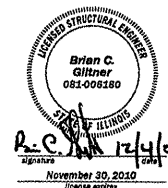


BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	32	#4	5'-7"	—
h1	10	#4	17'-6"	—
p	10	#7	17'-2"	—
s	16	#4	12'-8"	□
u	8	#6	11'-7"	□
v1	20	#4	7'-4"	—
v2	36	#4	5'-6"	—
Concrete Structures *				12.5 Cu. Yd.
Reinforcement Bars				1,091 Lb.
Structure Excavation				46.9 Cu. Yd.
Furnishing Steel Piles, HP 12x74				200 FL.
Driving Piles				200 FL.
Controlled Low Strength Mat'l				14.8 Cu. Yd.

* Concrete for Pile Encasement is included in this quantity



DESIGN STRESSES

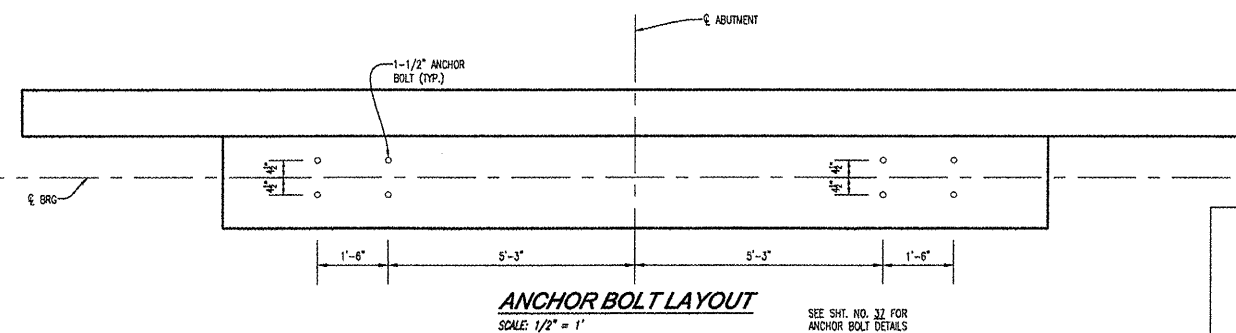
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Steel Reinforcement)

PILE DATA

Type HP 12x74 (Grade 50)
No. Required 10 (for 2 Abutments)
Allowable Resistance Available 54 kips per pile (West Abutment)
..... 84 kips per pile (East Abutment)
Nominal Required Bearing 162 kips per pile (West Abutment)
..... 252 kips per pile (East Abutment)
Estimated Length 40 feet per pile

NOTES

1. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
2. Reinforcement shall be spaced in cap to miss anchor bolts.



SEE SHI. NO. 32 FOR ANCHOR BOLT DETAILS



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