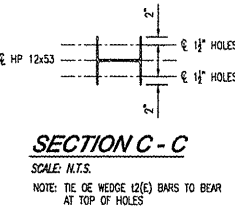
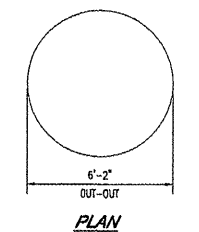
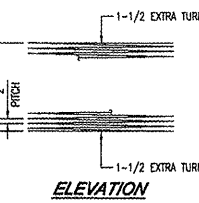
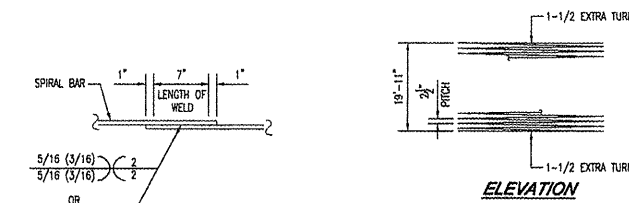
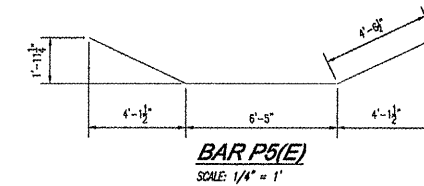
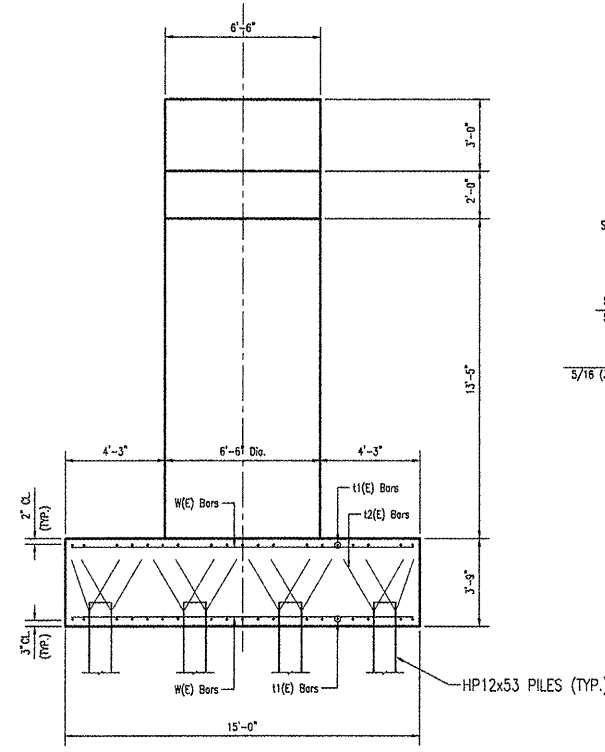
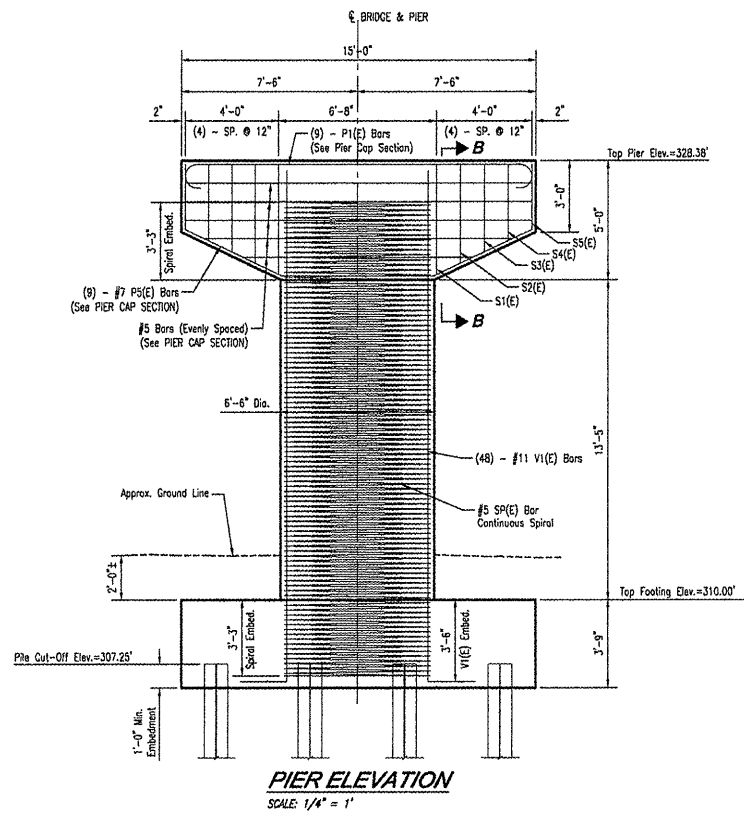
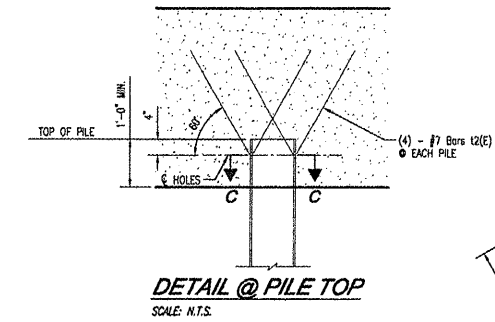
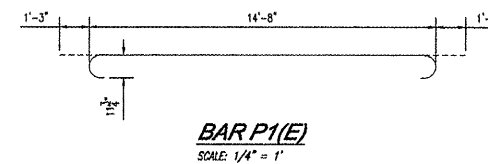
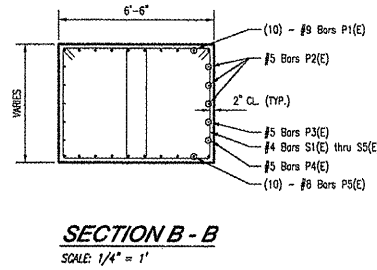
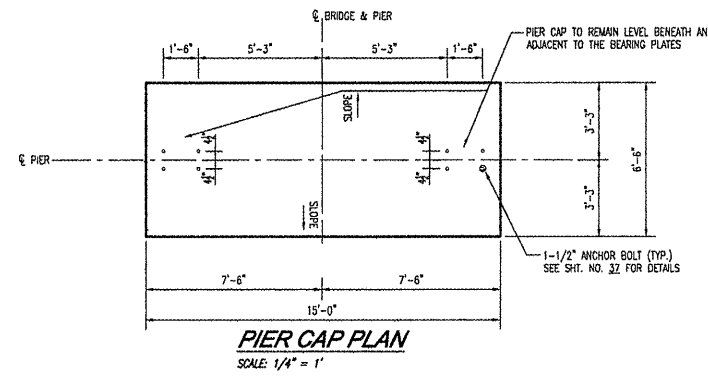
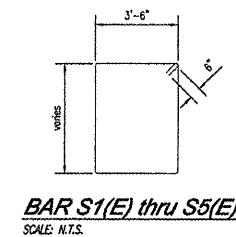
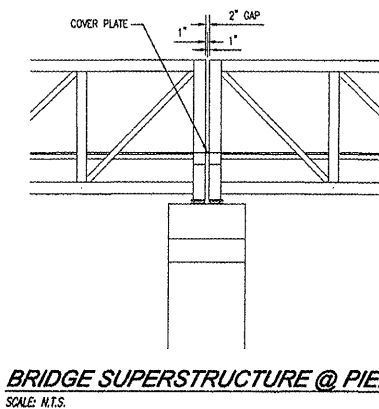
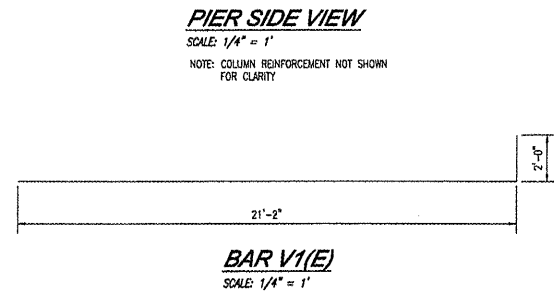
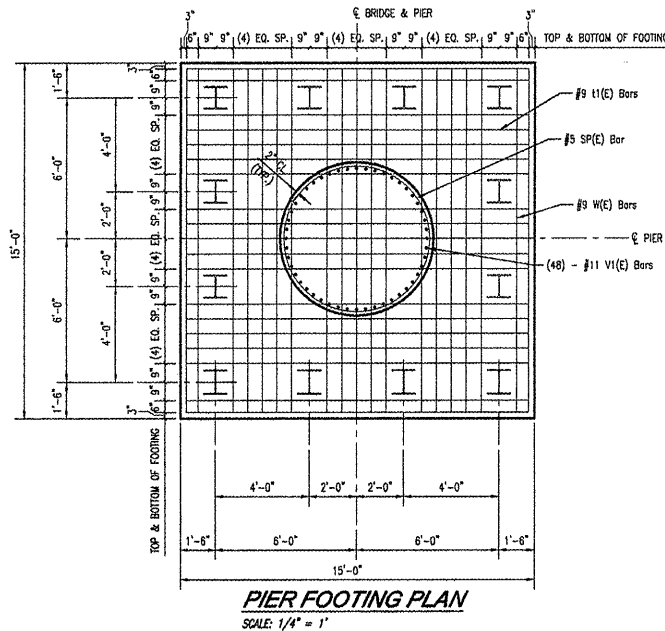


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
GRCDT	09-00038-00-BT	MASSAC	55	36
Pier				
FEDERAL PROJECT NO. ARA-5045(009)			CONTRACT NO. 99417	



**BILL OF MATERIAL FOR ONE PIER**

Bar	No.	Size	Length	Shape
P1(E)	10	#9	17'-2"	—
P2(E)	6	#5	14'-8"	—
P3(E)	2	#5	13'-0"	—
P4(E)	2	#5	9'-9"	—
P5(E)	10	#9	15'-6"	—
S1(E)	4	#4	17'-5"	□
S2(E)	4	#4	16'-4"	□
S3(E)	4	#4	15'-5"	□
S4(E)	4	#4	14'-5"	□
S5(E)	4	#4	13'-6"	□
SP(E)**	1	#5	1901'-10"	SPIRAL
I1(E)	38	#9	14'-6"	—
I2(E)	48	#7	5'-0"	▽
V1(E)	48	#11	23'-2"	—
W(E)	38	#9	14'-6"	—
Structure Excavation		65.6	Cu. Yd.	
Concrete Structures		60.7	Cu. Yd.	
Reinforcement Bars		13,473	Lb.	
Epoxy Coated				
Furnishing Steel Piles		744	FL	
HP12x53				
Driving Piles		744	FL	



**DESIGN STRESSES**

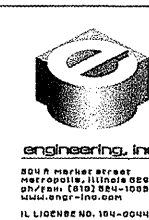
$f_c = 3,500$  psi  
 $f_y = 60,000$  psi (Steel Reinforcement)

**PILE DATA**

Type ..... HP 12x53 (Grade 50)  
No. Required ..... 12 (for 1 Pier)  
Allowable Resistance Available ..... 53 kips per pile  
Nominal Required Bearing ..... 280 kips per pile  
Estimated Length ..... 62 feet per pile

**NOTES**

- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Reinforcement shall be spaced in cap to miss anchor bolts.
- Longitudinal steel reinforcement in column shall NOT be lap-spliced.
- Spiral Reinforcement SP(E) shall only be weld-spliced.



**GEORGE ROGERS CLARK DISCOVERY TRAIL  
OVER FOURMILE CREEK  
SECTION 09-00038-00-BT  
MASSAC COUNTY  
STATION 1163+57.50  
STRUCTURE NUMBER 064-9918**



\*\* Length of Spiral does not include welded splice length. Length of welded splices shall be considered incidental to bar SP(E).