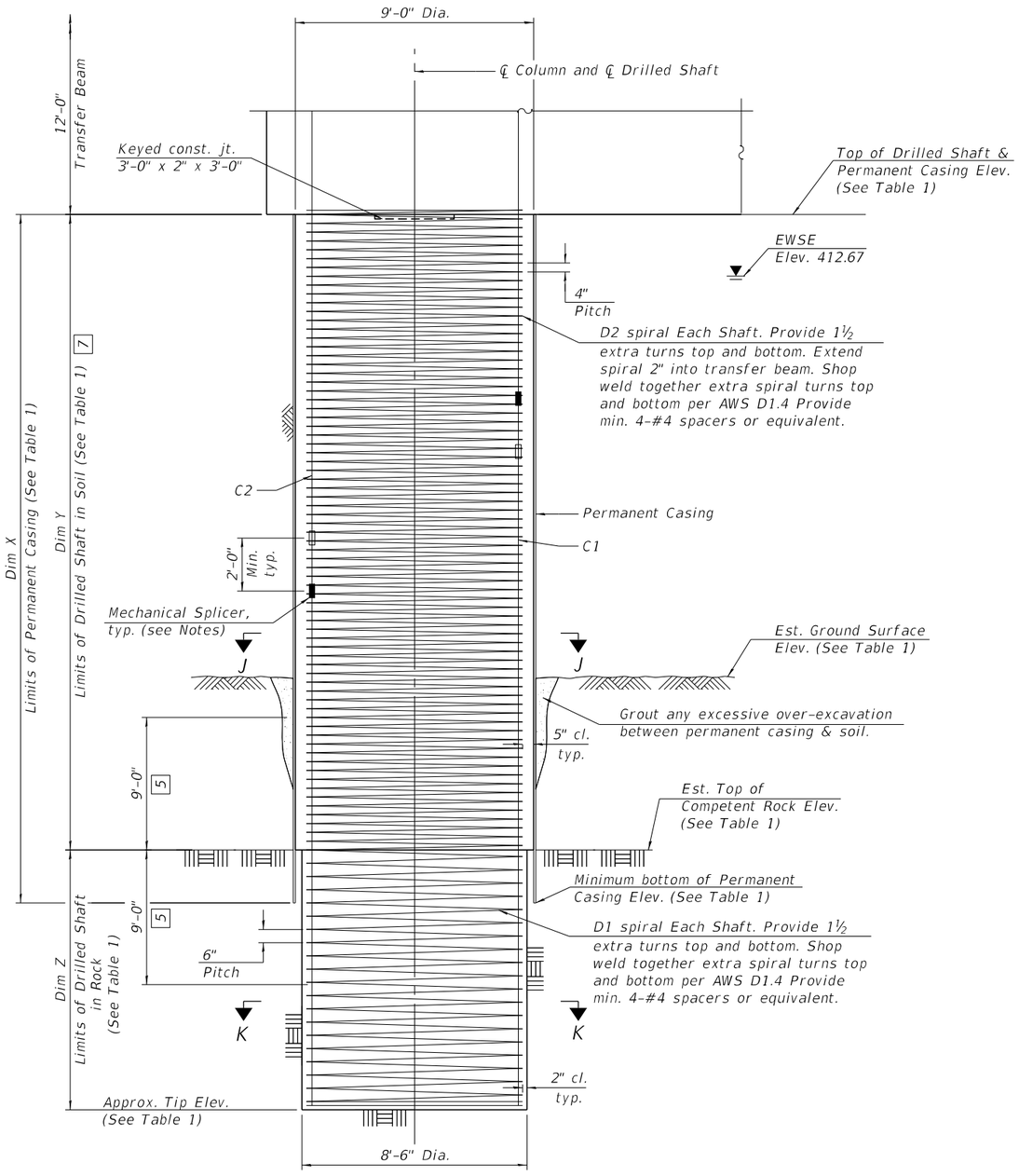
HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -	
	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

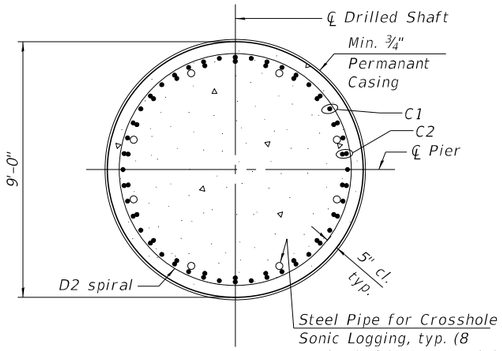
PIER 11 & 16 PLAN AND ELEVATION - 2
STRUCTURE NO. 060-0351 (WB)
SHEET 205 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	710
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

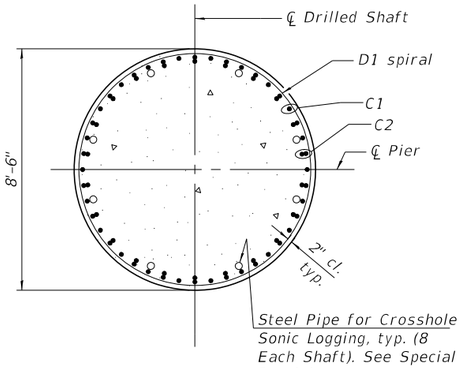


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 204 and 205 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 208 and 209 of 288 .

For Table 1, see sheet 207 of 288 .

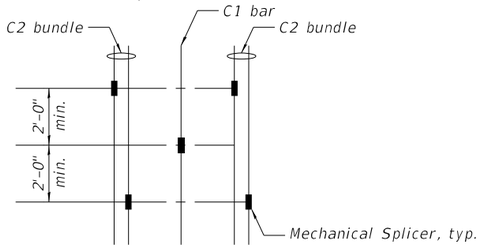
For Mechanical Splicer Details, see sheet 242of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



ALTERNATE MECHANICAL SPLICERS LOCATION

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2/10/2022 1:28:28 PM

HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -	
	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

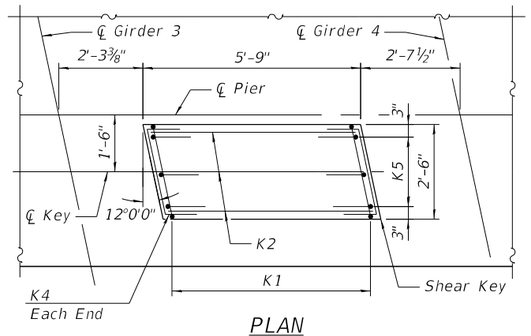
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 11 & 16 PLAN AND ELEVATION – 3
STRUCTURE NO. 060-0351 (WB)
SHEET 206 OF 288 SHEETS

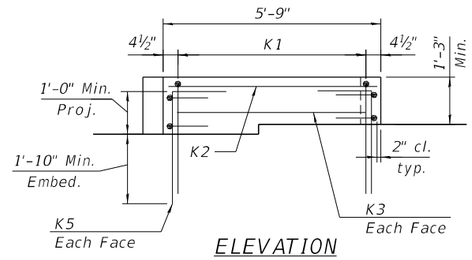
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	711
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

TABLE 1

		Pier 11	Pier 16
℄ Pier Station		2801+70.40	2813+50.40
Bearing Seat Elevation	Girder 1	454.61	453.33
	Girder 2	454.80	453.55
	Girder 3	455.00	453.77
	Girder 4	455.20	453.99
	Girder 5	455.01	453.82
	Girder 6	454.79	453.62
Top of Cap Elevation		454.61	453.33
Bottom of Cap Elevation		446.61	445.33
Column Height		19'-7 1/4"	18'-3 3/8"
Top of Shaft Elevation		415.00	415.00
Approx. Tip Elevation		340.50	320.00
Est. Ground Surface Elevation		368.70	370.00
Est. Top of Rock Elevation		366.00	345.50
Min. bottom of Permanent Casing Elevation		364.00	343.50
Dim X		51'-0"	71'-6"
Dim Y		49'-0"	69'-6"
Dim Z		25'-6"	25'-6"
S1		2 1/4 "	2 5/8 "
S2		2 3/8 "	2 5/8 "
S3		2 3/8 "	2 5/8 "
S4		2 1/4 "	2 "
S5		2 5/8 "	2 3/8 "



PLAN



ELEVATION

SHEAR KEY DETAILS

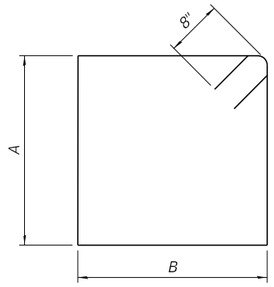
Pier 11

Mark	Bar Callouts
(1)	43 sets of 1-#6 s1101(E) and 1-#6 s1105(E) at 5" cts.
(2)	11 sets of 2-#6 s1102(E) at 8" cts.
(3)	6 sets of 4-#6 s1107(E) at 5" cts.
(4)	47-#6 s1108(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1103(E) and 2-#6 s1106(E) at 6" cts.
(6)	17 sets of 2-#6 s1104(E) at 6" cts
(7)	18 sets of 2-#6 s1104(E) at 6" cts.
(8)	14-#7 hp1102(E) hoops at 3"
(9)	44-#7 hp1102(E) hoops at 3"
(10)	33-#7 hp1101(E) hoops at 4"
T1	2 layers of 13-#11 p1101(E) or p1102(E) at 7 3/8"
T2	14 bundles of 1-#11 p1105(E) (top) and 1-#11 p1106(E) (bot) at 12" max
B1	2 layers of 13-#11 p1103(E) at 7 3/8"
B2	11-#7 p1104(E) at 7 3/8"
B3	14 bundles of 1-#11 p1105E (bot) and 1-#11 p1106(E) (top) at 12" max
H1	10-#8 h1101(E) at 7 1/2"
H2	18-#9 h1102(E) at 7"
H3	10-#6 h1103(E) at abt. 9 3/4"
A1	6 sets of 1-#7 u1103(E) & 1-#7 u1104(E) at 10 1/2"
A2	10-#7 u1105(E) at 10 3/4"
U1	11-#8 u1101(E) space with h1101(E) and p1101(E)
U2	20-#9 u1102(E) splice with h1102(E) and space with p1105(E)
C1	22 sets of 1-#14 v1101(E) and 1-#14 v1102(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1103(E) and 2-#14 v1104(E) alternate eq. spa.
C3	40-#11 v1105(E) eq. spa.
D1	#7 sp1101(E) at 6" pitch
D2	#7 sp1102(E) at 4" pitch
D3	#7 sp1103(E) at 3" pitch
K1	13-#5 s1109(E) spa. at 5"
K2	3-#5 h1104(E) space with n1101(E)
K3	1-#5 h1104(E) ea. face
K4	2-#5 h1105(E) ea. face
K5	3-#5 n1101(E) at 12" ea. face
R	#5 s1110(E)

Pier 16

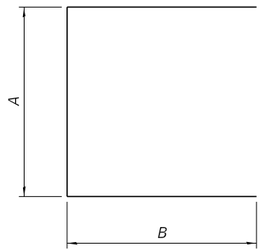
Mark	Bar Callouts
(1)	43 sets of 1-#6 s1601(E) and 1-#6 s1605(E) at 5" cts.
(2)	11 sets of 2-#6 s1602(E) at 8" cts.
(3)	6 sets of 4-#6 s1607(E) at 5" cts.
(4)	47-#6 s1608(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1603(E) and 2-#6 s1606(E) at 6" cts.
(6)	17 sets of 2-#6 s1604(E) at 6" cts
(7)	18 sets of 2-#6 s1604(E) at 6" cts.
(8)	14-#7 hp1602(E) hoops at 3"
(9)	44-#7 hp1602(E) hoops at 3"
(10)	33-#7 hp1601(E) hoops at 4"
T1	2 layers of 13-#11 p1601(E) or p1602(E) at 7 3/8"
T2	14 bundles of 1-#11 p1605(E) (top) and 1-#11 p1606(E) (bot) at 12" max
B1	2 layers of 13-#11 p1603(E) at 7 3/8"
B2	11-#7 p1604(E) at 7 3/8"
B3	14 bundles of 1-#11 p1605(E) (bot) and 1-#11 p1606(E) (top) at 12" max
H1	10-#8 h1601(E) at 7 1/2"
H2	18-#9 h1602(E) at 7"
H3	10-#6 h1603(E) at abt. 9 3/4"
A1	6 sets of 1-#7 u1603(E) & 1-#7 u1604(E) at 10 1/2"
A2	10-#7 u1605(E) at 10 3/4"
U1	11-#8 u1601(E) space with h1601(E) and p1601(E)
U2	20-#9 u1602(E) splice with h1602(E) and space with p1605(E)
C1	22 sets of 1-#14 v1601(E) and 1-#14 v1602(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1603(E) and 2-#14 v1604(E) alternate eq. spa.
C3	40-#11 v1605(E) eq. spa.
D1	#7 sp1601(E) at 6" pitch
D2	#7 sp1602(E) at 4" pitch
D3	#7 sp1603(E) at 3" pitch
K1	13-#5 s1609(E) spa. at 5"
K2	3-#5 h1604(E) space with n1601(E)
K3	1-#5 h1604(E) ea. face
K4	2-#5 h1605(E) ea. face
K5	3-#5 n1601(E) at 12" ea. face
R	#5 s1610(E)

Notes:
For Pier Plan and Elevation, see sheets 204, 205 and 206 of 288 .
For bar details, see sheet 208 of 288 .
For Bill of Material, see sheet 209 of 288 .



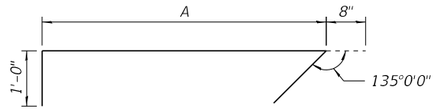
BARS s1101(E) & s1103(E)
BARS s1601(E) & s1603(E)

Bars	A	B
s1101(E) & s1601(E)	7' -8"	7' -8"
s1103(E) & s1603(E)	11' -8"	9' -4"



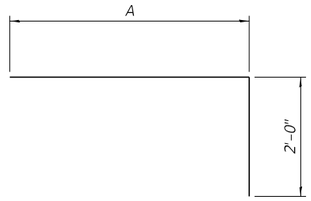
BARS s1102(E) & s1104(E) & s1107(E)
BARS s1602(E) & s1604(E) & s1607(E)

Bars	A	B
s1102(E) & s1602(E)	7' -8"	5' -10"
s1104(E) & s1604(E)	11' -8"	6' -8"
s1107(E) & s1607(E)	4' -10"	5' -10"



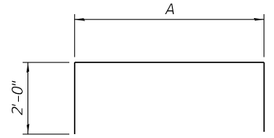
BARS s1105(E) & s1106(E)
BARS s1605(E) & s1606(E)

Bars	A
s1105(E) & s1605(E)	7' -8"
s1106(E) & s1606(E)	11' -8"



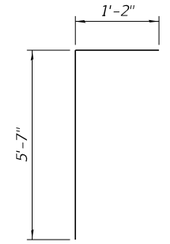
BARS p1101(E) & p1102(E)
BARS p1601(E) & p1602(E)

Bars	A
p1101(E) & p1601(E)	24' -0"
p1102(E) & p1602(E)	49' -5"

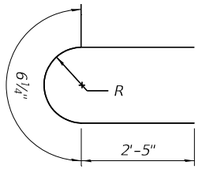


BARS p1105(E) & p1106(E)
BARS p1605(E) & p1606(E)

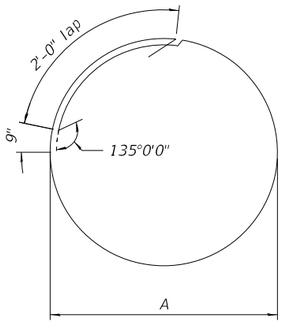
Bars	A
p1105(E) & p1605(E)	54' -2"
p1106(E) & p1606(E)	53' -8"



BARS u1103(E)
BARS u1603(E)

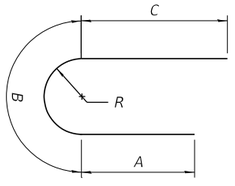


BARS s1110(E)
BARS s1610(E)



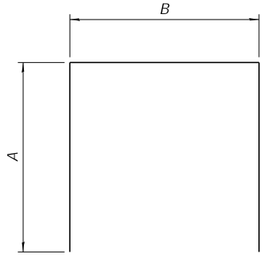
BARS hp1101(E) & hp1102(E)
BARS hp1601(E) & hp1602(E)

Bars	A
hp1101(E) & hp1601(E)	8' -2"
hp1102(E) & hp1602(E)	6' -8"



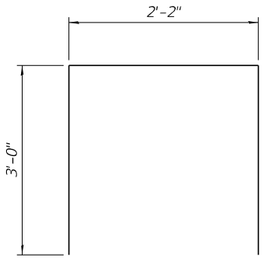
BARS u1101(E) & u1102(E)
BARS u1601(E) & u1602(E)

Bars	A	B	C	R
u1101(E) & u1601(E)	5' -4"	11' -9"	5' -4"	3' -9"
u1102(E) & u1602(E)	5' -9"	14' -5"	7' -9"	4' -7"

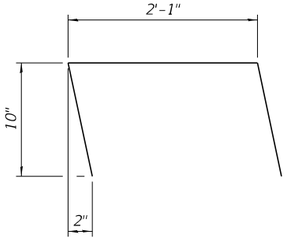


BARS u1105(E) & s1108(E)
BARS u1605(E) & s1608(E)

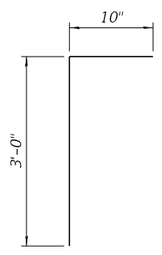
Bars	A	B
u1105(E) & u1605(E)	4' -7"	11' -6"
u1180(E) & u1608(E)	2' -9"	7' -8"



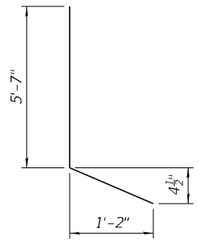
BARS s1109(E)
BARS s1609(E)



BARS h1105(E)
BARS h1605(E)



BARS n1101(E)
BARS n1601(E)



BARS u1104(E)
BARS u1604(E)

Pier 11

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1101(E)	20	#8	56'-2"	
	h1102(E)	36	#9	38'-0"	
	h1103(E)	10	#6	31'-7"	
	h1104(E)	5	#5	5'-5"	
	h1105(E)	4	#5	3'-11"	
	hp1101(E)	99	#7	29'-2"	
	hp1102(E)	174	#7	24'-6"	
	n1101(E)	6	#5	3'-10"	
	p1101(E)	26	#11	26'-0"	
	p1102(E)	26	#11	51'-5"	
	p1103(E)	26	#11	57'-9"	
	p1104(E)	22	#7	2'-11"	
	p1105(E)	28	#11	58'-2"	
	p1106(E)	28	#11	57'-8"	
	s1101(E)	86	#6	32'-0"	
	s1102(E)	66	#6	19'-4"	
	s1103(E)	66	#6	43'-4"	
	s1104(E)	106	#6	25'-0"	
	s1105(E)	86	#6	9'-4"	
	s1106(E)	132	#6	13'-4"	
	s1107(E)	48	#6	16'-6"	
	s1108(E)	47	#6	13'-2"	
	s1109(E)	13	#5	8'-2"	
	s1110(E)	8	#5	5'-5"	
***	sp1101(E)	3	#7	24'-6"	
***	sp1102(E)	3	#7	50'-2"	
***	sp1103(E)	3	#7	20'-0"	
	u1101(E)	22	#8	22'-5"	
	u1102(E)	40	#9	27'-11"	
	u1103(E)	12	#7	6'-9"	
	u1104(E)	12	#7	6'-10"	
	u1105(E)	20	#7	20'-8"	
	v1101(E)	66	#14	41'-7"	
	v1102(E)	66	#14	44'-2"	
	v1103(E)	132	#14	39'-1"	
	v1104(E)	132	#14	46'-8"	
	v1105(E)	120	#11	38'-7"	

Concrete Structures	Cu. Yd.	492.5
Reinforcement Bars, Epoxy Coated	Pound	283,070
Permanent Casing	Foot	153
Drilled Shaft in Soil	Cu. Yd.	347
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	224
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	224
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 16

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1601(E)	20	#8	56'-2"	
	h1602(E)	36	#9	38'-0"	
	h1603(E)	10	#6	31'-7"	
	h1604(E)	5	#5	5'-5"	
	h1605(E)	4	#5	3'-11"	
	hp1601(E)	99	#7	29'-2"	
	hp1602(E)	174	#7	24'-6"	
	n1601(E)	6	#5	3'-10"	
	p1601(E)	26	#11	26'-0"	
	p1602(E)	26	#11	51'-5"	
	p1603(E)	26	#11	57'-9"	
	p1604(E)	22	#7	2'-11"	
	p1605(E)	28	#11	58'-2"	
	p1606(E)	28	#11	57'-8"	
	s1601(E)	86	#6	32'-0"	
	s1602(E)	66	#6	19'-4"	
	s1603(E)	66	#6	43'-4"	
	s1604(E)	106	#6	25'-0"	
	s1605(E)	86	#6	9'-4"	
	s1606(E)	132	#6	13'-4"	
	s1607(E)	48	#6	16'-6"	
	s1608(E)	47	#6	13'-2"	
	s1609(E)	13	#5	8'-2"	
	s1610(E)	8	#5	5'-5"	
***	sp1601(E)	3	#7	24'-6"	
***	sp1602(E)	3	#7	70'-8"	
***	sp1603(E)	3	#7	18'-8"	
	u1601(E)	22	#8	22'-5"	
	u1602(E)	40	#9	27'-11"	
	u1603(E)	12	#7	6'-9"	
	u1604(E)	12	#7	6'-10"	
	u1605(E)	20	#7	20'-8"	
	v1601(E)	66	#14	51'-10"	
	v1602(E)	66	#14	54'-5"	
	v1603(E)	132	#14	49'-4"	
	v1604(E)	132	#14	56'-11"	
	v1605(E)	120	#11	37'-3"	

Concrete Structures	Cu. Yd.	488.1
Reinforcement Bars, Epoxy Coated	Pound	322,260
Permanent Casing	Foot	215
Drilled Shaft in Soil	Cu. Yd.	492
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	285
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	285
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Notes:

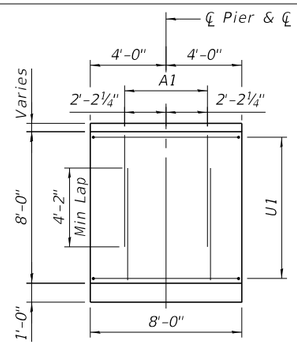
For Pier Plan and Elevation, see sheets 204 thru 206 of 288.

For additional bar details, see sheets 207 and 208 of 288.

Pier 11 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (11,129kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

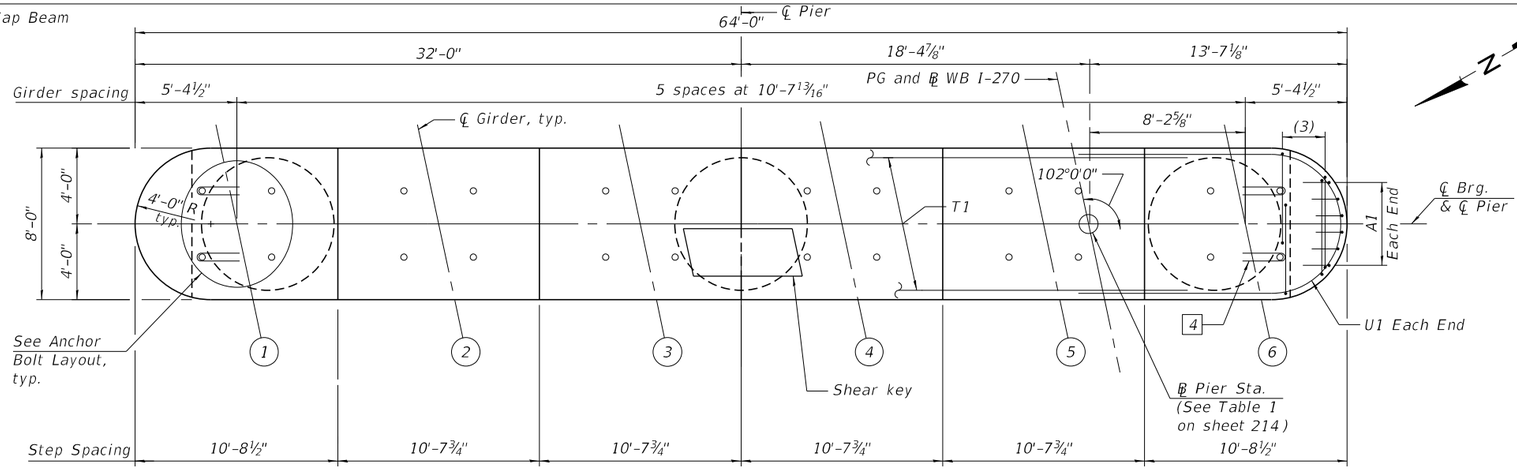
Pier 16 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (12,242 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.



VIEW A-A

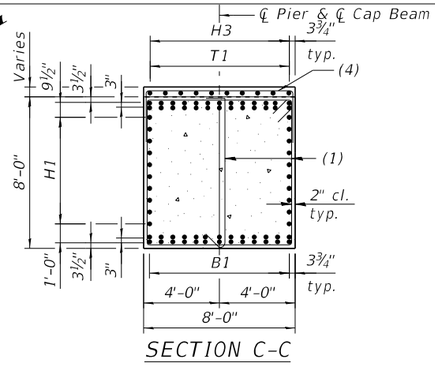
(T1 and (3) bars not shown for clarity)



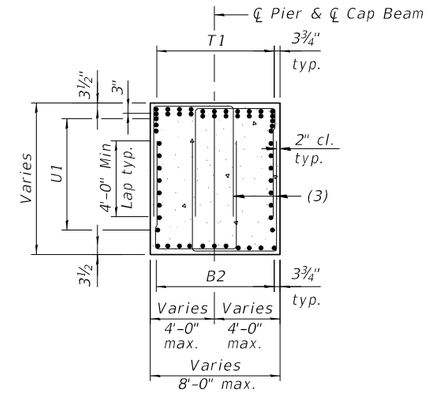
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

TOP PLAN

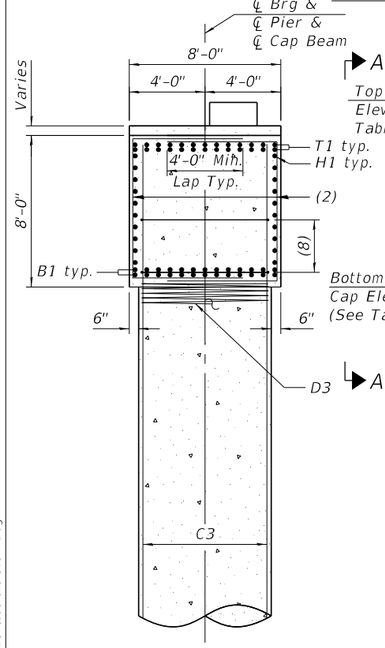
(Pier 12, 14 & 15)



SECTION C-C



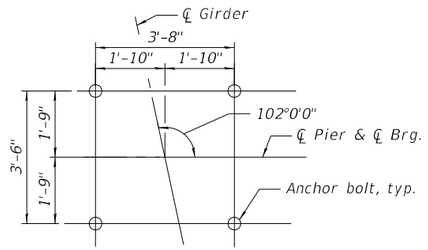
SECTION D-D



SECTION B-B

PART ELEVATION

(Looking East)
(Pier 12, 14 & 15)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps

4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 215 and 216 of 288.
For column height, step height and all elevations, See Table 1 on sheet 214 of 288.
For bearing details, see sheet 158 of 288.
For bar callouts and shear key details, see sheet 214 of 288.
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 THRU 15 PLAN AND ELEVATION - 1
STRUCTURE NO. 060-0351 (WB)

SHEET 210 OF 288 SHEETS

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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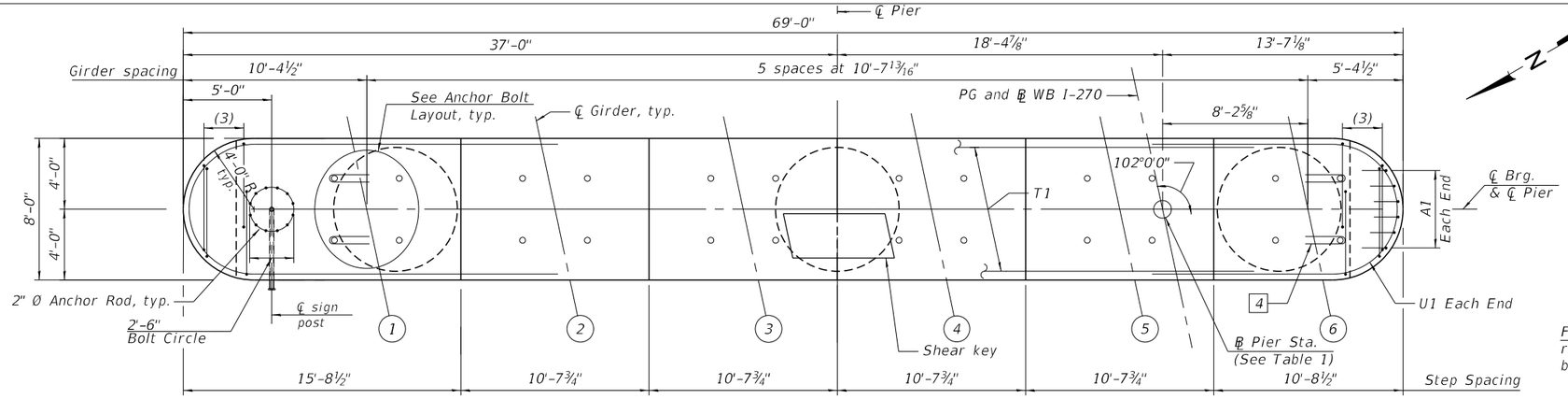
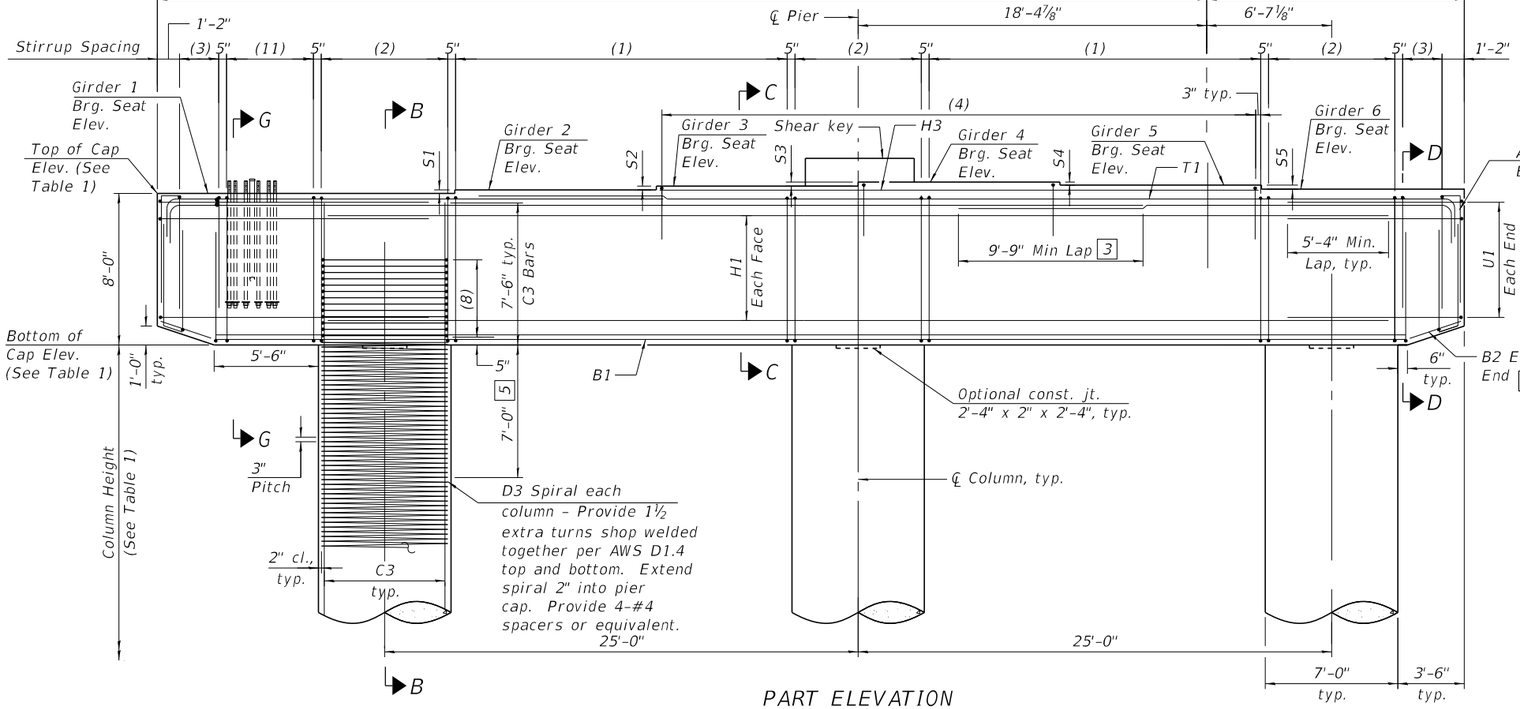
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			



Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

TOP PLAN
(Pier 13)



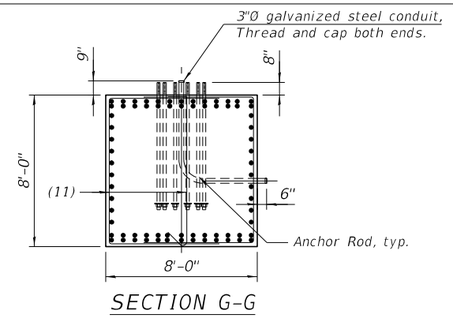
PART ELEVATION
(Looking East)
(Pier 13)

3 Alternate placement cap top rebars to stagger the laps

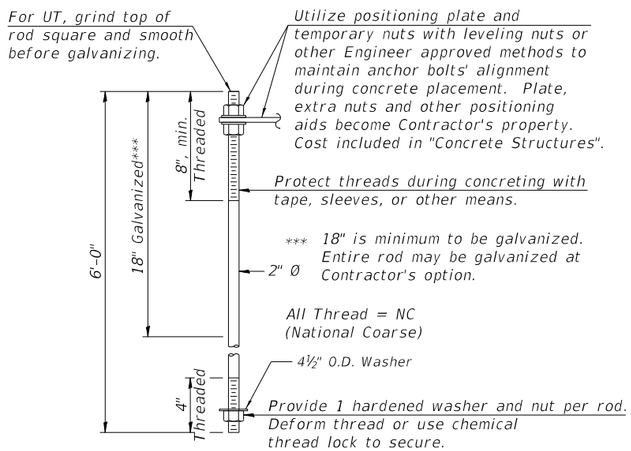
4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.



SECTION G-G

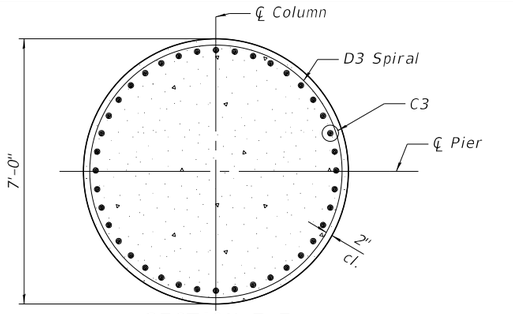


ANCHOR ROD DETAIL

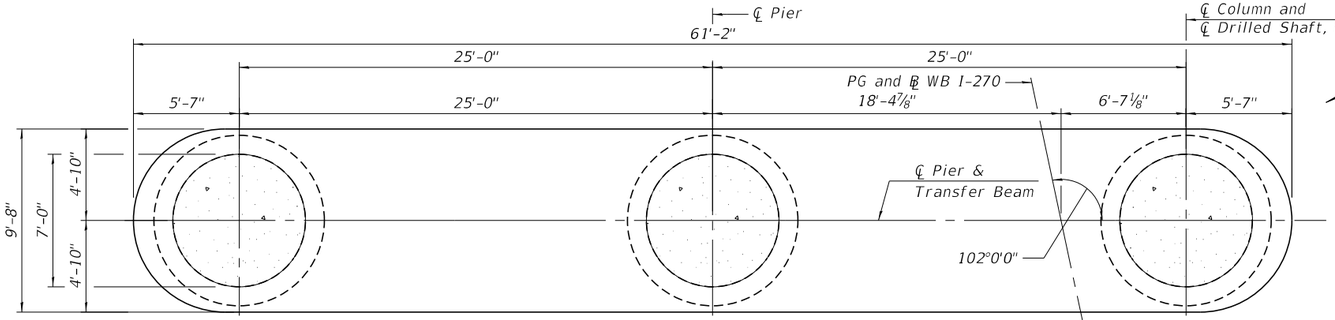
Anchor rods shall conform to ASTM F1554 Grade 105. Galvanize the upper 18" (minimum***) and associated AASHTO M291, Grade A, C or DH heavy hex nuts and F436 hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide a nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Concrete Structures.

For suggested positioning plate, see sign standard 0SF-A-4-VMS.

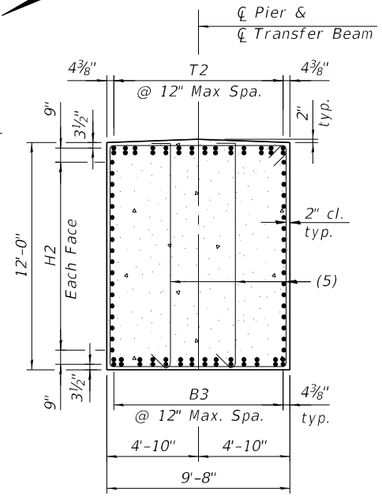
Notes:
For Anchor bolts layout, View A-A, Section B-B, Section C-C and Section D-D see sheet 210 of 288.
For bar details and Bill of Materials see sheets 215 and 216 of 288.
For station, column height, step height and all elevations, See Table 1 on sheet 214 of 288.
For bearing details, see sheet 158 of 288.
For bar callouts and shear key details, see sheet 214of 288.



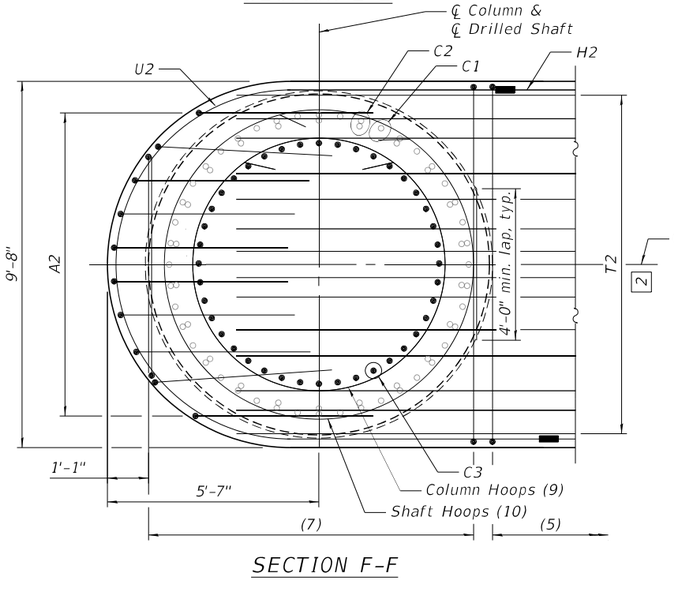
SECTION E-E



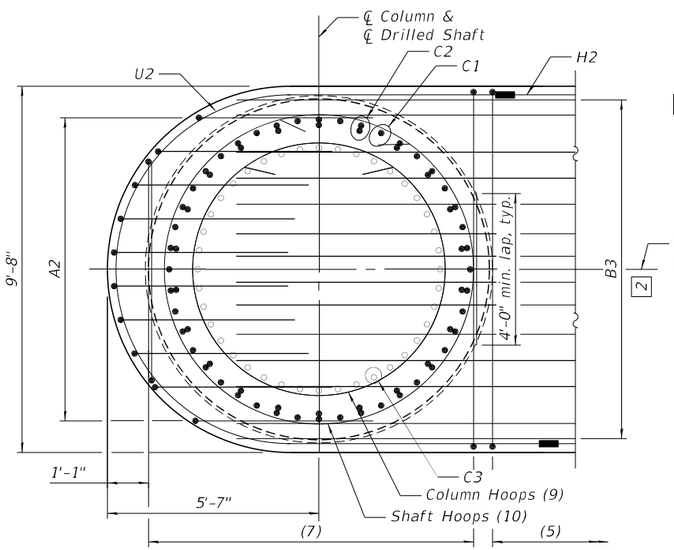
PLAN - TRANSFER BEAM



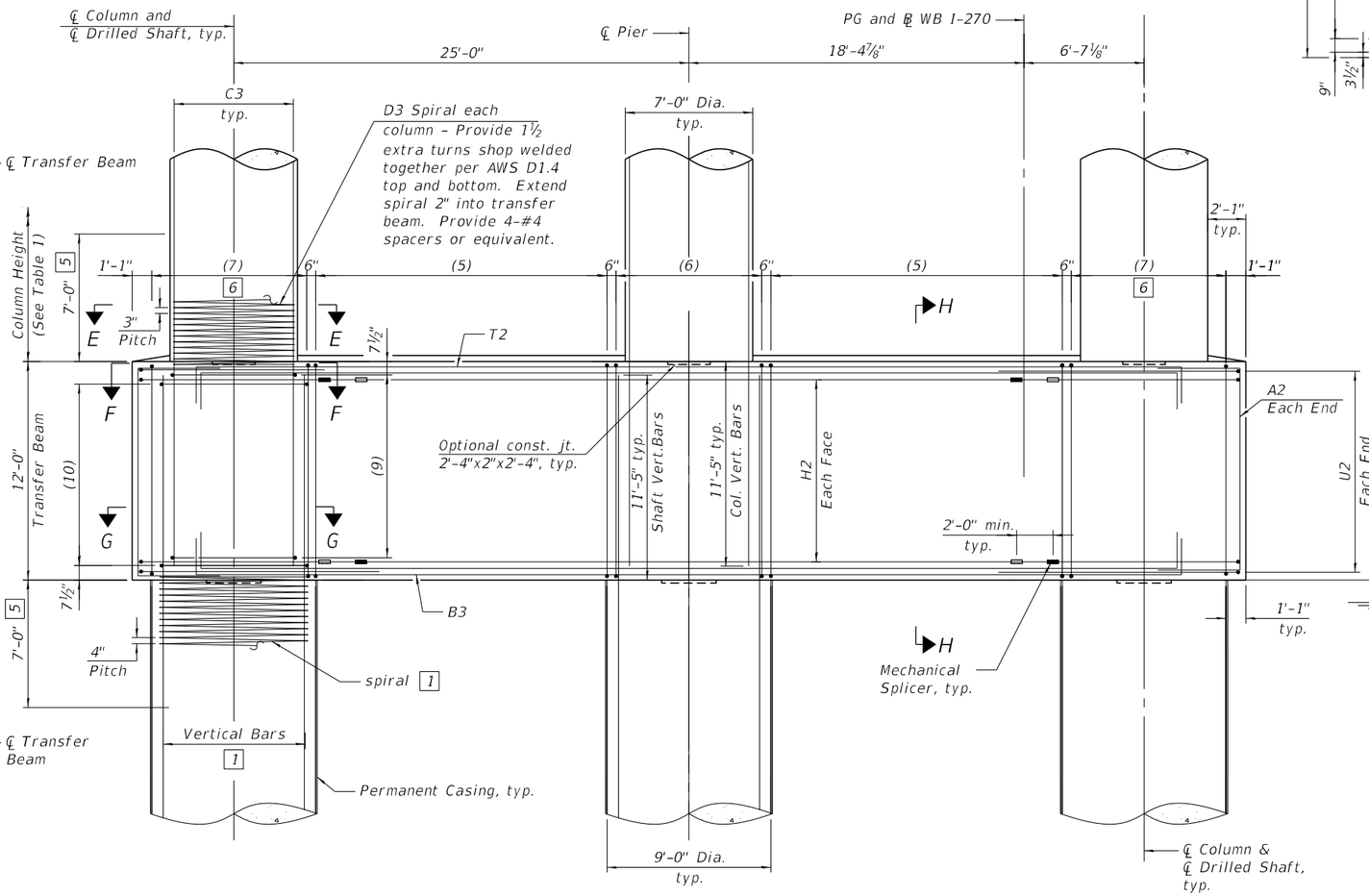
SECTION H-H



SECTION F-F



SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

Design HWE
Elev. 433.4

1 See sheet 213 of 292 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevation Piers 12, 14 & 15, see sheet 210 of 288.
For Top Plan and Part Elevation Pier 13, see sheet 211 of 288.
For Drilled Shaft Details, see sheet 213 of 288.
For additional notes, bar details, and Bill of Material, see sheets 214 and 216 of 288.
For Table 1, see sheet 214 of 288
For Mechanical Splicer Details, see sheet 242 of 288.

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PLOT DATE =	CHECKED - TMB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 THRU 15 PLAN AND ELEVATION - 3
STRUCTURE NO. 060-0351 (WB)
SHEET 212 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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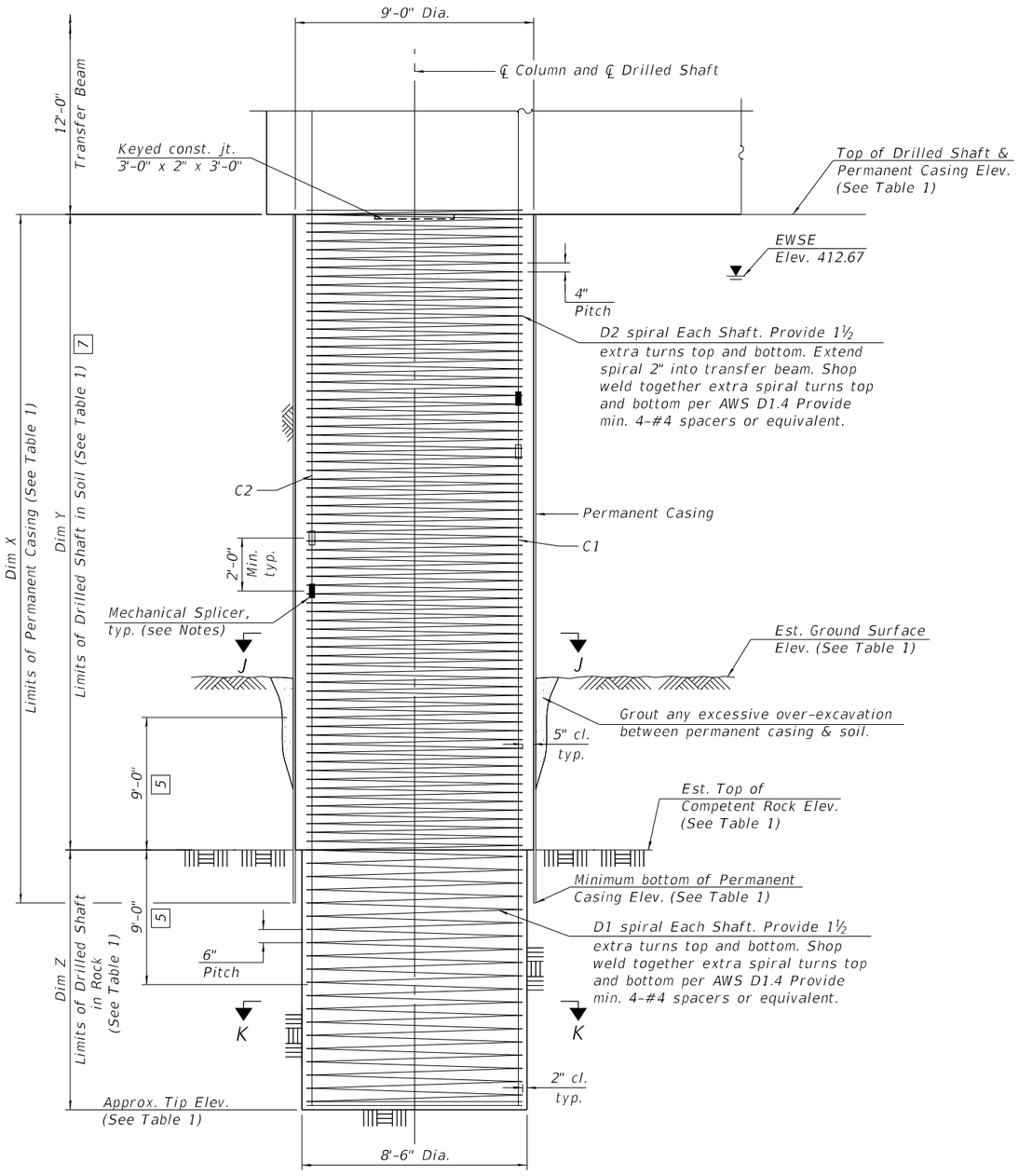
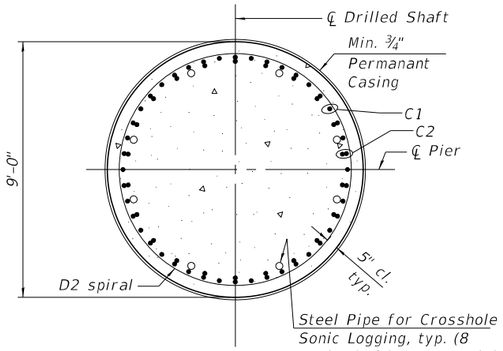
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

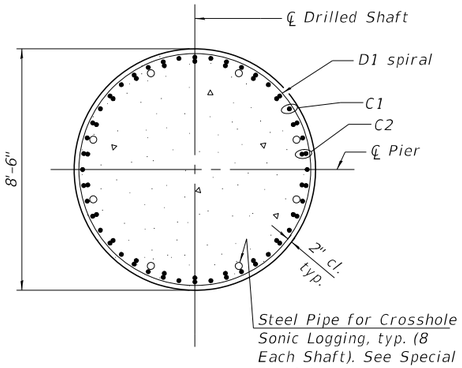


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 210 and 212 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 215 and 216 of 288.

For Table 1, see sheet 214 of 288.

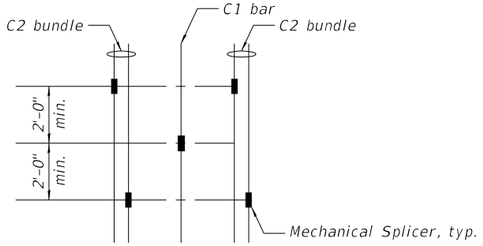
For Mechanical Splicer Details, see sheet of .

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



ALTERNATE MECHANICAL SPLICERS LOCATION

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HORNER & SHIFRIN
Teaming with: PARSONS

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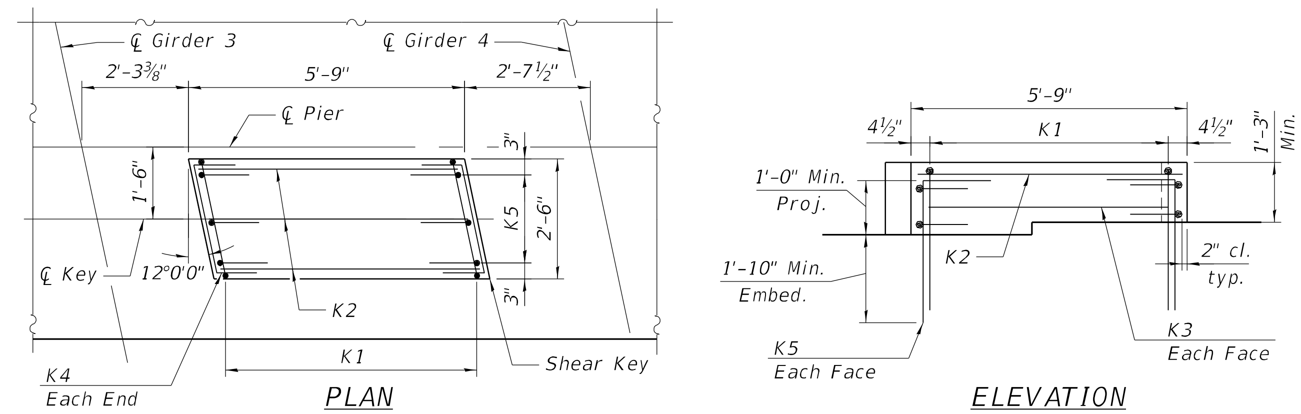
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 THRU 15 PLAN AND ELEVATION - 4
STRUCTURE NO. 060-0351 (WB)
SHEET 213 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	718
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

TABLE 1

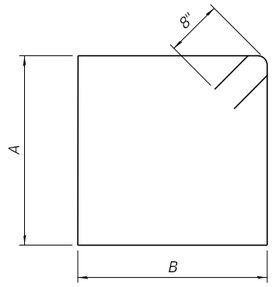
		Pier 12	Pier 13	Pier 14	Pier 15
℄ Pier Station		2804+06.40	2806+42.40	2808+78.40	2811+14.40
Bearing Seat Elevation	Girder 1	455.86	456.74	455.76	454.58
	Girder 2	456.05	456.95	455.98	454.80
	Girder 3	456.25	457.15	456.20	455.02
	Girder 4	456.45	457.36	456.42	455.24
	Girder 5	456.26	457.19	456.25	455.07
	Girder 6	456.04	456.98	456.05	454.87
Top of Cap Elevation		455.86	456.74	455.76	454.58
Bottom of Cap Elevation		447.86	448.74	447.76	446.58
Column Height		20'-10 1/4"	21'-8 7/8"	20'-9"	19'-6 7/8"
Top of Shaft Elevation		415.00	415.00	415.00	415.00
Approx. Tip Elevation		330.80	320.90	317.60	319.10
Est. Ground Surface Elevation		359.20	365.10	367.20	367.10
Est. Top of Rock Elevation		356.30	346.40	343.10	344.60
Min. bottom of Permanent Casing Elevation		354.30	344.40	341.10	342.60
Dim X		60'-8 3/8"	70'-7 1/8"	73'-10 3/4"	72'-4 3/4"
Dim Y		58'-8 3/8"	68'-7 1/8"	71'-10 3/4"	70'-4 3/4"
Dim Z		25'-6"	25'-6"	25'-6"	25'-6"
S1		2 1/4 "	2 1/2 "	2 5/8 "	2 5/8 "
S2		2 3/8 "	2 3/8 "	2 5/8 "	2 5/8 "
S3		2 3/8 "	2 1/2 "	2 5/8 "	2 5/8 "
S4		2 1/4 "	2 "	2 "	2 "
S5		2 5/8 "	2 1/2 "	2 3/8 "	2 3/8 "



SHEAR KEY DETAILS

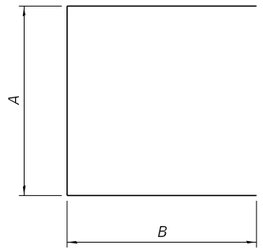
Notes:
For Pier Plan and Elevation, see sheets 210 thru 213 of 288.
For bar details, see sheet 215 of 288.
For Bill of Material, see sheet 216 of 288.

Mark	Pier 12 Bar Callouts	Pier 13 Bar Callouts	Pier 14 Bar Callouts	Pier 15 Bar Callouts
(1)	43 sets of 1-#6 s1201(E) and 1-#6 s1205(E) at 5" cts.	43 sets of 1-#6 s1301(E) and 1-#6 s1305(E) at 5" cts.	43 sets of 1-#6 s1401(E) and 1-#6 s1405(E) at 5" cts.	43 sets of 1-#6 s1501(E) and 1-#6 s1505(E) at 5" cts.
(2)	11 sets of 2-#6 s1202(E) at 8" cts.	11 sets of 2-#6 s1302(E) at 8" cts.	11 sets of 2-#6 s1402(E) at 8" cts.	11 sets of 2-#6 s1502(E) at 8" cts.
(3)	6 sets of 4-#6 s1207(E) at 5" cts.	6 sets of 4-#6 s1307(E) at 5" cts.	6 sets of 4-#6 s1407(E) at 5" cts.	6 sets of 4-#6 s1507(E) at 5" cts.
(4)	47-#6 s1208(E) at abt. 8" cts.	47-#6 s1308(E) at abt. 8" cts.	47-#6 s1408(E) at abt. 8" cts.	47-#6 s1508(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1203(E) and 2-#6 s1206(E) at 6" cts.	33 sets of 1-#6 s1303(E) and 2-#6 s1306(E) at 6" cts.	33 sets of 1-#6 s1403(E) and 2-#6 s1406(E) at 6" cts.	33 sets of 1-#6 s1503(E) and 2-#6 s1506(E) at 6" cts.
(6)	17 sets of 2-#6 s1204(E) at 6" cts	17 sets of 2-#6 s1304(E) at 6" cts	17 sets of 2-#6 s1404(E) at 6" cts	17 sets of 2-#6 s1504(E) at 6" cts
(7)	18 sets of 2-#6 s1204(E) at 6" cts.	18 sets of 2-#6 s1304(E) at 6" cts.	18 sets of 2-#6 s1404(E) at 6" cts.	18 sets of 2-#6 s1504(E) at 6" cts.
(8)	14-#7 hp1202(E) hoops at 3"	14-#7 hp1302(E) hoops at 3"	14-#7 hp1402(E) hoops at 3"	14-#7 hp1502(E) hoops at 3"
(9)	44-#7 hp1202(E) hoops at 3"	44-#7 hp1302(E) hoops at 3"	44-#7 hp1402(E) hoops at 3"	44-#7 hp1502(E) hoops at 3"
(10)	33-#7 hp1201(E) hoops at 4"	33-#7 hp1301(E) hoops at 4"	33-#7 hp1401(E) hoops at 4"	33-#7 hp1501(E) hoops at 4"
(11)	-	11 sets of 2-#6 s1302(E) and 1-#6 s1305(E) at 5" cts.	-	-
T1	2 layers of 13-#11 p1201(E) or p1202(E) at 7 3/8"	2 layers of 13-#11 p1301(E) or p1302(E) at 7 3/8"	2 layers of 13-#11 p1401(E) or p1402(E) at 7 3/8"	2 layers of 13-#11 p1501(E) or p1502(E) at 7 3/8"
T2	14 bundles of 1-#11 p1205(E) (top) and 1-#11 p1206(E) (bot) at 12" max	14 bundles of 1-#11 p1305(E) (top) and 1-#11 p1306(E) (bot) at 12" max	14 bundles of 1-#11 p1405(E) (top) and 1-#11 p1406(E) (bot) at 12" max	14 bundles of 1-#11 p1505(E) (top) and 1-#11 p1506(E) (bot) at 12" max
B1	2 layers of 13-#11 p1203(E) at 7 3/8"	2 layers of 13-#11 p1303(E) at 7 3/8"	2 layers of 13-#11 p1403(E) at 7 3/8"	2 layers of 13-#11 p1503(E) at 7 3/8"
B2	11-#7 p1204(E) at 7 3/8"	11-#7 p1304(E) at 7 3/8"	11-#7 p1404(E) at 7 3/8"	11-#7 p1504(E) at 7 3/8"
B3	14 bundles of 1-#11 p1205(E) (bot) and 1-#11 p1206(E) (top) at 12" max	14 bundles of 1-#11 p1305(E) (bot) and 1-#11 p1306(E) (top) at 12" max	14 bundles of 1-#11 p1405(E) (bot) and 1-#11 p1406(E) (top) at 12" max	14 bundles of 1-#11 p1505(E) (bot) and 1-#11 p1506(E) (top) at 12" max
H1	10-#8 h1201(E) at 7 1/2"	10-#8 h1301(E) at 7 1/2"	10-#8 h1401(E) at 7 1/2"	10-#8 h1501(E) at 7 1/2"
H2	18-#9 h1202(E) at 7"	18-#9 h1302(E) at 7"	18-#9 h1402(E) at 7"	18-#9 h1502(E) at 7"
H3	10-#6 h1203(E) at abt. 9 3/4"	10-#6 h1303(E) at abt. 9 3/4"	10-#6 h1403(E) at abt. 9 3/4"	10-#6 h1503(E) at abt. 9 3/4"
A1	6 sets of 1-#7 u1203(E) and 1-#7 u1204(E) at 10 1/2"	6 sets of 1-#7 u1303(E) and 1-#7 u1304(E) at 10 1/2"	6 sets of 1-#7 u1403(E) and 1-#7 u1404(E) at 10 1/2"	6 sets of 1-#7 u1503(E) and 1-#7 u1504(E) at 10 1/2"
A2	10-#7 u1205(E) at 10 3/4"	10-#7 u1305(E) at 10 3/4"	10-#7 u1405(E) at 10 3/4"	10-#7 u1505(E) at 10 3/4"
U1	11-#8 u1201(E) space with h1201(E) and p1201(E)	11-#8 u1301(E) space with h1301(E) and p1301(E)	11-#8 u1401(E) space with h1401(E) and p1401(E)	11-#8 u1501(E) space with h1501(E) and p1501(E)
U2	20-#9 u1202(E) splice with h1202(E) and space with p1205(E)	20-#9 u1302(E) splice with h1302(E) and space with p1305(E)	20-#9 u1402(E) splice with h1402(E) and space with p1405(E)	20-#9 u1502(E) splice with h1502(E) and space with p1505(E)
C1	22 sets of 1-#14 v1201(E) and 1-#14 v1202(E) alternate eq. spa.	22 sets of 1-#14 v1301(E) and 1-#14 v1302(E) alternate eq. spa.	22 sets of 1-#14 v1401(E) and 1-#14 v1402(E) alternate eq. spa.	22 sets of 1-#14 v1501(E) and 1-#14 v1502(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1203(E) and 2-#14 v1204(E) alternate eq. spa.	22 bundles of 2-#14 v1303(E) and 2-#14 v1304(E) alternate eq. spa.	22 bundles of 2-#14 v1403(E) and 2-#14 v1404(E) alternate eq. spa.	22 bundles of 2-#14 v1503(E) and 2-#14 v1504(E) alternate eq. spa.
C3	40-#11 v1205(E) eq. spa.	40-#11 v1305(E) eq. spa.	40-#11 v1405(E) eq. spa.	40-#11 v1505(E) eq. spa.
D1	#7 sp1201(E) at 6" pitch	#7 sp1301(E) at 6" pitch	#7 sp1401(E) at 6" pitch	#7 sp1501(E) at 6" pitch
D2	#7 sp1202(E) at 4" pitch	#7 sp1302(E) at 4" pitch	#7 sp1402(E) at 4" pitch	#7 sp1502(E) at 4" pitch
D3	#7 sp1203(E) at 3" pitch	#7 sp1303(E) at 3" pitch	#7 sp1403(E) at 3" pitch	#7 sp1503(E) at 3" pitch
K1	13-#5 s1209(E) spa. at 5"	13-#5 s1309(E) spa. at 5"	13-#5 s1409(E) spa. at 5"	13-#5 s1509(E) spa. at 5"
K2	3-#5 h1204(E) spa. with n1201(E)	3-#5 h1304(E) spa. with n1301(E)	3-#5 h1404(E) spa. with n1401(E)	3-#5 h1504(E) spa. with n1501(E)
K3	1-#5 h1204(E) ea. face	1-#5 h1304(E) ea. face	1-#5 h1404(E) ea. face	1-#5 h1504(E) ea. face
K4	2-#5 h1205(E) ea. face	2-#5 h1305(E) ea. face	2-#5 h1405(E) ea. face	2-#5 h1505(E) ea. face
K5	3-#5 n1201(E) at 12" ea. face	3-#5 n1301(E) at 12" ea. face	3-#5 n1401(E) at 12" ea. face	3-#5 n1501(E) at 12" ea. face
R	#5 s1210(E)	#5 s1310(E)	#5 s1410(E)	#5 s1510(E)



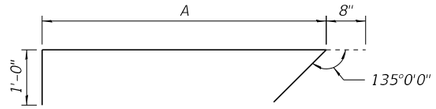
BARS s1201(E) & s1203(E)
BARS s1301(E) & s1303(E)
BARS s1401(E) & s1403(E)
BARS s1501(E) & s1503(E)

Bars	A	B
s1201(E) thru s1501(E)	7'-8"	7'-8"
s1203(E) thru s1503(E)	11'-8"	9'-4"



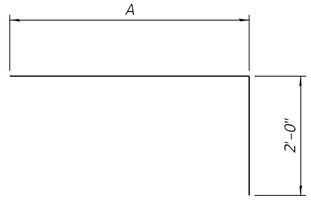
BARS s1202(E) & s1204(E) & s1207(E)
BARS s1302(E) & s1304(E) & s1307(E)
BARS s1402(E) & s1404(E) & s1407(E)
BARS s1502(E) & s1504(E) & s1507(E)

Bars	A	B
s1202(E) thru s1502(E)	7'-8"	5'-10"
s1204(E) thru s1504(E)	11'-8"	6'-8"
s1207(E) thru s1507(E)	4'-10"	5'-10"



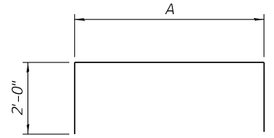
BARS s1205(E) & s1206(E)
BARS s1305(E) & s1306(E)
BARS s1405(E) & s1406(E)
BARS s1505(E) & s1506(E)

Bars	A
s1205(E) thru s1505(E)	7'-8"
s1206(E) thru s1506(E)	11'-8"



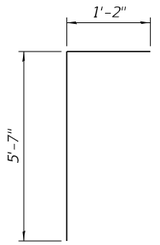
BARS p1201(E) & p1202(E)
BARS p1301(E) & p1302(E)
BARS p1401(E) & p1402(E)
BARS p1501(E) & p1502(E)

Bars	A
p1201(E), p1401(E) & p1501(E)	24'-0"
p1202(E), p1402(E) & p1502(E)	49'-5"
p1301(E)	26'-6"
p1302(E)	51'-11"

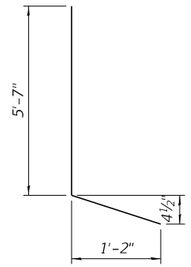


BARS p1205(E) & p1206(E)
BARS p1305(E) & p1306(E)
BARS p1405(E) & p1406(E)
BARS p1505(E) & p1506(E)

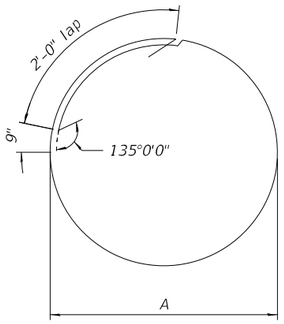
Bars	A
p1205(E) thru p1505(E)	54'-2"
p1206(E) thru p1506(E)	53'-8"



BARS u1203(E)
BARS u1303(E)
BARS u1403(E)
BARS u1503(E)

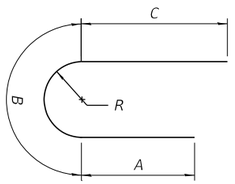


BARS u1204(E)
BARS u1304(E)
BARS u1404(E)
BARS u1504(E)



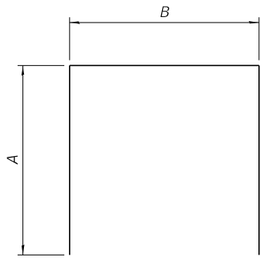
BARS hp1201(E) & hp1202(E)
BARS hp1301(E) & hp1302(E)
BARS hp1401(E) & hp1402(E)
BARS hp1501(E) & hp1502(E)

Bars	A
hp1201(E) thru hp1501(E)	8'-2"
hp1202(E) thru hp1502(E)	6'-8"



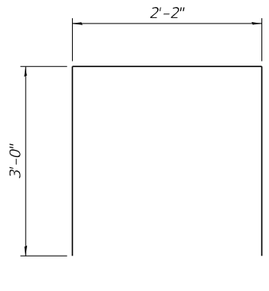
BARS u1201(E) & u1202(E)
BARS u1301(E) & u1302(E)
BARS u1401(E) & u1402(E)
BARS u1501(E) & u1502(E)

Bars	A	B	C	R
u1201(E) thru u1501(E)	5'-4"	11'-9"	5'-4"	3'-9"
u1202(E) thru u1502(E)	5'-9"	14'-5"	7'-9"	4'-7"

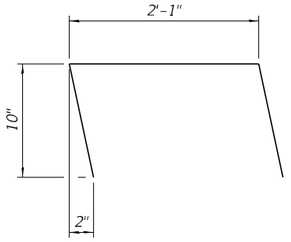


BARS u1205(E) & s1208(E)
BARS u1305(E) & s1308(E)
BARS u1405(E) & s1408(E)
BARS u1505(E) & s1508(E)

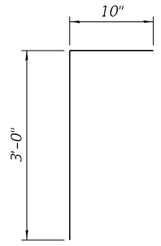
Bars	A	B
u1205(E) thru u1505(E)	4'-7"	11'-6"
s1208(E) thru s1508(E)	2'-9"	7'-8"



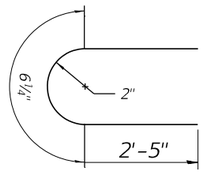
BARS s1209(E)
BARS s1309(E)
BARS s1409(E)
BARS s1509(E)



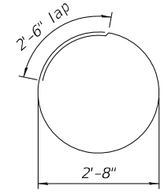
BARS h1205(E)
BARS h1305(E)
BARS h1405(E)
BARS h1605(E)



BARS n1201(E)
BARS n1301(E)
BARS n1401(E)
BARS n1501(E)



BARS s1210(E)
BARS s1310(E)
BARS s1410(E)
BARS s1510(E)



BARS hp1303(E)

MODEL: Default
FILE NAME: C:\ICS4PDF\90811\45087_327\060-0351-D876J90-oxa-55aPRT.dgn

HORNER & SHIFRIN / Teaming with: PARSONS	USER NAME =	DESIGNED - GX	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - TMB	REVISED -	
	PLOT SCALE =	DRAWN - JG	REVISED -	
	PLOT DATE =	CHECKED - TMB	REVISED -	

PIER 12 THRU 15 REINFORCEMENT TABLES – 2
STRUCTURE NO. 060–0351 (WB)
SHEET 215 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	720
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

9/10/2021 8:29:48 AM

Pier 12
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1201(E)	20	#8	56'-2"	
	h1202(E)	36	#9	38'-0"	
	h1203(E)	10	#6	31'-7"	
	h1204(E)	5	#5	5'-5"	
	h1205(E)	4	#5	3'-11"	
	hp1201(E)	99	#7	29'-2"	
	hp1202(E)	174	#7	24'-6"	
	n1201(E)	6	#5	3'-10"	
	p1201(E)	26	#11	26'-0"	
	p1202(E)	26	#11	51'-5"	
	p1203(E)	26	#11	57'-9"	
	p1204(E)	22	#7	2'-11"	
	p1205(E)	28	#11	58'-2"	
	p1206(E)	28	#11	57'-8"	
	s1201(E)	86	#6	32'-0"	
	s1202(E)	66	#6	19'-4"	
	s1203(E)	66	#6	43'-4"	
	s1204(E)	106	#6	25'-0"	
	s1205(E)	86	#6	9'-4"	
	s1206(E)	132	#6	13'-4"	
	s1207(E)	48	#6	16'-6"	
	s1208(E)	47	#6	13'-2"	
	s1209(E)	13	#5	8'-2"	
	s1210(E)	8	#5	5'-5"	
***	sp1201(E)	3	#7	24'-6"	
***	sp1202(E)	3	#7	59'-11"	
***	sp1203(E)	3	#7	21'-3"	
	u1201(E)	22	#8	22'-5"	
	u1202(E)	40	#9	27'-11"	
	u1203(E)	12	#7	6'-9"	
	u1204(E)	12	#7	6'-10"	
	u1205(E)	20	#7	20'-8"	
	v1201(E)	66	#14	46'-6"	
	v1202(E)	66	#14	49'-0"	
	v1203(E)	132	#14	44'-0"	
	v1204(E)	132	#14	51'-6"	
	v1205(E)	120	#11	39'-10"	

Concrete Structures	Cu. Yd.	497.8
Reinforcement Bars, Epoxy Coated	Pound	303,880
Permanent Casing	Foot	183
Drilled Shaft in Soil	Cu. Yd.	415
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	253
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	253
Thermal Integrity Profile Testing	Each	1

*** Length is height of spiral.

Pier 13
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1301(E)	20	#8	56'-2"	
	h1302(E)	36	#9	38'-0"	
	h1303(E)	10	#6	31'-7"	
	h1304(E)	5	#5	5'-5"	
	h1305(E)	4	#5	3'-11"	
	hp1301(E)	99	#7	29'-2"	
	hp1302(E)	174	#7	24'-6"	
	n1301(E)	6	#5	3'-10"	
	p1301(E)	26	#11	28'-6"	
	p1302(E)	26	#11	53'-11"	
	p1303(E)	26	#11	62'-9"	
	p1304(E)	22	#7	2'-11"	
	p1305(E)	28	#11	58'-2"	
	p1306(E)	28	#11	57'-8"	
	s1301(E)	86	#6	32'-0"	
	s1302(E)	88	#6	19'-4"	
	s1303(E)	66	#6	43'-4"	
	s1304(E)	106	#6	25'-0"	
	s1305(E)	97	#6	9'-4"	
	s1306(E)	132	#6	13'-4"	
	s1307(E)	48	#6	16'-6"	
	s1308(E)	47	#6	13'-2"	
	s1309(E)	13	#5	8'-2"	
	s1310(E)	8	#5	5'-5"	
***	sp1301(E)	3	#7	24'-6"	
***	sp1302(E)	3	#7	69'-10"	
***	sp1303(E)	3	#7	22'-1"	
	u1301(E)	22	#8	22'-5"	
	u1302(E)	40	#9	27'-11"	
	u1303(E)	12	#7	6'-9"	
	u1304(E)	12	#7	6'-10"	
	u1305(E)	20	#7	20'-8"	
	v1301(E)	66	#14	51'-5"	
	v1302(E)	66	#14	54'-0"	
	v1303(E)	132	#14	48'-11"	
	v1304(E)	132	#14	56'-6"	
	v1305(E)	120	#11	40'-8"	

Concrete Structures	Cu. Yd.	514.0
Reinforcement Bars, Epoxy Coated	Pound	326,720
Permanent Casing	Foot	212
Drilled Shaft in Soil	Cu.Yd.	485
Drilled Shaft in Rock	Cu.Yd.	161
Anchor Bolts, 2"	Each	12
Crosshole Sonic Logging Access Ducts	Foot	282
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	282
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 14
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1401(E)	20	#8	56'-2"	
	h1402(E)	36	#9	38'-0"	
	h1403(E)	10	#6	31'-7"	
	h1404(E)	5	#5	5'-5"	
	h1405(E)	4	#5	3'-11"	
	hp1401(E)	99	#7	29'-2"	
	hp1402(E)	174	#7	24'-6"	
	n1401(E)	6	#5	3'-10"	
	p1401(E)	26	#11	26'-0"	
	p1402(E)	26	#11	51'-5"	
	p1403(E)	26	#11	57'-9"	
	p1404(E)	22	#7	2'-11"	
	p1405(E)	28	#11	58'-2"	
	p1406(E)	28	#11	57'-8"	
	s1401(E)	86	#6	32'-0"	
	s1402(E)	66	#6	19'-4"	
	s1403(E)	66	#6	43'-4"	
	s1404(E)	106	#6	25'-0"	
	s1405(E)	86	#6	9'-4"	
	s1406(E)	132	#6	13'-4"	
	s1407(E)	48	#6	16'-6"	
	s1408(E)	47	#6	13'-2"	
	s1409(E)	13	#5	8'-2"	
	s1410(E)	8	#5	5'-5"	
***	sp1401(E)	3	#7	24'-6"	
***	sp1402(E)	3	#7	73'-1"	
***	sp1403(E)	3	#7	21'-1"	
	u1401(E)	22	#8	22'-5"	
	u1402(E)	40	#9	27'-11"	
	u1403(E)	12	#7	6'-9"	
	u1404(E)	12	#7	6'-10"	
	u1405(E)	20	#7	20'-8"	
	v1401(E)	66	#14	53'-1"	
	v1402(E)	66	#14	55'-7"	
	v1403(E)	132	#14	50'-7"	
	v1404(E)	132	#14	58'-1"	
	v1405(E)	120	#11	39'-9"	

Concrete Structures	Cu. Yd.	498.4
Reinforcement Bars, Epoxy Coated	Pound	329,900
Permanent Casing	Foot	222
Drilled Shaft in Soil	Cu. Yd.	509
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	292
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	292
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 15
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1501(E)	20	#8	56'-2"	
	h1502(E)	36	#9	38'-0"	
	h1503(E)	10	#6	31'-7"	
	h1504(E)	5	#5	5'-5"	
	h1505(E)	4	#5	3'-11"	
	hp1501(E)	99	#7	29'-2"	
	hp1502(E)	174	#7	24'-6"	
	n1501(E)	6	#5	3'-10"	
	p1501(E)	26	#11	26'-0"	
	p1502(E)	26	#11	51'-5"	
	p1503(E)	26	#11	57'-9"	
	p1504(E)	22	#7	2'-11"	
	p1505(E)	28	#11	58'-2"	
	p1506(E)	28	#11	57'-8"	
	s1501(E)	86	#6	32'-0"	
	s1502(E)	66	#6	19'-4"	
	s1503(E)	66	#6	43'-4"	
	s1504(E)	106	#6	25'-0"	
	s1505(E)	86	#6	9'-4"	
	s1506(E)	132	#6	13'-4"	
	s1507(E)	48	#6	16'-6"	
	s1508(E)	47	#6	13'-2"	
	s1509(E)	13	#5	8'-2"	
	s1510(E)	8	#5	5'-5"	
***	sp1501(E)	3	#7	24'-6"	
***	sp1502(E)	3	#7	71'-7"	
***	sp1503(E)	3	#7	19'-11"	
	u1501(E)	22	#8	22'-5"	
	u1502(E)	40	#9	27'-11"	
	u1503(E)	12	#7	6'-9"	
	u1504(E)	12	#7	6'-10"	
	u1505(E)	20	#7	20'-8"	
	v1501(E)	66	#14	52'-4"	
	v1502(E)	66	#14	54'-10"	
	v1503(E)	132	#14	49'-10"	
	v1504(E)	132	#14	57'-4"	
	v1505(E)	120	#11	38'-6"	

Concrete Structures	Cu. Yd.	493.4
Reinforcement Bars, Epoxy Coated	Pound	325,520
Permanent Casing	Foot	218
Drilled Shaft in Soil	Cu. Yd.	498
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	288
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	288
Thermal Integrity Profile Testing	Each	1

*** Length is height of spiral.

Notes:

For Pier Plan and Elevation, see sheets 210 thru 213 of 288.

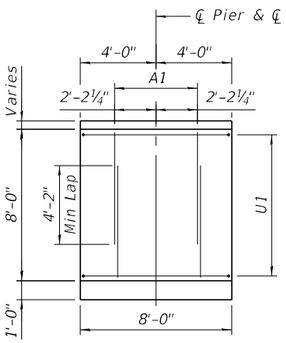
For additional bar details, see sheets 214 and 215 of 288 .

Pier 12 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (11,656 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

Pier 13 & 14 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (12,242 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

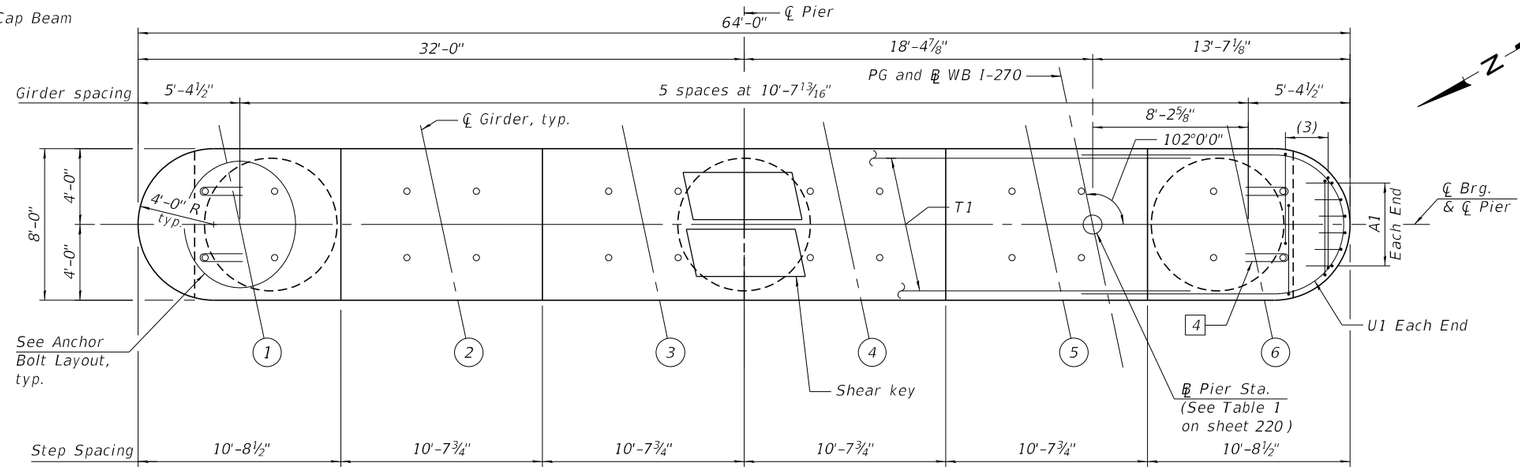
Pier 15 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (9,969 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.



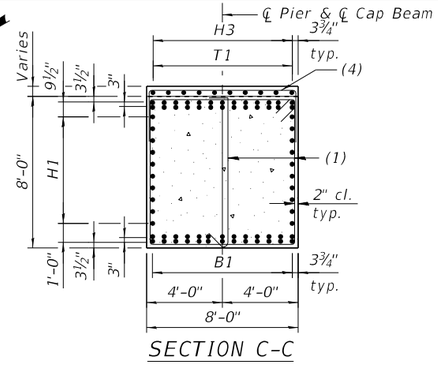
VIEW A-A

(T1 and (3) bars not shown for clarity)

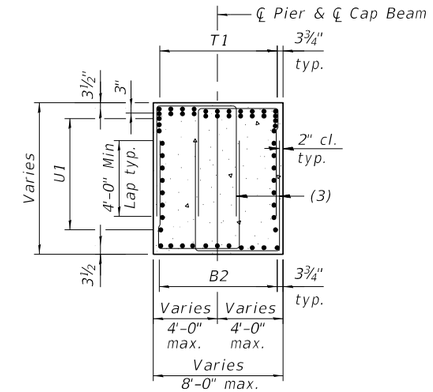


Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

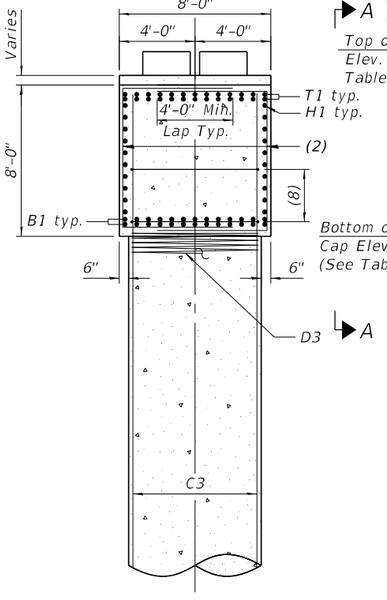
TOP PLAN



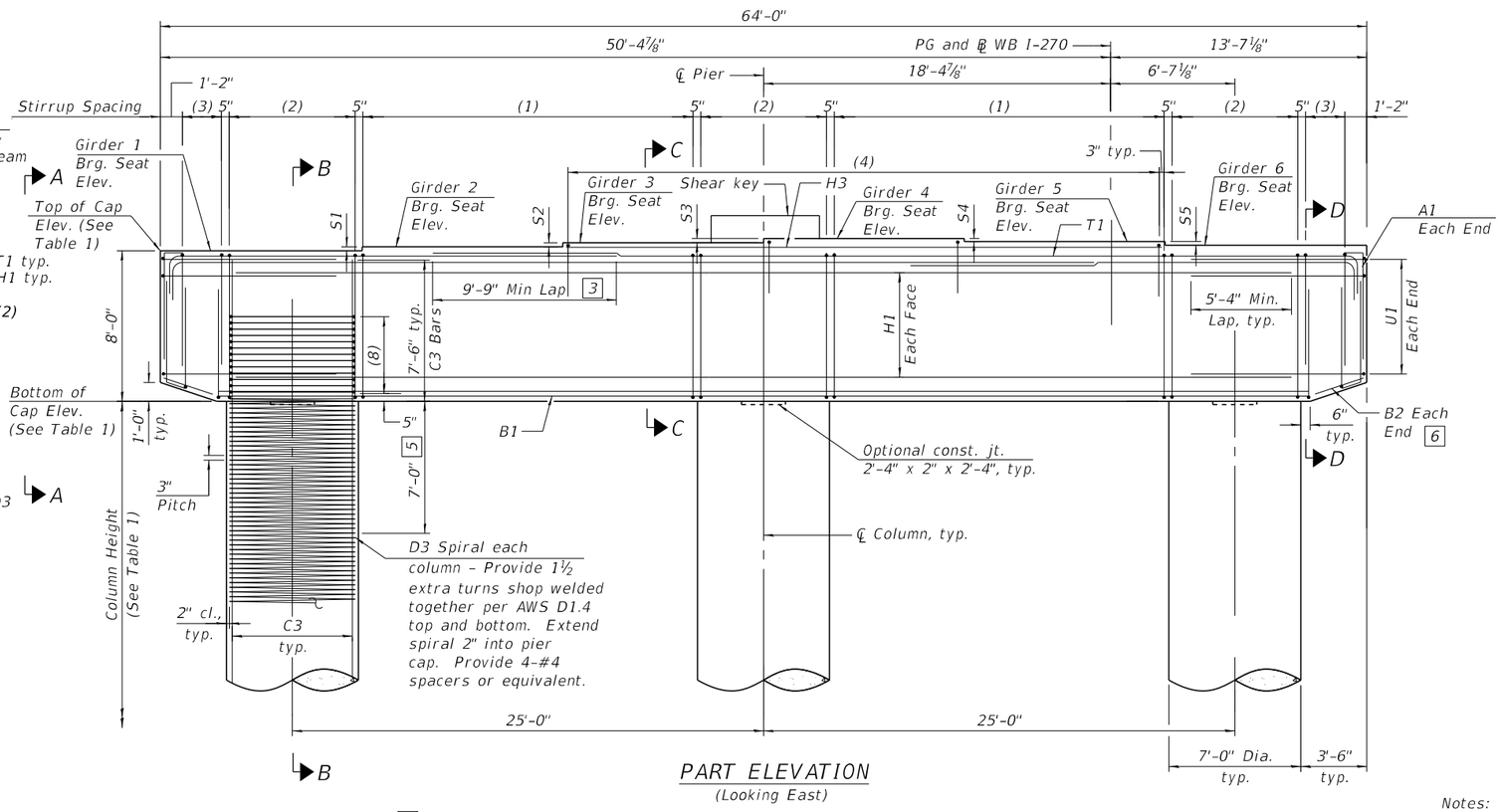
SECTION C-C



SECTION D-D

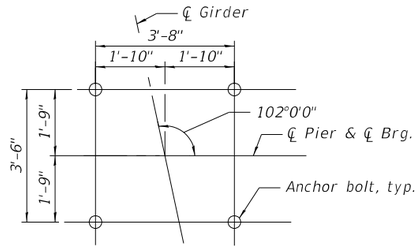


SECTION B-B



PART ELEVATION

(Looking East)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps

4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 221 and 222 of 288 .
For column height, step height and all elevations, See Table 1 on sheet 220 of 288
For bearing details, see sheet 158 of 288.
For bar callouts and shear key details, see sheet 220 of 288.
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 & 23 PLAN AND ELEVATION – 1
STRUCTURE NO. 060-0351 (WB)
SHEET 217 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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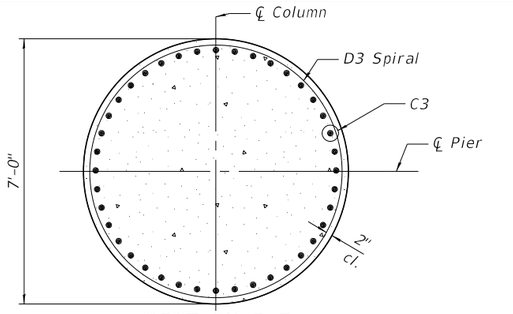
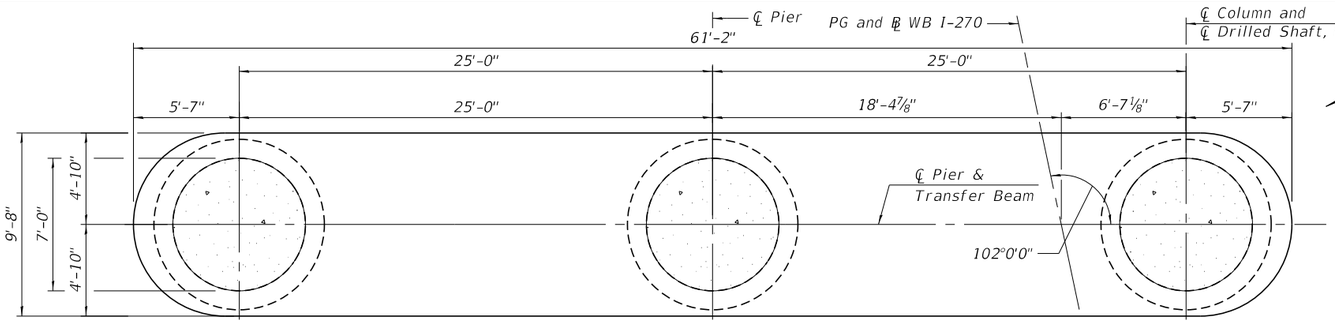
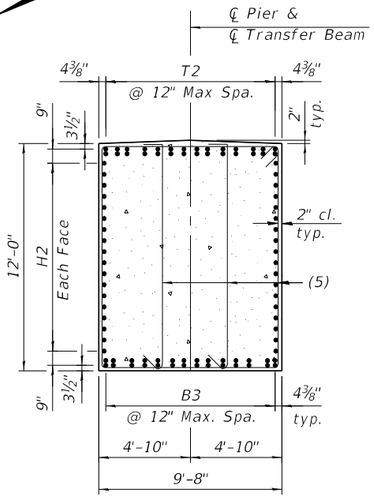
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	



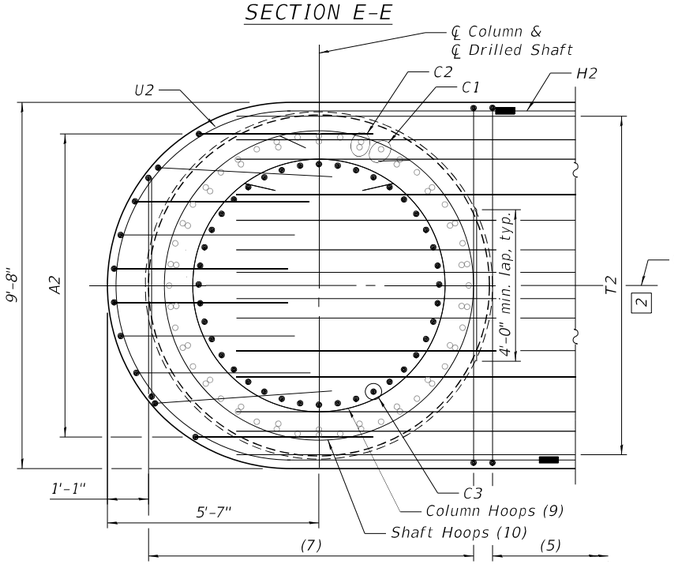
SECTION E-E



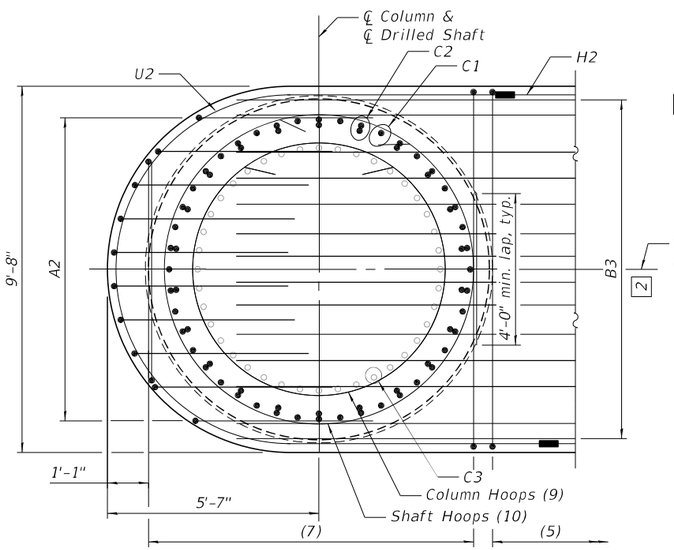
PLAN - TRANSFER BEAM



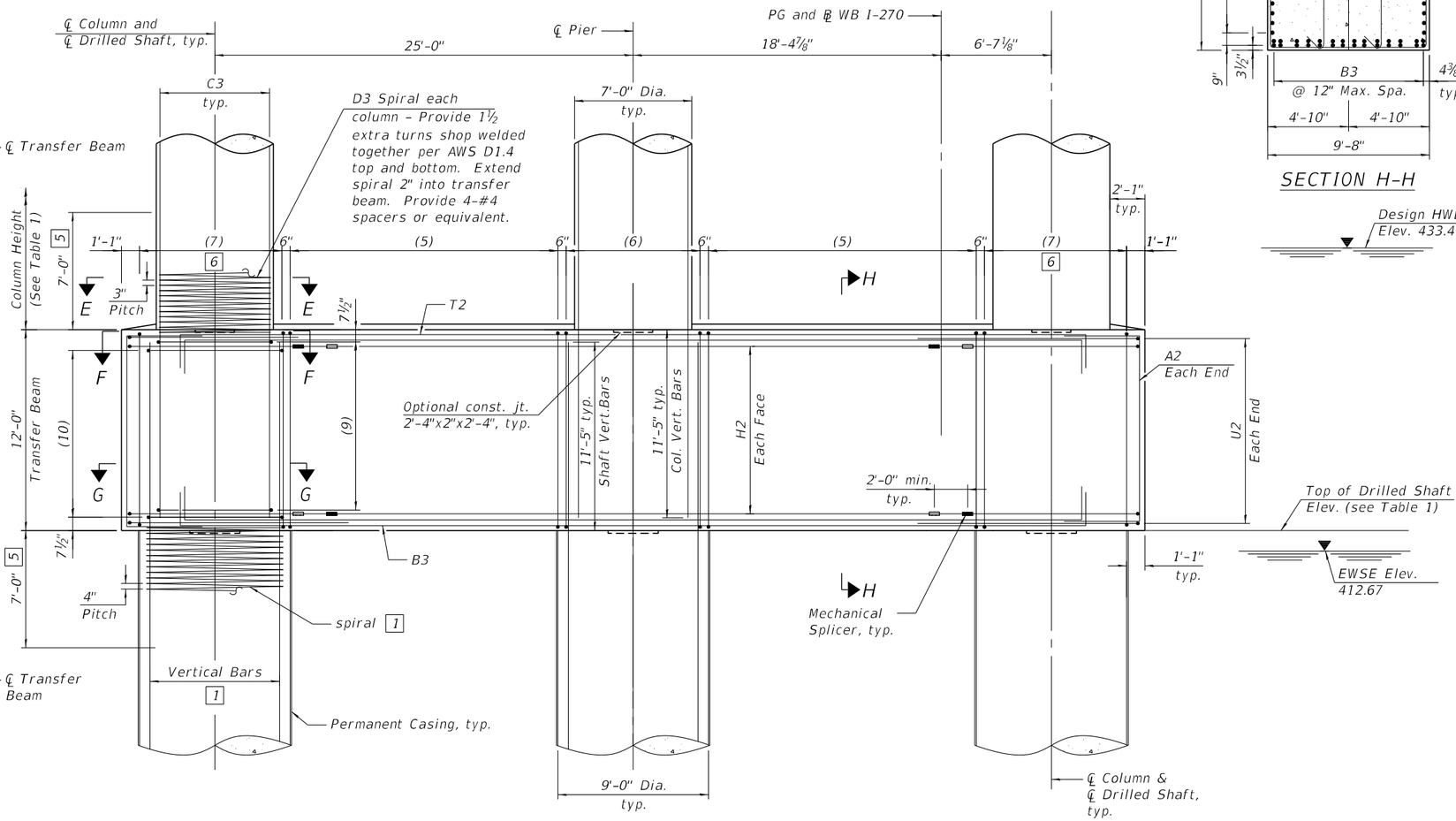
SECTION H-H



SECTION F-F



SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

1 See sheet 219 of 288 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevations, see sheet 217 of 288.
For Drilled Shaft Details, see sheet 219 of 288.
For additional notes, bar details, and Bill of Material, see sheets 220 and 222 of 288.
For Table 1, see sheet 220of 288.
For Mechanical Splicer Details, see sheet 242of 288.

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -
PLOT SCALE =	DRAWN - JG	REVISED -
PLOT DATE =	CHECKED - TMB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 18 & 23 PLAN AND ELEVATION - 2
STRUCTURE NO. 060-0351 (WB)
SHEET 218 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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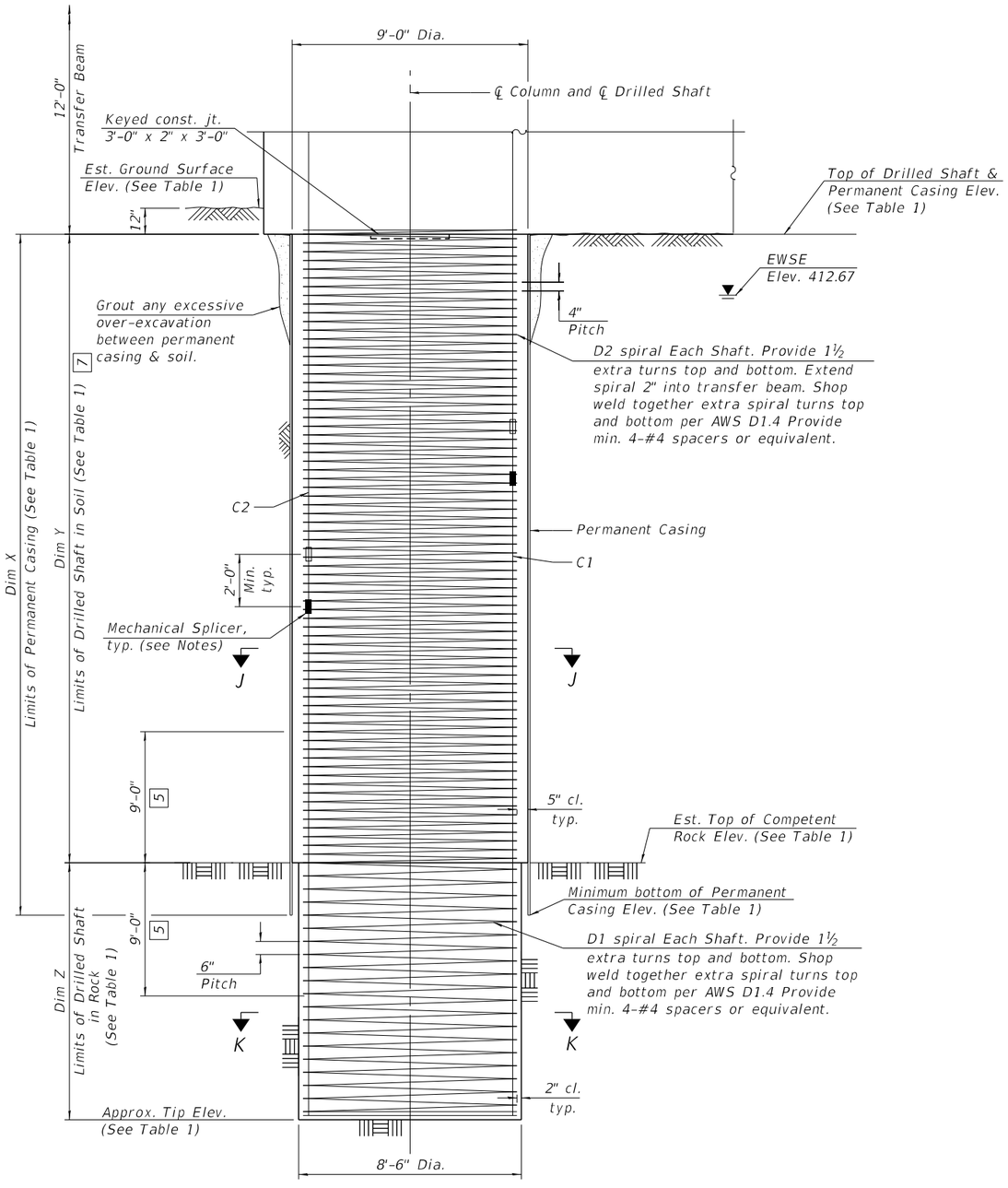
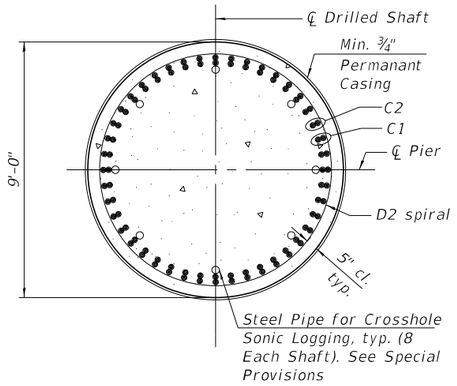
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

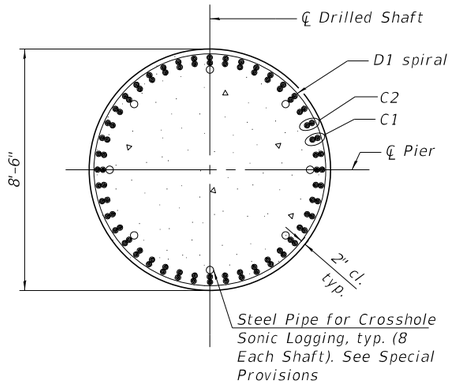


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 217 and 218 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 221 and 222 of 288.

For Table 1, see sheet 220 of 288.

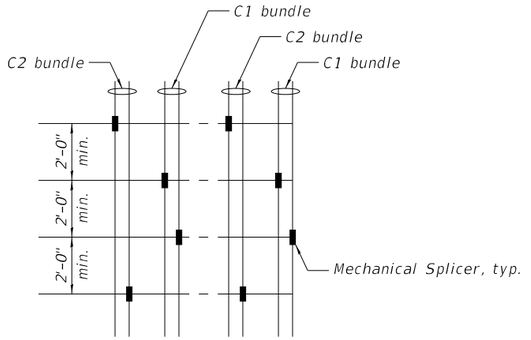
For Mechanical Splicer Details, see sheet 242 of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

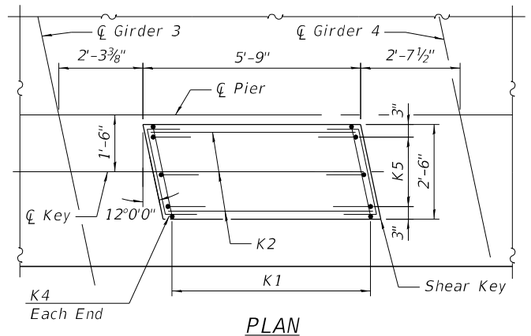
Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



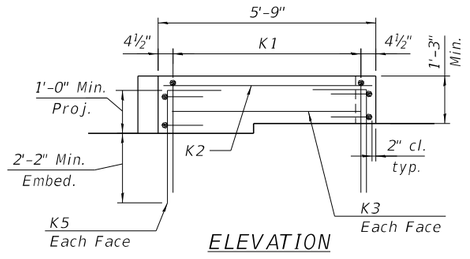
ALTERNATE MECHANICAL SPLICERS LOCATION

TABLE 1

		Pier 18	Pier 23
℄ Pier Station		2817+30.90	2829+10.90
Bearing Seat Elevation	Girder 1	451.43	445.53
	Girder 2	451.64	445.74
	Girder 3	451.86	445.96
	Girder 4	452.08	446.18
	Girder 5	451.92	446.02
	Girder 6	451.72	445.82
Top of Cap Elevation		451.43	445.53
Bottom of Cap Elevation		443.43	437.53
Column Height		15'-3⅞"	16'-3⅞"
Top of Shaft Elevation		416.10	409.20
Approx. Tip Elevation		316.60	318.10
Est. Ground Surface Elevation		417.10	410.20
Est. Top of Rock Elevation		342.10	331.60
Min. bottom of Permanent Casing Elevation		340.10	329.60
Dim X		76'-0"	79'-7⅛"
Dim Y		74'-0"	77'-7⅛"
Dim Z		25'-6"	13'-6"
S1		2 ½ "	2 ½ "
S2		2 ⅝ "	2 ⅝ "
S3		2 ⅝ "	2 ⅝ "
S4		1 ⅞ "	1 ⅞ "
S5		2 ⅜ "	2 ⅜ "



PLAN



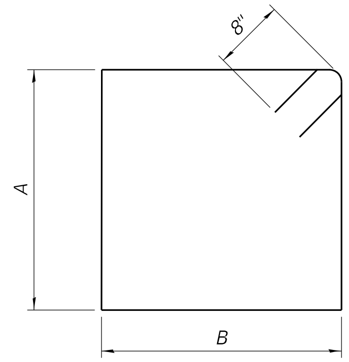
ELEVATION

SHEAR KEY DETAILS

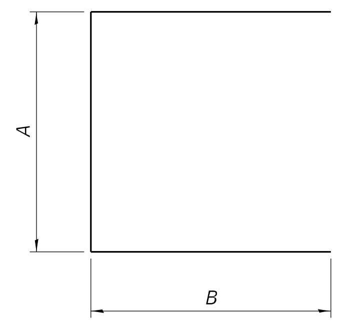
Pier 18 / Pier 23

Mark	Bar Callouts	Bar Callouts
(1)	43 sets of 1-#6 s1801(E) and 1-#6 s1805(E) at 5" cts.	43 sets of 1-#6 s2301(E) and 1-#6 s2305(E) at 5" cts.
(2)	11 sets of 2-#6 s1802(E) at 8" cts.	11 sets of 2-#6 s2302(E) at 8" cts.
(3)	6 sets of 4-#6 s1807(E) at 5" cts.	6 sets of 4-#6 s2307(E) at 5" cts.
(4)	47-#6 s1808(E) at abt. 8" cts.	47-#6 s2308(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1803(E) and 2-#6 s1806(E) at 6" cts.	33 sets of 1-#6 s2303(E) and 2-#6 s2306(E) at 6" cts.
(6)	17 sets of 2-#6 s1804(E) at 6" cts	17 sets of 2-#6 s2304(E) at 6" cts
(7)	18 sets of 2-#6 s1804(E) at 6" cts.	18 sets of 2-#6 s2304(E) at 6" cts.
(8)	14-#7 hp1802(E) hoops at 3"	14-#7 hp2302(E) hoops at 3"
(9)	44-#7 hp1802(E) hoops at 3"	44-#7 hp2302(E) hoops at 3"
(10)	33-#7 hp1801(E) hoops at 4"	33-#7 hp2301(E) hoops at 4"
T1	2 layers of 13-#11 p1801(E) or p1802(E) at 7⅜"	2 layers of 13-#11 p2301(E) or p2302(E) at 7⅜"
T2	14 bundles of 1-#11 p1805(E) (top) and 1-#11 p1806(E) (bot) at 12" max	14 bundles of 1-#11 p2305(E) (top) and 1-#11 p2306(E) (bot) at 12" max
B1	2 layers of 13-#11 p1803(E) at 7⅜"	2 layers of 13-#11 p2303(E) at 7⅜"
B2	11-#7 p1804(E) at 7⅜"	11-#7 p2304(E) at 7⅜"
B3	14 bundles of 1-#11 p1805(E) (bot) and 1-#11 p1806(E) (top) at 12" max	14 bundles of 1-#11 p2305(E) (bot) and 1-#11 p2306(E) (top) at 12" max
H1	10-#8 h1801(E) at 7½"	10-#8 h2301(E) at 7½"
H2	18-#9 h1802(E) at 7"	18-#9 h2302(E) at 7"
H3	10-#6 h1803(E) at abt. 9¾"	10-#6 h2303(E) at abt. 9¾"
A1	6 sets of 1-#7 u1803(E) & 1-#7 u1804(E) at 10½"	6 sets of 1-#7 u2303(E) & 1-#7 u2304(E) at 10½"
A2	10-#7 u1805(E) at 10¾"	10-#7 u2305(E) at 10¾"
U1	11-#8 u1801(E) space with h1801(E) and p1801(E)	11-#8 u2301(E) space with h2301(E) and p2301(E)
U2	20-#9 u1802(E) splice with h1802(E) and space with p1805(E)	20-#9 u2302(E) splice with h2302(E) and space with p2305(E)
C1	22 bundles of 2-#14 v1801(E) and 2-#14 v1802(E) alternate eq. spa.	22 bundles of 2-#14 v2301(E) and 2-#14 v2302(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1803(E) and 2-#14 v1804(E) alternate eq. spa.	22 bundles of 2-#14 v2303(E) and 2-#14 v2304(E) alternate eq. spa.
C3	40-#11 v1805(E) eq. spa.	40-#11 v2305(E) eq. spa.
D1	#7 sp1801(E) at 6" pitch	#7 sp2301(E) at 6" pitch
D2	#7 sp1802(E) at 4" pitch	#7 sp2302(E) at 4" pitch
D3	#7 sp1803(E) at 3" pitch	#7 sp2303(E) at 3" pitch
K1	13-#6 s1809(E) spa. at 5"	13-#6 s2309(E) spa. at 5"
K2	3-#5 h1804(E) space with n1801(E)	3-#5 h2304(E) space with n2301(E)
K3	1-#5 h1804(E) ea. face	1-#5 h2304(E) ea. face
K4	2-#5 h1805(E) ea. face	2-#5 h2305(E) ea. face
K5	3-#6 n1801(E) at 12" ea. face	3-#6 n2301(E) at 12" ea. face
R	#5 s1810(E)	#5 s2310(E)

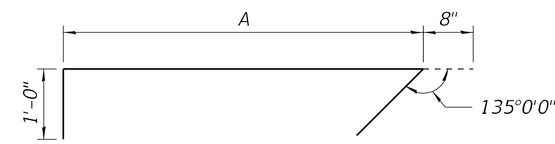
Notes:
For Pier Plan and Elevation, see sheets 217, 218 and 219 of 288.
For bar details, see sheet 221 of 288.
For Bill of Material, see sheet 222 of 288.



BARS s1801(E) & s1803(E)
BARS s2301(E) & s2303(E)



BARS s1802(E) & s1804(E) & s1807(E)
BARS s2302(E) & s2304(E) & s2307(E)



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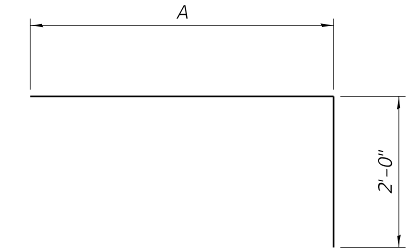

BARS p1801(E) & p1802(E)
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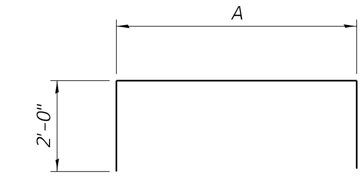
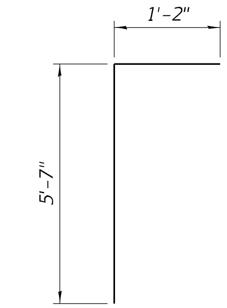


BARS p1805(E) & p1806(E)
BARS p2305(E) & p2306(E)



BARS u1803(E)
BARS u2303(E)

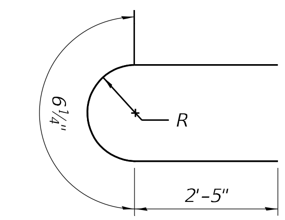
Bars	A	B
s1801(E) & s2301(E)	7' -8"	7' -8"
s1803(E) & s2303(E)	11' -8"	9' -4"

Bars	A	B
s1802(E) & s2302(E)	7' -8"	5' -10"
s1804(E) & s2304(E)	11' -8"	6' -8"
s1807(E) & s2307(E)	4' -10"	5' -10"

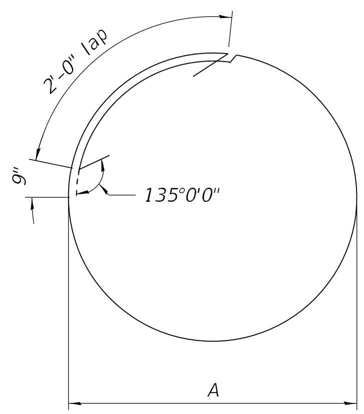
Bars	A
s1805(E) & s2305(E)	7' -8"
s1806(E) & s2306(E)	11' -8"

Bars	A
p1801(E) & p2301(E)	24' -0"
p1802(E) & p2302(E)	49' -5"

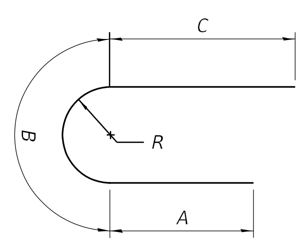
Bars	A
p1805(E) & p2305(E)	54' -2"
p1806(E) & p2306(E)	53' -8"



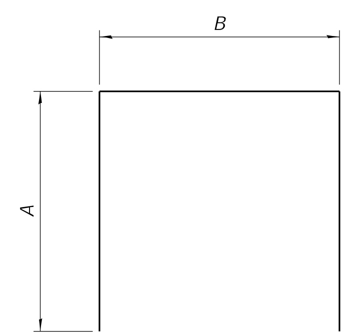
BARS s1810(E)
BARS s2310(E)



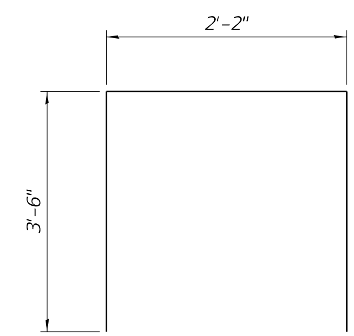
BARS hp1801(E) & hp1802(E)
BARS hp2301(E) & hp2302(E)



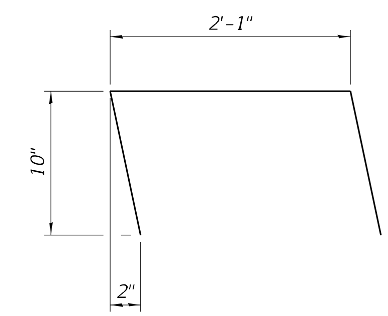
BARS u1801(E) & u1802(E)
BARS u2301(E) & u2302(E)



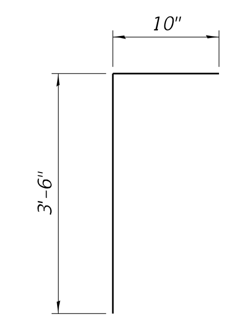
BARS u1805(E) & s1808(E)
BARS u2305(E) & s2308(E)



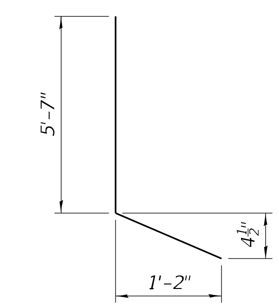
BARS s1809(E)
BARS s2309(E)



BARS h1805(E)
BARS h2305(E)



BARS n1801(E)
BARS n2301(E)



BARS u1804(E)
BARS u2304(E)

Bars	A
hp1801(E) & hp2301(E)	8' -2"
hp1802(E) & hp2302(E)	6' -8"

Bars	A	B	C	R
u1801(E) & u2301(E)	5' -4"	11' -9"	5' -4"	3' -9"
u1802(E) & u2302(E)	5' -9"	14' -5"	7' -9"	4' -7"

Bars	A	B
u1805(E) & u2305(E)	4' -7"	11' -6"
s1808(E) & s2308(E)	2' -9"	7' -8"

Pier 18

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1801(E)	20	#8	56'-2"	
	h1802(E)	36	#9	38'-0"	
	h1803(E)	10	#6	31'-7"	
	h1804(E)	5	#5	5'-5"	
	h1805(E)	4	#5	3'-11"	
	hp1801(E)	99	#7	29'-2"	
	hp1802(E)	174	#7	24'-6"	
	n1801(E)	12	#6	4'-4"	
	p1801(E)	26	#11	26'-0"	
	p1802(E)	26	#11	51'-5"	
	p1803(E)	26	#11	57'-9"	
	p1804(E)	22	#7	2'-11"	
	p1805(E)	28	#11	58'-2"	
	p1806(E)	28	#11	57'-8"	
	s1801(E)	86	#6	32'-0"	
	s1802(E)	66	#6	19'-4"	
	s1803(E)	66	#6	43'-4"	
	s1804(E)	106	#6	25'-0"	
	s1805(E)	86	#6	9'-4"	
	s1806(E)	132	#6	13'-4"	
	s1807(E)	48	#6	16'-6"	
	s1808(E)	47	#6	13'-2"	
	s1809(E)	26	#6	9'-2"	
	s1810(E)	8	#5	5'-5"	
***	sp1801(E)	3	#7	24'-6"	
***	sp1802(E)	3	#7	75'-2"	
***	sp1803(E)	3	#7	15'-8"	
	u1801(E)	22	#8	22'-5"	
	u1802(E)	40	#9	27'-11"	
	u1803(E)	12	#7	6'-9"	
	u1804(E)	12	#7	6'-10"	
	u1805(E)	20	#7	20'-8"	
	v1801(E)	132	#14	54'-1"	
	v1802(E)	132	#14	56'-8"	
	v1803(E)	132	#14	51'-7"	
	v1804(E)	132	#14	59'-2"	
	v1805(E)	120	#11	34'-3"	

Structure Excavation	Cu. Yd.	32
Concrete Structures	Cu. Yd.	475.9
Reinforcement Bars, Epoxy Coated	Pound	383,970
Permanent Casing	Foot	228
Drilled Shaft in Soil	Cu. Yd.	524
Drilled Shaft in Rock	Cu. Yd.	161
Crosshole Sonic Logging Access Ducts	Foot	299
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	299
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 23

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2301(E)	20	#8	56'-2"	
	h2302(E)	36	#9	38'-0"	
	h2303(E)	10	#6	31'-7"	
	h2304(E)	5	#5	5'-5"	
	h2305(E)	4	#5	3'-11"	
	hp2301(E)	99	#7	29'-2"	
	hp2302(E)	174	#7	24'-6"	
	n2301(E)	12	#6	4'-4"	
	p2301(E)	26	#11	26'-0"	
	p2302(E)	26	#11	51'-5"	
	p2303(E)	26	#11	57'-9"	
	p2304(E)	22	#7	2'-11"	
	p2305(E)	28	#11	58'-2"	
	p2306(E)	28	#11	57'-8"	
	s2301(E)	86	#6	32'-0"	
	s2302(E)	66	#6	19'-4"	
	s2303(E)	66	#6	43'-4"	
	s2304(E)	106	#6	25'-0"	
	s2305(E)	86	#6	9'-4"	
	s2306(E)	132	#6	13'-4"	
	s2307(E)	48	#6	16'-6"	
	s2308(E)	47	#6	13'-2"	
	s2309(E)	26	#6	9'-2"	
	s2310(E)	8	#5	5'-5"	
***	sp2301(E)	3	#7	12'-6"	
***	sp2302(E)	3	#7	78'-10"	
***	sp2303(E)	3	#7	16'-8"	
	u2301(E)	22	#8	22'-5"	
	u2302(E)	40	#9	27'-11"	
	u2303(E)	12	#7	6'-9"	
	u2304(E)	12	#7	6'-10"	
	u2305(E)	20	#7	20'-8"	
	v2301(E)	132	#14	49'-11"	
	v2302(E)	132	#14	52'-6"	
	v2303(E)	132	#14	46'-6"	
	v2304(E)	132	#14	55'-11"	
	v2305(E)	120	#11	35'-3"	

Structure Excavation	Cu. Yd.	32
Concrete Structures	Cu. Yd.	480.2
Reinforcement Bars, Epoxy Coated	Pound	366,240
Permanent Casing	Foot	239
Drilled Shaft in Soil	Cu. Yd.	549
Drilled Shaft in Rock	Cu. Yd.	86
Crosshole Sonic Logging Access Ducts	Foot	273
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	273
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Notes:

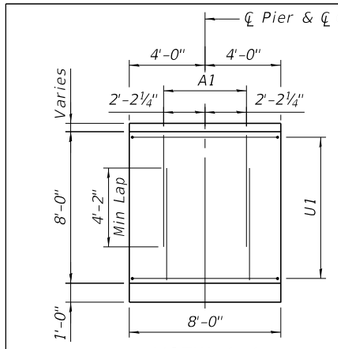
For Pier Plan and Elevation, see sheets 217 thru 219 of 288.

For additional bar details, see sheets 220 and 221 of 288.

Pier 18 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (11,843 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

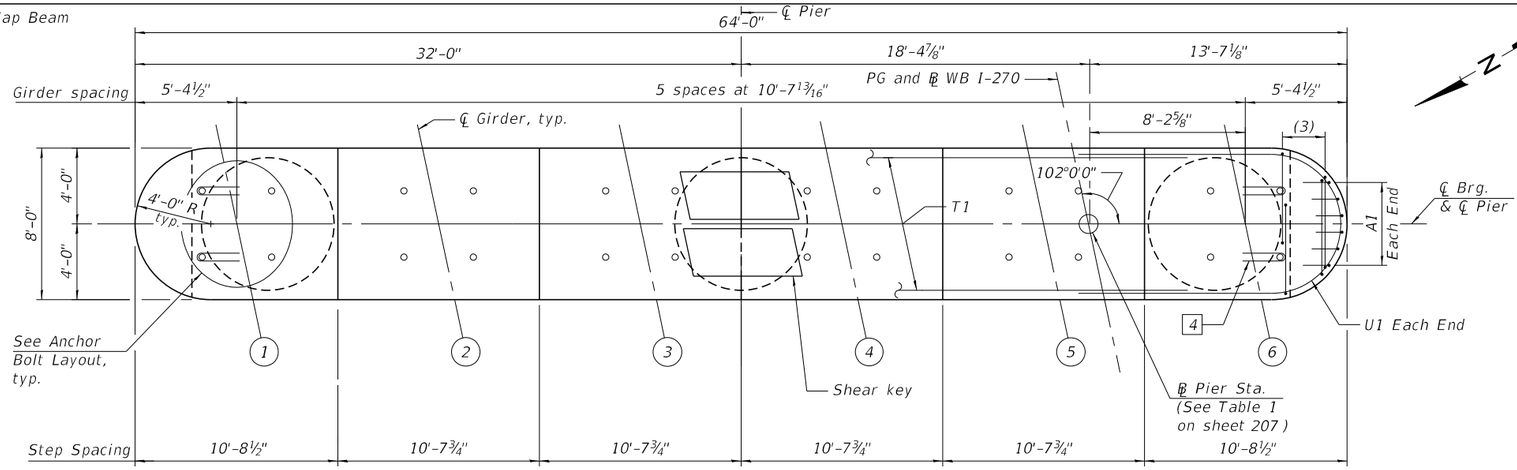
Pier 23 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (5,949 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.



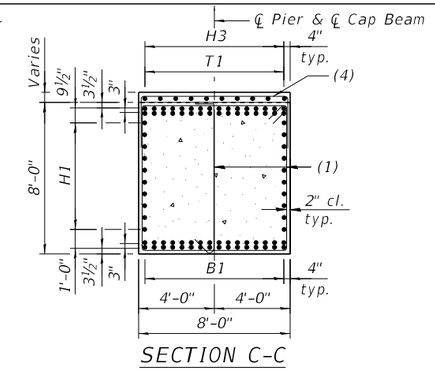
VIEW A-A

(T1 and (3) bars not shown for clarity)

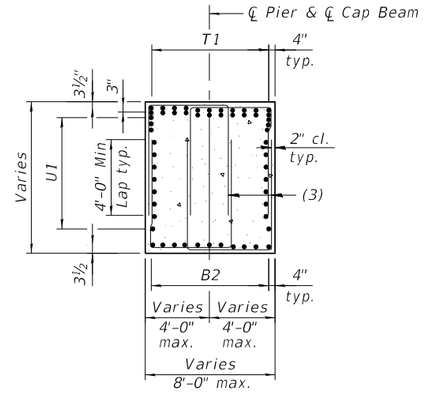


TOP PLAN

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.



SECTION C-C



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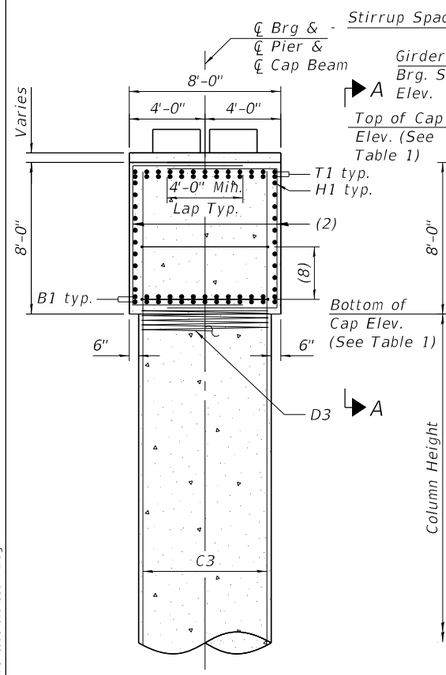
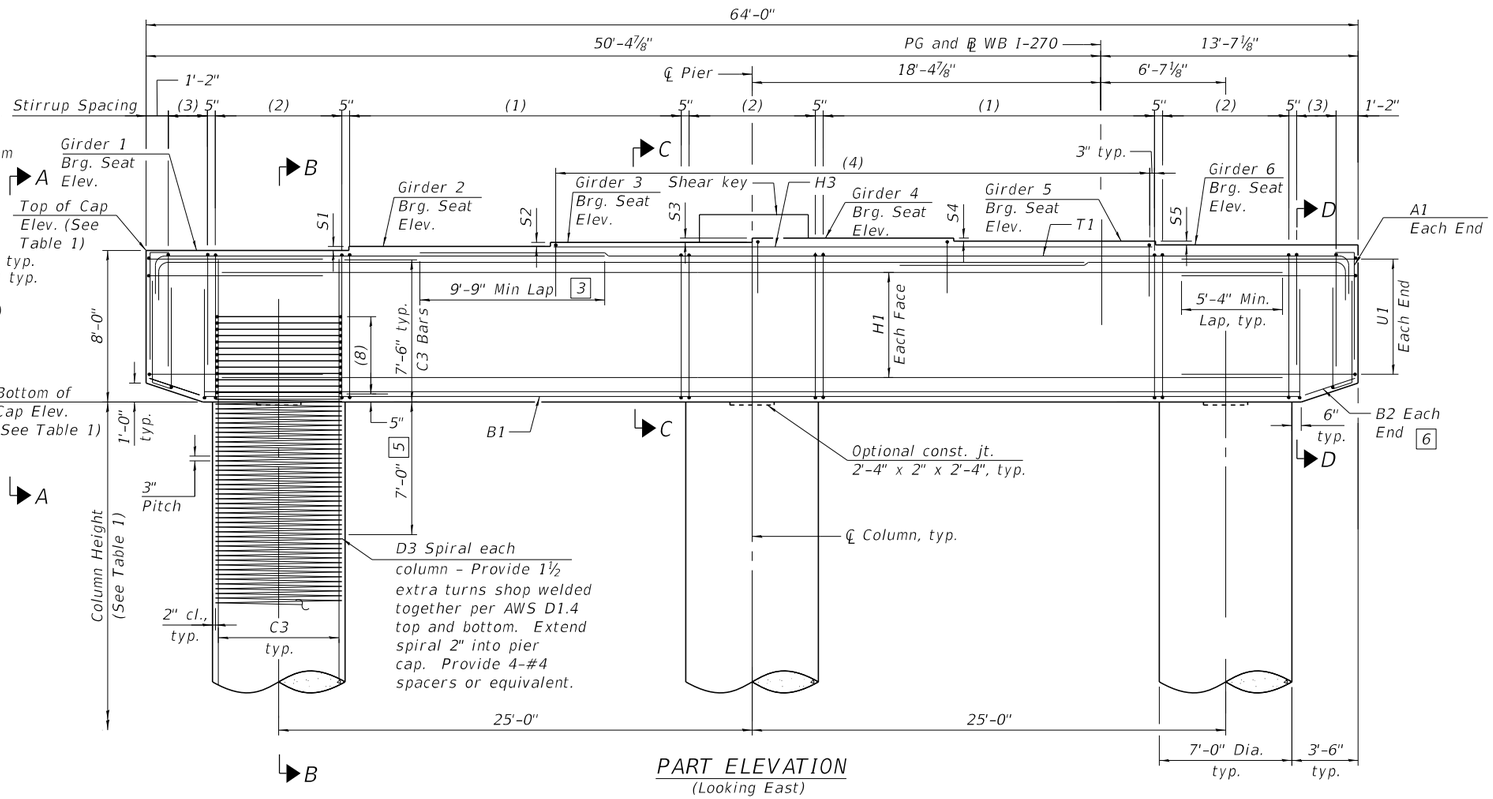
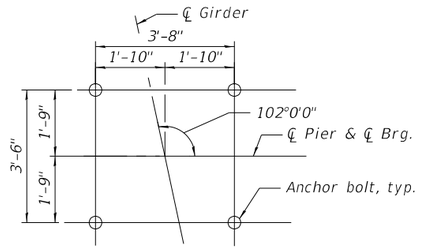


SECTION B-B



PART ELEVATION

(Looking East)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps

4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 227 and 228 of 288 .
For column height, step height and all elevations, See Table 1 on sheet 226 of 288 .
For bearing details, see sheet 158 of 288 .
For bar callouts and shear key details, see sheet 226 of 288 .
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 THRU 22 PLAN AND ELEVATION - 1
STRUCTURE NO. 060-0351 (WB)
SHEET 223 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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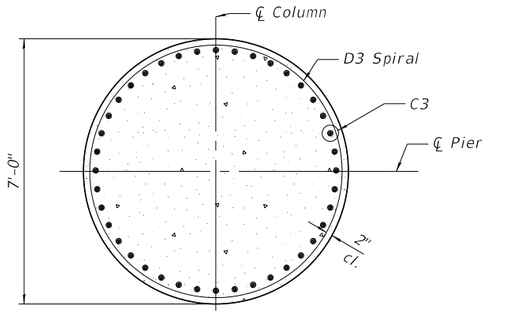
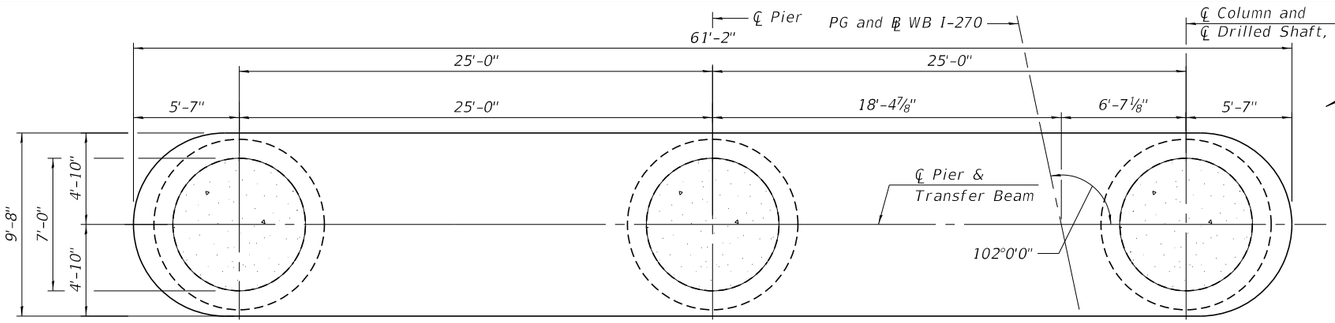
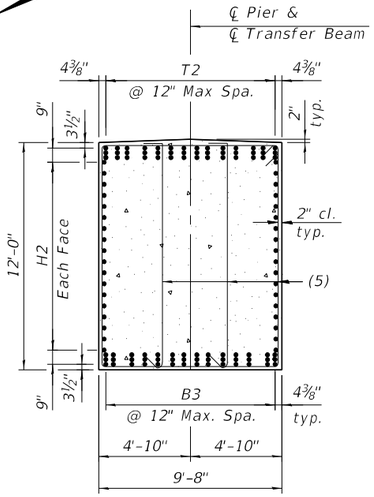
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			



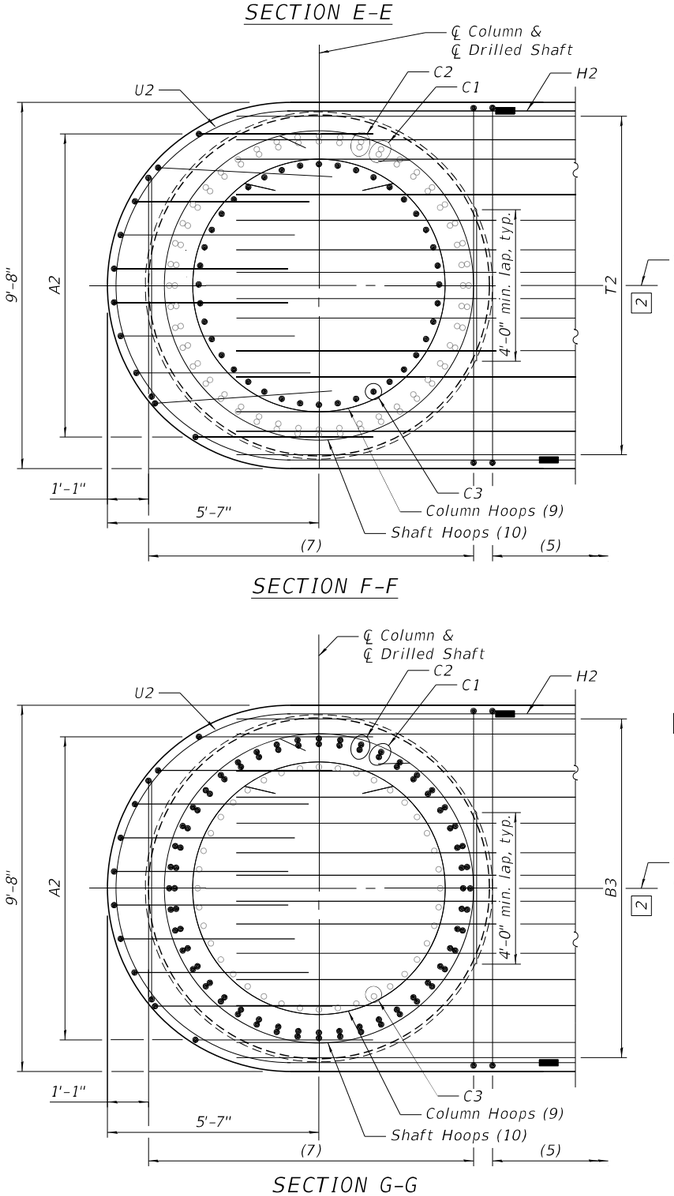
SECTION E-E



PLAN - TRANSFER BEAM

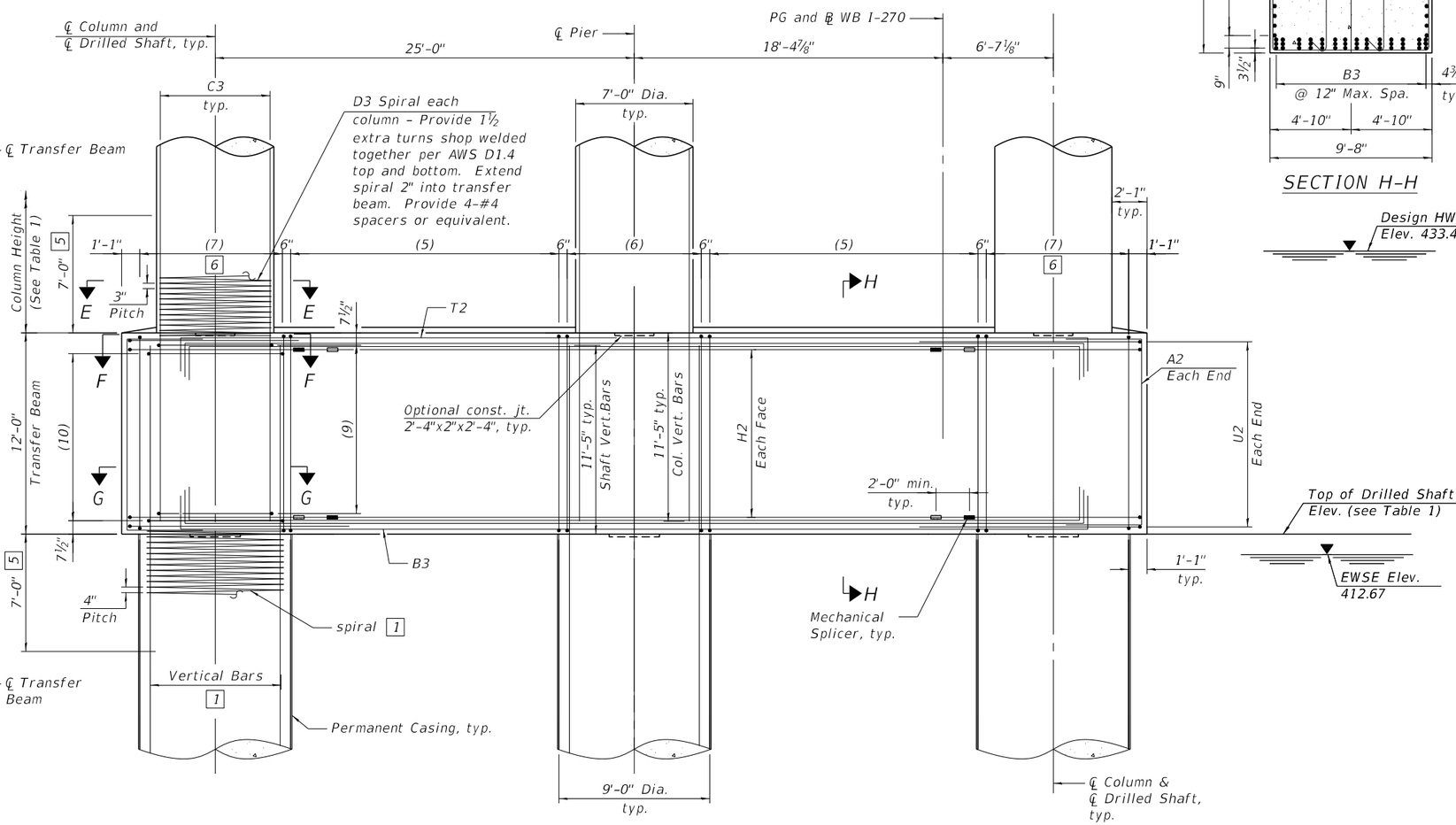


SECTION H-H



SECTION F-F

SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

Design HWE
Elev. 433.4

1 See sheet 225 of 288 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevations, see sheet223 of 288.
For Drilled Shaft Details, see sheet225 of 288.
For additional notes, bar details, and Bill of Material, see sheets 227 and 228 of 288.
For Table 1, see sheet 226of 288.
For Mechanical Splicer Details, see sheet 242of 288.

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HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -
	CHECKED - TMB	REVISED -
PLOT SCALE =	DRAWN - JG	REVISED -
PLOT DATE =	CHECKED - TMB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 19 THRU 22 PLAN AND ELEVATION - 2
STRUCTURE NO. 060-0351 (WB)
SHEET 224 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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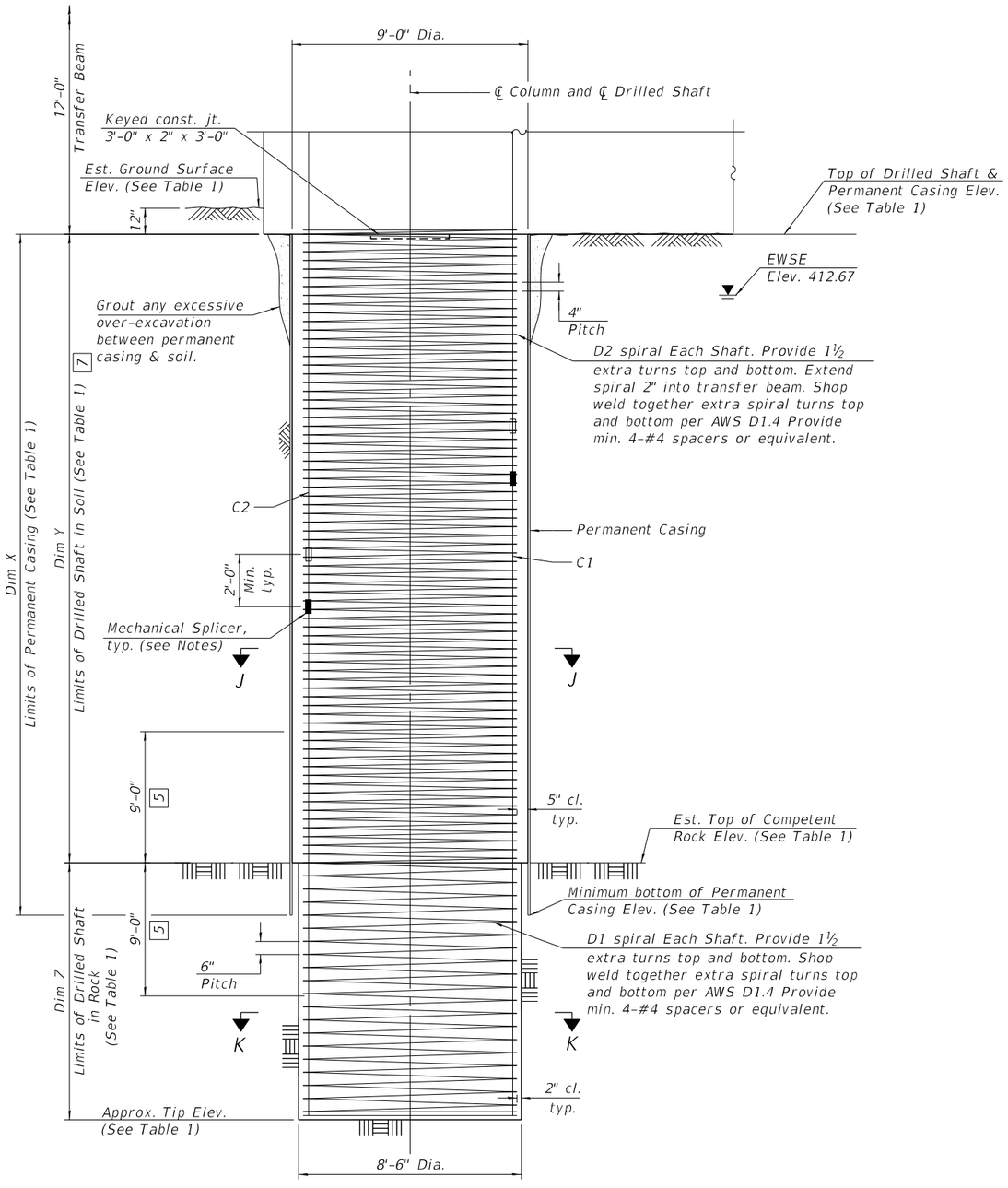
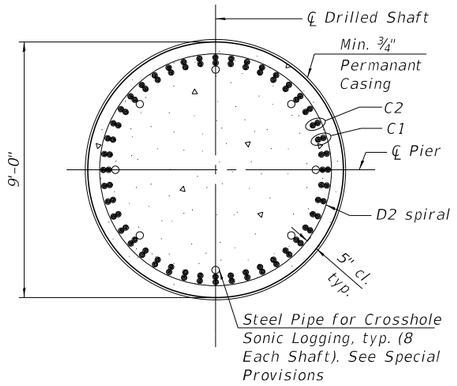
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

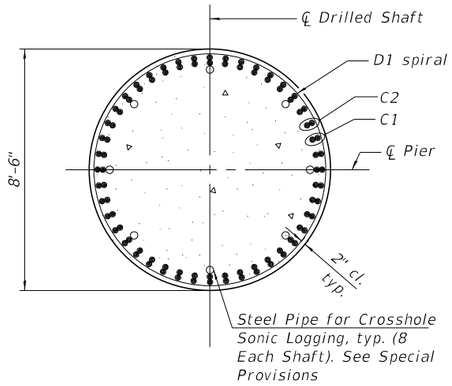


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 223 and 224 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 227 and 228 of 288.

For Table 1, see sheet 226 of 288.

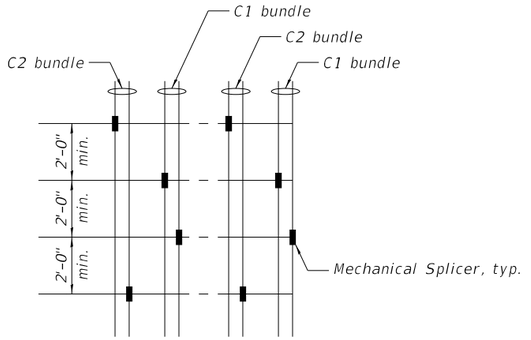
For Mechanical Splicer Details, see sheet 242 of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

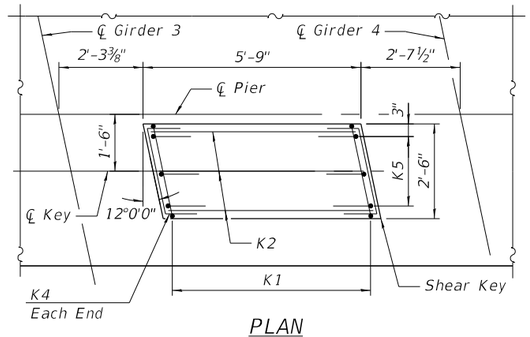
Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



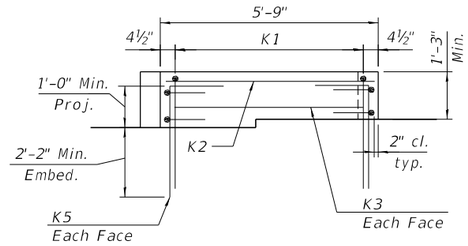
ALTERNATE MECHANICAL SPLICERS LOCATION

TABLE 1

		Pier 19	Pier 20	Pier 21	Pier 22
℄ Pier Station		2819+66.90	2822+02.90	2824+38.90	2826+74.90
Bearing Seat Elevation	Girder 1	450.32	449.14	447.96	446.78
	Girder 2	450.53	449.35	448.17	446.99
	Girder 3	450.75	449.57	448.39	447.21
	Girder 4	450.97	449.79	448.61	447.43
	Girder 5	450.81	449.63	448.45	447.27
	Girder 6	450.61	449.43	448.25	447.07
Top of Cap Elevation		450.32	449.14	447.96	446.78
Bottom of Cap Elevation		442.32	441.14	439.96	438.78
Column Height		14'-9¾"	14'-5¼"	14'-0⅝"	15'-2⅛"
Top of Shaft Elevation		415.50	414.70	413.90	411.60
Approx. Tip Elevation		329.00	326.70	323.90	321.30
Est. Ground Surface Elevation		416.50	415.70	414.90	412.60
Est. Top of Rock Elevation		342.50	340.20	337.40	334.80
Min. bottom of Permanent Casing Elevation		340.50	338.20	335.40	332.80
Dim X		75'-0"	76'-6"	78'-6"	78'-9½"
Dim Y		73'-0"	74'-6"	76'-6"	76'-9½"
Dim Z		13'-6"	13'-6"	13'-6"	13'-6"
S1		2 ½ "	2 ½ "	2 ½ "	2 ½ "
S2		2 ⅝ "	2 ⅝ "	2 ⅝ "	2 ⅝ "
S3		2 ⅜ "	2 ⅝ "	2 ⅜ "	2 ⅝ "
S4		1 ⅞ "	1 ⅞ "	1 ⅞ "	1 ⅞ "
S5		2 ⅜ "	2 ⅜ "	2 ⅜ "	2 ⅜ "



PLAN

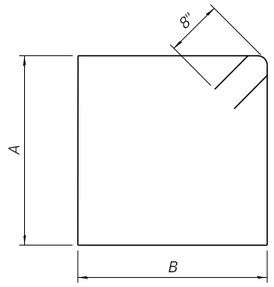


ELEVATION

SHEAR KEY DETAILS

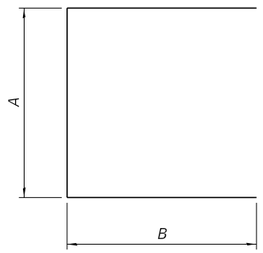
Notes:
For Pier Plan and Elevation, see sheets 223, 224 and 225 of 288.
For bar details, see sheet 227 of 288.
For Bill of Material, see sheet 228 of 288.

Mark	Pier 19 Bar Callouts	Pier 20 Bar Callouts	Pier 21 Bar Callouts	Pier 22 Bar Callouts
(1)	43 sets of 1-#6 s1901(E) and 1-#6 s1905(E) at 5" cts.	43 sets of 1-#6 s2001(E) and 1-#6 s2005(E) at 5" cts.	43 sets of 1-#6 s2101(E) and 1-#6 s2105(E) at 5" cts.	43 sets of 1-#6 s2201(E) and 1-#6 s2205(E) at 5" cts.
(2)	11 sets of 2-#6 s1902(E) at 8" cts.	11 sets of 2-#6 s2002(E) at 8" cts.	11 sets of 2-#6 s2102(E) at 8" cts.	11 sets of 2-#6 s2202(E) at 8" cts.
(3)	6 sets of 4-#6 s1907(E) at 5" cts.	6 sets of 4-#6 s2007(E) at 5" cts.	6 sets of 4-#6 s2107(E) at 5" cts.	6 sets of 2-#6 s2207(E) at 5" cts.
(4)	47-#6 s1908(E) at abt. 8" cts.	47-#6 s2008(E) at abt. 8" cts.	47-#6 s2108(E) at abt. 8" cts.	47-#6 s2208(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s1903(E) and 2-#6 s1906(E) at 6" cts.	33 sets of 1-#6 s2003(E) and 2-#6 s2006(E) at 6" cts.	33 sets of 1-#6 s2103(E) and 2-#6 s2106(E) at 6" cts.	33 sets of 1-#6 s2203(E) and 2-#6 s2206(E) at 6" cts.
(6)	17 sets of 2-#6 s1904(E) at 6" cts	17 sets of 2-#6 s2004(E) at 6" cts	17 sets of 2-#6 s2104(E) at 6" cts	17 sets of 2-#6 s2204(E) at 6" cts
(7)	18 sets of 2-#6 s1904(E) at 6" cts.	18 sets of 2-#6 s2004(E) at 6" cts.	18 sets of 2-#6 s2104(E) at 6" cts.	18 sets of 2-#6 s2204(E) at 6" cts.
(8)	14-#7 hp1902(E) hoops at 3"	14-#7 hp2002(E) hoops at 3"	14-#7 hp2102(E) hoops at 3"	14-#7 hp2202(E) hoops at 3"
(9)	44-#7 hp1902(E) hoops at 3"	44-#7 hp2002(E) hoops at 3"	44-#7 hp2102(E) hoops at 3"	44-#7 hp2202(E) hoops at 3"
(10)	33-#7 hp1901(E) hoops at 4"	33-#7 hp2001(E) hoops at 4"	33-#7 hp2101(E) hoops at 4"	33-#7 hp2201(E) hoops at 4"
T1	2 layers of 16-#11 p1901(E) or p1902(E) at abt. 5⅞"	2 layers of 16-#11 p2001(E) or p2002(E) at abt. 5⅞"	2 layers of 16-#11 p2101(E) or p2102(E) at abt. 5⅞"	2 layers of 16-#11 p2201(E) or p2202(E) at abt. 5⅞"
T2	14 bundles of 1-#11 p1905(E) (top), 1-#11 p1906(E) (mid) and 1-#11 p1907(E) (bot) at 12" max	14 bundles of 1-#11 p2005(E) (top), 1-#11 p2006(E) (mid) and 1-#11 p2007(E) (bot) at 12" max	14 bundles of 1-#11 p2105(E) (top), 1-#11 p2106(E) (mid) and 1-#11 p2107(E) (bot) at 12" max	14 bundles of 1-#11 p2205(E) (top), 1-#11 p2206(E) (mid) and 1-#11 p2207(E) (bot) at 12" max
B1	2 layers of 16-#11 p1903(E) at abt. 5⅞"	2 layers of 16-#11 p2003(E) at abt. 5⅞"	2 layers of 16-#11 p2103(E) at abt. 5⅞"	2 layers of 16-#11 p2203(E) at abt. 5⅞"
B2	14-#7 p1904(E) at abt. 5⅞"	14-#7 p2004(E) at abt. 5⅞"	14-#7 p2104(E) at abt. 5⅞"	14-#7 p2204(E) at abt. 5⅞"
B3	14 bundles of 1-#11 p1905(E) (bot), 1-#11 p1906(E) (mid) and 1-#11 p1907(E) (top) at 12" max	14 bundles of 1-#11 p2005(E) (bot), 1-#11 p2006(E) (mid) and 1-#11 p2007(E) (top) at 12" max	14 bundles of 1-#11 p2105(E) (bot), 1-#11 p2106(E) (mid) and 1-#11 p2107(E) (top) at 12" max	14 bundles of 1-#11 p2205(E) (bot), 1-#11 p2206(E) (mid) and 1-#11 p2207(E) (top) at 12" max
H1	10-#8 h1901(E) at 7½"	10-#8 h2001(E) at 7½"	10-#8 h2101(E) at 7½"	10-#8 h2201(E) at 7½"
H2	18-#9 h1902(E) at 7"	18-#9 h2002(E) at 7"	18-#9 h2102(E) at 7"	18-#9 h2202(E) at 7"
H3	10-#6 h1903(E) at abt. 9¾"	10-#6 h2003(E) at abt. 9¾"	10-#6 h2103(E) at abt. 9¾"	10-#6 h2203(E) at abt. 9¾"
A1	6 sets of 1-#7 u1903(E) & 1-#7 u1904(E) at 10½"	6 sets of 1-#7 u2003(E) & 1-#7 u2004(E) at 10½"	6 sets of 1-#7 u2103(E) & 1-#7 u2104(E) at 10½"	6 sets of 1-#7 u2203(E) & 1-#7 u2204(E) at 10½"
A2	10-#7 u1905(E) at 10¾"	10-#7 u2005(E) at 10¾"	10-#7 u2105(E) at 10¾"	10-#7 u2205(E) at 10¾"
U1	11-#8 u1901(E) space with h1901(E) and p1901(E)	11-#8 u2001(E) space with h2001(E) and p2001(E)	11-#8 u2101(E) space with h2101(E) and p2101(E)	11-#8 u2201(E) space with h2201(E) and p2201(E)
U2	20-#9 u1902(E) splice with h1902(E) and space with p1905(E)	20-#9 u2002(E) splice with h2002(E) and space with p2005(E)	20-#9 u2102(E) splice with h2102(E) and space with p2105(E)	20-#9 u2202(E) splice with h2202(E) and space with p2205(E)
C1	22 bundles of 2-#14 v1901(E) and 2-#14 v1902(E) alternate eq. spa.	22 bundles of 2-#14 v2001(E) and 2-#14 v2002(E) alternate eq. spa.	22 bundles of 2-#14 v2101(E) and 2-#14 v2102(E) alternate eq. spa.	22 bundles of 2-#14 v2201(E) and 2-#14 v2202(E) alternate eq. spa.
C2	22 bundles of 2-#14 v1903(E) and 2-#14 v1904(E) alternate eq. spa.	22 bundles of 2-#14 v2003(E) and 2-#14 v2004(E) alternate eq. spa.	22 bundles of 2-#14 v2103(E) and 2-#14 v2104(E) alternate eq. spa.	22 bundles of 2-#14 v2203(E) and 2-#14 v2204(E) alternate eq. spa.
C3	40-#11 v1905(E) eq. spa.	40-#11 v2005(E) eq. spa.	40-#11 v2105(E) eq. spa.	40-#11 v2205(E) eq. spa.
D1	#7 sp1901(E) at 6" pitch	#7 sp2001(E) at 6" pitch	#7 sp2101(E) at 6" pitch	#7 sp2201(E) at 6" pitch
D2	#7 sp1902(E) at 4" pitch	#7 sp2002(E) at 4" pitch	#7 sp2102(E) at 4" pitch	#7 sp2202(E) at 4" pitch
D3	#7 sp1903(E) at 3" pitch	#7 sp2003(E) at 3" pitch	#7 sp2103(E) at 3" pitch	#7 sp2203(E) at 3" pitch
K1	13-#6 s1909(E) spa. at 5"	13-#6 s2009(E) spa. at 5"	13-#6 s2109(E) spa. at 5"	13-#6 s2209(E) spa. at 5"
K2	3-#5 h1904(E) space with n1901(E)	3-#5 h2004(E) space with n2001(E)	3-#5 h2104(E) space with n2101(E)	3-#5 h2204(E) space with n2201(E)
K3	1-#5 h1904(E) ea. face	1-#5 h2004(E) ea. face	1-#5 h2104(E) ea. face	1-#5 h2204(E) ea. face
K4	2-#5 h1905(E) ea. face	2-#5 h2005(E) ea. face	2-#5 h2105(E) ea. face	2-#5 h2205(E) ea. face
K5	3-#6 n1901(E) at 12" ea. face	3-#6 n2001(E) at 12" ea. face	3-#6 n2101(E) at 12" ea. face	3-#6 n2201(E) at 12" ea. face
R	#5 s1910(E)	#5 s2010(E)	#5 s2110(E)	#5 s2210(E)



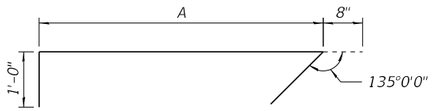
BARS s1901(E) & s1903(E)
BARS s2001(E) & s2003(E)
BARS s2101(E) & s2103(E)
BARS s2201(E) & s2203(E)

Bars	A	B
s1901(E) thru s2201(E)	7' -8"	7' -8"
s1903(E) thru s2203(E)	11' -8"	9' -4"



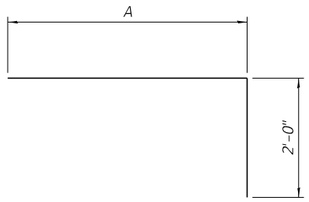
BARS s1902(E) & s1904(E) & s1907(E)
BARS s2002(E) & s2004(E) & s2007(E)
BARS s2102(E) & s2104(E) & s2107(E)
BARS s2202(E) & s2204(E) & s2207(E)

Bars	A	B
s1902(E) thru s2202(E)	7' -8"	5' -10"
s1904(E) thru s2204(E)	11' -8"	6' -8"
s1907(E) thru s2207(E)	4' -10"	5' -10"



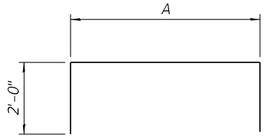
BARS s1905(E) & s1906(E)
BARS s2005(E) & s2006(E)
BARS s2105(E) & s2106(E)
BARS s2205(E) & s2206(E)

Bars	A
s1905(E) thru s2205(E)	7' -8"
s1906(E) thru s2206(E)	11' -8"



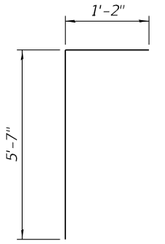
BARS p1901(E) & p1902(E)
BARS p2001(E) & p2002(E)
BARS p2101(E) & p2102(E)
BARS p2201(E) & p2202(E)

Bars	A
p1901(E) thru p2201(E)	24' -0"
p1902(E) thru p2202(E)	49' -5"

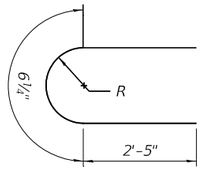


BARS p1905(E) & p1906(E) & p1907(E)
BARS p2005(E) & p2006(E) & p2007(E)
BARS p2105(E) & p2106(E) & p2107(E)
BARS p2205(E) & p2206(E) & p2207(E)

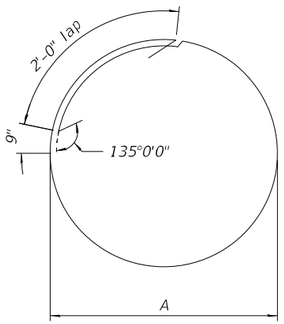
Bars	A
p1905(E) thru p2205(E)	54' -2"
p1906(E) thru p2206(E)	53' -8"
p1907(E) thru p2207(E)	53' -2"



BARS u1903(E)
BARS u2003(E)
BARS u2103(E)
BARS u2203(E)

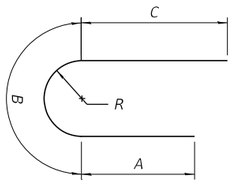


BARS s1910(E)
BARS s2010(E)
BARS s2110(E)
BARS s2210(E)



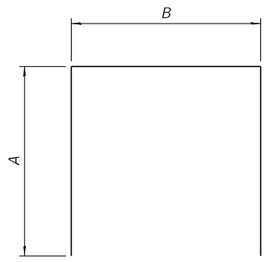
BARS hp1901(E) & hp1902(E)
BARS hp2001(E) & hp2002(E)
BARS hp2101(E) & hp2102(E)
BARS hp2201(E) & hp2202(E)

Bars	A
hp1901(E) thru hp2201(E)	8' -2"
hp1902(E) thru hp2202(E)	6' -8"



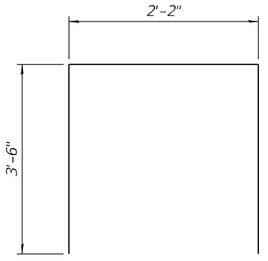
BARS u1901(E) & u1902(E)
BARS u2001(E) & u2002(E)
BARS u2101(E) & u2102(E)
BARS u2201(E) & u2202(E)

Bars	A	B	C	R
u1901(E) thru u2201(E)	5' -4"	11' -9"	5' -4"	3' -9"
u1902(E) thru u2202(E)	5' -9"	14' -5"	7' -9"	4' -7"

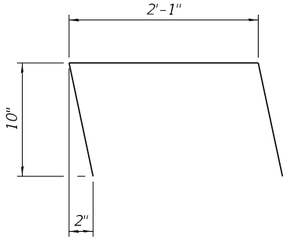


BARS u1905(E) & s1908(E)
BARS u2005(E) & s2008(E)
BARS u2105(E) & s2108(E)
BARS u2205(E) & s2208(E)

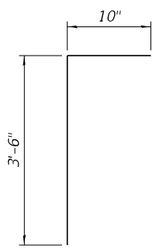
Bars	A	B
u1905(E) thru u2205(E)	4' -7"	11' -6"
s1908(E) thru s2208(E)	2' -9"	7' -8"



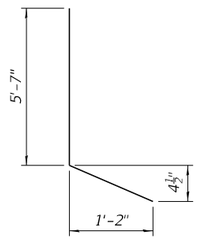
BARS s1909(E)
BARS s2009(E)
BARS s2109(E)
BARS s2209(E)



BARS h1905(E)
BARS h2005(E)
BARS h2105(E)
BARS h2205(E)



BARS n1901(E)
BARS n2001(E)
BARS n2102(E)
BARS n2201(E)



BARS u1904(E)
BARS u2004(E)
BARS u2104(E)
BARS u2204(E)

Pier 19

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1901(E)	20	#8	56'-2"	
	h1902(E)	36	#9	38'-0"	
	h1903(E)	10	#6	31'-7"	
	h1904(E)	5	#5	5'-5"	
	h1905(E)	4	#5	3'-11"	
	hp1901(E)	99	#7	29'-2"	
	hp1902(E)	174	#7	24'-6"	
	n1901(E)	12	#6	4'-4"	
	p1901(E)	32	#11	26'-0"	
	p1902(E)	32	#11	51'-5"	
	p1903(E)	32	#11	57'-9"	
	p1904(E)	28	#7	2'-11"	
	p1905(E)	28	#11	58'-2"	
	p1906(E)	28	#11	57'-8"	
	p1907(E)	28	#11	57'-2"	
	s1901(E)	86	#6	32'-0"	
	s1902(E)	66	#6	19'-4"	
	s1903(E)	66	#6	43'-4"	
	s1904(E)	106	#6	25'-0"	
	s1905(E)	86	#6	9'-4"	
	s1906(E)	132	#6	13'-4"	
	s1907(E)	48	#6	16'-6"	
	s1908(E)	47	#6	13'-2"	
	s1909(E)	26	#6	9'-2"	
	s1910(E)	8	#5	5'-5"	
***	sp1901(E)	3	#7	12'-6"	
***	sp1902(E)	3	#7	74'-2"	
***	sp1903(E)	3	#7	15'-2"	
	u1901(E)	22	#8	22'-5"	
	u1902(E)	40	#9	27'-11"	
	u1903(E)	12	#7	6'-9"	
	u1904(E)	12	#7	6'-10"	
	u1905(E)	20	#7	20'-8"	
	v1901(E)	132	#14	47'-7"	
	v1902(E)	132	#14	50'-2"	
	v1903(E)	132	#14	45'-1"	
	v1904(E)	132	#14	52'-8"	
	v1905(E)	120	#11	33'-9"	

	Structure Excavation	Cu. Yd.	32
	Concrete Structures	Cu. Yd.	473.7
	Reinforcement Bars, Epoxy Coated	Pound	365,450
	Permanent Casing	Foot	225
	Drilled Shaft in Soil	Cu. Yd.	517
	Drilled Shaft in Rock	Cu. Yd.	86
	Crosshole Sonic Logging Access Ducts	Foot	260
	Crosshole Sonic Logging Testing	Each	3
	Thermal Integrity Profile Data Collection	Foot	260
	Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 20

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2001(E)	20	#8	56'-2"	
	h2002(E)	36	#9	38'-0"	
	h2003(E)	10	#6	31'-7"	
	h2004(E)	5	#5	5'-5"	
	h2005(E)	4	#5	3'-11"	
	hp2001(E)	99	#7	29'-2"	
	hp2002(E)	174	#7	24'-6"	
	n2001(E)	12	#6	4'-4"	
	p2001(E)	32	#11	26'-0"	
	p2002(E)	32	#11	51'-5"	
	p2003(E)	32	#11	57'-9"	
	p2004(E)	28	#7	2'-11"	
	p2005(E)	28	#11	58'-2"	
	p2006(E)	28	#11	57'-8"	
	p2007(E)	28	#11	57'-2"	
	s2001(E)	86	#6	32'-0"	
	s2002(E)	66	#6	19'-4"	
	s2003(E)	66	#6	43'-4"	
	s2004(E)	106	#6	25'-0"	
	s2005(E)	86	#6	9'-4"	
	s2006(E)	132	#6	13'-4"	
	s2007(E)	48	#6	16'-6"	
	s2008(E)	47	#6	13'-2"	
	s2009(E)	26	#6	9'-2"	
	s2010(E)	8	#5	5'-5"	
***	sp2001(E)	3	#7	12'-6"	
***	sp2002(E)	3	#7	75'-8"	
***	sp2003(E)	3	#7	14'-10"	
	u2001(E)	22	#8	22'-5"	
	u2002(E)	40	#9	27'-11"	
	u2003(E)	12	#7	6'-9"	
	u2004(E)	12	#7	6'-10"	
	u2005(E)	20	#7	20'-8"	
	v2001(E)	132	#14	48'-4"	
	v2002(E)	132	#14	50'-11"	
	v2003(E)	132	#14	45'-10"	
	v2004(E)	132	#14	53'-5"	
	v2005(E)	120	#11	33'-5"	

	Structure Excavation	Cu. Yd.	32
	Concrete Structures	Cu. Yd.	472.1
	Reinforcement Bars, Epoxy Coated	Pound	368,810
	Permanent Casing	Foot	230
	Drilled Shaft in Soil	Cu. Yd.	527
	Drilled Shaft in Rock	Cu. Yd.	86
	Crosshole Sonic Logging Access Ducts	Foot	264
	Crosshole Sonic Logging Testing	Each	3
	Thermal Integrity Profile Data Collection	Foot	264
	Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 21

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2101(E)	20	#8	56'-2"	
	h2102(E)	36	#9	38'-0"	
	h2103(E)	10	#6	31'-7"	
	h2104(E)	5	#5	5'-5"	
	h2105(E)	4	#5	3'-11"	
	hp2101(E)	99	#7	29'-2"	
	hp2102(E)	174	#7	24'-6"	
	n2101(E)	12	#6	4'-4"	
	p2101(E)	32	#11	26'-0"	
	p2102(E)	32	#11	51'-5"	
	p2103(E)	32	#11	57'-9"	
	p2104(E)	28	#7	2'-11"	
	p2105(E)	28	#11	58'-2"	
	p2106(E)	28	#11	57'-8"	
	p2107(E)	28	#11	57'-2"	
	s2101(E)	86	#6	32'-0"	
	s2102(E)	66	#6	19'-4"	
	s2103(E)	66	#6	43'-4"	
	s2104(E)	106	#6	25'-0"	
	s2105(E)	86	#6	9'-4"	
	s2106(E)	132	#6	13'-4"	
	s2107(E)	48	#6	16'-6"	
	s2108(E)	47	#6	13'-2"	
	s2109(E)	26	#6	9'-2"	
	s2110(E)	8	#5	5'-5"	
***	sp2101(E)	3	#7	12'-6"	
***	sp2102(E)	3	#7	77'-8"	
***	sp2103(E)	3	#7	14'-5"	
	u2101(E)	22	#8	22'-5"	
	u2102(E)	40	#9	27'-11"	
	u2103(E)	12	#7	6'-9"	
	u2104(E)	12	#7	6'-10"	
	u2105(E)	20	#7	20'-8"	
	v2101(E)	132	#14	48'-0"	
	v2102(E)	132	#14	53'-3"	
	v2103(E)	132	#14	45'-6"	
	v2104(E)	132	#14	55'-9"	
	v2105(E)	120	#11	33'-0"	

	Structure Excavation	Cu. Yd.	32
	Concrete Structures	Cu. Yd.	470.5
	Reinforcement Bars, Epoxy Coated	Pound	373,600
	Permanent Casing	Foot	236
	Drilled Shaft in Soil	Cu. Yd.	541
	Drilled Shaft in Rock	Cu. Yd.	86
	Crosshole Sonic Logging Access Ducts	Foot	270
	Crosshole Sonic Logging Testing	Each	3
	Thermal Integrity Profile Data Collection	Foot	270
	Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Pier 22

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2201(E)	20	#8	56'-2"	
	h2202(E)	36	#9	38'-0"	
	h2203(E)	10	#6	31'-7"	
	h2204(E)	5	#5	5'-5"	
	h2205(E)	4	#5	3'-11"	
	hp2201(E)	99	#7	29'-2"	
	hp2202(E)	174	#7	24'-6"	
	n2201(E)	12	#6	4'-4"	
	p2201(E)	32	#11	26'-0"	
	p2202(E)	32	#11	51'-5"	
	p2203(E)	32	#11	57'-9"	
	p2204(E)	28	#7	2'-11"	
	p2205(E)	28	#11	58'-2"	
	p2206(E)	28	#11	57'-8"	
	p2207(E)	28	#11	57'-2"	
	s2201(E)	86	#6	32'-0"	
	s2202(E)	66	#6	19'-4"	
	s2203(E)	66	#6	43'-4"	
	s2204(E)	106	#6	25'-0"	
	s2205(E)	86	#6	9'-4"	
	s2206(E)	132	#6	13'-4"	
	s2207(E)	48	#6	16'-6"	
	s2208(E)	47	#6	13'-2"	
	s2209(E)	26	#6	9'-2"	
	s2210(E)	8	#5	5'-5"	
***	sp2201(E)	3	#7	12'-6"	
***	sp2202(E)	3	#7	78'-0"	
***	sp2203(E)	3	#7	15'-7"	
	u2201(E)	22	#8	22'-5"	
	u2202(E)	40	#9	27'-11"	
	u2203(E)	12	#7	6'-9"	
	u2204(E)	12	#7	6'-10"	
	u2205(E)	20	#7	20'-8"	
	v2201(E)	132	#14	49'-6"	
	v2202(E)	132	#14	52'-1"	
	v2203(E)	132	#14	47'-0"	
	v2204(E)	132	#14	54'-7"	
	v2205(E)	120	#11	34'-2"	

	Structure Excavation	Cu. Yd.	32
	Concrete Structures	Cu. Yd.	475.3
	Reinforcement Bars, Epoxy Coated	Pound	375,770
	Permanent Casing	Foot	237
	Drilled Shaft in Soil	Cu. Yd.	543
	Drilled Shaft in Rock	Cu. Yd.	86
	Crosshole Sonic Logging Access Ducts	Foot	271
	Crosshole Sonic Logging Testing	Each	3
	Thermal Integrity Profile Data Collection	Foot	271
	Thermal Integrity Profile Testing	Each	1

*** Length is height of spiral.

Notes:

For Pier Plan and Elevation, see sheets 223 thru 225 of 288.

For additional bar details, see sheets 226 and 227 of 288.

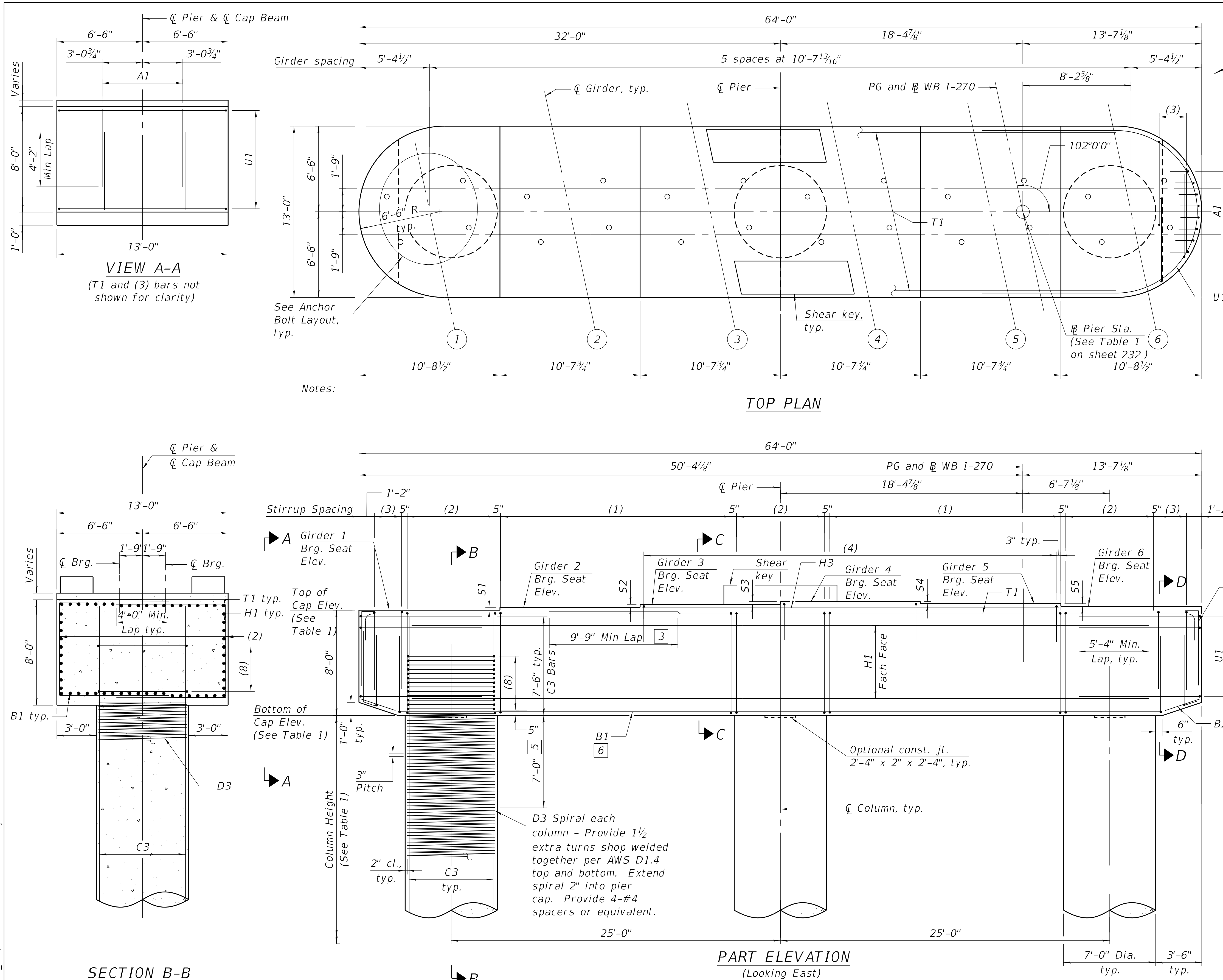
Pier 19 & Pier 20 vertical load drilled shaft foundation design is based on side resistance in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (6,481 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

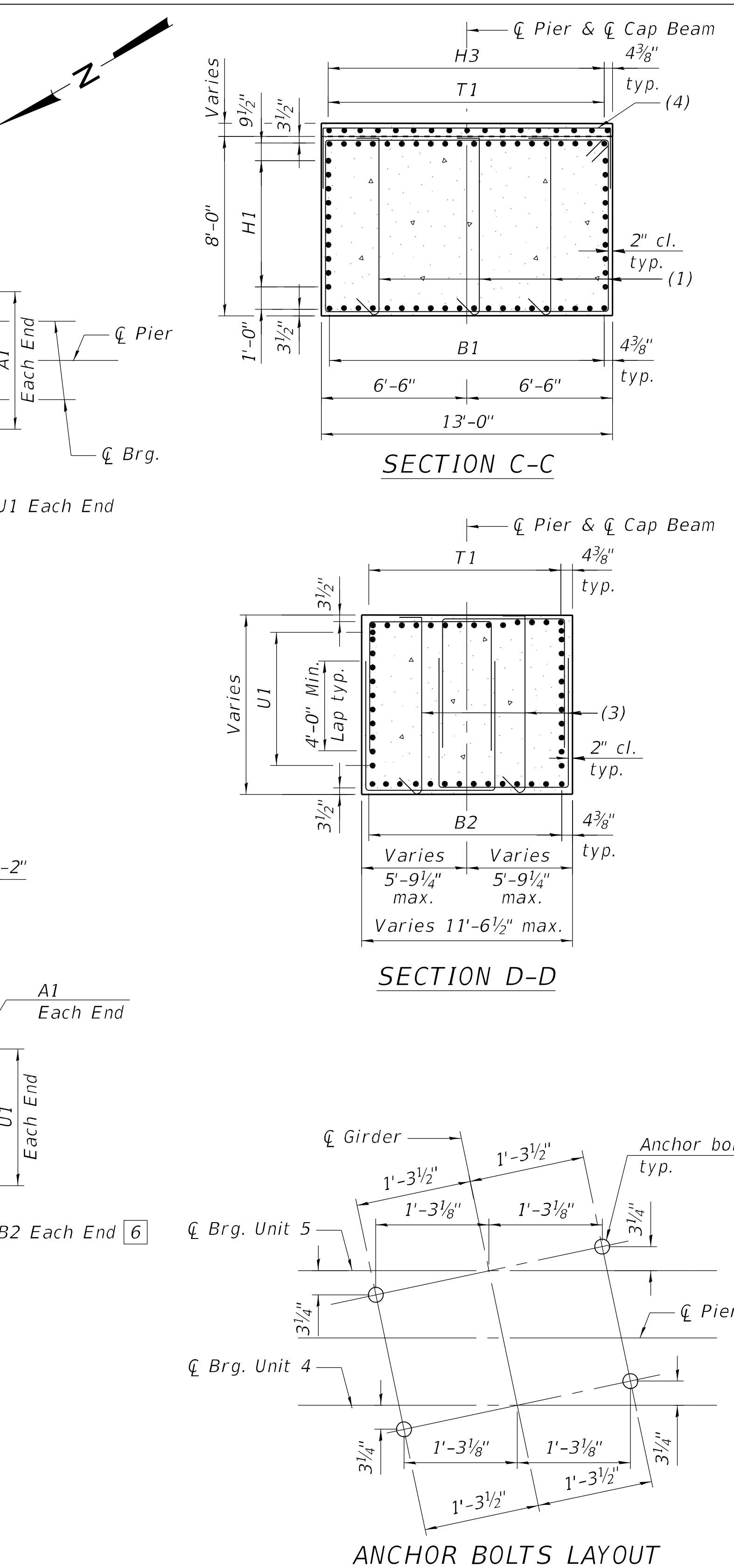
Pier 21 vertical load drilled shaft foundation design is based on end bearing in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (19,537 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

Pier 22 vertical load drilled shaft foundation design is based on end bearing in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (52,823 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.

Wet construction methods within permament casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.





Notes:
For bar details and Bill of Materials see sheets 233 and 234 of 288.
For column height, step height and all elevations, See Table 1 on sheet 232 of 288.
For bar callouts and shear key details, see sheet 232 of 288.
For bearing details, Unit 4, see sheet 157 of 288. For bearing details, Unit 5, see sheet 160 of 288.
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

5 No splicing of bars allowed in this region.

3 Alternate placement cap top rebars to stagger the laps

6 Field cut bars when needed to keep 2" clear concrete cover.

HORNER SHIFRIN Teaming with: PARSONS	USER NAME =	DESIGNED - GX	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 24 PLAN AND ELEVATION - 1 STRUCTURE NO. 060-0351 (WB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - TMB	REVISED -			270	60B-1	MADISON	875	734
	PLOT SCALE =	DRAWN - JG	REVISED -					CONTRACT NO. 76J90		
	PLOT DATE =	CHECKED - TMB	REVISED -		SHEET 229 OF 288 SHEETS		ILLINOIS FED. AID PROJECT			

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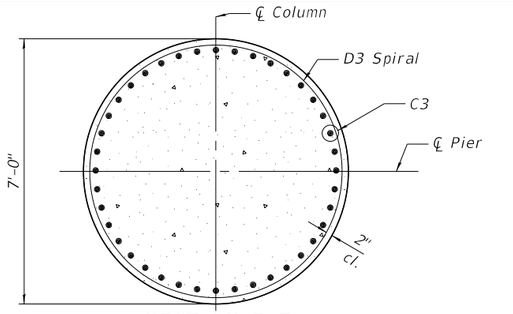
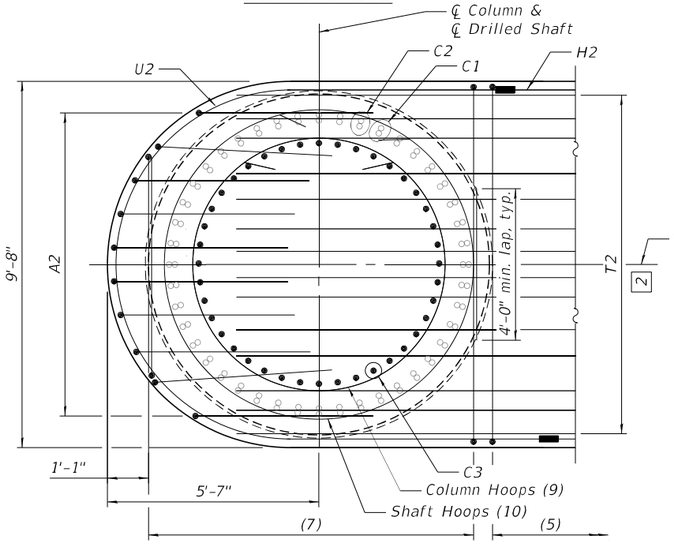
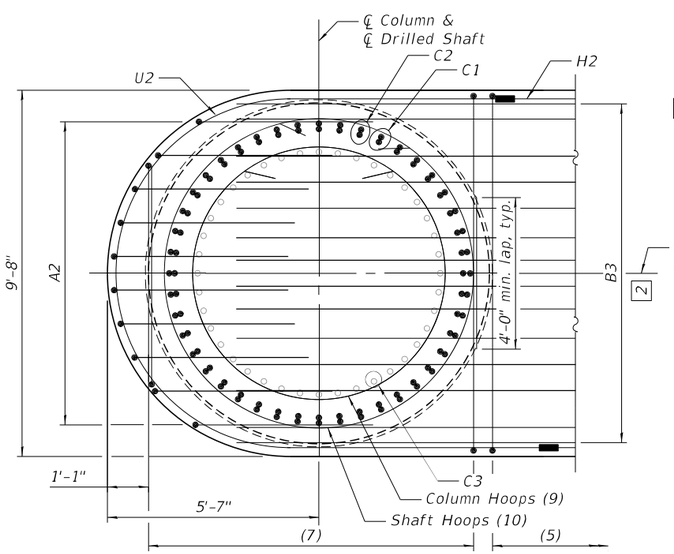


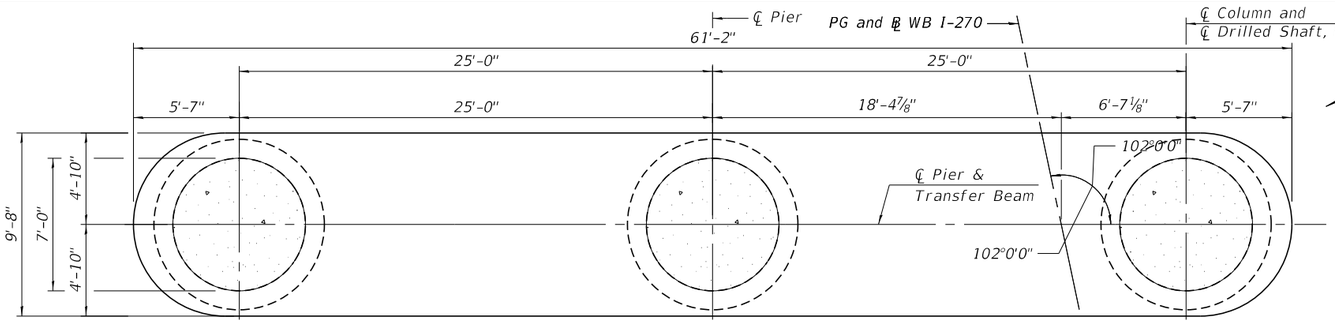
SECTION E-E



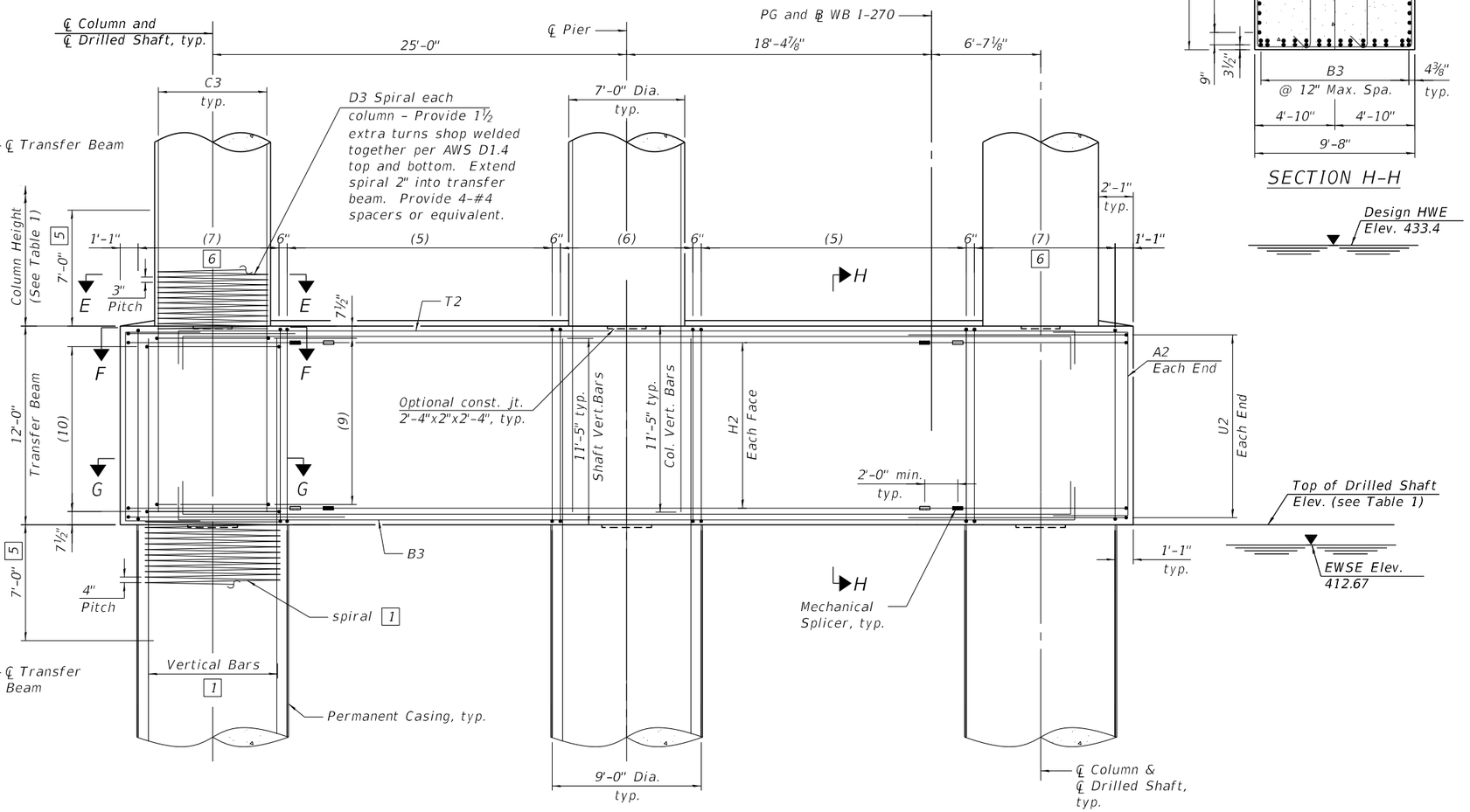
SECTION F-F



SECTION G-G

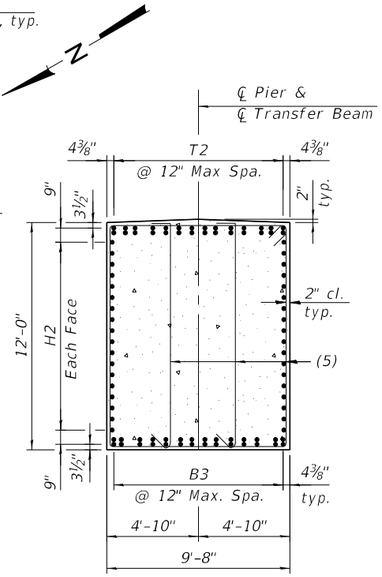


PLAN - TRANSFER BEAM



PART ELEVATION - TRANSFER BEAM

(Looking East)



SECTION H-H

Design HWE
Elev. 433.4

1 See sheet 231 of 288 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

GX

Notes:
For Top Plan and Part Elevations, see sheet 229 of 288.
For Drilled Shaft Details, see sheet 231 of 288.
For additional notes, bar details, and Bill of Material, see sheets 232 thru 234 of 288.
For Table 1, see sheet 232 of 288.
For Mechanical Splicer Details, see sheet 242 of 288.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 24 PLAN AND ELEVATION - 2
STRUCTURE NO. 060-0351 (WB)
SHEET 230 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

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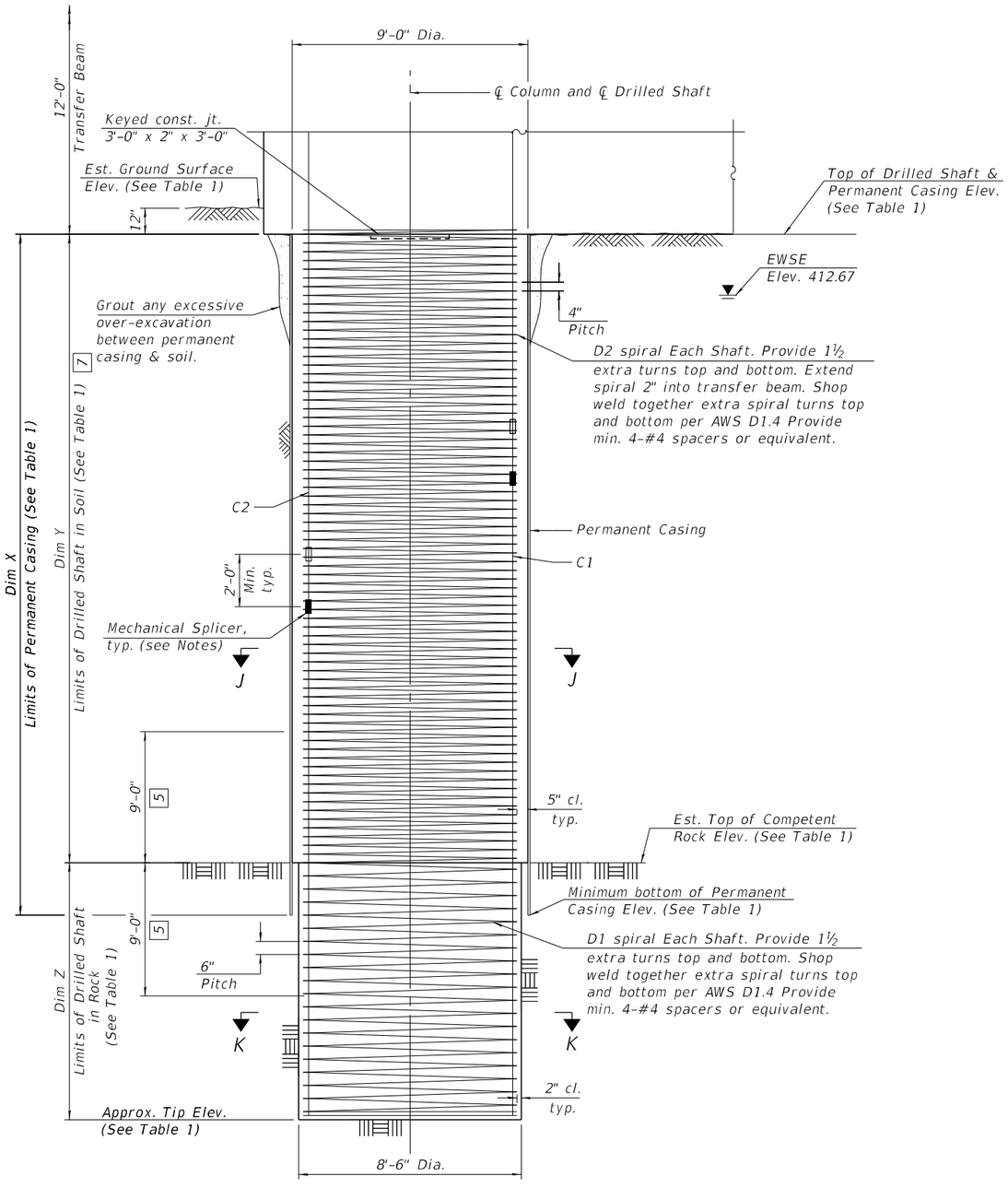
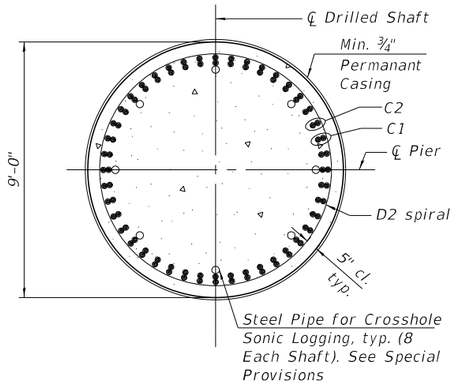
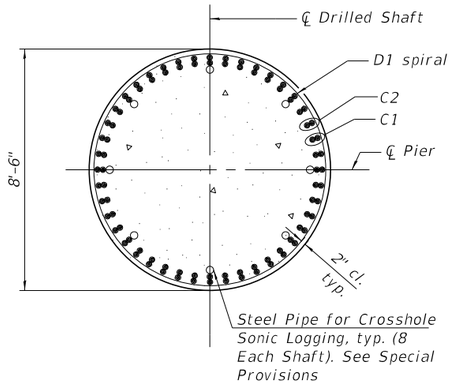


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 No splicing of bars allowed in this region.

7 If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Notes:

For Pier Plan and Elevation, see Sheets 229 and 230 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 233 and 234 of 288.

For Table 1, see sheet 232 of 288.

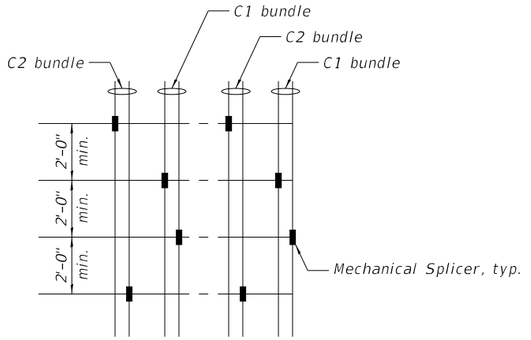
For Mechanical Splicer Details, see sheet 242 of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



ALTERNATE MECHANICAL SPLICERS LOCATION

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 24 PLAN AND ELEVATION – 3
STRUCTURE NO. 060-0351 (WB)
SHEET 231 OF 288 SHEETS

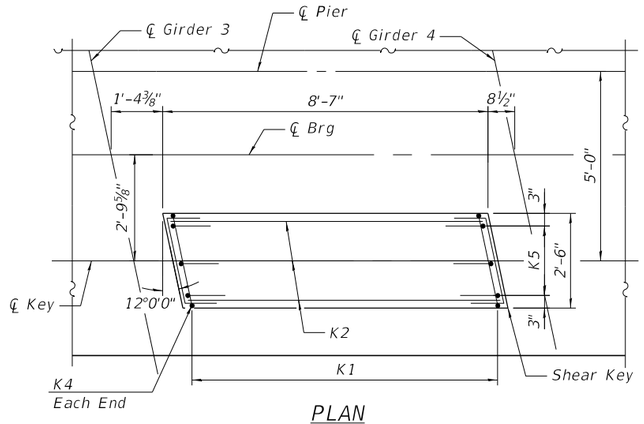
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	736
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

TABLE 1

		Pier 24
℄ Pier Station		2830+96.44
Bearing Seat Elevation	Girder 1	444.82
	Girder 2	445.04
	Girder 3	445.26
	Girder 4	445.48
	Girder 5	445.31
	Girder 6	445.11
Top of Cap Elevation		444.82
Bottom of Cap Elevation		436.82
Column Height		14'-11"
Top of Shaft Elevation		409.90
Approx. Tip Elevation		317.40
Est. Ground Surface Elevation		410.90
Est. Top of Rock Elevation		330.90
Min. bottom of Permanent Casing Elevation		328.90
Dim X		81'-0"
Dim Y		79'-0"
Dim Z		13'-6"
S1		2 ⅝ "
S2		2 ⅝ "
S3		2 ⅝ "
S4		2 "
S5		2 ⅜ "

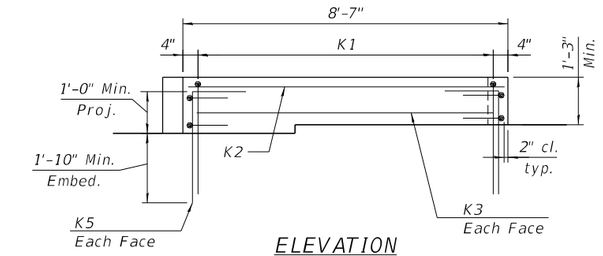
Pier 24

Mark	Bar Callouts
(1)	43 sets of 1-#6 s2401(E) and 3-#6 s2405(E) at 5" cts.
(2)	11 sets of 2-#6 s2402(E) at 8" cts.
(3)	6 sets of 4-#6 s2407(E) at 5" cts.
(4)	47-#6 s2408(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s2403(E) and 2-#6 s2406(E) at 6" cts.
(6)	17 sets of 2-#6 s2404(E) at 6" cts
(7)	18 sets of 2-#6 s2404(E) at 6" cts.
(8)	14-#7 hp2402(E) hoops at 3"
(9)	44-#7 hp2402(E) hoops at 3"
(10)	33-#7 hp2401(E) hoops at 4"
T1	20-#11 p2401(E) or p2402(E) at 7¾"
T2	14 bundles of 1-#11 p2405(E) (top) and 1-#11 p2406(E) (bot) at 12" max
B1	20-#11 p2403(E) at 7¾"
B2	14-#7 p2404(E) at 7¾"
B3	14 bundles of 1-#11 p2405(E) (bot) and 1-#11 p2406(E) (top) at 12" max
H1	10-#8 h2401(E) at 7½"
H2	18-#9 h2402(E) at 7"
H3	19-#6 h2403(E) at abt. 8⅛"
A1	8 sets of 1-#7 u2403(E) & 1-#7 u2404(E) at 10½"
A2	10-#7 u2405(E) at 10¾"
U1	11-#8 u2401(E) space with h2401(E) and p2401(E)
U2	20-#9 u2402(E) splice with h2402(E) and space with p2405(E)
C1	22 bundles of 2-#14 v2401(E) and 2-#14 v2402(E) alternate eq. spa.
C2	22 bundles of 2-#14 v2403(E) and 2-#14 v2404(E) alternate eq. spa.
C3	40-#11 v2405(E) eq. spa.
D1	#7 sp2401(E) at 6" pitch
D2	#7 sp2402(E) at 4" pitch
D3	#7 sp2403(E) at 3" pitch
K1	20-#5 s2409(E) spa. at 5"
K2	3-#5 h2404(E) space with n2401(E)
K3	1-#5 h2404(E) ea. face
K4	2-#5 h2405(E) ea. face
K5	3-#5 n2401(E) at 12" ea. face



PLAN

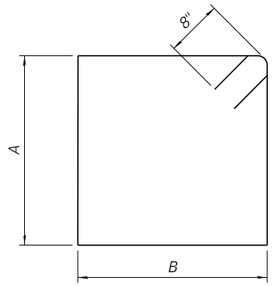
Down station key shown.
Up station key mirrored
about ℄ Pier and
opposite hand.



ELEVATION

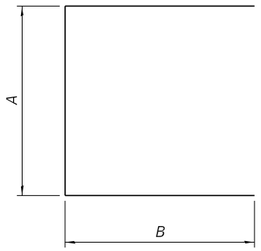
SHEAR KEY DETAILS

Notes:
For Pier Plan and Elevation, see sheets 229, 230 and 231 of 288 .
For bar details, see sheet 233 of 288 .
For Bill of Material, see sheet 234 of 288 .



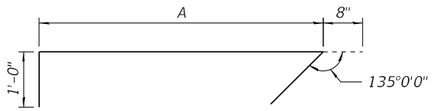
BARS s2401(E) & s2403(E)

Bars	A	B
s2401(E)	7' -8"	12' -8"
s2403(E)	11' -8"	9' -4"



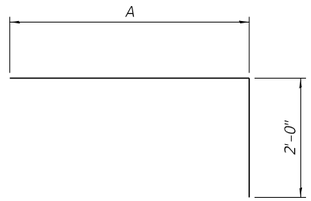
BARS s2402(E) & s2404(E) & s2407(E)

Bars	A	B
s2402(E)	7' -8"	8' -4"
s2404(E)	11' -8"	6' -8"
s2407(E)	6' -4"	5' -10"



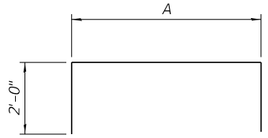
BARS s2405(E) & s2406(E)

Bars	A
s2405(E)	7' -8"
s2406(E)	11' -8"



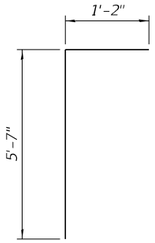
BARS p2401(E) & p2402(E)

Bars	A
p2401(E)	24' -0"
p2402(E)	49' -5"

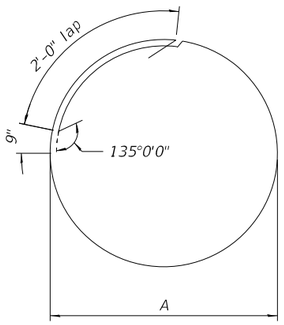


BARS p2405(E) & p2406(E)

Bars	A
p2405(E)	54' -2"
p2406(E)	53' -8"

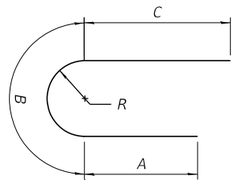


BARS u2403(E)



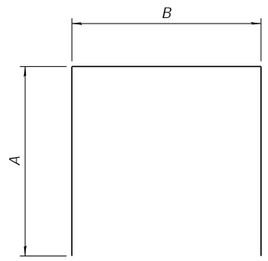
BARS hp2401(E) & hp2402(E)

Bars	A
hp2401(E)	8' -2"
hp2402(E)	6' -8"



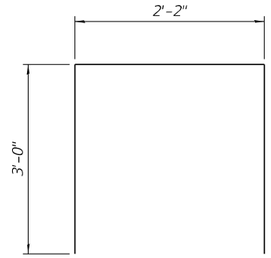
BARS u2401(E) & u2402(E)

Bars	A	B	C	R
u2401(E)	5' -4"	19' -8"	5' -4"	6' -3"
u2402(E)	5' -9"	14' -5"	7' -9"	4' -7"

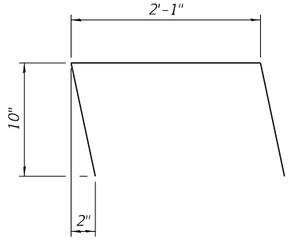


BARS u2405(E) & s2408(E)

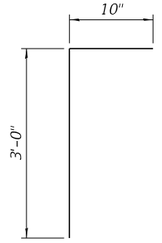
Bars	A	B
u2405(E)	4' -7"	11' -6"
s2408(E)	2' -9"	12' -8"



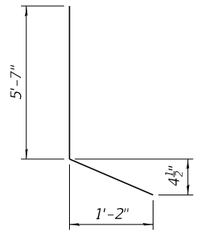
BARS s2409(E)



BARS h2405(E)



BARS n2401(E)



BARS u2404(E)

Pier 24

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2401(E)	20	#8	51'-2"	
	h2402(E)	36	#9	38'-0"	
	h2403(E)	19	#6	31'-7"	
	h2404(E)	10	#5	8'-3"	
	h2405(E)	8	#5	3'-11"	
	hp2401(E)	99	#7	29'-2"	
	hp2402(E)	174	#7	24'-6"	
	n2401(E)	12	#5	3'-10"	
	p2401(E)	20	#11	26'-0"	
	p2402(E)	20	#11	51'-5"	
	p2403(E)	20	#11	57'-9"	
	p2404(E)	28	#7	2'-11"	
	p2405(E)	28	#11	58'-2"	
	p2406(E)	28	#11	57'-8"	
	s2401(E)	86	#6	42'-0"	
	s2402(E)	66	#6	24'-4"	
	s2403(E)	66	#6	43'-4"	
	s2404(E)	106	#6	25'-0"	
	s2405(E)	258	#6	9'-4"	
	s2406(E)	132	#6	13'-4"	
	s2407(E)	48	#6	18'-0"	
	s2408(E)	47	#6	18'-2"	
	s2409(E)	40	#5	8'-2"	
***	sp2401(E)	3	#7	12'-6"	
***	sp2402(E)	3	#7	80'-2"	
***	sp2403(E)	3	#7	15'-4"	
	u2401(E)	22	#8	30'-4"	
	u2402(E)	40	#9	27'-11"	
	u2403(E)	16	#7	6'-9"	
	u2404(E)	16	#7	6'-10"	
	u2405(E)	20	#7	20'-8"	
	v2401(E)	132	#14	50'-7"	
	v2402(E)	132	#14	53'-2"	
	v2403(E)	132	#14	47'-2"	
	v2404(E)	132	#14	56'-7"	
	v2405(E)	120	#11	33'-11"	

Structure Excavation	Cu. Yd.	32
Concrete Structures	Cu. Yd.	566.8
Reinforcement Bars, Epoxy Coated	Pound	369,130
Permanent Casing	Foot	243
Drilled Shaft in Soil	Cu. Yd.	559
Drilled Shaft in Rock	Cu. Yd.	86
Concrete Sealer	Sq. Ft.	5,774
Crosshole Sonic Logging Access Ducts	Foot	278
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	278
Thermal Integrity Profile Testing	Each	0

*** Length is height of spiral.

Notes:

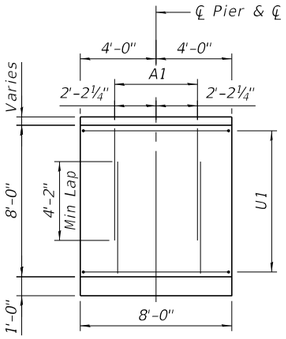
For Pier Plan and Elevation, see sheets 229 thru 231 of 288.

For additional bar details, see sheets 232 and 233 of 288.

Pier 24 vertical load drilled shaft foundation design is based on end bearing in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (15,915 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

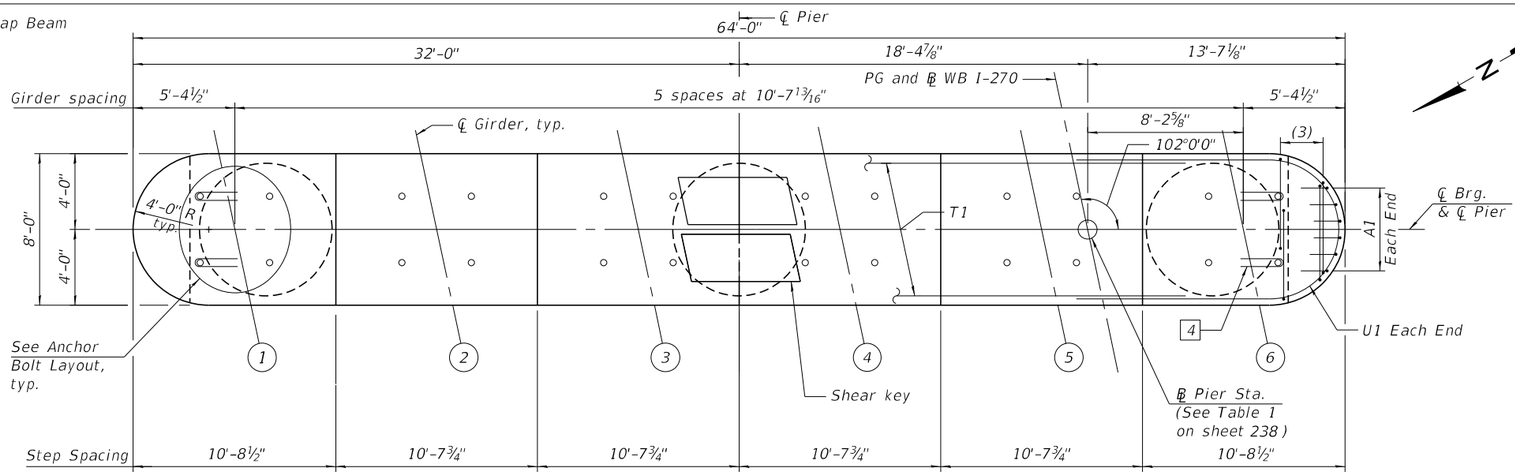
The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.

Wet construction methods within permament casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.



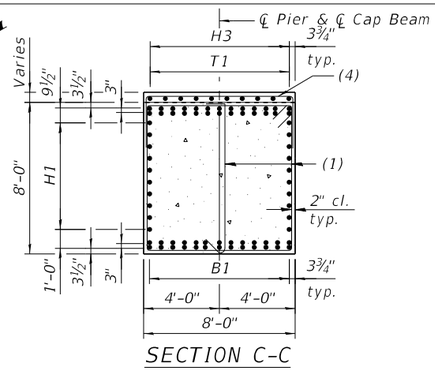
VIEW A-A

(T1 and (3) bars not shown for clarity)

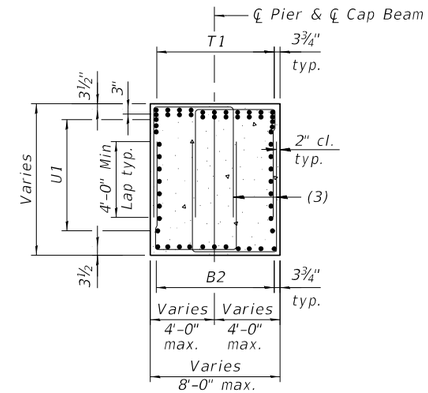


Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

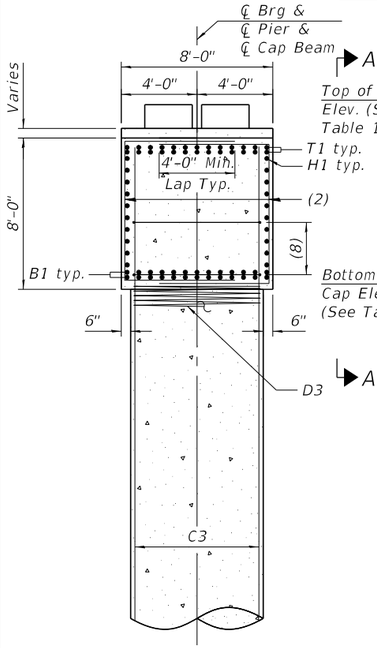
TOP PLAN



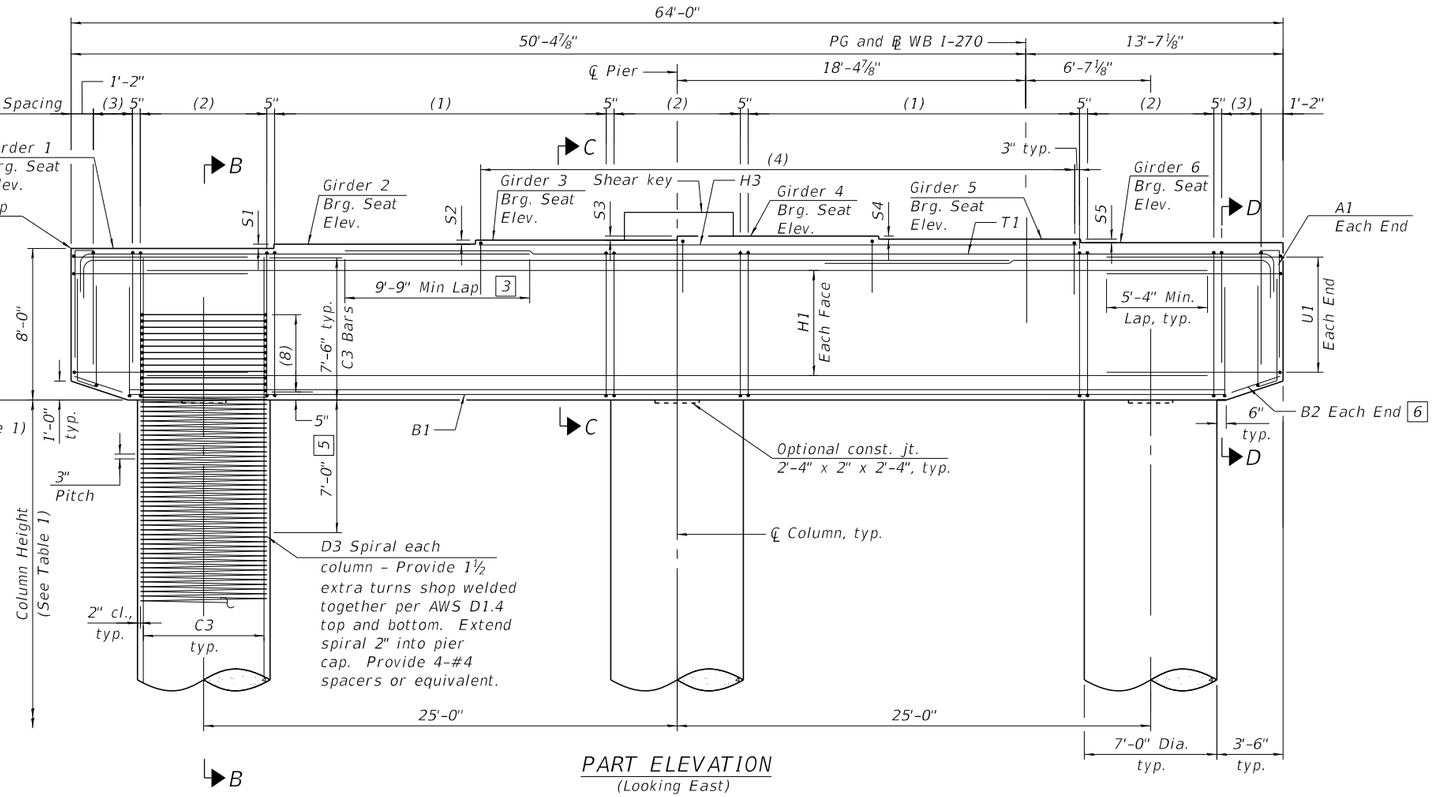
SECTION C-C



SECTION D-D

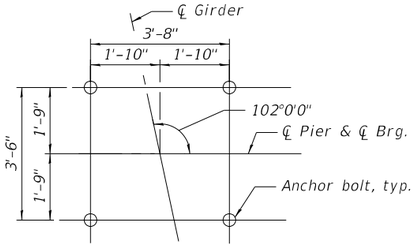


SECTION B-B



PART ELEVATION

(Looking East)



ANCHOR BOLTS LAYOUT

3 Alternate placement cap top rebars to stagger the laps

4 Provide 2 - R bar at each anchor shown. Place first R bar with top mat reinforcement and second R bar 6" below top U bar

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For bar details and Bill of Materials see sheets 239 and 240 of 288.
For column height, step height and all elevations, See Table 1 on sheet 238 of 288.
For bearing details, see sheet 158 of 288.
For bar callouts and shear key details, see sheet 238 of 288.
Pour Shear Key monolithically or intentionally roughen cap to an amplitude of ¼" prior to Shear Key pour.

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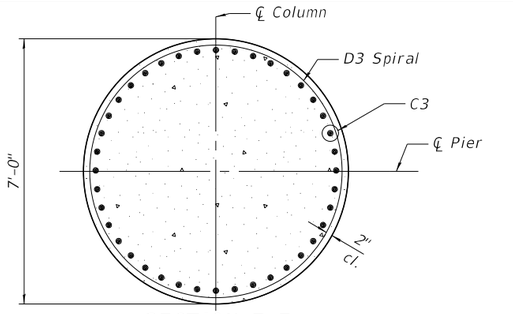
HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -	
	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

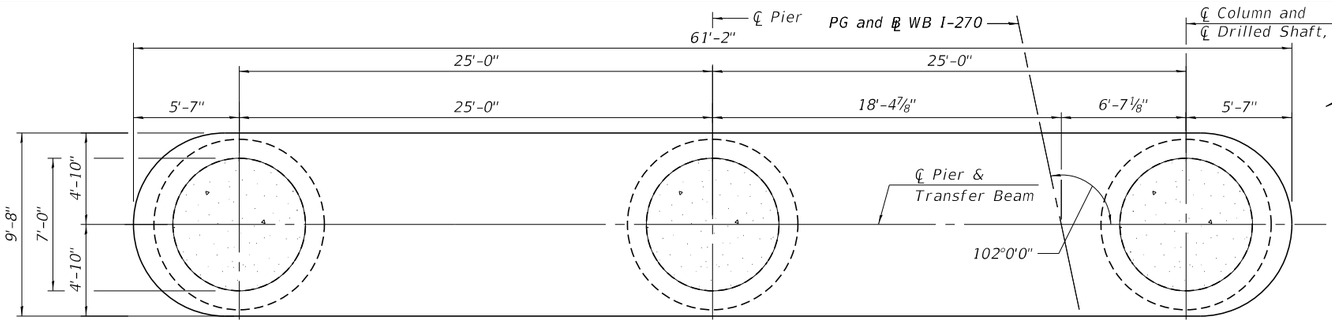
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 25 PLAN AND ELEVATION – 1
STRUCTURE NO. 060-0351 (WB)
SHEET 235 OF 288 SHEETS

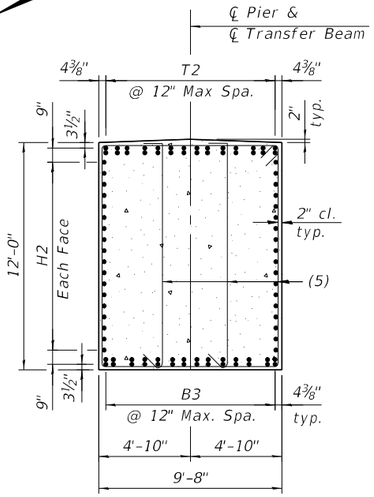
F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	740
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			



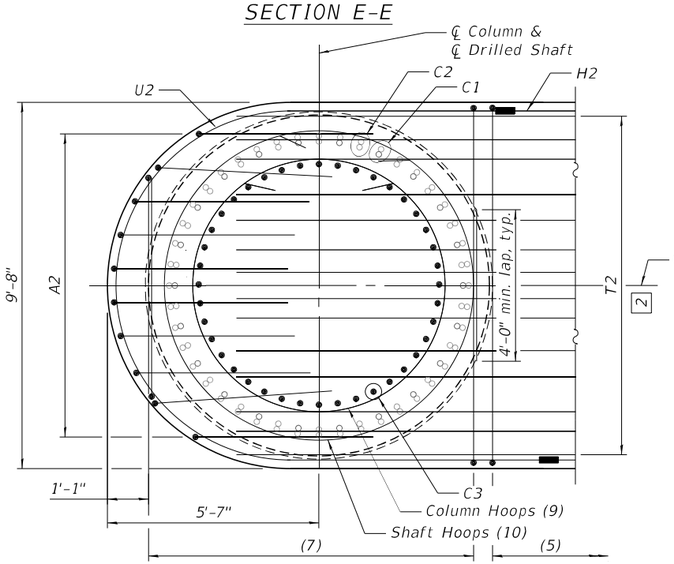
SECTION E-E



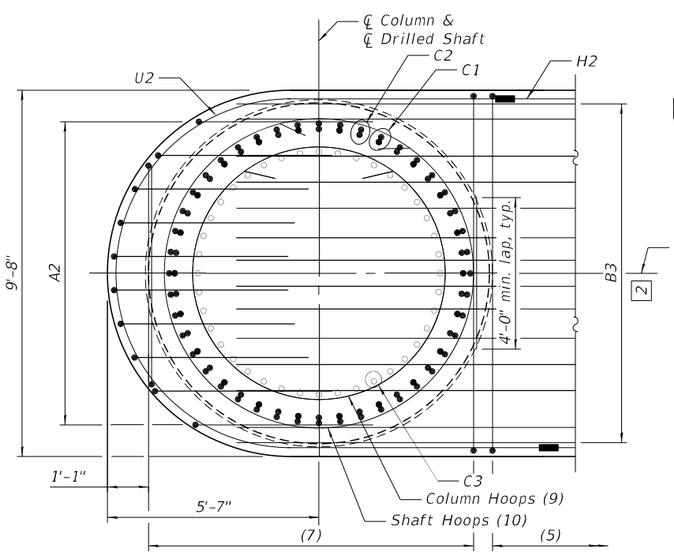
PLAN - TRANSFER BEAM



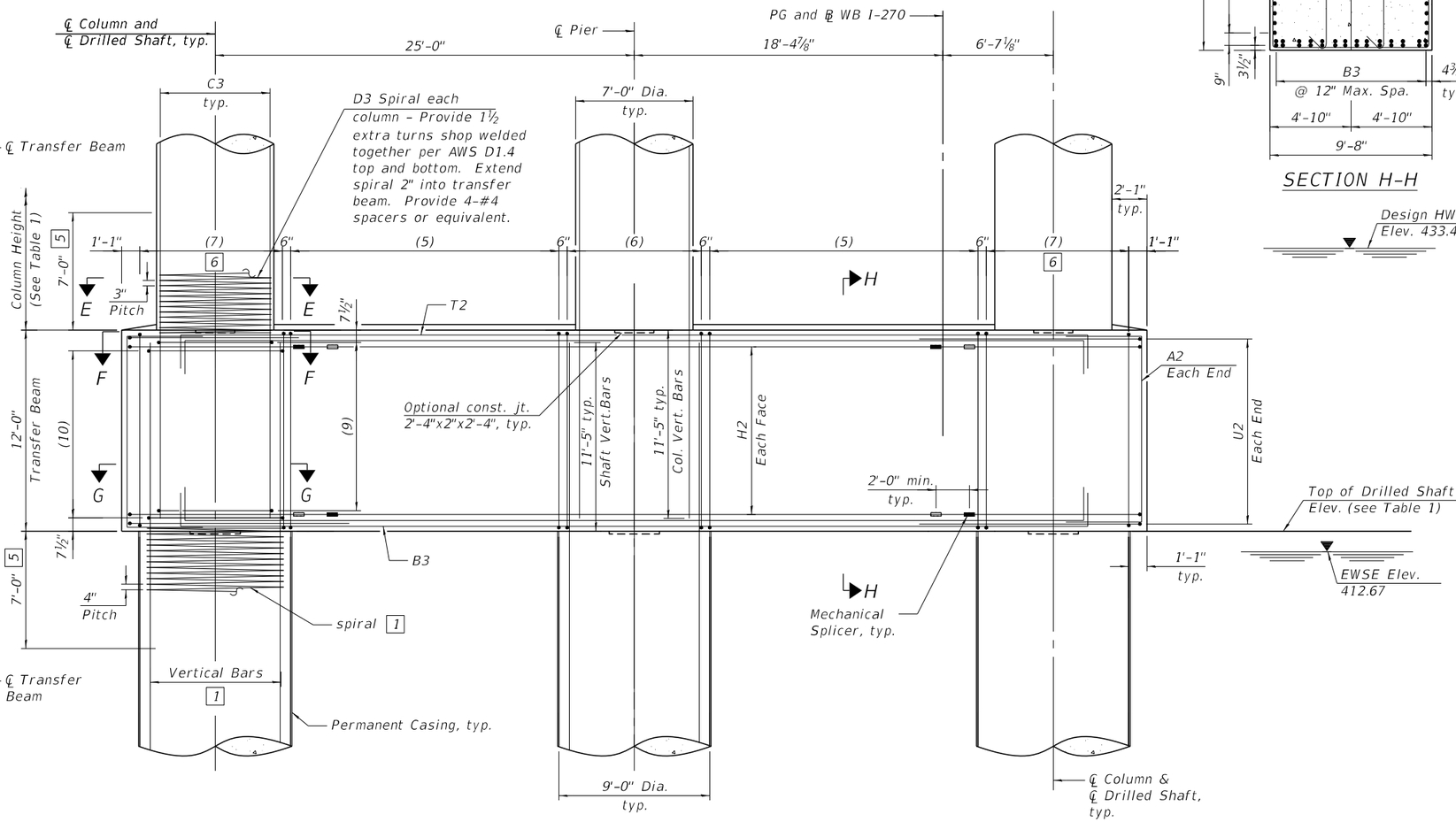
SECTION H-H



SECTION F-F



SECTION G-G



PART ELEVATION - TRANSFER BEAM

(Looking East)

Design HWE
Elev. 433.4

1 See sheet 237 of 288 for additional rebar placement.

2 Adjust transfer beam rebar slightly when conflict with column or shaft vertical bar.

5 No splicing of bars allowed in this region.

6 Field cut bars when needed to keep 2" clear concrete cover.

Notes:
For Top Plan and Part Elevations, see sheet 235 of 288.
For Drilled Shaft Details, see sheet 237 of 288
For additional notes, bar details, and Bill of Material, see sheets 238 thru 240 of 288.
For Table 1, see sheet 238 of 288
For Mechanical Splicer Details, see sheet 242 of 288.

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HORNER & SHIFRIN
Teaming with: PARSONS

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	CHECKED - TMB	REVISED -
PLOT SCALE =	DRAWN - JG	REVISED -
PLOT DATE =	CHECKED - TMB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 25 PLAN AND ELEVATION - 2
STRUCTURE NO. 060-0351 (WB)
SHEET 236 OF 288 SHEETS

F.AJ. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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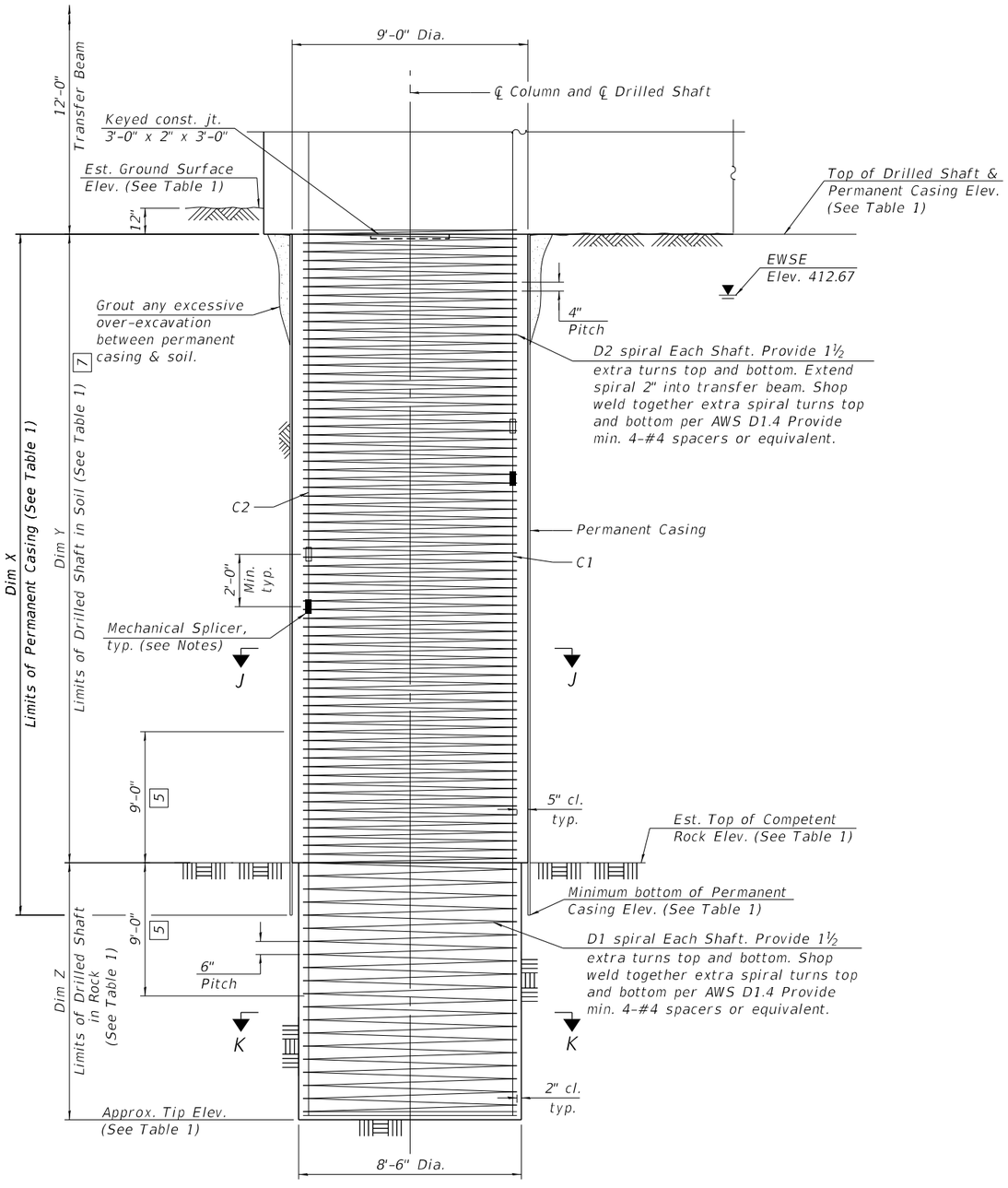
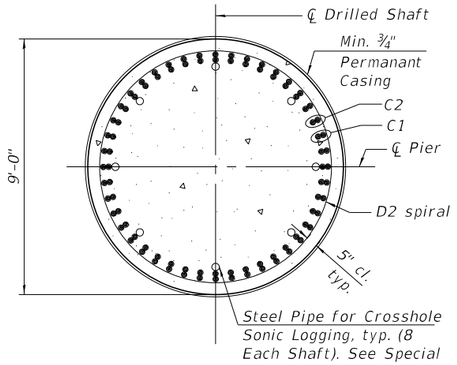
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

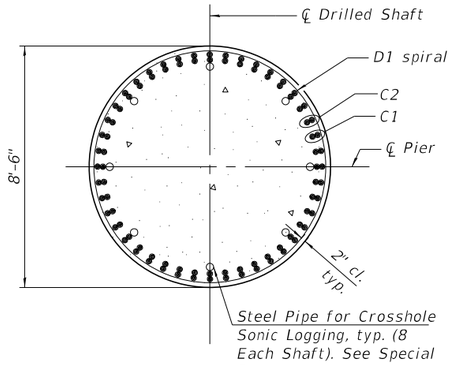


DRILLED SHAFT DETAIL

(One shaft shown, three shafts required, one under each column)



SECTION J-J



SECTION K-K

5 *No splicing of bars allowed in this region.*

7 *If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.*

Notes:

For Pier Plan and Elevation, see Sheets 235 and 236 of 288.

For additional notes, bar details, and Bill of Materials, see sheets 239 and 240 of 288.

For Table 1, see sheet 238 of 288.

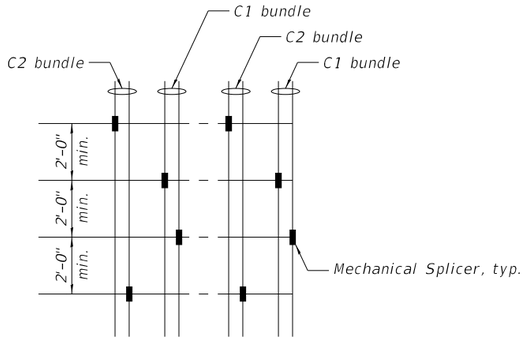
For Mechanical Splicer Details, see sheet 242 of 288.

The Contractor may propose a construction joint in the drilled shaft so separate pours can be made, if the shaft can be poured in the dry, subject to approval from the Engineer.

The Permanent Casing is shown embedded 2 ft. into rock for estimate of quantities. The Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay Limits for the Permanent Casing shall be based on the minimum length shown.

When splicing of spiral reinforcement is necessary, the spirals shall be provided with 1 ½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.

Alternate location of mechanical splices of C1 bars every other bar. Alternate location of mechanical splices of C2 bars within each bundle.



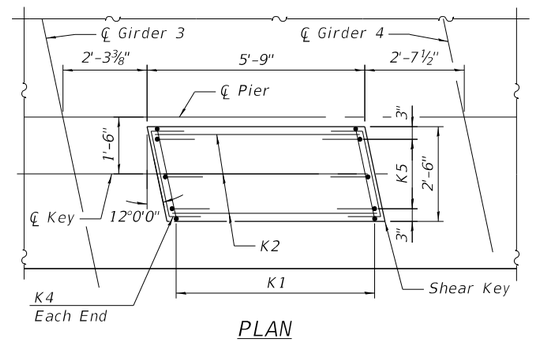
ALTERNATE MECHANICAL SPLICERS LOCATION

TABLE 1

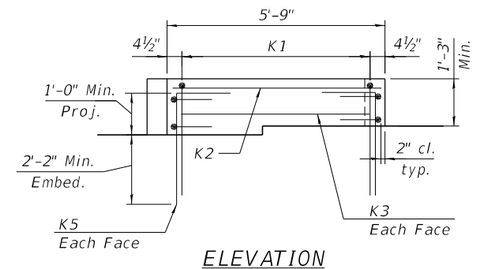
		Pier 25
℄ Pier Station		2832+77.98
Bearing Seat Elevation	Girder 1	444.92
	Girder 2	445.14
	Girder 3	445.36
	Girder 4	445.58
	Girder 5	445.41
	Girder 6	445.22
Top of Cap Elevation		444.92
Bottom of Cap Elevation		436.92
Column Height		13'-0⅛"
Top of Shaft Elevation		411.90
Approx. Tip Elevation		316.90
Est. Ground Surface Elevation		412.90
Est. Top of Rock Elevation		330.40
Min. bottom of Permanent Casing Elevation		328.40
Dim X		83'-6"
Dim Y		81'-6"
Dim Z		13'-6"
S1		2 ⅝ "
S2		2 ⅝ "
S3		2 ⅝ "
S4		2 "
S5		2 ¼ "

Pier 25

Mark	Bar Callouts
(1)	43 sets of 1-#6 s2501(E) and 1-#6 s2505(E) at 5" cts.
(2)	11 sets of 2-#6 s2502(E) at 8" cts.
(3)	6 sets of 4-#6 s2507(E) at 5" cts.
(4)	47-#6 s2508(E) at abt. 8" cts.
(5)	33 sets of 1-#6 s2503(E) and 2-#6 s2506(E) at 6" cts.
(6)	17 sets of 2-#6 s2504(E) at 6" cts
(7)	18 sets of 2-#6 s2504(E) at 6" cts.
(8)	14-#7 hp2502(E) hoops at 3"
(9)	44-#7 hp2502(E) hoops at 3"
(10)	33-#7 hp2501(E) hoops at 4"
T1	2 layers of 13-#11 p2501(E) or p2502(E) at 7⅜"
T2	14 bundles of 1-#11 p2505(E) (top) and 1-#11 p2506(E) (bot) at 12" max
B1	2 layers of 13-#11 p2503(E) at 7⅜"
B2	11-#7 p2504(E) at 7⅜"
B3	14 bundles of 1-#11 p2505(E) (bot) and 1-#11 p2506(E) (top) at 12" max
H1	10-#8 h2501(E) at 7½"
H2	18-#9 h2502(E) at 7"
H3	10-#6 h2503(E) at abt. 9¾"
A1	6 sets of 1-#7 u2503(E) & 1-#7 u2504(E) at 10½"
A2	10-#7 u2505(E) at 10¾"
U1	11-#8 u2501(E) space with h2501(E) and p2501(E)
U2	20-#9 u2502(E) splice with h2502(E) and space with p2505(E)
C1	22 bundles of 2-#14 v2501(E) and 2-#14 v2502(E) alternate eq. spa.
C2	22 bundles of 2-#14 v2503(E) and 2-#14 v2504(E) alternate eq. spa.
C3	40-#11 v2505(E) eq. spa.
D1	#7 sp2501(E) at 6" pitch
D2	#7 sp2502(E) at 4" pitch
D3	#7 sp2503(E) at 3" pitch
K1	13-#6 s2509(E) spa. at 5"
K2	3-#5 h2504(E) space with n2501(E)
K3	1-#5 h2504(E) ea. face
K4	2-#5 h2505(E) ea. face
K5	3-#6 n2501(E) at 12" ea. face
R	#5 s2510(E)



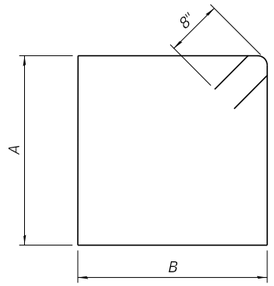
PLAN



ELEVATION

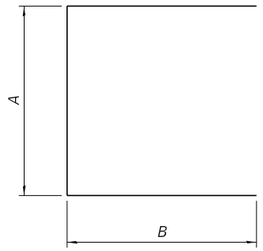
SHEAR KEY DETAILS

Notes:
For Pier Plan and Elevation, see sheets 235, 236 and 237 of 288 .
For bar details, see sheet 239 of 288 .
For Bill of Material, see sheet 240 of 288 .



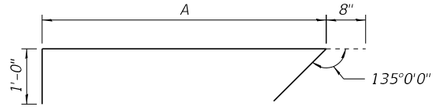
BARS s2501(E) & s2503(E)

Bars	A	B
s2501(E)	7' -8"	7' -8"
s2503(E)	11' -8"	9' -4"



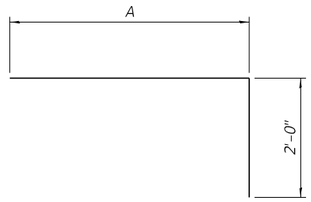
BARS s2502(E) & s2504(E) & s2507(E)

Bars	A	B
s2502(E)	7' -8"	5' -10"
s2504(E)	11' -8"	6' -8"
s2507(E)	4' -10"	5' -10"



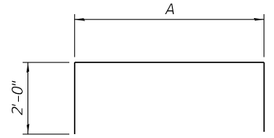
BARS s2505(E) & s2506(E)

Bars	A
s2505(E)	7' -8"
s2506(E)	11' -8"



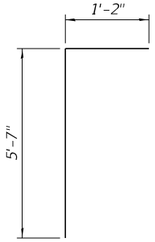
BARS p2501(E) & p2502(E)

Bars	A
p2501(E)	24' -0"
p2502(E)	49' -5"

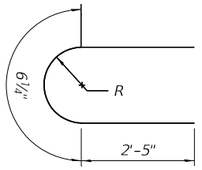


BARS p2505(E) & p2506(E)

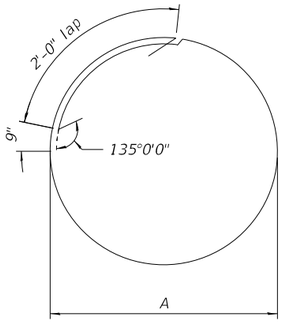
Bars	A
p2505(E)	54' -2"
p2506(E)	53' -8"



BARS u2503(E)

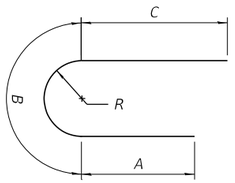


BARS s2510(E)



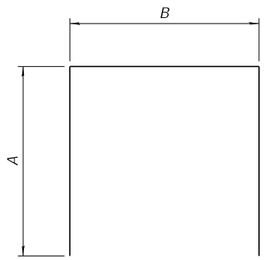
BARS hp2501(E) & hp2502(E)

Bars	A
hp2501(E)	8' -2"
hp2502(E)	6' -8"



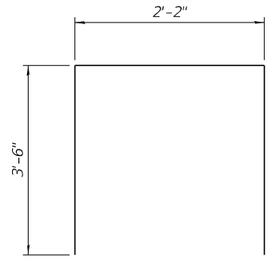
BARS u2501(E) & u2502(E)

Bars	A	B	C	R
u2501(E)	5' -4"	11' -9"	5' -4"	3' -9"
u2502(E)	5' -9"	14' -5"	7' -9"	4' -7"

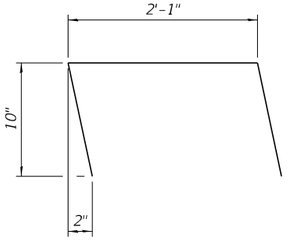


BARS u2505(E) & s2508(E)

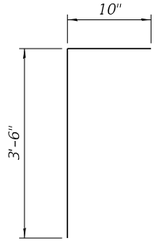
Bars	A	B
u2505(E)	4' -7"	11' -6"
s2508(E)	2' -9"	7' -8"



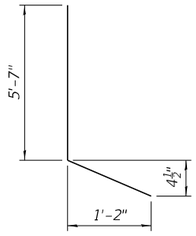
BARS s2509(E)



BARS h2505(E)



BARS n2501(E)



BARS u2504(E)

HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - GX	REVISED -	
	CHECKED - TMB	REVISED -	
PLOT SCALE =	DRAWN - JG	REVISED -	
PLOT DATE =	CHECKED - TMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 25 REINFORCEMENT TABLES – 2
STRUCTURE NO. 060–0351 (WB)
SHEET 239 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	744
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

Pier 25

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h2501(E)	20	#8	56'-2"	
	h2502(E)	36	#9	38'-0"	
	h2503(E)	10	#6	31'-7"	
	h2504(E)	5	#5	5'-5"	
	h2505(E)	4	#5	3'-11"	
	hp2501(E)	99	#7	29'-2"	
	hp2502(E)	174	#7	24'-6"	
	n2501(E)	12	#6	4'-4"	
	p2501(E)	26	#11	26'-0"	
	p2502(E)	26	#11	51'-5"	
	p2503(E)	26	#11	57'-9"	
	p2504(E)	22	#7	2'-11"	
	p2505(E)	28	#11	58'-2"	
	p2506(E)	28	#11	57'-8"	
	s2501(E)	86	#6	32'-0"	
	s2502(E)	66	#6	19'-4"	
	s2503(E)	66	#6	43'-4"	
	s2504(E)	106	#6	25'-0"	
	s2505(E)	86	#6	9'-4"	
	s2506(E)	132	#6	13'-4"	
	s2507(E)	48	#6	16'-6"	
	s2508(E)	47	#6	13'-2"	
	s2509(E)	26	#6	9'-2"	
	s2510(E)	8	#5	5'-5"	
***	sp2501(E)	3	#7	12'-6"	
***	sp2502(E)	3	#7	82'-8"	
***	sp2503(E)	3	#7	13'-5"	
	u2501(E)	22	#8	22'-5"	
	u2502(E)	40	#9	27'-11"	
	u2503(E)	12	#7	6'-9"	
	u2504(E)	12	#7	6'-10"	
	u2505(E)	20	#7	20'-8"	
	v2501(E)	132	#14	51'-10"	
	v2502(E)	132	#14	54'-5"	
	v2503(E)	132	#14	48'-5"	
	v2504(E)	132	#14	57'-10"	
	v2505(E)	120	#11	32'-0"	

Structure Excavation	Cu. Yd.	32
Concrete Structures	Cu. Yd.	466.2
Reinforcement Bars, Epoxy Coated	Pound	372,050
Permanent Casing	Foot	251
Drilled Shaft in Soil	Cu. Yd.	577
Drilled Shaft in Rock	Cu. Yd.	86
Crosshole Sonic Logging Access Ducts	Foot	285
Crosshole Sonic Logging Testing	Each	3
Thermal Integrity Profile Data Collection	Foot	285
Thermal Integrity Profile Testing	Each	1

*** Length is height of spiral.

Notes:

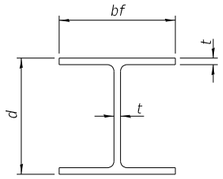
For Pier Plan and Elevation, see sheets 235 thru 237 of 288.

For additional bar details, see sheets 238 and 239 of 288.

Pier 25 vertical load drilled shaft foundation design is based on end bearing in bedrock. For vertical load design, penetration into rock is required to achieve the factored resistance used in design (19,436 kip). The limits shown for drilled shaft in rock is the minimum penetration required to achieve lateral fixity in rock for lateral load design.

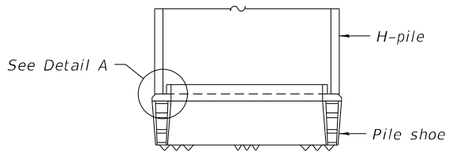
The quantities and reinforcement detailing are based on the estimated top of competent rock and the estimated elevations shown and may change based on the actual elevations encountered at each shaft.

Wet construction methods within permament casing may be required. The Contractor's installation procedure shall clearly address cleaning and inspection methods proposed for use with wet construction methods which will ensure adequate end bearing on rock is achieved.

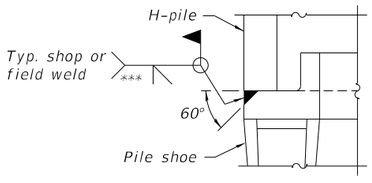


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	11/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	11/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



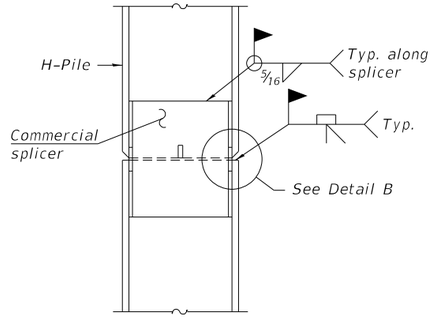
ELEVATION



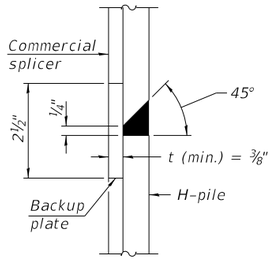
DETAIL A

SHOE ATTACHMENT

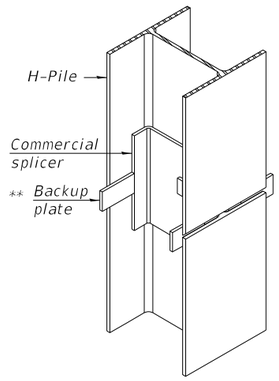
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

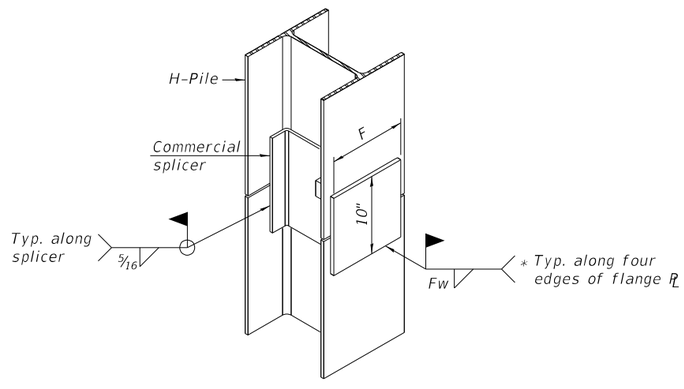


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



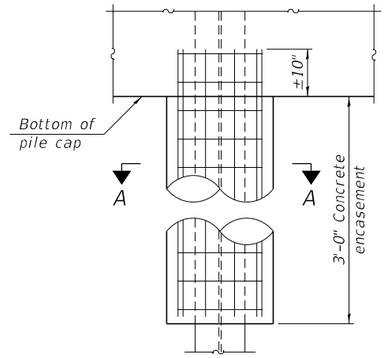
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

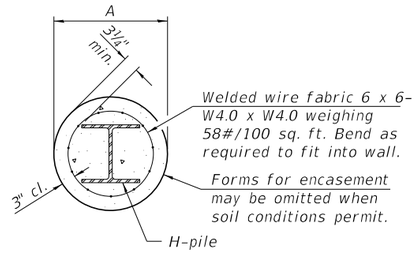
* Interrupt welds ¼" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



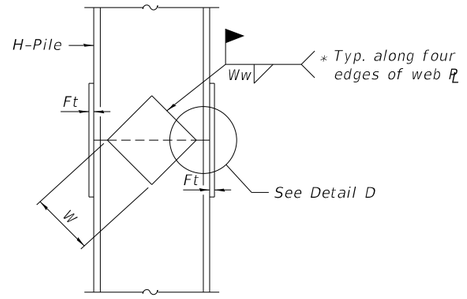
ELEVATION



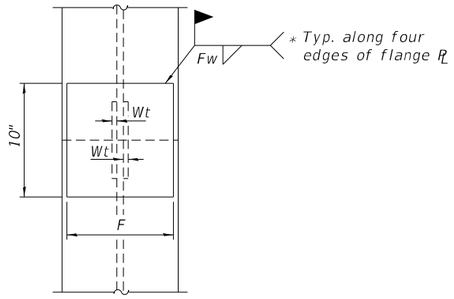
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

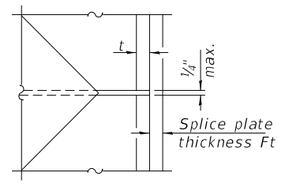
(when specified)



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12½"	1"	⅞"	7¾"	⅝"	½"
x102	12½"	⅞"	¾"	7¾"	⅝"	½"
x89	12½"	¾"	11/16"	7¾"	⅝"	½"
x73	12½"	⅝"	9/16"	7¾"	⅝"	½"
HP 12x84	10"	⅞"	11/16"	6½"	⅝"	½"
x74	10"	⅞"	11/16"	6½"	⅝"	½"
x63	10"	⅝"	½"	6½"	½"	⅜"
x53	10"	⅝"	½"	6½"	½"	⅜"
HP 10x57	8"	¾"	9/16"	5¼"	½"	⅜"
x42	8"	⅝"	9/16"	5¼"	½"	⅜"
HP 8x36	7"	⅝"	7/16"	4¼"	½"	⅜"

WELDED PLATE FIELD SPLICE

F-HP 1-1-2020

HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME =	DESIGNED - NHP	REVISED -
	CHECKED - GLC	REVISED -
PLOT SCALE =	DRAWN - EAT	REVISED -
PLOT DATE =	CHECKED - BTF	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 060-0351 (WB)
SHEET 241 OF 288 SHEETS

F.AJ. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	746
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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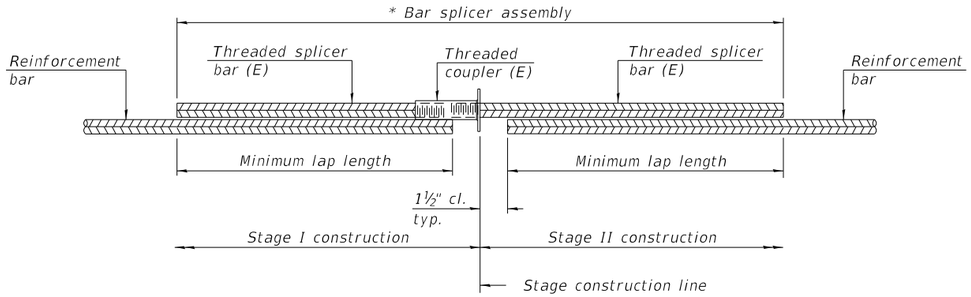
3/14/2022 10:42:16 AM



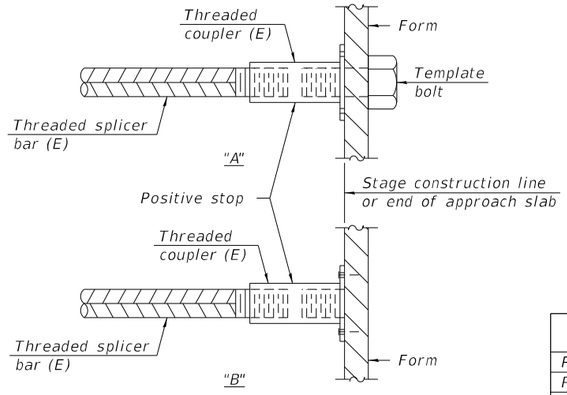
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1½" + thread length

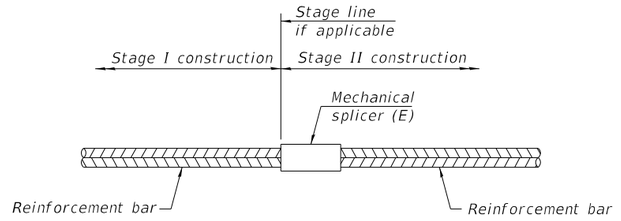
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#9	72
Pier 1	#11	56
Pier 1	#14	198
Pier 2	#9	72
Pier 2	#11	56
Pier 2	#14	198
Pier 3	#9	72
Pier 3	#11	56
Pier 3	#14	198
Pier 4	#9	72
Pier 4	#11	56
Pier 4	#14	198
Pier 5	#9	72
Pier 5	#14	198
Pier 6	#9	72
Pier 6	#14	198
Pier 7	#9	72
Pier 7	#14	198
Pier 8	#9	72
Pier 8	#14	198
Pier 9	#9	72
Pier 9	#14	198
Pier 10	#9	72
Pier 10	#14	198
Pier 11	#9	72
Pier 11	#14	198

Location	Bar size	No. assemblies required
Pier 12	#9	72
Pier 12	#14	198
Pier 13	#9	72
Pier 13	#14	198
Pier 14	#9	72
Pier 14	#14	198
Pier 15	#9	72
Pier 15	#14	198
Pier 16	#9	72
Pier 16	#14	198
Pier 17	#9	72
Pier 17	#14	198
Pier 18	#9	72
Pier 18	#14	264
Pier 19	#9	72
Pier 19	#14	264
Pier 20	#9	72
Pier 20	#14	264
Pier 21	#9	72
Pier 21	#14	264
Pier 22	#9	72
Pier 22	#14	264
Pier 23	#9	72
Pier 23	#14	264
Pier 24	#9	72
Pier 24	#14	264
Pier 25	#9	72
Pier 25	#14	264

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/21/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION West Approach SEC., TWP. Land Grant 00114, RNG.
Lat 38.76682699 Long -90.17977297

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-101
Station 1780+03.06
Offset 258.6 ft L (EB)
Ground Surface Elev. 419.1 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 415.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Brown, moist, fill, A-7. 418.8			
Crushed limestone, fill. 416.8		NC	--
Clay: Brown, stiff, poor recovery. moist, fill, A-7. ▼	4 5 8	0.8 P	40
413.1			
Clay: Brown to gray, stiff, with slag, brick, and gravel, moist, fill, A-7. 410.6	2 5 5	1.7 S/15	31
Clay: Brown to gray, soft to very soft, moist, A-7.	2 1 2	0.6 B/20	39
Unconsolidated, Undrained Triaxial Strength and Atterberg Limits Tests performed.	ST	0.6 B	52
	0 0 0	0.2 B/20	45
403.1			
Silty Clay: Brown to gray, soft, moist, A-6.	ST	0.5 B	40
	0 0 4	0.2 B/20	41

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
398.6			
Sandy Loam: Brown to gray, fine grained, loose, wet, A-2.	2 2 5	NC	--
395.1	4		
Clay: Brown to gray, soft, moist, A-7. 394.6	2 1	0.2 B/20	48
Silty Clay: Brown to gray, soft, moist, A-6. 393.6			
Silty Loam: Brown to gray, soft, moist, A-4.	2 2 2	0.3 P	32
391.1			
Clay: Brown to gray, medium stiff, moist, A-7.	0 3 3	0.3 B/20	46
387.1			
Sandy Loam: Brown to gray, fine grained, medium dense, A-2.	3 4 13	NC	12
384.6			
Clayey Shale: Gray.			
381.3			
Weathered Limestone: Gray, interbedded with clayey shale.	100/2"	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/21/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION West Approach SEC., TWP. Land Grant 00114, RNG.
Lat 38.76682699 Long -90.17977297

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-101
Station 1780+03.06
Offset 258.6 ft L (EB)
Ground Surface Elev. 419.1 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 415.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Weathered Limestone: Gray, interbedded with clayey shale. *(continued)* 377.6	100/0.5"	NC	--
Boring terminated at 41.5 feet. Boring grouted to 41.5 feet.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 2/2-3/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION West Abutment SEC., TWP. Land Grant 00114, RNG.
Lat 38.76632939 Long -90.1799847

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-01
Station 1780+01.52
Offset 67.5 ft L (EB)
Ground Surface Elev. 441.4 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 413.9 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silt: Brown, moist, stiff, trace crushed rock, fill, A-6.	2 5 4 6	1.7 S/10	22
No crushed rock. *Particle Size Analysis performed.*	2 5 8 7	2.5 P	22
	3 5 8 10	2.9 S/15	19
	3 6 8 8	3.0 P	21
433.4			
Silty Clay Loam: Brown and gray, moist, stiff to very stiff, fill, A-7. *Particle Size Analysis performed.*	2 7 8 10	4.1 S/15	21
	4 5 9	2.3 B/20	22
428.4			
Sandy Loam: Brown and gray, moist, dense, fill, A-4. *Particle Size Analysis performed.*	10 11 10	4.5 S/15	10
425.9			
Sandy Clay Loam: Brown and gray, moist, very stiff, fill, A-6.	4 5 8	2.9 B/20	18
Trace crushed rock and cinders 421.4	6 7 12	2.1 B/20	13

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Clay: Brown, fine-grained, moist, medium dense, A-6.	5 10 9	1.7 S/15	16
418.4			
Silty Clay: Brown, trace gray, moist, very stiff, A-6.	5 10 10	3.7 S/15	18
415.9			
Clay Loam: Brown, moist, stiff, A-6. ▼	6 6 9	2.0 P	20
413.4			
Clay: Gray, moist, stiff to very stiff, A-6.	2 3 5	1.2 B/20	22
409.4			
Clay: Gray, moist, medium stiff to stiff, A-7.	2 4 4	2.1 B/20	34
	1 3 6	1.0 B/20	31

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – WEST ABUTMENT
STRUCTURE NO. 060–0351 (WB)
SHEET 243 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	748
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 2/2-3/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION West Abutment SEC. TWP. Land Grant 00114, RNG.
Lat 38.76832939 Long -90.1799547

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-01
Station 1780+01.52
Offset 67.5 ft L (EB)
Ground Surface Elev. 441.4 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 413.9 ft ▼
Upon Completion ____ ft
After ____ Hrs. ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Gray, moist, medium stiff to stiff, A-7. *(continued)*				
399.4				
Silty Loam: Gray, moist, stiff, A-6. *Particle Size Analysis performed.*		1 3 13	1.2 B/20	34
396.4	-45			
Loam: Gray, moist, medium stiff, A-4.		1 3 3	NC	25
389.4	-50			
Auger refusal at 52.0 feet. Patched the deck hole with rapid hardening concrete. Backfilled borehole with bentonite chips. Sampling began 16.2 feet below top of deck. Top of deck elevation 457.6 feet.	-55			
	-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 02/03/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 1, SEC., TWP, Land Grant 00114, RNG.
Lat 38.76822632 Long -90.17956162

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-03
Station 1781+22.43
Offset 67.3 ft L (EB)
Ground Surface Elev. 420.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silty Loam: Dark brown, moist, very soft to soft, fill A-6.	1 0 0	1.0 P	48
	1 3 2	0.5 P	37
397.0			
Particle Size Analysis performed.	0 1 2	0.6 B/20	32
-5			
Medium stiff to stiff.	2 2 3	0.6 B/15	23
412.0	4		
Silty Clay Loam: Brown, moist, very soft to soft, fill, A-6. *Grain Size Analysis performed.*	4 7 9	3.5 S/15	33
-10	10		
Soft to very soft.	2 1 2	0.6 S/15	34
	1 1 2	1.2 B/20	38
-15			
Particle Size Analysis performed.	0 2 2	1.0 B/20	39
	1 1 2	0.4 B/20	42
400.0 -20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay Loam: Gray, moist, soft to medium stiff, A-6.	1 1 2	0.25 P	33
-25			
Very stiff.	1 7 9	NC	36
392.0			
Sandy Loam: Gray, fine to coarse grained, moist, loose, A-2.	2 2 2	NC	
-30			
386.5			
Weathered limestone.	50/2"	NC	--
385.6			
Borehole continued with rock coring.			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 02/03/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 1, SEC., TWP, Land Grant 00114, RNG.
Lat 38.76822632 Long -90.17956162

COUNTY St. Louis CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 386.5 ft
Begin Core Elev. 385.6 ft

BORING NO. BB-03
Station 1781+22.43
Offset 67.3 ft L (EB)
Ground Surface Elev. 420.0 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Hard, aphanitic to very finely crystalline, thin to medium bedded, moderately weathered, dense, calcareous, cherty No chert.	1	100	76	5.1		
-35						
Trace stylolites. *Depth 36.5', Dry Density: 164.1 pcf.*					619.9	0.6
-40						
Depth 41.9', Dry Density: 166.4 pcf. Trace clay seams.					685.5	0.4
-45	2	100	80	4		
No clay seams or stylolites. Trace shale seams. *Depth 47.1', Dry Density: 161.9 pcf.*					504.3	1
-50						
No shale. *Depth 53.3', Dry Density: 164.3 pcf.*					425.1	0.8
365.6						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 02/03/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 1, SEC., TWP, Land Grant 00114, RNG.
Lat 38.76822632 Long -90.17956162

COUNTY St. Louis CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 386.5 ft
Begin Core Elev. 385.6 ft

BORING NO. BB-03
Station 1781+22.43
Offset 67.3 ft L (EB)
Ground Surface Elev. 420.0 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Hard, aphanitic to very finely crystalline, thin to medium bedded, slightly weathered, dense *(Continued)*	3	100	85	2.4		
-55						
Depth 55.4', Dry Density: 164.0 pcf.					736.1	0.8
Depth 63.4', Dry Density: 160.5 pcf.					792.8	1.3
355.6						
Boring terminated at 64.4 feet. Patched deck hole with rapid hardening concrete. Backfilled borehole with bentonite chips. Sampling began 37.9 feet below top of deck. Top of deck elevation 457.9 feet.						
-65						
-70						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 1
STRUCTURE NO. 060–0351 (WB)
SHEET 245 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	750
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 02/10/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 2, SEC., TWP, Land Grant 00114, RNG.
Lat 38.7681185 Long -90.17912998

COUNTY St. Louis DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-05
Station 1782+57.04
Offset 69.6 ft L (EB)
Ground Surface Elev. 420.4 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silty Clay: Dark gray, moist, stiff, fill, A-6.	4 4 5 6	>4.5 P	23
416.9			
Sandy Loam: Light gray and brown, fine-grained, moist, medium dense, fill, A-3. *Particle Size Analysis performed.*	2 3 6 5	1.5 P	11
-5			
414.4			
Silty Clay: Light gray and brown, moist, soft to medium stiff, fill, A-6.	2 3 1 3	0.5 P	30
411.9			
Silt: Gray, moist, stiff, fill, A-4.	2 5 6 7	0.7 S/10	22
-10			
409.4			
Silty Loam: Gray, moist, soft, with layers of silt and fine sandy loam, A-6.	1 2 1	<0.25 P	29
Particle Size Analysis performed.	1 1 1	0.3 B/20	33
-15			
404.9			
Silt: Gray, moist, soft to very soft, A-4.	0 0 1	0.2 B/20	40
	1 2 2	0.4 B/20	25
400.4 -20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silty Clay: Gray, moist, soft, A-6.	0 1 2	0.5 B/20	33
397.4			
SILTY LOAM Loam: Gray, moist, medium stiff, with layers of clay and sandy loam, A-3. *Particle Size Analysis performed.*	1 3 3	NC	33
-25			
394.9			
Silty Clay: Gray, moist, very soft to soft, A-6.	1 1 1	0.2 B/20	24
	0 2 1	0.3 B/20	34
-30			
	0 1 4	0.5 B/20	33
	0 3 27	NC	28
385.9 Weathered Limestone.			
-35			
384.4 Borehole continued with rock coring.			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 02/10/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 2, SEC., TWP, Land Grant 00114, RNG.
Lat 38.7681185 Long -90.17912998

COUNTY St. Louis CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 384.4 ft
Begin Core Elev. 383.4 ft

BORING NO. BB-05
Station 1782+57.04
Offset 69.6 ft L (EB)
Ground Surface Elev. 420.4 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Hard, aphanitic to very finely crystalline, thinly bedded, moderately weathered, dense, trace clay seams. *Depth 37.3', Dry Density: 165.2 pcf.*	1	100	80	4.3	349.5	0.1
-40						
Depth 45.7', Dry Density: 163.8 pcf.					429.1	0.1
-45						
Hard to very hard, thickly bedded, slightly weathered, no clay seams.	2	100	87	2.1		
Depth 49.5', Dry Density: 163.9 pcf.					546.1	0.1
-50						
Depth 53.2', Dry Density: 162.4 pcf.					779.1	0.1
-55						
363.4						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 02/10/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 2, SEC., TWP, Land Grant 00114, RNG.
Lat 38.7681185 Long -90.17912998

COUNTY St. Louis CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 384.4 ft
Begin Core Elev. 383.4 ft

BORING NO. BB-05
Station 1782+57.04
Offset 69.6 ft L (EB)
Ground Surface Elev. 420.4 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Hard to very hard, thickly bedded, slightly weathered, dense. *(Continued)*	3	100	88	2.3		
-60						
Depth 60.3', Dry Density: 161.8 pcf.					617.8	0.1
Depth 63.1', Dry Density: 161.4 pcf.					910.6	0.1
-65						
353.4						
Boring terminated at 67.0 feet. Backfilled borehole with bentonite chips. Sampling began 37.9 feet below top of deck. Top of deck elevation 458.3 feet.						
-70						
-75						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 2
STRUCTURE NO. 060–0351 (WB)
SHEET 246 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	751
		CONTRACT NO. 76J90		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 3/31-4/1/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 3, SEC., TWP. Land Grant 00114, RNG.
Lat 38.765890 Long -90.176645

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-07
Station 1783+87.45
Offset 72.6 ft L (EB)
Ground Surface Elev. 410.3 ft

Surface Water Elev. 403.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 410.3 (+/-) feet. Surface elevation at river bottom = 395.0 (+/-) feet. Sampling began 16.7 feet below water level.			
-5			
-10			
-15			
393.6			
Silty Loam: Gray, wet, very soft, trace wood, A-4.	WOH	<0.25 P	--
	WOH		
	1		
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
389.1			
No recovery. 389.0	50/2"		
Borehole continued with rock coring.			
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 3/31-4/1/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 3, SEC., TWP. Land Grant 00114, RNG.
Lat 38.765890 Long -90.176645

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 389.1 ft
Begin Core Elev. 389.0 ft

BORING NO. BB-07
Station 1783+87.45
Offset 72.6 ft L (EB)
Ground Surface Elev. 410.3 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Wood. 389.0						
Limestone: Light gray, hard to very hard, very finely to finely crystalline, thin to thickly bedded, slightly weathered, dense, with clayey shale deposits. 388.9	1	95	78	3.1	824.4	0.1
Depth 21.4', Dry Density: 167.6 pcf.						
-25						
Depth 24.9', Dry Density: 165.1 pcf.					647.0	0.1
-30						
379.0						
Clayey Shale: Gray.	2	100	100	1.8		
377.6						
Limestone: Gray, hard to very hard, very finely to finely crystalline, medium bedded, slightly weathered, dense.	3	99	84	3.3		
Depth 33.6', Dry Density: 162.7 pcf.					763.0	0.1
375.8						
Sandstone: Gray to greenish-gray, hard to very hard, very finely to finely crystalline, massive bedding, slightly weathered, dense.						
-35						
Trace clayey shale deposits. 373.8						
Limestone: Gray, hard to very hard, very finely to finely crystalline, medium bedded, slightly weathered, dense.						
-40						
Depth 40.2', Dry Density: 159.0 pcf.					679.8	0.1

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 3/31-4/1/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 3, SEC., TWP. Land Grant 00114, RNG.
Lat 38.765890 Long -90.176645

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 389.1 ft
Begin Core Elev. 389.0 ft

BORING NO. BB-07
Station 1783+87.45
Offset 72.6 ft L (EB)
Ground Surface Elev. 410.3 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
368.6						
Limestone: Gray, hard to very hard, very finely to finely crystalline, massive bedding, slightly weathered, dense. *(continued)*	4	97	80	4.6		
Depth 42.7', Dry Density: 158.3 pcf.					353.9	0.1
-45						
Depth 48.7', Dry Density: 161.7 pcf.					990.9	0.2
-50						
358.6						
Boring terminated at 51.73 feet.						
-55						
-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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PLOT DATE =	CHECKED -	REVISED -	

BORING LOGS – PIER 3
STRUCTURE NO. 060–0351 (WB)
SHEET 247 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	752
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/29-30/2018

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 4, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7659437 Long -90.17804158

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-09
Station 1785+71.90
Offset 104.8 ft L (EB)
Ground Surface Elev. 400.2 ft

Surface Water Elev. 400.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 400.2 (+/-) feet. Surface elevation at river bottom = 380.4 (+/-) feet. Sampling began 19.8 feet below water level.				
	-5			
	-10			
	-15			
Borehole continued with rock coring.	-20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/29-30/2018

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 4, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7659437 Long -90.17804158

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.85 in
Top of Rock Elev. 381.0 ft
Begin Core Elev. 380.4 ft

BORING NO. BB-09
Station 1785+71.90
Offset 104.8 ft L (EB)
Ground Surface Elev. 400.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, very hard, finely crystalline, with fine grained sand, banded to thinly bedded, moderately weathered, moderately fractured.	380.4	1	88	55	2.4		
Depth 20.4, Dry Density: 159.3 pcf.						212.2	0.2
	-25	2	98	77	3.2		
Depth 24.35', Dry Density: 164.1 pcf.						398.3	0.3
Silty Limestone: Light gray, hard, finely crystalline, thinly bedded, moderately weathered, highly fractured, with open vertical fractures infilled with siltstone.	374.5						
Calcareous Sandstone: Light gray and greenish-gray, hard, fine grained, laminated to banded, wary-cross beddings, moderately weathered, slightly fractured. Banded to thinly bedded, slightly weathered, slightly fractured.	373.2	3	100	95	3.5		
Depth 29.4', Dry Density: 157.6 pcf.	-30					228.8	0.5
		4	96	82	2.9		
Silty Limestone: Gray, moderately hard to hard, finely crystalline, with fine sand, laminated to thinly bedded, slightly weathered, slightly fractured.	368.2						
Moderately weathered, moderately fractured.	-35						
Depth 37.3', Dry Density: 165.6 pcf.						455.8	0.4
Calcareous Sandstone: Light gray, very hard, fine grained, banded to thinly bedded, slightly weathered, slightly fractured.	361.2						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/29-30/2018

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 4, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7659437 Long -90.17804158

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.85 in
Top of Rock Elev. 381.0 ft
Begin Core Elev. 380.4 ft

BORING NO. BB-09
Station 1785+71.90
Offset 104.8 ft L (EB)
Ground Surface Elev. 400.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Calcareous Sandstone: Light gray, very hard, fine grained, banded to thinly bedded, slightly weathered, slightly fractured. *(continued)* Some high angle cross-bedding.		5	100	79	2.2		
Depth 43.0', Dry Density: 163.0 pcf.						228.3	0.4
	355.2 -45						
Sandy Limestone: Light gray, hard, finely crystalline, sand is fine grained, thinly bedded, slightly weathered, slightly fractured.		6	100	86	1.4		
Depth 48.9', Dry Density: 167.0 pcf.	350.4 -50					1341.5	0.2
Boring terminated at 49.8 feet. Boring grouted to 49.8 feet.							
	-55						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 4
STRUCTURE NO. 060–0351 (WB)
SHEET 248 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	753
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 04/09/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 5, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765761 Long -90.177109

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-11
Station 1788+34.02
Offset 116.3 ft L (EB)
Ground Surface Elev. 406.6 ft

Surface Water Elev. 399.0 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 406.6 (+/-) feet. Surface elevation at river bottom = 387.6 (+/-) feet. Sampling began 21.0 feet below water level.				*Samples not obtained of river deposits (sediment and sand). (continued)*			
				385.7 Borehole continued with rock coring.			
-5				-25			
-10				-30			
-15				-35			
387.6 *Samples not obtained of river deposits (sediment and sand).*							
-20				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/09/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 5, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765761 Long -90.177109

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 385.7 ft
Begin Core Elev. 385.7 ft

BORING NO. BB-11
Station 1788+34.02
Offset 116.3 ft L (EB)
Ground Surface Elev. 406.6 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, finely to very finely crystalline, thin to thickly bedded, slighty weathered,	1	95	87	2.4		
With clayey shale deposits.						
-25						
Depth 25.6', Dry Density: 154.3 pcf.					524.6	1.1
378.6 Calcareous Sandstone: Greenish-gray and gray, hard to very hard, very finely crystalline, medium to massive bedding, slightly weathered, dense.						
-30						
Depth 30.5', Dry Density: 155.4 pcf.					576.2	0.2
375.7 Limestone: Light gray, hard to very hard, very finely crystalline, thin to thick bedding, slightly weathered, dense.	2	97	75	3.6		
Depth 33.2', Dry Density: 165.6 pcf.					847.1	0.1
-35						
Depth 33.4', Dry Density: 169.3 pcf.					910.6	0.2
365.7						
-40						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/09/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 5, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765761 Long -90.177109

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 385.7 ft
Begin Core Elev. 385.7 ft

BORING NO. BB-11
Station 1788+34.02
Offset 116.3 ft L (EB)
Ground Surface Elev. 406.6 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline, massive bedding, slightly weathered, dense. *(continued)*	3	100	89	3.6		
Depth 41.9', Dry Density: 160.7 pcf.					765.4	0.2
-45						
Depth 48.2', Dry Density: 166.2 pcf.					717.8	0.1
-50						
355.7 Boring terminated at 50.9 feet.						
-55						
-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 5
STRUCTURE NO. 060–0351 (WB)
SHEET 249 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	754
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 04/08/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 6, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765611 Long -90.176314

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-13
Station 1790+73.68
Offset 108.9 ft L (EB)
Ground Surface Elev. 405.4 ft

Surface Water Elev. 397.8 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 405.4 +/- feet. Surface elevation at river bottom = 394.7 (+/-) feet. Sampling began 11.4 feet below water level.				
	-5			
	-10			
394.7 Sand: Brown, fine to coarse grained, very loose, trace fine gravel. A-3		1 1 2	NC	--
	-15			
Gray and loose.		2 2 2	NC	--
385.4	-20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Borehole continued with rock coring.				
	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/08/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 6, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765611 Long -90.176314

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 385.4 ft
Begin Core Elev. 385.2 ft

BORING NO. BB-13
Station 1790+73.68
Offset 108.9 ft L (EB)
Ground Surface Elev. 405.4 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, micritic to very finely crystalline, thin to medium bedding, slighty weathered, dense. With clayey shale deposits.		1	95	80	4.5		
Depth 23.7', Dry Density: 166.1 pcf.	-25					613.7	0.1
378.4 Sandstone: Gray to greenish-gray, hard to very hard, very finely crystalline, medium to thick bedding, slightly weathered, dense.		2	87	59	4.3		
Depth 29.4', Dry Density: 157.8 pcf.	-30					561.0	0.4
375.2 With clayey shale deposits. Limestone: Light gray, hard to very hard, micritic to very finely crystalline, thin to medium bedding, slighty weathered, dense.		3	94	83	5.1		
Depth 33.6', Dry Density: 166.1 pcf.	-35					562.3	0.3
Depth 37.4', Dry Density: 161.5 pcf.	-40					470.6	0.7

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/08/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 6, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765611 Long -90.176314

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 385.4 ft
Begin Core Elev. 385.2 ft

BORING NO. BB-13
Station 1790+73.68
Offset 108.9 ft L (EB)
Ground Surface Elev. 405.4 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, micritic to very finely crystalline, thin to medium bedding, slighty weathered, dense. *(continued)*		4	100	90	4.2		
Depth 41.5', Dry Density: 166.2 pcf.	-45					913.6	0.1
Depth 48.9', Dry Density: 163.8 pcf.	-50					678.3	0.2
355.2 Boring terminated at 50.24 feet.							
	-55						
	-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 6
STRUCTURE NO. 060–0351 (WB)
SHEET 250 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	755
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 04/05/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 7, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7652016 Long -90.1757276

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-15
Station 1793+11.37
Offset 113.9 ft L (EB)
Ground Surface Elev. 406.6 ft

Surface Water Elev. 399.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 406.6 (+/-) feet. Surface elevation at river bottom = 400.9 (+/-) feet. Sampling began 5.9 feet below water level.				
	-5			
400.9				
Sand: Brown, fine to coarse grained, very loose, A-3.		1 1 2	NC	--
	-10			
No recovery - piece of wood and fine gravel lodged in shoe.		4 2 6	NC	--
Gray and medium dense.		4 8 8	NC	--
	-15			
	-20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine to coarse grained, very loose, A-3. *(continued)*		2 0 2	NC	--
382.6				
Weathered Limestone. 382.4		50/1"	NC	--
Borehole continued with rock coring.	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/05/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 7, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7652016 Long -90.1757276

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 382.6 ft
Begin Core Elev. 382.4 ft

BORING NO. BB-15
Station 1793+11.37
Offset 113.9 ft L (EB)
Ground Surface Elev. 406.6 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline, medium bedding, slighty weathered, dense.	382.4	1	88	53	5.6		
	-25						
Depth 28.8', Dry Density: 165.4 pcf.						593.3	0.1
Sandstone: Greenish-gray to gray, hard to very hard, very finely crystalline, medium bedding, slightly weathered, dense.	376.6						
	-30						
Depth 32.3', Dry Density: 160.1 pcf.						627.5	0.3
	372.4						
Clayey Shale: Gray	371.8	2	97	73	3.8		
	-35						
Limestone: Light gray, hard to very hard, very finely crystalline, medium to massive bedding, slighty weathered, dense. *Depth 35.3', Dry Density: 164.7 pcf.*						579.7	0.1
	-40						
Depth 39.9', Dry Density: 162.5 pcf.						467.4	0.7

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/05/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 7, SEC., TWP. Land Grant 00114, RNG.
Lat 38.7652016 Long -90.1757276

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 382.6 ft
Begin Core Elev. 382.4 ft

BORING NO. BB-15
Station 1793+11.37
Offset 113.9 ft L (EB)
Ground Surface Elev. 406.6 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline, medium to massive bedding, slighty weathered, dense. *(continued)* Massive.	-45	3	100	100	4		
Depth 46.8', Dry Density: 161.8 pcf.						781.2	0.2
	-50						
Depth 53.2', Dry Density: 166.8 pcf.						751.0	0.1
Boring terminated at 54.2 feet. 352.4	-55						
	-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 7
STRUCTURE NO. 060–0351 (WB)
SHEET 251 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	756
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/05/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 8, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765200 Long -90.174740

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-17
Station 1795+45.76
Offset 111.5 ft L (EB)
Ground Surface Elev. 389.6 ft

Surface Water Elev. 389.6 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 389.6 (+/-) feet. Surface elevation at river bottom = 387.5 (+/-) feet. Sampling began 2.1 feet below water level.				
	387.5			
Silt: Gray, wet, very soft, A-2.	387.2	1 1 2	NC	--
Sand: Gray, wet, loose, A-2.	-5			
		3 4 4	NC	--
	-10			
		2 3 4	NC	--
	374.6 -15			
Weathered Limestone: Gray.	374.3	50/4.5"	NC	--
Borehole continued with rock coring.	-20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/05/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 8, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765200 Long -90.174740

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 374.3 ft
Begin Core Elev. 374.3 ft

BORING NO. BB-17
Station 1795+45.76
Offset 111.5 ft L (EB)
Ground Surface Elev. 389.6 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thin to medium bedded, slightly to moderately weathered, dense, with stylolites.	374.3	1	96	62	2.4		
Depth 19.8', Dry Density: 164.4 pcf.	-20					507.4	0.1
	368.7						
Sandy Limestone: Light gray, hard, finely to medium crystalline, thin to medium bedded, slightly weathered, pitted, with shale partings.							
Depth 22.5', Dry Density: 149.4 pcf.						583.1	0.2
	364.9						
Shale: Green.	-25						
	364.3						
Argillaceous Limestone: Gray and greenish-gray, moderately hard.		2	92	0	3.2		
	-30						
	359.3						
Limestone: Gray, very hard, very finely crystalline, medium to thickly bedded, slightly weathered, dense.		3	91	73	2.8		
Depth 32.3', Dry Density: 165.9 pcf.						1344.7	0.1
Vertical joint at 34.7 feet.	354.3 -35						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/05/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 8, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765200 Long -90.174740

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 374.3 ft
Begin Core Elev. 374.3 ft

BORING NO. BB-17
Station 1795+45.76
Offset 111.5 ft L (EB)
Ground Surface Elev. 389.6 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, very hard, aphanitic, thickly bedded, fresh, dense. *(continued)*		4	99	91	2.3		
Depth 36.6', Dry Density: 163.8 pcf.						626.4	0.1
Depth 42.6', Dry Density: 165.4 pcf.	-40					496.0	0.1
	-45						
	344.3						
Boring terminated at 45.3 feet.	-50						
	-55						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 8
STRUCTURE NO. 060–0351 (WB)
SHEET 252 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	757
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/07/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 9, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765047 Long -90.173932

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-19
Station 1797+84.85
Offset 157.5 ft L (EB)
Ground Surface Elev. 389.5 ft

Surface Water Elev. 389.5 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 389.5 (+/-) feet. Surface elevation at river bottom = 372.6 (+/-) feet. Sampling began 16.9 feet below water level.			
-5			
-10			
-15			
372.6 Sandy Loam: Brownish-gray, wet, very loose, A-2.			
-20	50/4.5"	NC	--
368.9 Borehole continued with rock coring.	4 1 WOH	NC	--
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/07/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 9, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765047 Long -90.173932

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 368.9 ft
Begin Core Elev. 368.9 ft

BORING NO. BB-19
Station 1797+84.85
Offset 157.5 ft L (EB)
Ground Surface Elev. 389.5 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, micritic, banded, slightly weathered, dense. 368.9	1	76	0	4		
3 inch shaley clay seam.	2	95	22	2.3		
365.5 Sandy Limestone: Gray, hard, fine to medium crystalline, thinly bedded, slightly weathered, dense, with clayey shale seams. -25						
Depth 26.6', Dry Density: 164.1 pcf. 362.4					415.6	0.2
Argillaceous Limestone: Gray, hard, micritic, thinly bedded, slightly weathered, with shale partings. -30						
Depth 31.4', Dry Density: 160.3 pcf.	3	100	61	2	434.3	0.8
355.1 Limestone: Gray, hard to very hard, very finely crystalline, thick to massive bedding, fresh. -35						
Depth 37.9', Dry Density: 163.3 pcf.					522.6	0.1
348.9 -40						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/07/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 9, SEC., TWP, Land Grant 00114, RNG.
Lat 38.765047 Long -90.173932

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 368.9 ft
Begin Core Elev. 368.9 ft

BORING NO. BB-19
Station 1797+84.85
Offset 157.5 ft L (EB)
Ground Surface Elev. 389.5 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard to very hard, aphanitic, thick to massive bedding, fresh. *(continued)*	4	100	92	2		
Depth 42.2', Dry Density: 164.9 pcf.					810.2	0.1
-45						
Vertical joint.						
Depth 49.9', Dry Density: 164.7 pcf. -50						
Trace clay partings and styolites. 338.9					709.5	0.1
Boring terminated at 50.6 feet. -55 -60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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BORING LOGS – PIER 9
STRUCTURE NO. 060–0351 (WB)
SHEET 253 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	758
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 10/09/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 10 SEC. TWP. Land Grant 00114, RNG.
Lat 38.76472944 Long -90.1733395

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-21
Station 1799+83.72
Offset 97.6 ft L (EB)
Ground Surface Elev. 388.7 ft

Surface Water Elev. 388.7 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 388.7 (+/-) feet. Surface elevation at river bottom = 371.2 (+/-) feet. Sampling began 17.5 feet below water level.			
-5			
-10			
-15			
371.2 Sand: Brown, wet, fine to coarse grained, very loose, A-3.	WOH	NC	
-20	WOH		
	2		
367.7 Borehole continued with rock coring.	50/3"	NC	
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 10/09/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 10 SEC. TWP. Land Grant 00114, RNG.
Lat 38.76472944 Long -90.1733395

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 367.7 ft
Begin Core Elev. 366.2 ft

BORING NO. BB-21
Station 1799+83.72
Offset 97.6 ft L (EB)
Ground Surface Elev. 388.7 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, soft, aphanitic, banded to thinly bedded, slightly weathered, dense.	1	55	0	3		
Depth 23.7', Dry Density: 162.6 pcf.	2	95	35	4.4	597.6	0.2
-25						
Moderately hard, banded, moderately weathered.						
Banded to thinly bedded.						
Depth 29.9', Dry Density: 161.5 pcf.					517.8	0.8
-30						
	3	100	100	2		
	4	100	85	2.7		
-35						
Thinly to medium bedded.						
Depth 35.4', Dry Density: 163.4 pcf.					1097.3	0.1
-40						
Depth 40.9', Dry Density: 162.5 pcf.					418.3	0.1
346.2						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 2 of 2

Date 10/09/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 10 SEC. TWP. Land Grant 00114, RNG.
Lat 38.76472944 Long -90.1733395

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 367.7 ft
Begin Core Elev. 366.2 ft

BORING NO. BB-21
Station 1799+83.72
Offset 97.6 ft L (EB)
Ground Surface Elev. 388.7 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, moderately hard, aphanitic to very finely crystalline, thin to medium bedding, moderately weathered, dense. *(continued)*	5	98	94	2.8		
Depth 43.5', Dry Density: 166.6 pcf.					606.6	0.1
-45						
-50						
Depth 52.1', Dry Density: 165.6 pcf.					676.1	0.1
336.2 Boring terminated at 52.5 feet.						
-55						
-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 10
STRUCTURE NO. 060–0351 (WB)
SHEET 254 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	759
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/13/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 11, SEC., TWP. Land Grant 00114, RNG.
Lat 38.764696 Long -90.172611

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-23 Offset
Station 1801+82.38
Offset 152.8 ft L (EB)
Ground Surface Elev. 389.2 ft

Surface Water Elev. 389.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 389.2 (+/-) feet. Surface elevation at river bottom = 368.2 (+/-) feet. Sampling began 21.0 feet below water level.				
	-5			
	-10			
	-15			
	-20			
	368.2			
Sand: Brown, fine to coarse grained, loose, A-2.		2 (50/1")	NC	--
	366.4			
Weathered Limestone.	366.0			
Borehole continued with rock coring.				
	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/13/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 11, SEC., TWP. Land Grant 00114, RNG.
Lat 38.764696 Long -90.172611

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 366.2 ft
Begin Core Elev. 366.0 ft

BORING NO. BB-23 Offset
Station 1801+82.38
Offset 152.8 ft L (EB)
Ground Surface Elev. 389.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thinly bedded, slightly weathered, dense, with stylolites.	366.0	1	94	28	3.3		
	-25						
	363.3						
Sandy Limestone: Greenish-gray, hard, very finely crystalline, thinly bedded, slightly weathered, dense, trace shale partings.		2	100	73	4.4		
Depth 29.3', Dry Density: 16.7 pcf.	359.2 -30					738.0	0.1
Argillaceous Limestone: Light gray, moderately hard to hard, aphanitic, medium bedding, fresh, dense, with shale partings. *Depth 30.4', Dry Density: 164.4 pcf.*						719.3	0.2
		3	100	93	3.8		
	-35						
Depth 35.9', Dry Density: 165.1 pcf.	352.6					883.4	0.1
Limestone: Light gray, hard, finely crystalline, thickly bedded, fresh, dense.							
	-40						
Depth 40.3', Dry Density: 163.8 pcf.						432.2	0.1

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/13/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 11, SEC., TWP. Land Grant 00114, RNG.
Lat 38.764696 Long -90.172611

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 366.2 ft
Begin Core Elev. 366.0 ft

BORING NO. BB-23 Offset
Station 1801+82.38
Offset 152.8 ft L (EB)
Ground Surface Elev. 389.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, finely crystalline, thickly bedded, fresh, dense. *(continued)*		4	96	96	3.6		
Depth 44.5', Dry Density: 163.1 pcf.	-45					658.0	0.1
Very finely crystalline.							
	-50						
Depth 50.3', Dry Density: 165.4 pcf.						794.4	0.2
	336.0						
Boring terminated at 52.8 feet.							
	-55						
	-60						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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BORING LOGS – PIER 11
STRUCTURE NO. 060–0351 (WB)
SHEET 255 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	760
		CONTRACT NO. 76J90		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 10/12/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 11, SEC., TWP. Land Grant 00114, RNG.
Lat 38.764633 Long -90.172050

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-23
Station 1801+79.10
Offset 126.8 ft L (EB)
Ground Surface Elev. 389.7 ft

Surface Water Elev. 389.7 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 389.7 (+/-) feet. Surface elevation at river bottom = 368.7 (+/-) feet. Sampling began 21.0 feet below water level.			
368.7			
Sand: Brown, fine to coarse grained, medium dense, A-3.	6 6 5	NC	--
367.2			
Weathered Limestone.			
366.7			
Borehole continued with rock coring.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 10/12/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 11, SEC., TWP. Land Grant 00114, RNG.
Lat 38.764633 Long -90.172050

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 367.2 ft
Begin Core Elev. 366.5 ft

BORING NO. BB-23
Station 1801+79.10
Offset 126.8 ft L (EB)
Ground Surface Elev. 389.7 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, finely crystalline, thinly bedded, slightly weathered, dense. *(continued)*	1	98	55	4.4		
363.7						
Sandy Limestone: Gray, hard, finely to medium crystalline, medium bedding, slightly weathered to fresh, dense, some shale partings. *Depth 26.6', Dry Density: 157.5 pcf.*					623.7	0.2
Depth 29.3', Dry Density: 163.6 pcf.					612.9	0.2
357.0						
Argillaceous Limestone: Light gray, aphanitic, moderately hard, thickly bedded, slightly weathered to fresh, dense, some shale partings.						
356.5						
Boring terminated at 33.2 feet.						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 11
STRUCTURE NO. 060–0351 (WB)
SHEET 256 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	761
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 10/16/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 12, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.764366 Long -90.171900

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-27
Station 1804+12.53
Offset 100.3 ft L (EB)
Ground Surface Elev. 388.5 ft

Surface Water Elev. 388.5 ft
Stream Bed Elev. ___ ft

Groundwater Elev.:
First Encounter ___ ft
Upon Completion ___ ft
After ___ Hrs. ___ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 388.5 (+/-) feet. Surface elevation at river bottom = 359.2 (+/-) feet. Sampling began 29.3 feet below water level.					
		-5			
		-10			
		-15			
	368.5	-20			
		-25			
	359.2				
Sand: Brown, fine to coarse grained, A-3.		-30	2 50/3"	NC	--
	356.3				
Borehole continued with rock coring.					
		-35			
		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 10/16/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 12, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.764366 Long -90.171900

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-27
Station 1804+12.53
Offset 100.3 ft L (EB)
Ground Surface Elev. 388.5 ft

CORING BARREL TYPE & SIZE Solid Barrel NQ

Core Diameter 1.86 in
Top of Rock Elev. 358.5 ft
Begin Core Elev. 356.3 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Sandy Limestone: Light gray, soft, thinly bedded, slightly weathered, dense.	356.3		1	100	0	0.6		
			2	100	56	3		
		-35						
	351.7							
Limestone: Light gray, moderately hard, very finely crystalline, thin to medium bedding, fresh, dense. *Depth 37.0 feet. Dry Density: 164.0 pcf.*							939.2	0.1
		-40						
			3	100	96	3.6		
Depth 43.0 feet. Dry Density: 164.7 pcf.							854.3	0.2
Depth 44.4 feet. Dry Density: 165.8 pcf.		-45					924.5	0.1
Depth 49.6 feet. Dry Density: 156.3 pcf.		-50					726.6	1.3
Gray.								

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 2 of 2

Date 10/16/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 12, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.764366 Long -90.171900

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-27
Station 1804+12.53
Offset 100.3 ft L (EB)
Ground Surface Elev. 388.5 ft

CORING BARREL TYPE & SIZE Solid Barrel NQ

Core Diameter 1.86 in
Top of Rock Elev. 358.5 ft
Begin Core Elev. 356.3 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
	335.7							
Limestone: Gray, moderately hard, very finely crystalline, thin to medium bedding, fresh, dense.			4	100	100	3.4		
Depth 54.4 feet. Dry Density: 159.5 pcf.		-55					830.1	0.1
		-60						
Depth 60.9 feet. Dry Density: 165.6 pcf.							542.5	0.2
	325.7							
Boring terminated at 62.8 feet.								
		-65						
		-70						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/19-20/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 13, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764183 Long -90.171174

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-31
Station 1806+30.02
Offset 100.7 ft L (EB)
Ground Surface Elev. 390.0 ft

Surface Water Elev. 390.0 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 390.0 (+/-) feet. Surface elevation at river bottom = 365.1 (+/-) feet. Sampling began 23.1 feet below water level.				
	366.9			
Sand: Brownish-gray, fine to coarse grained, very loose, A-3.		1 WOH WOH	NC	--
	-25			
Gray.		WOH 1 2	NC	--
	-30			
		3 5 5	NC	--
	-35			
		6 4 1	NC	--
	370.0 -20		350.0 -40	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/19-20/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 13, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764183 Long -90.171174

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-31
Station 1806+30.02
Offset 100.7 ft L (EB)
Ground Surface Elev. 390.0 ft

Surface Water Elev. 390.0 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, very loose, A-3. *(continued)*		11 8 4	NC	--
		3 50/1"	NC	--
Weathered Limestone.	346.5 346.4			
Borehole continued with rock coring.	-45			
	-50			
	-55			
	-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/19-20/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 13, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764183 Long -90.171174

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 346.5 ft
Begin Core Elev. 346.4 ft

BORING NO. BB-31
Station 1806+30.02
Offset 100.7 ft L (EB)
Ground Surface Elev. 390.0 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thin to medium bedding, slightly weathered, trace fine clay seams and stylolites.	346.4 -45	1	99	83	3.3		
Depth 46.1 feet. Dry Density: 166.3 pcf.						482.3	0.2
17 inch vertical fracture.	-50						
Depth 52.8 feet. Dry Density: 165.4 pcf.						768.2	0.1
With shale partings.	-55	2	100	92	3.1		
Medium bedded.							
Depth 57.8 feet. Dry Density: 135.9 pcf.						999.9	0.1
15 inch vertical fracture.	-60						
Depth 62.9 feet. Dry Density: 135.3 pcf.	326.4					1008.5	0.2

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 13
STRUCTURE NO. 060–0351 (WB)
SHEET 258 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	763
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/19-20/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 13, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764183 Long -90.171174

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NQ
Station 806+89.23

Core Diameter 1.86 in
Top of Rock Elev. 346.5 ft
Begin Core Elev. 346.4 ft

BORING NO. BB-31
Station 1806+30.02
Offset 100.7 ft L (EB)
Ground Surface Elev. 390.0 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thickly bedded, slightly weathered, dense.	-65	3	98	98	3.3		
Depth 65.2 feet. Dry Density: 165.9 pcf.						576.7	0.1
	-70						
Shaley Limestone: Gray, hard, aphanitic, thickly bedded, slightly weathered, dense.	319.9						
3 inch vertical fracture.	317.9						
Limestone: Light gray, hard, very finely crystalline, thickly bedded, slightly weathered, dense.							
Depth 73.1 feet. Dry Density: 167.5 pcf.	316.4					497.6	0.1
Boring terminated at 73.2 feet.							
	-75						
	-80						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 13
STRUCTURE NO. 060–0351 (WB)
SHEET 259 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	764
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/23-24/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 14, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764009 Long -90.170315

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-33
Station 1808+82.57
Offset 116.0 ft L (EB)
Ground Surface Elev. 392.1 ft

Surface Water Elev. 392.1 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 392.1 (+/-) feet. Surface elevation at river bottom = 367.2 (+/-) feet. Sampling began 22.8 feet below water level.			
369.3 Sand: Brown, fine to coarse grained, very loose, A-3.	1 WOH 1	NC	--
Brownish-gray.	2 1 2	NC	--
Brown.	3 2 3	NC	--
372.1 / 352.1	2 4	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/23-24/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 14, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764009 Long -90.170315

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-33
Station 1808+82.57
Offset 116.0 ft L (EB)
Ground Surface Elev. 392.1 ft

Surface Water Elev. 392.1 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, medium dense, A-3. *(continued)*	5		
346.9 / 346.6 Clay: Gray, very stiff, clayey shale, A-7.	17 13 10	NC	12 --
Sand: Gray, fine to coarse grained, medium dense, A-3. 343.1			
Borehole continued with rock coring.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/23-24/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 14, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764009 Long -90.170315

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 343.1 ft
Begin Core Elev. 343.1 ft

BORING NO. BB-33
Station 1808+82.57
Offset 116.0 ft L (EB)
Ground Surface Elev. 392.1 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thinly bedded, slightly weathered, dense. 343.1	1	98	80	4.5		
2.3 inch chert.						
Depth 51.7 feet. Dry Density: 166.4 pcf.					652.7	0.5
Thickly bedded.						
Depth 57.4 feet. Dry Density: 166.5 pcf.					1131.4	0.1
Depth 59.4 feet. Dry Density: 167.5 pcf.	2	100	88	3.5	1027.0	0.1
With interbedded shale.						
2 inch shaley limestone. *Depth 57.1 feet. Dry Density: 161.8 pcf.* 323.1					1048.0	0.7

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 14
STRUCTURE NO. 060–0351 (WB)
SHEET 260 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	765
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/23-24/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 14, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.764009 Long -90.170315

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NQ
Station 806+89.23

Core Diameter 1.86 in
Top of Rock Elev. 343.1 ft
Begin Core Elev. 343.1 ft

BORING NO. BB-33
Station 1808+82.57
Offset 116.0 ft L (EB)
Ground Surface Elev. 392.1 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, medium bedded, slightly weathered, dense. *(continued)*	-70	3	98	97	3.9		
Depth 70.0 feet. Dry Density: 167.0 pcf.						660.0	0.2
	-75						
Depth 76.5 feet. Dry Density: 166.6 pcf.						953.6	0.1
	313.1						
Boring terminated at 79.0 feet.	-80						
	-85						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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BORING LOGS – PIER 14
STRUCTURE NO. 060–0351 (WB)
SHEET 261 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	766
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/30/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76371911 Long -90.16928955

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-25
Station 1811+95.77
Offset 103.8 ft L (EB)
Ground Surface Elev. 400.2 ft

Surface Water Elev. 400.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 400.2 (+/-) feet. Surface elevation at river bottom = 371.9 (+/-) feet. Sampling began 28.3 feet below water level.			
-5			
-10			
-15			
380.2 -20			
371.9 Sand: Brown, fine to coarse grained, very loose to very dense, A-2. -30	5 2 2	NC	--
Gray. -35	2 0 1	NC	--
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/30/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76371911 Long -90.16928955

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-25
Station 1811+95.77
Offset 103.8 ft L (EB)
Ground Surface Elev. 400.2 ft

Surface Water Elev. 400.2 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
359.2	1 1 1	NC	--
Gravel: Coarse, with limestone fragments, A-1. -45			
No recovery.	4 7 8	NC	--
-50			
	15 22 10	NC	--
-55	15 50/2" 50/1"	NC	--
344.5 Borehole continued with rock coring. -60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/30/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76371911 Long -90.16928955

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 344.5 ft
Begin Core Elev. 344.5 ft

BORING NO. BB-25
Station 1811+95.77
Offset 103.8 ft L (EB)
Ground Surface Elev. 400.2 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Gravel: Fine to coarse, with weathered limestone. 344.5 A-1. With weathered limestone. 343.2	1	38	0	1.5		
Limestone: Light gray, hard, finely crystalline, banded to thinly bedded, moderately weathered, moderately fractured. Trace fine sand. *Depth 58.75', Dry Density: 165.2 pcf.* 341.3	2	91	47	4.1	389.9	0.3
Shaley limestone: Gray and green, soft to moderately hard, finely crystalline, laminated to banded, with interbedded shale seams. -60 4.5" Shale seam. 339.9						7.5
Limestone: Light gray, hard, finely crystalline, thin to medium bedded, slightly weathered, slightly fractured, some fine sand. With fine sand. *Depth 63.1', Dry Density: 162.9 pcf.* 5" Open vertical fracture overlies sandy shale seam. -65	3	100	87	3.6	607.5	0.1
9" Open vertical fracture. 332.2	4	100	96	3.3		
Sandy Limestone: Gray, very hard, fine grained, thin to medium bedded, some chert, slightly weathered, slightly fractured. -70 *Depth 71.0', Dry Density: 167.3 pcf.*					710.8	0.1
Depth 74.3', Dry Density: 164.6 pcf. -75	5	97	93	3	301.2	0.5

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 15
STRUCTURE NO. 060–0351 (WB)
SHEET 262 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	767
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/30/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76371911 Long -90.16928855

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NQ
Core Diameter 1.86 in
Top of Rock Elev. 344.5 ft
Begin Core Elev. 344.5 ft

BORING NO. BB-25
Station 1811+95.77
Offset 103.8 ft L (EB)
Ground Surface Elev. 400.2 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
323.7	6	99	97	2.6		
Calcareous Siltstone: Green and light gray, soft to mocerately hard, thickly bedded, slightly weathered, no fracturing. *Depth 77.1', Dry Density: 178.6 pcf.*					263.7	1.2
322.2						
Sandy Limestone: Gray, very hard, fine grained, thickly bedded, some chert, slightly weathered, slightly fractured.						
-80						
Thinly to medium bedded.						
Banded to thinly bedded.						
-85						
314.5						
Boring terminated at 85.7 feet. Boring grouted to 85.7 feet.						
-90						
-95						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/29/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 15, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76376494 Long -90.16957779

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-37
Station 1811+12.43
Offset 94.3 ft L (EB)
Ground Surface Elev. 393.8 ft

Surface Water Elev. 393.8 ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 393.8 (+/-) feet. Surface elevation at river bottom = 367.1 (+/-) feet. Sampling began 26.7 feet below water level.			
-5			
-10			
-15			
373.8 -20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-25			
367.1			
Sand: Brown, fine to coarse grained, loose, A-3.	2 3 4	NC	--
-30	1 1 WOH	NC	--
-35			
Very loose.	2 4 4	NC	--
353.8 -40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 10/29/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 15, SEC. 26, TWP. 4N, RNG. 10W
Lat 38.76376494 Long -90.16957779

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-37
Station 1811+12.43
Offset 94.3 ft L (EB)
Ground Surface Elev. 393.8 ft

Surface Water Elev. 393.8 ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine to coarse grained, loose, A-3.	2 1 3	NC	--
-45			
Gray.	4 14 17	NC	--
344.6			
Borehole continued with rock coring.			
-50			
-55			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 15
STRUCTURE NO. 060–0351 (WB)
SHEET 263 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	768
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/29/20

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 15, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76376494 **Long** -90.16857779

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB) **CORING BARREL TYPE & SIZE** Solid Barrel NQ
Station 806+89.23
Core Diameter 1.86 in
Top of Rock Elev. 344.6 ft
Begin Core Elev. 344.6 ft

BORING NO. BB-37
Station 1811+12.43
Offset 94.3 ft L (EB)
Ground Surface Elev. 393.8 ft

Description		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, very finely crystalline, banded to thinly bedded, fresh, dense.	344.6	-50	1	98	97	7		
Thin to medium bedded.							365.4	0.3
Depth 53.7', Dry Density: 164.9 pcf.		-55						
Depth 58.3', Dry Density: 166.5 pcf.							843.4	0.1
		-60	2	98	96	6		
Depth 61.3', Dry Density: 164.2 pcf.							559.9	0.2
		-65						
Depth 67.3', Dry Density: 166.7 pcf.							634.5	0.2
Sandy Limestone: Light gray, very hard, fine to coarse grained, medium bedded, fresh, interbedded with dark gray sandstone bands.	325.6 324.6							

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 10/29/20

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 15, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76376494 **Long** -90.16857779

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB) **CORING BARREL TYPE & SIZE** Solid Barrel NQ
Station 806+89.23
Core Diameter 1.86 in
Top of Rock Elev. 344.6 ft
Begin Core Elev. 344.6 ft

BORING NO. BB-37
Station 1811+12.43
Offset 94.3 ft L (EB)
Ground Surface Elev. 393.8 ft

Description		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard, very finely crystalline, thin to thickly bedded, fresh, dense.		-70	3	95	95	10	551.8	0.2
Depth 69.4', Dry Density: 166.0 pcf.								
Depth 75.6', Dry Density: 165.4 pcf.		-75					828.6	0.3
Banded to thinly bedded.								
	314.6	-80						
Boring terminated at 79.2 feet.								
		-85						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 15
STRUCTURE NO. 060–0351 (WB)
SHEET 264 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	769
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 04/22/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 16, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.7656485 Long -90.16882821

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-39
Station 1813+44.51
Offset 92.7 ft L (EB)
Ground Surface Elev. 403.9 ft

Surface Water Elev. 396.5 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 403.9 (+/-) feet. Surface elevation at river bottom = 370.0 (+/-) feet. Sampling began 41.2 feet below water level.			
-5			
-10			
-15			
383.9 -20			
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 2 of 2

Date 04/22/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 16, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.7656485 Long -90.16882821

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-39
Station 1813+44.51
Offset 92.7 ft L (EB)
Ground Surface Elev. 403.9 ft

Surface Water Elev. 396.5 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
362.7			
Sand: Brown, fine to coarse grained, loose, wet, trace fine gravel. A-1	2 3 2	NC	--
359.9			
Sand: Brown, fine to coarse grained, loose, wet. A-3	3 3 4	NC	--
-50			
352.7			
Poor recovery - coarse gravel lodged in shoe.	5 3 4	NC	--
350.9			
Sand: Gray, fine to coarse grained, medium dense, wet, with trace fine to coarse gravel. A-1			
-55			
346.6	24 50/3"	NC	--
Clayey Shale: Gray			
345.5			
Borehole continued with rock coring.			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 04/22/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 16, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.7656485 Long -90.16882821

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

BORING NO. BB-39
Station 1813+44.51
Offset 92.7 ft L (EB)
Ground Surface Elev. 403.9 ft

Core Diameter 2.06 in
Top of Rock Elev. 346.3 ft
Begin Core Elev. 345.5 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline to aphanitic, medium to massive bedding, slightly weathered, dense. With clayey shale deposits	1	92	74	4		
Depth 59.6', Dry Density: 164.9 pcf. -60					670.1	0.1
Vertical fracturing caused by coring process.						
-65						
Depth 65.7', Dry Density: 166.3 pcf.					1024.3	0.1
	2	100	96	3.5		
Massive bedding. -70						
Depth 71.7', Dry Density: 166.2 pcf.					1017.5	0.2
Depth 74.0', Dry Density: 163.7 pcf. -75					392.2	0.4

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/22/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 16, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.7656485 Long -90.16882621

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23

Core Diameter 2.06 in
Top of Rock Elev. 346.3 ft
Begin Core Elev. 345.5 ft

BORING NO. BB-39
Station 1813+44.51
Offset 92.7 ft L (EB)
Ground Surface Elev. 403.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline to aphanitic, medium to massive bedding, slightly weathered, dense. *(continued)*		3	99	88	3.3		
Depth 79.0', Dry Density: 166.4 pcf.	-80					990.8	0.1
Depth 85.5', Dry Density: 167.6 pcf.	-85					784.6	0.1
	315.5						
Boring terminated at 88.4 feet.	-90						
	-95						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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BORING LOGS – PIER 16
STRUCTURE NO. 060–0351 (WB)
SHEET 266 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	771
		CONTRACT NO. 76J90		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 04/21/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 17, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76340375 Long -90.16818102

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-41
Station 1815+42.88
Offset 91.5 ft L (EB)
Ground Surface Elev. 403.2 ft

Surface Water Elev. 395.9 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
River surface elevation at 403.2 (+/-) feet. Surface elevation at river bottom = 381.1 (+/-) feet.			
-5			
-10			
-15			
383.2 -20			
381.1 *Samples not obtained of river deposits (sediment and sand).*			
-25			
-30			
-35			
363.2 -40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 04/21/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 17, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76340375 Long -9016818102

COUNTY Madison DRILLING METHOD HSA, NQ Casing HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-41
Station 1815+42.88
Offset 91.5 ft L (EB)
Ground Surface Elev. 403.2 ft

Surface Water Elev. 395.9 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-45			
-50			
-55			
Driller observed harder drilling from 50 to 59 feet. Possible cobbles or boulders.			
344.1 Borehole continued with rock coring. -60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/21/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 17, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76340375 Long -9016818102

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 344.1 ft
Begin Core Elev. 344.1 ft

BORING NO. BB-41
Station 1815+42.88
Offset 91.5 ft L (EB)
Ground Surface Elev. 403.2 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, very finely crystalline to aphantic, thin to massive bedding, slightly weathered, dense. Thin brown sandstone from 59.6 to 59.7 feet with thin greenish-gray clayey shale deposit. Vertical fracturing caused by coring process. 344.1	1	97	78	4.2		
-60						
Depth 62.2', Dry Density: 166.4 pcf.					540.5	0.2
-65						
Depth 66.6', Dry Density: 166.2 pcf.					346.3	0.3
-70	2	100	94	4		
Massive. *Depth 69.9', Dry Density: 162.4 pcf.*					460.5	0.9
-75						
Depth 78.4', Dry Density: 167.4 pcf.					414.3	0.1

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 17
STRUCTURE NO. 060–0351 (WB)
SHEET 267 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	772
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 04/21/21

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 17, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76340375 Long -90.16818102

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23

Core Diameter 2.06 in
Top of Rock Elev. 344.1 ft
Begin Core Elev. 344.1 ft

BORING NO. BB-41
Station 1815+42.88
Offset 91.5 ft L (EB)
Ground Surface Elev. 403.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Thin to thick bedded. Limestone: Light gray, hard to very hard, very finely crystalline to aphantic, thin to massive bedding, slightly weathered, dense. *(continued)* Medium to thick bedding. *Depth 80.4', Dry Density: 167.0 pcf.*	-80	3	100	94	4.5	424.0	0.1
Depth 87.6', Dry Density: 167.2 pcf.	-85					496.2	0.1
Boring terminated at 89.1 feet.	314.1 -90 -95						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 17
STRUCTURE NO. 060–0351 (WB)
SHEET 268 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	773
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/28/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76323037 Long -90.16716985

COUNTY Madison DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-29
Station 1818+26.03
Offset 129.5 ft L (EB)
Ground Surface Elev. 418.0 ft

Surface Water Elev. 418.0 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 409.0 ft
Upon Completion ft
After 16.0 Hrs. 409.0 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
447.8			
Topsoil.			
Loam: Brown, very loose, trace fine gravel, A-4.	2 1 3	0.5 P	17
Particle Size Analysis Test performed.	1 1 1	0.3 S/20	27
-5			
With intercede of silty clay.	1 1 2	0.8 P	28
410.0			
Sand: Brown, fine grained, very loose, A-2.	2 1 1	NC	--
-10			
With silt.	0 1 1	NC	--
405.0			
Silty Clay: Brown, soft, A-6.	1 1 2	0.8 B/20	30
-15			
	1 2 1	1.0 B/20	49
400.0			
Sandy Loam: Brown, fine grained, loose to medium dense, A-4. *Grain Size Analysis Test performed.*	4 6 9	NC	--
398.0 -20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine to coarse grained, loose to medium dense, A-2.	7 6 11	NC	--
Trace gravel.	7 7 9	NC	--
-25			
	7 9 10	NC	--
390.0			
Sandy Loam: Brown, fine to coarse grained, loose to medium dense, A-2. *Grain Size Analysis Test performed.*	5 7 7	NC	--
-30			
Dark gray and reddish-brown.	5 5 5	NC	--
-35			
381.0			
Sand: Gray, fine to coarse grained, loose to medium dense, A-2.	9 10 11	NC	--
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/28/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76323037 Long -90.16716985

COUNTY Madison DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-29
Station 1818+26.03
Offset 129.5 ft L (EB)
Ground Surface Elev. 418.0 ft

Surface Water Elev. 418.0 ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 409.0 ft
Upon Completion ft
After 16.0 Hrs. 409.0 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, loose to medium dense, A-2. *(continued)*			
-45	5 4 4	NC	--
Poor recovery. *Trace fine gravel.*	13 16 20	NC	--
-50			
	14 11 12	NC	--
-55			
	14 10 7	NC	--
-60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, loose to medium dense, A-2. *(continued)*			
Some gravel.	14 29 39	NC	--
-65			
	10 9 8	NC	--
-70			
345.1			
Weathered Limestone. 344.5	100/0"	NC	--
Borehole continued with rock coring.			
-75			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/28/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76323037 Long -90.16716985

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX
Core Diameter 2.06 in
Top of Rock Elev. 345.1 ft
Begin Core Elev. 344.5 ft

BORING NO. BB-29
Station 1818+26.03
Offset 129.5 ft L (EB)
Ground Surface Elev. 418.0 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard, very finely crystalline, banded, slightly weathered, dense. 344.5	1	100	55	5		
-75						
3" Open vertical fracture. Thinly to medium bedded. 342.5						
Sandy Limestone: Brownish-gray, finely crystalline, fine grained, thinly to medium bedded, moderately weathered, with fractures infilled by light green clayey shale. 341.5						
Limestone: Gray, hard, very finely crystalline, thinly to medium bedded, slightly weathered, dense.						
Finely crystalline.						
-80						
Depth 80.05', Dry Density: 166.3 pcf.					863.1	0.2
4.5" Open vertical fracture.						
No recovery 83.5-84.6 feet.						
Thinly bedded. -85	2	100	49	1.7		
2" Open vertical fracture. *Depth 86.6', Dry Density: 166.5 pcf.*						
Thinly to medium bedded.					913.9	0.1
Banded to thinly bedded.						
-90						
324.5						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 18
STRUCTURE NO. 060–0351 (WB)
SHEET 269 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	774
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/28/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76323037 Long -90.16716985

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX
Core Diameter 2.06 in
Top of Rock Elev. 345.1 ft
Begin Core Elev. 344.5 ft

BORING NO. BB-29
Station 1818+26.03
Offset 129.5 ft L (EB)
Ground Surface Elev. 418.0 ft

Limestone: Gray, hard, finely crystalline, banded to thinly bedded, slightly weathered, dense.*(Continued)*	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Thinly to medium bedded.	-95	3	100	30	3.1	876.1	0.1
Depth 94.5', Dry Density: 168.6 pcf.							
Banded to thinly bedded.							
	-100						
	-105	4	100	79	4.1		
8" Open vertical fracture.							
3" Open vertical fracture.	-110						
Depth 110.5', Dry Density: 168.6 pcf.						823.6	0.1
3" Open vertical fracture. Thinly bedded.	304.5						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/28/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76323037 Long -90.16716985

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX
Core Diameter 2.06 in
Top of Rock Elev. 345.1 ft
Begin Core Elev. 344.5 ft

BORING NO. BB-29
Station 1818+26.03
Offset 129.5 ft L (EB)
Ground Surface Elev. 418.0 ft

Limestone: Gray, hard, finely crystalline, thinly bedded, slightly weathered, dense.*(Continued)*	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
304.2							
Boring terminated at 113.8 feet. Boring grouted to 113.8 feet.	-115						
	-120						
	-125						
	-130						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/09/20

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 18 SEC. 25 TWP. 4N RNG. 10W
Lat 38.76325207 Long -90.16751444

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

Surface Water Elev. ft
Stream Bed Elev. ft

BORING NO. BB-45
Station 1817+29.74
Offset 98.2 ft L (EB)
Ground Surface Elev. 417.1 ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS	UCS Qu (tsf)	MOIST (%)
Silty Clay: Gray, soft, moist, trace roots, with layers of fine sandy loam, fill, A-6.		1 1 1	<0.25 P	22
	414.1			
Sandy Loam: Gray, loose, moist, trace crushed rock, fine grained, A-2		2 3 4	NC	--
	-5			
		4 4 2	NC	--
	409.6			
Loam: Gray, soft to medium stiff, moist, with layers of silty clay and sandy loam, A-4.		3 2 2	<0.25 P	28
	-10			
		3 2 1	<0.25 P	31
	404.1			
Silty Clay: gray, soft to very soft, moist, A-4. *Grain Size Analysis performed.*		2 1 1	NC	33
	-15			
		1 1 2	0.9 B/20	--
	400.1			
Clay: Gray, moist, soft, A-7.	399.1			
Loam: Gray, soft to medium stiff, moist, with layers of silty clay and sandy loam, A-4.	398.1	1 1 1	NC	35
	397.1 -20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Gray, moist, soft, A-7.				
Loam: Gray, moist, very soft, moist, A-4.		1 1 0	NC	35
With layers of sandy loam and clay.	-25	3 1 5	NC	30
	391.6			
Loam: Gray, moist, soft, with layers of clay, A-2.		7 6 5	NC	--
	389.1			
Clay: Gray, soft, moist, with layers of sandy clay loam, A-6. *Grain Size Analysis performed.*	-30	1 1 1	0.1 S/10	33
	385.1			
Sand: Gray, moist, fine to coarse grained, A-2.	-35	3 3 7	NC	--
		6 8 12	NC	--
	377.1 -40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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CDI CIVIL DESIGN, INC.

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN - JGS	REVISED -
PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 18
STRUCTURE NO. 060–0351 (WB)
SHEET 270 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	775
		CONTRACT NO. 76J90		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation

Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/09/20

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 18, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76325207 **Long** -90.16751444

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-45
Station 1817+29.74
Offset 98.2 ft L (EB)
Ground Surface Elev. 417.1 ft

Surface Water Elev. ______ ft
Stream Bed Elev. ______ ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ______ ft
After ____ **Hrs.** ______ ft

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, medium dense, moist, fine to coarse grained, A-3.				
	-45	7 9 10	NC	--
	-50	9 10 8	NC	--
	-55	10 13 13	NC	--
357.1	-60	12 12 15	NC	--

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, medium dense, moist, fine to coarse grained, with gravel, A-1.				
	-65	10 14 13	NC	--
	-70	8 9 10	NC	--
343.6 Weathered Limestone.		50/3"	NC	--
342.1	-75			
Borehole continued with rock coring.				
	-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/09/20

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 18, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76325207 **Long** -90.16751444

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 343.6 ft
Begin Core Elev. 342.1 ft

BORING NO. BB-45
Station 1817+29.74
Offset 98.2 ft L (EB)
Ground Surface Elev. 417.1 ft

Description	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard, aphanitic to very finely crystalline, thinly bedded, slightly to moderately weathered, dense. 342.1		1	92	46	2.2		
Depth 77.4 feet. Dry Density: 167.0 pcf.						757.7	0.1
	-80						
Trace clay seams.							
Depth 83.1 feet. Dry Density: 166.9 pcf.						558.3	0.1
333.1							
Shaley Limestone: Dark gray, thinly bedded, slightly weathered, dense.	-85						
331.8		2	100	60	2.4		
Limestone: Gray, hard, aphanitic to very finely crystalline, thin to massive bedding, fresh to slightly weathered, dense.							
Depth 87.9 feet. Dry Density: 165.0 pcf.						1020.9	0.3
	-90						
Depth 93.3 feet. Dry Density: 167.7 pcf.						963.1	0.1
	-95						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/09/20

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 18, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76325207 **Long** -90.16751444

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 343.6 ft
Begin Core Elev. 342.1 ft

BORING NO. BB-45
Station 1817+29.74
Offset 98.2 ft L (EB)
Ground Surface Elev. 417.1 ft

Description	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard, aphanitic to very finely crystalline, thin to massive bedding, fresh to slightly weathered, dense. *(continued)* Thin to medium bedding.		3	100	58	2.6		
Depth 97.9 feet. Dry Density: 166.6 pcf.						903.3	0.2
	-100						
Depth 104.3 feet. Dry Density: 167.1 pcf. 312.1	-105					1322.3	0.1
Boring terminated at 105.0 feet.							
	-110						
	-115						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 5/19-20/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 19, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76305976 **Long** -90.16673113

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-47
Station 1819+62.82
Offset 100.4 ft L (EB)
Ground Surface Elev. 416.5 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ____ ft
After ____ **Hrs.** ____ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Dark gray, medium stiff, moist, A-6.			1 3 2	1.0 P	37
Sandy Loam: Gray, fine grained, loose, moist, A-2.	412.5	-5	2 4 3	1.0 P	31
Silt: Gray, soft, moist, A-4	411.0		1 3 1	<0.25 P	30
Clay: Gray, with brown, medium stiff, moist, A-7. *Atterberg Limits test performed.*	409.5	-10	1 2 2	1.0 B/20	31
			1 1 2	0.8 B/20	38
Sand: Gray and brown, fine grained, loose, moist, A-2.	404.0	-15	4 4 4	NC	--
			4 4 5	NC	--
Medium dense.	396.5	-20	6 8 10	NC	--
Sandy Loam: Gray and brown, fine grained, loose to medium dense, moist, A-2.			6 8 10	NC	--
		-25	6 5 5	NC	--
			7 8 11	NC	--
	386.5	-30	3 3 7	NC	--
Sand: Gray, fine to coarse grained, medium dense, moist, A-2.		-35	5 9 8	NC	--
	376.5	-40	7 13 13	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
sci engineering inc

SOIL BORING LOG

Page 2 of 2

Date 5/19-20/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 19, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76305976 **Long** -90.16673113

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-47
Station 1819+62.82
Offset 100.4 ft L (EB)
Ground Surface Elev. 416.5 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ____ ft
After ____ **Hrs.** ____ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, loose to medium dense, moist, A-2.		-45	7 6 7	NC	--
	367.0				
Coal.	366.5	-50	4 3 1	NC	--
Sand: Gray, fine to coarse grained, loose to medium dense, moist, A-2. Trace organics.	361.5	-55	10 6 6	NC	--
Sand: Gray, fine to coarse grained sand and gravel, dense, moist, A-1.	356.5	-60	28 19 26	NC	--
Sand: Gray, fine to coarse grained, medium dense, moist, A-2.		-65	11 8 5	NC	--
		-70	11 11 11	NC	--
	344.0				
Borehole continued with rock coring.		-75			
		-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 5/19-20/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 19, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76305976 **Long** -90.16673113

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-47
Station 1819+62.82
Offset 100.4 ft L (EB)
Ground Surface Elev. 416.5 ft

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 344.0 ft
Begin Core Elev. 342.5 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard to very hard, micritic, thin bedding, slightly weathered, dense. Cherty from 74.0 to 75.0 feet.	342.5	-75	1	100	40	6.9		
Depth 78.2', Dry Density: 166.3 pcf.							666.6	0.2
Shaley from 79.0 to 81.0 feet.		-80						
Very finely crystalline. *Depth 81.0', Dry Density: 165.1 pcf.*							827.6	0.5
With styolites. *Depth 84.1', Dry Density: 166.8 pcf.*		-85	2	100	30	3.7	754.1	0.1
		-90						
Depth 90.5', Dry Density: 167.0 pcf.							854.0	0.2
	322.5							

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

CDI CIVIL DESIGN, INC.	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS – PIER 19 STRUCTURE NO. 060–0351 (WB)
		CHECKED -	REVISED -		
	PLOT SCALE =	DRAWN - JGS	REVISED -		
	PLOT DATE =	CHECKED -	REVISED -		SHEET 272 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	777
CONTRACT NO. 76J90				
ILLINOIS FED. AID PROJECT				

MODEL: Default
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Illinois Department of Transportation

Division of Highways
sci engineering inc

ROCK CORE LOG

Date 5/19-20/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 19, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76305976 **Long** -90.16673113

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 344.0 ft
Begin Core Elev. 342.5 ft

BORING NO. BB-47
Station 1819+62.82
Offset 100.4 ft L (EB)
Ground Surface Elev. 416.5 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, moderatley hard, micritic to very finely crystalline, thin bedding, moderately weathered, dense, with styolites.			3	98	18	4.7		
		-95						
		-100						
Depth 102.2', Dry Density: 159.8 pcf.							438.5	0.2
	312.5							
Boring terminated at 104.0 feet.								
		-105						
		-110						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/04/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76282598 Long -90.16573044

COUNTY Madison DRILLING METHOD HSA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-35
Station 1822+61.70
Offset 96.8 ft L (EB)
Ground Surface Elev. 415.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Silty Loam: Brown, stiff, A-4.
	3 4 5	0.7 S/10	20	
412.2				
				Sand: Brown, fine grained, loose, A-2.
	4 3 2	NC	--	
-5				
	2 1 1	0.5 P	--	
408.2				
				Silty Loam: Brown, very soft, A-4.
407.2				
				Silty Clay: Brown, soft, A-6.
406.2	1 1 2	0.6 S/15	43	
-10				Clay: Brown and gray, soft, A-7.
404.7				
	1 1 2	0.3 P	34	Silty Loam: Brown, very soft, A-4. *Particle Size Analysis performed.*
401.2				
	2 3 6	NC	--	Sand: Brown and reddish brown, fine grained, A-2.
-15				
	6 10 9	NC	--	Brown.
	7 7 10	NC	--	
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	5 9 8	NC	--	Sand: Brown and reddish brown, fine grained, A-2. *(continued)*
393.0				
	5 6 8	NC	--	Sandy Loam: Brown, fine to coarse grained, medium dense, trace fine gravel, A-2.
-25				
	11 11 12	NC	--	*Grain Size Analysis performed.*
	9 6 9	NC	--	*Grain Size Analysis performed.*
383.2				
	11 12 13	NC	--	Sand: Gray, fine to coarse grained, medium dense, trace fine gravel, A-1.
-35				
378.2				
	11 13 17	NC	--	Sand: Gray, fine grained, medium dense to dense, A-2.
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/04/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76282598 Long -90.16573044

COUNTY Madison DRILLING METHOD HSA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-35
Station 1822+61.70
Offset 96.8 ft L (EB)
Ground Surface Elev. 415.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sand: Gray, fine grained, medium dense to dense, A-2. *(continued)*
	15 17 18	NC	--	
-45				
	13 15 16	NC	--	
-50				
	15 18 25	NC	--	
-55				
358.2				
	9 8 5	NC	--	Sand: Gray, fine to coarse grained, medium dense, trace fine gravel, A-1.
-60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sand: Gray, fine to coarse grained, medium dense, trace fine gravel, A-1. *(continued)*
353.2				
	18 17 24	NC	--	Sand: Grayish brown, fine grained, dense, trace fine gravel, A-2.
-65				
348.2				
	13 10 14	NC	--	Sand: Grayish brown, fine to coarse grained, medium dense to very dense, trace fine gravel, A-1.
-70				
	11 13 13	NC	--	
-75				
340.1				Borehole continued with rock coring.
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 12/04/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25 TWP. 4N RNG. 10W
Lat 38.76282598 Long -90.16573044

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

BORING NO. BB-35
Station 1822+61.70
Offset 96.8 ft L (EB)
Ground Surface Elev. 415.2 ft

Core Diameter 2.06 in
Top of Rock Elev. 340.1 ft
Begin Core Elev. 339.1 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)	Description
	1	100	45	2.7			Limestone: Gray, hard to very hard, very finely crystalline, thinly to medium bedded, slightly weathered, dense.
							Banded to thinly bedded. 2" Open Vertical Fracture.
-80					797.1	0.1	Thinly to medium bedded. *Depth 79.2', Dry Density: 164.6 pcf.*
							Trace clayey shale laminations.
							7" Open vertical fracture.
							2" Open vertical fracture.
-85							
	2	94	48	2.4			
-90							
					489.1	0.1	Thinly to medium bedded. *Depth 93.2', Dry Density: 166.2 pcf.*
-95							
319.1							

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 20
STRUCTURE NO. 060–0351 (WB)
SHEET 274 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	779
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 12/04/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76282598 Long -90.16573044

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23
Core Diameter 2.06 in
Top of Rock Elev. 340.1 ft
BORING NO. BB-35 Begin Core Elev. 339.1 ft
Station 1822+61.70
Offset 96.8 ft L (EB)
Ground Surface Elev. 415.2 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard to very hard, very finely crystalline, thinly to bedded, slightly weathered, dense. *(continued)*		3	100	76	2		
	-100						
Depth 101.7', Dry Density: 165.7 pcf.						797.4	0.2
	-105						
Thickly bedded.							
	309.1						
Boring terminated at 106.1 feet. Boring grouted to 106.1 feet.							
	-110						
	-115						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 5/17-18/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 20, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76282684 Long -90.16596147

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23
BORING NO. BB-51
Station 1821+98.76
Offset 87.4 ft L (EB)
Ground Surface Elev. 415.7 ft

Surface Water Elev. ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Dark gray, medium stiff, moist, A-6.		3 4 6	1.0 P	21
	-5	4 8 7	2.5 P	18
	410.2			
SILTY CLAY: Gray, soft to medium stiff, moist, A-4. *Atterberg Limits test performed.*		2 2 2	0.7 B/20	29
	408.2			
Clay: Gray, soft, moist, A-7.	-10	2 1 2	0.4 S/15	42
	405.7			
Clay: Dark gray, soft, moist, A-6. *Began mud rotary.*		1 1 2	1.2 B/20	37
	403.2			
Sandy Loam: Brown and gray, fine to coarse grained, medium dense, moist, A-2.	-15	3 5 8	NC	--
		5 9 10	NC	--
Fine grained.	-20	5 4 3	NC	--

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Loam: Brown and gray, fine to coarse grained, medium dense, moist, A-2. *(continued)*		5 8 11	NC	--
Fine to coarse grained.	-25	6 8 6	NC	--
		7 7 10	NC	--
	-30	6 12 12	NC	--
Sand: Gray, fine to coarse grained, medium dense, moist, A-2.	385.7			
	-35	5 10 12	NC	--
Trace organics.	375.7 -40	8 15 16	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 5/17-18/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 20, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76282684 Long -90.16596147

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23
BORING NO. BB-51
Station 1821+98.76
Offset 87.4 ft L (EB)
Ground Surface Elev. 415.7 ft

Surface Water Elev. ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, medium dense, moist, A-2. *(continued)*				
Dark gray, fine grained.	-45	4 10 15	NC	--
	350.7			
Gray, dense.	-50			
Dark brown.	-55	15 15 15	NC	--
Medium dense.	355.7 -60	7 7 7	NC	--

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Dark brown, fine grained, dense, moist, A-2.				
	-65	11 16 25	NC	--
Sand: Brown and gray, fine to coarse grained sand and gravel, dense, A-3.	350.7			
	-70	7 16 15	NC	--
	341.7	50/5"	NC	--
Borehole continued with rock coring.	-75			
	-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 20
STRUCTURE NO. 060–0351 (WB)
SHEET 275 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	780
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 5/17-18/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 20 **SEC.** 25 **TWP.** 4N **RNG.** 10W
Lat 38.76282684 **Long** -90.16596147

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23
Core Diameter 2.06 in
BORING NO. BB-51 Top of Rock Elev. 341.7 ft
Station 1821+98.76 Begin Core Elev. 340.2 ft
Offset 87.4 ft L (EB)
Ground Surface Elev. 415.7 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, moderately hard to hard, aphanitic, thin bedding, slightly weathered, dense, with syolites.		1	100	50	5.1		
Cherty.							
Clay seams from 79.5 to 80.0 feet. Shaley from 79.5 to 81.5 feet. *Depth 80.1', Dry Density: 166.6 pcf.*	-80					875.3	0.4
Depth 84.1', Dry Density: 167.0 pcf.	-85					505.1	0.2
	330.2						
Limestone: Gray, moderately hard, aphanitic, banded to thin bedding, moderately weathered, dense.		2	100	28	5.9		
Depth 87.1', Dry Density: 167.6 pcf.	-90					825.1	0.1
Depth 91.1', Dry Density: 166.8 pcf.	-95					772.8	0.1
	320.2						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 5/17-18/2021

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 20 **SEC.** 25 **TWP.** 4N **RNG.** 10W
Lat 38.76282684 **Long** -90.16596147

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23
Core Diameter 2.06 in
BORING NO. BB-51 Top of Rock Elev. 341.7 ft
Station 1821+98.76 Begin Core Elev. 340.2 ft
Offset 87.4 ft L (EB)
Ground Surface Elev. 415.7 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Cherty Limestone: Gray, hard to very hard, aphanitic, thin bedding, fresh, dense.		3	100	41	3.7		
Depth 99.6', Dry Density: 163.8 pcf.	-100					588.6	0.5
Depth 102.7', Dry Density: 156.2 pcf.	-105					575.5	0.5
	310.2						
Boring terminated at 105.5 feet.	-110						
	-115						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/11-12/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 21, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76264092 Long -90.16517544

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-53
Station 1824+32.86
Offset 92.2 ft L (EB)
Ground Surface Elev. 414.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 406.4 ft
Upon Completion ft
After Hrs. 406.4 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silty Loam: Gray, soft to medium stiff, moist, fill, A-4.			
	2 2 2	0.8 P	15
Grain Size Analysis performed. 411.9			
Silty Clay: Gray, medium stiff, moist, fill, A-6.			
	3 4 7	2.5 P	15
409.9 -5			
Silty Clay: Gray, trace brown, medium stiff moist, A-6.			
	3 4 3	1.5 S/20	20
407.4			
Clay: Gray, trace brown, soft, moist, A-6.			
Atterberg Limits test performed.	1 1 2	1.2 B/20	43
404.9 -10			
Silty Clay: Gray, trace brown, medium stiff moist, A-6.			
	1 1 3	0.5 B/20	43
402.9			
Silty Clay Loam: Gray, soft, moist, A-6.			
Grain Size Analysis performed.			
	0 0 3	0.2 B/20	40
399.9 -15			
Sandy Loam: Gray, loose to medium dense, moist, A-2.			
398.4	3 4 6	0.2 B/20	--
Sand: Gray, medium dense, moist, A-3.			
	5 6 6	NC	--
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, medium dense, moist, A-3. *(continued)*			
	8 9 8	NC	--
391.9			
Sand: Gray, medium dense, moist, A-1.			
	7 11 8	NC	--
-25			
	6 8 7	NC	--
	9 9 7	NC	--
-30			
	7 11 7	NC	--
-35			
Loose.	3 2 6	NC	--
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/11-12/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 21, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76264092 Long -90.16517544

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-53
Station 1824+32.86
Offset 92.2 ft L (EB)
Ground Surface Elev. 414.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 406.4 ft
Upon Completion ft
After Hrs. 406.4 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, medium dense, moist, A-1. *(continued)*			
Medium dense.	7 8 4	NC	--
-45			
Loose.	5 4 4	NC	--
-50			
Trace organics.	8 14 15	NC	--
-55			
356.4			
Sand: Dark gray, loose to medium dense, moist, with organics, A-3.	5 4 6	NC	--
354.9 -60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, medium dense, moist, A-1.			
Possible boulder.			
-65	10 14 14	NC	--
	7 9 10	NC	--
-70			
	8 12 17	NC	--
-75			
338.9			
Weathered Limestone.			
337.4			
Borehole continued with rock coring.			
-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/11-12/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 21, SEC. 25, TWP. 4N, RNG. 10W
Lat 38.76264092 Long -90.16517544

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX

BORING NO. BB-53
Station 1824+32.86
Offset 92.2 ft L (EB)
Ground Surface Elev. 414.9 ft

Core Diameter 2.06 in
Top of Rock Elev. 338.9 ft
Begin Core Elev. 337.4 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, aphanitic to very finely crystalline, moderately hard to hard, banded to thickly bedded, slightly to moderately weathered, dense. 337.4	1	98	63	2.7		
Depth 78.7 feet. Dry Density: 166.5 pcf.					1115.6	0.2
-80						
332.9						
Shaley Limestone: Gray, thinly bedded, slightly weathered, dense, trace clay seams. 332.4						
Limestone: Gray, aphanitic to very finely crystalline, moderately hard to hard, banded to thickly bedded, slightly to moderately weathered, dense.					885.2	0.2
Depth 83.1 feet. Dry Density: 166.7 pcf.						
-85						
Hard, thinly bedded, slightly weathered, trace clay seams.	2	100	35	2.9		
-90						
Depth 90.0 feet. Dry Density: 167.1 pcf.					1045.7	0.1
-95						
Depth 96.3 feet. Dry Density: 166.1 pcf.					698.2	0.2
317.4						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 21
STRUCTURE NO. 060–0351 (WB)
SHEET 277 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	782
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/11-12/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 21 SEC. 25 TWP. 4N RNG. 10W
Lat 38.76264092 Long -90.16517544

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23

Core Diameter 2.06 in
Top of Rock Elev. 338.9 ft
Begin Core Elev. 337.4 ft

BORING NO. BB-53
Station 1824+32.86
Offset 92.2 ft L (EB)
Ground Surface Elev. 414.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, aphanitic to very finely crystalline, hard, thin to massive bedding, fresh to slightly weathered, dense.		3	100	89	2.7		
	-100						
Depth 100.4 feet. Dry Density: 167.1 pcf.						634.2	0.2
	-105						
Depth 106.1 feet. Dry Density: 152.9 pcf.						586.4	0.4
	307.4						
Boring terminated at 107.5 feet.							
	-110						
	-115						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 21
STRUCTURE NO. 060–0351 (WB)
SHEET 278 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	783
		CONTRACT NO. 76J90		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 1 of 2

Date 12/10/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 22, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76242593 **Long** -90.16435141

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-40
Station 1826+80.53
Offset 90.2 ft L (EB)
Ground Surface Elev. 412.6 ft

Surface Water Elev. ___ ft
Stream Bed Elev. ___ ft

Groundwater Elev.:
First Encounter 407.1 ft ▼
Upon Completion ___ ft
After ___ **Hrs.** ___ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay: Brown, moist, A-7.	411.6				
Clay Loam: Brown, moist, A-7.			3 3 5	3.0 B/20	18
	409.6				
Clay: Brown, moist, A-7.	408.6				
Silty Loam: Brown, moist, A-6. *Particle Size Analysis Test performed.*		-5	2 2 2	1.0 P / 0.6 B/20	38 / 39
	407.1 ▼				
Sand: Brown, fine grained, wet, A-2.			0 0 0	NC	--
		-10	1 2 3	NC	
	402.1				
Clay: Gray, very moist to wet, A-7.			1 1 1	<0.25 P	66
	398.1	-15	1 1 1	0.2 B/20	62
Sand: Gray, fine grained, wet, A-2.	397.1				
Clay: Gray, very moist to wet, with fine sand deposits, A-7.			1 0 1	<0.25 P	42
	393.6				
Silt: Gray, wet, A-4.		-20	3 1 1	<0.25 P	31

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	392.1				
Sandy Loam: Gray, fine to coarse grained, wet, A-2. *Grain Size Analysis Test performed.*			5 5 5	NC	--
		-25	6 3 5	NC	--
			3 4 6	NC	--
		-30	5 5 5	NC	--
Grain Size Analysis Test performed.		-35	10 11 10	NC	--
	372.6	-40	9 8 10	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Page 2 of 2

Date 12/10/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 22, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76242593 **Long** -90.16435141

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-40
Station 1826+80.53
Offset 90.2 ft L (EB)
Ground Surface Elev. 412.6 ft

Surface Water Elev. ___ ft
Stream Bed Elev. ___ ft

Groundwater Elev.:
First Encounter 407.1 ft ▼
Upon Completion ___ ft
After ___ **Hrs.** ___ ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Loam: Gray, fine to coarse grained, wet, A-2.*(Continued)*					
	370.6				
Sand: Gray, fine to coarse grained, wet, A-1.		-45	8 8 12	NC	--
		-50	6 4 5	NC	--
Trace fine gravel.		-55	9 4 6	NC	--
	355.6				
Sand: Gray, fine to coarse grained, wet, A-2.		-60	11 14 17	NC	--

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, wet, A-2. *(continued)*					
	350.6				
Sand: Gray, fine to coarse grained, wet, trace fine gravel, A-1.		-65	7 7 10	NC	--
		-70	10 8 8	NC	--
		-75	9 8 7	NC	--
	335.6				
Weathered Limestone: Gray.	334.8				
Borehole continued with rock coring.		-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Page 1 of 2

Date 12/10/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 22, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76242593 **Long** -90.16435141

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-40
Station 1826+80.53
Offset 90.2 ft L (EB)
Ground Surface Elev. 412.6 ft

CORING BARREL TYPE & SIZE Solid Barrel NX

Core Diameter 2.06 in
Top of Rock Elev. 335.6 ft
Begin Core Elev. 334.8 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, hard to very hard, very finely crystalline, thin to medium bedded, slightly weathered, dense.	334.8		1	98	78	2.5		
		-80						
Depth 81.2', Dry Density: 166.5 pcf.							568.6	0.1
		-85						
			2	100	83	1.9		
		-90						
Depth 93.6', Dry Density: 160.8 pcf.							369.5	0.2
	317.9	-95						
Calcareous Siltstone: Brownish-gray, moderately hard, very finely crystalline, slightly weathered, dense. *Depth 95.6', Dry Density: 130.2 pcf.*							331.6	1.1
	315.5							

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 12/10/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 22, **SEC.** 25, **TWP.** 4N, **RNG.** 10W
Lat 38.76242593 **Long** -90.16435141

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB) **CORING BARREL TYPE & SIZE** Solid Barrel NX
Station 806+89.23

Core Diameter 2.06 in
Top of Rock Elev. 335.6 ft
Begin Core Elev. 334.8 ft

BORING NO. BB-40
Station 1826+80.53
Offset 90.2 ft L (EB)
Ground Surface Elev. 412.6 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, moderately hard, very finely crystalline, thinly bedded, slightly weathered, dense. *(continued)*						
Thin to medium bedded.	3	99	96	3.6		
-100						
Some chert laminations.						
Thickly bedded.						
Depth 101.8', Dry Density: 152.6 pcf.					406.9	0.3
Pitted.						
Gray.						
-105						
					782.6	0.2
304.3						
Boring terminated at 108.3 feet.						
-110						
-115						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 22
STRUCTURE NO. 060–0351 (WB)
SHEET 280 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	785
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/05/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 23, **SEC.** 36, **TWP.** 4N, **RNG.** 10W
Lat 38.76226293 **Long** -90.16347466

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-42
Station 1829+24.65
Offset 95.6 ft L (EB)
Ground Surface Elev. 410.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 399.2 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Loam: Brown, stiff, dry A-4. *Particle Size Analysis Test performed.*				*performed.* 389.7			
408.5				Clay: Gray, high plasticity, very soft, moist, A-7.	3 1 2	0.5 B/20	65
Silty Clay Loam: Brown, stiff to medium stiff, poor recovery, A-6.	10 8 7	0.8 S/10	15	387.2			
	5 3 5	0.8 S/10	15	Sandy Loam: Gray, fine grained, medium dense to very loose, A-2. *Grain Size Analysis Test performed.*	6 5 7	NC	--
-5				-25			
404.7							
Sand: Brown, fine grained, loose, dry to very moist, A-2.	5 4 4	NC	--	*No recovery.*	5 4 5	NC	--
	5 2 8	NC	--	*No recovery.*	3 1 0	NC	--
-10				-30			
▼ Fine to coarse grained, loose to medium dense, wet.	3 3 3	NC	--	378.2			
				Sand: Gray, fine to coarse grained, medium dense, A-2.	6 7 12	NC	--
	4 5 7	NC	--	-35			
-15				373.2			
	5 6 10	NC	--	Sandy Loam: Gray, fine to coarse grained, medium dense, trace coal, A-2. *Grain Size Analysis Test performed.*	10 9 11	NC	--
392.2				-40			
Sandy Loam: Brown, fine grained, loose. A-2. *Grain Size Analysis Test*	4 4 4	NC	--				
-20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/05/18

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 23, **SEC.** 36, **TWP.** 4N, **RNG.** 10W
Lat 38.76226293 **Long** -90.16347466

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-42
Station 1829+24.65
Offset 95.6 ft L (EB)
Ground Surface Elev. 410.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 399.2 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Loam: Gray, fine to coarse grained, medium dense, trace coal, A-2. *(continued)*				Sand: Gray, fine to coarse grained, medium dense to dense, trace fine gravel, A-2. *(continued)*			
368.2							
Sand: Gray, fine to coarse grained, medium dense to dense, trace fine gravel, A-2.	17 16 14	NC	--	Trace fine gravel.	28 15 12	NC	--
-45				-65			
363.2				343.2			
Sandy Loam: Gray, fine and coarse grained, medium dense, trace fine gravel, A-1-b. *Grain Size Analysis Test performed.*	6 6 6	NC	--	Sand: Gray, fine to coarse grained, medium dense, trace fine gravel, A-1.	14 14 14	NC	--
-50				-70			
358.2							
Sand: Gray, fine to coarse grained, medium dense to dense, trace fine gravel, A-2.	13 9 13	NC	--		14 8 8	NC	--
-55				-75			
				332.2			
No gravel.	15 19 21	NC	--	Weathered Limestone: Gray. 331.6 Boring terminated at 78.6 feet. Boring grouted to 78.6 feet.	100/1"	NC	--
-60				-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 23
STRUCTURE NO. 060–0351 (WB)
SHEET 281 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	786
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/12-13/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 24, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76210452 Long -90.16297566

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-55
Station 1830+89.82
Offset 99.9 ft L (EB)
Ground Surface Elev. 410.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. None ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Silty Clay: Gray, medium stiff to stiff, moist, A-6.
	4 4 4	1.5 P	24	*Grain Size Analysis performed.*
407.9				
				Sandy Loam: Gray, trace brown, loose, moist, A-3.
	3 4 5	NC	--	
-5 405.4				
				Silty Clay: Gray, medium stiff, moist, A-6.
	3 3 4	0.4 B/20	24	
402.9				
				Sand: Gray, trace brown, medium dense, moist, A-3.
	4 7 6	NC	--	
-10				
	5 7 7	NC	--	
	5 6 9	NC	--	
-15				
				Loose.
	4 4 5	NC	--	*Grain Size Analysis performed.*
	3 4 5	NC	--	
-20 370.9				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sand: Gray, trace brown, medium dense, moist, A-3. *(continued)*
	5 6 9	NC	--	
	4 8 10	NC	-	
-25				
	6 6 7	NC	--	Gray.
	5 6 7	NC	--	
-30				
	5 7 10	NC	--	
-35				
	6 10 11	NC	--	
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 11/12-13/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 24, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76210452 Long -90.16297566

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-55
Station 1830+89.82
Offset 99.9 ft L (EB)
Ground Surface Elev. 410.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. None ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sandy Loam: Dark gray, very loose, moist, A-3.
	3 1 2	NC	--	
365.9 -45				
				Sand: Gray, medium dense, moist, A-1.
	4 4 6	NC	--	
-50				
	5 7 9	NC	--	
-55				
	5 5 6	NC	--	
-60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sand: Gray, medium dense, moist, A-1. *(continued)*
	19 17 8	NC	--	
-65				
	7 8 13	NC	--	
-70				
337.4				
	10 38 44	NC	--	Weathered Limestone.
-75				
330.9 -80				Borehole continued with rock coring.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/12-13/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 24, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76210452 Long -90.16297566

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

CORING BARREL TYPE & SIZE Solid Barrel NX
Core Diameter 2.06 in
Top of Rock Elev. 332.9 ft
Begin Core Elev. 330.9 ft

BORING NO. BB-55
Station 1830+89.82
Offset 99.9 ft L (EB)
Ground Surface Elev. 410.9 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)	Description
330.9	1	98	68	3.6			Limestone: Gray, hard, aphanitic to very finely crystalline, thinly bedded, moderately weathered, dense.
-85					851.6	0.4	
					311.1	0.1	
-90	2	97	91	2.8			Hard to very hard, thin to thickly bedded, fresh to slightly weathered.
					429.3	0.1	
-95							Trace chert.
							No chert.
					778.3	0.1	Pitted to vuggy.
310.9 -100							

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 24
STRUCTURE NO. 060–0351 (WB)
SHEET 282 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	787
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 11/12-13/2020

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION Pier 24, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76210452 Long -90.16297566

COUNTY Madison CORING METHOD Conventional

STRUCT. NO. 060-0350 (EB) CORING BARREL TYPE & SIZE Solid Barrel NX
Station 806+89.23

Core Diameter 2.06 in
Top of Rock Elev. 332.9 ft
Begin Core Elev. 330.9 ft

BORING NO. BB-55
Station 1830+89.82
Offset 99.9 ft L (EB)
Ground Surface Elev. 410.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Gray, moderately hard to hard, aphanitic to very finely crystalline, thinly bedded, moderately weathered, pitted, cherty, trace clay seams.		3	90	60	3.7		
Dense, no chert.						465.1	0.1
	-105						
						872.5	0.1
	300.9 -110						
Boring terminated at 110.0 feet.							
	-115						
	-120						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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BORING LOGS – PIER 24
STRUCTURE NO. 060–0351 (WB)
SHEET 283 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	788
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 4/26-27/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 25, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76194423 **Long** -90.16235613

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-57
Station 1832+75.88
Offset 98.9 ft L (EB)
Ground Surface Elev. 412.9 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 406.9 ft ▼
Upon Completion _____ ft
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Clay Loam: Brown, stiff, moist, fill. A-6.			
Atterberg Limits test performed.	3 3 7	2.5 P	15
Trace crushed rock. 410.4			
Silty Clay Loam: Brown, soft, moist. A-6.	3 1 2	0.1 B/20	34
407.4			
Sandy Loam: Brown, loose, very moist. A-4	3 4 4	NC	--
405.9			
Sand: Brown, fine grained, medium dense, moist to wet, A-2.	2 4 8	NC	--
Mud rotary drilling started at 10 feet.			
	5 7 7	NC	--
Loose.	1 3 5	NC	--
	3 4 6	NC	--
	5 6 7	NC	--
Sand: Brown, fine grained, medium dense, moist to wet, A-2. *(continued)*	4 6 7	NC	--
	7 8 9	NC	--
	3 6 11	NC	--
	7 11 15	NC	--
380.9			
Sand: Brown, fine to coarse grained, dense, very moist to wet, A-3.	9 23 23	NC	--
Trace coarse grained.			
Brown, medium dense.	7 13 13	NC	--
372.9			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 4/26-27/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 25, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76194423 **Long** -90.16235613

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-57
Station 1832+75.88
Offset 98.9 ft L (EB)
Ground Surface Elev. 412.9 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 406.9 ft ▼
Upon Completion _____ ft
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine to coarse grained, medium dense, very moist to wet, A-3.			
	7 10 13	NC	--
Gray.			
	5 7 6	NC	--
Trace fine gravel.	5 6 6	NC	--
Sand: Brown, fine to coarse grained, medium dense, very moist to wet, A-3. *(continued)*			
Trace fine to coarse gravel.	17 19 25	NC	--
Gravel encountered during drilling from 65 to 68.6 feet. Possible cobble or boulder at 67.5 feet.			
	50/6"	NC	--
340.9			
Sand: Gray, fine to coarse grained, medium to very dense, moist to wet, A-1.	11 10 13	NC	--
	12 17 33	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 4/26-27/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 25, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76194423 **Long** -90.16235613

COUNTY Madison **DRILLING METHOD** CFA, Mud Rotary **HAMMER TYPE** Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-57
Station 1832+75.88
Offset 98.9 ft L (EB)
Ground Surface Elev. 412.9 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 406.9 ft ▼
Upon Completion _____ ft
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, medium to very dense, moist to wet, A-1. *(continued)*			
Tri-cone refusal at 80.5 feet. Tri-cone advanced to 82.5 feet prior to rock coring. 330.4			
Borehole continued with rock coring.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 25
STRUCTURE NO. 060–0351 (WB)
SHEET 284 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	789
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 4/26-27/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 25, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76194423 **Long** -90.16235613

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB) **CORING BARREL TYPE & SIZE** Solid Barrel NX
Station 806+89.23

BORING NO. BB-57 **Core Diameter** 2.06 in
Station 1832+75.88 **Top of Rock Elev.** 332.4 ft
Offset 98.9 ft L (EB) **Begin Core Elev.** 330.4 ft
Ground Surface Elev. 412.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, aphanitic, thin bedding, slightly weathered, dense.	330.4	1	100	41	3.6		
	-85						
Depth 85.5', Dry Density: 166.3 pcf.						718.4	0.2
Medium to thick bedded.	-90						
Depth 91.2', Dry Density: 151.5 pcf.						404.4	0.2
		2	98	91	3		
Thick bedded.	-95						
Depth 95.3', Dry Density: 147.6 pcf.						525.5	0.4
Slightly pitted and with chert inclusions.	-100	3	98	60	3.2		
No return water at 101.5 feet to termination. *Depth 101.4', Dry Density: 150.8 pcf.*	310.4					524.7	0.6

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

ROCK CORE LOG

Date 4/26-27/2021

ROUTE FAI 270 **DESCRIPTION** I-270 over the Mississippi River **LOGGED BY** SCI

SECTION 60B-1 **LOCATION** Pier 25, **SEC.** 26, **TWP.** 4N, **RNG.** 10W
Lat 38.76194423 **Long** -90.16235613

COUNTY Madison **CORING METHOD** Conventional

STRUCT. NO. 060-0350 (EB) **CORING BARREL TYPE & SIZE** Solid Barrel NX
Station 806+89.23

BORING NO. BB-57 **Core Diameter** 2.06 in
Station 1832+75.88 **Top of Rock Elev.** 332.4 ft
Offset 98.9 ft L (EB) **Begin Core Elev.** 330.4 ft
Ground Surface Elev. 412.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)
Limestone: Light gray, hard to very hard, aphanitic, thick bedding, slightly weathered, dense. *(continued)*							
Thin to medium bedded.	-105						
Vertical fractures caused by coring process.	-110	4	100	33	4.2		
	300.4					944.8	0.2
Depth 113.5', Dry Density: 150.6 pcf. Boring terminated at 112.50 feet.	-115						
	-120						

Color pictures of the cores Yes
Cores will be stored for examination until completion
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

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CDI CIVIL DESIGN, INC.

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PLOT SCALE =	DRAWN - JGS	REVISED -
PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – PIER 25
STRUCTURE NO. 060–0351 (WB)
SHEET 285 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	790
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/08/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Approach, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76156064 Long -90.16173939

COUNTY Madison DRILLING METHOD CFA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-110
Station 1834+86.27
Offset 20.2 ft L (EB)
Ground Surface Elev. 442.6 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 436.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Asphalt. 441.6			
Sand: Brown, moist, fill, A-2. 440.6	4 9 7	NC	--
Sandy Loam: Gray, moist, fill, A-6.	3 5 5	1.4 S/15	17
-5			
▼ *Unconfined Compression and Atterberg Limits Tests performed.* 434.6	ST	1.1 S	19
Clay: Gray, moist, fill, A-7. 432.6 -10	3 7 4	2.1 S/15	25
Sandy Loam: Brown, moist, fill, A-4. 431.6			
Sand: Brown, moist, fill, A-2. 429.6	7 15 16	NC	--
Sandy Loam: Brown, moist, fill, A-2. 427.1 -15	9 19 14	NC	--
Sandy Loam: Gray, moist, fill, A-4. 424.6	11 12 15	0.6 S/15	--
Sand: Brown, with clay lumps, fill, A-2. -20	14 15 14	NC	--
Sand: Brown, with clay lumps, fill, A-2. *(continued)*	11 15 18	NC	--
-25	11 20 18	NC	--
Sandy Loam: Gray, moist, fill, A-4. 414.6	9 11 14	NC	--
Clay: Grayish brown, moist, A-7. -30	4 8 9	3.5 B/20	24
Silty Clay Loam: Brown, A-6. 408.6			
Sand: Brown, fine grained, moist, A-2. -35	5 10 11	NC	35
-40	9 8 11	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/08/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Approach, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76156064 Long -90.16173939

COUNTY Madison DRILLING METHOD CFA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-110
Station 1834+86.27
Offset 20.2 ft L (EB)
Ground Surface Elev. 442.6 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 436.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine grained, moist, A-2. *(continued)*			
-45	11 13 9	NC	--
392.6 -50	8 15 13	NC	--
Boring terminated at 50.0 feet. Boring grouted to 50 feet. -55			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/08/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Approach, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76121475 Long -90.16037622

COUNTY Madison DRILLING METHOD CFA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-112
Station 1838+95.92
Offset 12.4 ft L (EB)
Ground Surface Elev. 442.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Asphalt. 441.2			
Silty Clay Loam: Grayish brown, fill, A-6.	3 5 5	>4.5 P	18
-5	3 5 5	2.6 B/20	20
Sandy Loam: Brown, fill, A-4. 436.7	4 8 7	4.5 P	19
432.7 -10	7 11 8	3.0 P	20
Sand: Brown, moist, fill, A-2. 431.2			
Clay Loam: Gray, moist, fill, *A-4. Unit Weight Determination and Atterberg Limits Tests performed.* 429.2	ST	NC	20
Sand: Brown, moist, fill, A-2. -15	4 5 5	NC	--
Clay Loam: Gray, fill, A-7. 424.2	4 8 8	1.5 S/10	31
Loamy Sand: Gray, moist, fill, A-2. 422.7 -20	7 9 12	NC 3.5	--
Clay Loam: Gray, moist, fill, A-7. *(continued)* 421.7		P	
Sandy Loam: Gray, with clay lumps, fill, A-4. 419.2	5 11 10	NC	28
Clay Loam: Gray, moist, fill, A-7. 418.2	5 11 9	2.0 B/20	32 -- 38
Silt: Brown, moist, fill, A-4. -25			
416.7	3 7 7	1.9 B/20	23
Clay: Gray and brown, moist, fill, A-7			
Gray. Brown. 412.7 -30	4 8 9	2.8 S/15	--
Sand: Brown, fine grained, moist, A-2. -35	7 10 10	NC	--
-40	11 14 13	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – EAST ABUTMENT
STRUCTURE NO. 060–0351 (WB)
SHEET 286 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	791
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 12/08/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Approach, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76121475 Long -90.16037622

COUNTY Madison DRILLING METHOD CFA HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. B-112
Station 1838+95.92
Offset 12.4 ft L (EB)
Ground Surface Elev. 442.2 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter None. ft
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Brown, fine grained, moist, A-2. *(continued)*	-45	5 9 11	NC	--
	392.2 -50	13 21 16	NC	--
Boring terminated at 25.0 feet. Boring grouted to 25 feet.	-55			
	-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/06/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Abutment, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76191647 Long -90.16209908

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-49
Station 1833+48.72
Offset 111.9 ft L (EB)
Ground Surface Elev. 426.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 403.4 ft ▼
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Silty Loam: Brown, medium stiff, moist, fill, A-4.		6 4 4	3.0 P	19
Clay Loam: Brown, medium stiff to stiff, moist, fill, A-7.	424.9			
Silty Loam: Brown, stiff, moist, fill, A-4.	423.1 -5	4 6 6	2.0 P	17
Silty Clay Loam: Brown, medium stiff moist, fill, A-6.	421.4	3 3 3	1.5 P	11
Silty Loam: Brown, medium stiff, moist, A-4.	418.9 -10	3 2 3	1.5 P	21
Silt: Brown, stiff, moist, A-4.	416.4	3 4 5	0.6 S/15	28
Clay: Brown, stiff, moist, A-7.	413.9 -15	3 4 5	1.4 B/20	35
Sand: Brown, fine grained, medium dense to dense, moist, A-2.	410.4	4 7 5	NC	--
	-20	7 10 12	NC	--
Sand: Brown, fine grained, medium dense to dense, moist, A-2. *(continued)*	▼ -25	11 13 12	NC	--
		10 11 14	NC	--
		10 12 17	NC	--
Sandy Loam: Brown, fine grained, medium dense to dense, moist, A-2. *Grain Size Analysis Test performed.*	398.9 -30	13 15 16	NC	--
Sandy Loam: Brown, fine grained, medium dense to dense, moist, A-4. With silt. *Grain Size Analysis Test performed.*	394.9 -35	13 11 11	NC	--
	386.9 -40	13 10 10	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/06/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Abutment, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.76191647 Long -90.16209908

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-49
Station 1833+48.72
Offset 111.9 ft L (EB)
Ground Surface Elev. 426.9 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 403.4 ft ▼
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, medium dense to dense, trace coarse sand, A-2-4.	-45	11 9 18	NC	--
	-50	9 16 10	NC	--
	-55	8 11 14	NC	--
	-60	8 11 14	NC	--
Sand: Gray, fine to coarse grained, medium dense to dense, trace coarse sand, A-2-4. *(continued)*	-65	9 11 12	NC	--
	-70	15 19 22	NC	--
	352.9 -75	19 15 26	NC	--
Sand: Gray, fine to coarse grained, dense to very dense, trace fine gravel, A-1.	-80	19 49 43	NC	--

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – EAST ABUTMENT
STRUCTURE NO. 060–0351 (WB)
SHEET 287 OF 288 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	792
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
sci engineering inc

SOIL BORING LOG

Date 09/06/18

ROUTE FAI 270 DESCRIPTION I-270 over the Mississippi River LOGGED BY SCI

SECTION 60B-1 LOCATION East Abutment, SEC. 36, TWP. 4N, RNG. 10W
Lat 38.7619 1647 Long -90.1620 9908

COUNTY Madison DRILLING METHOD CFA, Mud Rotary HAMMER TYPE Automatic

STRUCT. NO. 060-0350 (EB)
Station 806+89.23

BORING NO. BB-49
Station 1833+48.72
Offset 111.9 ft L (EB)
Ground Surface Elev. 426.9 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 403.4 ft ▼
Upon Completion ____ ft
After ____ Hrs. ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sand: Gray, fine to coarse grained, dense to very dense, trace fine gravel, A-1. *(continued)*				
Cobble. Trace weathered limestone and coal.	-85	41 34 35	NC	--
339.9				
Sand: Gray, fine to coarse grained, very dense to dense, A-1.	-90	25 29 25	NC	--
	-95	16 17 21	NC	--
330.9				
Weathered Limestone: Gray. 330.5		100/1"	NC	--
Boring terminated at 96.4 feet. Boring grouted to 96.4 feet.	-100			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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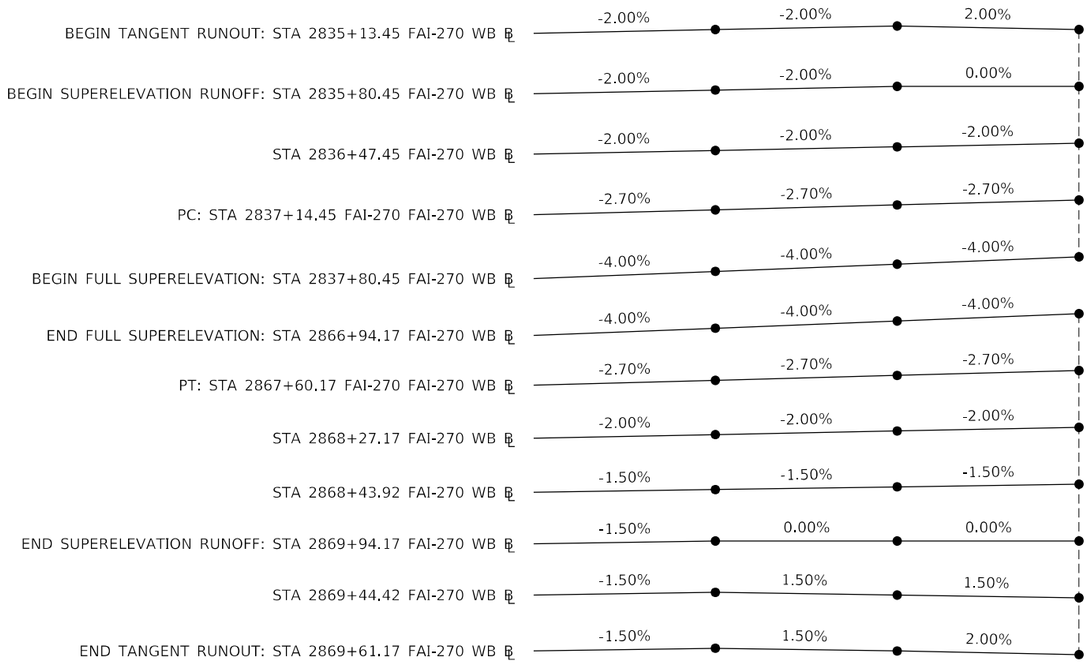
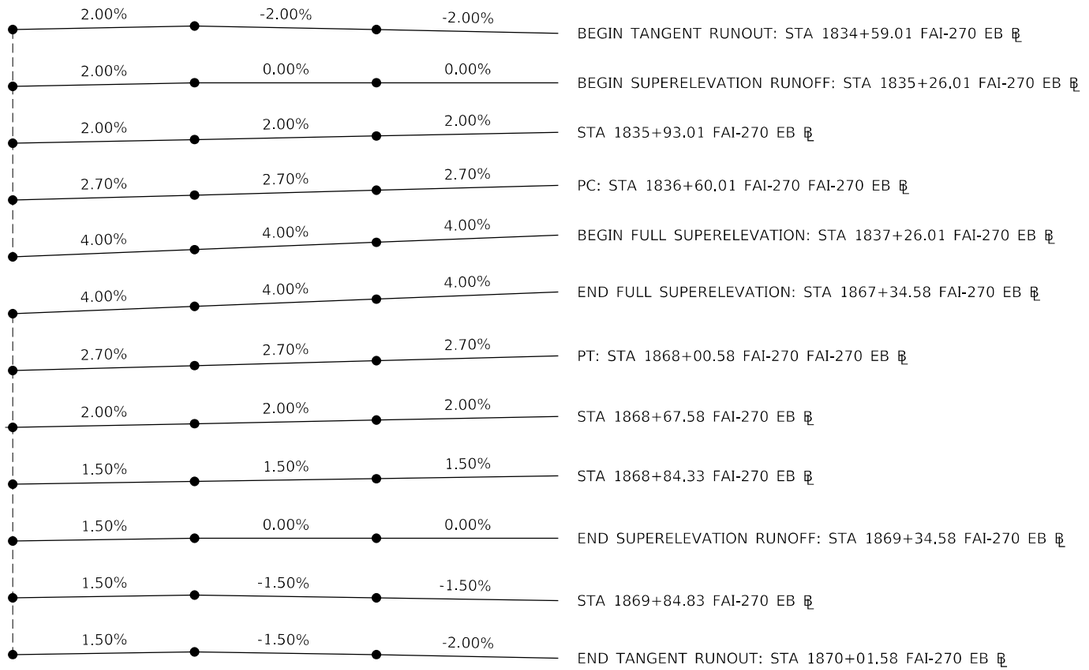
PLOT DATE =	CHECKED -	REVISED -

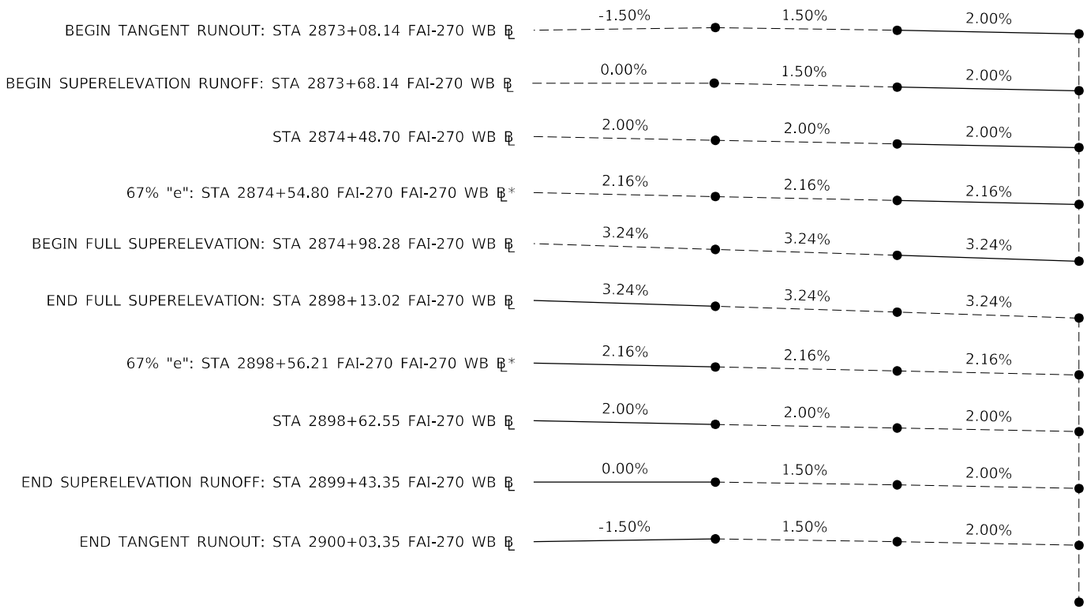
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

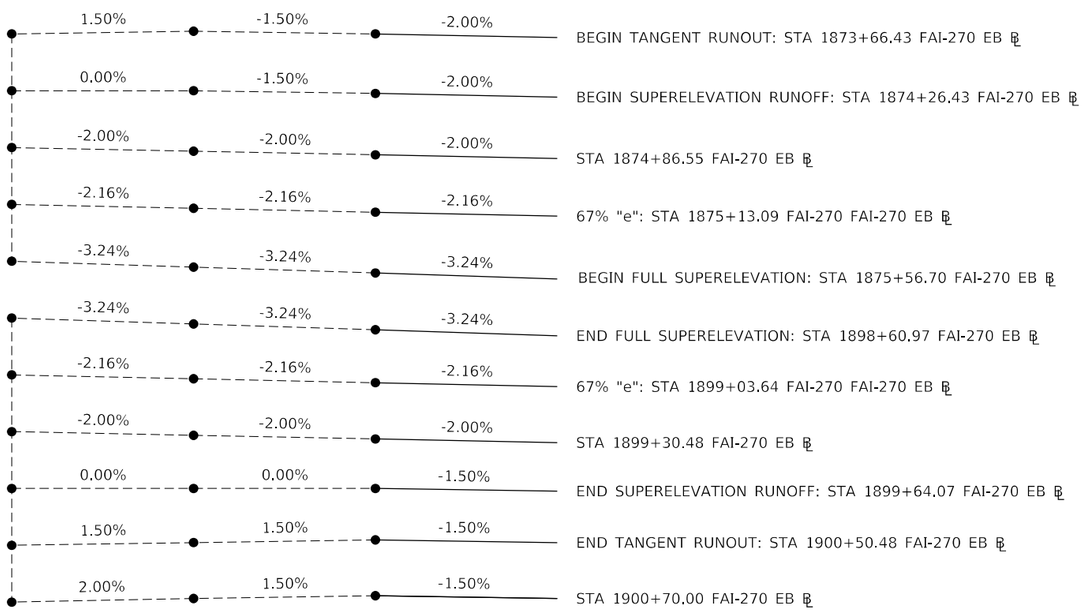
BORING LOGS – EAST ABUTMENT
STRUCTURE NO. 060–0351 (WB)
SHEET 288 OF 288 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	793
		CONTRACT NO. 76J90		
	ILLINOIS FED. AID PROJECT			









*INTERMEDIATE COMPOUND CURVES WERE OMITTED

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HORNER & SHIFRIN
Teaming with: PARSONS

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	DRAWN - JNBAILEY	REVISED -
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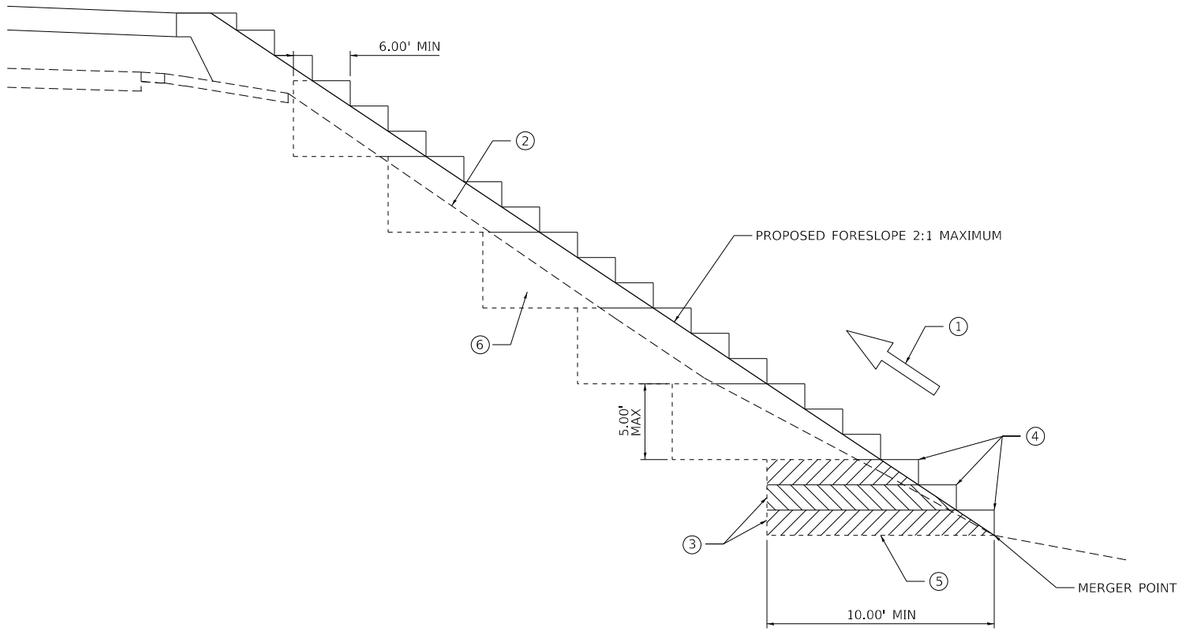
PLOT DATE = 3/16/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI–270
SUPERELEVATION DETAILS

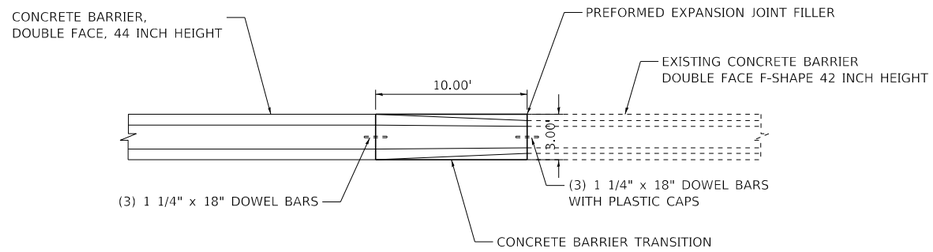
SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-270	60B-1	MADISON	875	794
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		



TYPICAL BENCHING FOR EMBANKMENT DETAIL

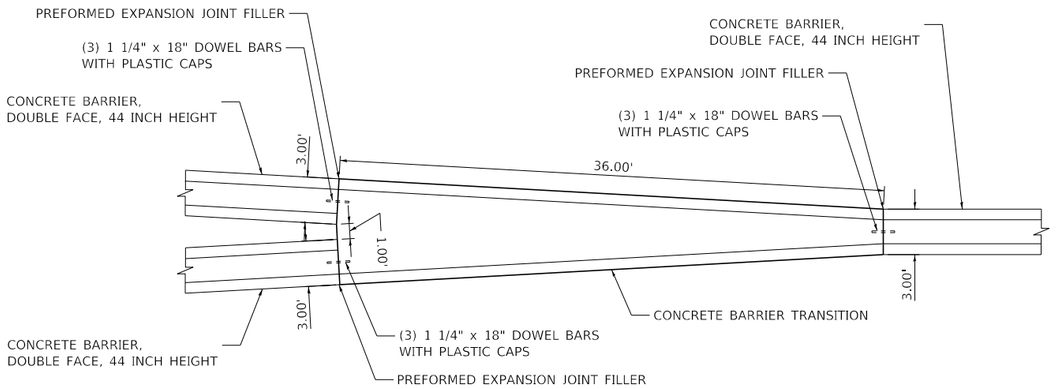
1. CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
2. EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03
3. BENCH CUT EXISTING FINAL SLOPE TYPICAL FOR EACH STEP.
4. TRIM TO FINAL SLOPE.
5. EQUAL 8-INCH LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
6. EXCAVATION OF BENCH CUTS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED AS INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION, AND THEIR CONSTRUCTION SHALL BE INCLUDED IN THE PRICES FOR THESE ITEMS.
7. SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5'.



NOTE:

CONCRETE BARRIER TRANSITION BASE TO BE PAID FOR AS CONCRETE BARRIER BASE PAY ITEM

CONCRETE BARRIER TRANSITION FROM DOUBLE FACE 44 INCH HEIGHT TO DOUBLE FACE F–SHAPE 42 INCH HEIGHT



NOTE:

CONCRETE BARRIER TRANSITION BASE TO BE PAID FOR AS CONCRETE BARRIER BASE PAY ITEM

CONCRETE BARRIER TRANSITION FROM (2) – DOUBLE FACE 44 INCH HEIGHT TO (1) DOUBLE FACE 44 INCH HEIGHT

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HORNER & SHIFRIN
Teaming with: PARSONS

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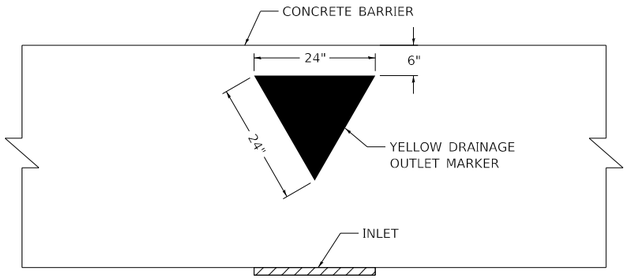
	DRAWN - JNBAILEY	REVISED -	
PLOT SCALE = 5.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 3/17/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI–270
BENCHING AND BARRIER CURB TRANSITION DETAILS

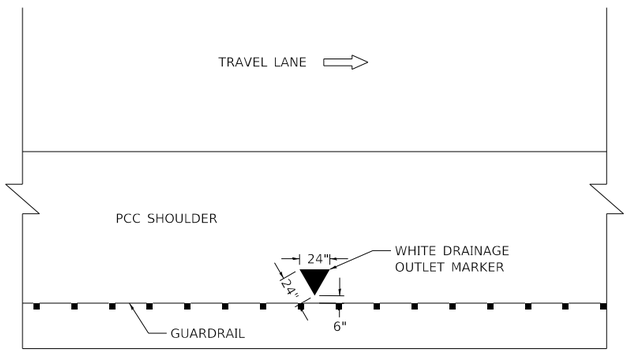
SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-270	60B-1	MADISON	875	795
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		



DRAINAGE STRUCTURE MARKER DETAIL

SEE DRAINAGE STRUCTURE SCHEDUAL FOR LOCATIONS



DRAINAGE OUTLET MARKER DETAIL

SEE UNDERDRAIN SCHEDUAL FOR LOCATIONS

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HORNER & SHIFRIN
Teaming with: PARSONS

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	DRAWN - JNBAILEY	REVISED -
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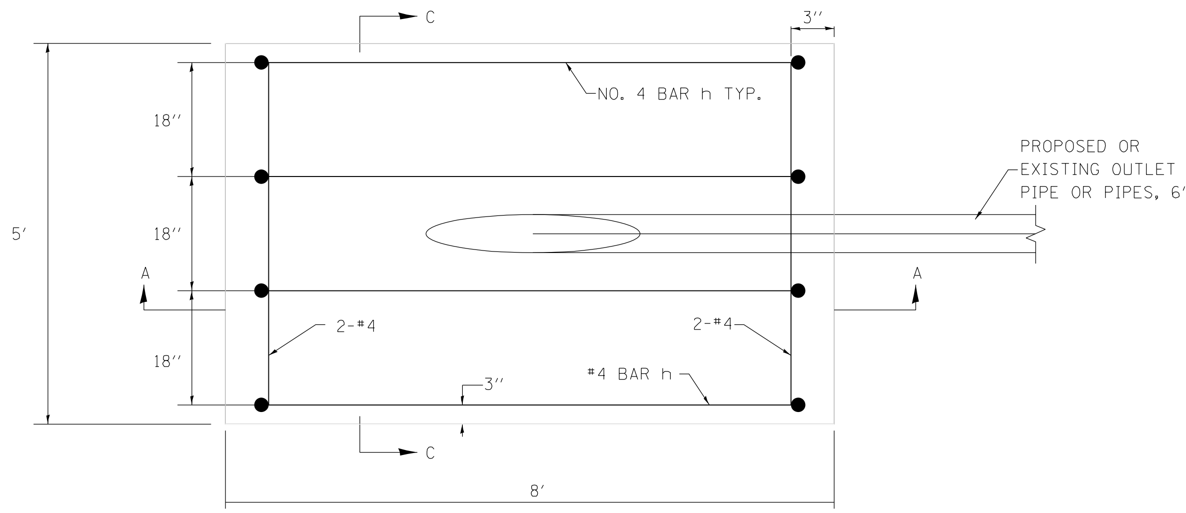
PLOT DATE = 3/17/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

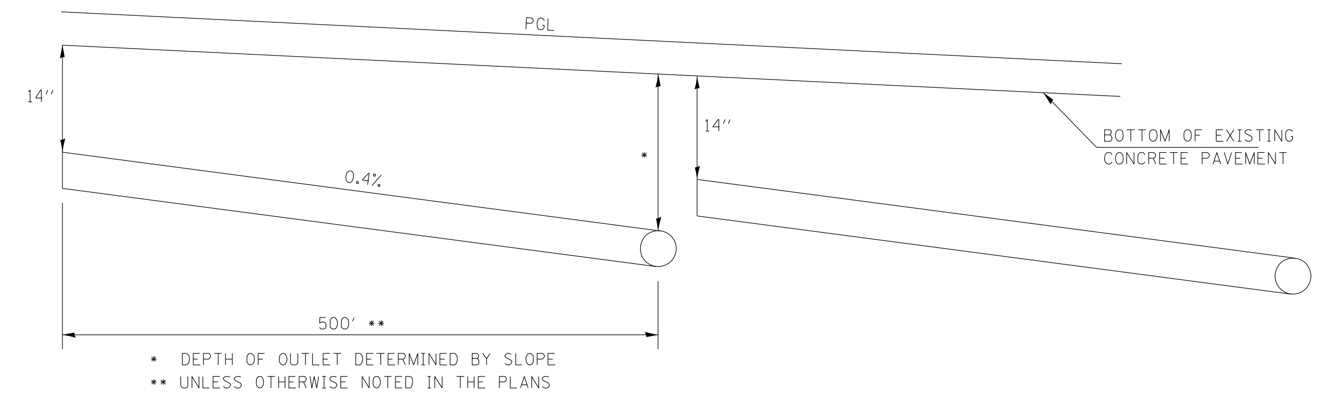
FAI–270
DRAINAGE MARKER DETAILS

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-270	60B-1	MADISON	875	796
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

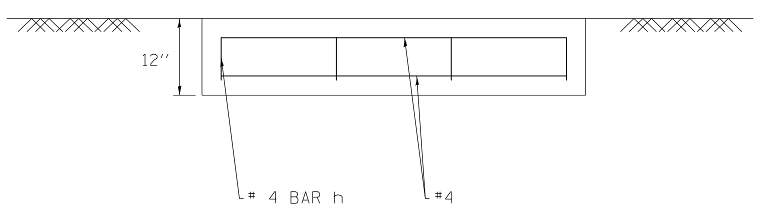


PLAN VIEW



PIPE UNDERDRAIN DETAIL

(USE WHEN PGL IS LESS THAN 0.4%)



SECTION C-C

NOTES

SEE STANDARD 601101 FOR DETAILS OF RODENT SHIELDS.

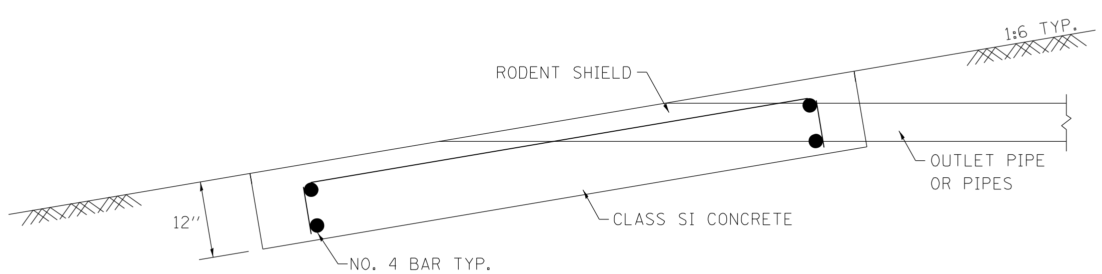
THE OUTLET PIPE OR PIPES SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE CENTER OF THE OUTLET PROTECTOR.

THE LAST 10 FEET OF OUTLET PIPE SHALL BE SCHEDULE 40 PVC.

REINFORCEMENT BARS MAY BE CUT OR RELOCATED TO ACCOMMODATE PIPE.

CUT OUTLET PIPE ON A BEVEL TO MATCH FINISHED SURFACE OF SURROUNDING PCC.

SEEDING CLASS 2 SHALL BE CONSIDERED INCLUDED IN THE COST OF THE PAY ITEMS.



SECTION A-A

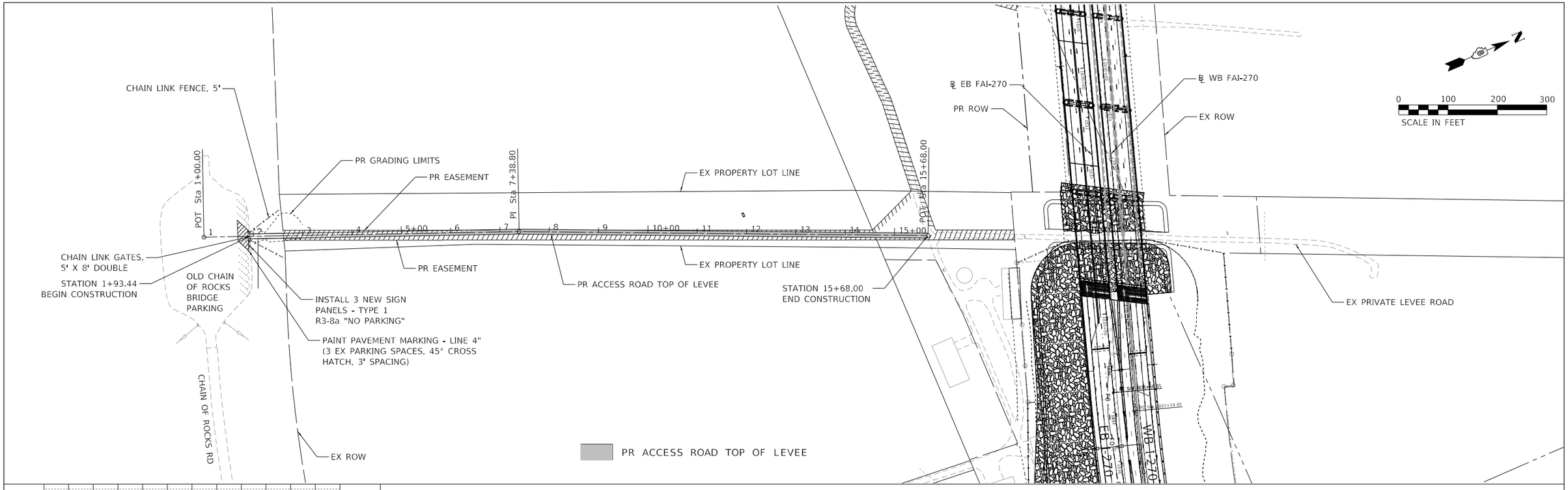
#4 h BAR

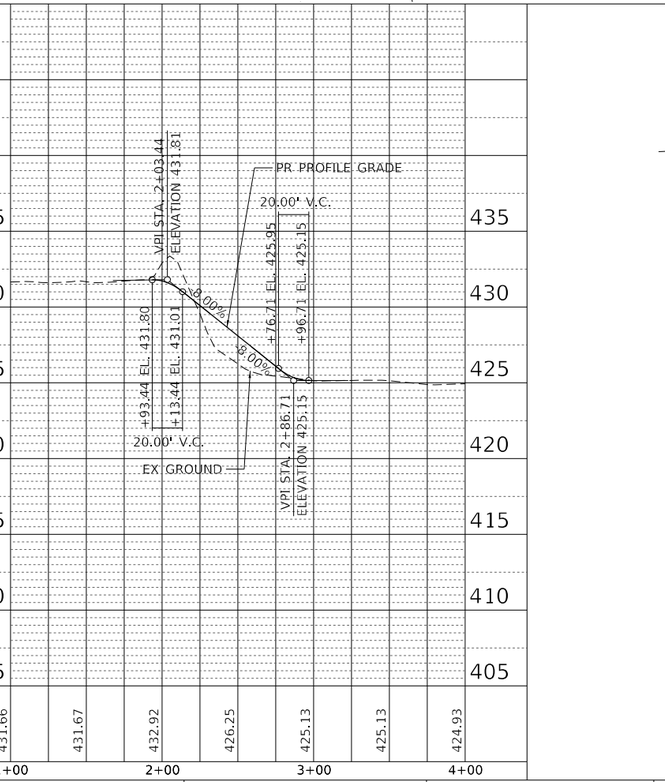
APPROXIMATE OUTLET PROTECTOR QUANTITIES FOR EACH OUTLET PROTECTOR	
CONCRETE, CLASS SI	REINFORCING STEEL
CU YD 1.5	LB 35.6

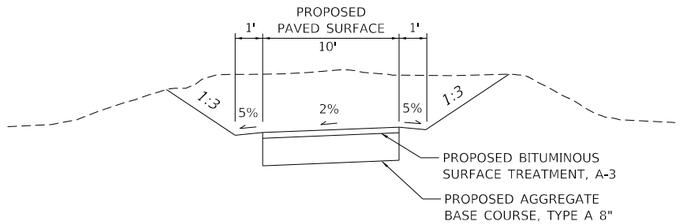
CONCRETE HEADWALL (SPECIAL)

HORNER & SHIFRIN / Teaming with: PARSONS	USER NAME = PWICSS	DESIGNED - JNBAILEY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FAI-270 CONCRETE HEADWALL (SPECIAL) DETAILS
		DRAWN - JNBAILEY	REVISED -		
	PLOT SCALE = 5.0000 ' / in.	CHECKED -	REVISED -		
	PLOT DATE = 4/11/2022	DATE -	REVISED -		SCALE: NTS SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-270	60B-1	MADISON	875	797
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		

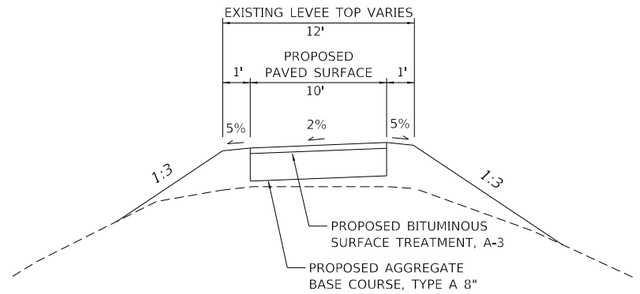






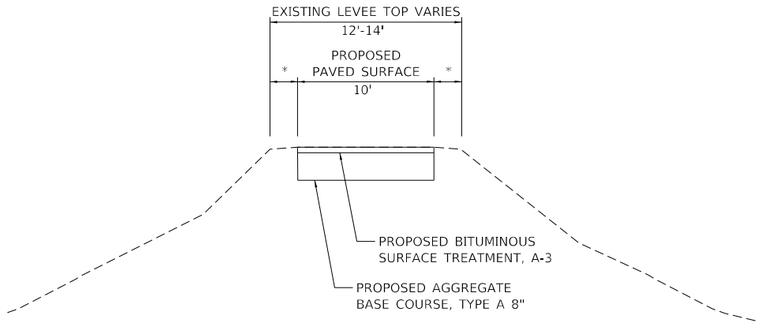
PROPOSED ACCESS ROAD (PR PROFILE)

STA 1+93.44 TO STA 2+21.37
(NOT TO SCALE)



PROPOSED ACCESS ROAD (PR PROFILE)

STA 2+21.37 TO STA 2+96.71
(NOT TO SCALE)



* 1-2 FT WIDE EXISTING CLAY CAP TO REMAIN IN PLACE

PROPOSED ACCESS ROAD (EX PROFILE)**

STA 2+96.71 TO STA 15+68.00
(NOT TO SCALE)

**EXISTING TOP OF LEVEE PROFILE
MATCHES PROPOSED TOP OF ACCESS ROAD PROFILE

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, CADD FILE NAME, NOTE BOOK, NO., BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADE CHECKED, EARTHWORK NOTED, STRUCTURE NOTATIONS CHKD, NOTE BOOK, NO., BY, DATE

MODEL: Default
FILE NAME: C:\ICS64PD\11935\45086_181\102-D876190-alt-details-002.dgn

HORNER & SHIFRIN
Teaming with: PARSONS

USER NAME = PWICS$	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 3/14/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

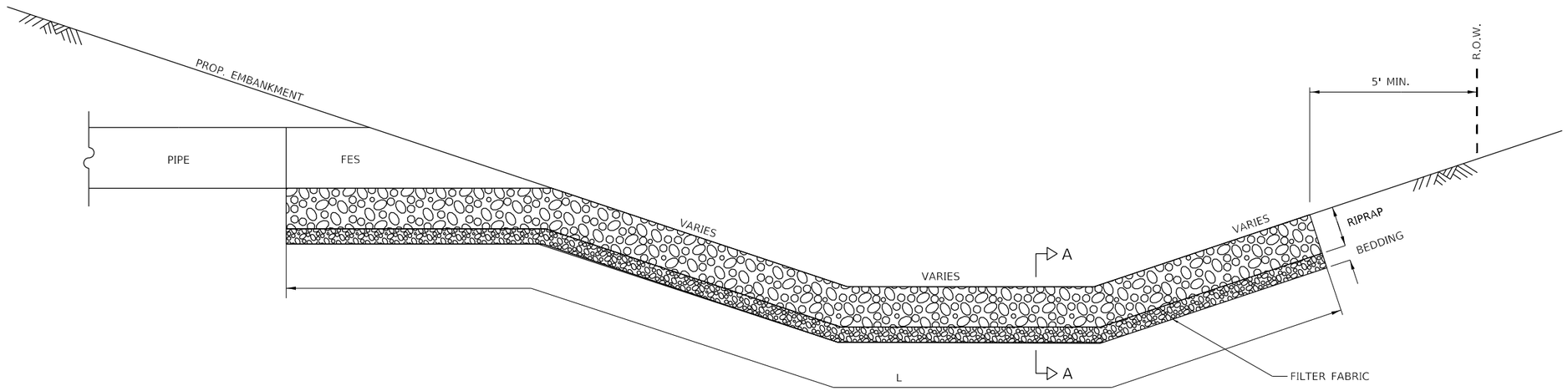
FAI 270
PROPOSED ACCESS ROAD ON TOP OF LEVEE DETAIL

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

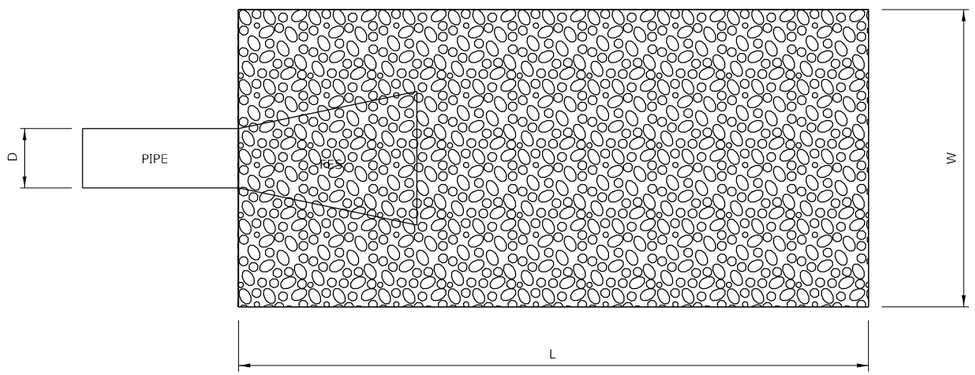
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	798
		CONTRACT NO. 76J90		
		ILLINOIS	FED. AID PROJECT	

STRUCTURE NUMBER	STATION	D (PIPE DIAMETER) (IN)	W (FT)	L (FT)	TREATMENT	RIP RAP (SQ YD)	FILTER FABRIC (SQ YD)
200	1845+20 (RT)	24"	10'	79' *	RR-4	30	30
300	1860+60 (RT)	24"	10'	58'	RR-4	64.4	64.4
400	1863+50 (RT)	24"	10'	37'	RR-4	41.1	41.1
500	1873+35 (RT)	24"	10'	36'	RR-4	40	40
600	1883+36 (RT)	18"	8'	142'	RR-4	126.2	126.2
700	1891+59 (RT)	24"	10'	163'	RR-4	181.1	181.1

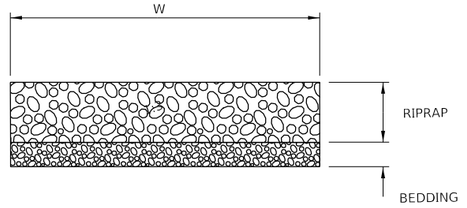
* 52' IS WITHIN SURROUNDING SLOPE RIPRAP



TYPICAL SECTION



PLAN VIEW



SECTION A-A

STONE RIPRAP DETAIL AT DRAINAGE OUTLET

MODEL: Default
FILE NAME: I:\2020\11713904 - Eng\04.01 - CADD\04.01.02- Sheet\D876\90-sht-detail-riprap-001.dgn

AMERICAN
SURVEYING & ENGINEERING, P.C.
SURVEYORS•ENGINEERS
GEODESISTS•MAPPING SCIENTISTS

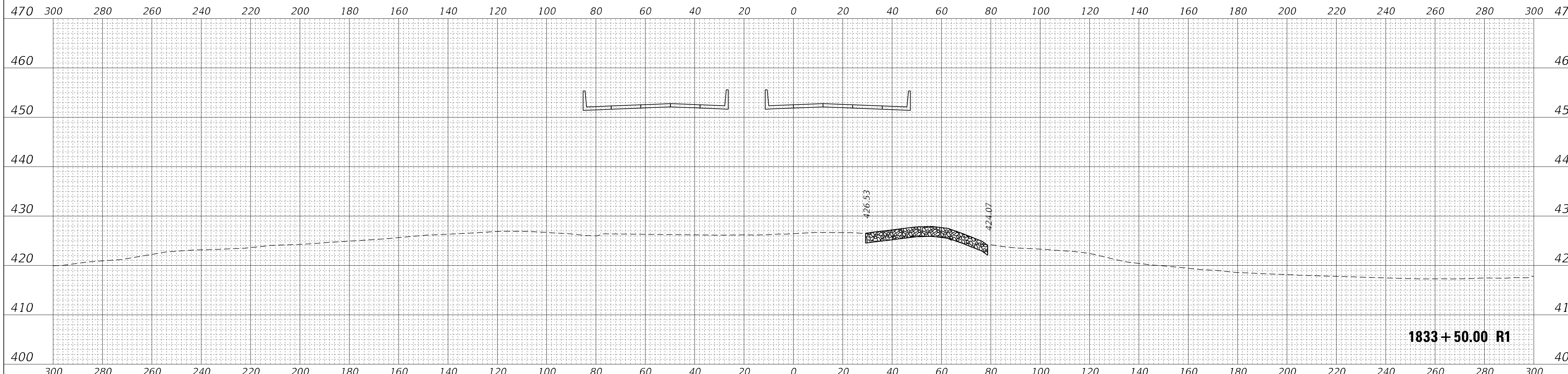
USER NAME = colwellj	DESIGNED JB	REVISED -
	DRAWN JM	REVISED -
PLOT SCALE = 50.0000 ' / in.	CHECKED JC	REVISED -
PLOT DATE = 3/12/2022	DATE 3/12/22	REVISED -

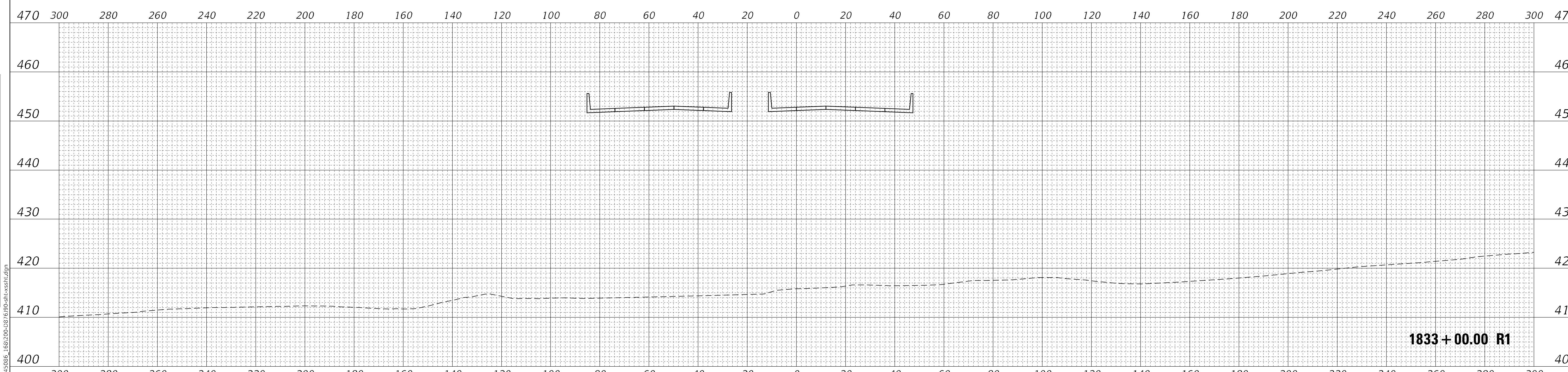
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI–270
STONE RIPRAP DETAIL

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60B-1	MADISON	875	799
		CONTRACT NO. 76J90		
	ILLINOIS	FED. AID PROJECT		





FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

MODEL: FAI270EB-0214
FILE NAME: C:\ICS4PD\11933\s45086_16&200-08\76J90-shi-xssht.dgn

HORNER SHIFRIN / Teaming with: PARSONS	USER NAME = PWICSS	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN -	REVISED -	
	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -	
	PLOT DATE = 3/14/2022	DATE -	REVISED -	

FAI-270
CROSS SECTIONS

SCALE: 1" = 20' | SHEET 01 OF 76 SHEETS | STA. 1833+00.00 R1 TO STA. 1833+50.00 R1

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-270	60B-1	MADISON	875	800

CONTRACT NO. 76J90

ILLINOIS | FED. AID PROJECT