



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	17	#5	21'-3"	—
h2(E)	54	#5	8'-3"	—
h3(E)	30	#5	7'-9"	—
p2(E)	14	#8	21'-3"	—
p3(E)	8	#7	18'-4"	—
p4(E)	8	#6	8'-5"	—
s4(E)	48	#6	13'-8"	□
s5(E)	8	#6	8'-6"	□
s6(E)	8	#6	9'-6"	□
s7(E)	24	#5	6'-6"	□
s8(E)	30	#5	6'-8"	□
sp(E)	4	#4	8'-2"	⋈
sp3	1	#4	18'-6"	⋈
sp5	1	#4	19'-6"	⋈
sp6	1	#4	27'-6"	⋈
sp7	1	#4	21'-6"	⋈
u1(E)	9	#5	10'-3"	U
v4(E)	52	#8	18'-3"	—
v5(E)	48	#5	7'-11"	—
v6(E)	48	#5	7'-3"	—
v9	13	#9	18'-6"	—
v11	13	#9	19'-6"	—
v12	13	#9	27'-6"	—
v13	13	#9	21'-6"	—

Concrete Structures	Cu. Yd.	53.5
Reinforcement Bars, Epoxy Coated	Pound	7,750
Reinforcement Bars	Pound	4,700
Drilled Shaft in Soil	Cu. Yd.	9.4
Drilled Shaft in Rock	Cu. Yd.	6.5

Cast steps monolithically with cap. Space cap reinforcement to miss anchor bolts. Minimum lap for spirals = 2'-7"

** Length is height of spiral.

Construction Sequence for Web Wall:

1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required. Web wall excavation is included with Concrete Structures.
2. Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
3. If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
4. Construct Columns.
5. Construct upper web walls.

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

Note:
If a portion of the drilled shaft web walls is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

SHAFT REINFORCEMENT***

	sp	v
Column 1	sp3	v9
Column 2	sp5	v11
Column 3	sp6	v12
Column 4	sp7	v13

MIN. BAR LAP
#5 bar = 2'-6"
#6 bar = 3'-0"