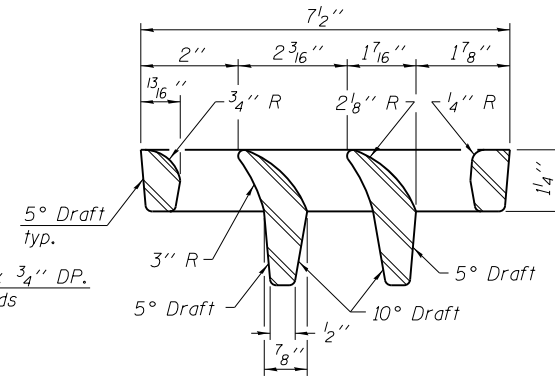
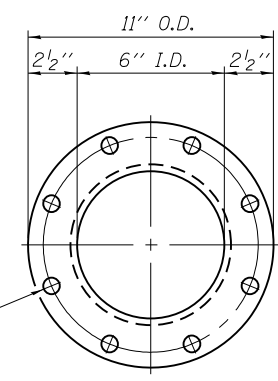


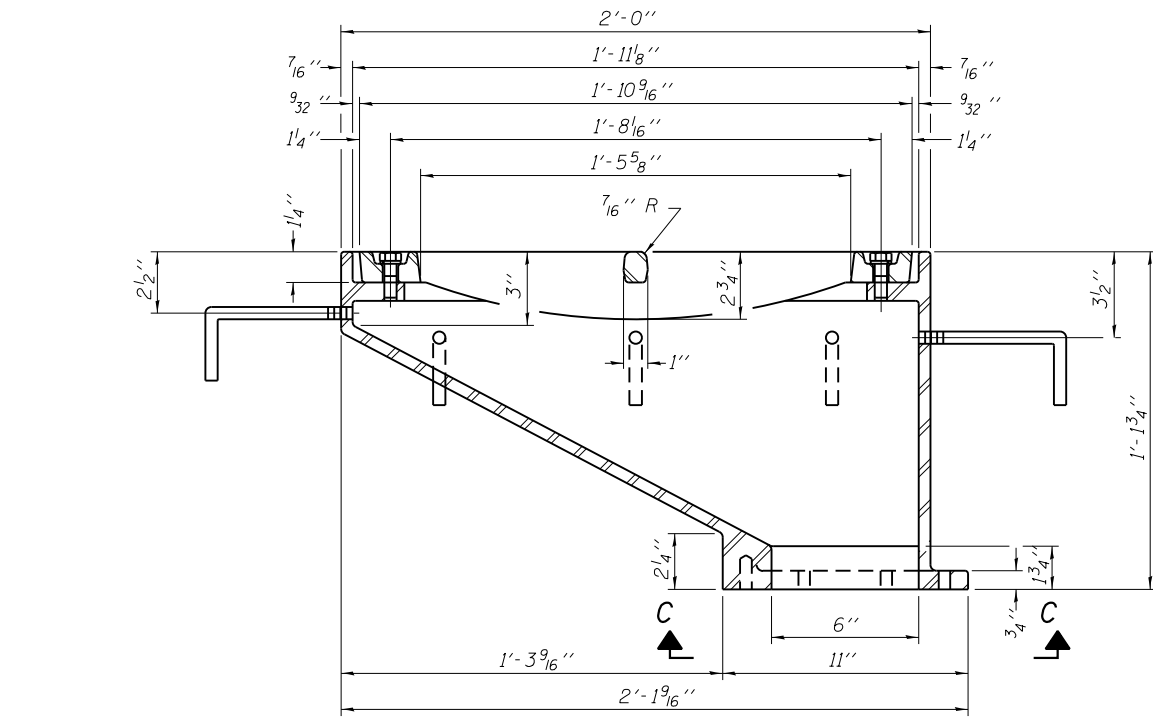
PLAN



VANE GRATE DETAIL

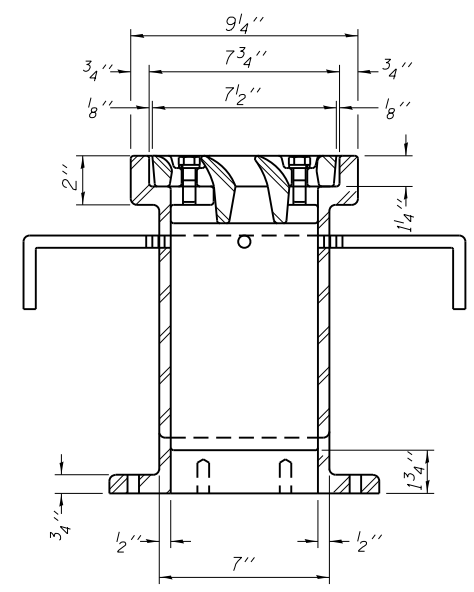


VIEW C-C

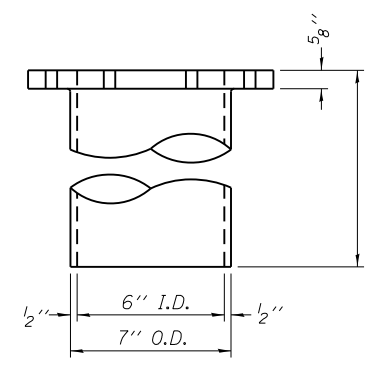


SECTION A-A

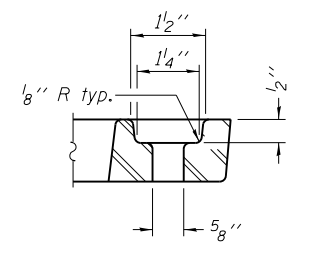
See sheets 17 and 19 of 47 for scupper location relative to curb.



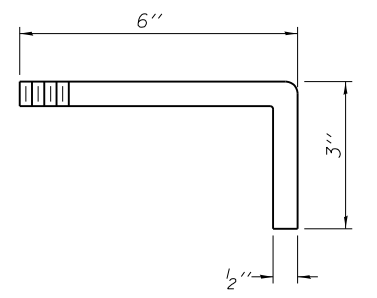
SECTION B-B



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	12

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DS-12

7-1-10

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225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D010-60L72-023-SP.dgn  
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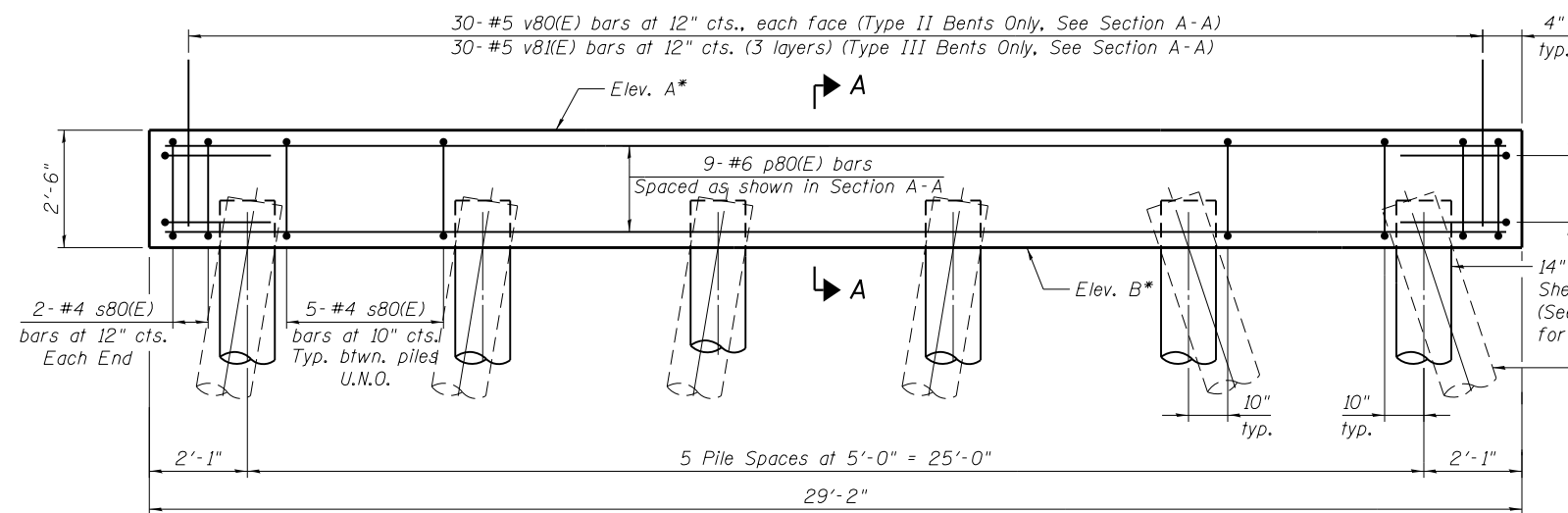
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CHECKED - RH

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

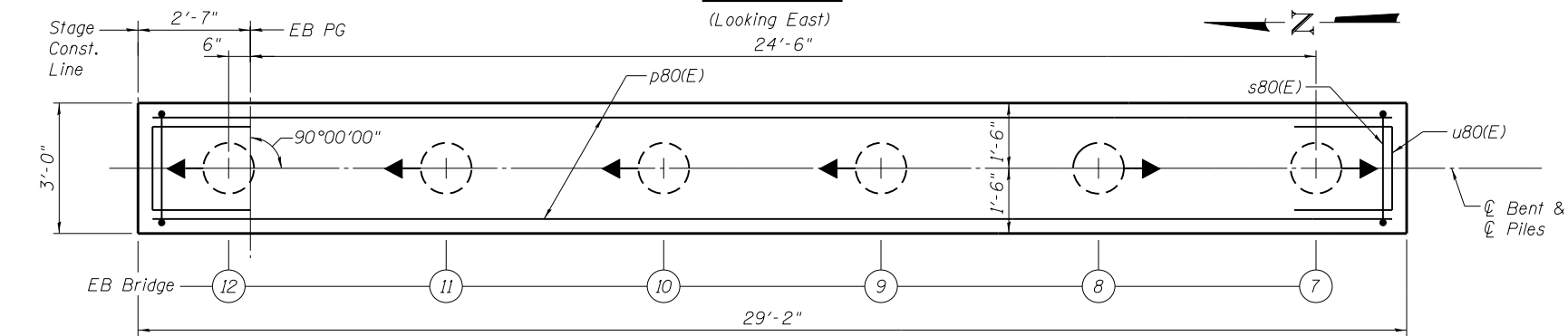
DRAINAGE SCUPPER DS-12  
STRUCTURE NO. 016-D010  
SHEET NO. 23 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	401
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

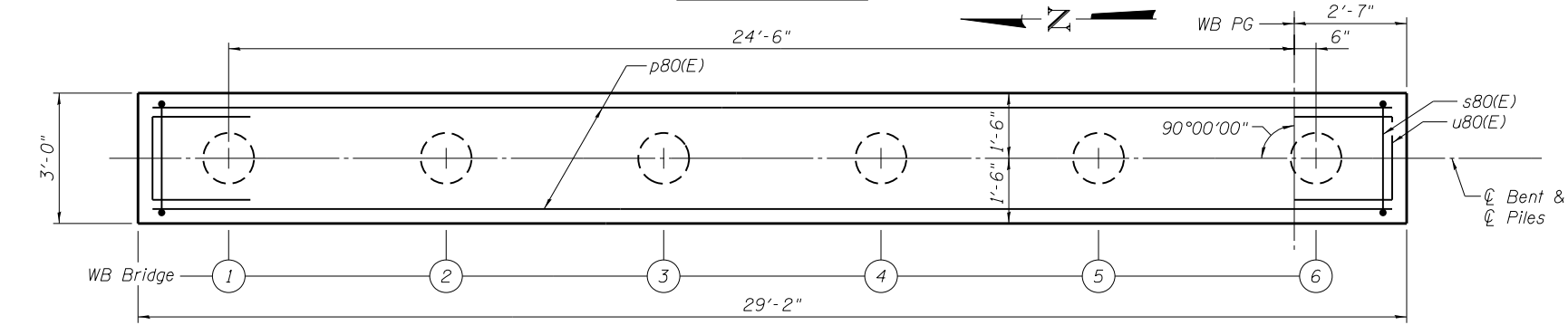


**ELEVATION**

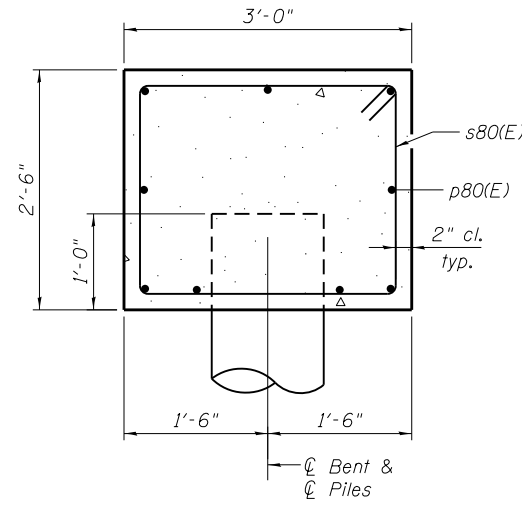
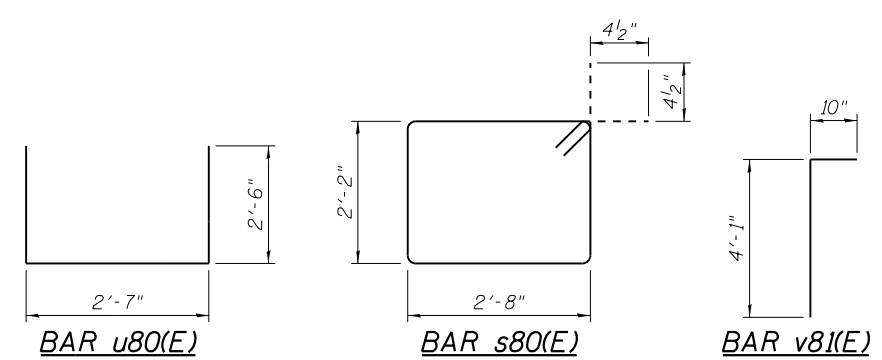
\*For Elev. A & B, see Sheet 25



**EB BENT PLAN**



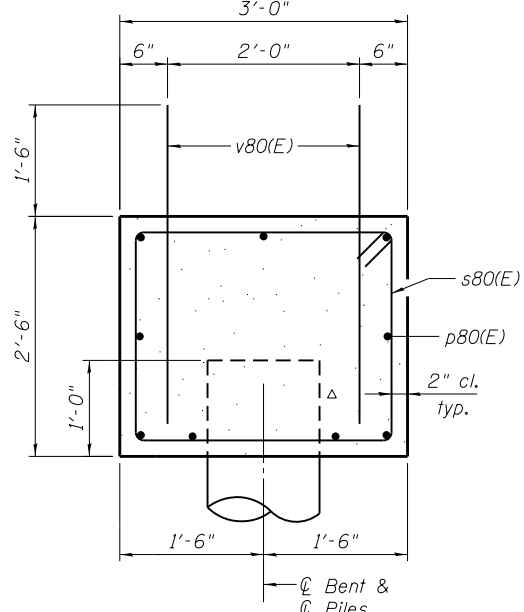
**WB BENT PLAN**



**TYPE I BENT**

**SECTION A-A THRU EXPANSION BENT**

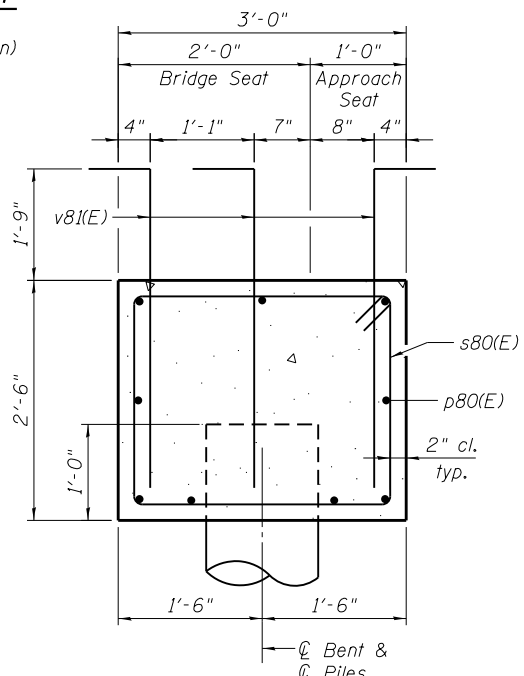
(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 25 for detail bent information)



**TYPE II BENT**

**SECTION A-A THRU FIXED BENT**

(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 25 for detail bent information)



**TYPE III BENT**

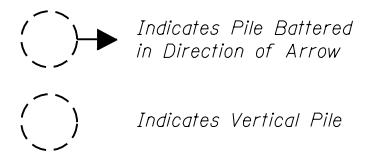
**SECTION A-A THRU END BENT**

(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 25 for detail bent information)

**PILE DATA**

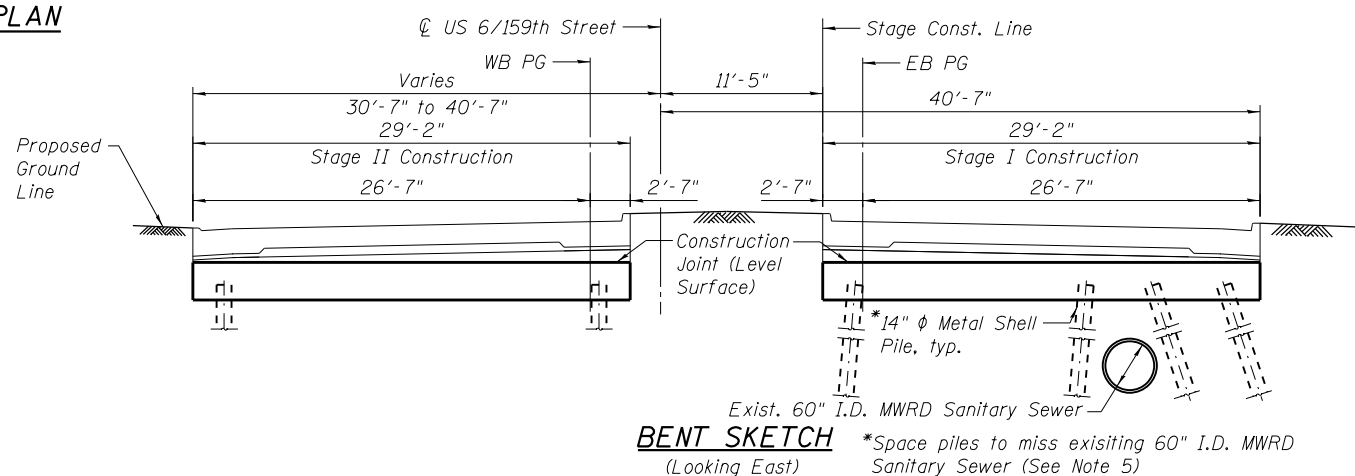
Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
 Nominal Required Bearing: See Table  
 Factored Resistance Available: See Table  
 Est. Length: See Table  
 No. Production Piles: See Table  
 No. Test Piles: See Table

**LEGEND**



**NOTES**

- For Metal Shell Pile Details, see Sheet 29.
- For Pile Data Table, see Sheet 25.
- Apply Concrete Sealer to top and sides of Bent Cap of WB Bents 4, 9, 14, 19, 24, 29 and 34 and EB Bents 6, 11, 16 and 21.
- For pile bent layout, see Sheets 1 and 2.
- The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14" diameter metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.



**BENT SKETCH**  
(Looking East)

\*Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)

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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 1**  
**STRUCTURE NO. 016-D010**

SHEET NO. 24 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	402
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**WESTBOUND BENT TABLE**

BENT CAP TABLE				PILE DATA TABLE					
Bent	Type of Pile Bent	Elev. A	Elev. B	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.)	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles
1	III	691.01	688.51	283	156	44	680	5	1
2	II	690.61	688.11	283	156	44	680	6	0
3	II	690.16	687.66	253	137	59	680	6	0
4	I	689.67	687.17	253	137	59	680	6	0
5	II	689.18	686.68	253	137	59	680	5	1
6	II	688.69	686.19	382	186	45	680	6	0
7	II	688.20	685.70	382	186	45	680	6	0
8	II	687.73	685.23	307	135	74	680	6	0
9	I	687.28	684.78	307	135	74	680	5	1
10	II	686.88	684.38	307	135	74	680	6	0
11	II	686.52	684.02	307	135	74	680	6	0
12	II	686.20	683.70	350	140	68	680	6	0
13	II	685.93	683.43	350	140	68	680	5	1
14	I	685.70	683.20	258	137	73	680	6	0
15	II	685.52	683.02	258	137	73	680	6	0
16	II	685.37	682.87	258	137	73	680	6	0
17	II	685.28	682.78	258	137	73	680	5	1
18	II	685.22	682.72	331	165	56	680	6	0
19	I	685.21	682.71	289	135	78	676	6	0
20	II	685.24	682.74	289	135	78	676	6	0
21	II	685.32	682.82	289	135	78	676	5	1
22	II	685.44	682.94	413	221	41	678	6	0
23	II	685.56	683.06	413	221	41	678	6	0
24	I	685.68	683.18	413	221	41	678	6	0
25	II	685.79	683.29	413	221	41	678	5	1
26	II	685.91	683.41	413	221	41	678	6	0
27	II	686.03	683.53	386	211	72	678	6	0
28	II	686.15	683.65	386	211	72	678	6	0
29	I	686.26	683.76	386	211	72	678	5	1
30	II	686.38	683.88	321	144	72	678	6	0
31	II	686.50	684.00	321	144	72	678	6	0
32	II	686.62	684.12	321	144	72	678	6	0
33	II	686.73	684.23	321	144	72	678	5	1
34	I	686.85	684.35	321	144	72	678	6	0
35	II	686.97	684.47	278	153	42	-	6	0
36	II	687.08	684.58	278	153	42	-	6	0
37	III	687.20	684.70	278	153	42	-	5	1

**EASTBOUND BENT TABLE**

BENT CAP TABLE				PILE DATA TABLE						PILE BATTER INFORMATION					
Bent	Type of Pile Bent	Elev. A	Elev. B	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.)	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles	Pile No. 7	Pile No. 8	Pile No. 9	Pile No. 10	Pile No. 11	Pile No. 12
1	III	685.64	683.14	350	140	72	680	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
2	II	685.47	682.97	258	137	77	680	5	1	-4:12	-4:12	1:12	1:12	1:12	1:12
3	II	685.34	682.84	258	137	77	680	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
4	II	685.26	682.76	331	165	59	680	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
5	II	685.21	682.71	331	165	59	680	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
6	I	685.22	682.72	289	135	83	676	5	1	-4:12	-4:12	1:12	1:12	1:12	1:12
7	II	685.26	682.76	289	135	83	676	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
8	II	685.35	682.85	289	135	83	676	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
9	II	685.48	682.98	413	221	44	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
10	II	685.60	683.10	413	221	44	678	5	1	-4:12	-4:12	1:12	1:12	1:12	1:12
11	I	685.71	683.21	413	221	44	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
12	II	685.83	683.33	413	221	44	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
13	II	685.95	683.45	299	159	75	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
14	II	686.06	683.56	299	159	75	678	5	1	-4:12	-4:12	2:12	2:12	2:12	2:12
15	II	686.18	683.68	299	159	75	678	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
16	I	686.30	683.80	299	159	75	678	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
17	II	686.42	683.92	322	139	59	678	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
18	II	686.53	684.03	322	139	59	678	5	1	-4:12	-4:12	1:12	1:12	1:12	1:12
19	II	686.65	684.15	322	139	59	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
20	II	686.77	684.27	322	139	59	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
21	I	686.89	684.39	322	139	59	678	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
22	II	687.00	684.50	278	153	45	-	5	1	-4:12	-4:12	1:12	1:12	1:12	1:12
23	II	687.12	684.62	278	153	45	-	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12
24	III	687.24	684.74	278	153	45	-	6	0	-4:12	-4:12	1:12	1:12	1:12	1:12

Note: A positive batter indicates piles to be battered toward the  $\text{C}$  US 6/159th Street. A negative batter indicates piles to be battered away from the  $\text{C}$  US 6/159th Street.

**BILL OF MATERIAL BENT 1 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	90	#5	4'-11"	└┘
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	1110		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	220		
Driving Piles	Foot	220		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL BENT 2 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	264		
Driving Piles	Foot	264		

**NOTES**

- For pile bent layout, see Sheets 1 and 2.
- If peat soils are present above the estimated elevation of precore, the contractor shall cease the precore at the elevation peat is encountered in the field during construction.
- Cost of precoring for pile installation is included with DRIVING PILES.

**BILL OF MATERIAL BENT 3 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	25		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		

**BILL OF MATERIAL BENT 4 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL BENT 5 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	295		
Driving Piles	Foot	295		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL BENT 6 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	270		
Driving Piles	Foot	270		

**BILL OF MATERIAL BENT 7 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	270		
Driving Piles	Foot	270		

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CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 2  
STRUCTURE NO. 016-D010**

SHEET NO. 25 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	403
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL BENT 8 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	25		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	444		
Driving Piles	Foot	444		

**BILL OF MATERIAL BENT 9 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	370		
Driving Piles	Foot	370		
Test Pile Metal Shells	Each	1		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL BENT 10 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	444		
Driving Piles	Foot	444		

**BILL OF MATERIAL BENT 11 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	27		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	444		
Driving Piles	Foot	444		

**BILL OF MATERIAL BENT 12 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	27		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	408		
Driving Piles	Foot	408		

**BILL OF MATERIAL BENT 13 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	340		
Driving Piles	Foot	340		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL BENT 14 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	438		
Driving Piles	Foot	438		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL BENT 15 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	27		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	438		
Driving Piles	Foot	438		

**BILL OF MATERIAL BENT 16 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	29		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	438		
Driving Piles	Foot	438		

**BILL OF MATERIAL BENT 17 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	29		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	365		
Driving Piles	Foot	365		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL BENT 18 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	336		
Driving Piles	Foot	336		

**BILL OF MATERIAL BENT 19 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	468		
Driving Piles	Foot	468		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL BENT 20 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	29		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	468		
Driving Piles	Foot	468		

**BILL OF MATERIAL BENT 21 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	29		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	390		
Driving Piles	Foot	390		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL BENT 22 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	28		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	246		
Driving Piles	Foot	246		

**BILL OF MATERIAL BENT 23 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	27		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	246		
Driving Piles	Foot	246		

**BILL OF MATERIAL BENT 24 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	26		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	246		
Driving Piles	Foot	246		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL BENT 25 WB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	25		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	205		
Driving Piles	Foot	205		
Test Pile Metal Shells	Each	1		

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**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D010-60L72-026-RD.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 3  
STRUCTURE NO. 016-D010**

SHEET NO. 26 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	404
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**BILL OF MATERIAL - BENT 7 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	31		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	498		
Driving Piles	Foot	498		

**BILL OF MATERIAL - BENT 8 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	29		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	498		
Driving Piles	Foot	498		

**BILL OF MATERIAL - BENT 9 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	27		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	264		
Driving Piles	Foot	264		

**BILL OF MATERIAL - BENT 10 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	25		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	220		
Driving Piles	Foot	220		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL - BENT 11 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	23		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	264		
Driving Piles	Foot	264		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL - BENT 12 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	22		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	264		
Driving Piles	Foot	264		

**BILL OF MATERIAL - BENT 13 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	19		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	450		
Driving Piles	Foot	450		

**BILL OF MATERIAL - BENT 14 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	17		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	375		
Driving Piles	Foot	375		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL - BENT 15 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	16		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	450		
Driving Piles	Foot	450		

**BILL OF MATERIAL - BENT 16 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	15		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	450		
Driving Piles	Foot	450		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL - BENT 17 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	14		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		

**BILL OF MATERIAL - BENT 18 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	14		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	295		
Driving Piles	Foot	295		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL - BENT 19 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	13		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		

**BILL OF MATERIAL - BENT 20 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	12		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		

**BILL OF MATERIAL - BENT 21 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	11		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	354		
Driving Piles	Foot	354		
Concrete Sealer	Sq. Ft.	249		

**BILL OF MATERIAL - BENT 22 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	10		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	225		
Driving Piles	Foot	225		
Test Pile Metal Shells	Each	1		

**BILL OF MATERIAL - BENT 23 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	11		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	270		
Driving Piles	Foot	270		

**BILL OF MATERIAL - BENT 24 EB**

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v81(E)	90	#5	4'-11"	└
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	1110		
Structure Excavation	Cu. Yd.	8		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	270		
Driving Piles	Foot	270		

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**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

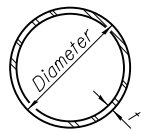
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PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 5  
STRUCTURE NO. 016-D010**

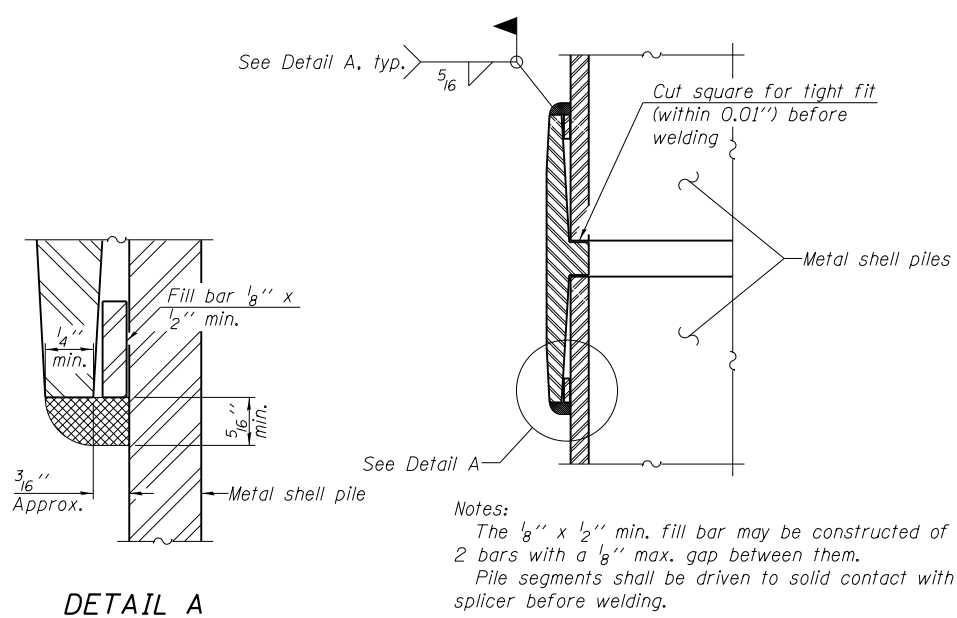
SHEET NO. 28 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	406
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**METAL SHELL PILE TABLE**

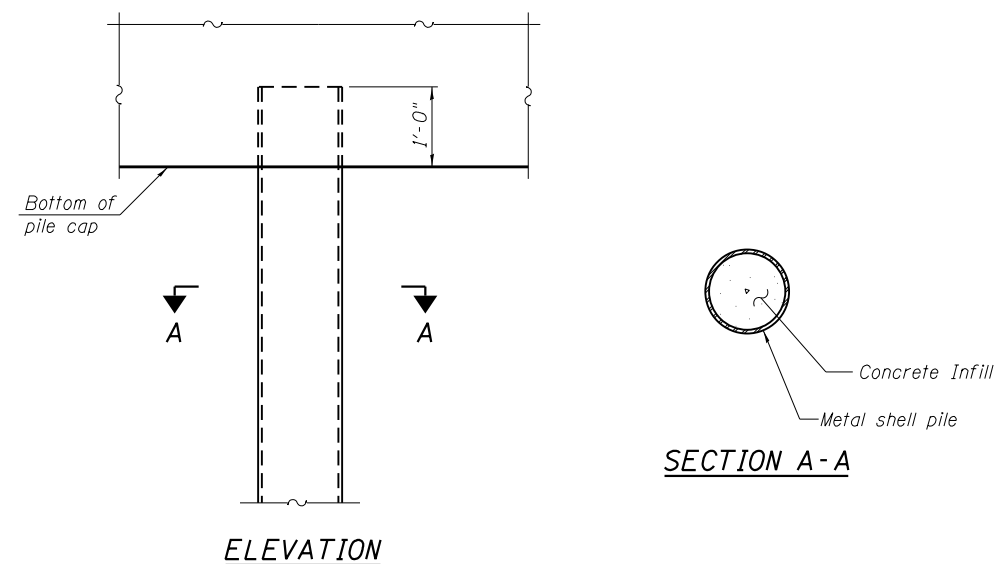
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



**DETAIL A**

Notes:  
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

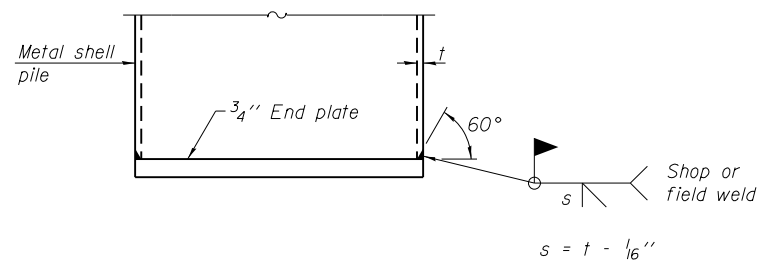
**WELDED COMMERCIAL SPLICE**



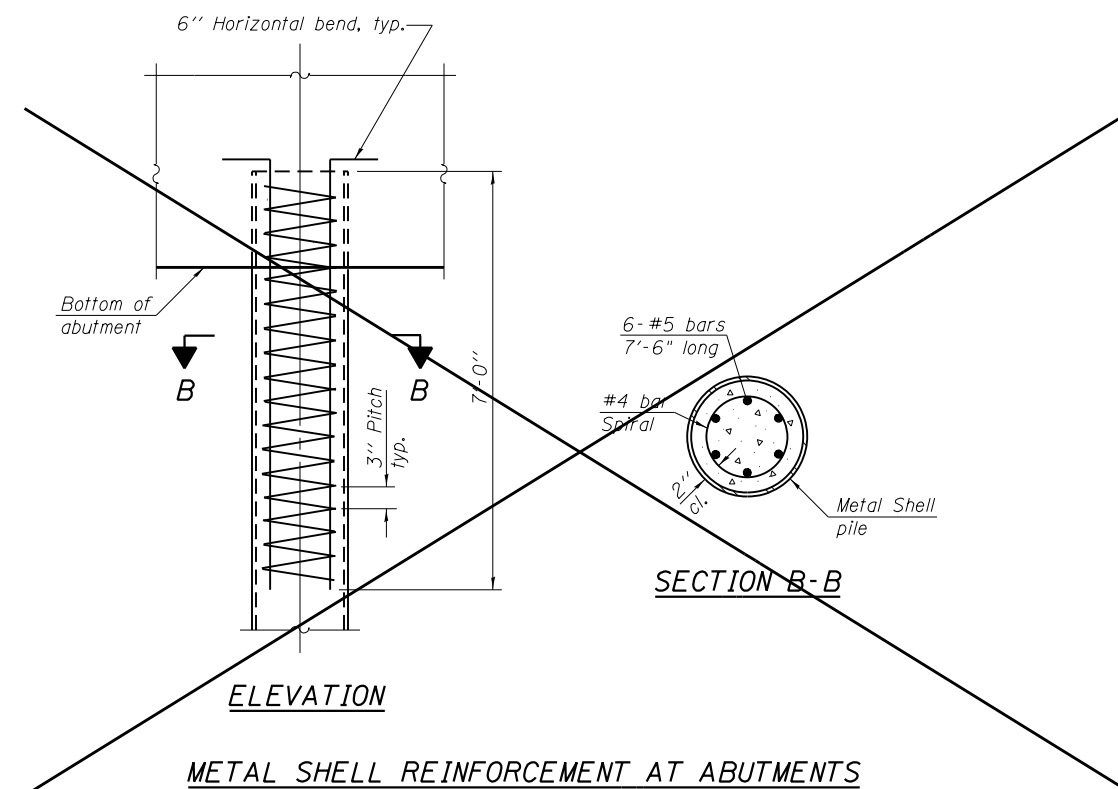
**ELEVATION**

**SECTION A-A**

**METAL SHELL PILE DETAILS AT PIERS**



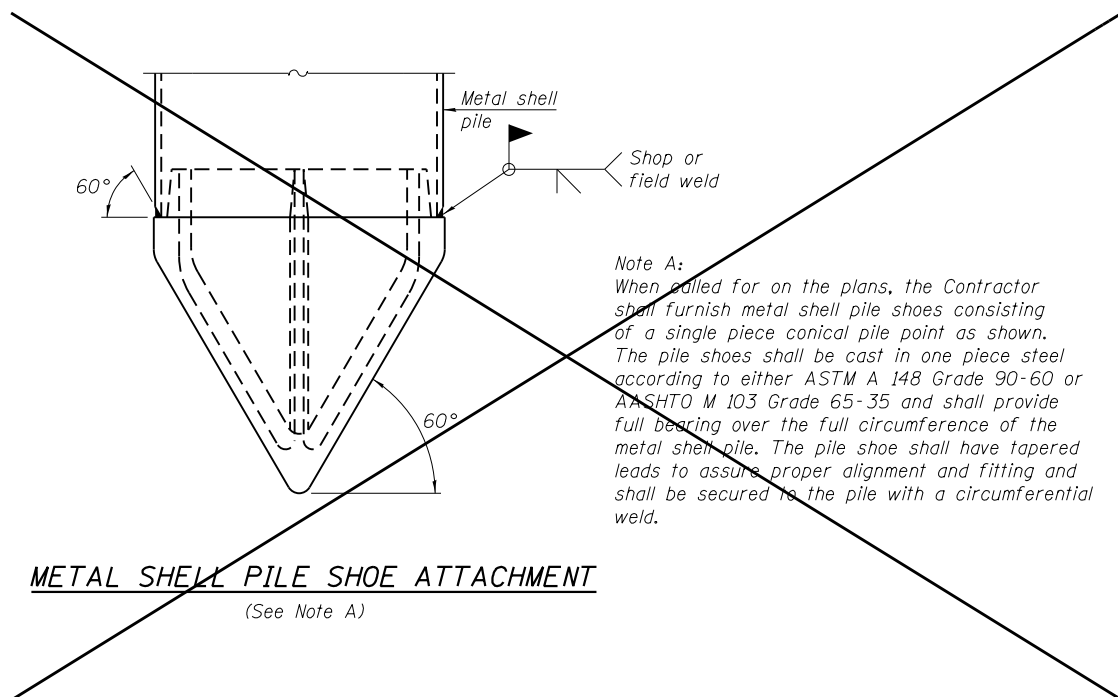
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**ELEVATION**

**SECTION B-B**

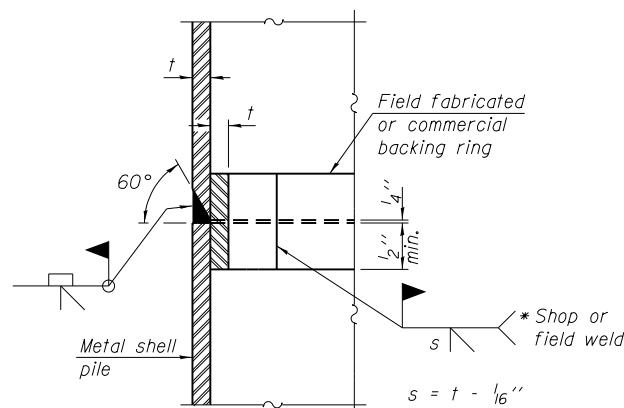
**METAL SHELL REINFORCEMENT AT ABUTMENTS**



**METAL SHELL PILE SHOE ATTACHMENT**

(See Note A)

Note A:  
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.



**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

Note:  
 The metal shell piles shall be according to ASTM A 252 Grade 3.

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =  
 FILE NAME = 016D010-60L72-029-PD.dgn  
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 PLOT DATE =

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 DRAWN - EF  
 CHECKED - RH

REVISED  
 REVISED  
 REVISED  
 REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILES  
 STRUCTURE NO. 016-D010**

SHEET NO. 29 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	407
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				







GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/25/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D010 Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.
					n/a ft
BORING NO. HA-21 Station 373+98 Offset 40.50ft Left Ground Surface Elev. 685.10 ft	(ft)	(/6")	(tsf)	%	Stream Bed Elev.
					n/a ft
					Groundwater Elev.:
					First Encounter
					Upon Completion
					After Hrs.
					ft
TOPSOIL-dark brown & black					45
683.10					
SILTY CLAY-brown & gray-very stiff					86
682.60					
PEAT-dark brown & black					446
-					
					270
					267
675.10					-10
End Of Boring @ -10.0'. Boring backfilled with cuttings.					
					-18
					-20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/19/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY CH

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D010 Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.
					n/a ft
BORING NO. HA-22 Station 377+13 Offset 35.70ft Left Ground Surface Elev. 682.60 ft	(ft)	(/6")	(tsf)	%	Stream Bed Elev.
					n/a ft
					Groundwater Elev.:
					First Encounter
					Upon Completion
					After Hrs.
					ft
TOPSOIL-black					33
679.60					1.8
CLAY-brown & gray-stiff to hard (Fill)					P
-					22
677.10					4.0
PEAT-dark brown & black					P
					361
					226
672.60					-10
End Of Boring @ -10.0'. Boring backfilled with cuttings.					
					-18
					-20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/19/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY CH

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D010 Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.
					n/a ft
BORING NO. HA-23 Station 378+14 Offset 34.70ft Left Ground Surface Elev. 682.50 ft	(ft)	(/6")	(tsf)	%	Stream Bed Elev.
					n/a ft
					Groundwater Elev.:
					First Encounter
					Upon Completion
					After Hrs.
					ft
TOPSOIL-black					19
679.50					1.3
SILTY CLAY-dark brown & gray-stiff (Fill)					P
-					21
677.50					1.5
PEAT-dark brown & black					P
					367
					460
672.50					-10
End Of Boring @ -10.0'. Boring backfilled with cuttings.					
					-18
					-20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D010-60L72-031-SB.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED -  
CHECKED -  
DRAWN - EF  
CHECKED - RH

REVISED  
REVISED  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 2  
STRUCTURE NO. 016-D010

SHEET NO. 31 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	409
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 1

Date 4/19/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY CH  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT H	BULGE	UCS	M O I S T	Surface Water Elev.	Stream Bed Elev.
016-D010					n/a ft	n/a ft
Station						
BORING NO. HA-24					Groundwater Elev.:	
Station 379+14					First Encounter 674.1 ft	
Offset 36.20ft Left					Upon Completion n/a ft	
Ground Surface Elev. 682.10 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	ft
TOPSOIL-black (Fill)						
681.10			1.5 P	21		
CLAY LOAM-dark brown-stiff (Fill)						
679.10			0.5 P	64		
ORGANIC SILTY CLAY-black (Fill)						
677.60			2.3 P	24		
CLAY-brown & gray-very stiff (Fill)						
675.60			0.3 P	117		
PEAT-dark brown & black						
672.10				435		
End Of Boring @ -10.0'. Boring backfilled with cuttings.						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 1

Date 4/19/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY CH  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT H	BULGE	UCS	M O I S T	Surface Water Elev.	Stream Bed Elev.
016-D010					n/a ft	n/a ft
Station						
BORING NO. HA-25					Groundwater Elev.:	
Station 380+13					First Encounter Dry ft	
Offset 36.10ft Left					Upon Completion n/a ft	
Ground Surface Elev. 682.70 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	ft
TOPSOIL-black						
681.20			1.8 P	32		
CLAY-brown & gray-very stiff to hard						
679.20			4.5 P	22		
677.20			3.3 P	19		
675.20			4.0 P	21		
CLAY-gray-stiff						
672.70			1.8 P	21		
End Of Boring @ -10.0'. Boring backfilled with cuttings.						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-032-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 3  
 STRUCTURE NO. 016-D010**

SHEET NO. 32 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	410
				<b>CONTRACT NO. 60L72</b>
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/15/12

ROUTE IL Route 7/J. S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station

BORING NO. RW-02 Station 371+76 Offset 25.00ft Left Ground Surface Elev. 693.40 ft

DEPTH (ft)	B L O W S	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Stream Bed Elev.		DEPTH (ft)	B L O W S	U C S Qu (tsf)	M O I S T (%)
				n/a	ft	n/a	ft				
				Groundwater Elev.:		First Encounter					
						Dry to 10'					
						Upon Completion					
						After					
						Hrs.					

CLAY LOAM-gray-soft to stiff  
(continued)  
 SAND, GRAVEL & STONE (Fill)  
 692.40  
 3  
 4 3.3 19  
 5 B  
 3  
 5 1.1 29  
 5 B  
 3  
 4 2.5 31  
 6 P  
 2  
 4 0.8 34  
 10 P  
 682.90  
 3  
 4 1.5 24  
 5 B  
 becoming gray @ -13.0'  
 2  
 4 32  
 15  
 677.90  
 2  
 4 19  
 675.40  
 2  
 2 0.6 21  
 2 B  
 20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/15/12

ROUTE IL Route 7/J. S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station

BORING NO. RW-02 Station 371+76 Offset 25.00ft Left Ground Surface Elev. 693.40 ft

DEPTH (ft)	B L O W S	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Stream Bed Elev.		DEPTH (ft)	B L O W S	U C S Qu (tsf)	M O I S T (%)
				n/a	ft	n/a	ft				
				Groundwater Elev.:		First Encounter					
						Dry to 10'					
						Upon Completion					
						After					
						Hrs.					

CLAY LOAM-gray-soft to stiff  
(continued)  
 5  
 7 1.8 21  
 8 B  
 646.40  
 SILTY SAND-gray-medium dense  
 9  
 10 18  
 12  
 643.40  
 End Of Boring @ -50.0'. Boring backfilled with cuttings.  
 12  
 35  
 40

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-033-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 4  
 STRUCTURE NO. 016-D010

SHEET NO. 33 OF 47 SHEETS

F.A.P. RTE. 351	SECTION 2010-081-R	COUNTY COOK	TOTAL SHEETS 1045	SHEET NO. 411
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	







GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 2

Date 3/15/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station  
 BORING NO. RW-05 Station 373+90 Offset 24.50ft Left Ground Surface Elev. 688.50 ft

DEPTHS (ft) (ft) (ft) (ft)

BL (in) (in) (in) (in)

UCS (tsf) (tsf) (tsf) (tsf)

M O I S T (%) (%) (%) (%)

DEPTH (ft)	BL (in)	UCS (tsf)	M O I S T (%)	DESCRIPTION
687.75			5	SAND & GRAVEL
685.50	6			TOPSOIL-black (continued)
	4	1.8	28	
	3	P		
685.50				SILTY CLAY-dark brown & gray-medium stiff to very stiff (Wet) Fill
	2		25	
	3	0.7		
	5	B		
	3			CLAY-gray-stiff to very stiff
	5	2.0	29	
	6	P		
680.50				PEAT-dark brown to black-very loose
	3		71	
	2			
	2			
	ST			
			123	
				SANDY LOAM-gray-medium dense
	1			
	1	0.3	119	
	1	P		
	1			CLAY-gray-very stiff
	1	0.5	127	
	1	P		
670.50				ORGANIC SILTY CLAY-dark brown & gray-very loose
	0			
	0	0.2	44	
	0	B		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 2 of 2

Date 3/15/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station  
 BORING NO. RW-05 Station 373+90 Offset 24.50ft Left Ground Surface Elev. 688.50 ft

DEPTHS (ft) (ft) (ft) (ft)

BL (in) (in) (in) (in)

UCS (tsf) (tsf) (tsf) (tsf)

M O I S T (%) (%) (%) (%)

DEPTH (ft)	BL (in)	UCS (tsf)	M O I S T (%)	DESCRIPTION
646.50				CLAY-gray-very stiff (continued)
646.50				SILTY LOAM-gray-medium dense
	6			
	6		21	
	6			
641.50				CLAY LOAM-gray-very stiff
	8			
	8	2.5	13	
	9	P		
638.50				End of Boring @ -50.0'. Boring backfilled with cuttings.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H. W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 7  
 STRUCTURE NO. 016-D010

SHEET NO. 36 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	414
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	D E P T H			M O I S T	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	D E P T H			M O I S T
				(ft)	(/6")	(tsf)					(ft)	(/6")	(tsf)	
016-D010	SB-01	13.70ft Right	687.60				n/a	n/a	Dry to 10'					
CLAY-gray-soft to stiff (continued)														
			686.60	3							2			
				5	4.5	19					4	0.8	17	
				7	P						5	B		
ORGANIC SILTY CLAY-brown & gray-loose														
			684.60	2							2			
				2	1.3	45					3	1.4	16	
				3	P						6	B		
				3							5			
				2	0.6	61					7	1.3	17	
				2	B						9	B		
CLAY-gray-soft to stiff														
			679.60	2							3			
				2	0.8	25					5	1.4	15	
				3	B						7	B		
				3										
				5	0.9	24								
				5	B									
CLAYEY SAND & GRAVEL-gray-medium dense														
			655.60	1							8			
				1	0.5	26					9		10	
				3	P						18			
				4										
				5	0.8	16								
				6	B									
CLAY-gray-stiff to hard														
			650.60	2							4			
				3	0.3	17					5	1.0	29	
				4	P						7	P		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	D E P T H			M O I S T	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	D E P T H			M O I S T
				(ft)	(/6")	(tsf)					(ft)	(/6")	(tsf)	
016-D010	SB-01	13.70ft Right	687.60				n/a	n/a	Dry to 10'					
CLAY-gray-stiff to hard (continued)														
				3							5			
				3	1.3	14					6	4.2	20	
				4	P						7	B		
				4										
				7										
				7	1.0	11								
				10	P						15			
				10							5	2.0	19	
				11	B						6	P		
				11										
SAND & GRAVEL-gray-medium dense														
			615.60	7							8			
				9	2.2	21					10		9	
				11	B						13			
				11										
End Of Boring @ -75.0'. Boring backfilled with cuttings.														
			612.60	6										
				5	1.7	18								
				6	B									

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-037-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 8  
 STRUCTURE NO. 016-D010**

SHEET NO. 37 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	415
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



IL Route 7/U.S. Route 6 (159th St.)

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station	B O R I N G NO. SB-02 Station 375+23 Offset 18.10ft Left Ground Surface Elev. 687.20 ft	Surface Water Elev. n/a ft Stream Bed Elev. n/a ft				D E P T H (ft)	B L U G S (ft)	U C S (tsf)	M O I S T (%)	Description	D E P T H (ft)	B L U G S (ft)	U C S (tsf)	M O I S T (%)
		Groundwater Elev.: First Encounter Dry to 10' ft Upon Completion n/a ft After Hrs.												
		CRUSHED ASPHALT & STONE 686.80							ORGANIC SILTY CLAY-dark gray-very loose					
		CLAY LOAM-dark brown, gray & black-very stiff (Fill)												
		681.70							SILTY CLAY-dark gray to black-very stiff (Wet)					
		679.20							PEAT-dark brown & black-very loose					
		655.20							CLAY-gray-stiff to very stiff					
		612.20							End Of Boring @ -75.0' Boring backfilled with cuttings.					

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)

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IL Route 7/U.S. Route 6 (159th St.)

SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D010 Station	B O R I N G NO. SB-02 Station 375+23 Offset 18.10ft Left Ground Surface Elev. 687.20 ft	Surface Water Elev. n/a ft Stream Bed Elev. n/a ft				D E P T H (ft)	B L U G S (ft)	U C S (tsf)	M O I S T (%)	Description	D E P T H (ft)	B L U G S (ft)	U C S (tsf)	M O I S T (%)
		Groundwater Elev.: First Encounter Dry to 10' ft Upon Completion n/a ft After Hrs.												
		CLAY-gray-stiff to very stiff (continued)							CLAY-gray-stiff to very stiff (continued)					
		625.20							CLAY LOAM-gray-stiff to very stiff					
		612.20							End Of Boring @ -75.0' Boring backfilled with cuttings.					

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\1016\11\LOCHNER\11.2\WILL COOK RD. TO US 46 (FTB 157, 5/31/10).BORING.LOG.01016.DWG

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<b>LOCHNER</b> H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED -	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>SOIL BORINGS 9</b> <b>STRUCTURE NO. 016-D010</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 016D010-60L72-038-SB.dgn	CHECKED -	REVISED			351	2010-081-R	COOK	1045	416
PLOT SCALE =	DRAWN - EF	REVISED	SHEET NO. 38 OF 47 SHEETS			ILLINOIS FED. AID PROJECT				
PLOT DATE =	CHECKED - RH	REVISED								







GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/7/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPT H	BLOWS	UCS	MOIST	Surface Water Elev.	DEPT H	BLOWS	UCS	MOIST
(ft)	(/6")	(tsf)	(%)	n/a ft	(ft)	(/6")	(tsf)	(%)
SAND, GRAVEL & STONE				PEAT-dark brown & black-very loose (continued)				
663.70	2		7		0			
CLAY to CLAY LOAM-brown, gray & black-stiff to very stiff (Fill)	3	1.3	23		0	<0.25	118	
	4	P			1	P		
				ORGANIC SILTY CLAY-dark gray-very loose				
661.70	4				1			
	5	3.5	22		0	<0.25	55	
	8	P			0	P		
				CLAY-gray-soft to very stiff				
676.70	6				0	<0.25	60	
	6	1.3	33		0	P		
PEAT-dark brown & black-very loose	4	P			0			
	ST		310		1			
					2	0.4	26	
	2				3	B		
	1		379					
	1							
	0				2			
	0		250		3	0.5	24	
	0				6	B		
	0							
	0	<0.25	155					
	0	P						
	0				5			
	0	<0.25	99		8	1.7	21	
	0	P			12	B		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/7/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPT H	BLOWS	UCS	MOIST	Surface Water Elev.	DEPT H	BLOWS	UCS	MOIST
(ft)	(/6")	(tsf)	(%)	n/a ft	(ft)	(/6")	(tsf)	(%)
CLAY-gray-soft to very stiff (continued)				CLAY-gray-soft to very stiff (continued)				
	5				6			
	7	1.6	21		6	1.1	12	
	9	B			9	B		
				CLAY-gray-soft to very stiff				
	3				6			
	5	1.3	16		10	1.5	21	
	7	B			15	B		
				CLAY-gray-soft to very stiff				
	10				8			
	12	1.2	16		10	2.9	20	
	8	B			10	B		
				End Of Boring @ -75.0'. Boring backfilled with cuttings.				
	7							
	9	1.0	20					
	13	P						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

T:\51006-USA\Struct\Bridges\Land Bridge 1 - 016-D010-60L72-040-SB.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-040-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 11  
 STRUCTURE NO. 016-D010**

SHEET NO. 40 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	418
<b>CONTRACT NO. 60L72</b>				

ILLINOIS FED. AID PROJECT





GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTH (ft)	BLOWS (6")	UCS (tsf)	MOIST (%)	SOIL DESCRIPTION	DEPTH (ft)	BLOWS (6")	UCS (tsf)	MOIST (%)
0				CRUSHED STONE-medium dense	0			
8			7		0			
15			6		0	<.25	62	
9					0	P		
663.80				CLAY LOAM-dark brown, gray & black-stiff (Fill)	663.80			
4	1.1	23			0		25	
3	B				0			
3					2		25	
4	1.9	30			3			
5	B				4			
678.80				PEAT-dark brown & black-very loose	678.80			
ST		241			3			
0					4	1.5	22	
1	<.25	432			7	B		
1	P				3			
0					4	1.5	22	
0	<.25	204			7	B		
0	P				9	4.3	19	
15					10	B		
0					7			
1	<.25	95			9		17	
1	P				9			
0					9			
0	P				9			
20					9			
668.80				ORGANIC SILTY CLAY-dark gray-very loose	649.80			
0					7			
0	<.25	52			9			
0	P				9			
0					9			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTH (ft)	BLOWS (6")	UCS (tsf)	MOIST (%)	SOIL DESCRIPTION	DEPTH (ft)	BLOWS (6")	UCS (tsf)	MOIST (%)
0				CRUSHED STONE-medium dense	0			
8			7		0			
15			6		0	<.25	62	
9					0	P		
663.80				CLAY LOAM-dark brown, gray & black-stiff (Fill)	663.80			
4	1.1	23			0		25	
3	B				0			
3					2		25	
4	1.9	30			3			
5	B				4			
678.80				PEAT-dark brown & black-very loose	678.80			
ST		241			3			
0					4	1.5	22	
1	<.25	432			7	B		
1	P				3			
0					4	1.5	22	
0	<.25	204			7	B		
0	P				9	4.3	19	
15					10	B		
0					7			
1	<.25	95			9		17	
1	P				9			
0					9			
0	P				9			
20					9			
668.80				ORGANIC SILTY CLAY-dark gray-very loose	649.80			
0					7			
0	<.25	52			9			
0	P				9			
0					9			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-042-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 13  
 STRUCTURE NO. 016-D010**

SHEET NO. 42 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	420
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/6/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Groundwater Elev.:		D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)
						n/a	ft	n/a	ft				
016-D010 688.20	SB-07 378+12 25.40ft Left 688.40						n/a	n/a	Dry to 10'				
	CLAYEY SAND & GRAVEL-dark gray				13				ORGANIC SILTY CLAY-dark gray-very loose (continued)				
	CLAY to CLAY LOAM-dark brown & gray-medium stiff to very stiff (Fill)	2 3 4			17					0 0 0			53
									CLAY-gray-medium stiff to stiff				
		2 3 5		0.9 B	24					1 2 3	0.6 B		26
		2 3 4		2.1 B	21					2 3 5	0.6 B		24
		1 2		0.6 B	29					2 4	1.0 P		25
	675.90												
	PEAT-dark brown & black-very loose				422								
		1 1			424					3 3	1.0 P		28
		1 1			110								
	668.40												
	ORGANIC SILTY CLAY-dark gray-very loose				58					2 3 4	0.9 B		24

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/6/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station Offset Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Groundwater Elev.:		D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)
						n/a	ft	n/a	ft				
016-D010 688.20	SB-07 378+12 25.40ft Left 688.40						n/a	n/a	Dry to 10'				
	CLAY-gray-medium stiff to stiff (continued)								CLAYEY SAND & GRAVEL-gray-medium dense (continued)				
		3 4		0.8 B	24					7 11			14
	639.40												
	SILTY SAND & GRAVEL-gray-medium dense								CLAY LOAM-gray-stiff				
		5 6			16					8 9	1.3 B		12
	634.40												
	CLAY LOAM-gray-medium stiff								FINE SAND-gray-medium dense				
		4 5		0.4 B	14					9 11			14
		8								11			
	629.40												
	CLAYEY SAND & GRAVEL-gray-medium dense												
		5 6			18								
		11											

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

T:\51006-USE5\Struct\Bridges\Land Bridge 1 - 016-D010-60L72-043-SB.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-043-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 14  
 STRUCTURE NO. 016-D010

SHEET NO. 43 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	421
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				





GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/6/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T38N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	D E P T H S	B L O W S	U C S Qu	M O D E S T	Surface Water Elev. n/a ft Stream Bed Elev. n/a ft	D E P T H S	B L O W S	U C S Qu	M O D E S T
ASPHALT									
CLAY LOAM with GRAVEL-dark brown to black-loose (Fill)	685.80	4				0			
		4	2.5	17		0	<0.25	49	
		4	P			0	P		
CLAY-brown & gray-stiff to very stiff	683.70	3				0			
		3	1.5	22		0	<0.25	53	
		4	B			1	P		
		4				3			
		4	2.4	24		6	1.1	24	
		6	B			6	B		
		3				3			
		2	2.3	21		4	1.2	23	
		2	B			6	B		
PEAT-dark brown & black-very loose	676.20	1							
		1		461					
		2							
		1				5			
		1		360		7	2.0	22	
		1				10	B		
		1				10			
		1	0.3	126					
		1	P						
ORGANIC SILTY CLAY-dark gray-very loose	668.70	0				4			
		0	<0.25	47		7	2.4	21	
		0	P			8	B		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/6/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T38N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	D E P T H S	B L O W S	U C S Qu	M O D E S T	Surface Water Elev. n/a ft Stream Bed Elev. n/a ft	D E P T H S	B L O W S	U C S Qu	M O D E S T
CLAY-gray-stiff to very stiff (continued)									
		4				7			
		5	1.5	24		9		30	
		7	B			10			
		4							
		6	1.5	22		4		26	
		9	B			4			
		6				6			
		10	1.0	22		6		23	
		19	P			6			
		12							
		13	3.2	15					
		19	B						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-045-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 16  
 STRUCTURE NO. 016-D010

SHEET NO. 45 OF 47 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	423
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)	Surface Water Elev.	Stream Bed Elev.	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)
016-D010	SB-10	380+03	13.90ft Right	687.00	687.00	n/a	n/a				
ASPHALT 686.10											
SILTY CLAY LOAM-brown & gray-hard (Fill) 684.00											
SILTY SAND-brown-very loose (Apparently Fill) 681.50											
CLAY-gray-stiff to hard 661.50											
SILT-gray-loose 655.00											
SAND & GRAVEL-gray-medium dense 650.00											
SILTY SAND & GRAVEL-gray-loose 630.00											
SILTY CLAY LOAM-gray-very stiff 669.00											

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/12/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD  
 SECTION 2010-081-R LOCATION SE1/4, SEC. 17, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)	Surface Water Elev.	Stream Bed Elev.	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)
016-D010	SB-10	380+03	13.90ft Right	687.00	687.00	n/a	n/a				
SAND & GRAVEL-gray-loose (continued) 645.00											
SAND-gray-medium dense 625.00											
CLAYEY SAND & GRAVEL-gray-medium dense 620.00											
SAND & GRAVEL-gray-medium dense 612.00											
SAND & GRAVEL-gray-medium dense 630.00											

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D010-60L72-046-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 17**  
**STRUCTURE NO. 016-D010**  
 SHEET NO. 46 OF 47 SHEETS

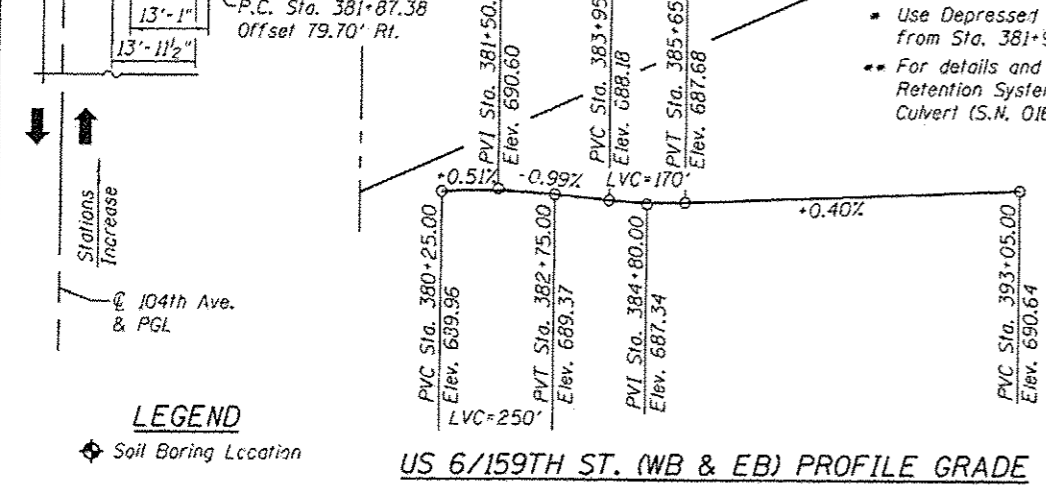
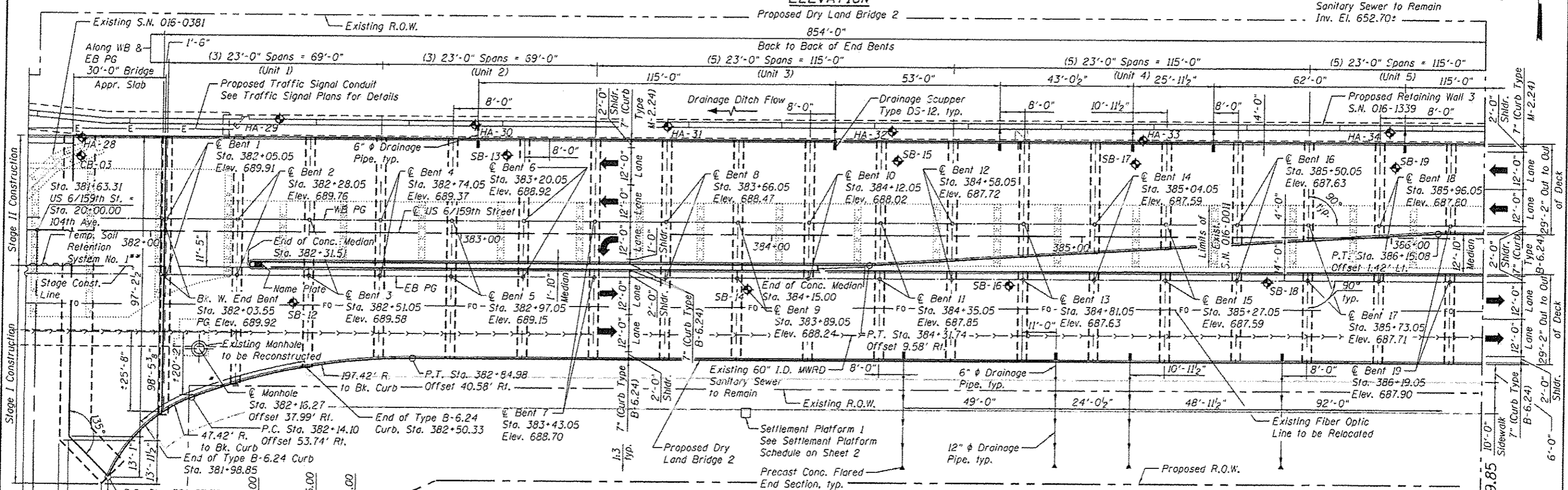
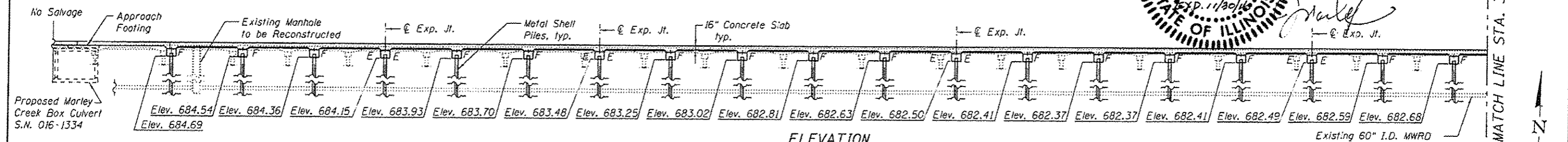
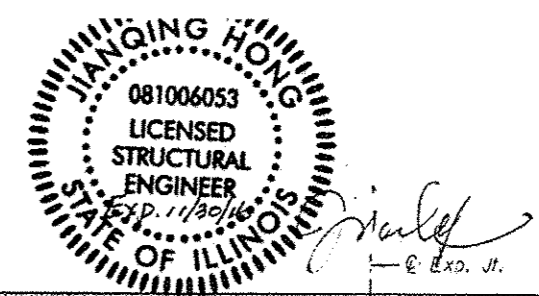
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	424
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				





Bench Mark: BM #48 Set at a notch cut on top of northwest wingwall of bridge US 6 over Marley Creek, Elev. 686.47.  
 BM #49 Set at a notch cut on south end of east 16' headwall to private entrance, Elev. 687.61, 37' north of C US 6 and 1000' east of 104th Street.

Existing Structure: S.N. D016-D011. Built in 1937 as S.B.I. Route 53. Section 537-R at Station 386+05.10. Structure consists of 40-spans - one 1-span, one 4-span and seven 5-span continuous reinforced concrete slab units supported on timber piles. Each unit has a width of 20'-0", 80'-0" and 115'-0" respectively. The overall length of the structure is 900'-0". Reconstructed in 1989 under FAP Rte. 581 (US 6) Section 537(B-R-8RS)86 with the addition of one pier and widening of 4 piers and roadway on the west end of the bridge. Structure to be removed and replaced using stage construction.



- Use Depressed Curb adjacent to curb ramp from Sta. 381+98.85 to Sta. 382+50.33
- For details and payment of Temporary Soil Retention System No. 1, see Marley Creek Box Culvert (S.N. 016-1334) plans.

STATION 386+30.55  
 BUILT 2015 BY  
 STATE OF ILLINOIS  
 F.A.P. RTE 351-SEC.2010-081-R  
 LOADING HL-93  
 STRUCTURE NO. 016-D011

NAME PLATE  
 See Std. 515001

LOADING HL-93  
 Allow 50#/sq. ft. for future wearing surface.

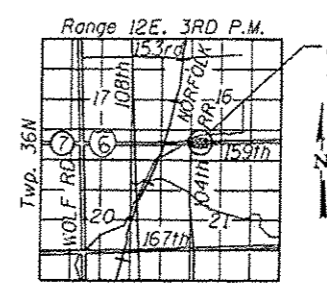
PLAN

DESIGN SPECIFICATIONS  
 2012 AASHTO LRFD Bridge Design Specifications,  
 6th Edition, with 2013 Interims.

DESIGN STRESSES  
 FIELD UNITS  
 $f_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (M270 Grade 36)

SEISMIC DATA  
 Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.130g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.238g  
 Soil Site Class = E

APPROVED  
 For Structural Adequacy Only  
 A. Carl Purdy  
 Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN & ELEVATION 1  
 DRY LAND BRIDGE 2  
 US ROUTE 6 / 159TH STREET  
 F.A.P. RTE 351 - SEC. 2010-081-R  
 COOK COUNTY  
 STATION 386+30.55  
 STRUCTURE NO. 016-D011

LOCHNER  
 H. W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME	DESIGNED - LJB	REVISED
FILE NAME	CHECKED - RH	REVISED
PLOT SCALE	DRAWN - LJB	REVISED
PLOT DATE	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	426
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	



**GENERAL NOTES**

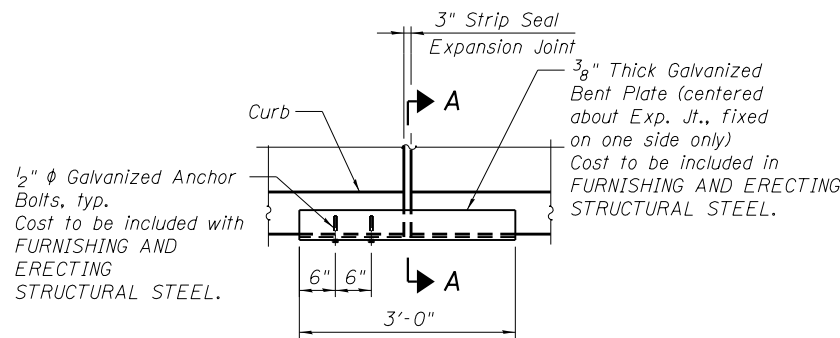
1. Calculated weight of Structural Steel M270 Grade 36 = 2,580lb.
2. All structural steel shall be AASHTO M 270 Grade 36.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Protective coat shall be applied to surfaces of bridge deck, approach slabs and curbs.
5. Concrete Sealer shall be applied to the designated areas of the Expansion Bent Caps. See Sheet 49 thru 53 for locations.
6. Refer to Roadway Plans for type and quantity of fill material required within the limits of Dry Land Bridge.
7. Piles shall be driven through 18" diameter precored holes extending to the estimated elevation shown on sheet 54 according to Article 512.09(c) of the Standard Specifications. Cost included in driving piles. However, the contractor may cease the precoring of piles at the elevation peat is encountered. Loose sand shall be backfilled in the precored holes without compacting.
8. The deck of the existing land bridge shall be removed. The existing bent caps and/or timber piles shall be removed to 2' below bottom of the proposed land bridge slab, abandoned in place and buried under the proposed land bridges.
9. The Contractor shall verify locations of all underground utilities before driving piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.
10. Excavation for placement of slab shall be paid for as Earth Excavation. See Roadway Plans.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill for Structures	Cu. Yd.		81	81
Removal of Existing Structures No. 2	Each	1		1
Structure Excavation	Cu. Yd.		1,813	1,813
Concrete Structures	Cu. Yd.		775.6	775.6
Concrete Superstructure	Cu. Yd.	3,688.0		3,688.0
Bridge Deck Grooving	Sq. Yd.	6,383		6,383
Protective Coat	Sq. Yd.	7,117		7,117
Reinforcement Bars, Epoxy Coated	Pound	704,810	84,410	789,220
Bar Splicers	Each	464	225	689
Mechanical Splicers	Each	1,009	80	1,089
Furnishing Metal Shell Piles 14"x0.25"	Foot		27,556	27,556
Driving Piles	Foot		27,556	27,556
Test Pile Metal Shells	Each		20	20
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	539		539
Concrete Sealer	Sq. Ft.		4,489	4,489
Drainage Scuppers, DS-12	Each	17		17
Drainage System No. 2	Each	1		1
Furnishing and Erecting Structural Steel	Pound	2,580		2,580
Settlement Platforms	Each		3	3

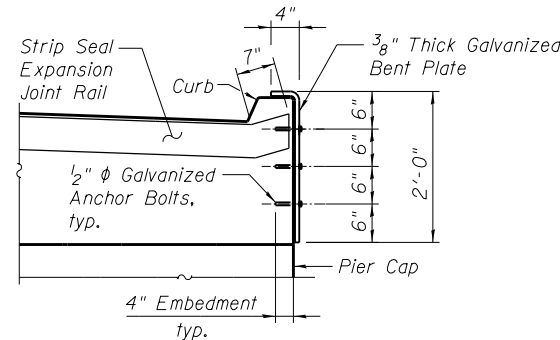
**INDEX OF SHEETS**

SHEET NO.	TITLE
1	General Plan & Elevation 1
2	General Plan & Elevation 2
3	General Notes and Bill of Material
4	Construction Staging 1
5	Construction Staging 2
6	Construction Staging 3
7	Construction Staging 4
8	Temporary Concrete Barrier
9	Top of Slab Elevation Plan 1
10	Top of Slab Elevation Plan 2
11	Top of Slab Elevation Plan 3
12	Top of Slab Elevations 1
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14	Top of Slab Elevations 3
15	Top of Slab Elevations 4
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17	Top of Approach Slab Elevations 1
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23	Deck Plan Unit 3
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25	Deck Plan Unit 4
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27	Deck Plan Unit 5
28	Superstructure Details Unit 5
29	Deck Plan Unit 6
30	Deck Plan II Unit 6
31	Superstructure Details I Unit 6
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33	Deck Plan I Unit 7
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39	Superstructure Details Unit 9
40	Deck Cross Section 1
41	Deck Cross Section 2
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45	East Bridge Approach Slab Details 1
46	East Bridge Approach Slab Details 2
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50	Typical Bent Details 2
51	Typical Bent Details 3
52	Typical Bent Details 4
53	Typical Bent Details 5
54	Typical Bent Details 6
55	Typical Bent Details 7
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57	Metal Shell Piles
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59	Soil Borings 1
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72	Soil Borings 14
73	Soil Borings 15
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77	Soil Borings 19

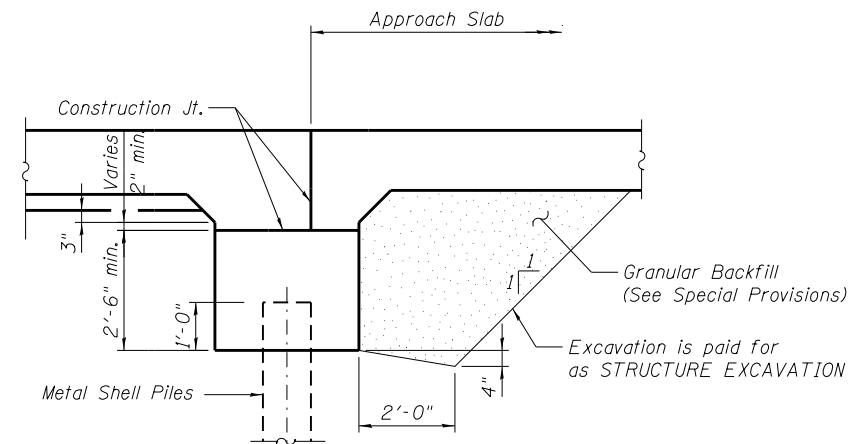


**END PLAN OF EXPANSION JOINT DETAILS**

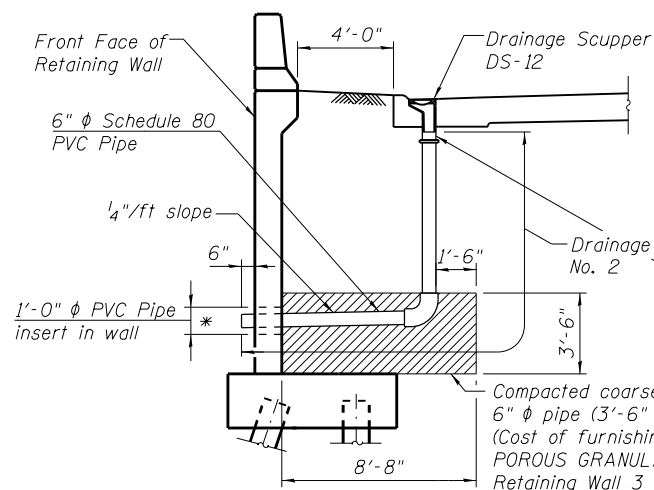
Typical at each end of Expansion Joints



**SECTION A-A**

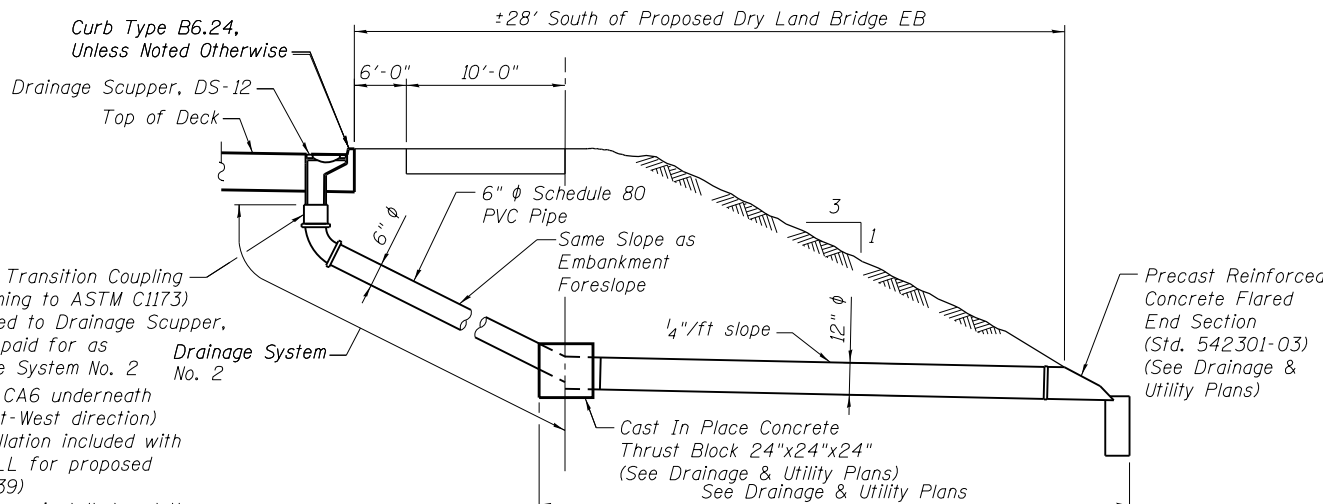


**SECTION THRU END PILE BENT CAP**



**SCUPPER AND DRAINAGE SYSTEM DETAILS**

(Looking East)



\\NASCH1\Chicago2\5106-056\Structure\Land Bridges\2 - 016-D011-016D011-60L72-003-GN.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

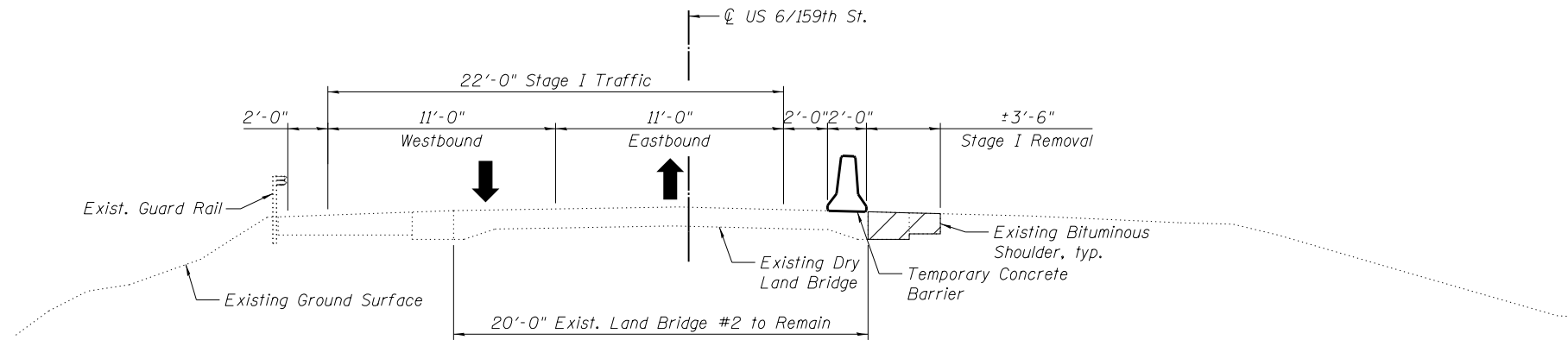
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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES AND BILL OF MATERIAL  
STRUCTURE NO. 016-D011**

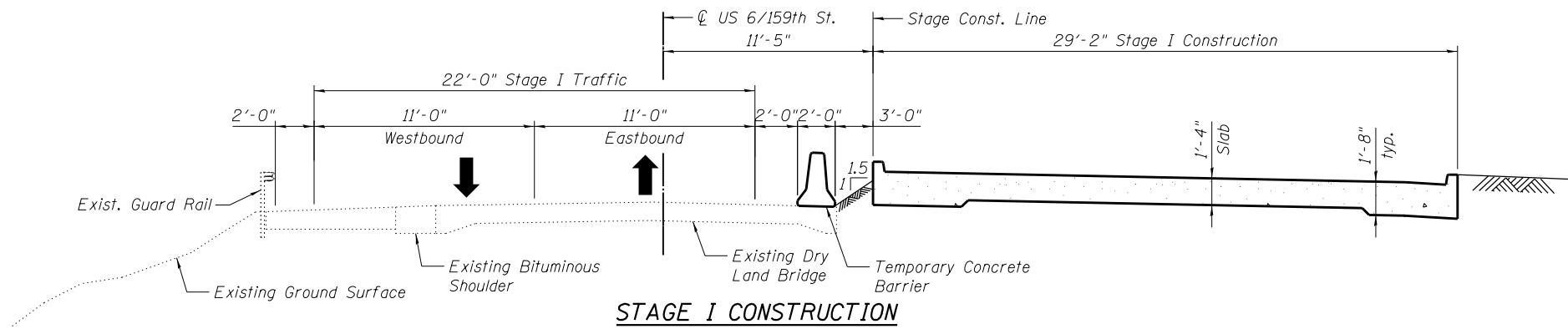
SHEET NO. 3 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	428
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**STAGE I REMOVAL**  
(Looking East)


Dry land bridge segment between Sta. 386+15.08 and Sta. 386+84.92 as shown. Other dry land bridge segments similar. See Cross Sections in details on Sheets 40 thru 42.



**STAGE I CONSTRUCTION**  
(Looking East)

Dry land bridge segment between Sta. 386+15.08 and Sta. 386+84.92 as shown. Other dry land bridge segments similar. See Cross Sections in details on Sheets 40 thru 42.

**LEGEND**

 Existing Structure Removal

\\NASCH\Chicago\25106-0011-016-D011-016-D011-60L72-004-MD.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

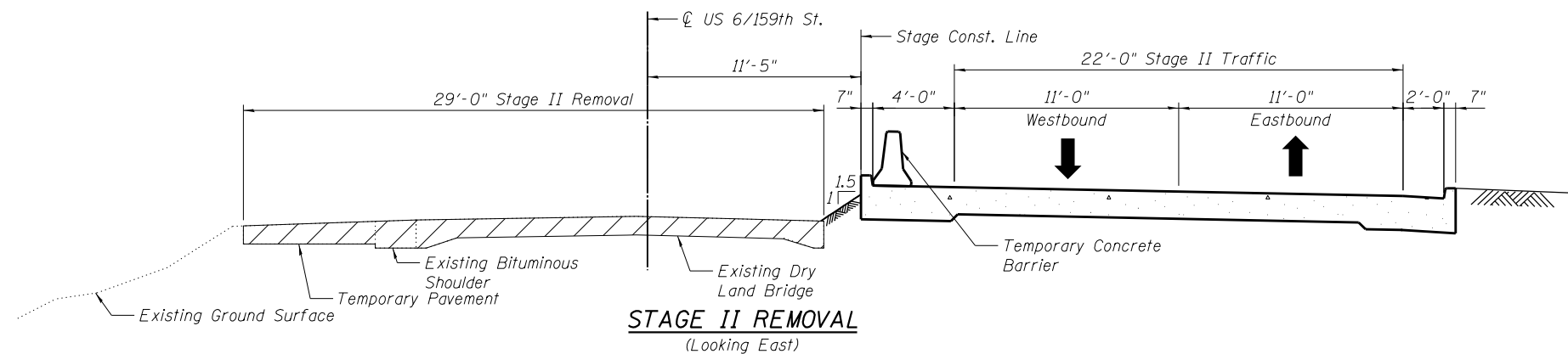
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION STAGING 1  
STRUCTURE NO. 016-D011**

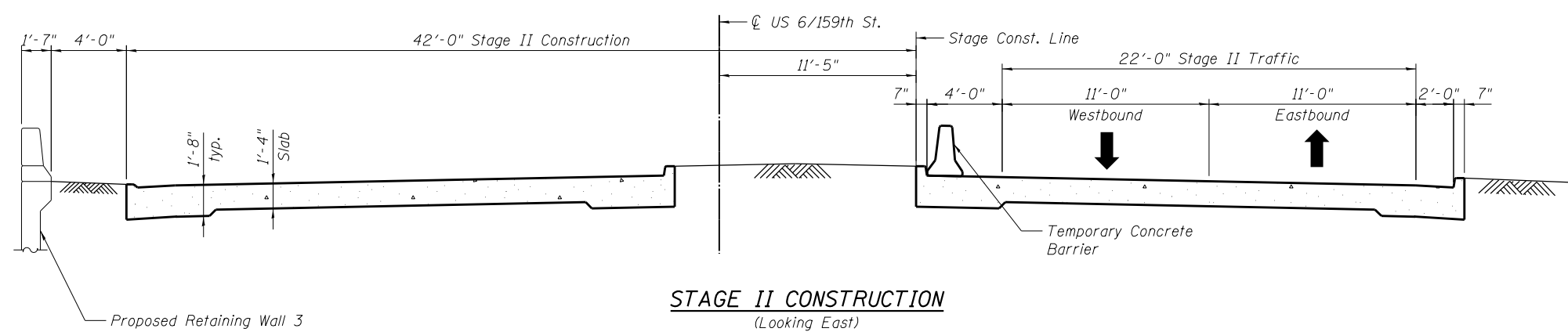
SHEET NO. 4 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	429
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**STAGE II REMOVAL**  
(Looking East)

Dry land bridge segment between Sta. 386+15.08 and Sta. 386+84.92 as shown. Other dry land bridge segments similar. See Cross Sections in details on Sheets 40 thru 42.



**STAGE II CONSTRUCTION**  
(Looking East)

Dry land bridge segment between Sta. 386+15.08 and Sta. 386+84.92 as shown. Other dry land bridge segments similar. See Cross Sections in details on Sheets 40 thru 42.

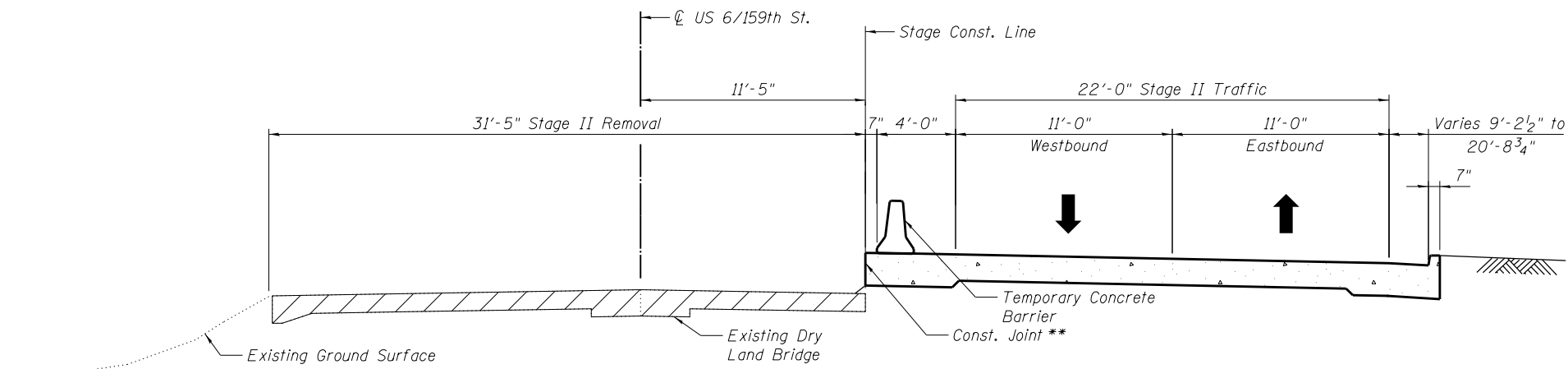
**LEGEND**

 Existing Structure Removal

\\NASCH1\Chicago\25106-056\Struct\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-005-MD.dgn

<b>LOCHNER</b> H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>CONSTRUCTION STAGING 2</b> <b>STRUCTURE NO. 016-D011</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE =	CHECKED - RH	REVISED	SHEET NO. 5 OF 77 SHEETS			ILLINOIS FED. AID PROJECT				

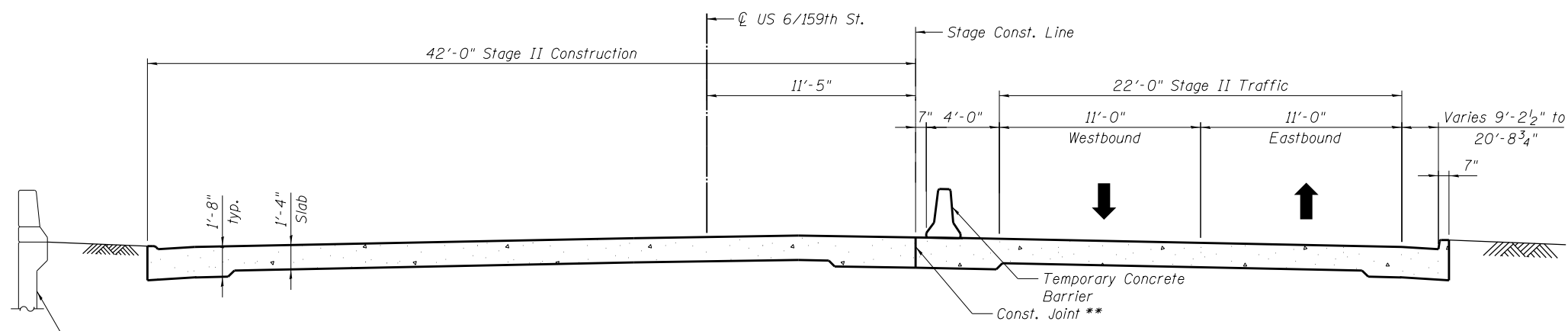




\*\* Construction joint provided between Sta. 381+74.55 and Sta. 384+15.00. At the stage construction joint, bar splicers will be required.

**STAGE II REMOVAL**  
(Looking East)

Dry land bridge segment between Sta. 382+04.55 and Sta. 382+31.51 as shown. See Cross Sections in details on Sheet 40.



\*\* Construction joint provided between Sta. 381+74.55 and Sta. 384+15.00. At the stage construction joint, bar splicers will be required.

**STAGE II CONSTRUCTION**  
(Looking East)

Dry land bridge segment between Sta. 382+04.55 and Sta. 382+31.51 as shown. See Cross Sections in details on Sheet 40.

**LEGEND**

Existing Structure Removal

\\NASCH\Chicago\2106-U56-Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-007-MD.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

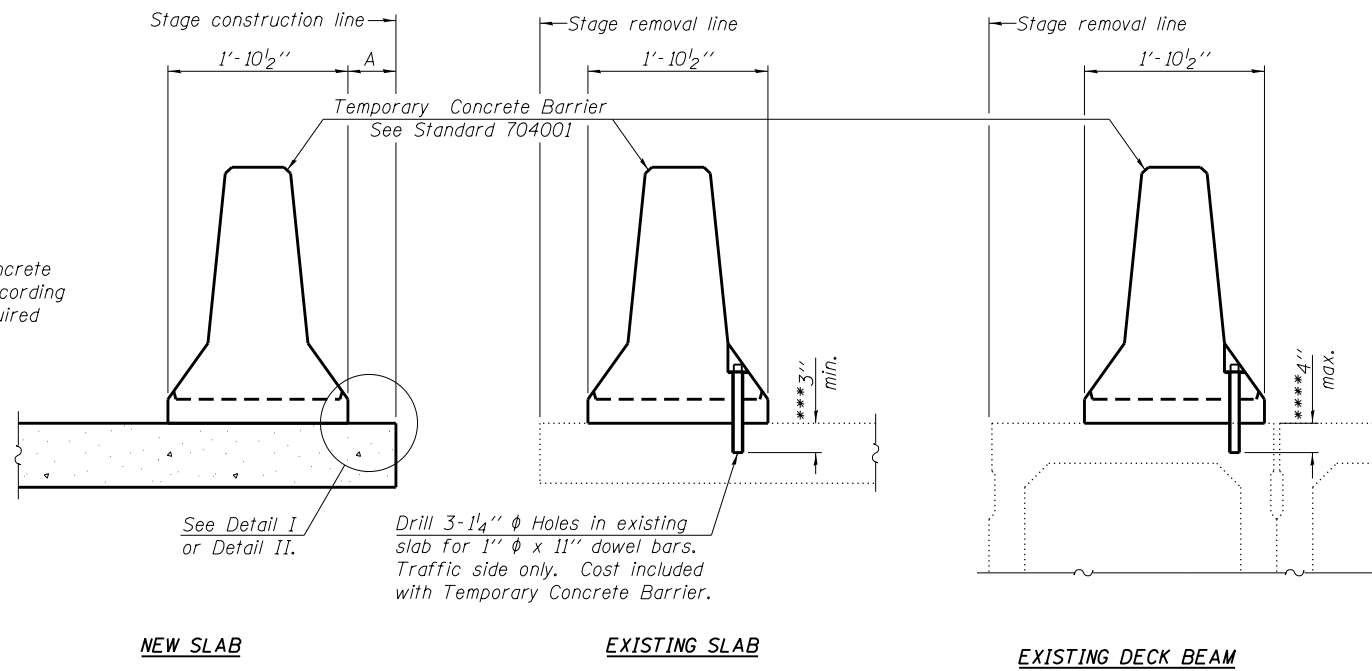
**CONSTRUCTION STAGING 4**  
**STRUCTURE NO. 016-D011**

SHEET NO. 7 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	432
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



**SECTIONS THRU SLAB OR DECK BEAM**

**NOTES**

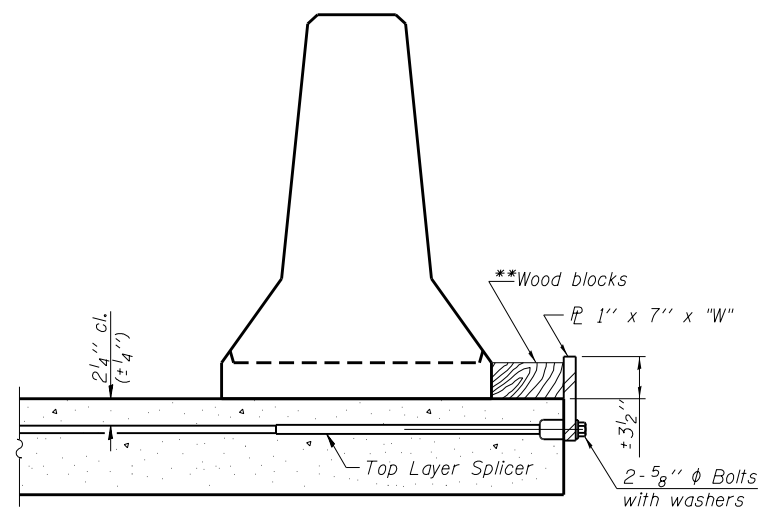
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1" x 7" x "W" steel  $\bar{L}$  to the top layer of couplers with 2-5/8"  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1" x 7" x "W" steel  $\bar{L}$  to the concrete slab or concrete wearing surface with 2-5/8"  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{C}$  of each barrier panel.

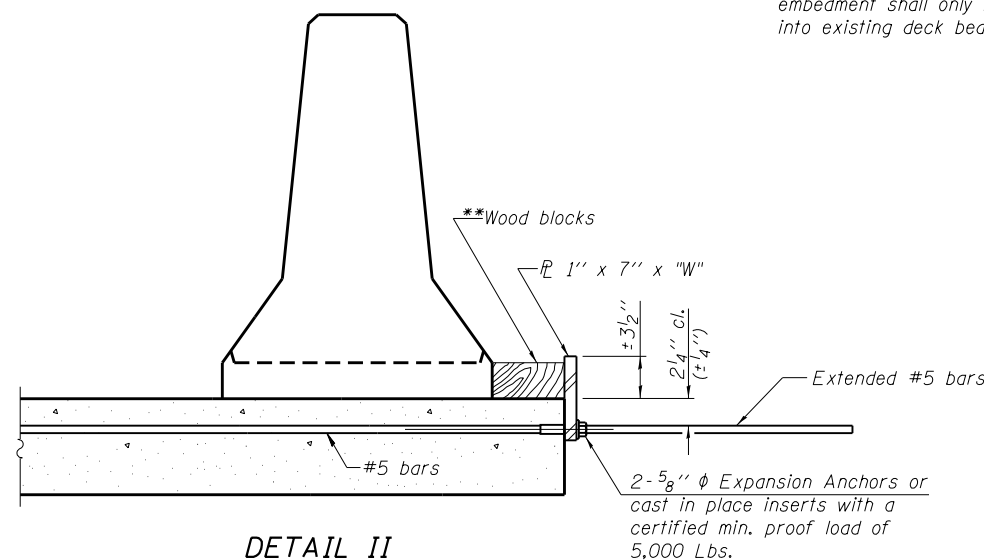
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

\*\*\* Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

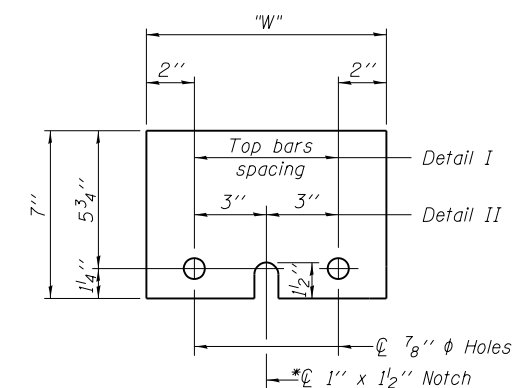
\*\*\*\* If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



**DETAIL I**



**DETAIL II**



**STEEL RETAINER  $\bar{L}$  1" x 7" x "W"**

\* Required only with Detail II

\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

R-27 7-1-10

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USER NAME =	DESIGNED - LJB	REVISED
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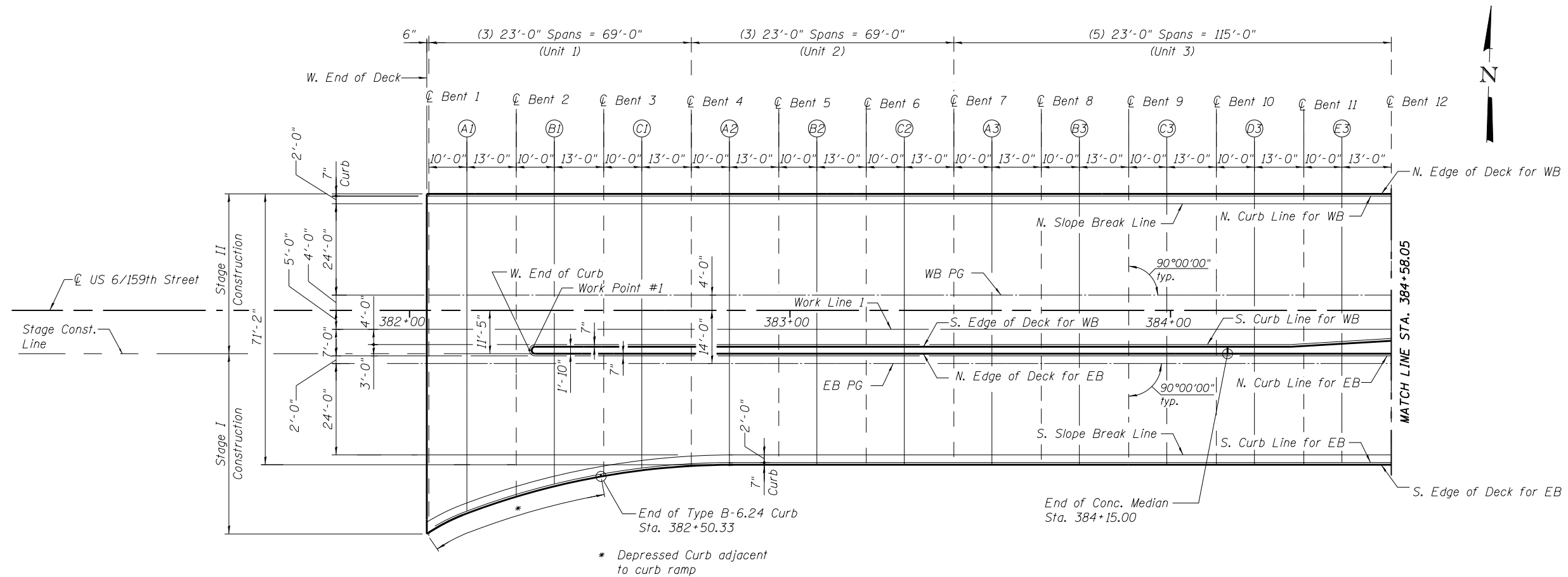
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER  
STRUCTURE NO. 016-D011**

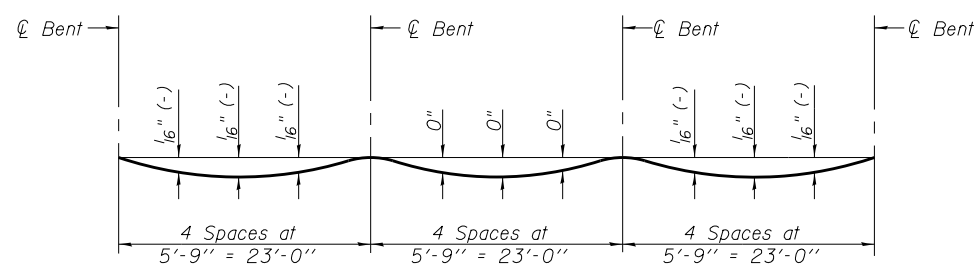
SHEET NO. 8 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	433
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	

\\NASCH\Chicago2\5106-056\Struct\dgn\Lead Bridges\Lead Bridges 2 - 016-D011-016D011-60L72-008-TC.dgn

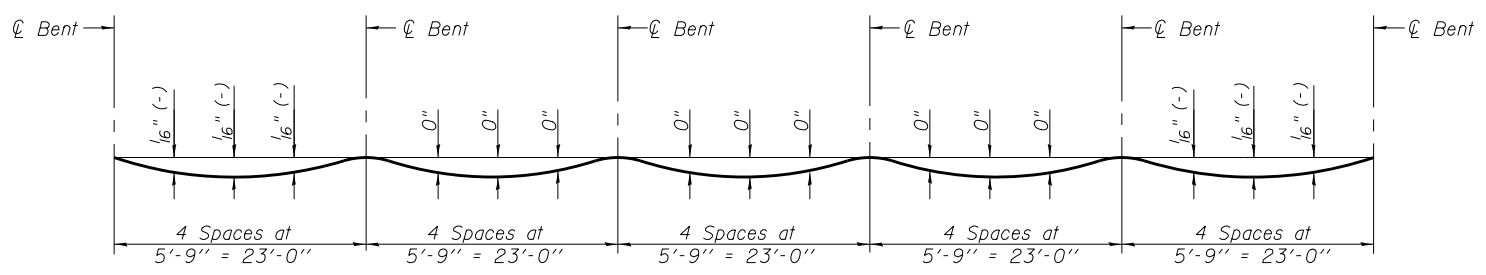


**PARTIAL PLAN DECK UNITS - DRY LAND BRIDGE 2**  
Unit 1, Unit 2 & Unit 3



**DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete).  
(For 3-Span units - Unit 1 & Unit 2).

*Note:*  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 12 thru 16 of 77.



**DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete).  
(For 5-Span units - Unit 3).

*Note:*  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 12 thru 16 of 77.

\\NASCH1\Chicago2\5105-056\Struct\Land Bridges\Land Bridges 2 - 016-D011\016D011-60L72-009-EL.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
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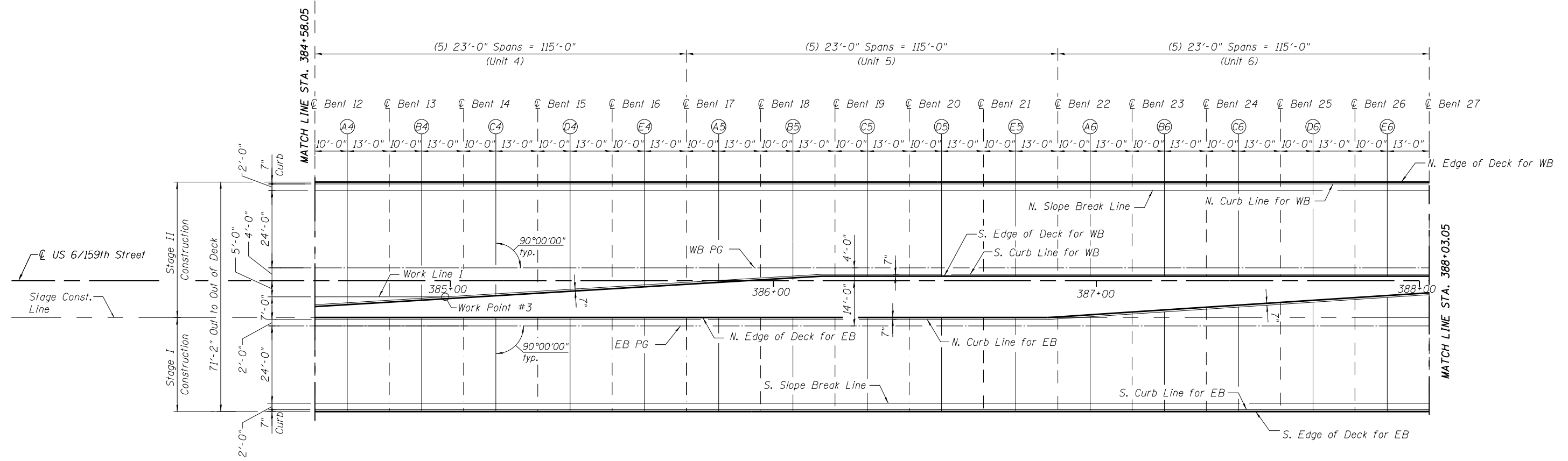
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATION PLAN 1  
STRUCTURE NO. 016-D011**

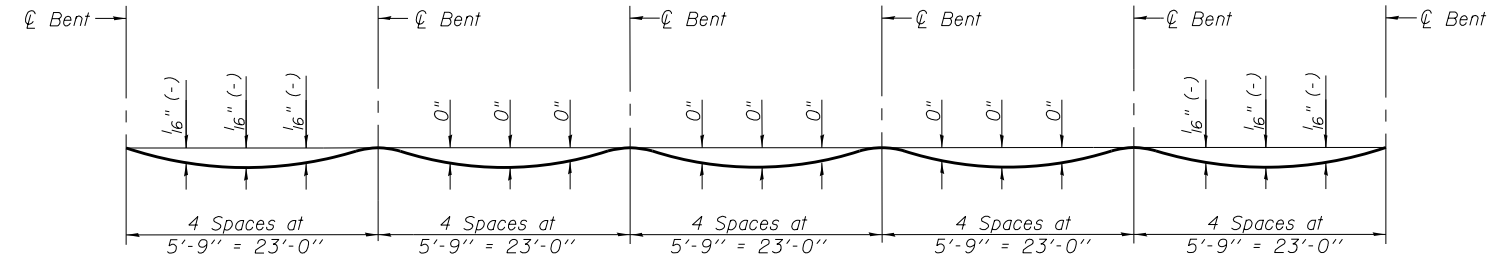
SHEET NO. 9 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	434
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\\NASCHI\Chicago\25106-056\Structure\Land Bridges\Land Bridge 2 - 016-D011-60L72-010-EL.dgn



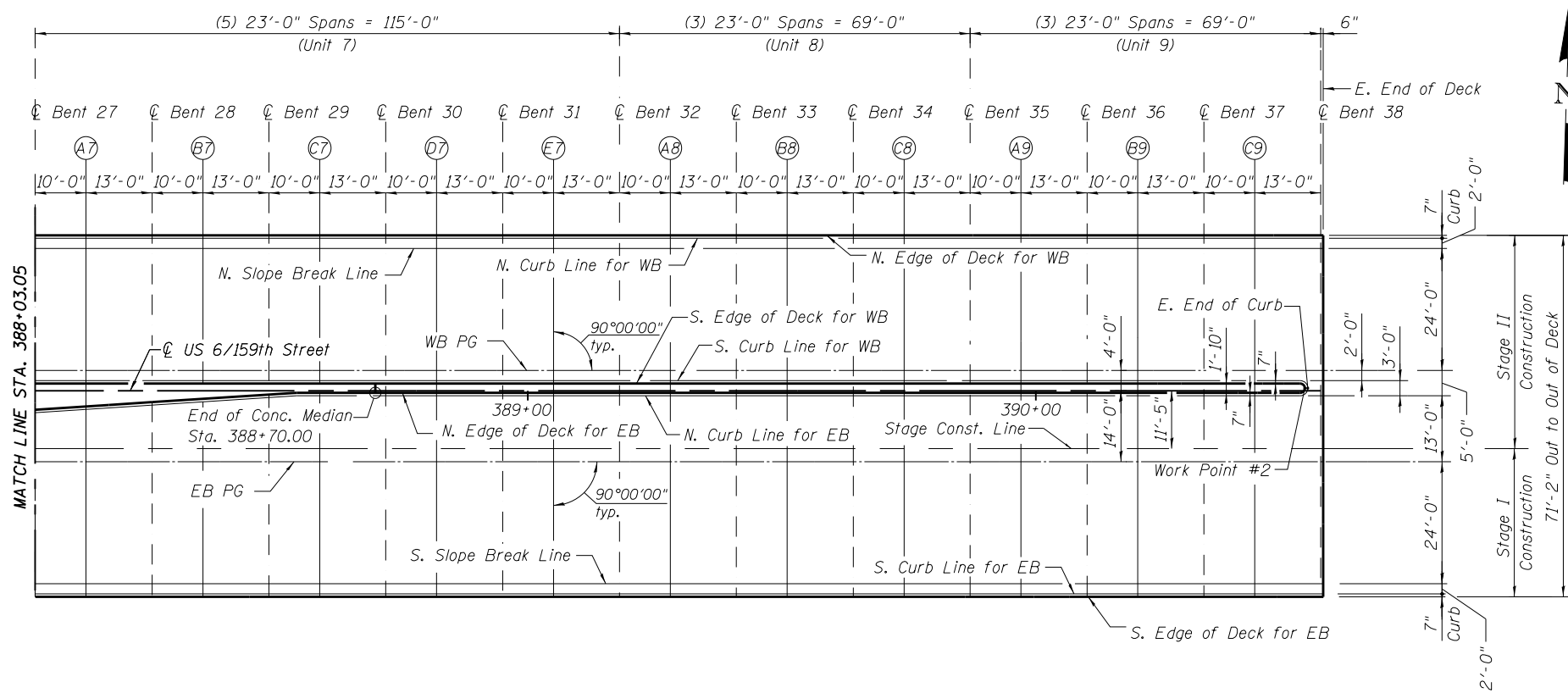
**PARTIAL PLAN DECK UNITS - DRY LAND BRIDGE 2**  
Unit 4, Unit 5 & Unit 6



**DEAD LOAD DEFLECTION DIAGRAM**  
(Includes weight of concrete).  
(For 5-Span units - Unit 4, Unit 5 & Unit 6).

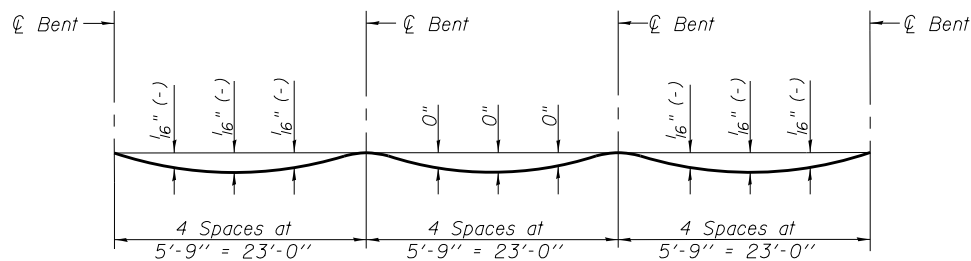
Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 12 thru 16 of 77.

<b>LOCHNER</b> H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - RH	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>TOP OF SLAB ELEVATION PLAN 2</b> <b>STRUCTURE NO. 016-D011</b>	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT DATE =	CHECKED - RAB	REVISED			ILLINOIS FED. AID PROJECT				
					SHEET NO. 10 OF 77 SHEETS					



**PARTIAL PLAN DECK UNITS - DRY LAND BRIDGE 2**

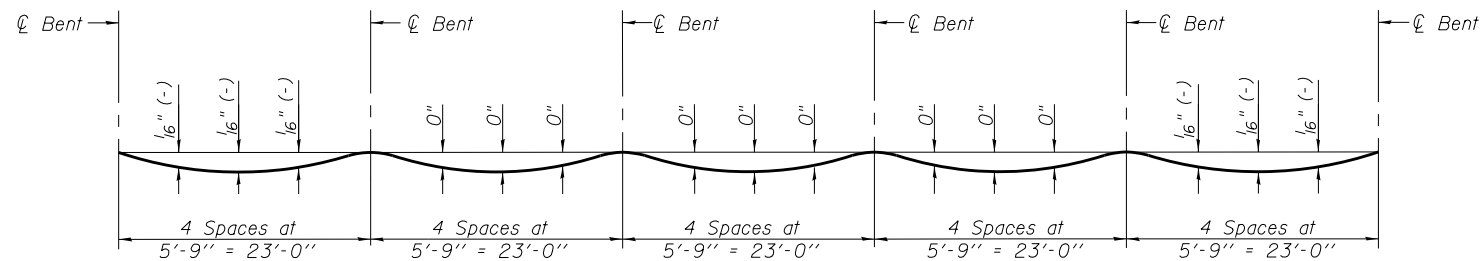
Unit 7, Unit 8 & Unit 9



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete).  
(For 3-Span units - Unit 8 & Unit 9).

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 12 thru 16 of 77.



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete).  
(For 5-Span unit - Unit 7)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 12 thru 16 of 77.

\\NASCH\Chicago2\5106-056\Struct\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-011-EL.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D011-60L72-011-EL.dgn	CHECKED - RAB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RAB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATION PLAN 3  
STRUCTURE NO. 016-D011**

SHEET NO. 11 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	436
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				











**SOUTH SLOPE BREAK LINE**

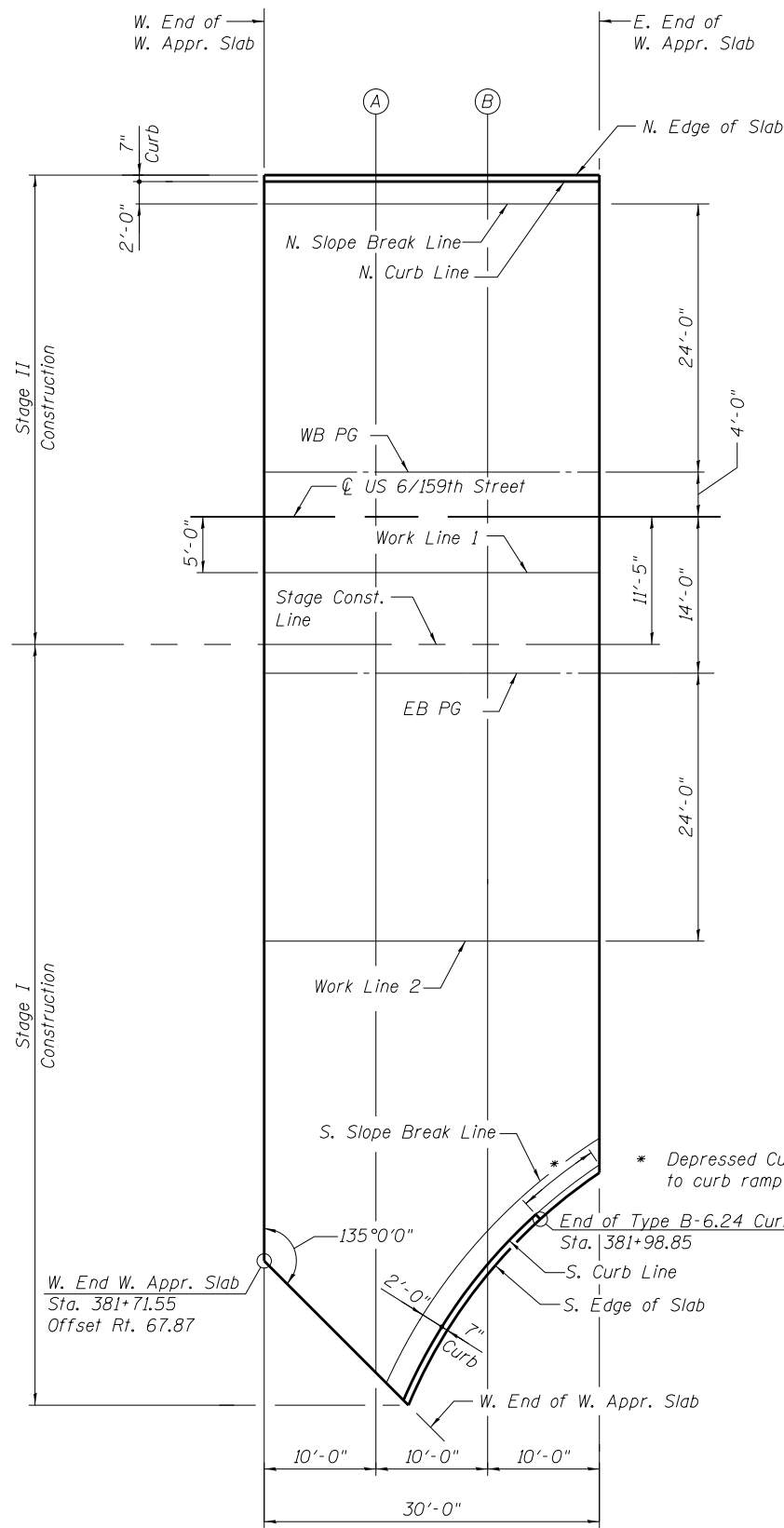
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	382+04.55	55.65	688.83	688.83
☉ Bent 1	382+05.05	55.33	688.84	688.84
A1	382+15.05	50.62	688.93	688.93
☉ Bent 2	382+28.05	46.27	688.98	688.98
B1	382+38.05	43.58	689.02	689.02
☉ Bent 3	382+51.05	40.90	689.04	689.04
C1	382+61.05	39.43	688.97	688.97
☉ Bent 4	382+74.05	38.30	688.87	688.87
A2	382+84.05	38.00	688.80	688.80
☉ Bent 5	382+97.05	38.00	688.67	688.67
B2	383+07.05	38.00	688.57	688.57
☉ Bent 6	383+20.05	38.00	688.44	688.44
C2	383+30.05	38.00	688.34	688.34
☉ Bent 7	383+43.05	38.00	688.22	688.22
A3	383+53.05	38.00	688.12	688.12
☉ Bent 8	383+66.05	38.00	687.99	687.99
B3	383+76.05	38.00	687.89	687.89
☉ Bent 9	383+89.05	38.00	687.76	687.76
C3	383+99.05	38.00	687.66	687.66
☉ Bent 10	384+12.05	38.00	687.54	687.54
D3	384+22.05	38.00	687.46	687.46
☉ Bent 11	384+35.05	38.00	687.37	687.37
E3	384+45.05	38.00	687.31	687.31
☉ Bent 12	384+58.05	38.00	687.24	687.24
A4	384+68.05	38.00	687.20	687.20
☉ Bent 13	384+81.05	38.00	687.15	687.15
B4	384+91.05	38.00	687.13	687.13
☉ Bent 14	385+04.05	38.00	687.11	687.11
C4	385+14.05	38.00	687.10	687.10
☉ Bent 15	385+27.05	38.00	687.11	687.11
D4	385+37.05	38.00	687.12	687.12
☉ Bent 16	385+50.05	38.00	687.15	687.15
E4	385+60.05	38.00	687.18	687.18
☉ Bent 17	385+73.05	38.00	687.23	687.23
A5	385+83.05	38.00	687.27	687.27
☉ Bent 18	385+96.05	38.00	687.32	687.32
B5	386+06.05	38.00	687.36	687.36
☉ Bent 19	386+19.05	38.00	687.42	687.42
C5	386+29.05	38.00	687.46	687.46
☉ Bent 20	386+42.05	38.00	687.51	687.51
D5	386+52.05	38.00	687.55	687.55
☉ Bent 21	386+65.05	38.00	687.60	687.60
E5	386+75.05	38.00	687.64	687.64
☉ Bent 22	386+88.05	38.00	687.69	687.69
A6	386+98.05	38.00	687.73	687.73
☉ Bent 23	387+11.05	38.00	687.78	687.78
B6	387+21.05	38.00	687.82	687.82
☉ Bent 24	387+34.05	38.00	687.88	687.88
C6	387+44.05	38.00	687.92	687.92
☉ Bent 25	387+57.05	38.00	687.97	687.97
D6	387+67.05	38.00	688.01	688.01
☉ Bent 26	387+80.05	38.00	688.06	688.06
E6	387+90.05	38.00	688.10	688.10
☉ Bent 27	388+03.05	38.00	688.15	688.15
A7	388+13.05	38.00	688.19	688.19
☉ Bent 28	388+26.05	38.00	688.24	688.24
B7	388+36.05	38.00	688.28	688.28
☉ Bent 29	388+49.05	38.00	688.34	688.34
C7	388+59.05	38.00	688.38	688.38
☉ Bent 30	388+72.05	38.00	688.43	688.43
D7	388+82.05	38.00	688.47	688.47
☉ Bent 31	388+95.05	38.00	688.52	688.52
E7	389+05.05	38.00	688.56	688.56
☉ Bent 32	389+18.05	38.00	688.61	688.61
A8	389+28.05	38.00	688.65	688.65
☉ Bent 33	389+41.05	38.00	688.70	688.70
B8	389+51.05	38.00	688.74	688.74
☉ Bent 34	389+64.05	38.00	688.80	688.80
C8	389+74.05	38.00	688.84	688.84
☉ Bent 35	389+87.05	38.00	688.89	688.89
A9	389+97.05	38.00	688.93	688.93
☉ Bent 36	390+10.05	38.00	688.98	688.98
B9	390+20.05	38.00	689.02	689.02
☉ Bent 37	390+33.05	38.00	689.07	689.07
C9	390+43.05	38.00	689.11	689.11
☉ Bent 38	390+56.05	38.00	689.16	689.16
E. End of Deck	390+56.55	38.00	689.17	689.17

**SOUTH CURB LINE FOR EB**

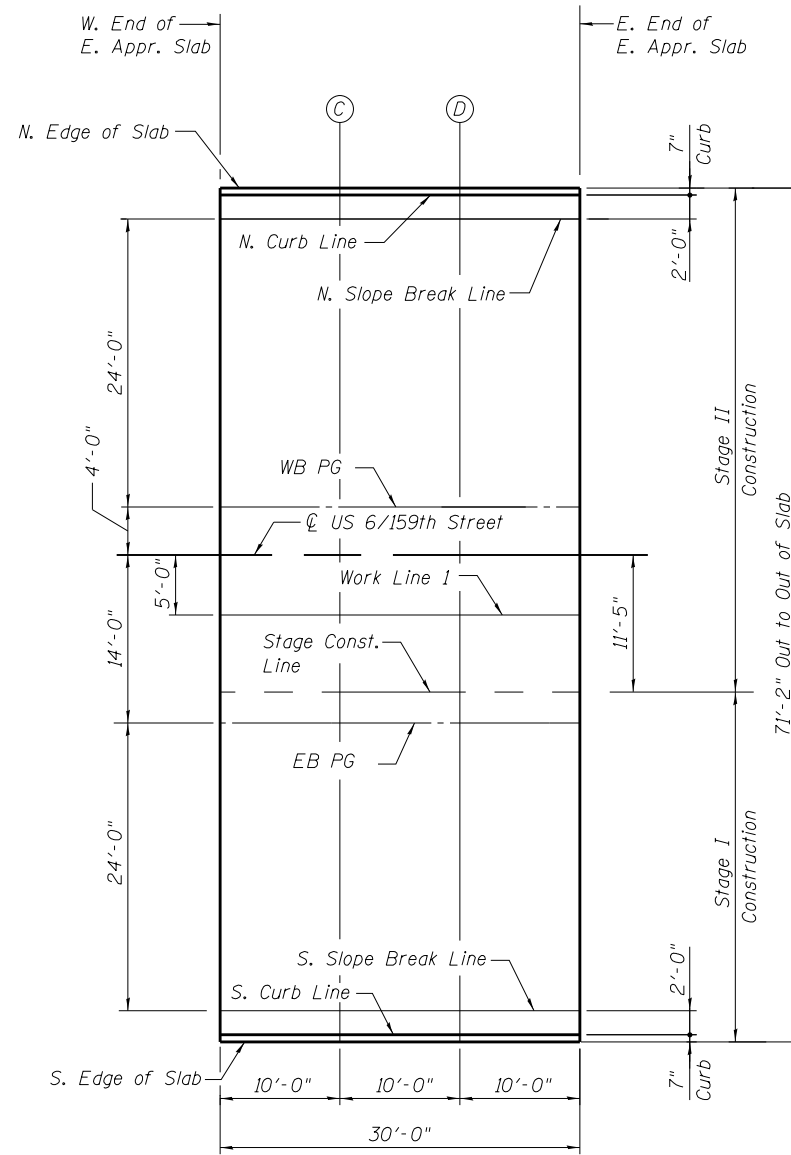
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	382+04.55	58.03	688.70	688.70
☉ Bent 1	382+05.05	57.70	688.70	688.70
A1	382+15.05	52.76	688.80	688.80
☉ Bent 2	382+28.05	48.35	688.86	688.86
B1	382+38.05	45.64	688.90	688.90
☉ Bent 3	382+51.05	42.92	688.92	688.92
C1	382+61.05	41.45	688.85	688.85
☉ Bent 4	382+74.05	40.30	688.75	688.75
A2	382+84.05	40.00	688.68	688.68
☉ Bent 5	382+97.05	40.00	688.55	688.55
B2	383+07.05	40.00	688.45	688.45
☉ Bent 6	383+20.05	40.00	688.32	688.32
C2	383+30.05	40.00	688.22	688.22
☉ Bent 7	383+43.05	40.00	688.10	688.10
A3	383+53.05	40.00	688.00	688.00
☉ Bent 8	383+66.05	40.00	687.87	687.87
B3	383+76.05	40.00	687.77	687.77
☉ Bent 9	383+89.05	40.00	687.64	687.64
C3	383+99.05	40.00	687.54	687.54
☉ Bent 10	384+12.05	40.00	687.42	687.42
D3	384+22.05	40.00	687.34	687.34
☉ Bent 11	384+35.05	40.00	687.25	687.25
E3	384+45.05	40.00	687.19	687.19
☉ Bent 12	384+58.05	40.00	687.12	687.12
A4	384+68.05	40.00	687.08	687.08
☉ Bent 13	384+81.05	40.00	687.03	687.03
B4	384+91.05	40.00	687.01	687.01
☉ Bent 14	385+04.05	40.00	686.99	686.99
C4	385+14.05	40.00	686.98	686.98
☉ Bent 15	385+27.05	40.00	686.99	686.99
D4	385+37.05	40.00	687.00	687.00
☉ Bent 16	385+50.05	40.00	687.03	687.03
E4	385+60.05	40.00	687.06	687.06
☉ Bent 17	385+73.05	40.00	687.11	687.11
A5	385+83.05	40.00	687.15	687.15
☉ Bent 18	385+96.05	40.00	687.20	687.20
B5	386+06.05	40.00	687.24	687.24
☉ Bent 19	386+19.05	40.00	687.30	687.30
C5	386+29.05	40.00	687.34	687.34
☉ Bent 20	386+42.05	40.00	687.39	687.39
D5	386+52.05	40.00	687.43	687.43
☉ Bent 21	386+65.05	40.00	687.48	687.48
E5	386+75.05	40.00	687.52	687.52
☉ Bent 22	386+88.05	40.00	687.57	687.57
A6	386+98.05	40.00	687.61	687.61
☉ Bent 23	387+11.05	40.00	687.66	687.66
B6	387+21.05	40.00	687.70	687.70
☉ Bent 24	387+34.05	40.00	687.76	687.76
C6	387+44.05	40.00	687.80	687.80
☉ Bent 25	387+57.05	40.00	687.85	687.85
D6	387+67.05	40.00	687.89	687.89
☉ Bent 26	387+80.05	40.00	687.94	687.94
E6	387+90.05	40.00	687.98	687.98
☉ Bent 27	388+03.05	40.00	688.03	688.03
A7	388+13.05	40.00	688.07	688.07
☉ Bent 28	388+26.05	40.00	688.12	688.12
B7	388+36.05	40.00	688.16	688.16
☉ Bent 29	388+49.05	40.00	688.22	688.22
C7	388+59.05	40.00	688.26	688.26
☉ Bent 30	388+72.05	40.00	688.31	688.31
D7	388+82.05	40.00	688.35	688.35
☉ Bent 31	388+95.05	40.00	688.40	688.40
E7	389+05.05	40.00	688.44	688.44
☉ Bent 32	389+18.05	40.00	688.49	688.49
A8	389+28.05	40.00	688.53	688.53
☉ Bent 33	389+41.05	40.00	688.58	688.58
B8	389+51.05	40.00	688.62	688.62
☉ Bent 34	389+64.05	40.00	688.68	688.68
C8	389+74.05	40.00	688.72	688.72
☉ Bent 35	389+87.05	40.00	688.77	688.77
A9	389+97.05	40.00	688.81	688.81
☉ Bent 36	390+10.05	40.00	688.86	688.86
B9	390+20.05	40.00	688.90	688.90
☉ Bent 37	390+33.05	40.00	688.95	688.95
C9	390+43.05	40.00	688.99	688.99
☉ Bent 38	390+56.05	40.00	689.04	689.04
E. End of Deck	390+56.55	40.00	689.05	689.05

**SOUTH EDGE OF DECK FOR EB**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	382+04.55	58.73	688.73	688.73
☉ Bent 1	382+05.05	58.40	688.74	688.74
A1	382+15.05	53.38	688.84	688.84
☉ Bent 2	382+28.05	48.96	688.90	688.90
B1	382+38.05	46.24	688.94	688.94
☉ Bent 3	382+51.05	43.52	689.42	689.42
C1	382+61.05	42.04	689.35	689.35
☉ Bent 4	382+74.05	40.88	689.25	689.25
A2	382+84.05	40.58	689.18	689.18
☉ Bent 5	382+97.05	40.58	689.05	689.05
B2	383+07.05	40.58	688.95	688.95
☉ Bent 6	383+20.05	40.58	688.82	688.82
C2	383+30.05	40.58	688.72	688.72
☉ Bent 7	383+43.05	40.58	688.60	688.60
A3	383+53.05	40.58	688.50	688.50
☉ Bent 8	383+66.05	40.58	688.37	688.37
B3	383+76.05	40.58	688.27	688.27
☉ Bent 9	383+89.05	40.58	688.14	688.14
C3	383+99.05	40.58	688.04	688.04
☉ Bent 10	384+12.05	40.58	687.92	687.92
D3	384+22.05	40.58	687.84	687.84
☉ Bent 11	384+35.05	40.58	687.75	687.75
E3	384+45.05	40.58	687.69	687.69
☉ Bent 12	384+58.05	40.58	687.62	687.62
A4	384+68.05	40.58	687.58	687.58
☉ Bent 13	384+81.05	40.58	687.53	687.53
B4	384+91.05	40.58	687.51	687.51
☉ Bent 14	385+04.05	40.58	687.49	687.49
C4	385+14.05	40.58	687.48	687.48
☉ Bent 15	385+27.05	40.58	687.49	687.49
D4	385+37.05	40.58	687.50	687.50
☉ Bent 16	385+50.05	40.58	687.53	687.53
E4	385+60.05	40.58	687.56	687.56
☉ Bent 17	385+73.05	40.58	687.61	687.61
A5	385+83.05	40.58	687.65	687.65
☉ Bent 18	385+96.05	40.58	687.70	687.70
B5	386+06.05	40.58	687.74	687.74
☉ Bent 19	386+19.05	40.58	687.80	687.80
C5	386+29.05	40.58	687.84	687.84
☉ Bent 20	386+42.05	40.58	687.89	687.89
D5	386+52.05	40.58	687.93	687.93
☉ Bent 21	386+65.05	40.58	687.98	687.98
E5	386+75.05	40.58	688.02	688.02
☉ Bent 22	386+88.05	40.58	688.07	688.07
A6	386+98.05	40.58	688.11	688.11
☉ Bent 23	387+11.05	40.58	688.16	688.16
B6	387+21.05	40.58	688.	



PLAN - DRY LAND BRIDGE 2 WEST APPROACH SLAB



PLAN - DRY LAND BRIDGE 2 EAST APPROACH SLAB

NORTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	-30.58	689.62
A	381+84.55	-30.58	689.58
B	381+94.55	-30.58	689.53
E. End of W. Appr. Slab	382+04.55	-30.58	689.48
W. End of E. Appr. Slab	390+56.55	-30.58	689.21
C	390+66.55	-30.58	689.25
D	390+76.55	-30.58	689.29
E. End of E. Appr. Slab	390+86.55	-30.58	689.33

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	-30.00	689.45
A	381+84.55	-30.00	689.41
B	381+94.55	-30.00	689.36
E. End of W. Appr. Slab	382+04.55	-30.00	689.31
W. End of E. Appr. Slab	390+56.55	-30.00	689.05
C	390+66.55	-30.00	689.09
D	390+76.55	-30.00	689.13
E. End of E. Appr. Slab	390+86.55	-30.00	689.17

NORTH SLOPE BREAK LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	-28.00	689.57
A	381+84.55	-28.00	689.53
B	381+94.55	-28.00	689.48
E. End of W. Appr. Slab	382+04.55	-28.00	689.43
W. End of E. Appr. Slab	390+56.55	-28.00	689.17
C	390+66.55	-28.00	689.21
D	390+76.55	-28.00	689.25
E. End of E. Appr. Slab	390+86.55	-28.00	689.29

WB PG

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	-4.00	690.05
A	381+84.55	-4.00	690.01
B	381+94.55	-4.00	689.96
E. End of W. Appr. Slab	382+04.55	-4.00	689.91
W. End of E. Appr. Slab	390+56.55	-4.00	689.65
C	390+66.55	-4.00	689.69
D	390+76.55	-4.00	689.73
E. End of E. Appr. Slab	390+86.55	-4.00	689.77

\\NASCH1\Chicago2\5106-056\Structure\Bridges\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-017-SE.dgn

US 6/159TH STREET

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	0.00	690.11
A	381+84.55	0.00	690.07
B	381+94.55	0.00	690.02
E. End of W. Appr. Slab	382+04.55	0.00	689.97
W. End of E. Appr. Slab	390+56.55	0.00	689.71
C	390+66.55	0.00	689.75
D	390+76.55	0.00	689.79
E. End of E. Appr. Slab	390+86.55	0.00	689.83

WORK LINE 1

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	5.00	690.19
A	381+84.55	5.00	690.15
B	381+94.55	5.00	690.10
E. End of W. Appr. Slab	382+04.55	5.00	690.05
W. End of E. Appr. Slab	390+56.55	5.00	689.78
C	390+66.55	5.00	689.82
D	390+76.55	5.00	689.86
E. End of E. Appr. Slab	390+86.55	5.00	689.90

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	11.42	690.09
A	381+84.55	11.42	690.05
B	381+94.55	11.42	690.00
E. End of W. Appr. Slab	382+04.55	11.42	689.95
W. End of E. Appr. Slab	390+56.55	11.42	689.68
C	390+66.55	11.42	689.72
D	390+76.55	11.42	689.76
E. End of E. Appr. Slab	390+86.55	11.42	689.80

EB PG

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	14.00	690.05
A	381+84.55	14.00	690.01
B	381+94.55	14.00	689.96
E. End of W. Appr. Slab	382+04.55	14.00	689.91
W. End of E. Appr. Slab	390+56.55	14.00	689.65
C	390+66.55	14.00	689.69
D	390+76.55	14.00	689.73
E. End of E. Appr. Slab	390+86.55	14.00	689.77

WORK LINE 2

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+74.55	38.00	689.57
A	381+84.55	38.00	689.53
B	381+94.55	38.00	689.48
E. End of W. Appr. Slab	382+04.55	38.00	689.43

SOUTH SLOPE BREAK LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+85.49	77.56	688.55
B	381+94.55	63.91	688.71
E. End of W. Appr. Slab	382+04.55	55.65	688.83
W. End of E. Appr. Slab	390+56.55	38.00	689.17
C	390+66.55	38.00	689.21
D	390+76.55	38.00	689.25
E. End of E. Appr. Slab	390+86.55	38.00	689.29

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+87.01	79.08	688.42
B	381+94.55	66.91	688.55
E. End of W. Appr. Slab	382+04.55	58.03	688.70
W. End of E. Appr. Slab	390+56.55	40.00	689.05
C	390+66.55	40.00	689.09
D	390+76.55	40.00	689.13
E. End of E. Appr. Slab	390+86.55	40.00	689.17

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	381+87.46	79.53	688.92
B	381+94.55	67.82	689.06
E. End of W. Appr. Slab	382+04.55	58.73	688.74
W. End of E. Appr. Slab	390+56.55	40.58	689.55
C	390+66.55	40.58	689.59
D	390+76.55	40.58	689.63
E. End of E. Appr. Slab	390+86.55	40.58	689.67

\\NASCH1\Chicago\2\106-056\Structure\Bridges\Land Bridges\2 - 016-D011\016D011-60L72-018-SE.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D011-60L72-018-SE.dgn	CHECKED - RAB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RAB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF APPROACH SLAB ELEVATIONS 2  
STRUCTURE NO. 016-D011**

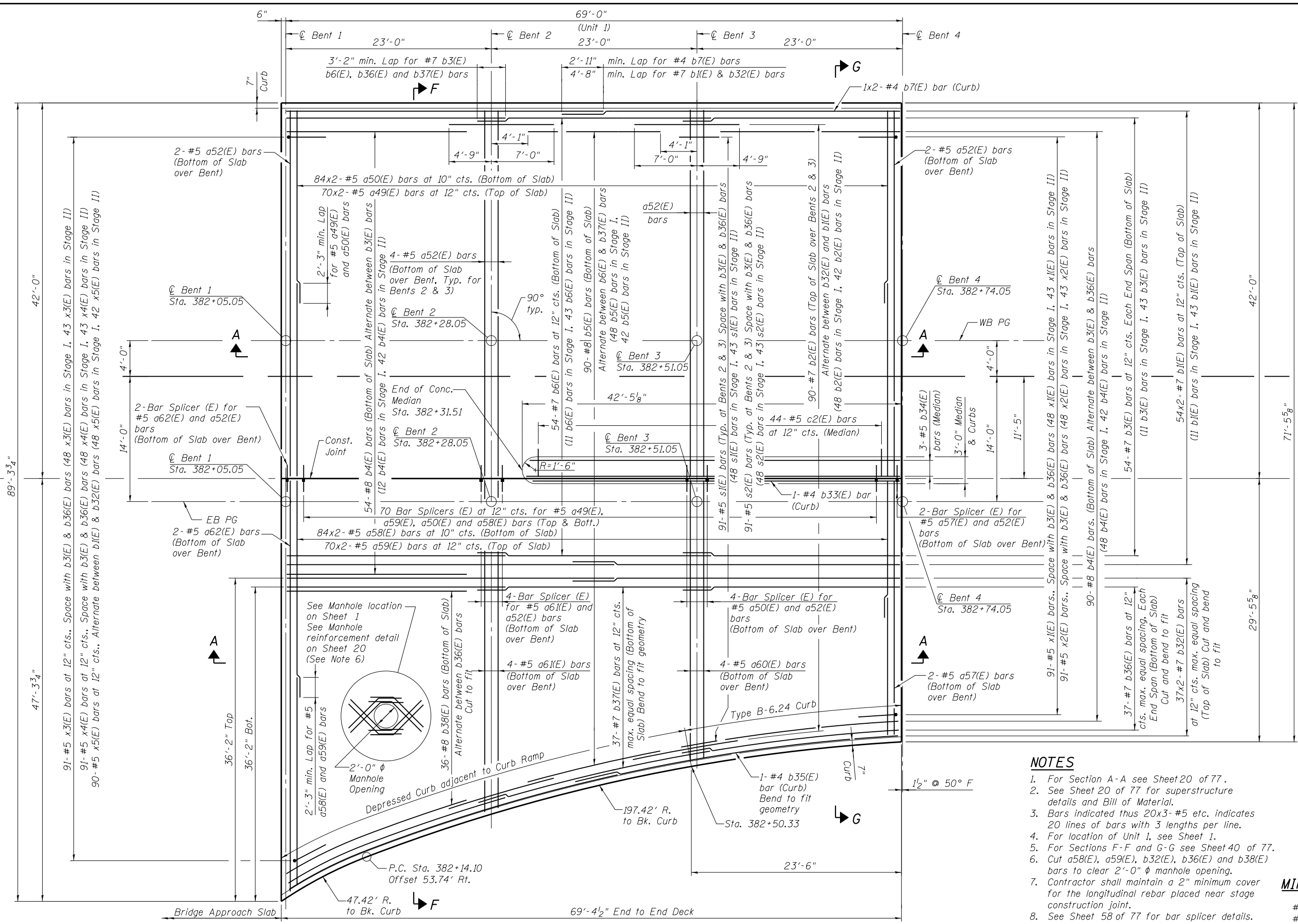
SHEET NO. 18 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	443
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\\NASCH\Chicago\25106-U56-Struct\Drawn\Bridges\Land Bridges\2 - 016-D011-60L72-019-DP.dgn

Stage II Construction

Stage I Construction



**NOTES**

1. For Section A-A see Sheet 20 of 77.
2. See Sheet 20 of 77 for superstructure details and Bill of Material.
3. Bars indicated thus 20x3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
4. For location of Unit 1, see Sheet 1.
5. For Sections F-F and G-G see Sheet 40 of 77.
6. Cut a58(E), a59(E), b32(E), b36(E) and b38(E) bars to clear 2'-0"  $\phi$  manhole opening.
7. Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near stage construction joint.
8. See Sheet 58 of 77 for bar splicer details.

**MINIMUM BAR LAP**

- (Deck)
- #4 bar (Top) = 2'-11"
  - #5 bar (Top) = 2'-3"
  - #7 bar (Top) = 4'-8"
  - #7 bar = 3'-2"

**PLAN**  
Unit 1

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-019-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

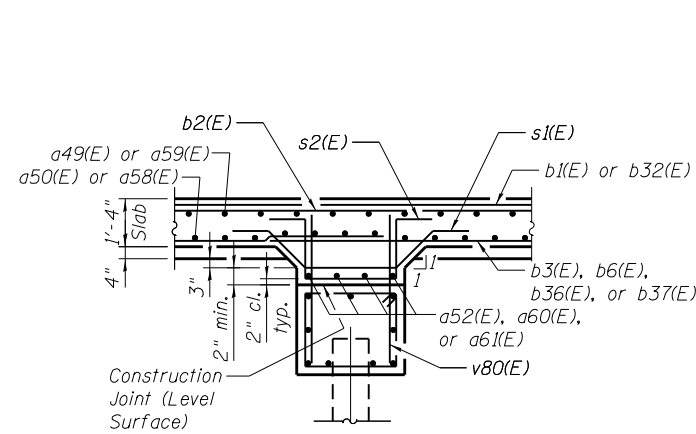
**DECK PLAN UNIT 1**  
**STRUCTURE NO. 016-D011**

SHEET NO. 19 OF 77 SHEETS

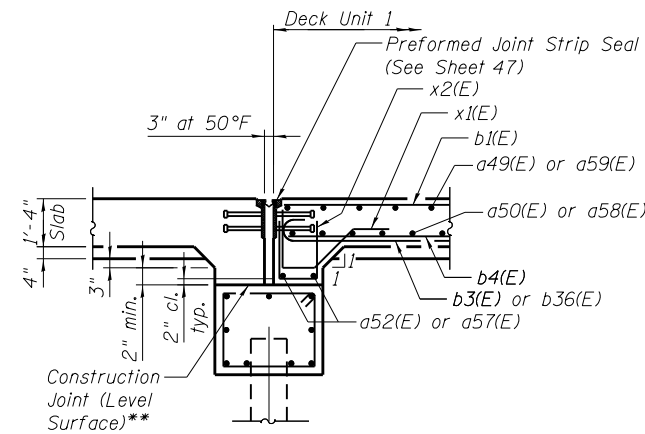
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	444
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 1**

Bar	No.	Size	Length	Shape
a49(E)	140	#5	22'-5"	
a50(E)	168	#5	22'-2"	
a52(E)	12	#5	41'-8"	
a57(E)	2	#5	29'-1"	
a58(E)	168	#5	24'-10"	
a59(E)	140	#5	25'-1"	
a60(E)	4	#5	31'-9"	
a61(E)	4	#5	37'-2"	
a62(E)	2	#5	46'-11"	
a65(E)	16	#6	7'-4"	
b1(E)	108	#7	36'-11"	
b2(E)	180	#7	11'-9"	
b3(E)	108	#7	25'-9"	
b4(E)	144	#8	20'-1"	
b5(E)	90	#8	14'-10"	
b6(E)	54	#7	26'-2"	
b7(E)	2	#4	36'-1"	
b32(E)	74	#7	38'-4"	
b33(E)	1	#4	41'-4"	
b34(E)	3	#5	42'-1"	
b35(E)	1	#4	23'-5"	
b36(E)	74	#7	27'-8"	
b37(E)	37	#7	26'-10"	
b38(E)	36	#8	20'-11"	
c2(E)	44	#5	7'-4"	
s1(E)	182	#5	7'-0"	
s2(E)	182	#5	8'-2"	
x1(E)	91	#5	4'-11"	
x2(E)	91	#5	4'-6"	
x3(E)	91	#5	5'-7"	
x4(E)	91	#5	5'-2"	
x5(E)	90	#5	8'-10"	
Reinforcement Bars, Epoxy Coated			Pound	68,860
Concrete Superstructure			Cu. Yd.	318.4
Protective Coat			Sq. Yd.	609
Bridge Deck Grooving			Sq. Yd.	559

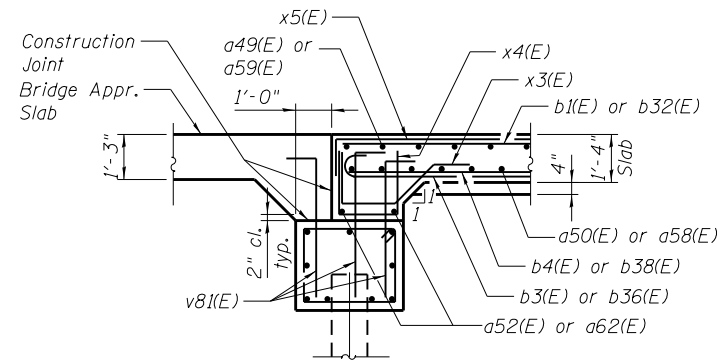


**FIXED PILE BENT  
CAP SECTION**

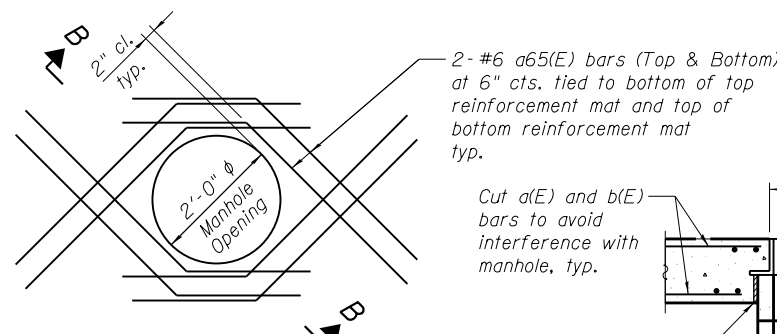


**EXPANSION PILE BENT 4**

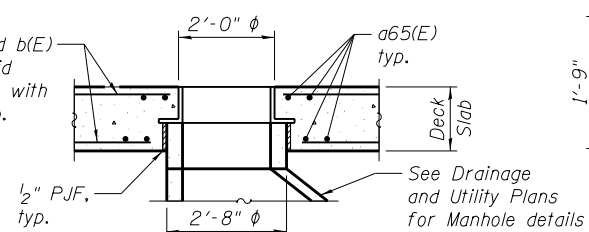
\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



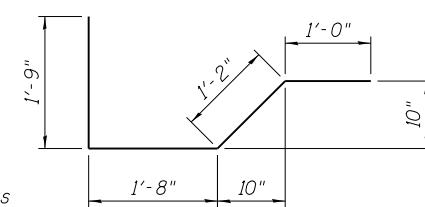
**END PILE BENT 1  
CAP SECTION**



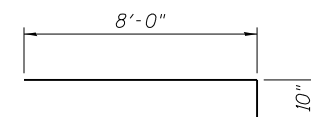
**MANHOLE REINFORCEMENT**



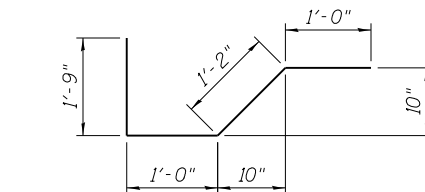
**SECTION B-B**



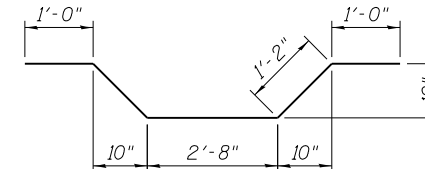
**BAR x3(E)**



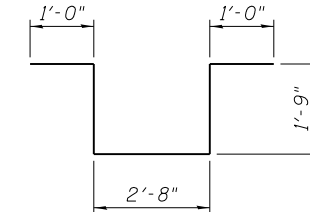
**BAR x5(E)**



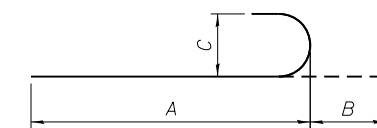
**BAR x1(E)**



**BAR s1(E)**



**BAR s2(E)**



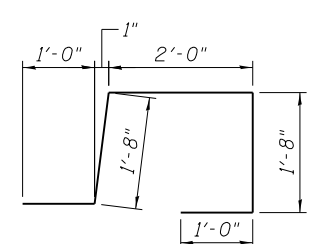
**BARS b3(E) & b36(E)**

Bar	A	B	C
a49(E)	21'-11"	1"	6"
a59(E)	24'-7"	1"	6"

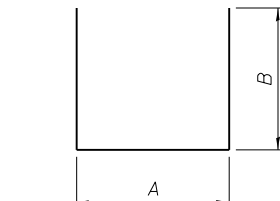
**BARS a49(E) & a59(E)**

Bar	A	B	C	D
a50(E)	4'-1"	4"	17'-7"	6"
a58(E)	4'-1"	4"	20'-3"	6"

**BARS a50(E) & a58(E)**

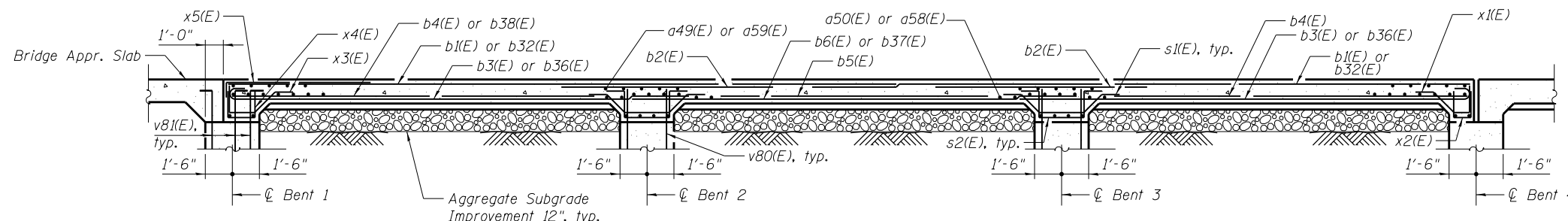


**BAR c2(E)**

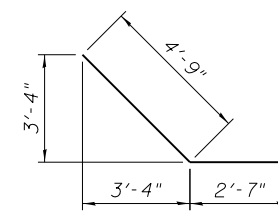


**BARS x2(E) & x4(E)**

Bar	A	B
x2(E)	1'-0"	1'-9"
x4(E)	1'-8"	1'-9"



**SECTION A-A**



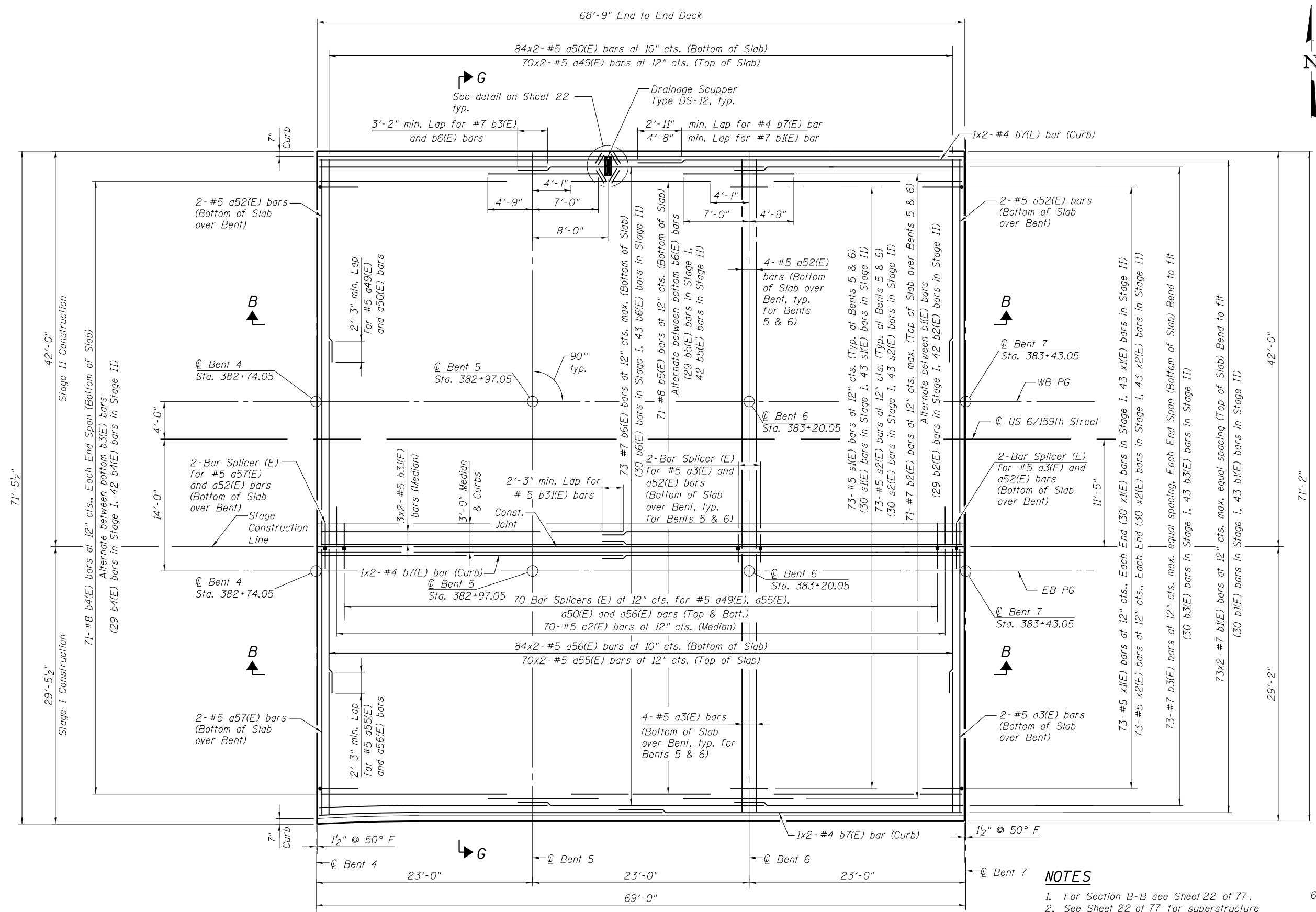
**BAR a65(E)**

**NOTES**

- Tilt #5 a49(E) bars as required to maintain clearance.

\\NASCH1\Chrcop2\5106-U56-Struct\Bridges\Land Bridges\2 - 016-D011-60L72-020-DP.dgn

\\NASCHI\Chicago2\5106-056\Structure\Drawings\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-021-DP.dgn



**MINIMUM BAR LAP**  
(Deck)

#4 bar (Top)	= 2'-11"
#5 bar (Top)	= 2'-3"
#7 bar (Top)	= 4'-8"
#7 bar	= 3'-2"

**NOTES**

- For Section B-B see Sheet 22 of 77.
- See Sheet 22 of 77 for superstructure details and Bill of Material.
- Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- For location of Unit 2, see Sheet 1.
- For Section G-G see Sheet 40 of 77.
- Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near stage construction joint.
- See Sheet 58 of 77 for bar splicer details.

**PLAN**  
Unit 2

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-021-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

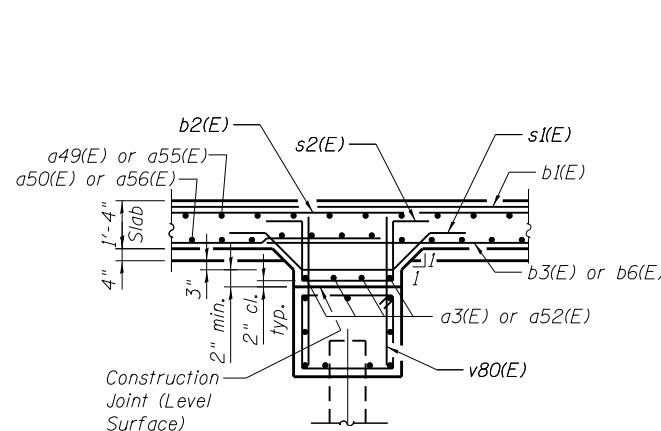
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK PLAN UNIT 2**  
**STRUCTURE NO. 016-D011**  
SHEET NO. 21 OF 77 SHEETS

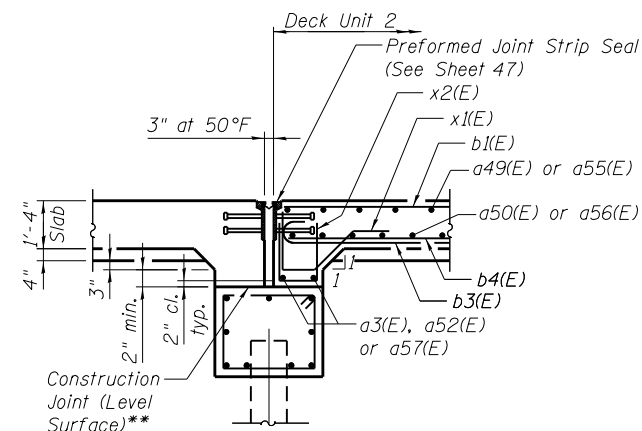
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	446
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 2**

Bar	No.	Size	Length	Shape
a3(E)	10	#5	28'-10"	—
a49(E)	140	#5	22'-5"	—
a50(E)	168	#5	22'-2"	—
a52(E)	12	#5	41'-8"	—
a55(E)	140	#5	16'-2"	—
a56(E)	168	#5	15'-11"	—
a57(E)	2	#5	29'-1"	—
b1(E)	146	#7	36'-11"	—
b2(E)	142	#7	11'-9"	—
b3(E)	146	#7	25'-9"	—
b4(E)	142	#8	20'-1"	—
b5(E)	71	#8	14'-10"	—
b6(E)	73	#7	26'-2"	—
b7(E)	6	#4	36'-1"	—
b31(E)	6	#5	35'-6"	—
c2(E)	70	#5	7'-4"	—
s1(E)	146	#5	7'-0"	—
s2(E)	146	#5	8'-2"	—
x1(E)	146	#5	4'-11"	—
x2(E)	146	#5	4'-6"	—
Reinforcement Bars, Epoxy Coated	Pound	54,280		
Concrete Superstructure	Cu. Yd.	290.4		
Protective Coat	Sq. Yd.	558		
Bridge Deck Grooving	Sq. Yd.	482		

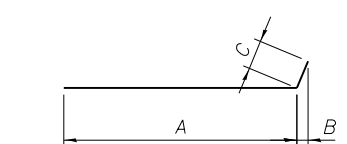


**FIXED PILE BENT  
CAP SECTION**



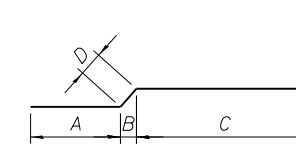
**EXPANSION PILE BENT**

\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



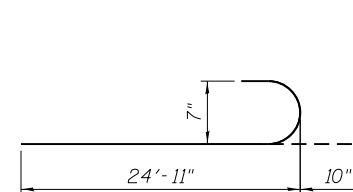
Bar	A	B	C
a49(E)	21'-11"	1"	6"
a55(E)	15'-8"	1"	6"

**BARS a49(E) & a55(E)**

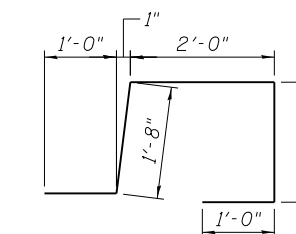


Bar	A	B	C	D
a50(E)	4'-1"	4"	17'-7"	6"
a56(E)	4'-1"	4"	11'-4"	6"

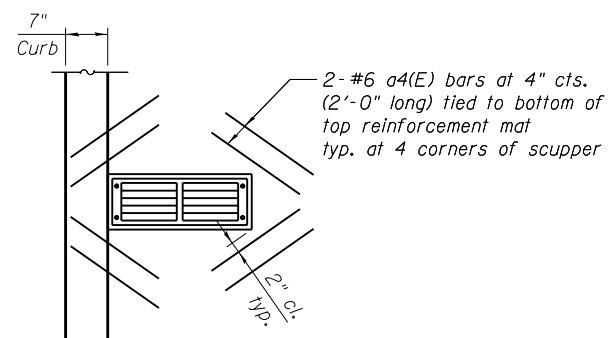
**BARS a50(E) & a56(E)**



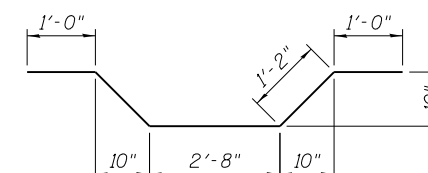
**BARS b3(E)**



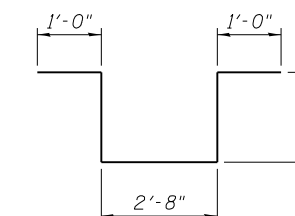
**BAR c2(E)**



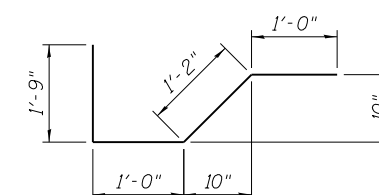
**SCUPPER REINFORCEMENT**



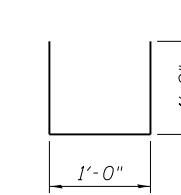
**BAR s1(E)**



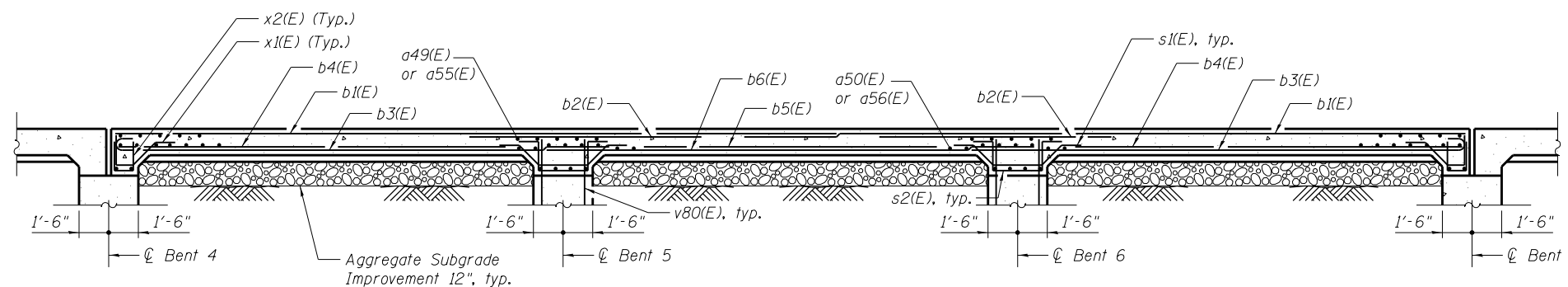
**BAR s2(E)**



**BAR x1(E)**



**BAR x2(E)**



**SECTION B-B**

**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	8	#6	2'-0"	—
Reinforcement Bars, Epoxy Coated	Pound	30		

The above quantities include reinforcement for 1 scupper.

**NOTES**

1. Cut b1(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.

\\NASCH1\Chicago2\5106-U56-Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-022-DP.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-022-DP.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
CHECKED - RH

REVISED  
REVISED  
REVISED  
REVISED

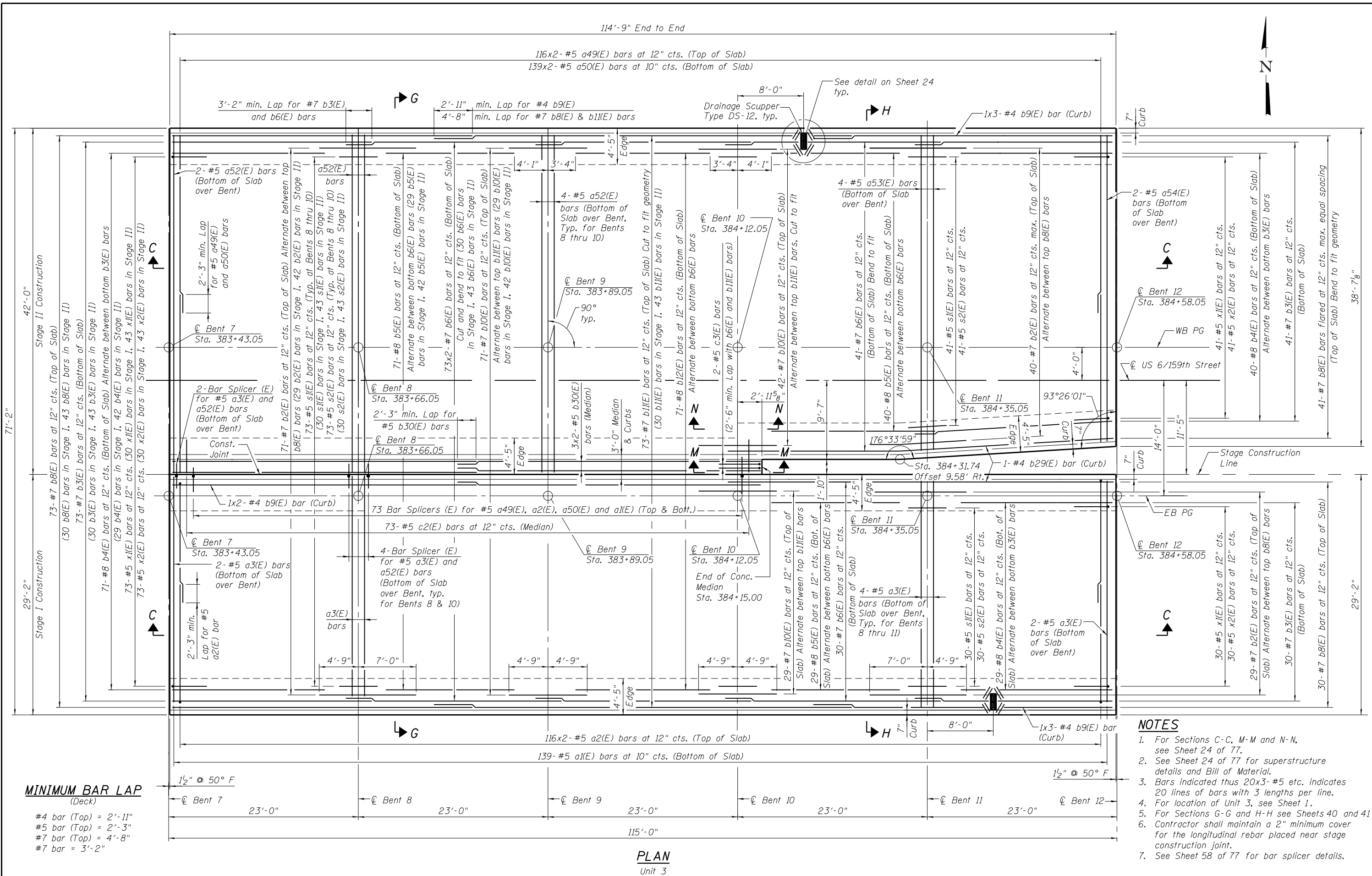
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS UNIT 2  
STRUCTURE NO. 016-D011

SHEET NO. 22 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	447
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\\NASCH1\Chicago2\5106-556-Struct\Drawn\Bridges\Lead Bridge 2 - 016-D011-60L72-023-0P.dgn



**MINIMUM BAR LAP**  
(Deck)

#4 bar (Top) = 2'-11"
#5 bar (Top) = 2'-3"
#7 bar (Top) = 4'-8"
#7 bar = 3'-2"

- NOTES**
- For Sections C-C, M-M and N-N, see Sheet 24 of 77.
  - See Sheet 24 of 77 for superstructure details and Bill of Material.
  - Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
  - For location of Unit 3, see Sheet 1.
  - For Sections G-G and H-H see Sheets 40 and 41. Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near stage construction joint.
  - See Sheet 58 of 77 for bar splicer details.

**PLAN**  
Unit 3

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-023-0P.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

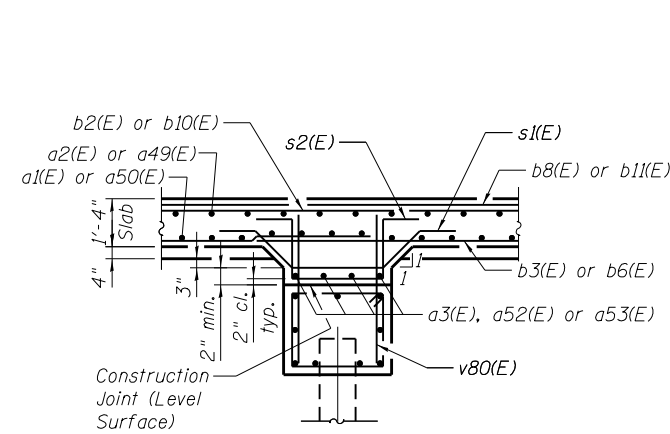
**DECK PLAN UNIT 3**  
**STRUCTURE NO. 016-D011**

SHEET NO. 23 OF 77 SHEETS

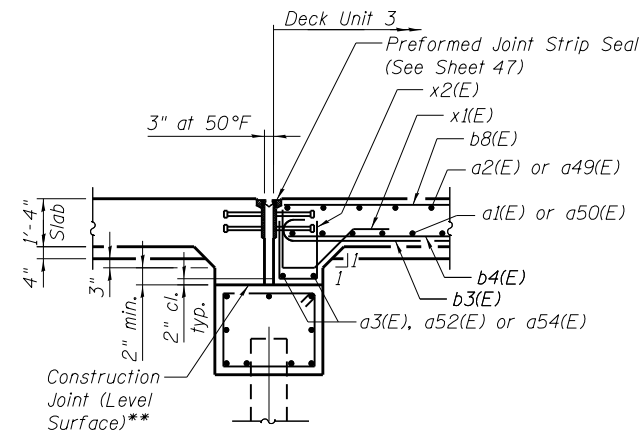
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	448
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**BILL OF MATERIAL  
FOR UNIT 3**

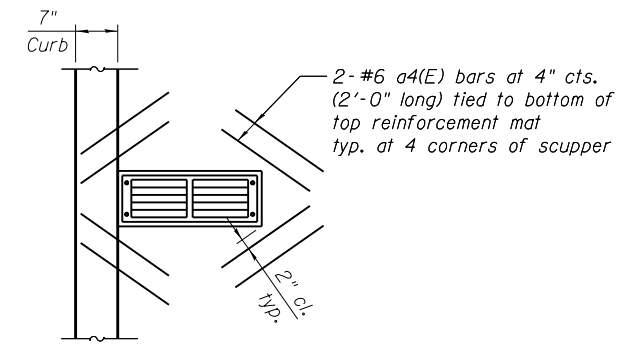


**FIXED PILE BENT  
CAP SECTION**

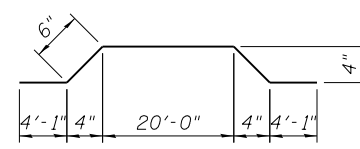


**EXPANSION PILE BENT**

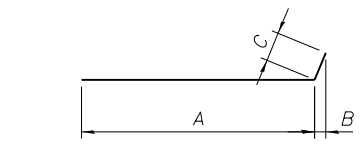
\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



**SCUPPER REINFORCEMENT**

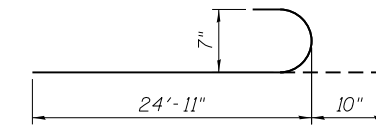


**BAR a1(E)**

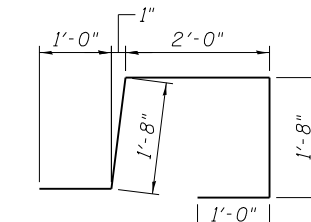


Bar	A	B	C
a2(E)	15'-7"	1"	6"
a49(E)	21'-11"	1"	6"

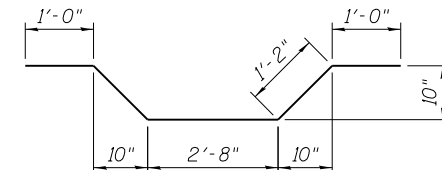
**BARS a2(E) & a49(E)**



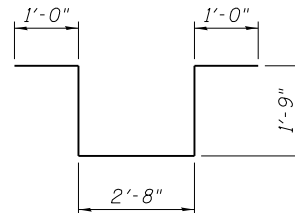
**BARS b3(E)**



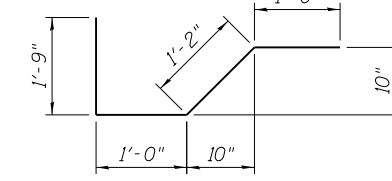
**BAR c2(E)**



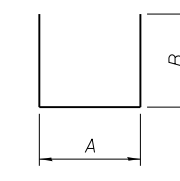
**BAR s1(E)**



**BAR s2(E)**



**BAR x1(E)**



Bar	A	B
c3(E)	1'-3"	3'-10"
x2(E)	1'-0"	1'-9"

**BARS c3(E) & x2(E)**

Bar	No.	Size	Length	Shape
a1(E)	139	#5	29'-2"	[Shape]
a2(E)	232	#5	16'-1"	[Shape]
a3(E)	20	#5	28'-10"	[Shape]
a49(E)	232	#5	22'-5"	[Shape]
a50(E)	278	#5	22'-2"	[Shape]
a52(E)	14	#5	41'-8"	[Shape]
a53(E)	4	#5	39'-7"	[Shape]
a54(E)	2	#5	38'-3"	[Shape]
b2(E)	140	#7	11'-9"	[Shape]
b3(E)	144	#7	25'-9"	[Shape]
b4(E)	140	#8	20'-1"	[Shape]
b5(E)	140	#8	14'-10"	[Shape]
b6(E)	217	#7	26'-2"	[Shape]
b8(E)	144	#7	37'-2"	[Shape]
b9(E)	8	#4	40'-4"	[Shape]
b10(E)	142	#7	9'-6"	[Shape]
b11(E)	73	#7	50'-8"	[Shape]
b12(E)	71	#8	16'-4"	[Shape]
b29(E)	2	#4	45'-10"	[Shape]
b30(E)	6	#5	36'-11"	[Shape]
c2(E)	73	#5	7'-4"	[Shape]
c3(E)	2	#5	8'-11"	[Shape]
s1(E)	290	#5	7'-0"	[Shape]
s2(E)	290	#5	8'-2"	[Shape]
x1(E)	144	#5	4'-11"	[Shape]
x2(E)	144	#5	4'-6"	[Shape]
Reinforcement Bars, Epoxy Coated			Pound	88,470
Concrete Superstructure			Cu. Yd.	478.3
Protective Coat			Sq. Yd.	922
Bridge Deck Grooving			Sq. Yd.	883

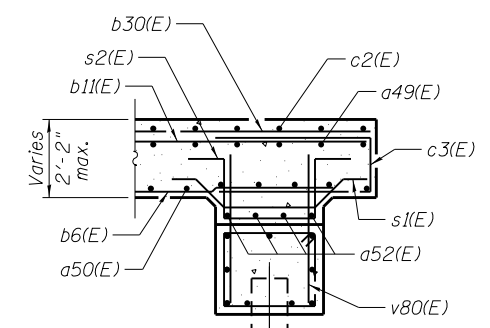
**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	[Shape]
Reinforcement Bars, Epoxy Coated			Pound	60

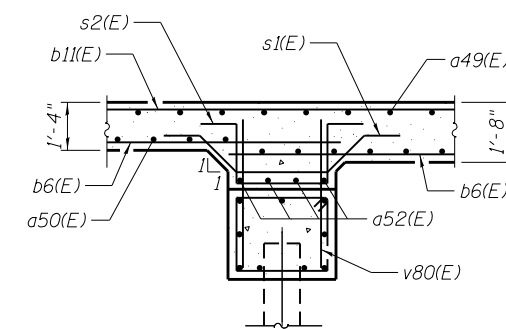
The above quantities include reinforcement for 2 scuppers.

**NOTES**

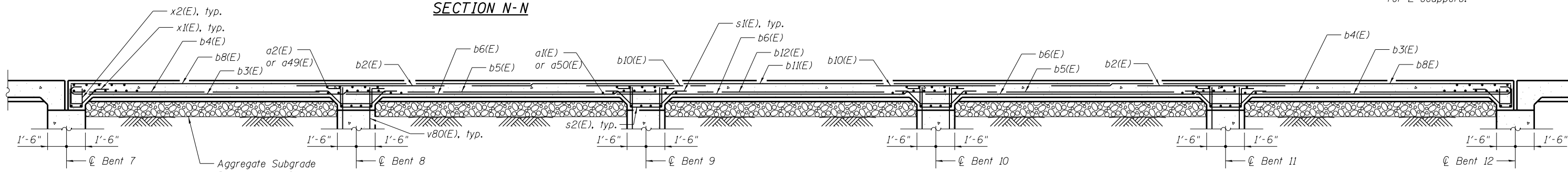
1. Cut b8(E) and b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.



**SECTION M-M**



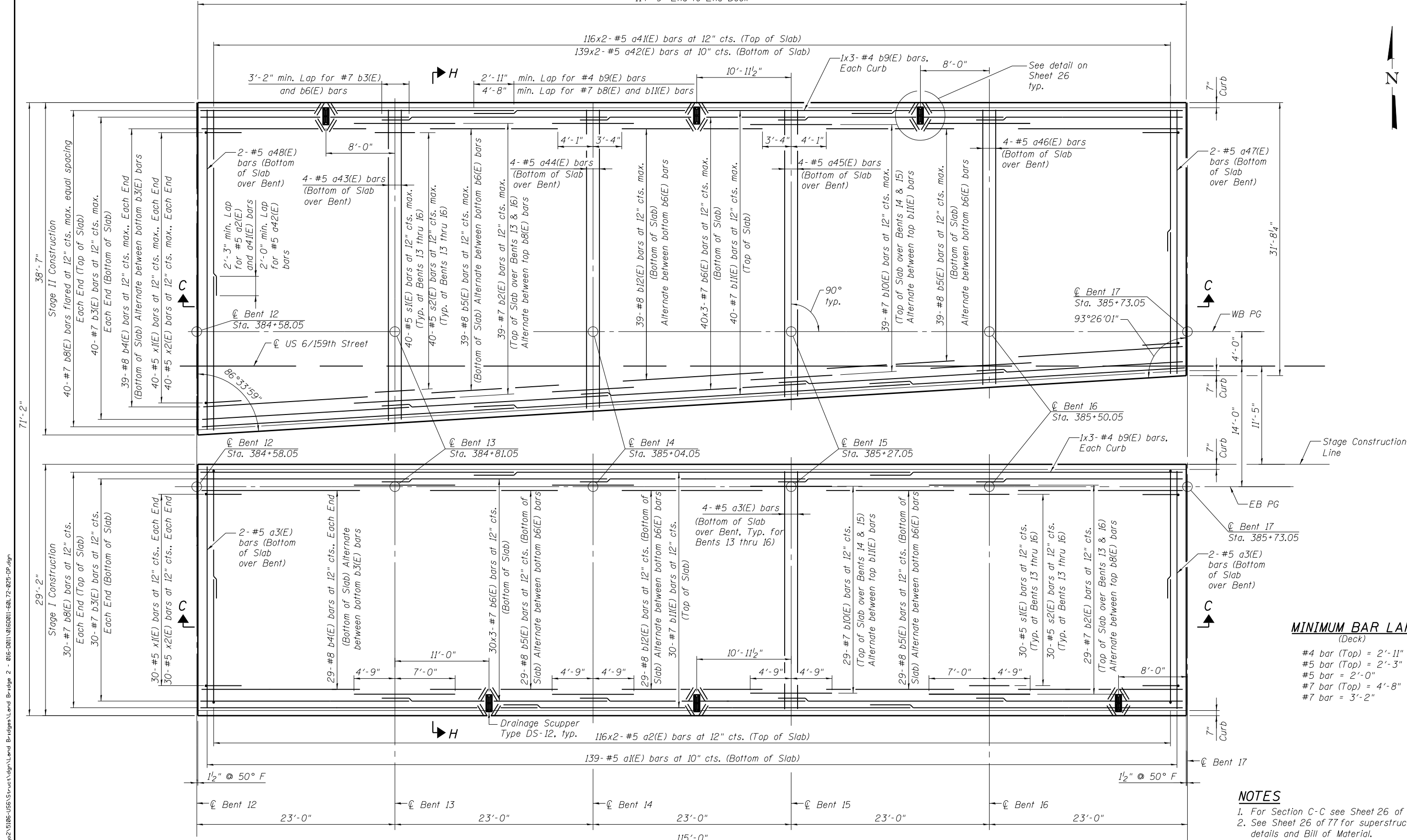
**SECTION N-N**



**SECTION C-C**

\\NASCH1\Chicago2\5106-USE6-Struct.dgn - 016-D011-60L72-024-DP.dgn

114'-9" End to End Deck



**MINIMUM BAR LAP**  
(Deck)

#4 bar (Top)	= 2'-11"
#5 bar (Top)	= 2'-3"
#5 bar	= 2'-0"
#7 bar (Top)	= 4'-8"
#7 bar	= 3'-2"

- NOTES**
1. For Section C-C see Sheet 26 of 77.
  2. See Sheet 26 of 77 for superstructure details and Bill of Material.
  3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
  4. For location of Unit 4, see Sheet 1.
  5. For Section H-H see Sheet 41.

**PLAN**  
Unit 4

\\NASCH1\chicago2\5106-016-0011\016D011-60L72-025-0P.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-025-0P.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

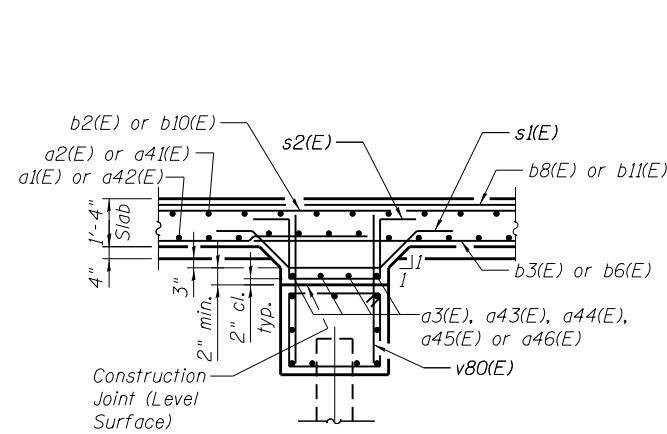
**DECK PLAN UNIT 4**  
**STRUCTURE NO. 016-D011**

SHEET NO. 25 OF 77 SHEETS

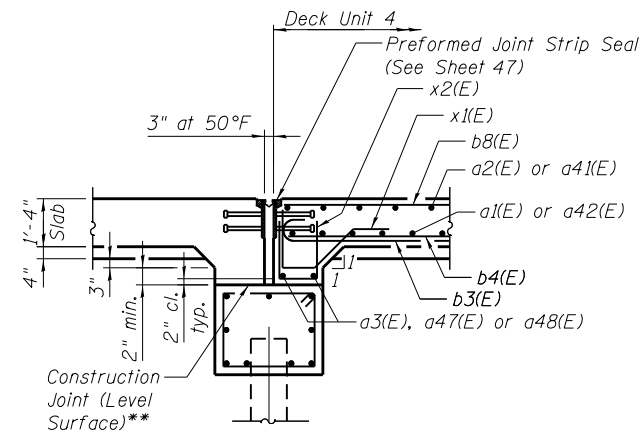
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	450
<b>CONTRACT NO. 60L72</b>				
<small>ILLINOIS FED. AID PROJECT</small>				

**BILL OF MATERIAL  
FOR UNIT 4**

Bar	No.	Size	Length	Shape
a1(E)	139	#5	29'-2"	
a2(E)	232	#5	16'-1"	
a3(E)	20	#5	28'-10"	
a4(E)	232	#5	20'-9"	
a42(E)	278	#5	20'-2"	
a43(E)	4	#5	36'-11"	
a44(E)	4	#5	35'-6"	
a45(E)	4	#5	34'-1"	
a46(E)	4	#5	32'-9"	
a47(E)	2	#5	31'-4"	
a48(E)	2	#5	38'-3"	
b2(E)	136	#7	11'-9"	
b3(E)	140	#7	25'-9"	
b4(E)	136	#8	20'-1"	
b5(E)	136	#8	14'-10"	
b6(E)	210	#7	26'-2"	
b8(E)	140	#7	37'-2"	
b9(E)	12	#4	40'-4"	
b10(E)	136	#7	9'-6"	
b11(E)	70	#7	50'-8"	
b12(E)	68	#8	16'-4"	
s1(E)	280	#5	7'-0"	
s2(E)	280	#5	8'-2"	
x1(E)	140	#5	4'-11"	
x2(E)	140	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	84,490
Concrete Superstructure			Cu. Yd.	437.2
Protective Coat			Sq. Yd.	843
Bridge Deck Grooving			Sq. Yd.	740

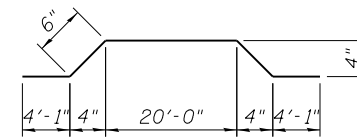


**FIXED PILE BENT  
CAP SECTION**



**EXPANSION PILE BENT**

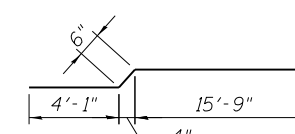
\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



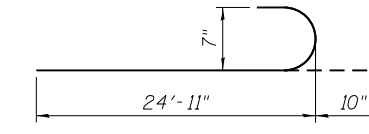
**BAR a1(E)**

Bar	A	B	C
a2(E)	15'-7"	1"	6"
a41(E)	20'-3"	1"	6"

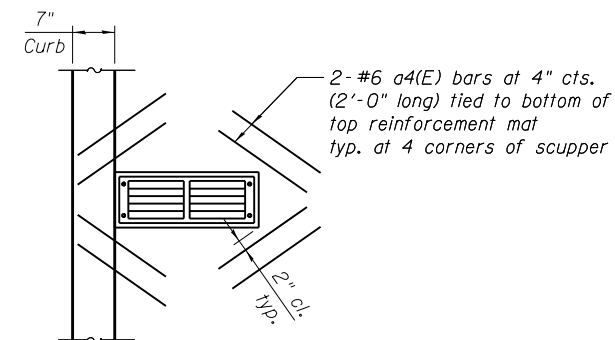
**BARS a2(E) & a41(E)**



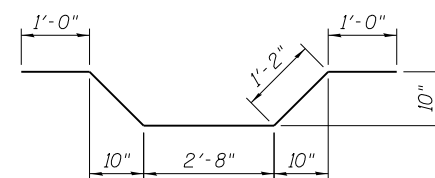
**BAR a42(E)**



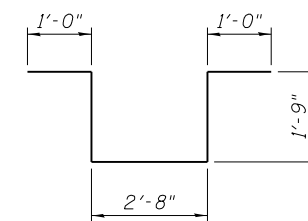
**BARS b3(E)**



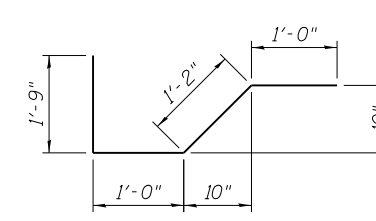
**SCUPPER REINFORCEMENT**



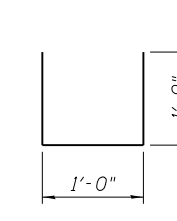
**BAR s1(E)**



**BAR s2(E)**



**BAR x1(E)**



**BAR x2(E)**

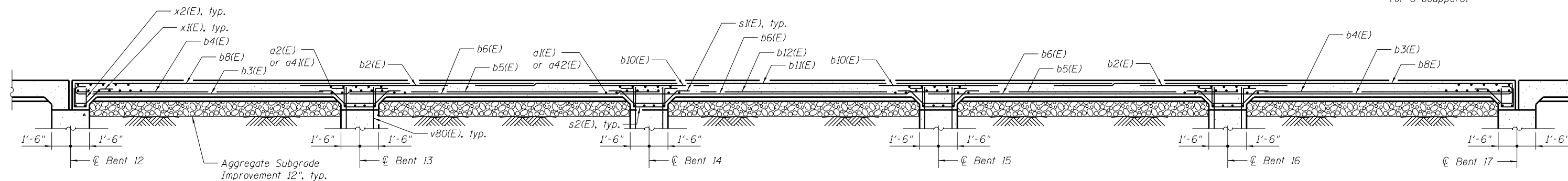
**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	48	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	180

The above quantities include reinforcement for 6 scuppers.

**NOTES**

1. Cut b8(E) and b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.



**SECTION C-C**

\\NASCHI\Chicago2\5106-USE6\Struct\Bridges\Land Bridges\2 - 016-D011\016D011-60L72-026-DF.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-026-DF.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
CHECKED - RH  
REVISED  
REVISED  
REVISED  
REVISED

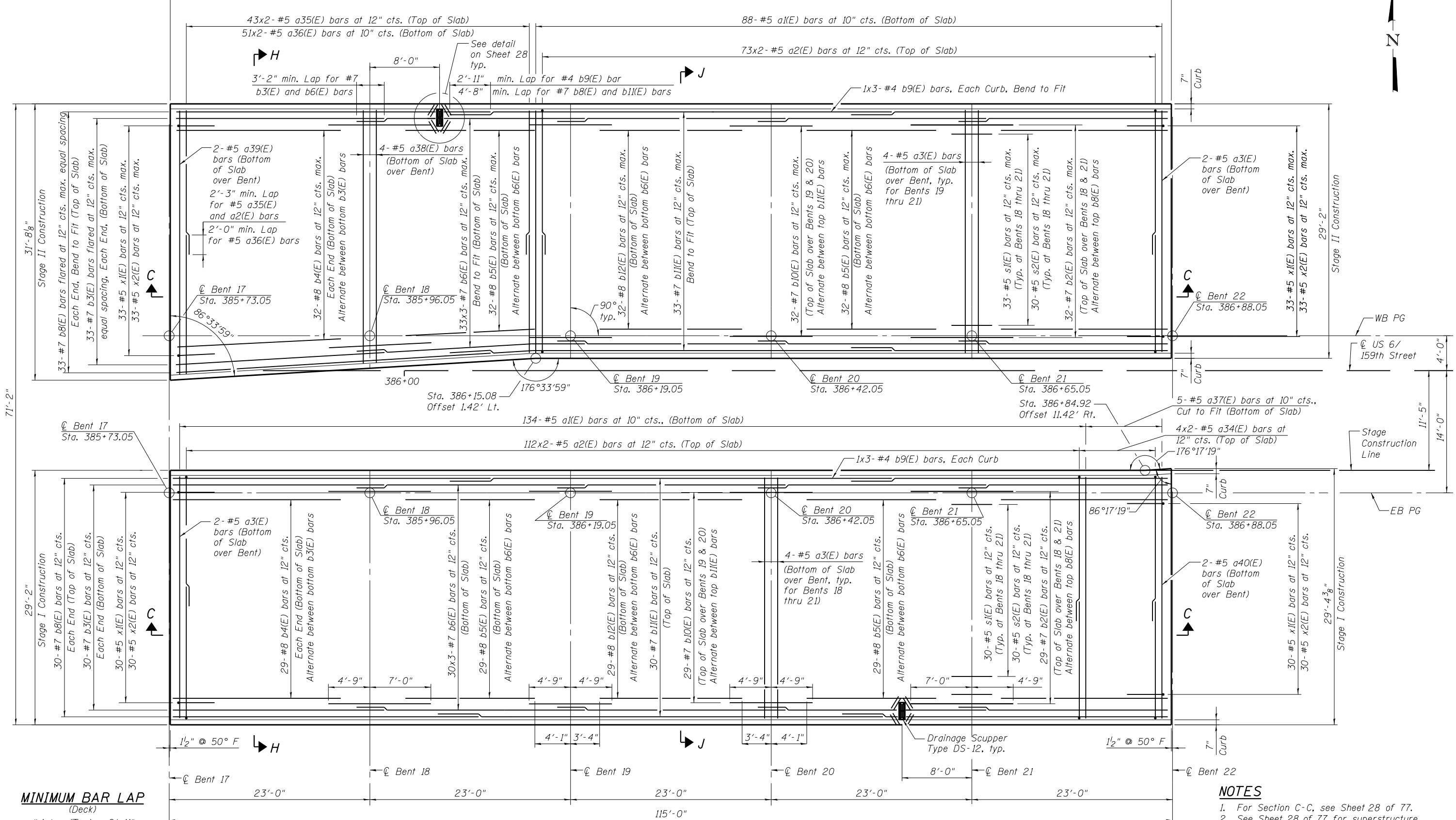
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS UNIT 4  
STRUCTURE NO. 016-D011**

SHEET NO. 26 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	451
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

114'-9" End to End Deck



**MINIMUM BAR LAP**  
(Deck)

- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #5 bar = 2'-0"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

**PLAN**  
Unit 5

- NOTES**
1. For Section C-C, see Sheet 28 of 77.
  2. See Sheet 28 of 77 for superstructure details and Bill of Material.
  3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
  4. For location of Unit 5, see Sheets 1 and 2.
  5. For Sections H-H and J-J see Sheet 41.

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-027-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK PLAN UNIT 5**  
**STRUCTURE NO. 016-D011**

SHEET NO. 27 OF 77 SHEETS

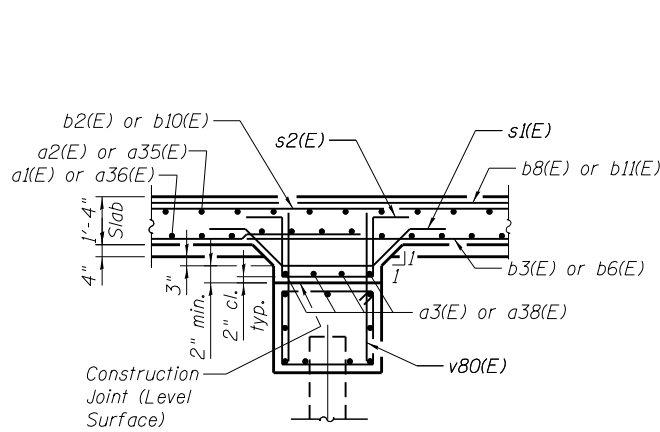
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	452
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 5**

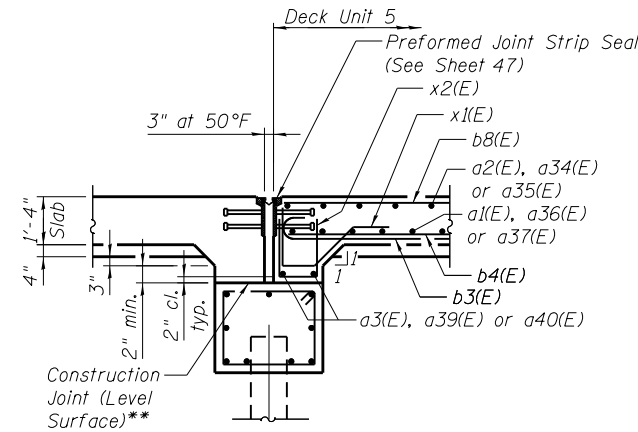
Bar	A	B	C	D	E	F	G
a1(E)	4'-1"	4"	20'-0"	4"	4'-1"	6"	4"
a37(E)	4'-1"	4"	20'-2"	4"	4'-1"	6"	4"

**BARS a1(E) & a37(E)**

Bar	No.	Size	Length	Shape
a1(E)	222	#5	29'-2"	
a2(E)	370	#5	16'-1"	
a3(E)	32	#5	28'-10"	
a34(E)	8	#5	16'-2"	
a35(E)	86	#5	17'-4"	
a36(E)	102	#5	16'-10"	
a37(E)	5	#5	29'-4"	
a38(E)	4	#5	29'-11"	
a39(E)	2	#5	31'-4"	
a40(E)	2	#5	29'-0"	
b2(E)	122	#7	11'-9"	
b3(E)	126	#7	25'-9"	
b4(E)	122	#8	20'-1"	
b5(E)	122	#8	14'-10"	
b6(E)	189	#7	26'-2"	
b8(E)	126	#7	37'-2"	
b9(E)	12	#4	40'-4"	
b10(E)	122	#7	9'-6"	
b11(E)	63	#7	50'-8"	
b12(E)	61	#8	16'-4"	
s1(E)	252	#5	7'-0"	
s2(E)	252	#5	8'-2"	
x1(E)	126	#5	4'-11"	
x2(E)	126	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	75,530
Concrete Superstructure			Cu. Yd.	402.8
Protective Coat			Sq. Yd.	774
Bridge Deck Grooving			Sq. Yd.	670

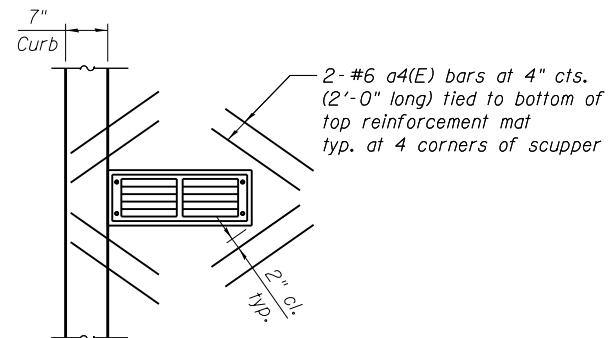


**FIXED PILE BENT  
CAP SECTION**

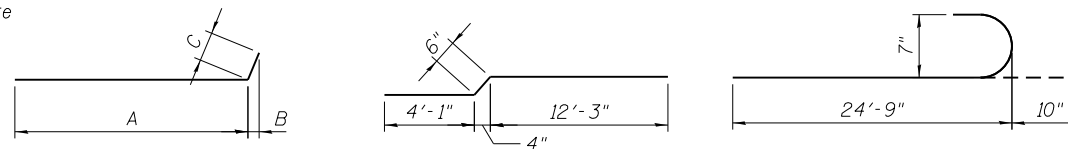


**EXPANSION PILE BENT**

\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.

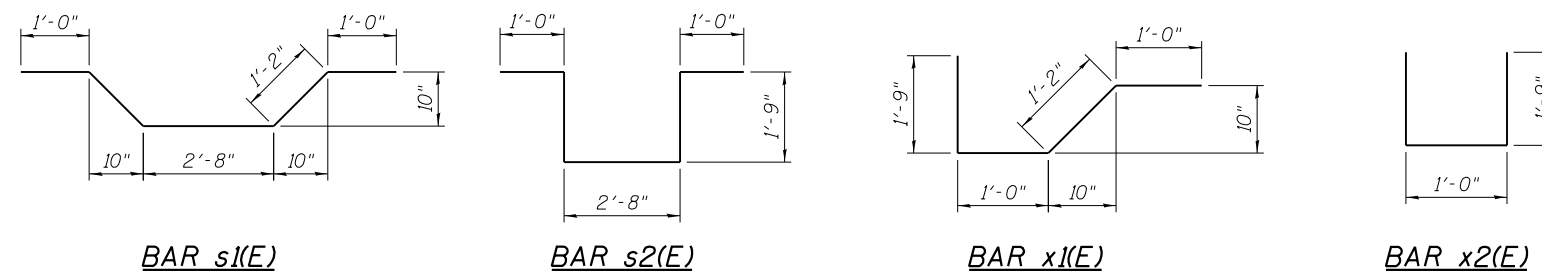


**SCUPPER REINFORCEMENT**



Bar	A	B	C
a2(E)	15'-7"	1"	6"
a34(E)	15'-8"	1"	6"
a35(E)	16'-10"	1"	6"

**BARS a2(E), a34(E) & a35(E)**



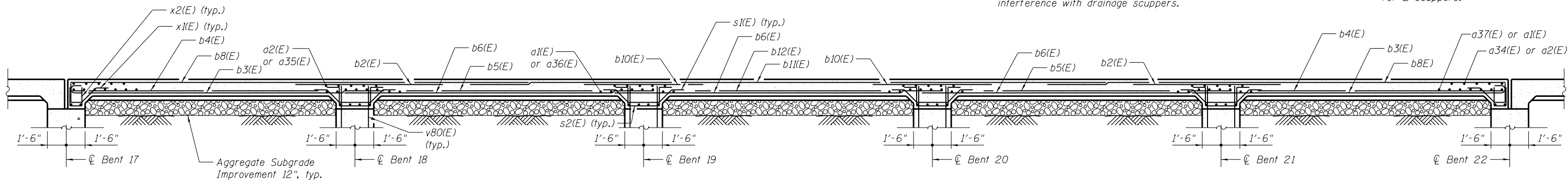
**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	60

The above quantities include reinforcement for 2 scuppers.

**NOTES**

1. Cut b8(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.



**SECTION C-C**

\\NASCH1\Chicago2\5106-USE6\Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-028-DP.dgn

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-028-DP.dgn  
PLOT SCALE =  
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DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
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REVISED  
REVISED  
REVISED  
REVISED

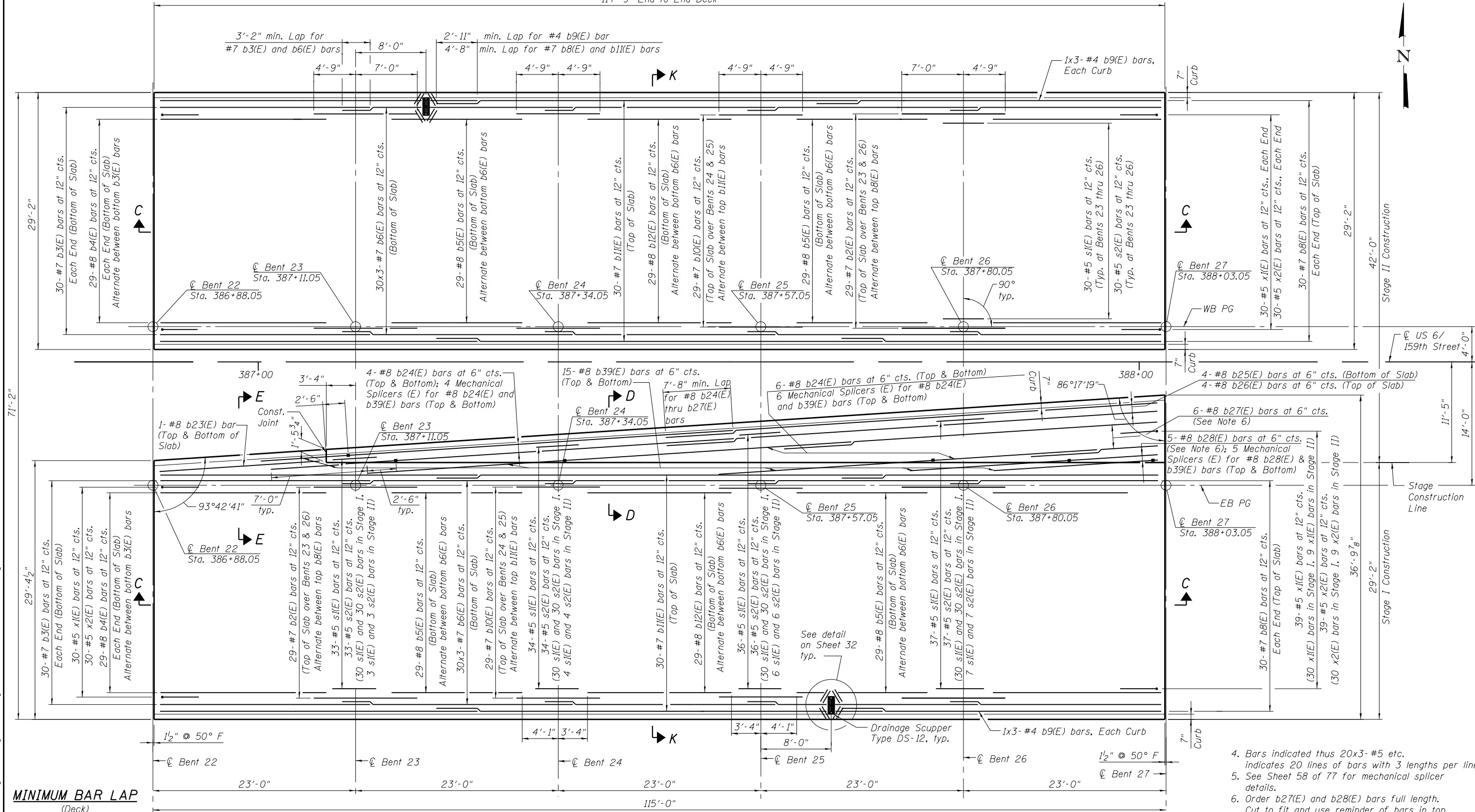
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS UNIT 5  
STRUCTURE NO. 016-D011**

SHEET NO. 28 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	453
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

114'-9" End to End Deck



**MINIMUM BAR LAP**  
(Deck)

- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"
- #8 bar = 7'-8"

**PLAN**  
Unit 6

**NOTES**

1. For Sections D-D and E-E see Sheet 31 of 77.
2. For Section C-C see Sheet 32 of 77.
3. See Sheet 32 of 77 for superstructure details and Bill of Material.

4. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
5. See Sheet 58 of 77 for mechanical splicer details.
6. Order b27(E) and b28(E) bars full length. Cut to fit and use reminder of bars in top of slab. Use hooked bars in bottom of slab.
7. For location of Unit 6, see Sheet 2.
8. Work this sheet with Sheet 30.
9. For Section K-K see Sheet 42.
10. Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near the stage construction joint.

\\NASCH1\Chicago2\5106-USE6-Structure\Bridges\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-029-DP.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

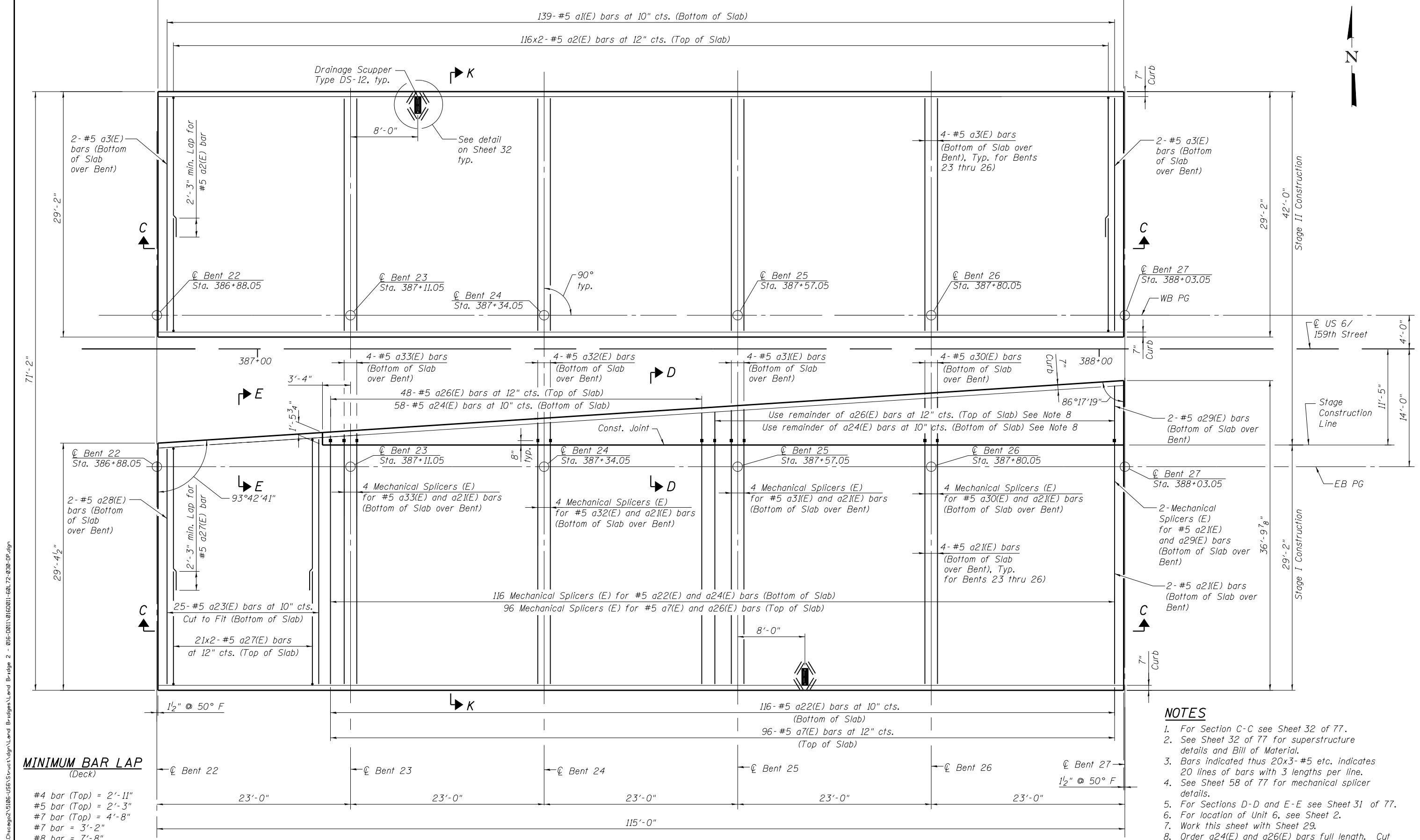
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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK PLAN I UNIT 6**  
**STRUCTURE NO. 016-D011**

SHEET NO. 29 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	454
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**PLAN**  
Unit 6

**MINIMUM BAR LAP**  
(Deck)

- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"
- #8 bar = 7'-8"

**NOTES**

1. For Section C-C see Sheet 32 of 77.
2. See Sheet 32 of 77 for superstructure details and Bill of Material.
3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
4. See Sheet 58 of 77 for mechanical splicer details.
5. For Sections D-D and E-E see Sheet 31 of 77.
6. For location of Unit 6, see Sheet 2.
7. Work this sheet with Sheet 29.
8. Order a24(E) and a26(E) bars full length. Cut to fit and use remainder of bars in adjacent area.
9. For Section K-K see Sheet 42.

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

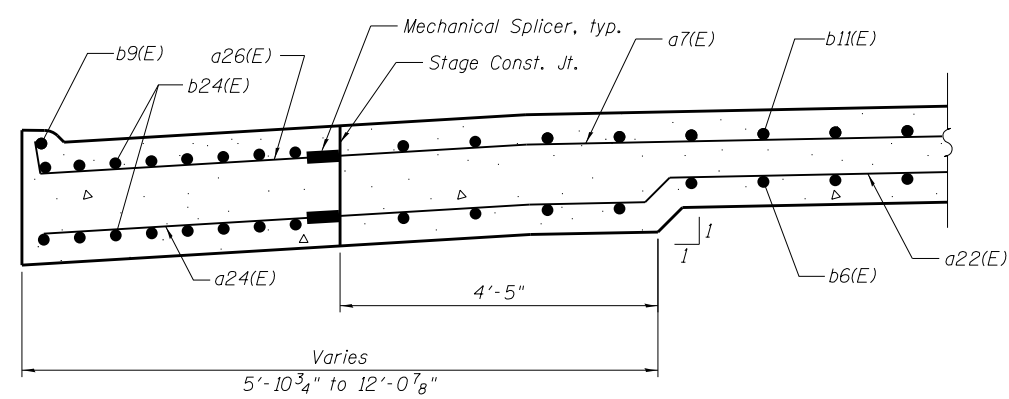
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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

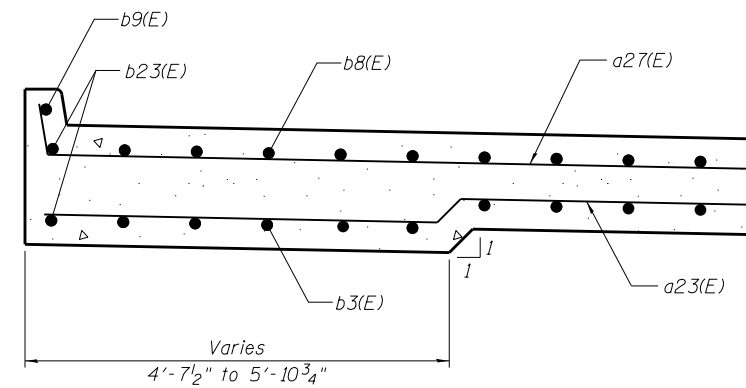
**DECK PLAN II UNIT 6**  
**STRUCTURE NO. 016-D011**

SHEET NO. 30 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	455
<b>CONTRACT NO. 60L72</b>				
<small>ILLINOIS FED. AID PROJECT</small>				



**SECTION D-D**



**SECTION E-E**

**NOTE**

1. For locations of SECTION D-D and SECTION E-E, see Sheet 29.

\\NASCH\Chicago\2106-U56-Struct\dgn\Leand Bridges\Leand Bridge 2 - 016-D011\016D011-60L72-031-DP.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-031-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS I UNIT 6  
 STRUCTURE NO. 016-D011**

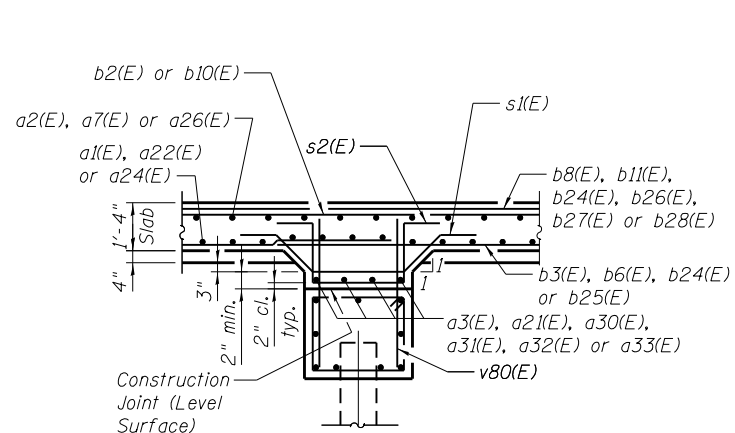
SHEET NO. 31 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	456
				<b>CONTRACT NO. 60L72</b>
ILLINOIS FED. AID PROJECT				

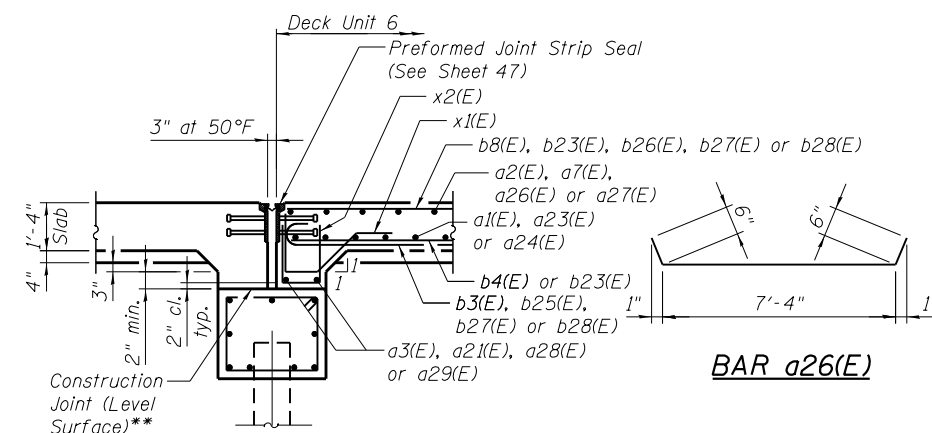


**BILL OF MATERIAL  
FOR UNIT 6**

Bar	No.	Size	Length	Shape
a1(E)	139	#5	29'-2"	
a2(E)	232	#5	16'-1"	
a3(E)	20	#5	28'-10"	
a7(E)	96	#5	30'-1"	
a21(E)	18	#5	29'-8"	
a22(E)	116	#5	30'-0"	
a23(E)	25	#5	30'-7"	
a24(E)	58	#5	7'-6"	
a26(E)	48	#5	8'-4"	
a27(E)	42	#5	16'-9"	
a28(E)	2	#5	29'-0"	
a29(E)	2	#5	6'-10"	
a30(E)	4	#5	5'-4"	
a31(E)	4	#5	3'-10"	
a32(E)	4	#5	2'-4"	
a33(E)	4	#5	0'-10"	
b2(E)	116	#7	11'-9"	
b3(E)	120	#7	25'-9"	
b4(E)	116	#8	20'-1"	
b5(E)	116	#8	14'-10"	
b6(E)	180	#7	26'-2"	
b8(E)	120	#7	37'-2"	
b9(E)	12	#4	40'-4"	
b10(E)	116	#7	9'-6"	
b11(E)	60	#7	50'-8"	
b12(E)	58	#8	16'-4"	
b23(E)	2	#8	19'-3"	
b24(E)	20	#8	43'-0"	
b25(E)	4	#8	58'-6"	
b26(E)	4	#8	57'-8"	
b27(E)	6	#8	55'-11"	
b28(E)	5	#8	41'-5"	
b39(E)	30	#8	9'-6"	
s1(E)	260	#5	7'-0"	
s2(E)	260	#5	8'-2"	
x1(E)	129	#5	4'-11"	
x2(E)	129	#5	4'-6"	
Reinforcement Bars, Epoxy Coated	Pound		79,660	
Concrete Superstructure	Cu. Yd.		424.3	
Protective Coat	Sq. Yd.		817	
Bridge Deck Grooving	Sq. Yd.		714	

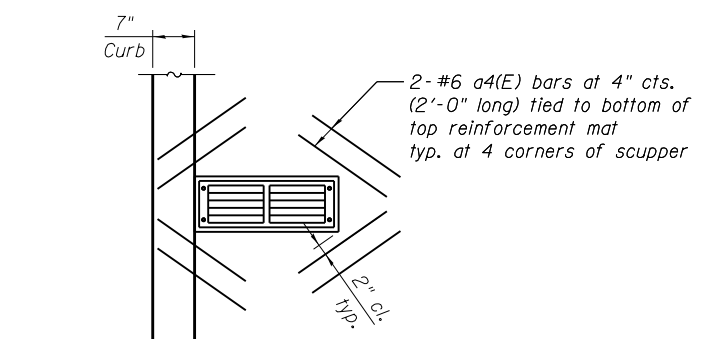


**FIXED PILE BENT  
CAP SECTION**

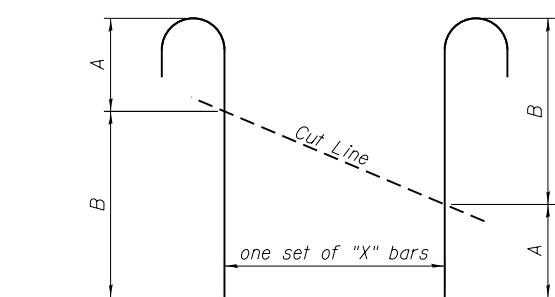


**EXPANSION PILE BENT**

\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.

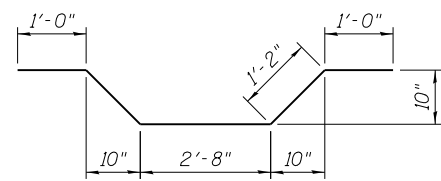


**SCUPPER REINFORCEMENT**

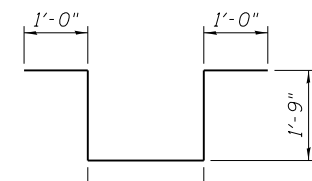


**FIELD CUTTING DIAGRAM**

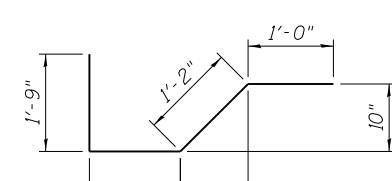
Bar	A	B	X
b27(E)	8'-2"	46'-11"	6
b28(E)	4'-10"	35'-9"	5



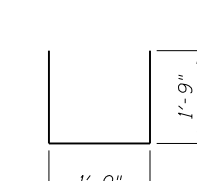
**BAR s1(E)**



**BAR s2(E)**



**BAR x1(E)**



**BAR x2(E)**

**BARS a2(E), a7(E) & a27(E)**

Bar	A	B	C
a2(E)	15'-7"	1"	6"
a7(E)	29'-7"	1"	6"
a27(E)	16'-3"	1"	6"

**BARS b3(E), b25(E), b27(E) & b28(E)**

Bar	A	B	C
b3(E)	24'-11"	10"	7"
b25(E)	57'-8"	10"	7"
b27(E)	55'-1"	10"	7"
b28(E)	40'-7"	10"	7"

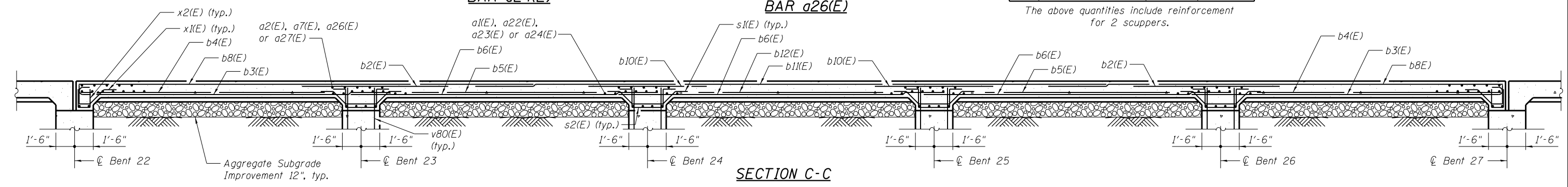
**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated	Pound			60

The above quantities include reinforcement for 2 scuppers.

**NOTES**

1. Cut b8(E) and b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.

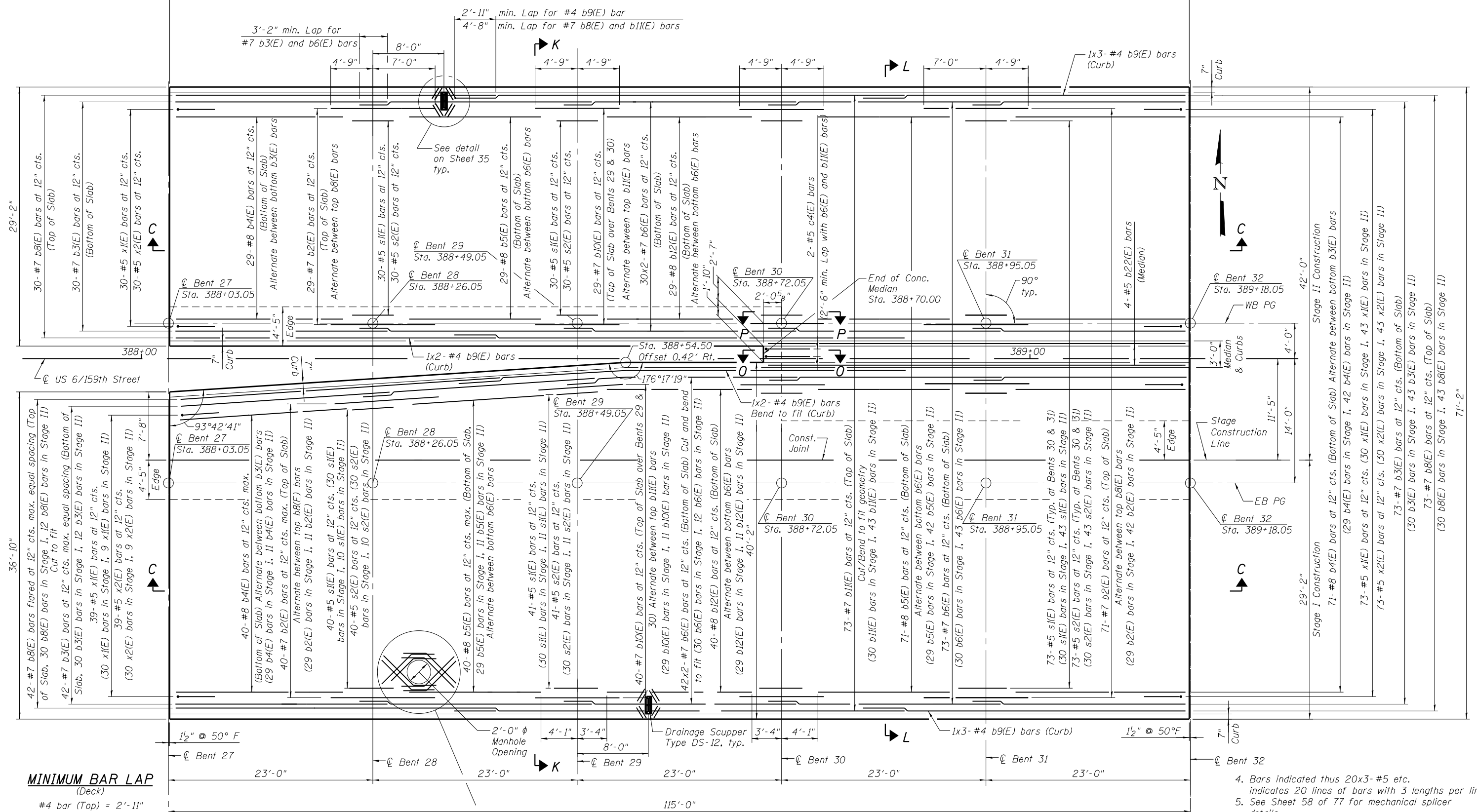


**SECTION C-C**

\\NASCH1\Chicagop2\5106\US6\Struct\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-032-0P.dgn

<b>LOCHNER</b> H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS II UNIT 6 STRUCTURE NO. 016-D011 SHEET NO. 32 OF 77 SHEETS	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 016D011-60L72-032-0P.dgn	CHECKED - RH	REVISED			351	2010-081-R	COOK	1045	457
	PLOT SCALE =	DRAWN - EF	REVISED			CONTRACT NO. 60L72				
	PLOT DATE	CHECKED - RH	REVISED			ILLINOIS FED. AID PROJECT				

114'-9" End to End Deck



**MINIMUM BAR LAP**  
(Deck)

- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

See Manhole location on Sheet 2  
See Manhole detail on Sheet 35  
(See Note 8)

**PLAN**  
Unit 7

**NOTES**

1. Work this sheet with Sheet 34.
2. For Sections K-K, C-C, O-O and P-P, see Sheet 35 of 77.
3. See Sheet 35 of 77 for superstructure details and Bill of Material.

4. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
5. See Sheet 58 of 77 for mechanical splicer details.
6. For location of Unit 7, see Sheet 2.
7. For Sections K-K and L-L see Sheet 42.
8. Cut b2(E), b5(E), b6(E) and b8(E) bars to clear 2'-0"  $\phi$  manhole opening.
9. Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near the stage construction joint.

\\NASCH1\Chicagop2\5106-056-056-Struct\Drawn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-033-0P.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-033-0P.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

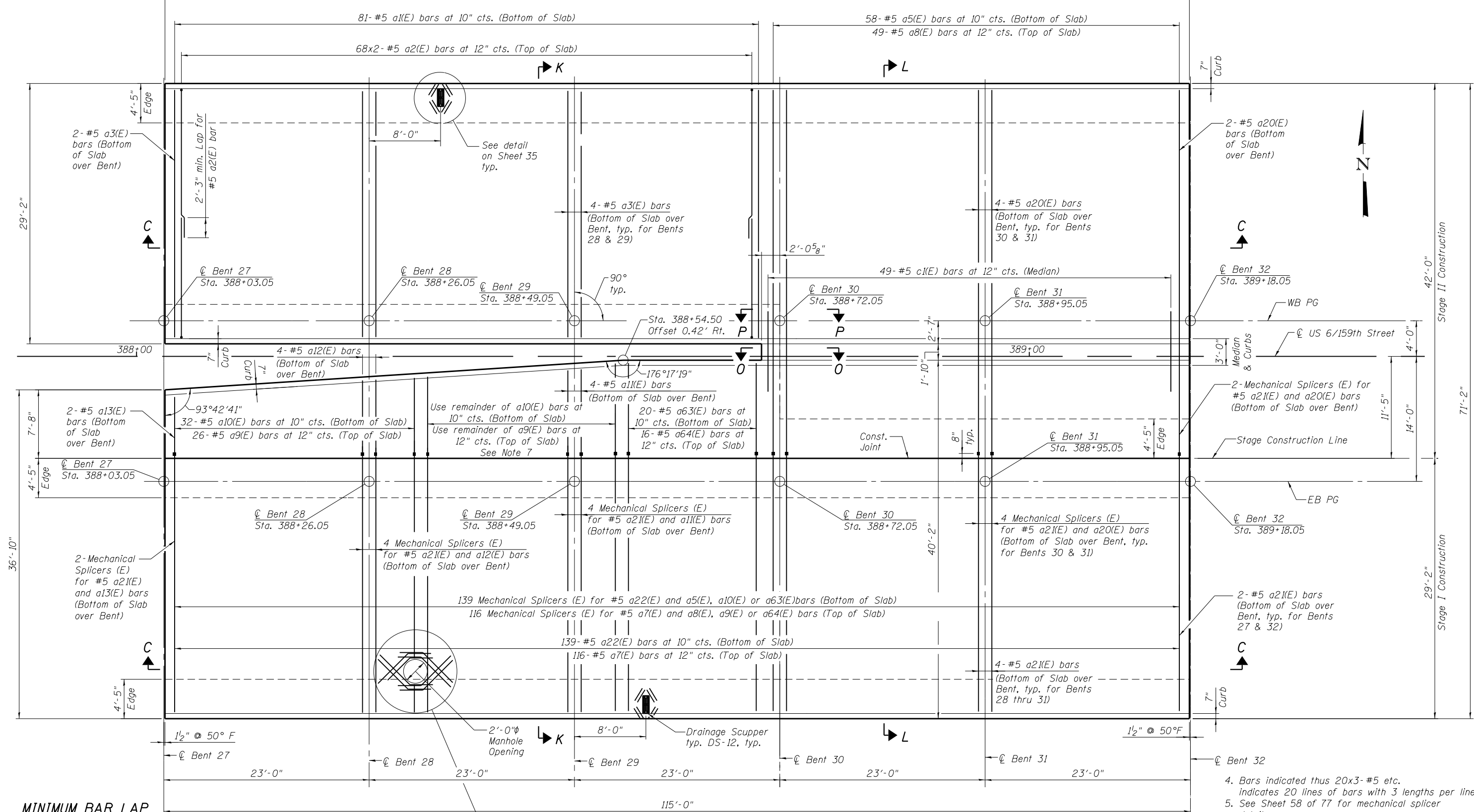
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DECK PLAN I UNIT 7**  
**STRUCTURE NO. 016-D011**

SHEET NO. 33 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	458
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

114'-9" End to End Deck



PLAN  
Unit 7

**MINIMUM BAR LAP**  
(Deck)

- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

See Manhole location on Sheet 2  
 See Manhole detail on Sheet 35  
 (See Note 9)

**NOTES**

1. Work this sheet with Sheet 33.
2. For Section C-C see Sheet 35 of 77.
3. See Sheet 35 of 77 for superstructure details and Bill of Material.

4. Bars indicated thus 20x3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
5. See Sheet 58 of 77 for mechanical splicer details.
6. For location of Unit 7, see Sheet 2.
7. Order a9(E) and a10(E) bars full length. Cut to fit and use remainder of bars in adjacent area.
8. For Sections K-K and L-L see Sheet 42.
9. Cut a1(E) and a7(E) bars to clear 2'-0" φ manhole opening.

**LOCHNER**  
 H. W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-034-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DECK PLAN II UNIT 7  
 STRUCTURE NO. 016-D011

SHEET NO. 34 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	459
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 7**

Bar	No.	Size	Length	Shape
a1(E)	81	#5	29'-2"	
a2(E)	136	#5	16'-11"	
a3(E)	10	#5	28'-10"	
a5(E)	58	#5	41'-6"	
a7(E)	116	#5	30'-1"	
a8(E)	49	#5	41'-3"	
a9(E)	26	#5	17'-10"	
a10(E)	32	#5	17'-0"	
a11(E)	4	#5	9'-9"	
a12(E)	4	#5	8'-3"	
a13(E)	2	#5	6'-10"	
a20(E)	10	#5	41'-2"	
a21(E)	20	#5	29'-8"	
a22(E)	139	#5	30'-0"	
a63(E)	20	#5	10'-2"	
a64(E)	16	#5	10'-7"	
a65(E)	16	#6	7'-4"	
b2(E)	140	#7	11'-9"	
b3(E)	145	#7	25'-9"	
b4(E)	140	#8	20'-11"	
b5(E)	140	#8	14'-10"	
b6(E)	217	#7	26'-2"	
b8(E)	145	#7	37'-2"	
b9(E)	10	#4	40'-4"	
b10(E)	138	#7	9'-6"	
b11(E)	73	#7	50'-8"	
b12(E)	69	#8	16'-4"	
b22(E)	4	#5	47'-7"	
c1(E)	49	#5	7'-6"	
c4(E)	2	#5	7'-1"	
s1(E)	287	#5	7'-0"	
s2(E)	287	#5	8'-2"	
x1(E)	142	#5	4'-11"	
x2(E)	142	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	87,130
Concrete Superstructure			Cu. Yd.	479.3
Protective Coat			Sq. Yd.	902
Bridge Deck Grooving			Sq. Yd.	820

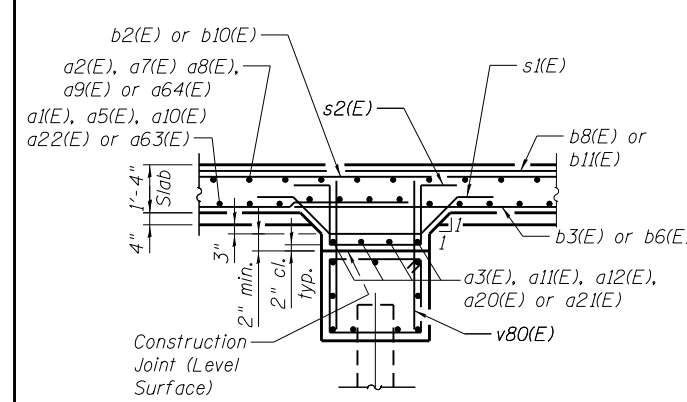
**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	60

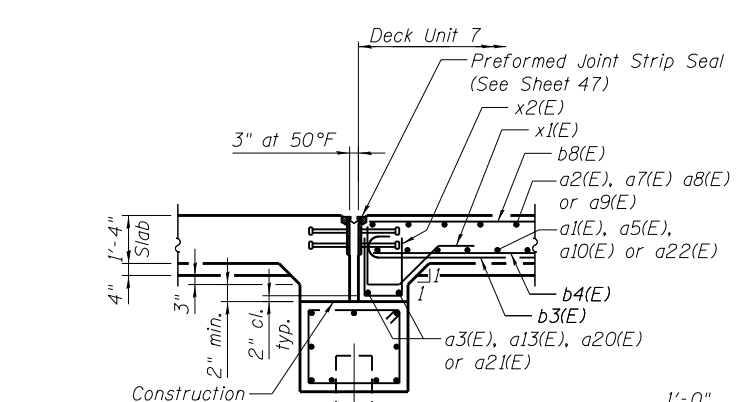
The above quantities include reinforcement for 2 scuppers.

**NOTES**

1. Cut b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.

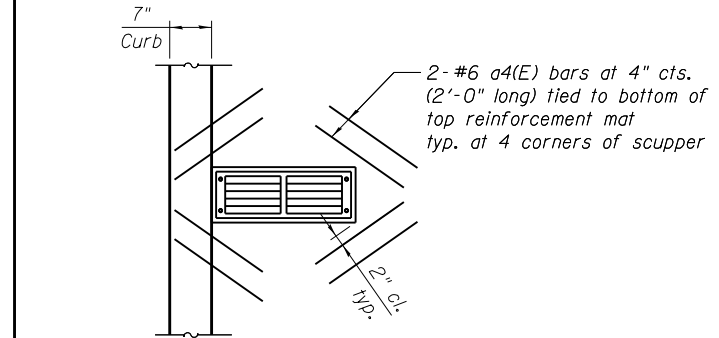


**FIXED PILE BENT  
CAP SECTION**

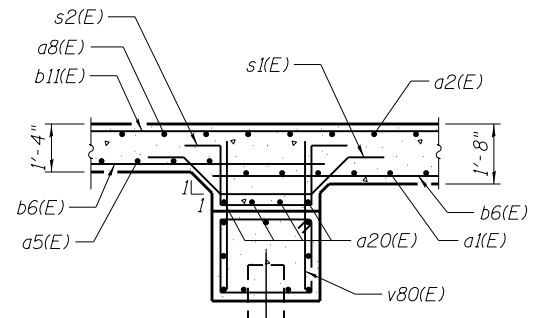


**EXPANSION PILE BENT**

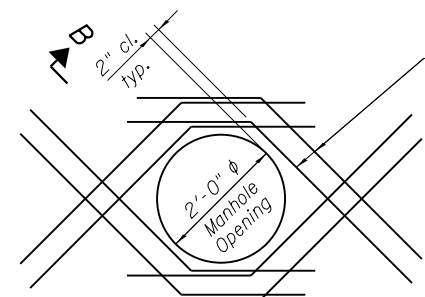
\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



**SCUPPER REINFORCEMENT**

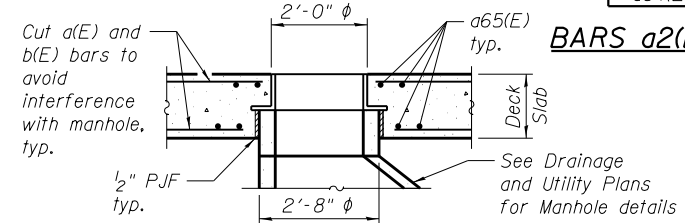


**SECTION P-P**

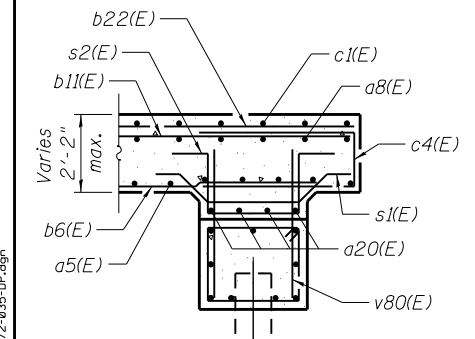


**MANHOLE REINFORCEMENT**

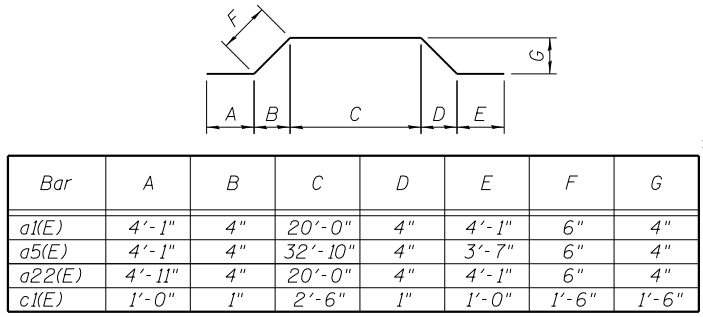
2-#6 a65(E) bars (Top & Bot.) at 6" cts. tied to bottom of top reinforcement mat and top of bottom reinforcement mat typ.



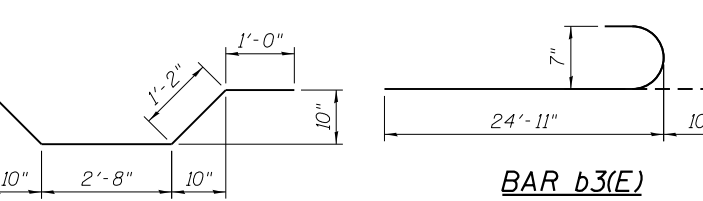
**SECTION B-B**



**SECTION O-O**

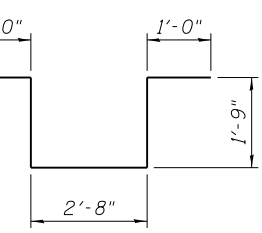


**BARS a1(E), a5(E) & c1(E)**

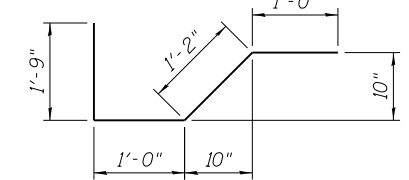


**BAR s1(E)**

**BAR b3(E)**



**BAR s2(E)**



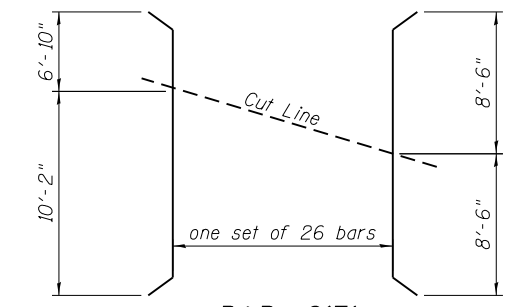
**BAR x1(E)**

Bar	A	B
c4(E)	1'-3"	2'-11"
x2(E)	1'-0"	1'-9"

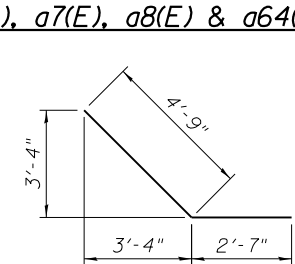
**BARS c4(E) & x2(E)**

Bar	A	B	C
a2(E)	15'-7"	1"	6"
a7(E)	29'-7"	1"	6"
a8(E)	41'-1"	1"	2"
a64(E)	10'-1"	1"	6"

**BARS a2(E), a7(E), a8(E) & a64(E)**

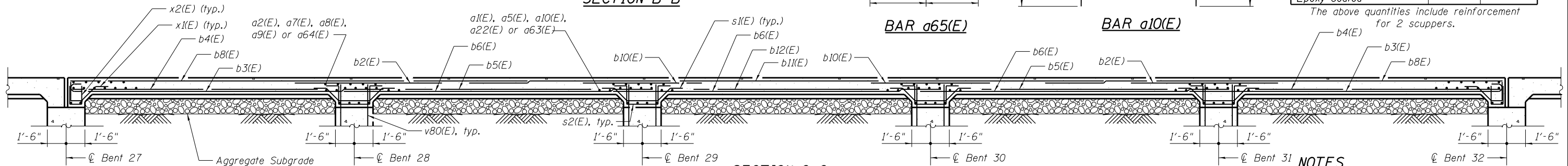


**BAR a9(E)**



**BAR a65(E)**

**BAR a10(E)**



**SECTION C-C**

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-035-DP.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

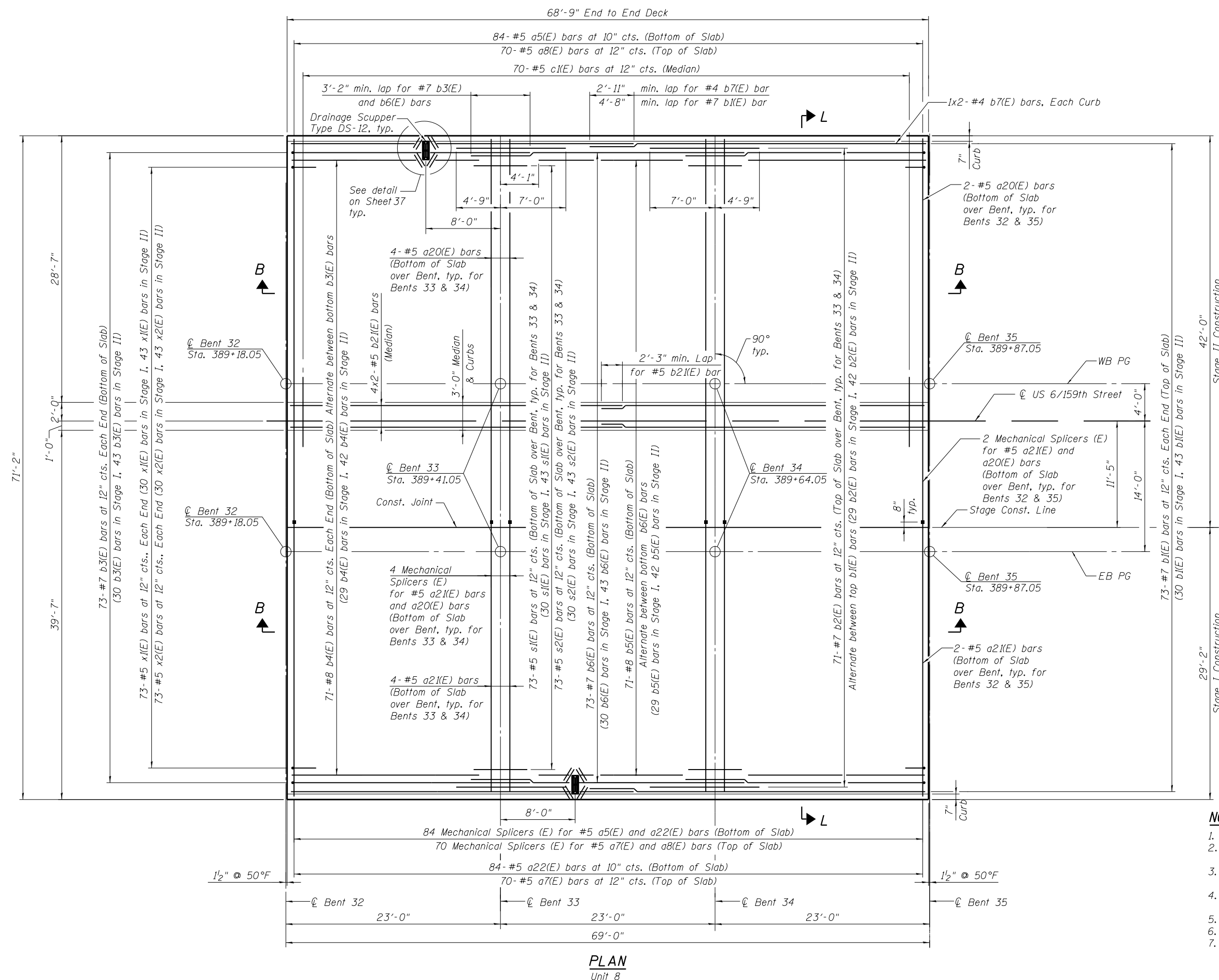
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS UNIT 7  
STRUCTURE NO. 016-D011**

SHEET NO. 35 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	460
				CONTRACT NO. 60L72
ILLINOIS FED. AID PROJECT				

\\NASCH1\Chicago2\5106-056\Structure\Drawings\End Bridges\End Bridge 2 - 016-D011\016D011-60L72-036-0P.dgn



**MINIMUM BAR LAP**  
(Deck)

#4 bar (Top)	= 2'-11"
#5 bar (Top)	= 2'-3"
#7 bar (Top)	= 4'-8"
#7 bar	= 3'-2"

- NOTES**
- For Section B-B see Sheet 37 of 77.
  - See Sheet 37 of 77 for superstructure details and Bill of Material.
  - Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
  - See Sheet 58 of 77 for mechanical splicer details.
  - For location of Unit 8, see Sheet 2.
  - For Section L-L see Sheet 42.
  - Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near the stage construction joint.

**PLAN**  
Unit 8

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-036-0P.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

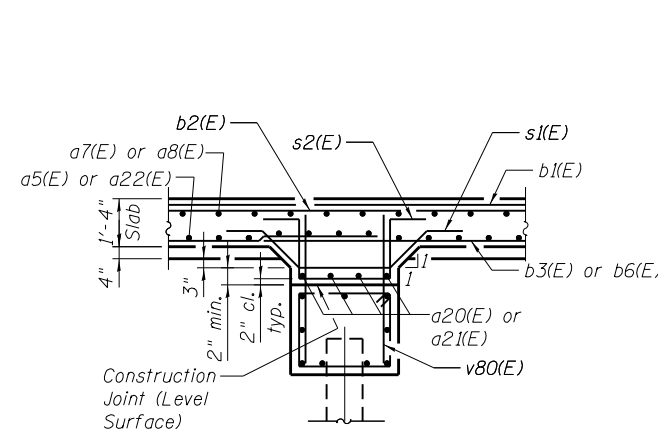
**DECK PLAN UNIT 8**  
**STRUCTURE NO. 016-D011**

SHEET NO. 36 OF 77 SHEETS

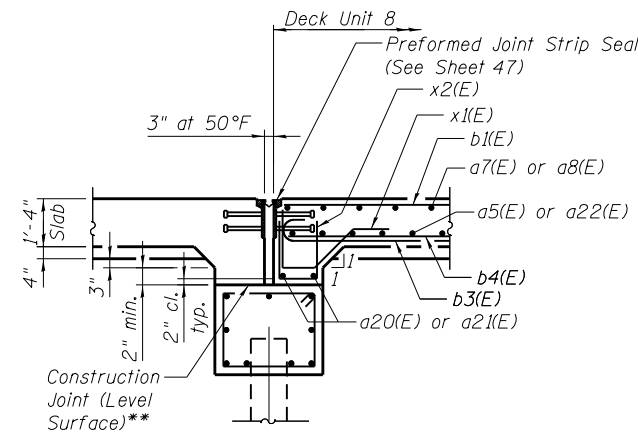
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	461
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 8**

Bar	No.	Size	Length	Shape
a5(E)	84	#5	41'-6"	
a7(E)	70	#5	30'-1"	
a8(E)	70	#5	41'-3"	
a20(E)	12	#5	41'-2"	
a21(E)	12	#5	29'-8"	
a22(E)	84	#5	30'-0"	
b1(E)	146	#7	36'-11"	
b2(E)	142	#7	11'-9"	
b3(E)	146	#7	25'-9"	
b4(E)	142	#8	20'-1"	
b5(E)	71	#8	14'-10"	
b6(E)	73	#7	26'-2"	
b7(E)	4	#4	36'-1"	
b21(E)	8	#5	35'-4"	
c1(E)	70	#5	7'-6"	
s1(E)	146	#5	7'-0"	
s2(E)	146	#5	8'-2"	
x1(E)	146	#5	4'-11"	
x2(E)	146	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	53,490
Concrete Superstructure			Cu. Yd.	290.3
Protective Coat			Sq. Yd.	558
Bridge Deck Grooving			Sq. Yd.	482

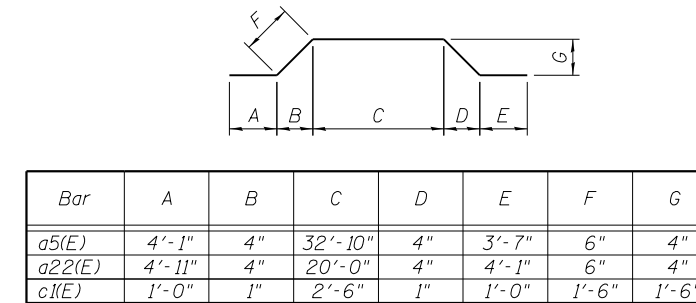


**FIXED PILE BENT  
CAP SECTION**

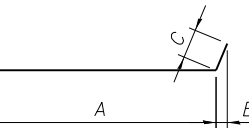


**EXPANSION PILE BENT**

\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.

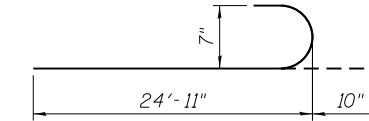


**BARS a5(E), a22(E) & c1(E)**

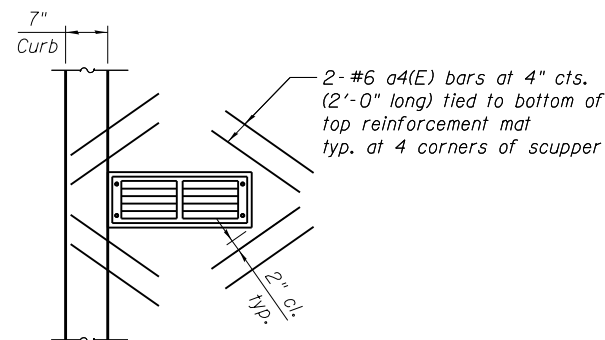


Bar	A	B	C
a7(E)	29'-7"	1"	6"
a8(E)	41'-1"	1"	2"

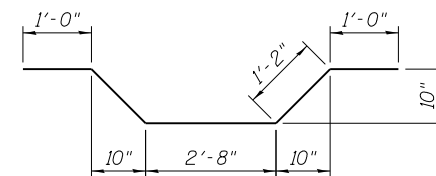
**BARS a7(E) & a8(E)**



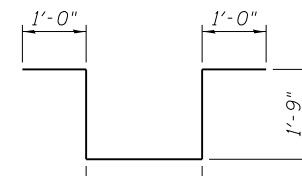
**BAR b3(E)**



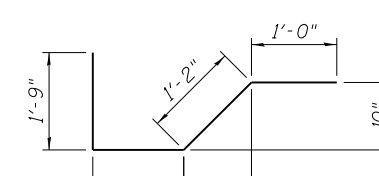
**SCUPPER REINFORCEMENT**



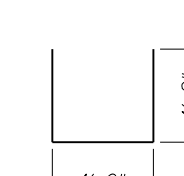
**BAR s1(E)**



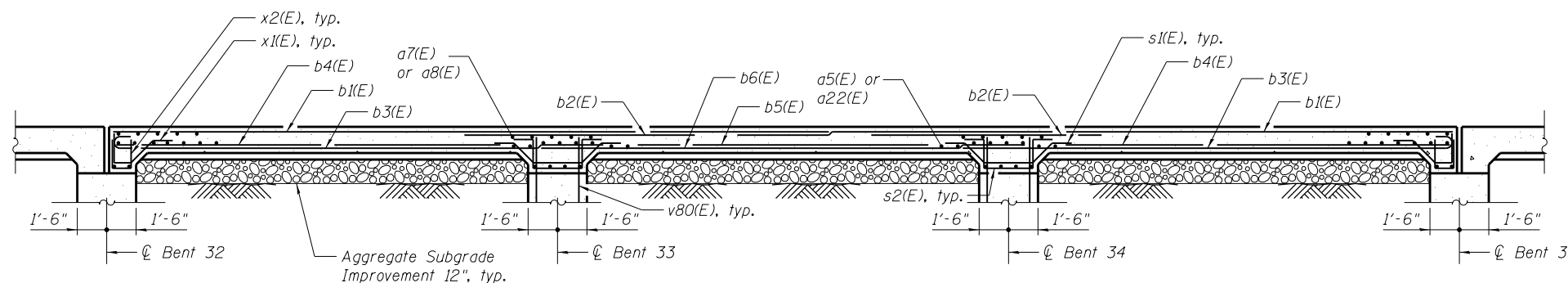
**BAR s2(E)**



**BAR x1(E)**



**BAR x2(E)**



**SECTION B-B**

**SCUPPER REINFORCEMENT  
BILL OF MATERIAL  
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	60

The above quantities include reinforcement for 2 scuppers.

**NOTES**

- Cut b1(E) bars to clear drainage scuppers.
- Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.

\\NASCH1\Chicagop2\5106-U56-Struct\Drawn Bridges\Land Bridge 2 - 016-D011\016D011-60L72-037-0P.dgn

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-037-0P.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
CHECKED - RH

REVISED  
REVISED  
REVISED  
REVISED

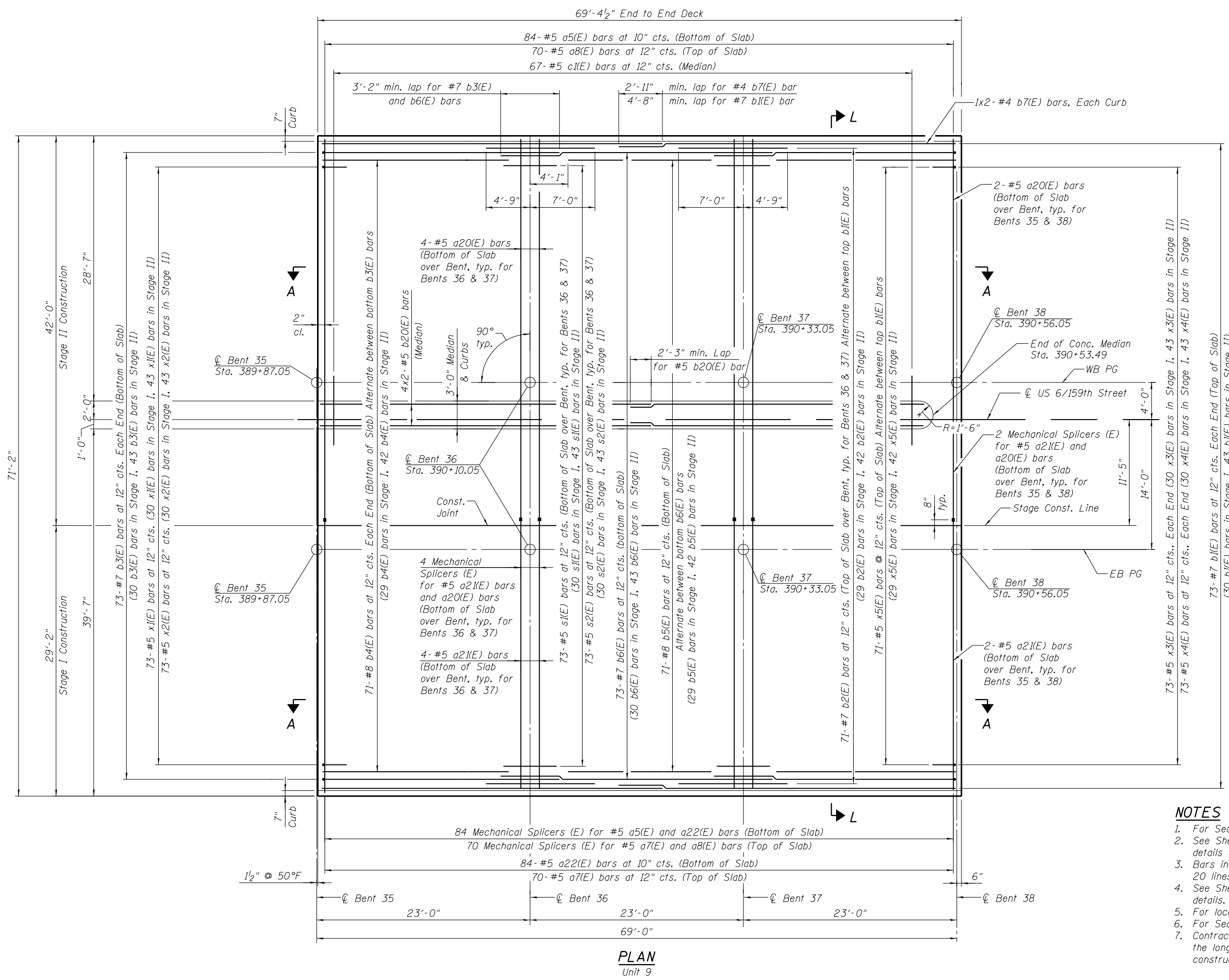
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS UNIT 8  
STRUCTURE NO. 016-D011**

SHEET NO. 37 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	462
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\\NASCH1\Chicago2\5106-U56-Struct\Drawn\Bridges\Land Bridge 2 - 016-D011\016D011-60L72-038-0P.dgn



**MINIMUM BAR LAP**  
(Deck)

#4 bar (Top)	= 2'-11"
#5 bar (Top)	= 2'-3"
#7 bar (Top)	= 4'-8"
#7 bar	= 3'-2"

- NOTES**
- For Section A-A see Sheet 39 of 77.
  - See Sheet 39 of 77 for superstructure details and Bill of Material.
  - Bars indicated thus 20x3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
  - See Sheet 58 of 77 for mechanical splicer details.
  - For location of Unit 9 see Sheet 2.
  - For Section L-L see Sheet 42.
  - Contractor shall maintain a 2" minimum cover for the longitudinal rebar placed near the stage construction joint.

**PLAN**  
Unit 9

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-038-0P.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

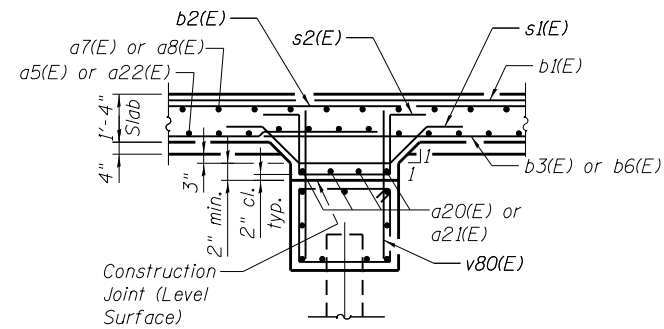
**DECK PLAN UNIT 9**  
**STRUCTURE NO. 016-D011**

SHEET NO. 38 OF 77 SHEETS

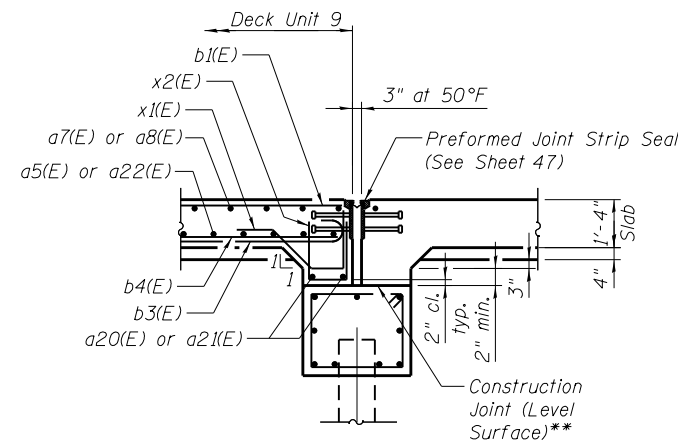
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	463
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL  
FOR UNIT 9**

Bar	No.	Size	Length	Shape
a5(E)	84	#5	41'-6"	
a7(E)	70	#5	30'-1"	
a8(E)	70	#5	41'-3"	
a20(E)	12	#5	41'-2"	
a21(E)	12	#5	29'-8"	
a22(E)	84	#5	30'-0"	
b1(E)	146	#7	36'-11"	
b2(E)	142	#7	11'-9"	
b3(E)	146	#7	25'-9"	
b4(E)	142	#8	20'-1"	
b5(E)	71	#8	14'-10"	
b6(E)	73	#7	26'-2"	
b7(E)	4	#4	36'-1"	
b20(E)	8	#5	34'-2"	
c1(E)	67	#5	7'-6"	
s1(E)	146	#5	7'-0"	
s2(E)	146	#5	8'-2"	
x1(E)	73	#5	4'-11"	
x2(E)	73	#5	4'-6"	
x3(E)	73	#5	5'-7"	
x4(E)	73	#5	5'-2"	
x5(E)	71	#5	8'-10"	
Reinforcement Bars, Epoxy Coated		Pound	54,210	
Concrete Superstructure		Cu. Yd.	294.0	
Protective Coat		Sq. Yd.	563	
Bridge Deck Grooving		Sq. Yd.	486	

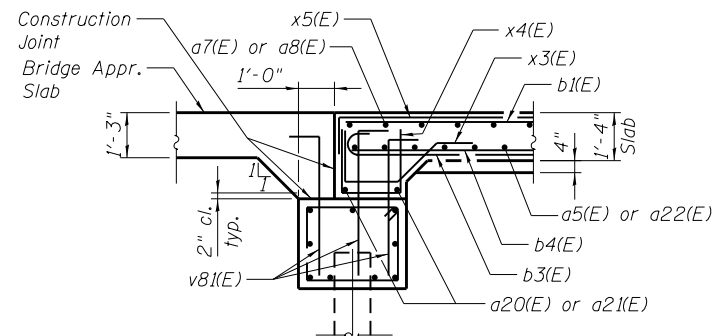


**FIXED PILE BENT  
CAP SECTION**

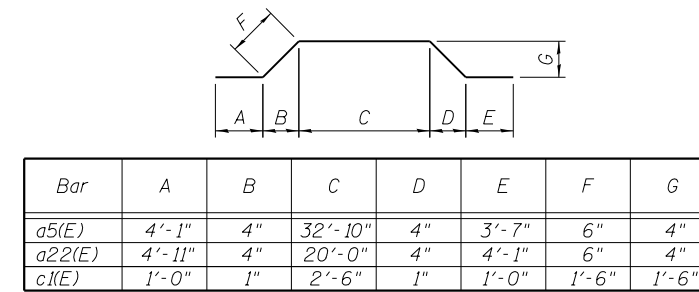


**EXPANSION PILE BENT 35**

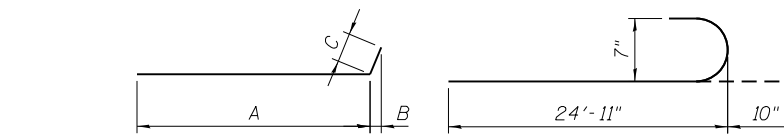
\*\* Top concrete surface of the expansion pier caps shall be finished to a very smooth finish.  $\frac{1}{8}$ " neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing  $\frac{1}{8}$ " neoprene sheet is included with CONCRETE STRUCTURES.



**END PILE BENT 38  
CAP SECTION**



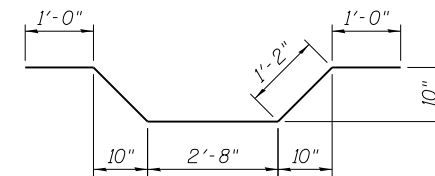
**BARS a5(E), a22(E) & c1(E)**



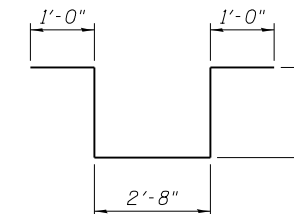
**BAR b3(E)**

Bar	A	B	C
a7(E)	29'-7"	1"	6"
a8(E)	41'-1"	1"	2"

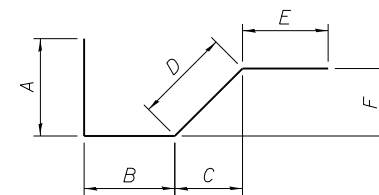
**BARS a7(E) & a8(E)**



**BAR s1(E)**

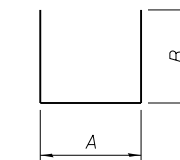


**BAR s2(E)**



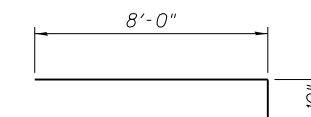
Bar	A	B	C	D	E	F
x1(E)	1'-9"	1'-0"	10"	1'-2"	1'-0"	10"
x3(E)	1'-9"	1'-8"	10"	1'-2"	1'-0"	10"

**BARS x1(E) & x3(E)**

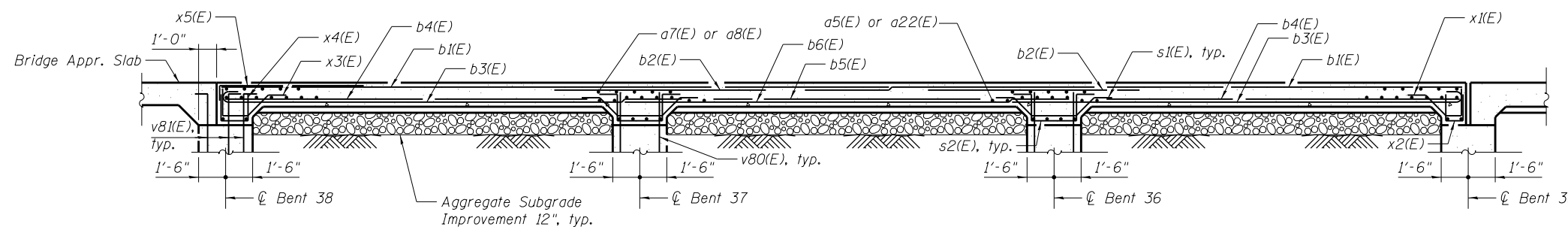


Bar	A	B
x2(E)	1'-0"	1'-9"
x4(E)	1'-8"	1'-9"

**BARS x2(E) & x4(E)**



**BAR x5(E)**



**SECTION A-A**

\\NASCH1\Chicago2\5106\US65\Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-039-DF.dgn

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-039-DF.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
CHECKED - RH

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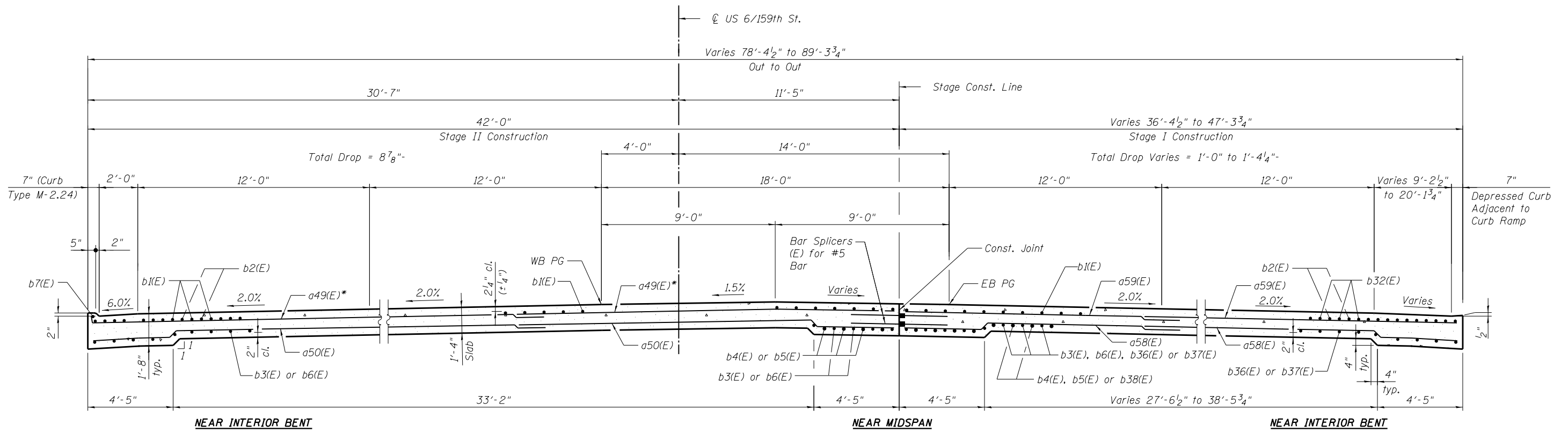
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS UNIT 9  
STRUCTURE NO. 016-D011**

SHEET NO. 39 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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				<b>CONTRACT NO. 60L72</b>
ILLINOIS FED. AID PROJECT				

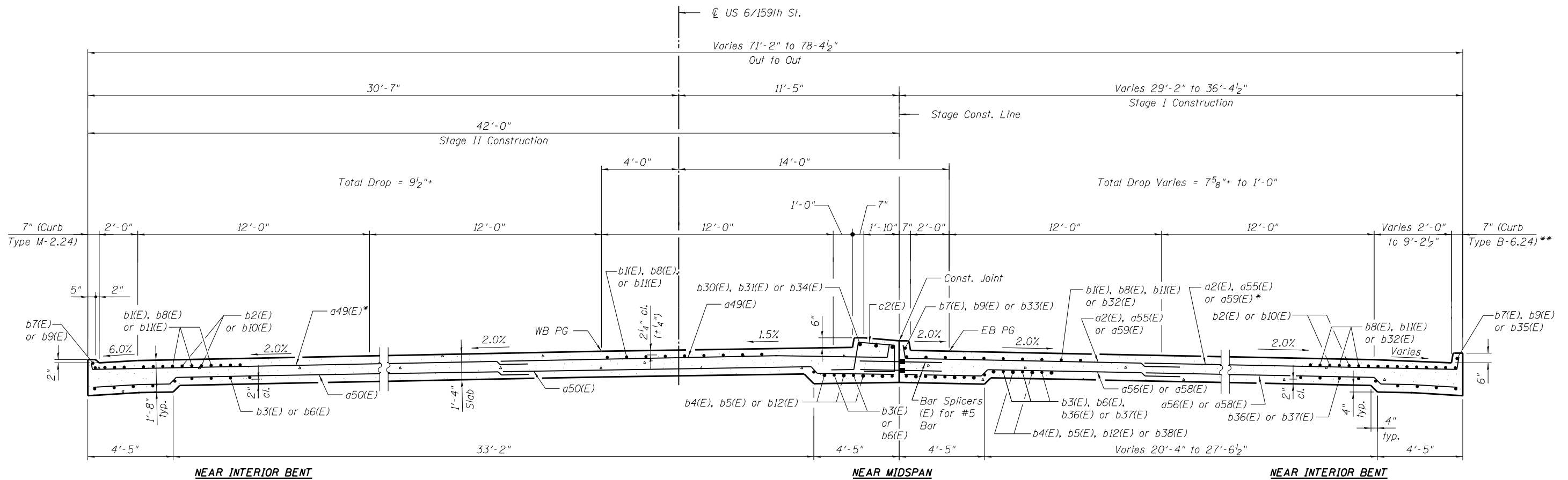




**SECTION F-F - STATION 382+04.55 TO STATION 382+31.51**

(Looking East)

\*Tilt #5 a49(E) bars as required to maintain clearance



**SECTION G-G - STATION 382+31.51 TO STATION 384+15.00**

(Looking East)

\* Tilt a49(E) and a59(E) bars as required to maintain clearance  
 \*\* Use Depressed Curb adjacent to curb Ramp from Sta. 381+98.85 to Sta. 382+50.33. See SECTION F-F for details.

\\NASCH1\Chicago2\5106-056\Structure\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-040-DP.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

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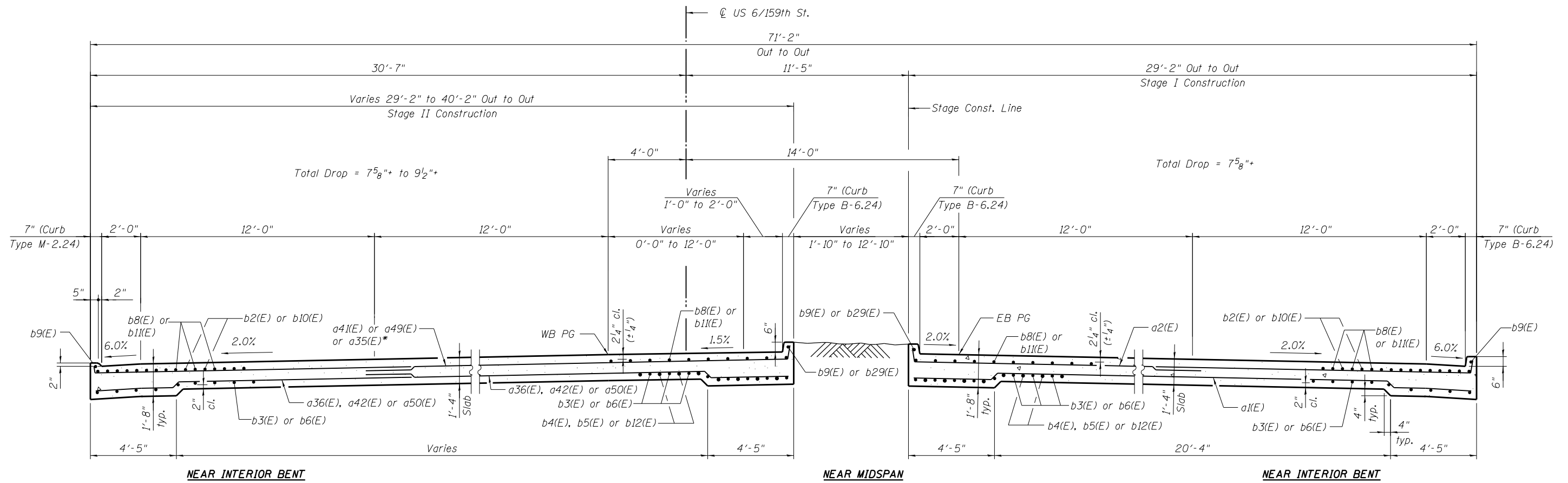
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**DECK CROSS SECTION 1  
 STRUCTURE NO. 016-D011**

SHEET NO. 40 OF 77 SHEETS

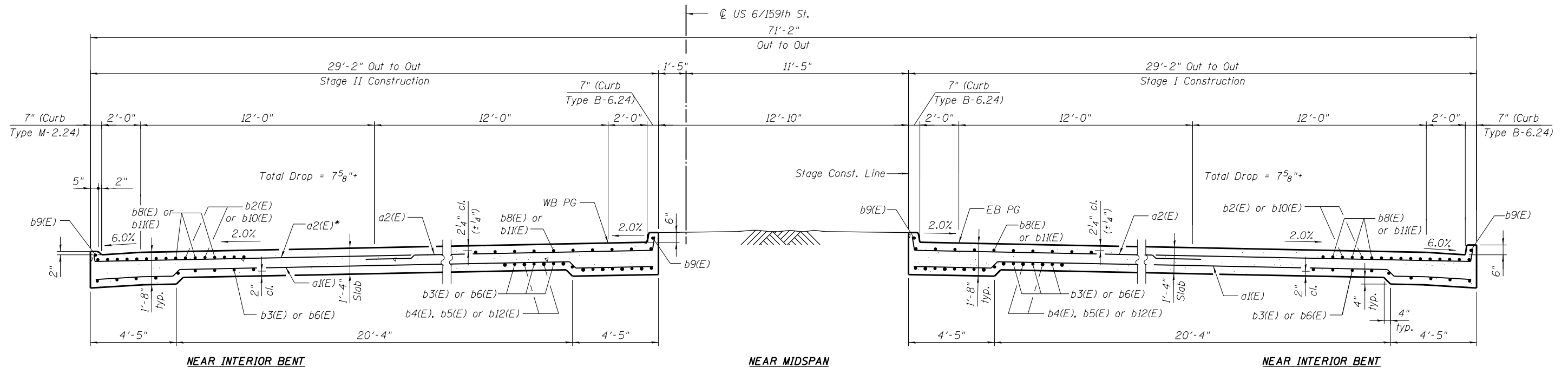
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	465
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**SECTION H-H - STATION 384+15.00 TO STATION 386+15.08**

(Looking East)

\*Tilt #5 a35(E) a41(E) or a49(E) bars as required to maintain clearance



**SECTION J-J - STATION 386+15.08 TO STATION 386+84.92**

(Looking East)

\*Tilt #5 a2(E) bars as required to maintain clearance

\\NASCHI\Chicago\25106-056\Struct\Drawn\Bridges\2 - 016-D011\016D011-60L72-041-DP.dgn

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225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

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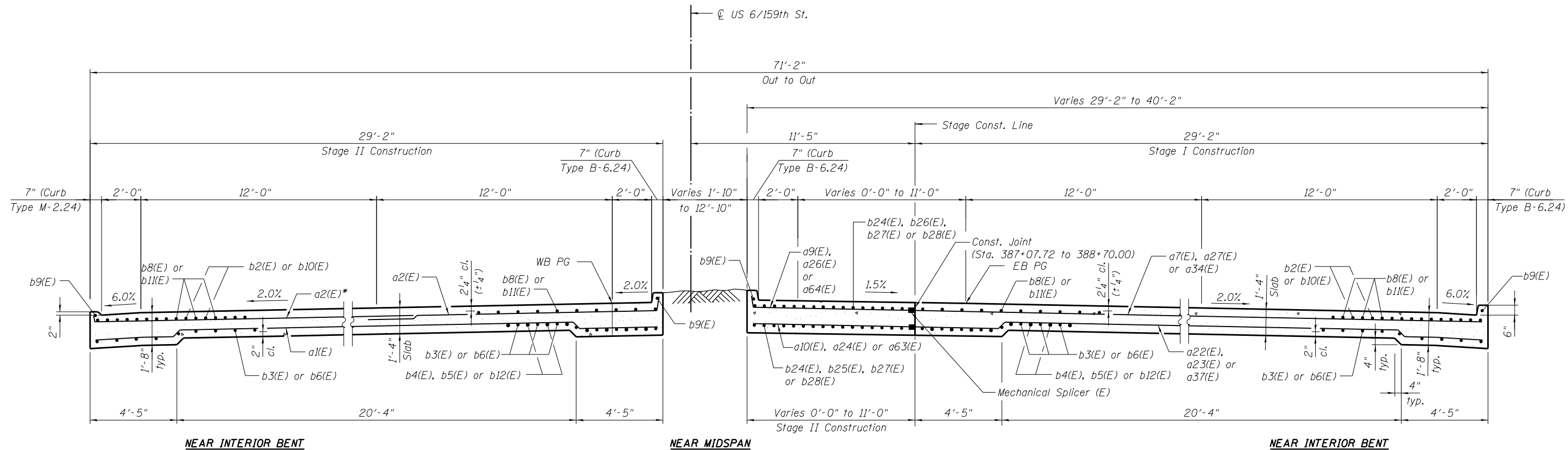
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REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DECK CROSS SECTION 2  
STRUCTURE NO. 016-D011**

SHEET NO. 41 OF 77 SHEETS

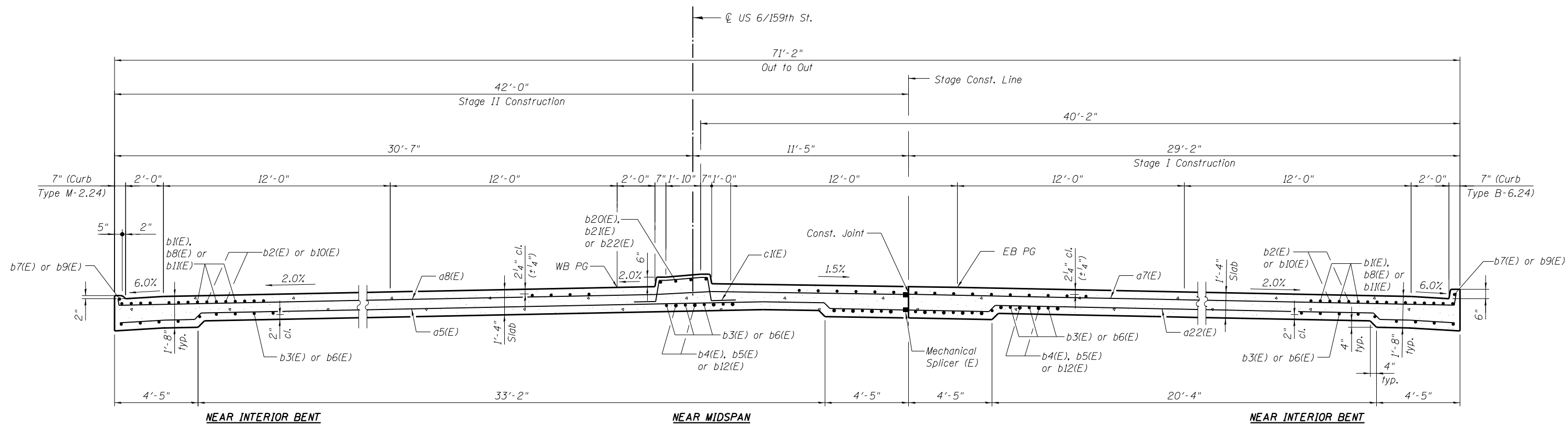
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	466
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**SECTION K-K - STATION 386+84.92 TO STATION 388+70.00**

(Looking East)

\*Tilt #5 a2(E) bars as required to maintain clearance



**SECTION L-L - STATION 388+70.00 TO STATION 390+53.49**

(Looking East)

\\NASCH1\Chicago\25106-Sub\Struct\Draw\Bridges\Lead Bridges\Lead Bridges\2 - 016-D011-016D011-60L72-042-DF.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
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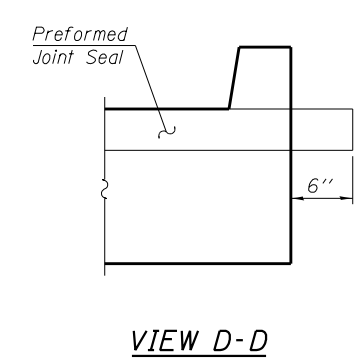
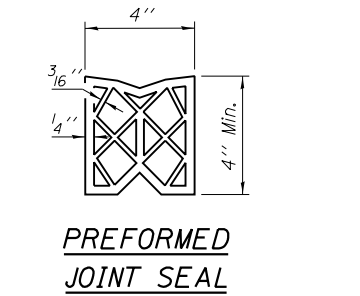
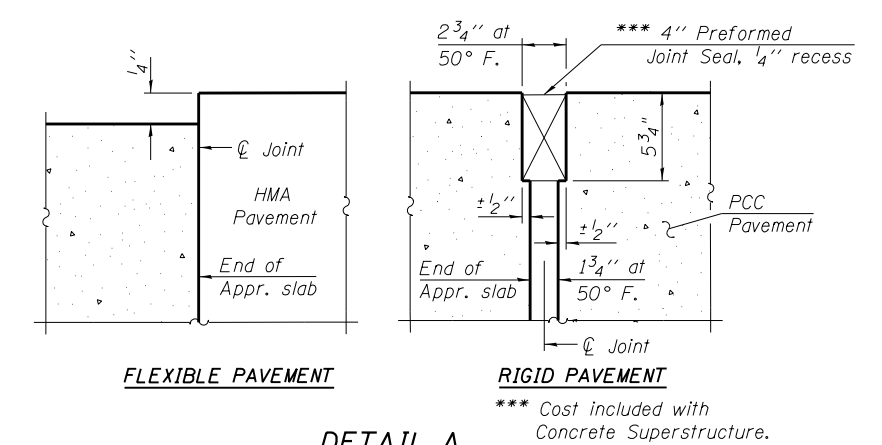
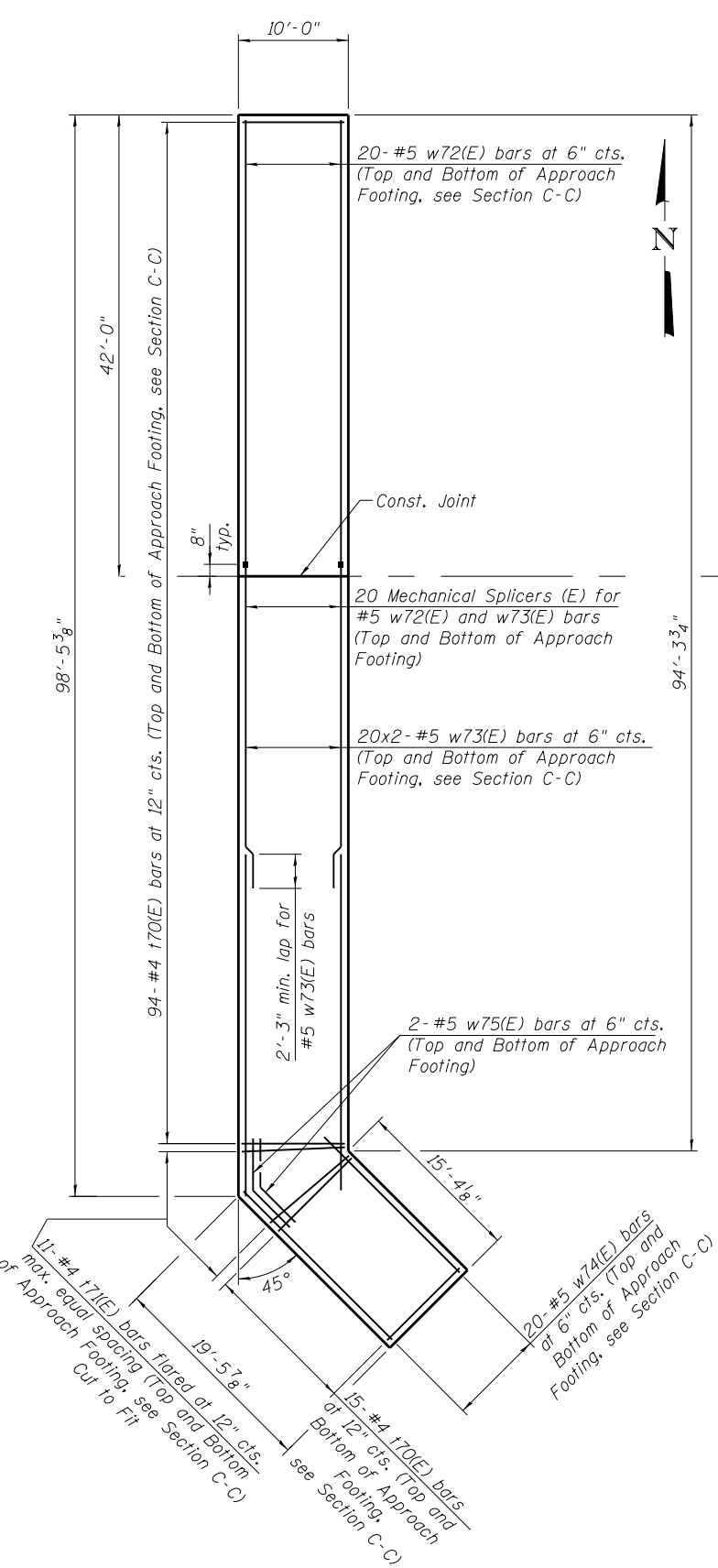
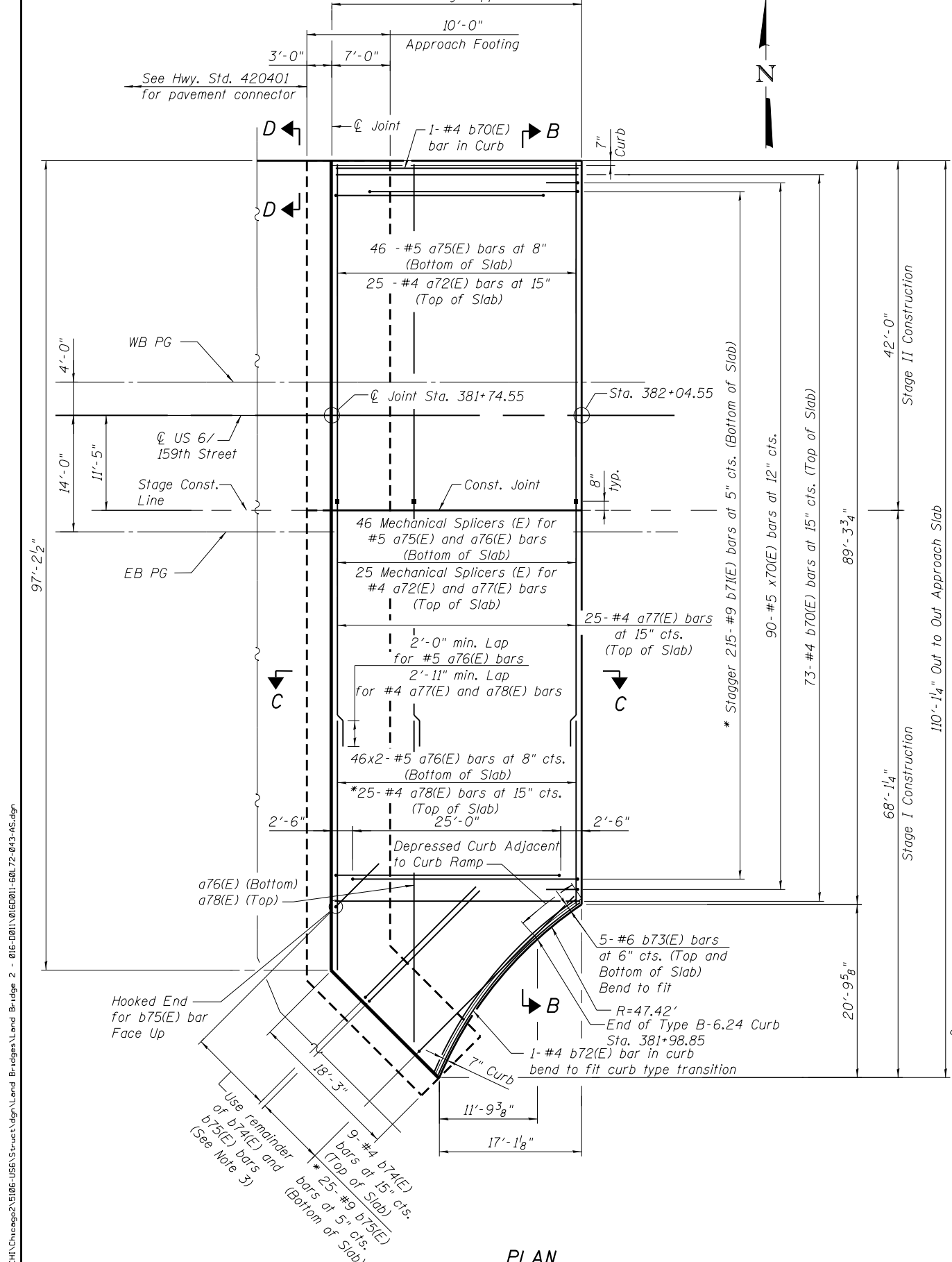
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DECK CROSS SECTION 3  
STRUCTURE NO. 016-D011**

SHEET NO. 42 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	467
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



- NOTES**
- See Sheet 44 of 77 for Sections B-B and C-C.
  - a72(E) and a75(E) thru a78(E) bar spacings measured along  $\phi$  Rdwy.
  - Order b74(E) and b75(E) bars full length. Cut to fit and use remainder of bars in adjacent area.
  - For Field Cutting Diagram, see Sheet 44.
  - See Sheet 58 of 77 for mechanical splicer details.
  - The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1/2" for installation purposes.

\* Tilt b71(E), b75(E) and a78(E) bars as required to maintain clearance.

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

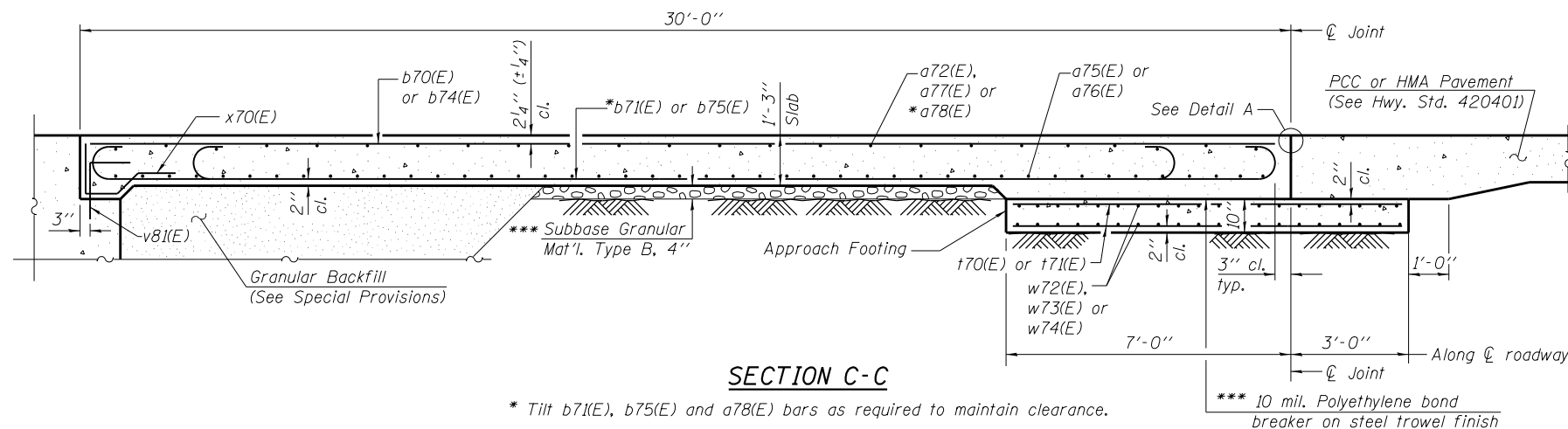
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**WEST BRIDGE APPROACH SLAB DETAILS 1  
STRUCTURE NO. 016-0011**

SHEET NO. 43 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	468
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



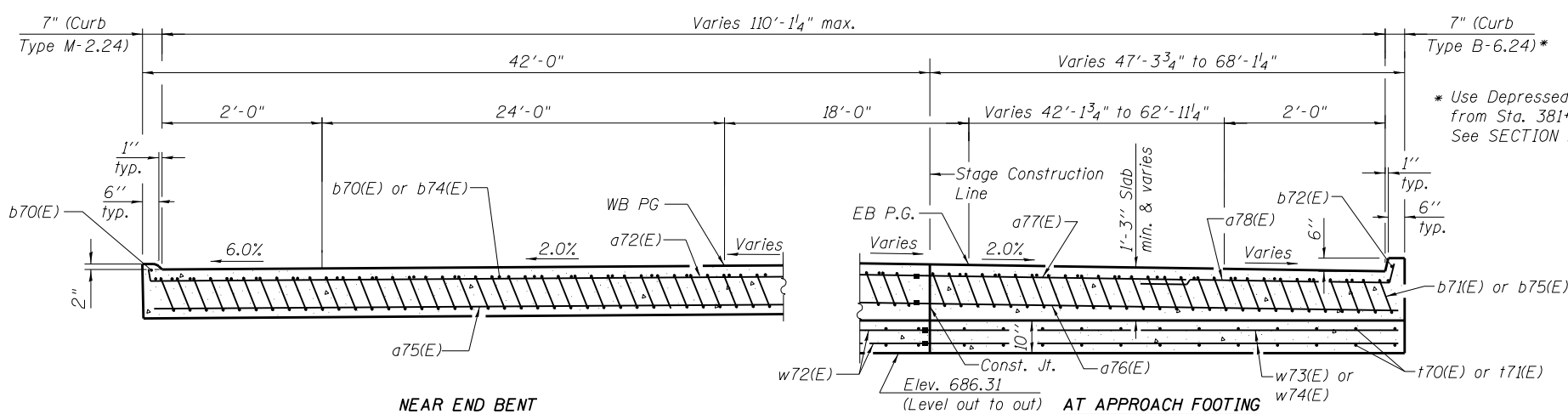
**SECTION C-C**  
 \* Tilt b71(E), b75(E) and a78(E) bars as required to maintain clearance.  
 \*\*\* Cost included with Concrete Superstructure.

**NOTES**

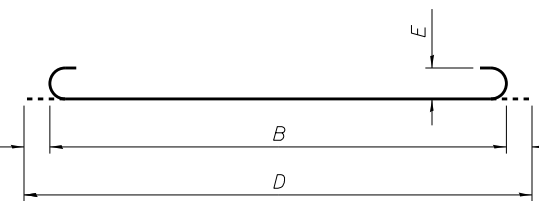
1. See Sheet 43 of 77 for Detail A.
2. Approach slab shall be paid for as CONCRETE SUPERSTRUCTURE.
3. Approach footing concrete shall be paid for as CONCRETE STRUCTURES.
4. Reinforcement shall be paid for as REINFORCEMENT BARS, EPOXY COATED.
5. For v81(E) bar details, see Sheet 53 of 77.
6. The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.
7. Cost of excavation for approach footing included with CONCRETE STRUCTURES.
8. For Granular Backfill and drainage treatment details, see Sheet 3 of 77.

**BILL OF MATERIAL FOR WEST APPROACH SLAB**

Bar	No.	Size	Length	Shape	
a72(E)	25	#4	41'-3"	—	
a75(E)	46	#5	41'-2"	—	
a76(E)	92	#5	35'-4"	—	
a77(E)	25	#4	30'-0"	—	
a78(E)	25	#4	39'-0"	—	
b70(E)	74	#4	29'-8"	—	
b71(E)	215	#9	29'-9"	—	
b72(E)	1	#4	20'-2"	—	
b73(E)	10	#6	27'-5"	—	
b74(E)	9	#4	34'-0"	—	
b75(E)	25	#9	36'-6"	—	
t70(E)	218	#4	9'-8"	—	
t71(E)	22	#4	10'-6"	—	
w72(E)	40	#5	41'-2"	—	
w73(E)	80	#5	29'-9"	—	
w74(E)	40	#5	19'-2"	—	
w75(E)	4	#5	6'-6"	—	
x70(E)	90	#5	5'-7"	—	
Reinforcement Bars, Epoxy Coated				Pound	41,270
Concrete Superstructure				Cu. Yd.	160.0
Concrete Structures				Cu. Yd.	35.2
Bridge Deck Grooving				Sq. Yd.	320
Protective Coat				Sq. Yd.	330

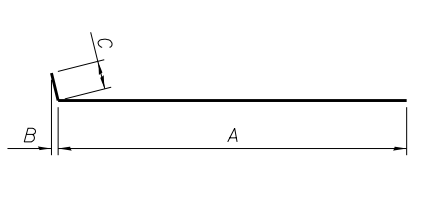


**SECTION B-B**  
 Looking East  
 (See Plan for dimensions not shown)



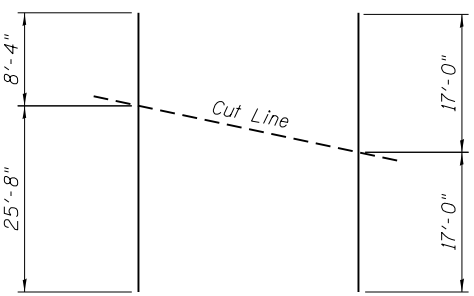
Bar	A	B	C	D	E
b71(E)	1'-3"	27'-3"	1'-3"	29'-9"	11 <sup>3</sup> / <sub>4</sub> "
b75(E)	1'-3"	34'-0"	1'-3"	36'-6"	11 <sup>3</sup> / <sub>4</sub> "

**BARS b71(E) & b75(E)**

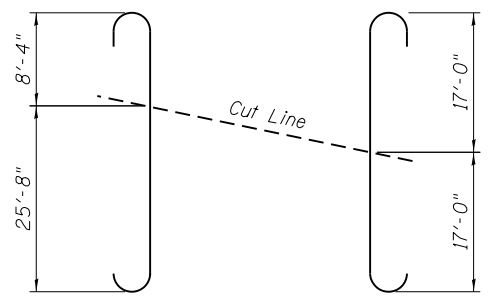


Bar	A	B	C
a72(E)	41'-1"	1"	2"
a78(E)	38'-6"	1"	6"

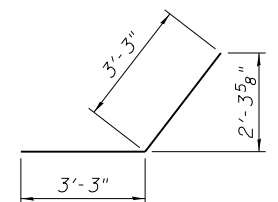
**BARS a72(E) & a78(E)**



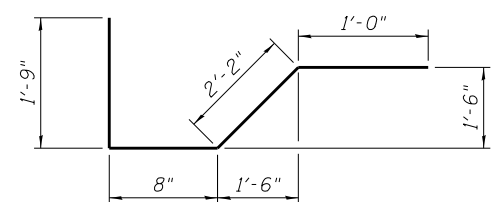
**BAR b74(E)**



**BAR b75(E)**

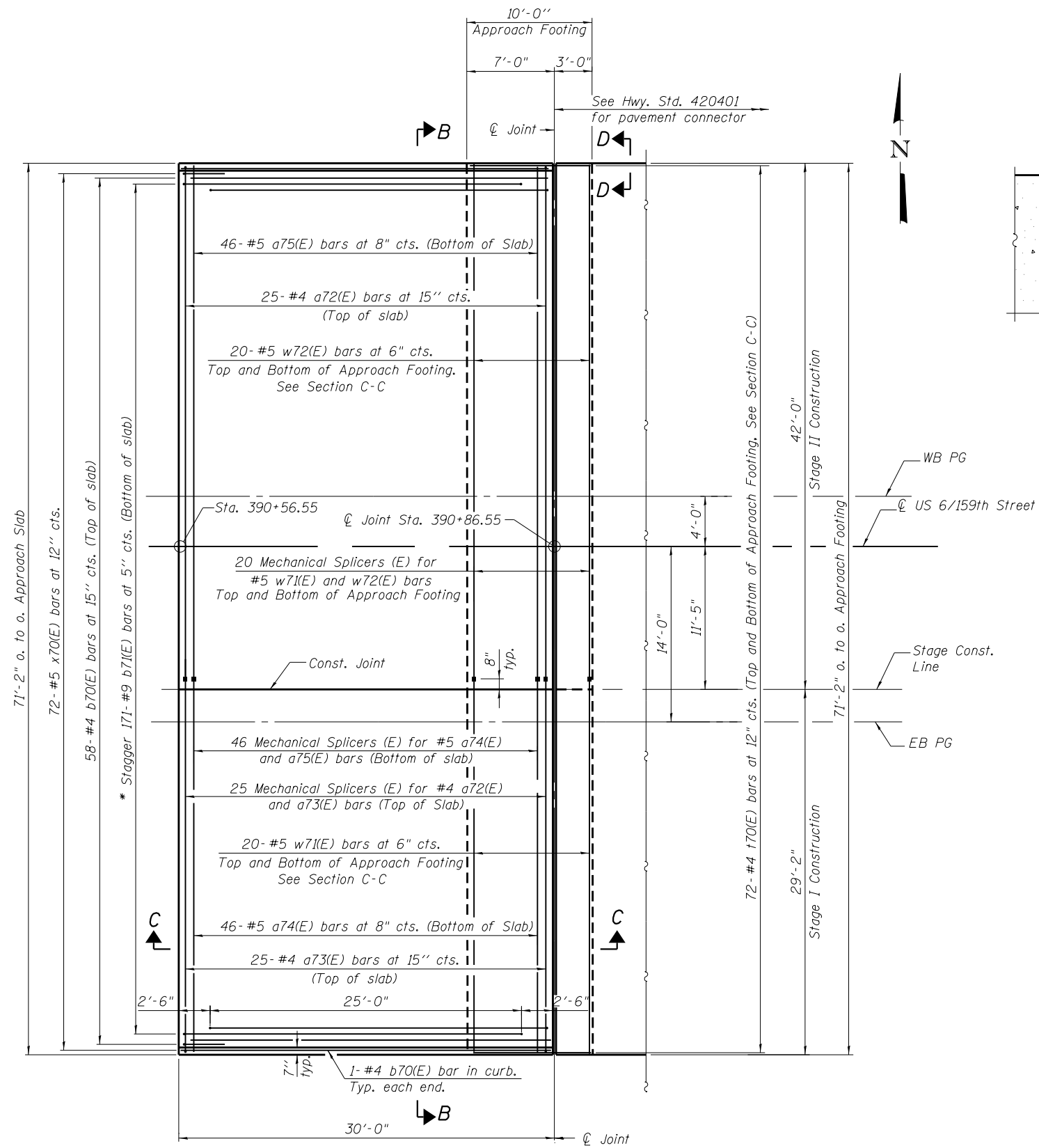


**BAR w75(E)**



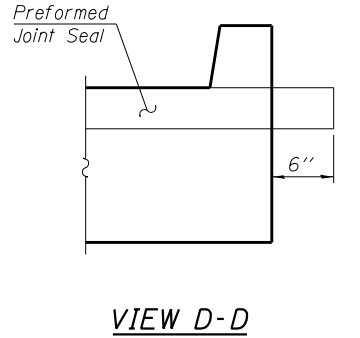
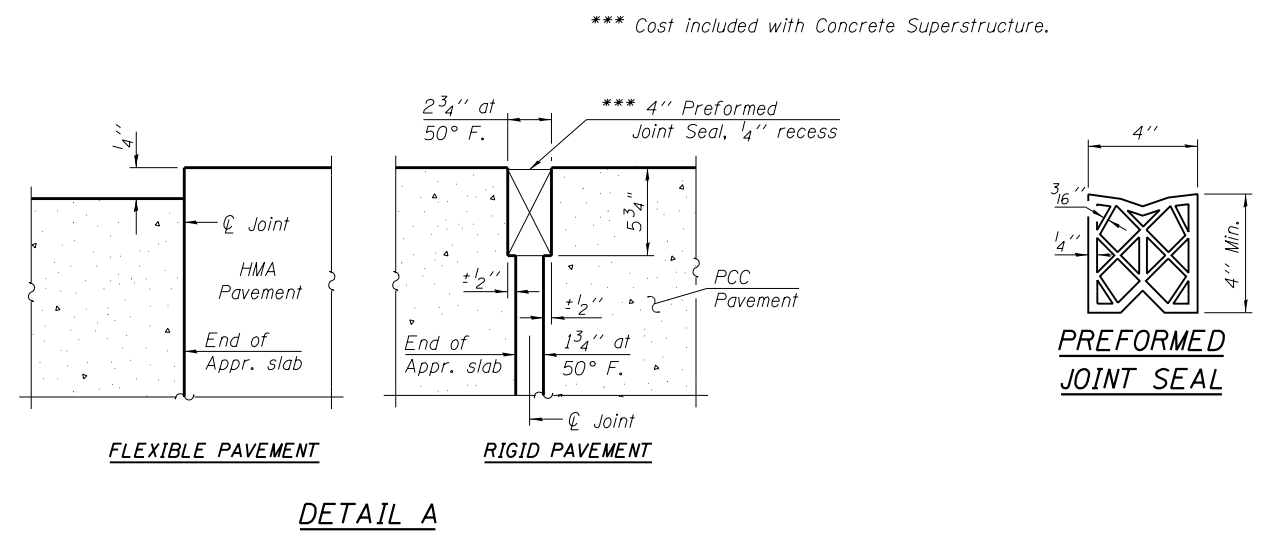
**BAR x70(E)**

\\NASCHI\Chicago\25106-U56-Struct\Drawn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-044-AS.dgn



**PLAN**

\*Tilt #9 b71(E) bars as required to maintain clearance.

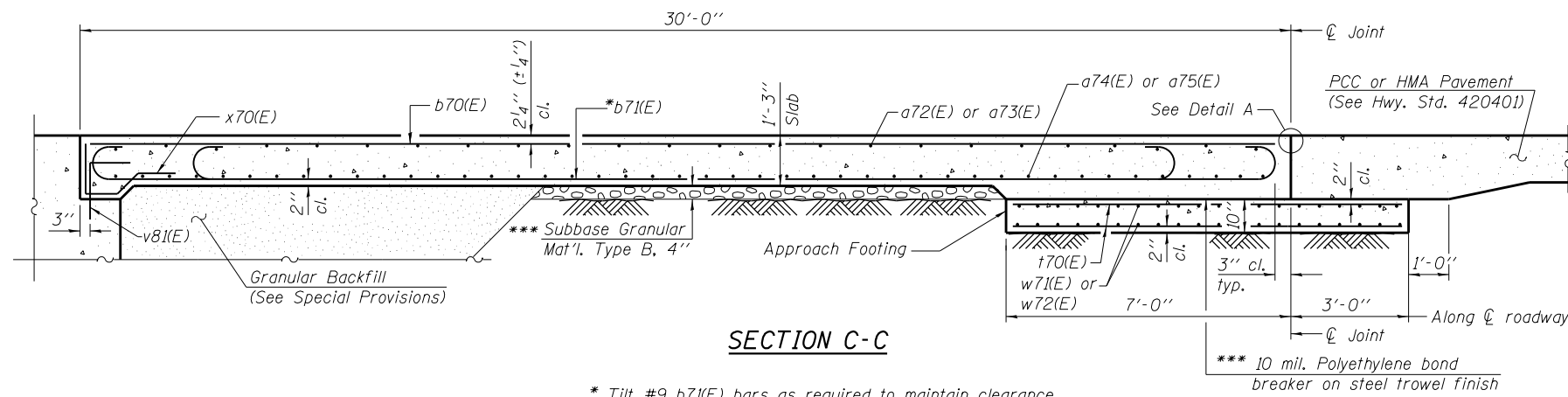


**NOTES**

1. See Sheet 46 of 77 for Sections B-B and C-C.
2. a72(E) thru a75(E) bar spacings measured along Ⓞ Rdwy.
3. See Sheet 58 of 77 for mechanical splicer details.
4. The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1 1/2" for installation purposes.

\\NASCHI\Chicago2\5106-USE6\Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-045-AS.dgn

<b>LOCHNER</b> H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>EAST BRIDGE APPROACH SLAB DETAILS I</b> <b>STRUCTURE NO. 016-D011</b>	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE =	CHECKED - RAB	REVISED								



**SECTION C-C**

\* Tilt #9 b71(E) bars as required to maintain clearance.

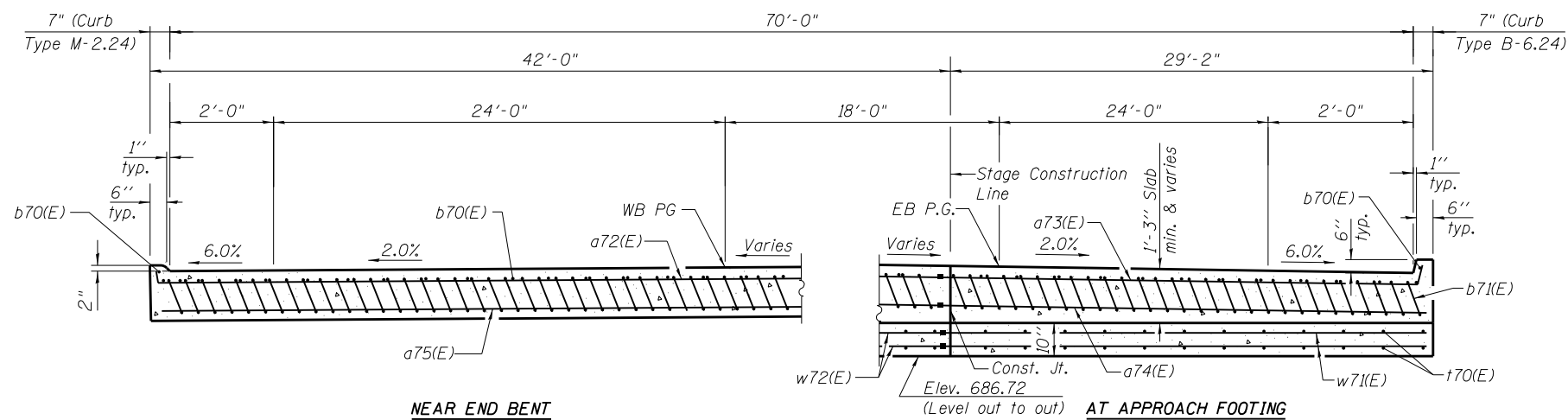
\*\*\* Cost included with Concrete Superstructure.

**NOTES**

1. See Sheet 45 of 77 for Detail A.
2. Approach slab shall be paid for as CONCRETE SUPERSTRUCTURE.
3. Approach footing concrete shall be paid for as CONCRETE STRUCTURES.
4. Reinforcement shall be paid for as REINFORCEMENT BARS, EPOXY COATED.
5. For v81(E) bar details, see Sheet 53 of 77.
6. The approach footing maximum applied service bearing pressure ( $Q_{max}$ ) = 2.0 ksf.
7. Cost of excavation for approach footing included with CONCRETE STRUCTURES.
8. For Granular Backfill and drainage treatment details, see Sheet 3 of 77.

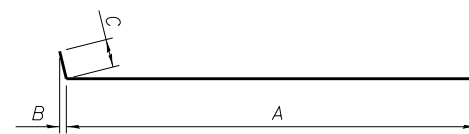
**BILL OF MATERIAL  
FOR EAST APPROACH SLAB**

Bar	No.	Size	Length	Shape	
a72(E)	25	#4	41'-3"	—/—	
a73(E)	25	#4	30'-1"	—/—	
a74(E)	46	#5	29'-8"	—/—	
a75(E)	46	#5	41'-2"	—/—	
b70(E)	60	#4	29'-8"	—/—	
b71(E)	171	#9	29'-9"	—/—	
t70(E)	144	#4	9'-8"	—/—	
w71(E)	40	#5	29'-8"	—/—	
w72(E)	40	#5	41'-2"	—/—	
x70(E)	72	#5	5'-7"	—/—	
Reinforcement Bars, Epoxy Coated				Pound	27,390
Concrete Superstructure				Cu. Yd.	113.0
Concrete Structures				Cu. Yd.	22.0
Bridge Deck Grooving				Sq. Yd.	227
Protective Coat				Sq. Yd.	241



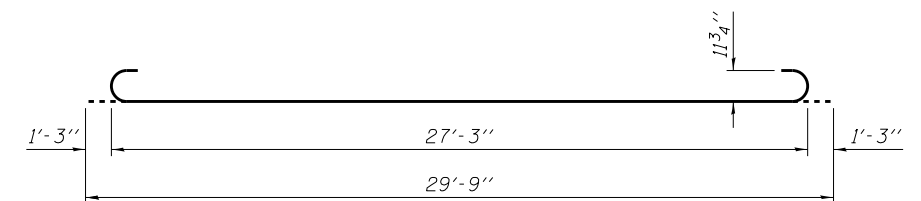
**SECTION B-B**

Looking East  
(See Plan for dimensions not shown)

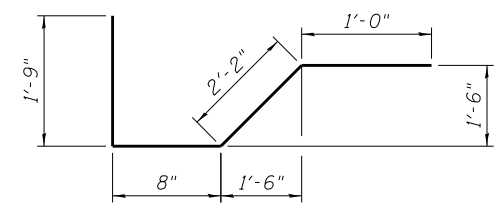


Bar	A	B	C
a72(E)	41'-1"	1"	2"
a73(E)	29'-7"	1"	6"

**BARS a72(E) & a73(E)**



**BAR b71(E)**



**BAR x70(E)**

\\NASCHI\Chicago\25106-056-Struct\Drawn\Bridges\Land\016-0011\016D011-60L72-046-AS.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

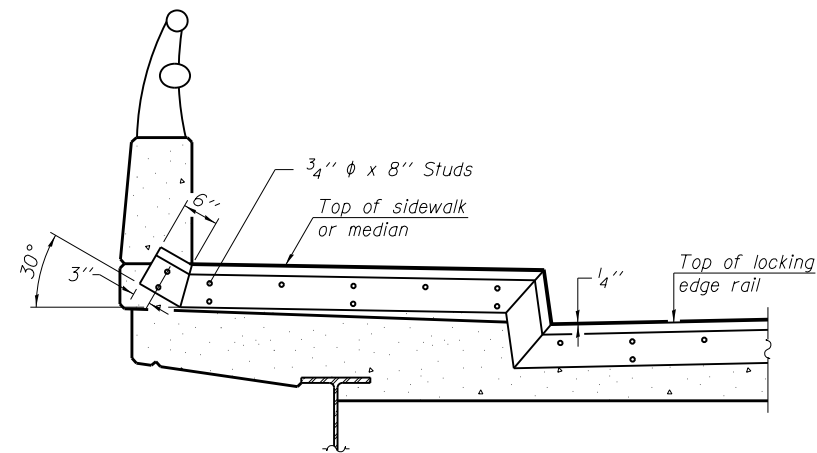
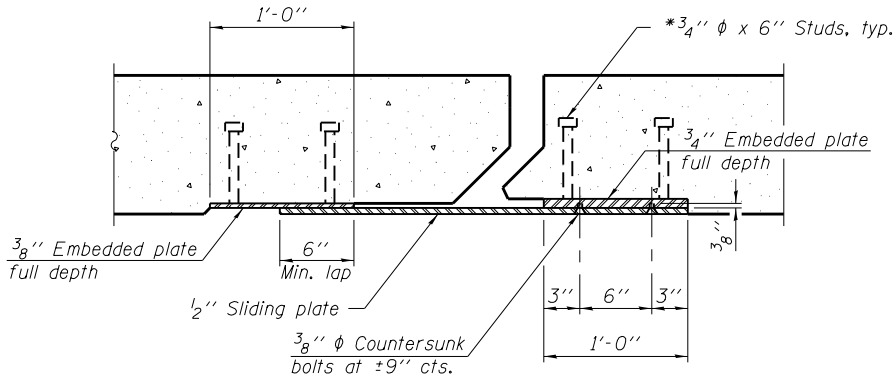
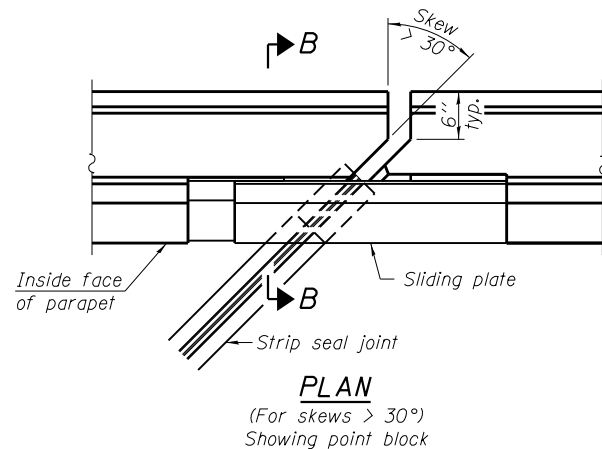
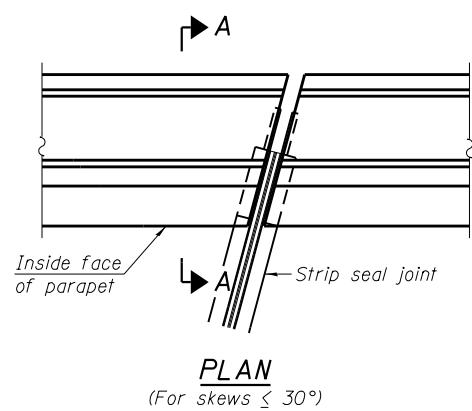
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FILE NAME = 016D011-60L72-046-AS.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RAB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**EAST BRIDGE APPROACH SLAB DETAILS 2  
STRUCTURE NO. 016-0011**

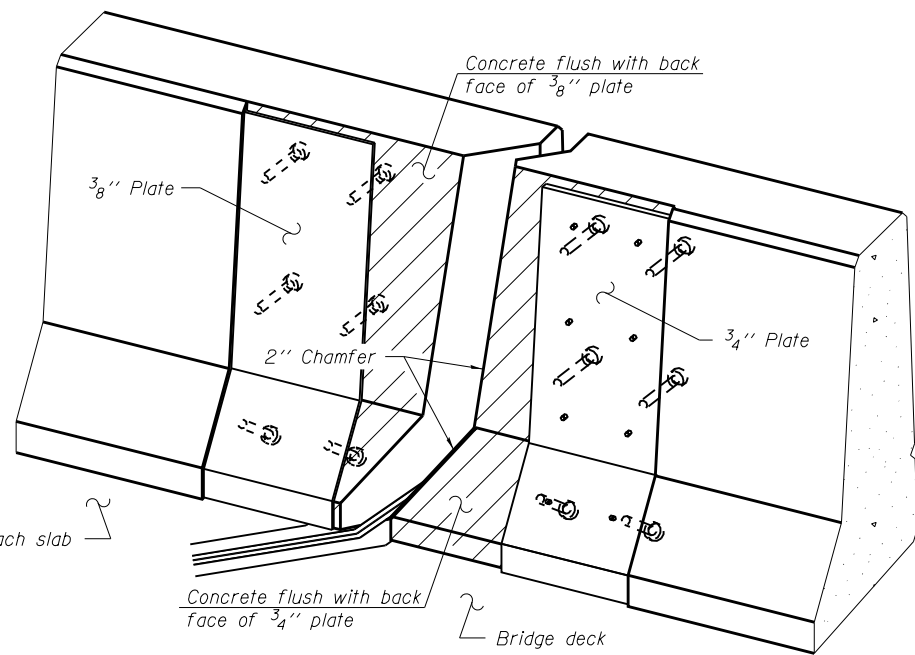
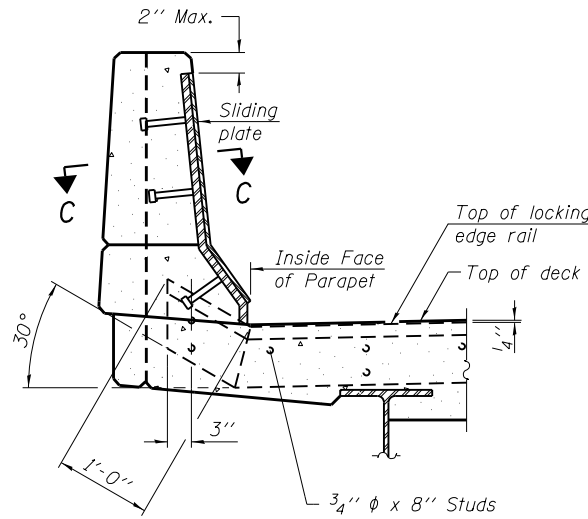
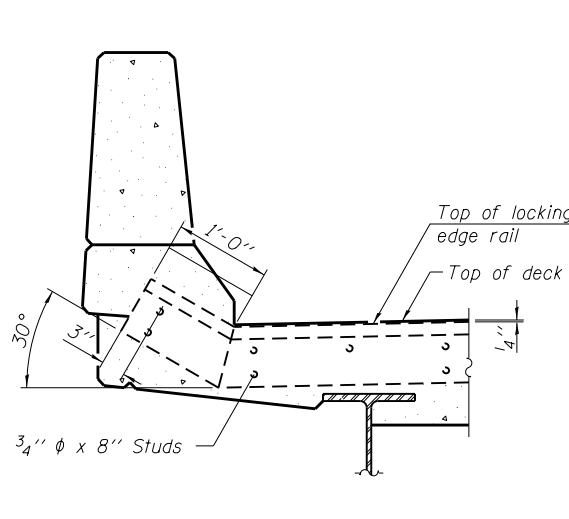
SHEET NO. 46 OF 77 SHEETS

F.A.P. RTE. = 351	SECTION = 2010-081-R	COUNTY = COOK	TOTAL SHEETS = 1045	SHEET NO. = 471
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN**

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



**Notes:**

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

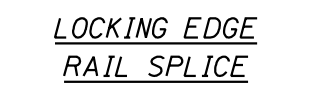
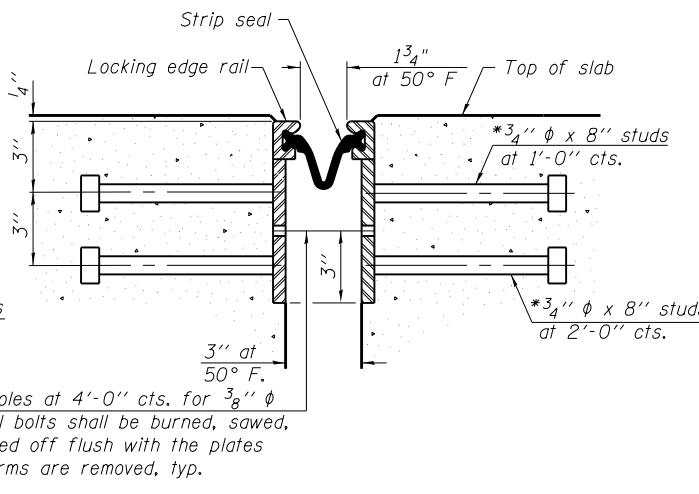
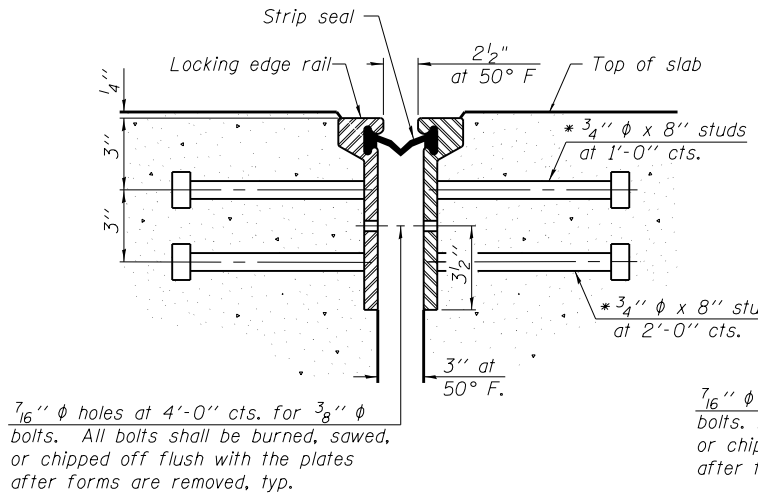
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30 degrees included in the cost of Preformed Joint Strip Seal.

\\NASCH1\Chicago2\5106-U56-Struct\Drawn\Bridges\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-047-EJ.dgn



The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

**LOCKING EDGE RAILS**

**BILL OF MATERIAL**

Item	Unit	Total
Preformed Joint Strip Seal	Foot	539

EJ-SSJ      1-27-12

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-047-EJ.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

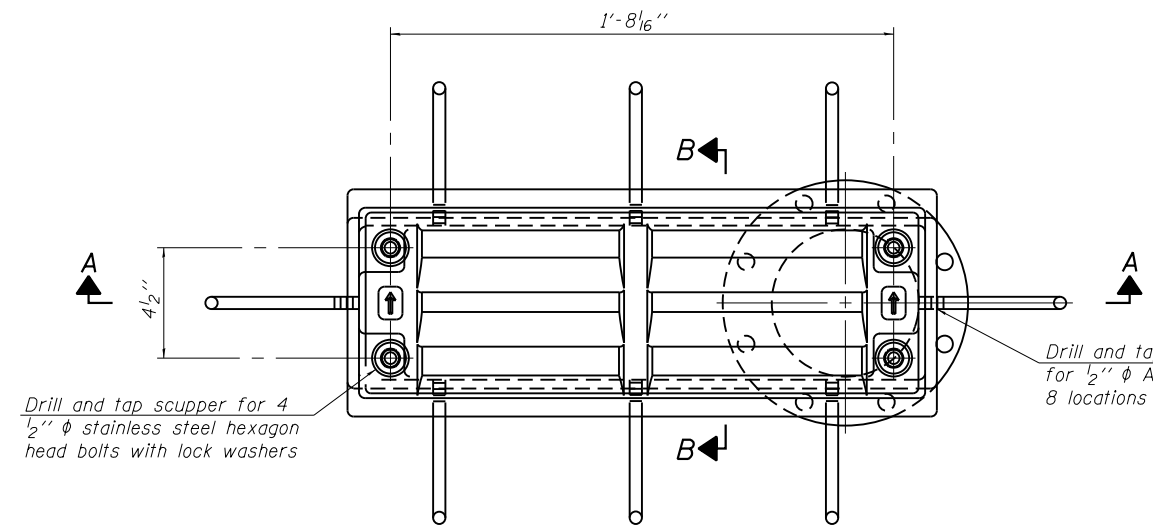
**PREFORMED JOINT STRIP SEAL**  
**STRUCTURE NO. 016-D011**

SHEET NO. 47 OF 77 SHEETS

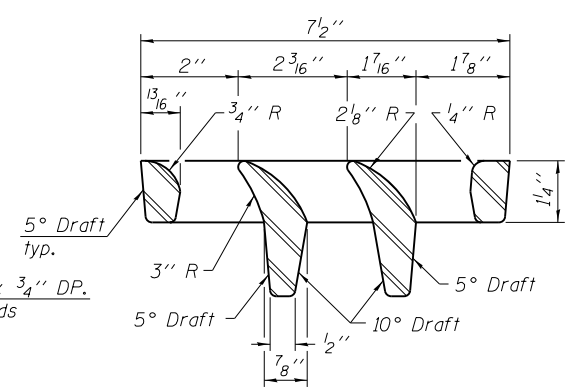
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	472
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\* Granular or solid Flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

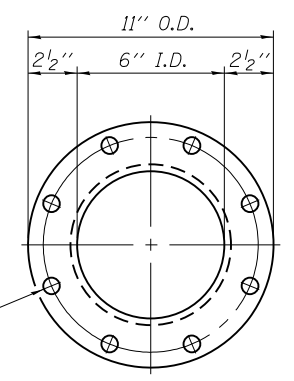




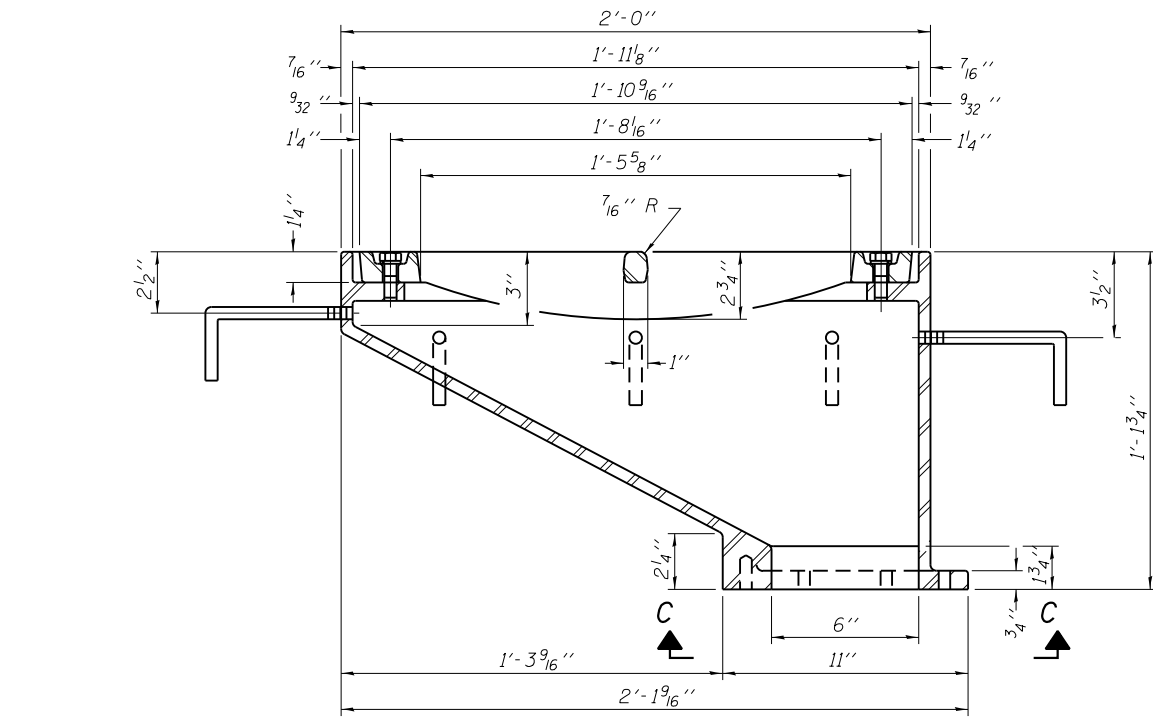
PLAN



VANE GRATE DETAIL

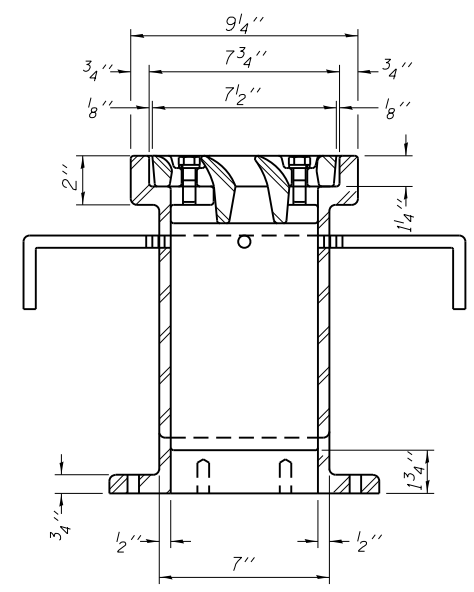


VIEW C-C

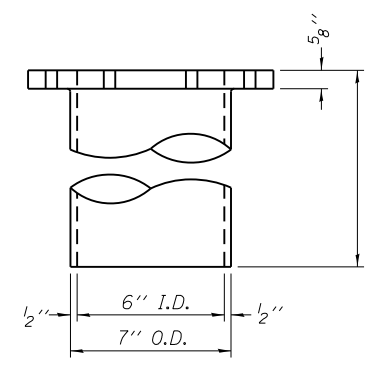


SECTION A-A

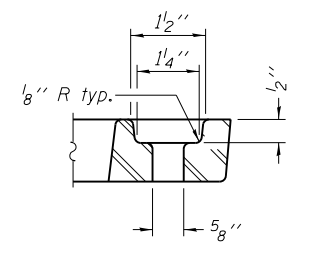
See sheets 22, 24, 26, 28, 32, 35 and 37 of 77 for scupper location relative to curb.



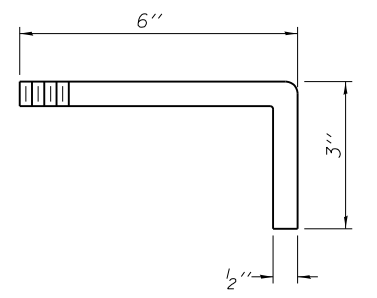
SECTION B-B



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	17

\\NASCH\Chicago\25106-056\Struct\Draw\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-048-SF.dgn

DS-12

7-1-10

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =  
FILE NAME = 016D011-60L72-048-SF.dgn  
PLOT SCALE =  
PLOT DATE =

DESIGNED - LJB  
CHECKED - RH  
DRAWN - EF  
CHECKED - RH

REVISED  
REVISED  
REVISED  
REVISED

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER DS-12  
STRUCTURE NO. 016-D011

SHEET NO. 48 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	473
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL BENT 1**

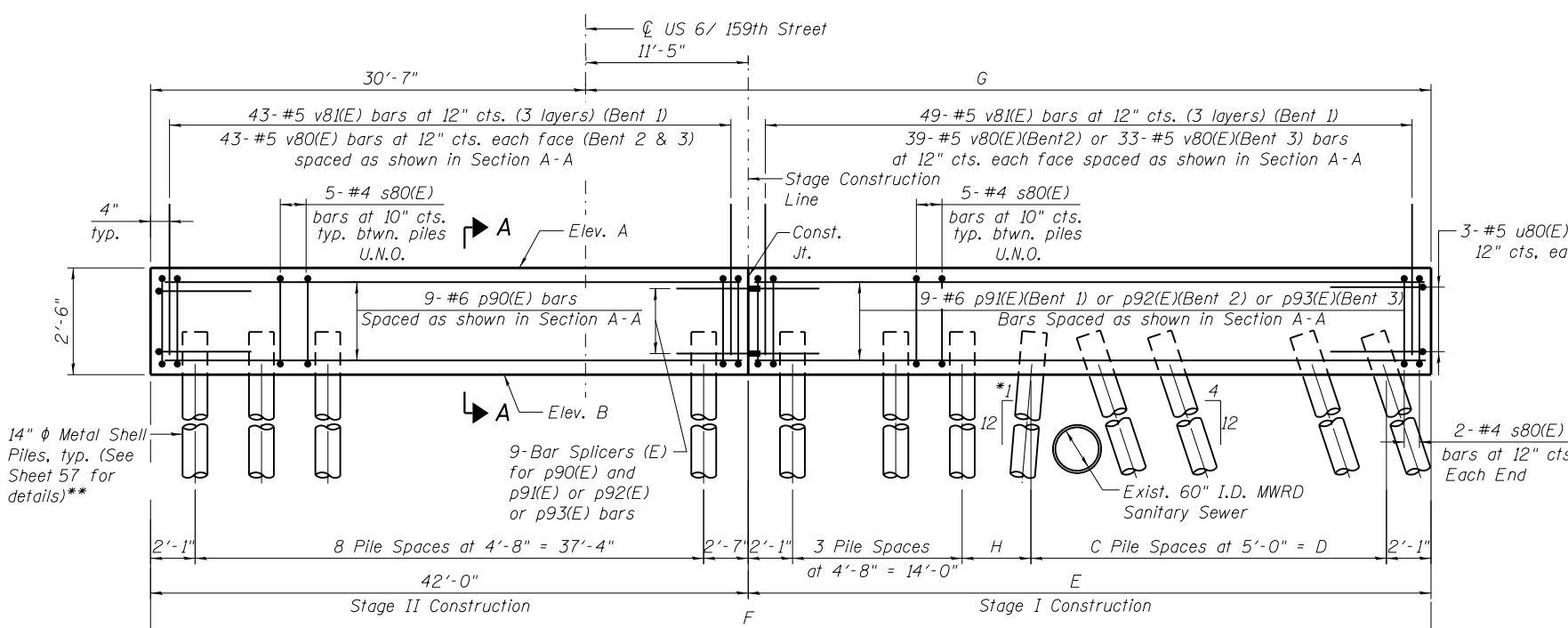
Bar	No.	Size	Length	Shape	
p90(E)	9	#6	41'-8"	—	
p91(E)	9	#6	47'-8"	—	
s80(E)	93	#4	10'-5"	□	
u80(E)	6	#5	7'-7"	└	
v81(E)	276	#5	4'-11"	└	
Concrete Structures				Cu. Yd.	25.0
Reinforcement Bars, Epoxy Coated				Pound	3,320
Structure Excavation				Cu. Yd.	34
Furnishing Metal Shell Piles - 14" X 0.25"				Foot	1,065
Driving Piles				Foot	1,065
Test Piles				Each	1

**BILL OF MATERIAL BENT 2**

Bar	No.	Size	Length	Shape	
p90(E)	9	#6	41'-8"	—	
p92(E)	9	#6	37'-8"	—	
s80(E)	83	#4	10'-5"	□	
u80(E)	6	#5	7'-7"	└	
v80(E)	164	#5	3'-10"	—	
Concrete Structures				Cu. Yd.	22.2
Reinforcement Bars, Epoxy Coated				Pound	2,360
Structure Excavation				Cu. Yd.	23
Furnishing Metal Shell Piles - 14" X 0.25"				Foot	943
Driving Piles				Foot	943
Test Piles				Each	1

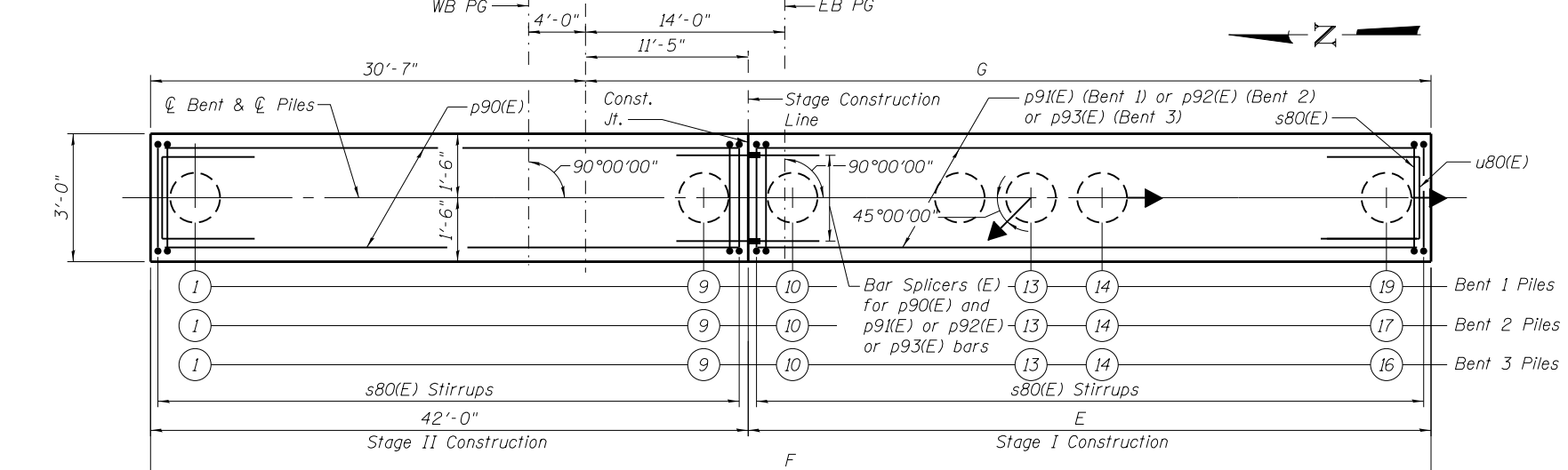
**BILL OF MATERIAL BENT 3**

Bar	No.	Size	Length	Shape	
p90(E)	9	#6	41'-8"	—	
p93(E)	9	#6	32'-0"	—	
s80(E)	78	#4	10'-5"	□	
u80(E)	6	#5	7'-7"	└	
v80(E)	152	#5	3'-10"	—	
Concrete Structures				Cu. Yd.	20.7
Reinforcement Bars, Epoxy Coated				Pound	2,200
Structure Excavation				Cu. Yd.	30
Furnishing Metal Shell Piles - 14" X 0.25"				Foot	940
Driving Piles				Foot	940



**ELEVATION**  
(Looking East, For Bent 1 Thru Bent 3)  
(Bent 1 Shown; Bent 2 & 3 Similar)

\* Pile batter in direction of arrow shown in PLAN  
\*\* Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 3)



**PLAN**  
(For Bent 1 Thru Bent 3)

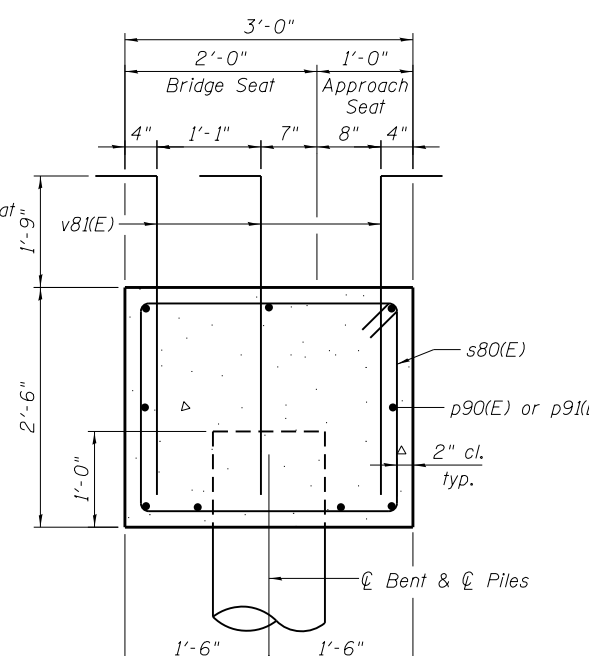
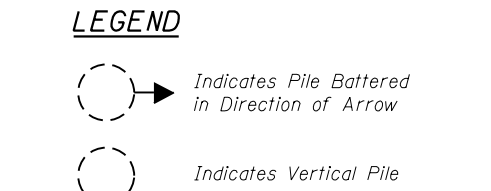
**BENT 1 PILE DATA**  
Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: 282 kips  
Factored Resistance Available: 140 kips  
Est. Length: Piles 1-12 58 ft.  
Piles 13-19 (Battered) 61 ft.  
Precore to Elev. 670  
No. Production Piles: 18  
No. Test Piles: 1

**BENT 2 PILE DATA**  
Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: 282 kips  
Factored Resistance Available: 140 kips  
Est. Length: Piles 1-12 58 ft.  
Piles 13-17 (Battered) 61 ft.  
Precore to Elev. 670  
No. Production Piles: 16  
No. Test Piles: 1

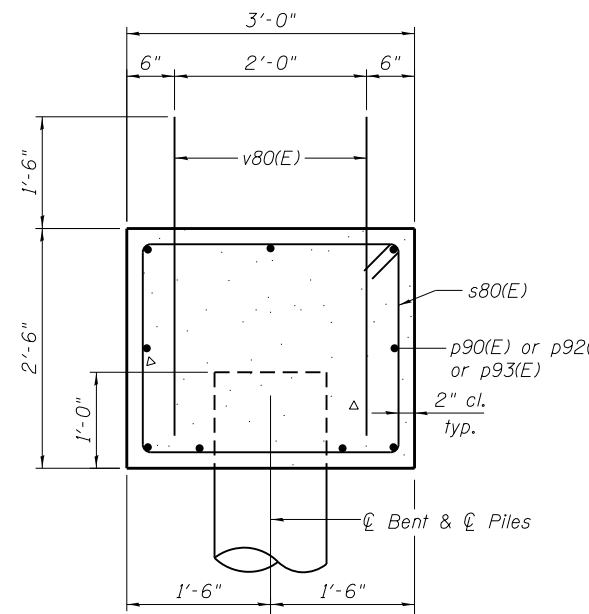
**BENT 3 PILE DATA**  
Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: 282 kips  
Factored Resistance Available: 140 kips  
Est. Length: Piles 1-12 58 ft.  
Piles 13-16 (Battered) 61 ft.  
Precore to Elev. 670  
No. Production Piles: 16  
No. Test Piles: 0

**BENT CAP TABLE**

Bent #	Elev. A	Elev. B	C	D	E	F	G	H
Bent 1	686.58	684.08	5	25'-0"	48'-0"	90'-0"	59'-5"	4'-10"
Bent 2	686.74	684.24	3	15'-0"	38'-0"	80'-0"	49'-5"	4'-10"
Bent 3	686.80	684.30	2	10'-0"	32'-4 <sup>3</sup> / <sub>8</sub> "	74'-4 <sup>3</sup> / <sub>8</sub> "	43'-9 <sup>3</sup> / <sub>8</sub> "	4'-2 <sup>3</sup> / <sub>8</sub> "



**SECTION A-A THRU BENT 1**



**SECTION A-A THRU BENT 2 AND BENT 3**

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

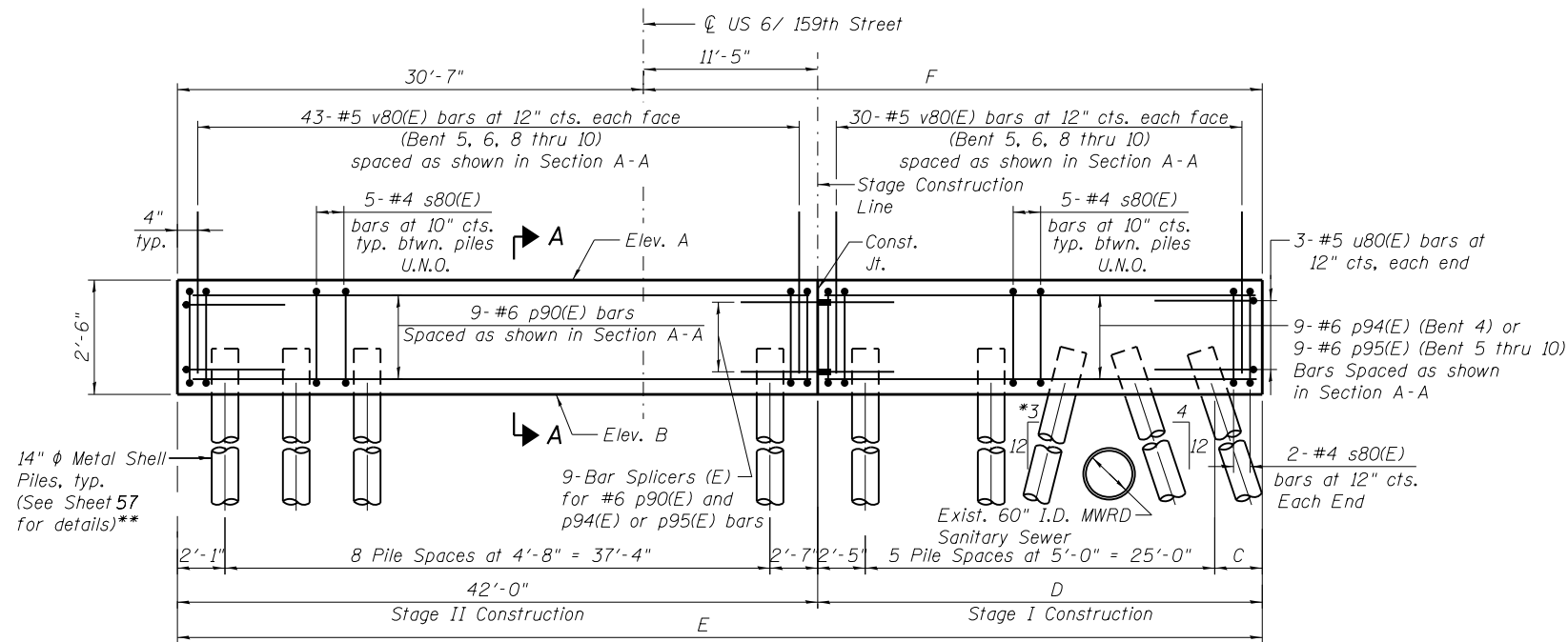
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PLOT DATE	CHECKED - LJB	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 1**  
**STRUCTURE NO. 016-D011**  
SHEET NO. 49 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	474
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

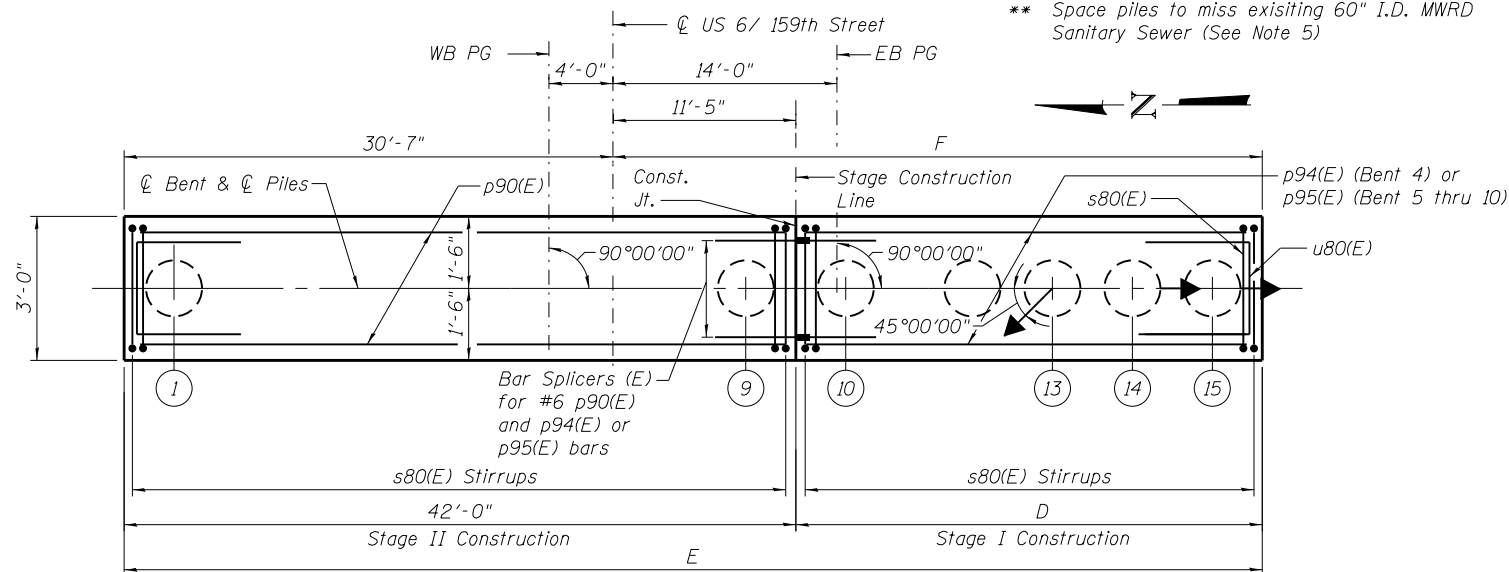
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**ELEVATION**

(For Bent 4 Thru Bent 10)  
(Looking East)

- \* Pile batter in direction of arrow shown in PLAN
- \*\* Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)

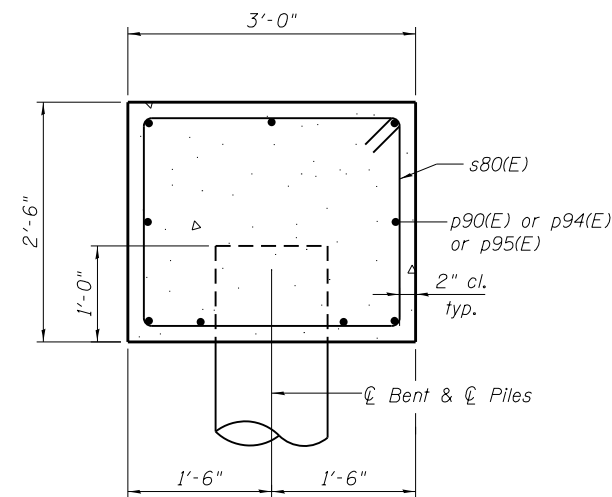
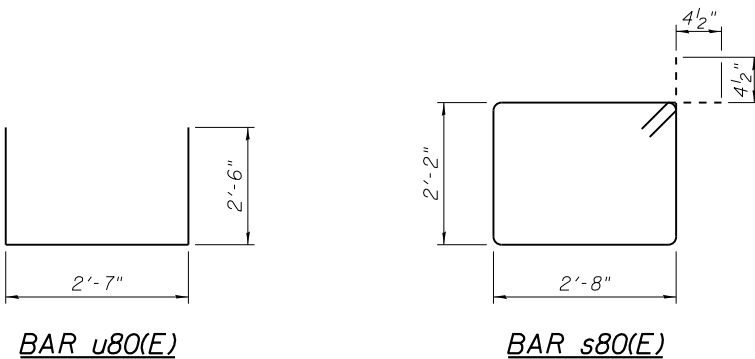


**PLAN**

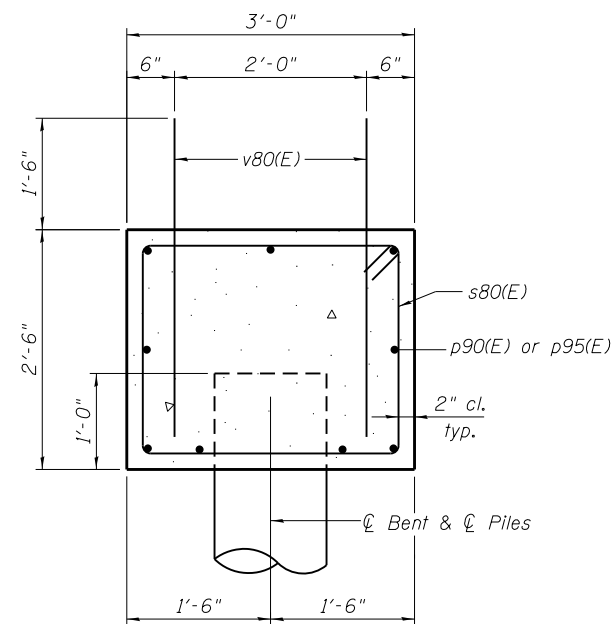
(For Bent 4 Thru Bent 10)

**BENT CAP TABLE**

Bent #	Elev. A	Elev. B	C	D	E	F
Bent 4	686.63	684.13	2'-1 <sup>3</sup> / <sub>4</sub> "	29'-6 <sup>3</sup> / <sub>4</sub> "	71'-6 <sup>3</sup> / <sub>4</sub> "	40'-11 <sup>3</sup> / <sub>4</sub> "
Bent 5	686.43	683.93	1'-9"	29'-2"	71'-2"	40'-7"
Bent 6	686.20	683.70	1'-9"	29'-2"	71'-2"	40'-7"
Bent 7	685.98	683.48	1'-9"	29'-2"	71'-2"	40'-7"
Bent 8	685.75	683.25	1'-9"	29'-2"	71'-2"	40'-7"
Bent 9	685.52	683.02	1'-9"	29'-2"	71'-2"	40'-7"
Bent 10	685.31	682.81	1'-9"	29'-2"	71'-2"	40'-7"



**SECTION A-A THRU BENT 4 AND 7**



**SECTION A-A THRU BENT 5, 6 AND 8 THRU 10**

**PILE DATA**

Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: See Table  
Factored Resistance Available: See Table  
Est. Length: See Table  
No. Production Piles: See Table  
No. Test Piles: See Table

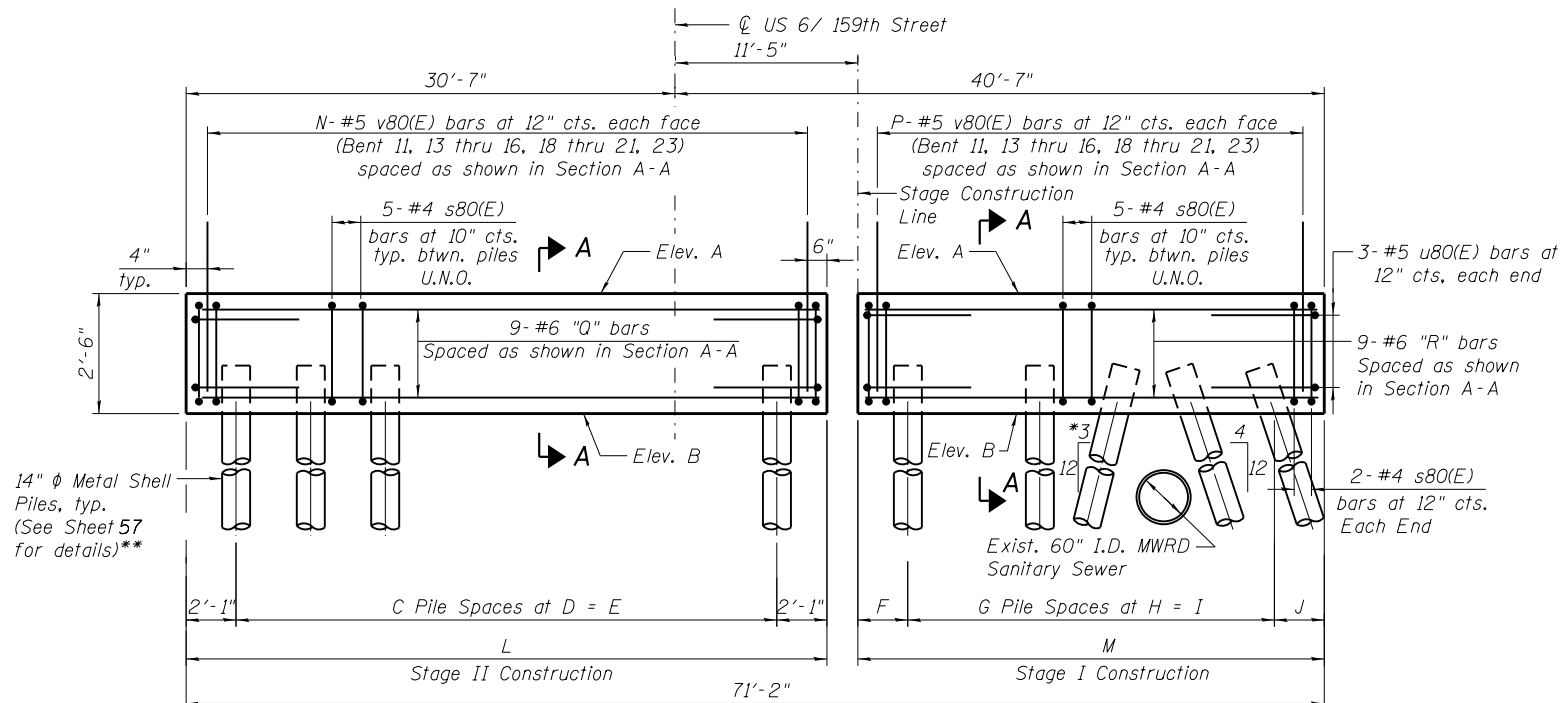
**LEGEND**

- Indicates Pile Battered in Direction of Arrow
- Indicates Vertical Pile

**NOTES**

1. For Metal Shell Pile Details, see Sheet 57.
2. For Pile Data Table, see Sheet 54.
3. Apply Concrete Sealer to top and sides of bent cap of Bent 4 & 7.
4. For pile bent layout, see Sheets 1 and 2.
5. The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14"  $\phi$  metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.

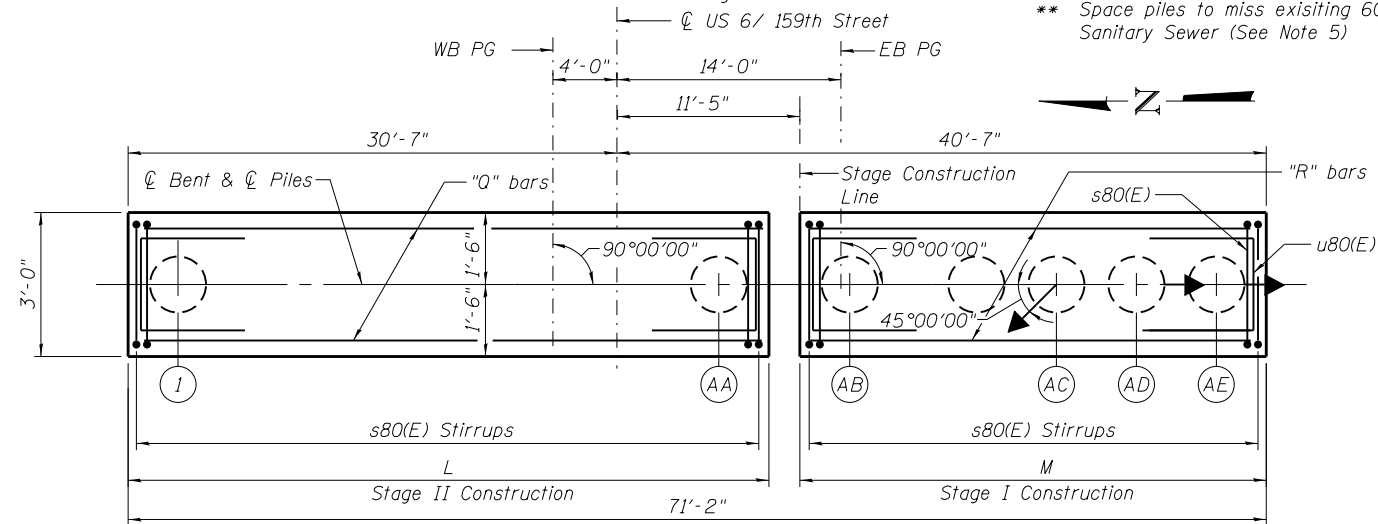
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**ELEVATION**

(For Bent 11 Thru Bent 23)  
(Looking East)

\* Pile batter in direction of arrow shown in PLAN  
\*\* Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)

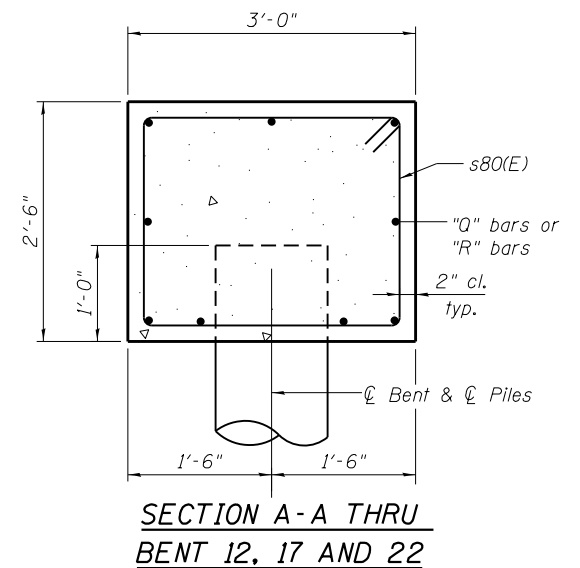


**PLAN**

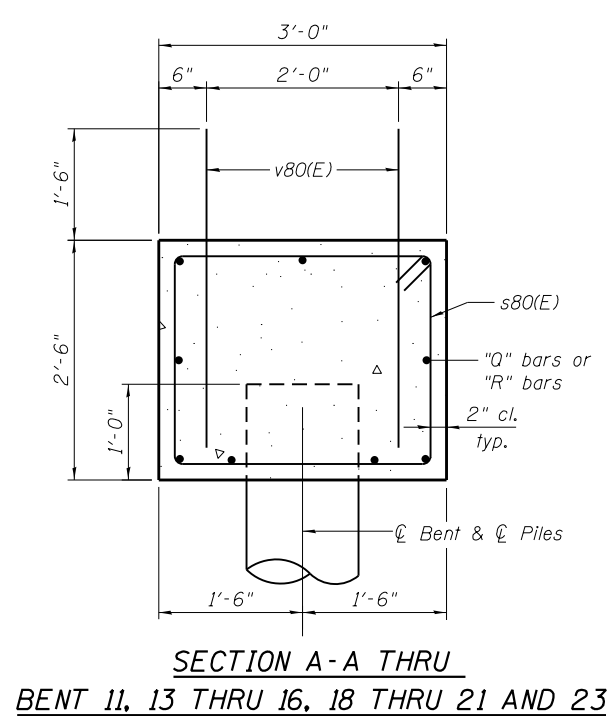
(For Bent 11 Thru Bent 23)

**BENT CAP TABLE**

Bent #	Elev. A	Elev. B	C	D	E	F	G	H	I	J	L	M	N	P	Q	R	AA	AB	AC	AD	AE
Bent 11	685.13	682.63	8	4'-5 <sup>7</sup> / <sub>8</sub> "	35'-10 <sup>3</sup> / <sub>4</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	40'-0 <sup>3</sup> / <sub>4</sub> "	29'-2"	41	30	p96(E)	p95(E)	9	10	13	14	15
Bent 12	685.00	682.50	7	4'-11 <sup>1</sup> / <sub>8</sub> "	34'-6 <sup>1</sup> / <sub>4</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	38'-8 <sup>1</sup> / <sub>4</sub> "	29'-2"	-	-	p97(E)	p95(E)	8	9	12	13	14
Bent 13	684.91	682.41	7	4'-8 <sup>3</sup> / <sub>4</sub> "	33'-1 <sup>1</sup> / <sub>2</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	37'-3 <sup>1</sup> / <sub>2</sub> "	29'-2"	38	30	p98(E)	p95(E)	8	9	12	13	14
Bent 14	684.87	682.37	7	4'-6 <sup>3</sup> / <sub>8</sub> "	31'-9"	2'-1"	5	5'-0"	25'-0"	2'-1"	35'-9"	29'-2"	37	30	p99(E)	p95(E)	8	9	12	13	14
Bent 15	684.87	682.37	7	4'-4"	30'-4 <sup>1</sup> / <sub>2</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	34'-6 <sup>1</sup> / <sub>2</sub> "	29'-2"	36	30	p100(E)	p95(E)	8	9	12	13	14
Bent 16	684.91	682.41	6	4'-10"	29'-0"	2'-1"	5	5'-0"	25'-0"	2'-1"	33'-2"	29'-2"	34	30	p101(E)	p95(E)	7	8	11	12	13
Bent 17	684.99	682.49	6	4'-7 <sup>1</sup> / <sub>4</sub> "	27'-7 <sup>1</sup> / <sub>4</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	31'-9 <sup>1</sup> / <sub>4</sub> "	29'-2"	-	-	p102(E)	p95(E)	7	8	11	12	13
Bent 18	685.09	682.59	6	4'-4 <sup>1</sup> / <sub>2</sub> "	26'-2 <sup>3</sup> / <sub>4</sub> "	2'-1"	5	5'-0"	25'-0"	2'-1"	30'-4 <sup>3</sup> / <sub>4</sub> "	29'-2"	31	30	p103(E)	p95(E)	7	8	11	12	13
Bent 19	685.18	682.68	5	5'-0"	25'-0"	2'-1"	5	5'-0"	25'-0"	2'-1"	29'-2"	29'-2"	30	30	p95(E)	p95(E)	6	7	10	11	12
Bent 20	685.27	682.77	5	5'-0"	25'-0"	2'-1"	5	5'-0"	25'-0"	2'-1"	29'-2"	29'-2"	30	30	p95(E)	p95(E)	6	7	10	11	12
Bent 21	685.36	682.86	5	5'-0"	25'-0"	2'-1"	5	5'-0"	25'-0"	2'-1"	29'-2"	29'-2"	30	30	p95(E)	p95(E)	6	7	10	11	12
Bent 22	685.45	682.95	5	5'-0"	25'-0"	2'-4 <sup>3</sup> / <sub>4</sub> "	5	5'-0"	25'-0"	2'-1"	29'-2"	29'-5 <sup>3</sup> / <sub>4</sub> "	-	-	p95(E)	p104(E)	6	7	10	11	12
Bent 23	685.55	683.05	5	5'-0"	25'-0"	2'-1"	6	4'-5 <sup>5</sup> / <sub>8</sub> "	26'-9 <sup>1</sup> / <sub>2</sub> "	2'-1"	29'-2"	30'-11 <sup>1</sup> / <sub>2</sub> "	30	32	p95(E)	p105(E)	6	7	11	12	13



**SECTION A-A THRU BENT 12, 17 AND 22**

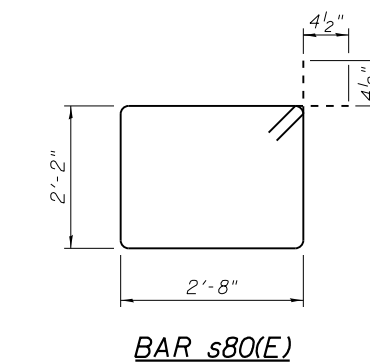
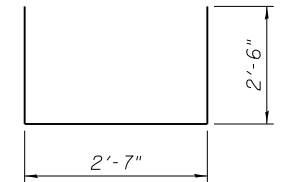
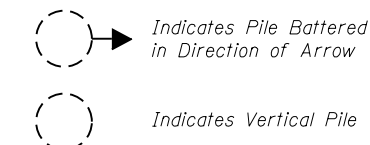


**SECTION A-A THRU BENT 11, 13 THRU 16, 18 THRU 21 AND 23**

**PILE DATA**

Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: See Table  
Factored Resistance Available: See Table  
Est. Length: See Table  
No. Production Piles: See Table  
No. Test Piles: See Table

**LEGEND**



**NOTES**

- For Metal Shell Pile Details, see Sheet 57.
- For Pile Data Table, see Sheet 54.
- Apply Concrete Sealer to top and sides of bent cap of Bent 12, 17 & 22.
- For pile bent layout, see Sheets 1 and 2.
- The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14"  $\phi$  metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.

\\NASCH\Chicopee2\5106\US6\Struct\Bridg\Land Bridges\2 - 016-D011\016D011-60L72-051-RD.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

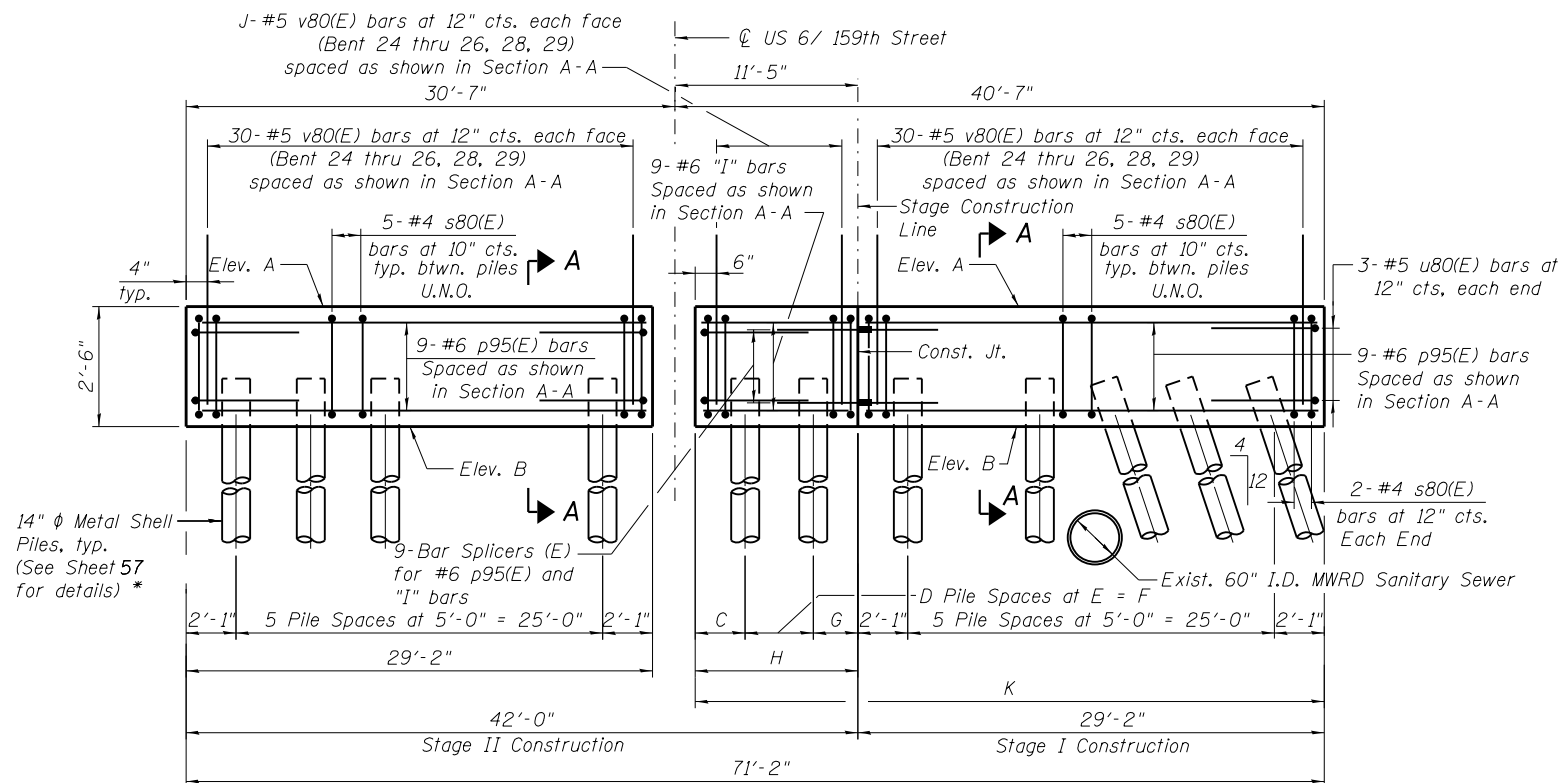
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PLOT DATE	CHECKED - LJB	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 3  
STRUCTURE NO. 016-D011**

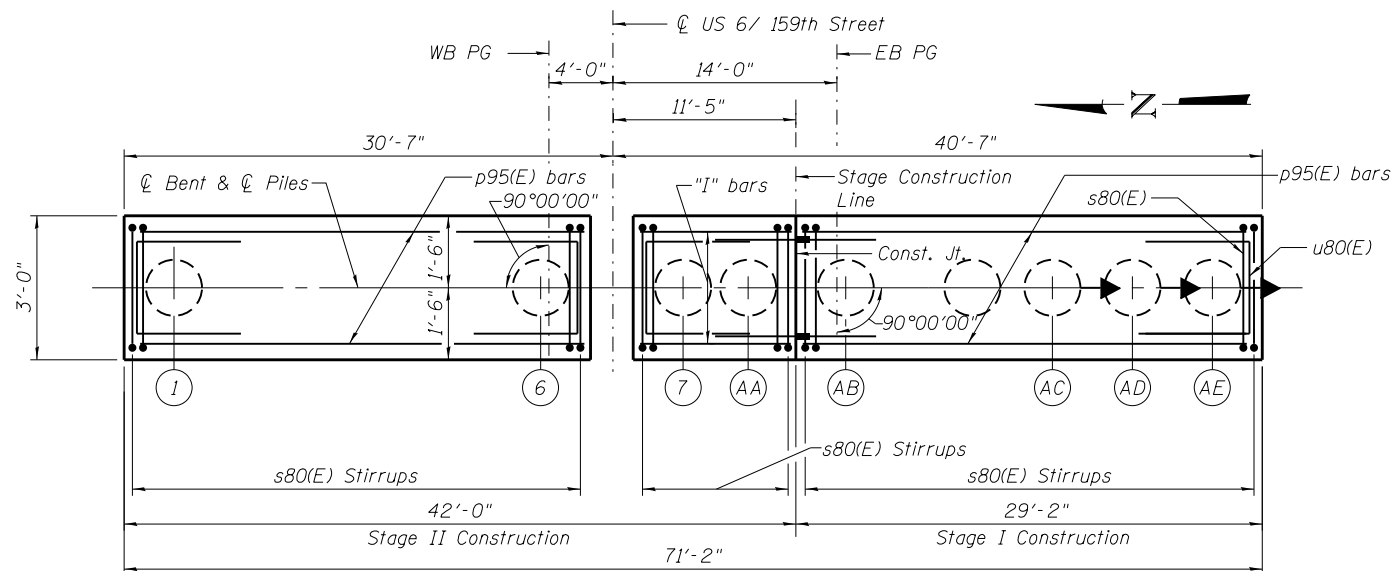
SHEET NO. 51 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	476
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**ELEVATION**  
(For Bent 24 Thru Bent 29)  
(Looking East)

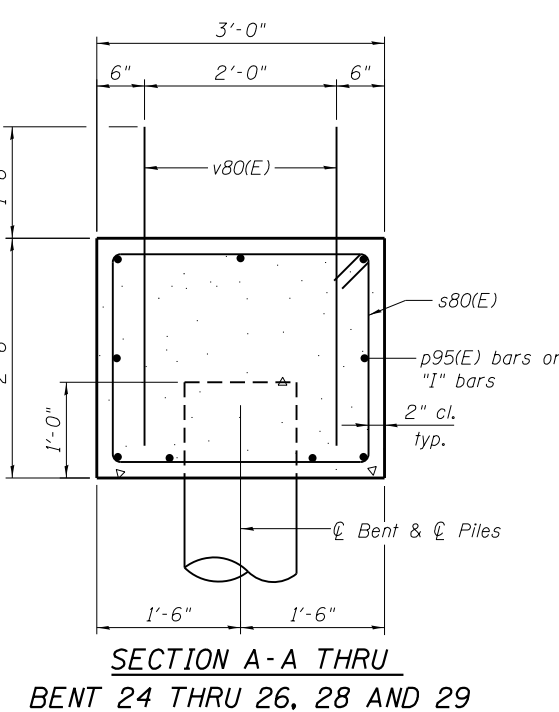
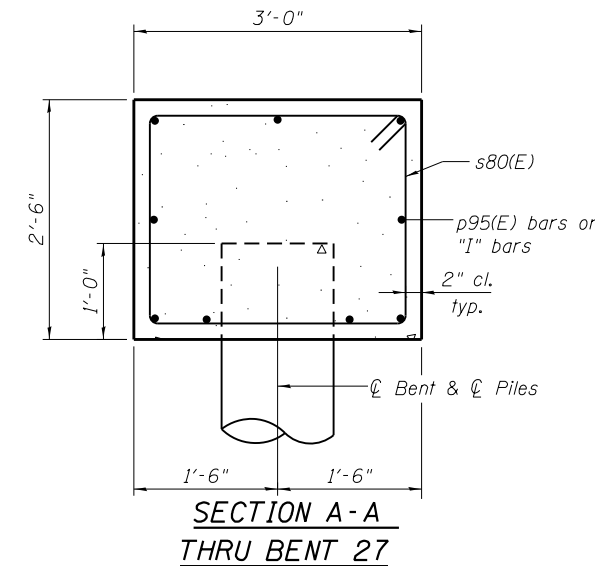
\* Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)



**PLAN**  
(For Bent 24 Thru Bent 29)

**BENT CAP TABLE**

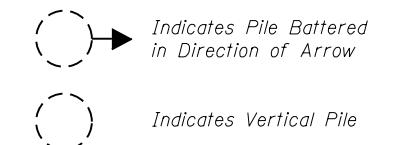
Bent #	Elev. A	Elev. B	C	D	E	F	G	H	I	J	K	AA	AB	AC	AD	AE
Bent 24	685.64	683.14	1'-6"	-	-	-	1'-9 1/2"	3'-3 1/2"	p106(E)	4	32'-5 1/2"	-	8	11	12	13
Bent 25	685.73	683.23	2'-1"	-	-	-	2'-8 1/2"	4'-9 1/4"	p107(E)	5	33'-11 1/4"	-	8	11	12	13
Bent 26	685.82	683.32	1'-6"	1	3'-6"	3'-6"	1'-5"	6'-5"	p108(E)	7	35'-7"	8	9	12	13	14
Bent 27	685.91	683.41	1'-6"	1	4'-2 1/4"	4'-2 1/4"	2'-1"	7'-9 1/4"	p109(E)	-	36'-11 1/4"	8	9	12	13	14
Bent 28	686.01	683.51	1'-6"	1	4'-11"	4'-11"	2'-9 3/4"	9'-2 3/4"	p110(E)	10	38'-4 3/4"	8	9	12	13	14
Bent 29	686.10	683.60	1'-6"	2	3'-9 1/4"	7'-6 1/2"	1'-8 1/2"	10'-9"	p111(E)	11	39'-11"	9	10	13	14	15



**PILE DATA**

Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
Nominal Required Bearing: See Table  
Factored Resistance Available: See Table  
Est. Length: See Table  
No. Production Piles: See Table  
No. Test Piles: See Table

**LEGEND**



**BAR u80(E)**

**BAR s80(E)**

**NOTES**

- For Metal Shell Pile Details, see Sheet 57.
- For Pile Data Table, see Sheet 54.
- Apply Concrete Sealer to top and sides of bent cap of Bent 27.
- For pile bent layout, see Sheets 1 and 2.
- The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14" φ metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.

\\NASCH1\Chicope2\5106\US6\Struct\Bent Cap\Bent Cap Table.dgn - 016-D011-60L72-052-BD.dgn

**LOCHNER**  
H.W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

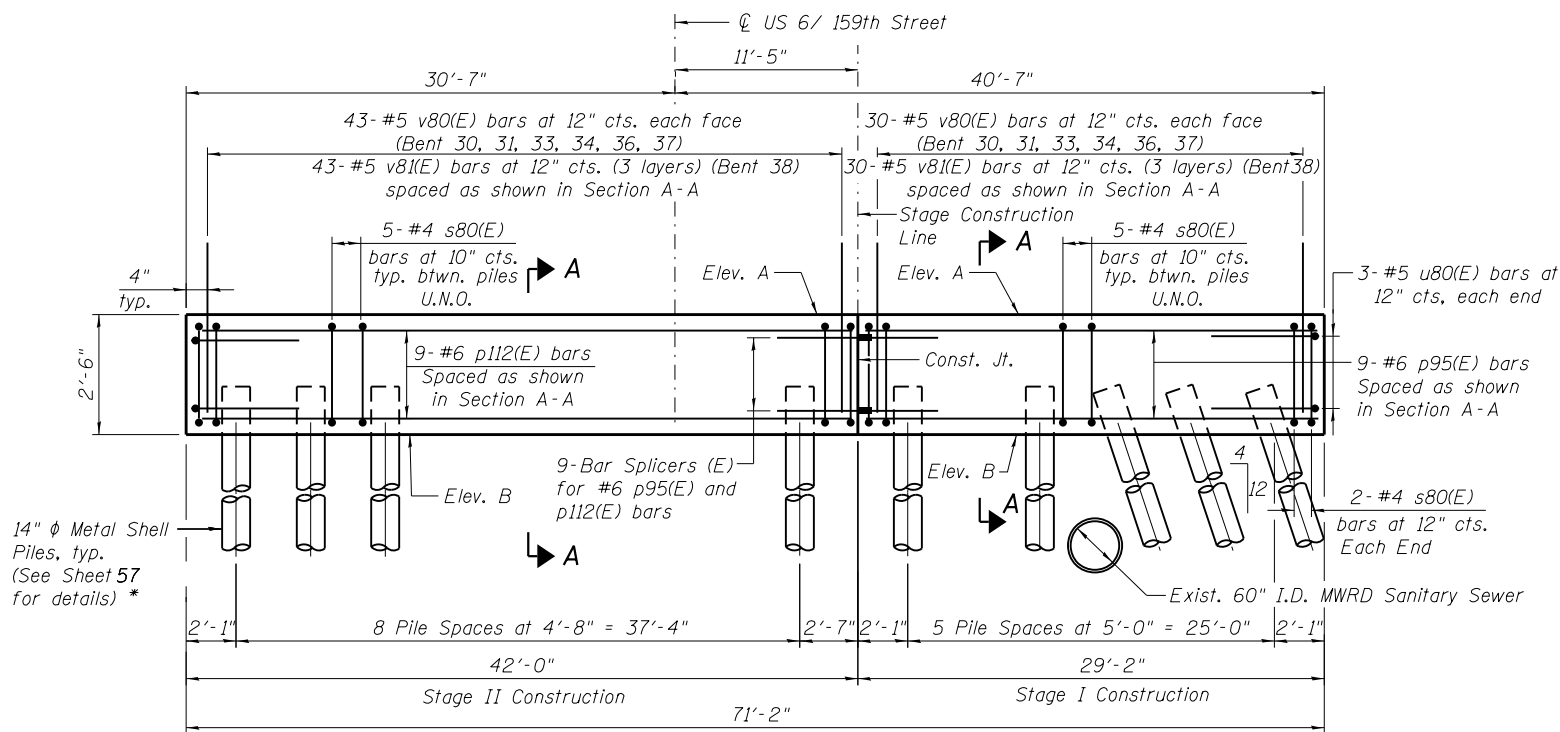
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

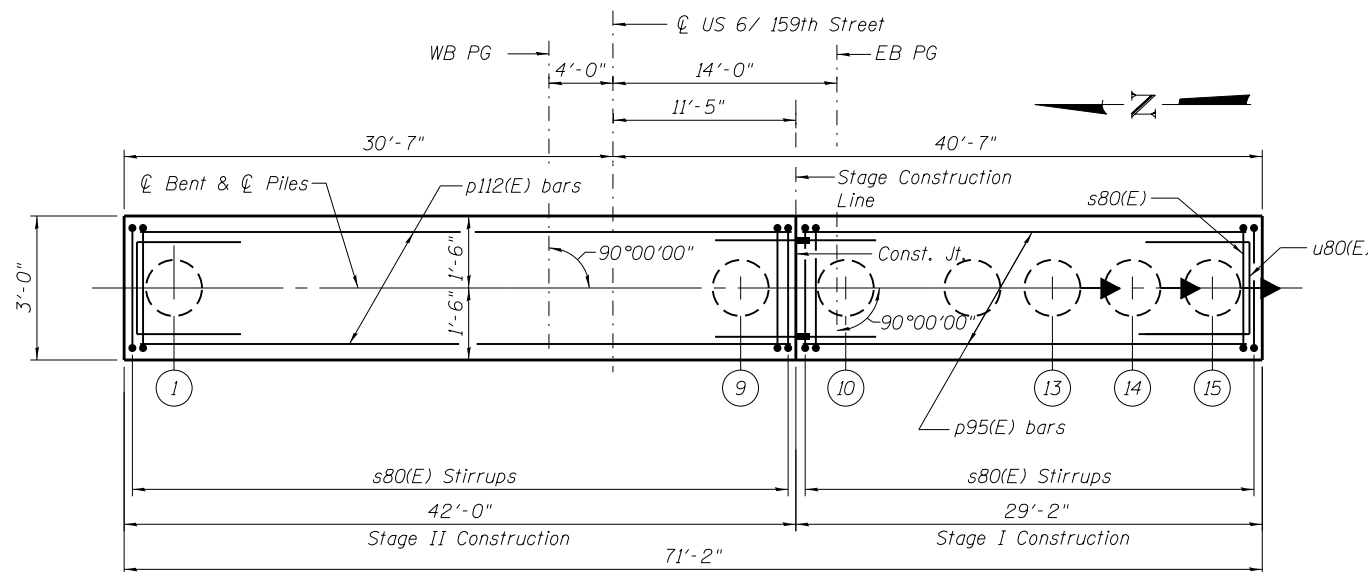
**TYPICAL BENT DETAILS 4  
STRUCTURE NO. 016-D011**

SHEET NO. 52 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	477
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

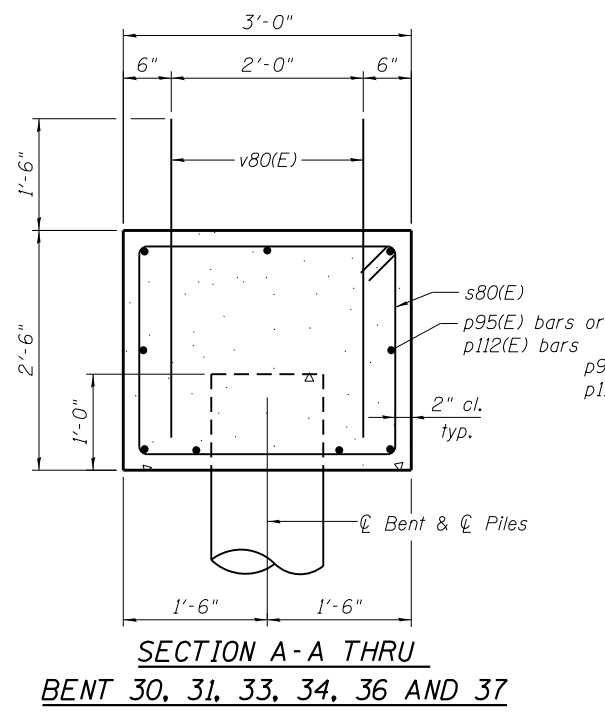
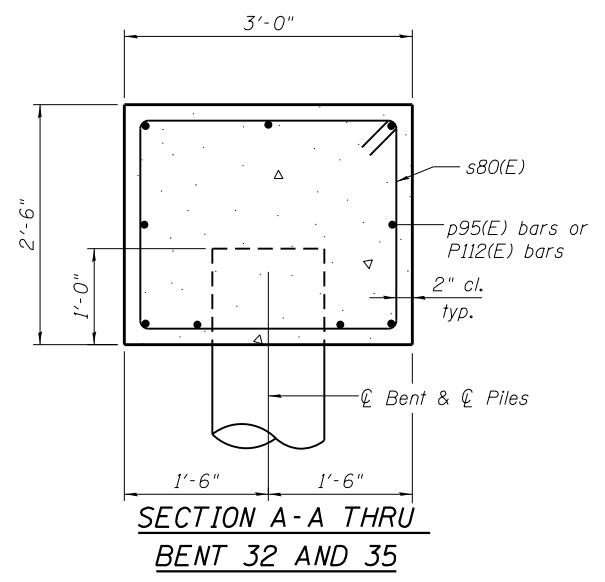


\* Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)



**BENT CAP TABLE**

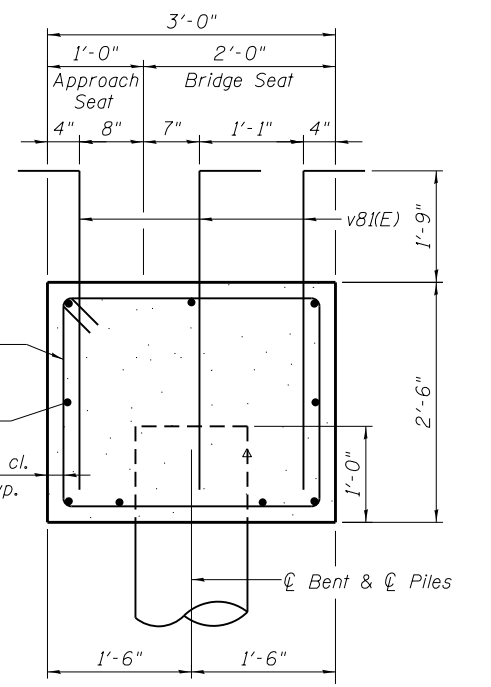
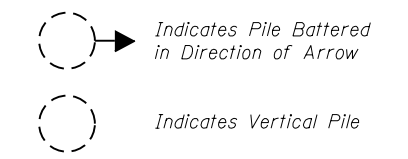
Bent #	Elev. A	Elev. B
Bent 30	686.19	683.69
Bent 31	686.28	683.78
Bent 32	686.37	683.87
Bent 33	686.47	683.97
Bent 34	686.56	684.06
Bent 35	686.65	684.15
Bent 36	686.74	684.24
Bent 37	686.83	684.33
Bent 38	686.93	684.43



**PILE DATA**

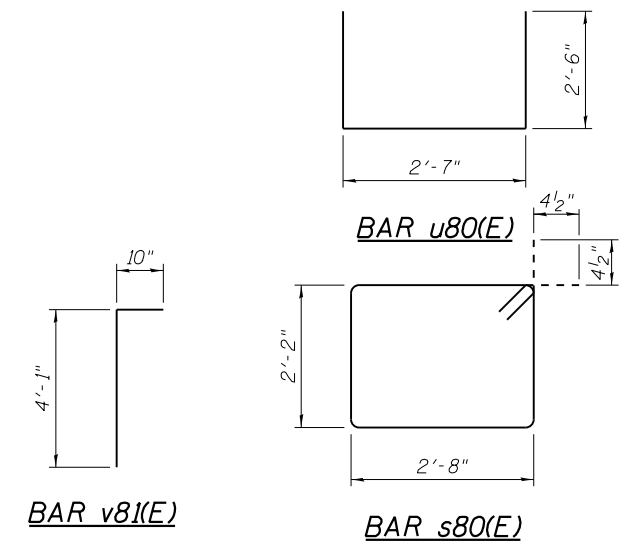
Type: Metal Shell - 14 in. dia. x 0.25 in. wall  
 Nominal Required Bearing: See Table  
 Factored Resistance Available: See Table  
 Est. Length: See Table  
 No. Production Piles: See Table  
 No. Test Piles: See Table

**LEGEND**



**NOTES**

- For Metal Shell Pile Details, see Sheet 57.
- For Pile Data Table, see Sheet 54.
- Apply Concrete Sealer to top and sides of bent cap of Bent 32 and 35.
- For pile bent layout, see Sheets 1 and 2.
- The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14" φ metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.



\\NASCH1\Chicagop2\5106-056-Struct\Bridges\Land Bridges\Land Bridge 2 - 016-D011-016D011-60L72-053-BD.dgn

**PILE DATA TABLE**

Bent	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.) <sup>1</sup>	Est. Pile Length (ft.) <sup>2</sup>	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles
4	315	148	52	55	670	15	0
5	315	148	52	55	670	14	1
6	315	148	52	55	670	14	1
7	315	148	52	55	670	15	0
8	334	140	63	67	670	15	0
9	334	140	63	67	670	14	1
10	334	140	63	67	670	14	1
11	307	146	48	51	670	15	0
12	362	176	50	53	670	14	0
13	362	176	50	53	670	13	1
14	301	165	45	48	670	13	1
15	301	165	45	48	670	14	0
16	261	144	63	67	670	13	0
17	261	144	63	67	670	12	1
18	413	227	36	38	670	12	1
19	413	227	36	38	670	12	0
20	282	155	51	54	670	12	0
21	282	155	51	54	670	11	1
22	282	155	51	54	670	11	1
23	293	144	41	44	670	13	0
24	293	144	41	44	670	13	0
25	293	144	41	44	670	12	1
26	293	144	41	44	670	13	1
27	270	148	41	44	670	14	0
28	270	148	41	44	670	14	0
29	413	178	57	60	670	14	1
30	413	178	57	60	670	14	1
31	257	141	49	52	670	15	0
32	257	141	49	52	670	15	0
33	275	151	60	63	670	14	1
34	275	151	60	63	670	14	1
35	275	151	60	63	670	15	0
36	275	151	60	63	670	15	0
37	284	156	47	50	670	14	1
38	284	156	47	50	670	14	1

<sup>1</sup> Vertical pile length. For vertical pile locations, see Sheet 50 thru Sheet 53.

<sup>2</sup> Battered pile length. For battered pile locations, see Sheet 50 thru Sheet 53.

**NOTES**

- For pile bent layout, see Sheets 1 and 2.
- If peat soils are present above Elev. 670, the contractor shall cease the precore at the elevation peat is encountered in the field during construction.
- For pile bent details, see Sheet 50 thru 53.
- Cost of precoring for pile installation is included with DRIVING PILES.

**BILL OF MATERIAL BENT 4**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p94(E)	9	#6	29'-2"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
Concrete Structures		Cu. Yd.	19.9	
Reinforcement Bars, Epoxy Coated		Pound	1,520	
Structure Excavation		Cu. Yd.	33	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	789	
Driving Piles		Foot	789	
Concrete Sealer		Sq. Ft.	588	

**BILL OF MATERIAL BENT 5**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	35	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	737	
Driving Piles		Foot	737	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 6**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	39	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	737	
Driving Piles		Foot	737	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 7**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	1,510	
Structure Excavation		Cu. Yd.	42	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	789	
Driving Piles		Foot	789	
Concrete Sealer		Sq. Ft.	584	

**BILL OF MATERIAL BENT 8**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	47	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	957	
Driving Piles		Foot	957	

**BILL OF MATERIAL BENT 9**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	51	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	894	
Driving Piles		Foot	894	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 10**

Bar	No.	Size	Length	Shape
p90(E)	9	#6	41'-8"	—
p95(E)	9	#6	28'-10"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└┘
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	55	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	894	
Driving Piles		Foot	894	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 11**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p96(E)	9	#6	39'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	12	#5	7'-7"	└┘
v80(E)	142	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.2	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	60	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	729	
Driving Piles		Foot	729	

**BILL OF MATERIAL BENT 12**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p97(E)	9	#6	38'-4"	—
s80(E)	68	#4	10'-5"	□
u80(E)	12	#5	7'-7"	└┘
Concrete Structures		Cu. Yd.	18.8	
Reinforcement Bars, Epoxy Coated		Pound	1,480	
Structure Excavation		Cu. Yd.	64	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	709	
Driving Piles		Foot	709	
Concrete Sealer		Sq. Ft.	573	

**BILL OF MATERIAL BENT 13**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p98(E)	9	#6	36'-11"	—
s80(E)	68	#4	10'-5"	□
u80(E)	12	#5	7'-7"	└┘
v80(E)	136	#5	3'-10"	—
Concrete Structures		Cu. Yd.	18.5	
Reinforcement Bars, Epoxy Coated		Pound	2,010	
Structure Excavation		Cu. Yd.	67	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	659	
Driving Piles		Foot	659	
Test Piles		Each	1	

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**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D011-60L72-054-BD.dgn	CHECKED - LJB	REVISED
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 6  
STRUCTURE NO. 016-D011**

SHEET NO. 54 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	479
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

**BILL OF MATERIAL BENT 14**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p99(E)	9	#6	35'-7"	—
s80(E)	68	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	134	#5	3'-10"	—
Concrete Structures			Cu. Yd.	18.1
Reinforcement Bars, Epoxy Coated			Pound	1,980
Structure Excavation			Cu. Yd.	66
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	594
Driving Piles			Foot	594
Test Piles			Each	1

**BILL OF MATERIAL BENT 15**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p100(E)	9	#6	34'-2"	—
s80(E)	68	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	132	#5	3'-10"	—
Concrete Structures			Cu. Yd.	17.7
Reinforcement Bars, Epoxy Coated			Pound	1,950
Structure Excavation			Cu. Yd.	65
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	639
Driving Piles			Foot	639

**BILL OF MATERIAL BENT 16**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p101(E)	9	#6	32'-10"	—
s80(E)	63	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	128	#5	3'-10"	—
Concrete Structures			Cu. Yd.	17.3
Reinforcement Bars, Epoxy Coated			Pound	1,880
Structure Excavation			Cu. Yd.	64
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	831
Driving Piles			Foot	831

**BILL OF MATERIAL BENT 17**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p102(E)	9	#6	31'-5"	—
s80(E)	63	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	122	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.9
Reinforcement Bars, Epoxy Coated			Pound	1,350
Structure Excavation			Cu. Yd.	62
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	768
Driving Piles			Foot	768
Test Piles			Each	1
Concrete Sealer			Sq. Ft.	518

**BILL OF MATERIAL BENT 18**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p103(E)	9	#6	30'-0"	—
s80(E)	63	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	122	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.5
Reinforcement Bars, Epoxy Coated			Pound	1,820
Structure Excavation			Cu. Yd.	59
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	438
Driving Piles			Foot	438
Test Piles			Each	1

**BILL OF MATERIAL BENT 19**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
s80(E)	58	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	120	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.2
Reinforcement Bars, Epoxy Coated			Pound	1,760
Structure Excavation			Cu. Yd.	57
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	438
Driving Piles			Foot	438

**BILL OF MATERIAL BENT 20**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
s80(E)	58	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	120	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.2
Reinforcement Bars, Epoxy Coated			Pound	1,760
Structure Excavation			Cu. Yd.	55
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	621
Driving Piles			Foot	621

**BILL OF MATERIAL BENT 21**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
s80(E)	58	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	120	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.2
Reinforcement Bars, Epoxy Coated			Pound	1,760
Structure Excavation			Cu. Yd.	54
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	570
Driving Piles			Foot	570
Test Piles			Each	1

**BILL OF MATERIAL BENT 22**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p104(E)	9	#6	29'-1"	—
s80(E)	58	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	124	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.3
Reinforcement Bars, Epoxy Coated			Pound	1,290
Structure Excavation			Cu. Yd.	52
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	570
Driving Piles			Foot	570
Test Piles			Each	1
Concrete Sealer			Sq. Ft.	499

**BILL OF MATERIAL BENT 23**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p105(E)	9	#6	30'-7"	—
s80(E)	63	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	124	#5	3'-10"	—
Concrete Structures			Cu. Yd.	16.7
Reinforcement Bars, Epoxy Coated			Pound	1,840
Structure Excavation			Cu. Yd.	51
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	542
Driving Piles			Foot	542

**BILL OF MATERIAL BENT 24**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p106(E)	9	#6	2'-11"	—
s80(E)	62	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	128	#5	3'-10"	—
Concrete Structures			Cu. Yd.	17.1
Reinforcement Bars, Epoxy Coated			Pound	1,860
Structure Excavation			Cu. Yd.	50
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	542
Driving Piles			Foot	542

**BILL OF MATERIAL BENT 25**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p107(E)	9	#6	4'-6"	—
s80(E)	62	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	130	#5	3'-10"	—
Concrete Structures			Cu. Yd.	17.5
Reinforcement Bars, Epoxy Coated			Pound	1,890
Structure Excavation			Cu. Yd.	50
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	501
Driving Piles			Foot	501
Test Piles			Each	1

**BILL OF MATERIAL BENT 26**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p108(E)	9	#6	6'-1"	—
s80(E)	67	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	134	#5	3'-10"	—
Concrete Structures			Cu. Yd.	18.0
Reinforcement Bars, Epoxy Coated			Pound	1,960
Structure Excavation			Cu. Yd.	50
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	542
Driving Piles			Foot	542
Test Piles			Each	1

**BILL OF MATERIAL BENT 27**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p109(E)	9	#6	7'-5"	—
s80(E)	67	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	140	#5	3'-10"	—
Concrete Structures			Cu. Yd.	18.4
Reinforcement Bars, Epoxy Coated			Pound	1,450
Structure Excavation			Cu. Yd.	48
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	583
Driving Piles			Foot	583
Concrete Sealer			Sq. Ft.	559

**BILL OF MATERIAL BENT 28**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p110(E)	9	#6	8'-11"	—
s80(E)	67	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌┐
v80(E)	140	#5	3'-10"	—
Concrete Structures			Cu. Yd.	18.8
Reinforcement Bars, Epoxy Coated			Pound	2,030
Structure Excavation			Cu. Yd.	47
Furnishing Metal Shell Piles - 14" X 0.25"			Foot	583
Driving Piles			Foot	583

**NOTE**

1. For pile bent layout, see Sheets 1 and 2.

\\NASCH1\Chicago\5105-USE\Struct\Bridges\Land Bridge 2 - 016-D011\016D011-60L72-055-BD.dgn

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS  
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**TYPICAL BENT DETAILS 7  
STRUCTURE NO. 016-D011**

SHEET NO. 55 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	480
<b>CONTRACT NO. 60L72</b>				
ILLINOIS FED. AID PROJECT				



**BILL OF MATERIAL BENT 29**

Bar	No.	Size	Length	Shape
p95(E)	18	#6	28'-10"	—
p111(E)	9	#6	10'-5"	—
s80(E)	72	#4	10'-5"	□
u80(E)	12	#5	7'-7"	┌
v80(E)	142	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.2	
Reinforcement Bars, Epoxy Coated		Pound	2,090	
Structure Excavation		Cu. Yd.	45	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	807	
Driving Piles		Foot	807	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 30**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	44	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	807	
Driving Piles		Foot	807	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 31**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	41	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	744	
Driving Piles		Foot	744	

**BILL OF MATERIAL BENT 32**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	1,510	
Structure Excavation		Cu. Yd.	40	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	744	
Driving Piles		Foot	744	
Concrete Sealer		Sq. Ft.	584	

**BILL OF MATERIAL BENT 33**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	39	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	849	
Driving Piles		Foot	849	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 34**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	38	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	849	
Driving Piles		Foot	849	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 35**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	1,510	
Structure Excavation		Cu. Yd.	36	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	909	
Driving Piles		Foot	909	
Concrete Sealer		Sq. Ft.	584	

**BILL OF MATERIAL BENT 36**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	36	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	909	
Driving Piles		Foot	909	

**BILL OF MATERIAL BENT 37**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	146	#5	3'-10"	—
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,100	
Structure Excavation		Cu. Yd.	35	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	667	
Driving Piles		Foot	667	
Test Piles		Each	1	

**BILL OF MATERIAL BENT 38**

Bar	No.	Size	Length	Shape
p95(E)	9	#6	28'-10"	—
p112(E)	9	#6	41'-8"	—
s80(E)	73	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v81(E)	219	#5	4'-11"	┌
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2,640	
Structure Excavation		Cu. Yd.	49	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	667	
Driving Piles		Foot	667	
Test Piles		Each	1	

**NOTE**

1. For pile bent layout, see Sheets 1 and 2.

\\NASCHI\Chicago\25106-056\Struct\Drawn\Bridges\Leand\Bridges 2 - 016-0011-016011-60L72-056-BD.dgn

**LOCHNER**  
H. W. LOCHNER, INC.  
225 WEST WASHINGTON STREET  
12 TH FLOOR  
CHICAGO, ILLINOIS 60606

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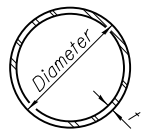
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 8  
STRUCTURE NO. 016-D011**

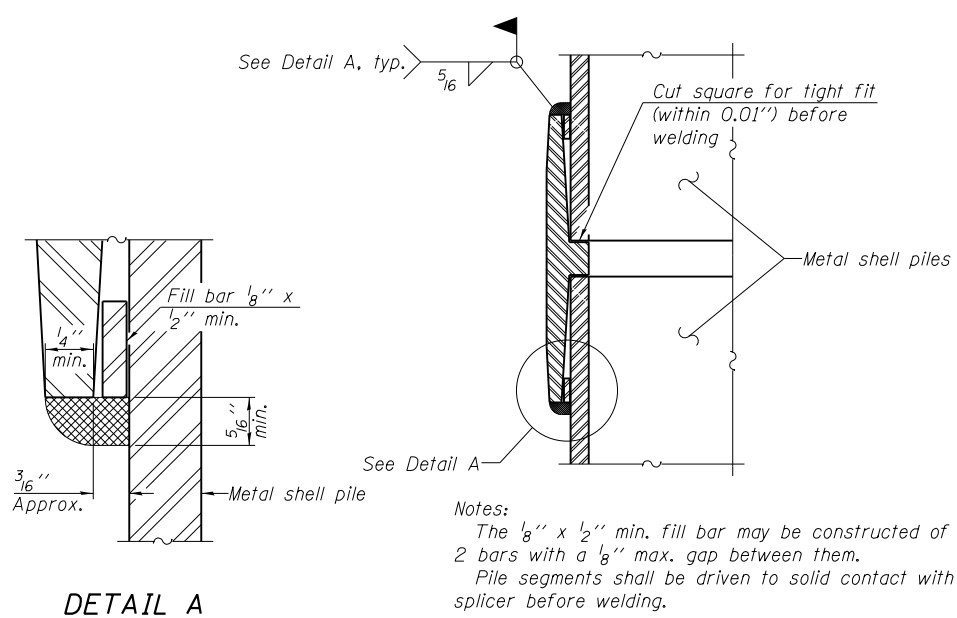
SHEET NO. 56 OF 77 SHEETS

F.A.P. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**METAL SHELL PILE TABLE**

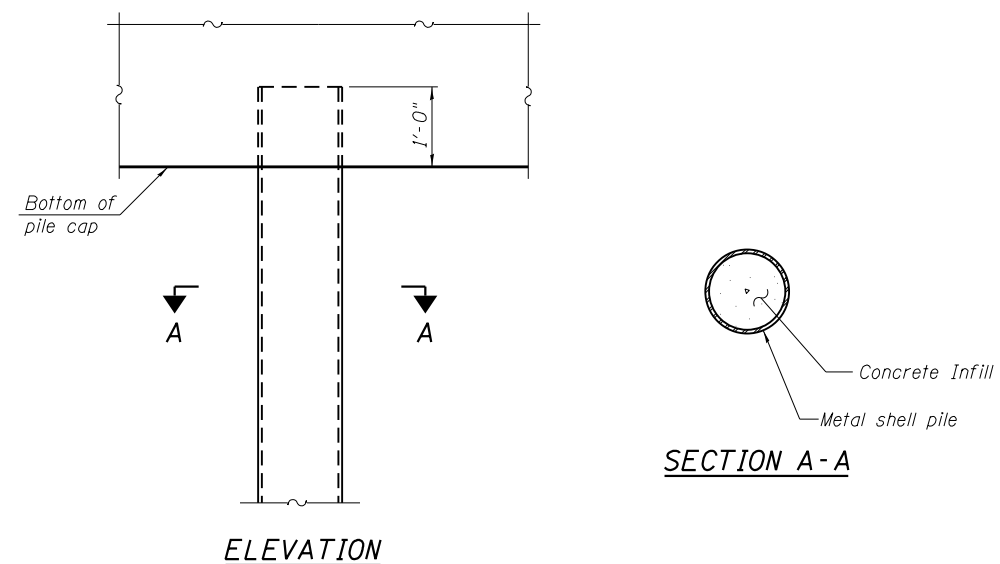
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. <sup>3</sup> /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



**DETAIL A**

Notes:  
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
 Pile segments shall be driven to solid contact with splicer before welding.

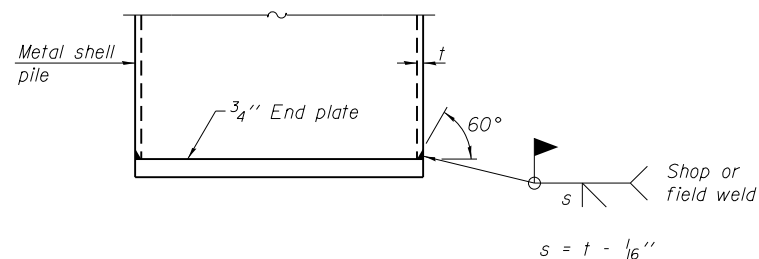
**WELDED COMMERCIAL SPLICE**



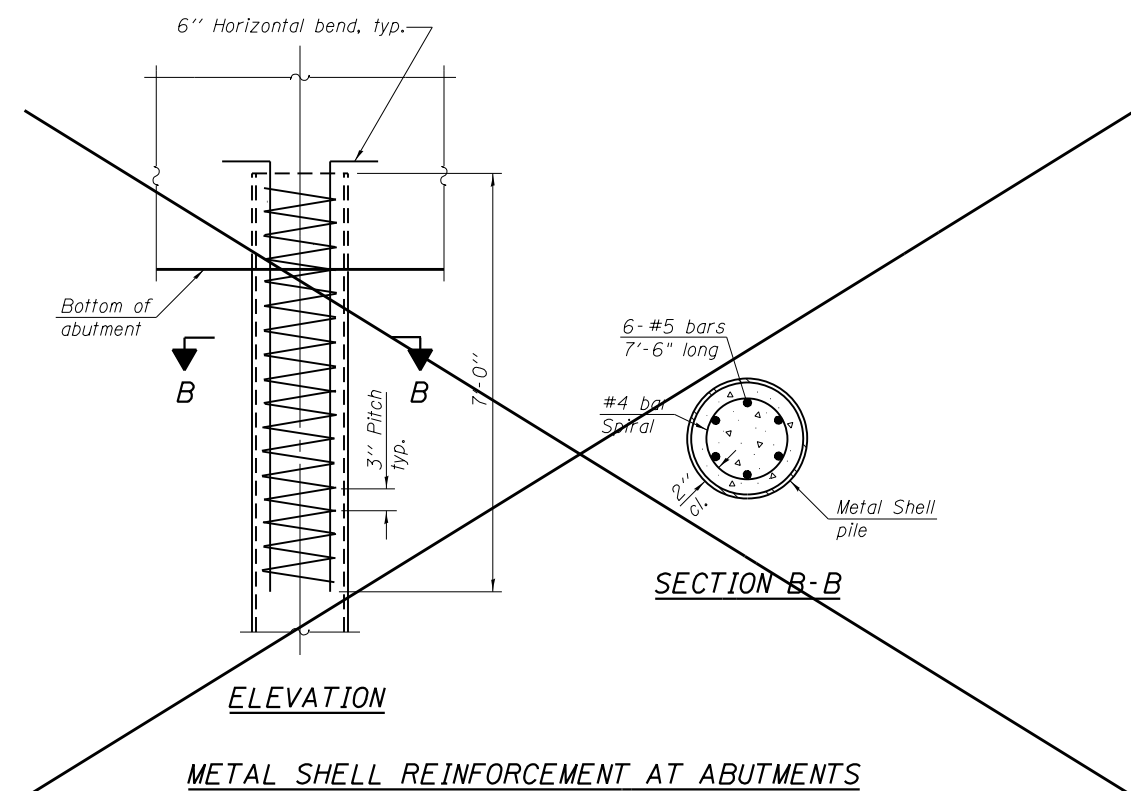
**ELEVATION**

**SECTION A-A**

**METAL SHELL PILE DETAILS AT PIERS**



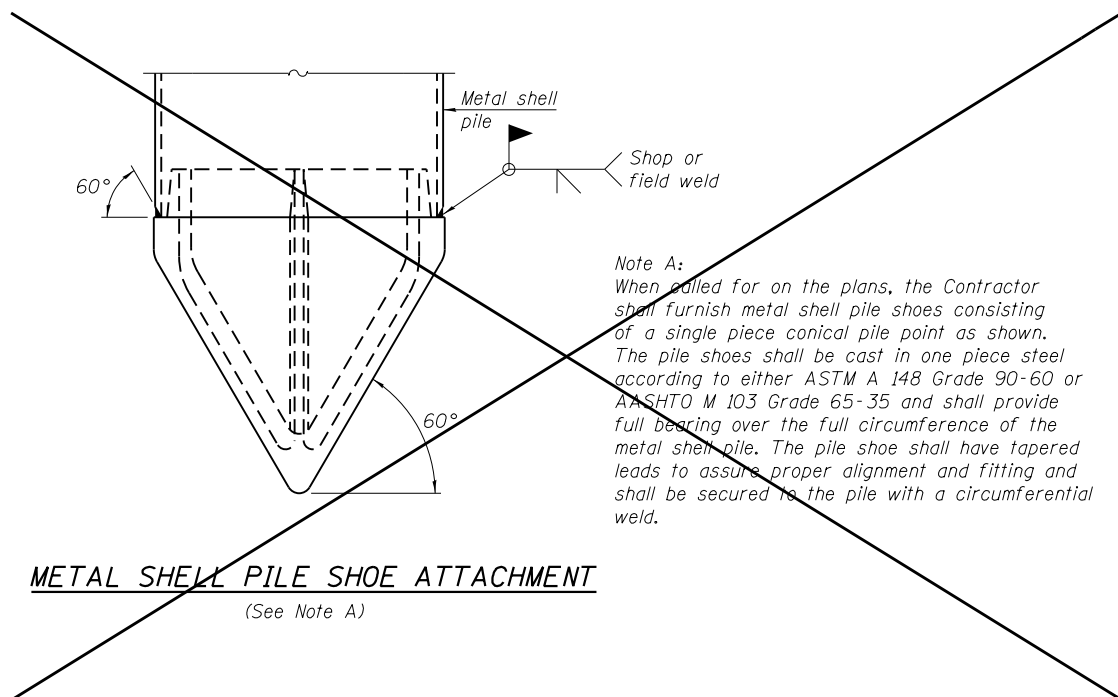
**END PLATE ATTACHMENT**



**ELEVATION**

**SECTION B-B**

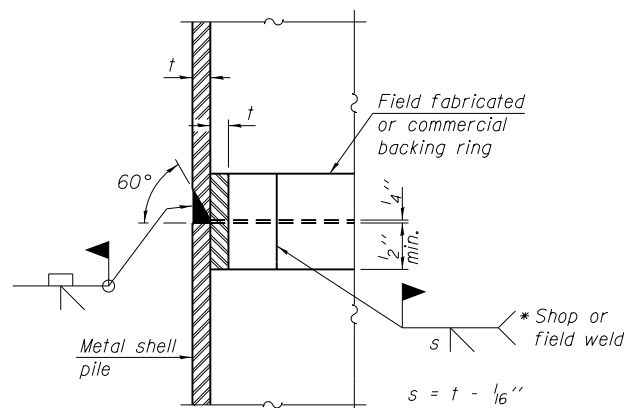
**METAL SHELL REINFORCEMENT AT ABUTMENTS**



**METAL SHELL PILE SHOE ATTACHMENT**

(See Note A)

Note A:  
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.



**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

Note:  
 The metal shell piles shall be according to ASTM A 252 Grade 3.

\\NASCH1\Chicago2\5106-056\Structure\Land Bridges\Land Bridges\2 - 016-D011\016D011-60L72-057-PD.dgn

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 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
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 CHICAGO, ILLINOIS 60606

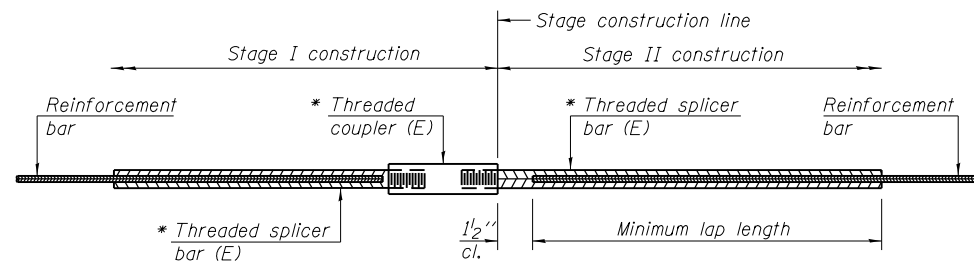
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**STATE OF ILLINOIS  
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**METAL SHELL PILES  
 STRUCTURE NO. 016-D011**

SHEET NO. 57 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	482
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**STANDARD BAR SPLICER ASSEMBLY**

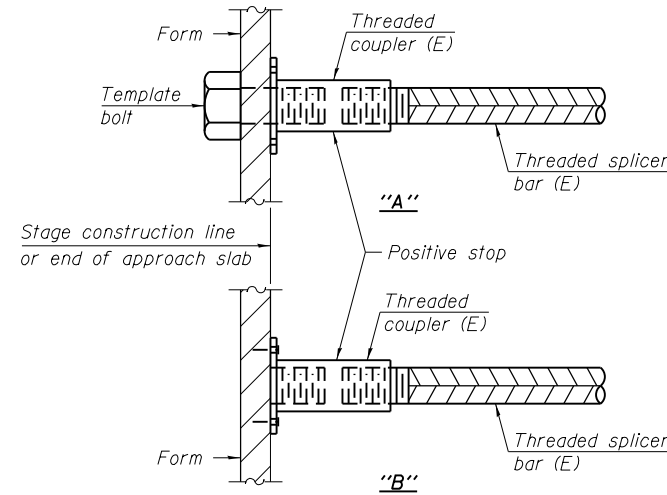
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1/2" + thread length

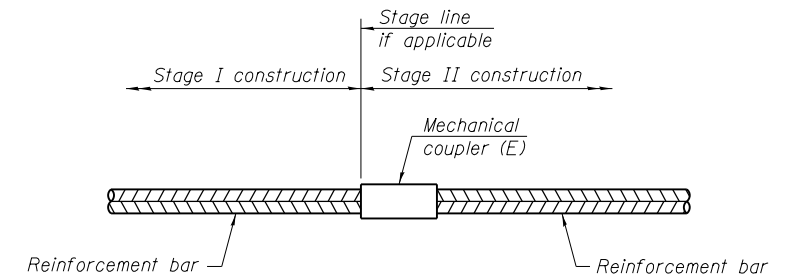
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Bent 1 thru 10	#6	90	Table 4
Bent 24 thru 38	#6	135	Table 4
Deck Unit 1 thru 3	#5	464	Table 6



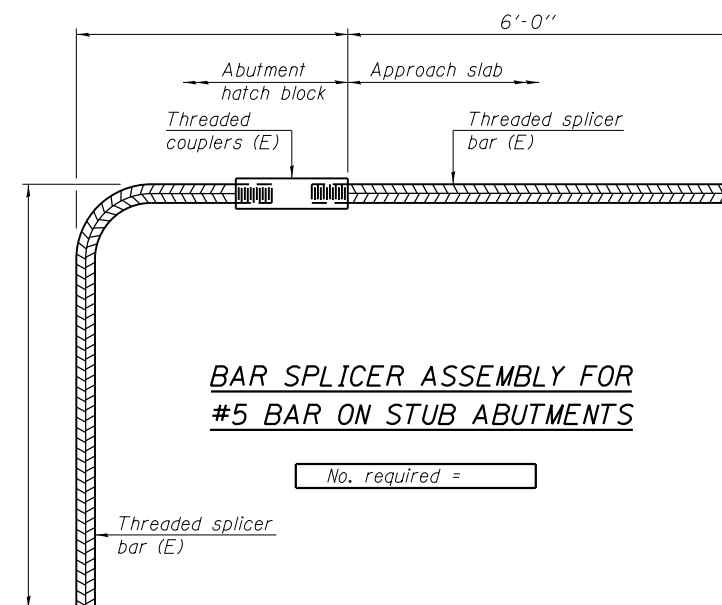
**INSTALLATION AND SETTING METHODS**

"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
Deck Unit 6	#5	230
Deck Unit 6	#8	30
Deck Unit 7	#5	275
Deck Unit 8	#5	166
Deck Unit 9	#5	166
West Approach	#4	25
West Approach	#5	86
East Approach	#4	25
East Approach	#5	86



**BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS**

No. required =

**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.

BSD-1 8-31-12

**LOCHNER**  
 H. W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D011-60L72-058-BS.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 STRUCTURE NO. 016-D011**

SHEET NO. 58 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	483
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

\\NASCH1\Chicago\25106-056\Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-058-BS.dgn



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/26/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for SOIL BORING LOG data including STRUCT. NO., BORING NO., and soil descriptions like SANDY TOPSOIL with GRAVEL-black.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/26/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for SOIL BORING LOG data including STRUCT. NO., BORING NO., and soil descriptions like TOPSOIL-black and CLAY-dark brown & gray-soft to stiff (Fill).

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/26/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for SOIL BORING LOG data including STRUCT. NO., BORING NO., and soil descriptions like TOPSOIL-black and CLAY-brown & gray-very stiff (Fill).

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

\\NASCH1\Chicago2\5106-566\Structure\Load Bridges\Load Bridge 2 - 016-D011\016D011-60L72-059-SB.dgn



GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/26/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D011 Station \_\_\_\_\_  
 BORING NO. HA-32 Station 384+39  
 Offset 33.40ft Left  
 Ground Surface Elev. 682.90 ft (ft) (/6") (tsf) (%)

Surface Water Elev. n/a ft  
 Stream Bed Elev. n/a ft  
 Groundwater Elev.:  
 First Encounter Dry ft  
 Upon Completion n/a ft  
 After \_\_\_\_\_ Hrs. \_\_\_\_\_ ft

DEPTH (ft)	BLU (ft)	UCS (tsf)	MOST (%)	DESCRIPTION
17				CLAY-dark brown, gray & black-stiff to very stiff (Fill)
23	P		27	
24	P	1.8	24	
26	P	1.5	26	
27	P	1.3	27	
672.90	-10			End Of Boring @ -10.0'. Boring backfilled with cuttings.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrator)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/26/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D011 Station \_\_\_\_\_  
 BORING NO. HA-33 Station 385+20  
 Offset 31.00ft Left  
 Ground Surface Elev. 684.60 ft (ft) (/6") (tsf) (%)

Surface Water Elev. n/a ft  
 Stream Bed Elev. n/a ft  
 Groundwater Elev.:  
 First Encounter Dry ft  
 Upon Completion n/a ft  
 After \_\_\_\_\_ Hrs. \_\_\_\_\_ ft

DEPTH (ft)	BLU (ft)	UCS (tsf)	MOST (%)	DESCRIPTION
2.8	P		20	CLAY-dark brown, gray & black-stiff to very stiff (Fill)
1.3	P		26	
3.3	P		25	
678.10			29	TOPSOIL-black (Fill)
676.10			40	CLAY-dark brown, gray & black-very stiff (Fill)
674.60	-10			End Of Boring @ -10.0'. Boring backfilled with cuttings.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrator)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 1

Date 4/25/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO. 016-D011 Station \_\_\_\_\_  
 BORING NO. HA-34 Station 386+00  
 Offset 33.80ft Left  
 Ground Surface Elev. 685.00 ft (ft) (/6") (tsf) (%)

Surface Water Elev. n/a ft  
 Stream Bed Elev. n/a ft  
 Groundwater Elev.:  
 First Encounter 680.0 ft  
 Upon Completion n/a ft  
 After \_\_\_\_\_ Hrs. \_\_\_\_\_ ft

DEPTH (ft)	BLU (ft)	UCS (tsf)	MOST (%)	DESCRIPTION
684.50			27	TOPSOIL-black
		2.3	27	SILTY CLAY-dark brown & gray-very stiff
		2.5	33	
			30	
679.00				PEAT-black
677.50			350	SILTY CLAY-brown & gray-medium stiff
		0.8	33	
675.00	-10			End Of Boring @ -10.0'. Boring backfilled with cuttings.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrator)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

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**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 2**  
**STRUCTURE NO. 016-D011**  
 SHEET NO. 60 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	485
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				





GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 1

Date 4/24/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT H	BLOWS	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.
016-D011					n/a ft	n/a ft
Station						
BORING NO. HA-38					Groundwater Elev.:	
Station 389+53					First Encounter 677.4 ft	
Offset 33.70ft Left					Upon Completion n/a ft	
Ground Surface Elev. 682.90 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	ft
CLAY LOAM-brown-very stiff (Fill)			2.3 P	21		
680.90						
TOPSOIL-black				13		
678.90						
CLAY LOAM-dark brown & gray-stiff (Fill)			1.0 P	24		
677.90						
PEAT-dark brown & black						
				321		
				485		
672.90						
End Of Boring @ -10.0'. Boring backfilled with cuttings.						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 1

Date 4/24/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT H	BLOWS	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.
016-D011					n/a ft	n/a ft
Station						
BORING NO. HA-39					Groundwater Elev.:	
Station 390+61					First Encounter 679.6 ft	
Offset 32.80ft Left					Upon Completion n/a ft	
Ground Surface Elev. 684.60 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	ft
SANDY TOPSOIL-black				15		
681.60						
SILTY SAND & GRAVEL-dark brown				18		
679.6						
PEAT-dark brown & black				21		
				22		
677.10						
SILTY LOAM-gray				20		
674.60						
End Of Boring @ -10.0'. Boring backfilled with cuttings.						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, from 137 (Rev. 8-99)

\\NASCH1\Chicago2\106-566-Sub\Struct\dgn\Land Bridges\Land Bridge 2 - 016-D011-60L72-062-SB.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 4**  
**STRUCTURE NO. 016-D011**  
 SHEET NO. 62 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	487
				<b>CONTRACT NO. 60L72</b>
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/8/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTH (ft)	BULGE (ft)	UCS (tsf)	FAILURE MODE (%)	DEPTH (ft)	BULGE (ft)	UCS (tsf)	FAILURE MODE (%)
ASPHALT 686.30							
CRUSHED STONE-medium dense (Fill)							
5				2			
10		9		2	0.8	203	
11				2	P		
683.60							
SILTY CLAY LOAM-dark brown & gray-stiff to hard							
3				1			
4	0.6	26		1	0.5	27	
6	B			1	P		
5				1			
7	4.5	17		1	1.0	23	
10	P			1	P		
3				2			
4	2.5	23		1		26	
5	P			2			
4							
3	1.5	24		654.60			
2	B			CLAY-gray-stiff			
673.60							
PEAT-dark brown & black-very loose to loose							
2				4			
2		117		5	1.8	22	
2				9	B		
2							
2		331					
1				4			
1		451		7	1.4	23	
1				8	B		
20				8			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/8/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTH (ft)	BULGE (ft)	UCS (tsf)	FAILURE MODE (%)	DEPTH (ft)	BULGE (ft)	UCS (tsf)	FAILURE MODE (%)
016-D011							
SB-12							
382+47							
23.10ft Right							
686.60							
CLAY-gray-stiff (continued)							
4				9			
6	1.0	24		7		9	
7	B			8			
45				65			
639.60							
CLAYEY SAND & GRAVEL-gray-medium dense							
12				9			
12		16		7		20	
7				6			
50				70			
634.60							
SILTY CLAY LOAM-gray-stiff							
4				7			
11	1.5	21		8		18	
10	P			6			
55				61.60	-75		
629.60							
CLAYEY SAND & GRAVEL-gray-medium dense							
8							
8		14					
8							
80							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)

\\NASCHI\Chicago\2\106-566-Sub\Struct\Bridges\Land Bridges\Land Bridge 2 - 016-D011\016D011-60L72-063-SB.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

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FILE NAME = 016D011-60L72-063-SB.dgn	CHECKED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 5  
 STRUCTURE NO. 016-D011**

SHEET NO. 63 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	488
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				







GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/8/12

ROUTE IL Route 7/J. S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTHS	B	U	M	Surface Water Elev.	DEPTHS	B	U	M
(ft)	(/6")	(tsf)	(%)	n/a ft	(ft)	(/6")	(tsf)	(%)
ASPHALT				686.20				
CLAY to CLAY LOAM-dark brown, gray & black-soft to very stiff (Fill)	4			666.20				
	3	2.0	26					
	4	P						
	3			663.70				
	3	1.1	25					
	5	B						
	5							
	3			658.70				
	5	2.5	23					
	5	P						
	ST	1.5	27					
	10	P						
	2			654.70				
	3	2.3	24					
	4	P						
	1							
	2	0.5	57					
	2	P						
	15							
	2							
	4	1.8	25					
	4	P						
	2							
	1	0.3	34					
	2	P						
	20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/8/12

ROUTE IL Route 7/J. S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

DEPTHS	B	U	M	Surface Water Elev.	DEPTHS	B	U	M
(ft)	(/6")	(tsf)	(%)	n/a ft	(ft)	(/6")	(tsf)	(%)
CLAY-gray-stiff (continued)								
	3							
	3	1.2	25					
	6	B						
	45							
	3			639.70				
SILTY SAND & GRAVEL-gray-medium dense								
	8							
	8							
	8							
	50							
	7			614.70				
	5							
	8							
	55							
	7			611.70				
	5							
	8							
	55							
	2			629.70				
SILTY LOAM-gray-medium dense								
	5							
	6							
	6							
	11							
	60							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)

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USER NAME =	DESIGNED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 7  
 STRUCTURE NO. 016-D011  
 SHEET NO. 65 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	490
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				





GSI Job No. 10195

### SOIL BORING LOG

Page 1 of 2

Date 3/8/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. <u>016-D011</u> Station _____	D E P T H S	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ n/a ft Stream Bed Elev. _____ n/a ft	D E P T H S	B L O W S	U C S Qu	M O I S T
					Groundwater Elev.: _____ First Encounter <u>Dry to 10'</u> ft Upon Completion _____ n/a ft After _____ Hrs. _____ ft				
					8" ASPHALT, 4.0" CRUSHED STONE				
					CLAY to CLAY LOAM-dark brown, gray & black-medium stiff to very stiff (Fill)				
					ORGANIC SILTY CLAY-brown & black-very loose				
					PEAT-dark brown & black-very loose				
					SILTY SAND & GRAVEL-gray-medium dense to dense				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

### SOIL BORING LOG

Page 2 of 2

Date 3/8/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. <u>016-D011</u> Station _____	D E P T H S	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ n/a ft Stream Bed Elev. _____ n/a ft	D E P T H S	B L O W S	U C S Qu	M O I S T
					Groundwater Elev.: _____ First Encounter <u>Dry to 10'</u> ft Upon Completion _____ n/a ft After _____ Hrs. _____ ft				
					SILTY SAND & GRAVEL-gray-medium dense to dense (continued)				
					SANDY LOAM-gray-medium dense				
					CLAY-gray-very stiff				
					CLAY-gray-very stiff				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T208)  
 BBS, from 137 (Rev. 8-99)

\\NASCH1\Chicago2\106-U66-Sub-Struct\Drawn\Land Bridges\Land Bridges 2 - 016-D011-60L72-067-SB.dgn



USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D011-60L72-067-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 9  
STRUCTURE NO. 016-D011**  
SHEET NO. 67 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	492
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				













GSI Job No. 10195

**SOIL BORING LOG**

Page 1 of 2

Date 3/1/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH	BLOW	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.	DEPTH	BLOW	UCS	MOIST
016-D011		(ft)	(/6")	(tsf)	(%)	n/a ft	n/a ft	(ft)	(/6")	(tsf)	(%)
BORING NO. SB-21 Station 387+73 Offset 22.80ft Left Ground Surface Elev. 688.30 ft											
ASPHALT 685.40											
CLAY to CLAY LOAM-dark brown, gray & black-stiff to very stiff (Fill)											
		7						3			
		3	2.3	23				6	1.8	21	
		5	P					8	B		
		2						3			
		2	2.2	21				4	1.8	23	
		3	B					6	B		
		4						4			
		4	2.4	23				4	1.2	18	
		4	B					5	B		
		2						3			
		2	2.3	22				4	1.7	22	
		3	P					6	B		
		1									
		1	1.0	37							
		2	P								
654.30											
SILTY SAND & GRAVEL-gray-medium dense to dense											
		2						6			
		1	1.0	34				8		15	
		2	P					9			
		15						35			
670.80											
PEAT-dark gray-very loose											
		1									
		2		120							
		2									
668.30											
CLAY-gray-stiff											
		5						5			
		3	1.3	23				7		20	
		2	P					5			
		20						40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

**SOIL BORING LOG**

Page 2 of 2

Date 3/1/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR  
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3<sup>rd</sup> PM  
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH	BLOW	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.	DEPTH	BLOW	UCS	MOIST
016-D011		(ft)	(/6")	(tsf)	(%)	n/a ft	n/a ft	(ft)	(/6")	(tsf)	(%)
BORING NO. SB-21 Station 387+73 Offset 22.80ft Left Ground Surface Elev. 688.30 ft											
SILTY SAND & GRAVEL-gray-medium dense to dense (continued)											
		12						12			
		10	4	16				10	13	16	
		10						10			
		45						45			
624.30											
FINE SAND-gray-medium dense											
		11						11			
		10	11					10	13	21	
		12						12			
		50						50			
619.30											
SILT-gray-medium dense											
		11						11			
		10	11					10	13	21	
		12						12			
		50						50			
614.30											
SAND-gray-medium dense											
		15						15			
		13	14					13	11	19	
		17						17			
		45						45			
611.30											
End Of Boring @ -75.0'. Boring backfilled with cuttings.											
629.30											
SILTY SAND-gray-medium dense											
		8						8			
		9	17					9	7	17	
		8						8			
		60						60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)  
 BBS, from 137 (Rev. 8-99)

\\NASCH1\Chicago2\106-U56-Struct\dgn\Lead Bridges\Lead Bridge 2 - 016-D011-60L72-072-SB.dgn

**LOCHNER**  
 H.W. LOCHNER, INC.  
 225 WEST WASHINGTON STREET  
 12 TH FLOOR  
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D011-60L72-072-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 14  
 STRUCTURE NO. 016-D011

SHEET NO. 72 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	497
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				





