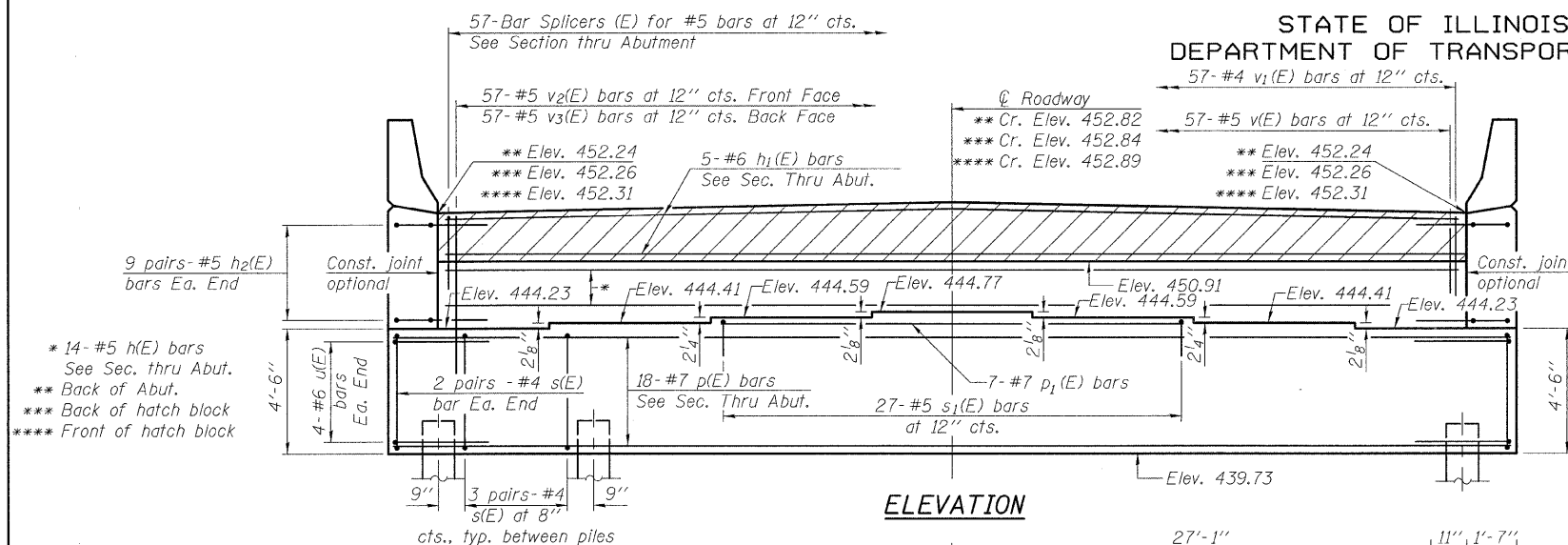
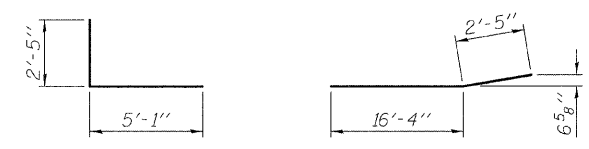


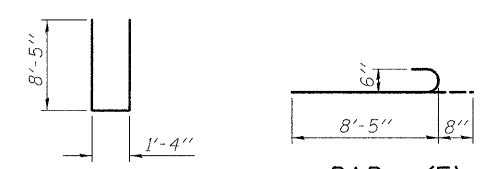
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



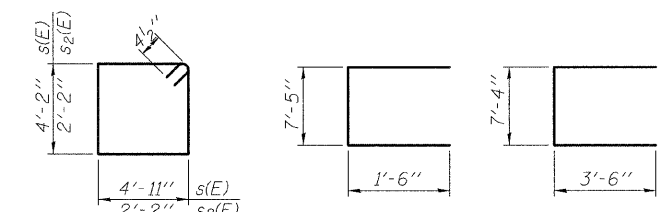
\* 14-#5 h(E) bars  
See Sec. thru Abut.  
\*\* Back of Abut.  
\*\*\* Back of hatch block  
\*\*\*\* Front of hatch block



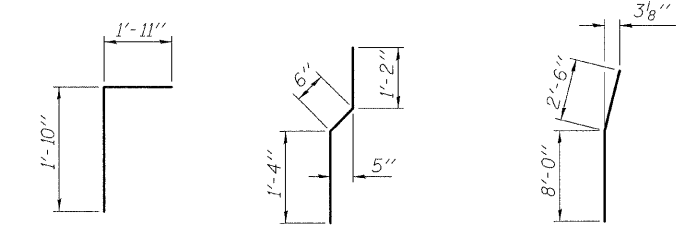
BAR h<sub>2</sub>(E)      BAR h<sub>4</sub>(E)



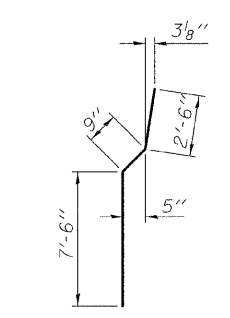
BAR n(E)      BAR n<sub>1</sub>(E)



BARS s(E) & s<sub>2</sub>(E)      BAR s<sub>1</sub>(E)      BAR u(E)



BAR v(E)      BAR v<sub>1</sub>(E)      BAR v<sub>5</sub>(E)



BAR v<sub>6</sub>(E)

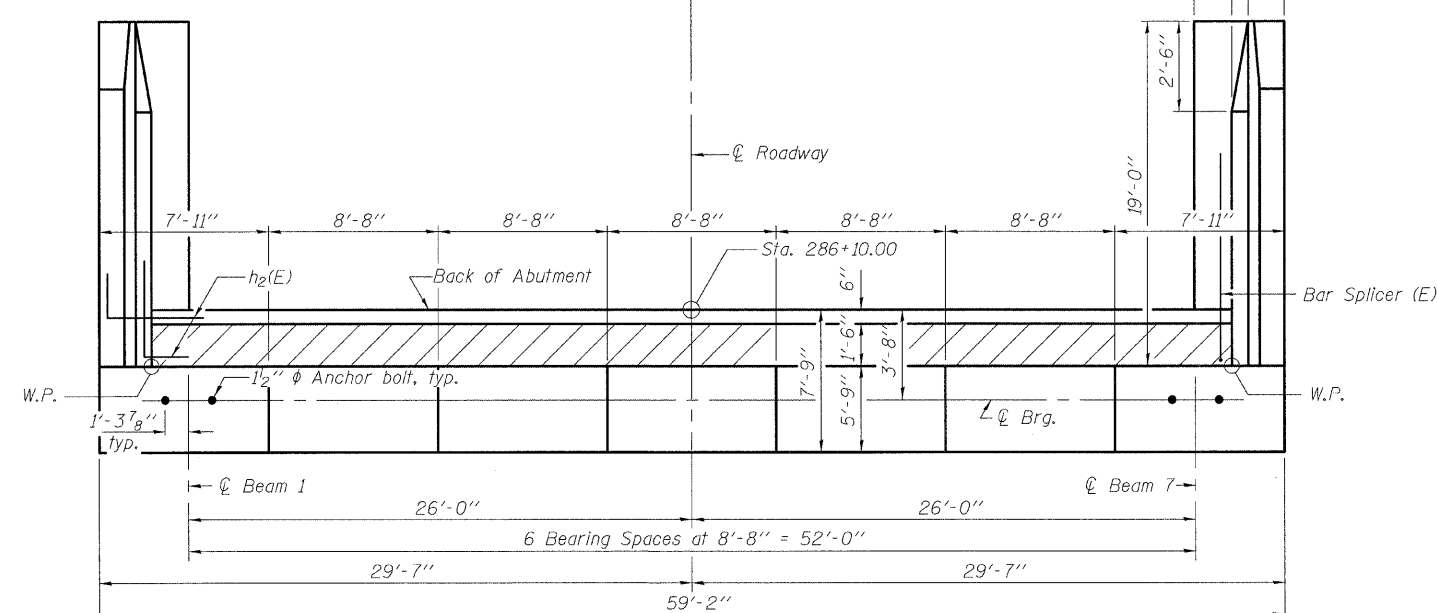
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	55'-9"	U
h <sub>1</sub> (E)	5	#6	55'-9"	U
h <sub>2</sub> (E)	36	#5	7'-6"	U
h <sub>3</sub> (E)	34	#4	18'-9"	U
h <sub>4</sub> (E)	22	#4	18'-9"	U
n(E)	34	#6	18'-2"	U
n <sub>1</sub> (E)	12	#6	9'-1"	U
p(E)	18	#7	58'-11"	U
p <sub>1</sub> (E)	7	#7	25'-9"	U
p <sub>2</sub> (E)	12	#9	24'-5"	U
s(E)	128	#4	18'-11"	U
s <sub>1</sub> (E)	27	#4	10'-5"	U
s <sub>2</sub> (E)	40	#4	9'-5"	U
u(E)	8	#6	14'-4"	U
v(E)	57	#5	3'-9"	T
v <sub>1</sub> (E)	57	#4	3'-0"	T
v <sub>2</sub> (E)	57	#5	9'-6"	T
v <sub>3</sub> (E)	57	#5	8'-5"	T
v <sub>4</sub> (E)	40	#6	10'-1"	T
v <sub>5</sub> (E)	6	#6	10'-6"	T
v <sub>6</sub> (E)	34	#6	10'-9"	T
Structure Excavation			Cu. Yd.	415
Concrete Structures			Cu. Yd.	134.2
Reinforcement Bars, Epoxy Coated			Pound	11,730
Bar Splicers			Each	57
Furnishing Metal Shell Piles 14" x 0.312"			Foot	1,848
Driving Piles			Foot	1,848
Test Pile Metal Shells			Each	1
Concrete Sealer			Sq. Ft.	1,051

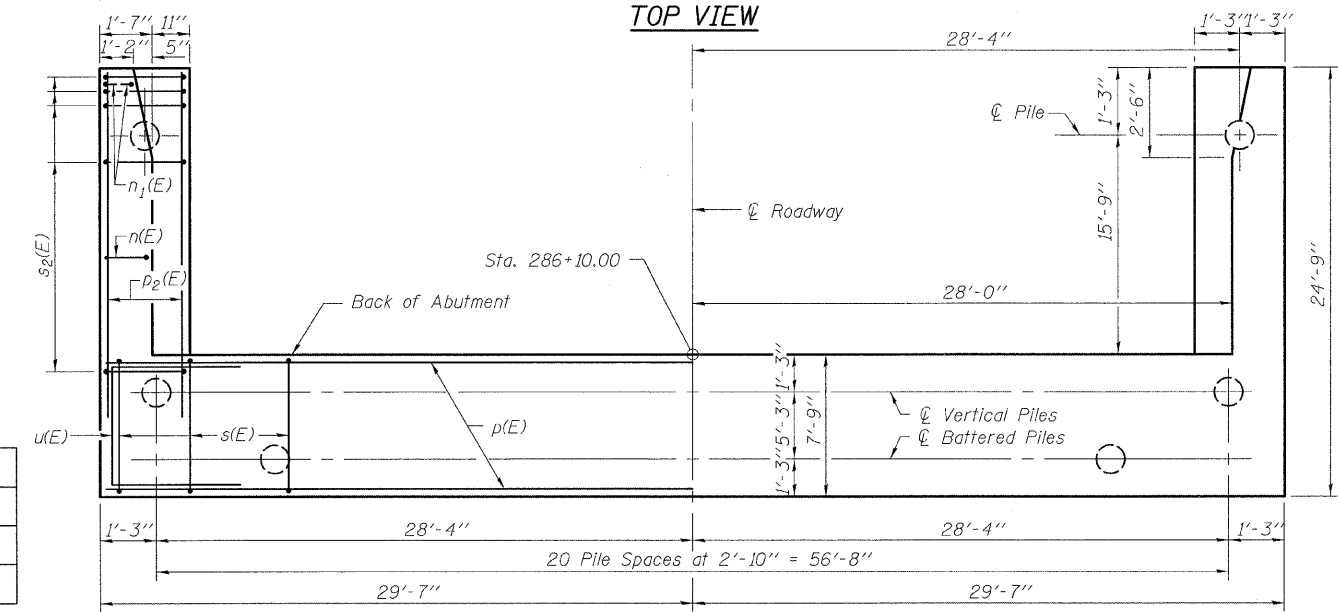
PILE DATA

Type: Metal Shell - 14"  $\phi$  x 0.312" wall  
Nominal Required Bearing: 350 Kips  
Factored Resistance Available: 175 Kips  
Est. Length: 82 ft.  
No. Production Piles: 22  
No. Test Piles: 1

For details of Bar Splicers, see sheet 43 of 48.  
For details of metal shell piles, see sheet 42 of 48.  
For Section thru Abut., see sheet 38 of 48.



TOP VIEW



PLAN-PILE CAP

DESIGNED	KAK
CHECKED	EML
DRAWN	AJF
CHECKED	EML

**HORNER & SHIFRIN, INC.**  
ENGINEERS

SHEET NO. 37 48 SHEETS	F.A.P. RTE. 312	SECTION 64-1VBR	COUNTY ST. CLAIR	TOTAL SHEETS 259	SHEET NO. 89
	CONTRACT NO. 76882				
ILLINOIS FED. AID PROJECT					

SOUTH ABUTMENT  
STRUCTURE NO. 082-0038