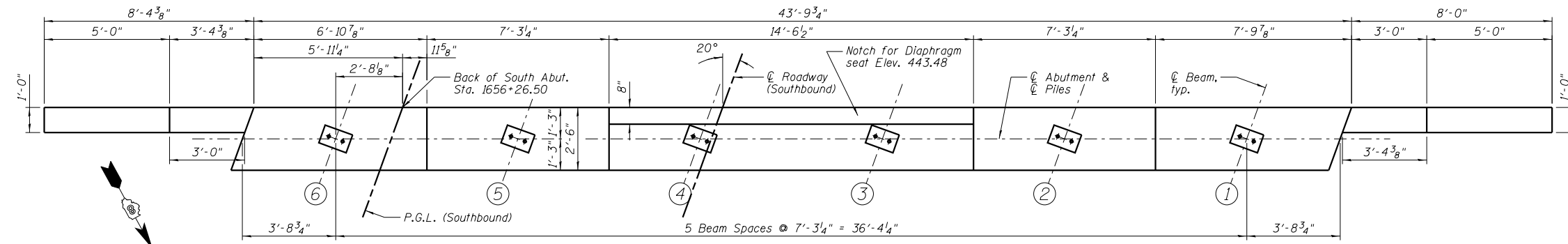
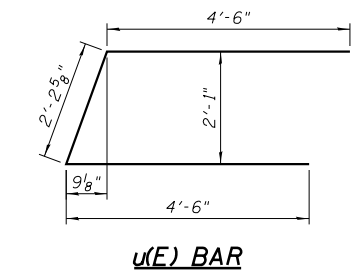
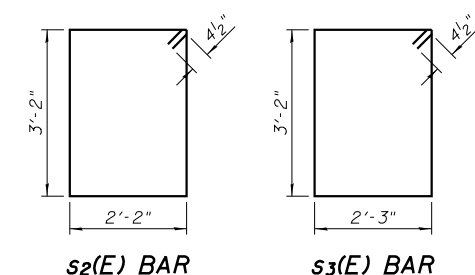
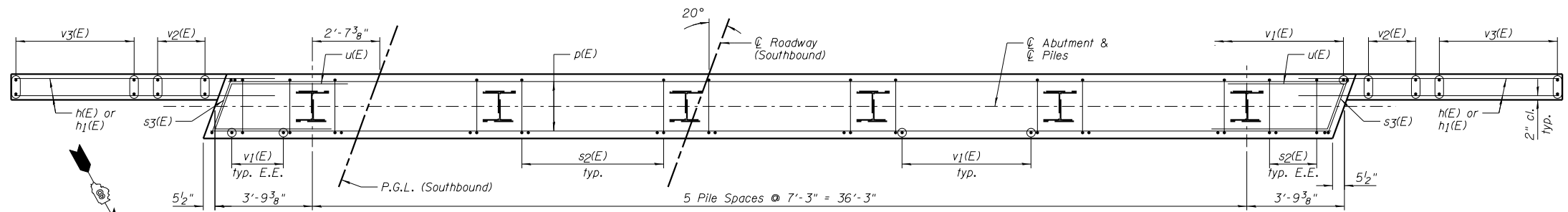


**SOUTH ABUTMENT
BILL OF MATERIAL**

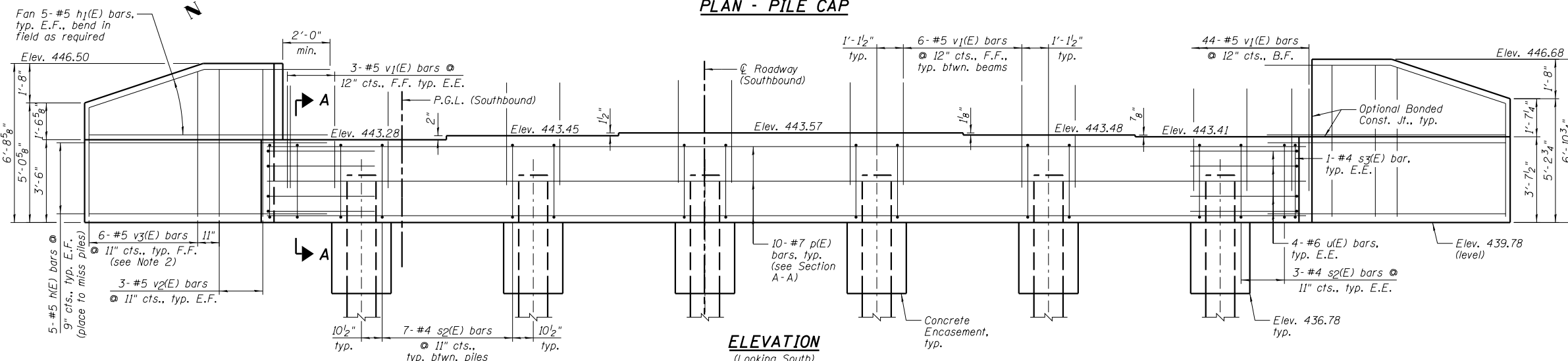
Bar	No.	Size	Length	Shape
h(E)	20	#5	10'-2"	—
h1(E)	20	#5	10'-8"	—
p(E)	10	#7	43'-6"	—
sp2(E)	41	#4	11'-5"	□
sp3(E)	2	#4	11'-7"	□
u(E)	8	#6	11'-3"	—
v1(E)	78	#5	4'-4"	—
v2(E)	12	#5	6'-5"	—
v3(E)	12	#5	11'-1"	—
Item	Unit	Quantity		
Porous Granular Embankment, Special	Cu. Yd.	61		
Structure Excavation	Cu. Yd.	79		
Concrete Structures	Cu. Yd.	18.7		
Concrete Encasement	Cu. Yd.	3.3		
Reinforcement Bars, Epoxy Coated	Pound	2,360		
Furnishing Steel Piles HP14x117	Foot	525		
Driving Piles	Foot	525		
Test Pile Steel HP14x117	Each	1		
Geocomposite Wall Drain	Sq. Yd.	35		
Pipe Underdrains for Structures 4"	Foot	97		



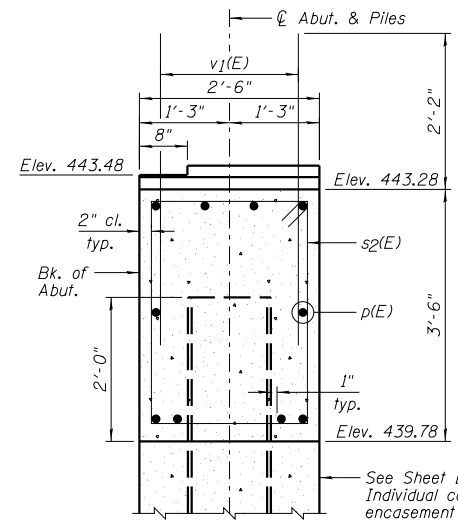
TOP VIEW ABUTMENT (SHOWING BEARING SEAT)



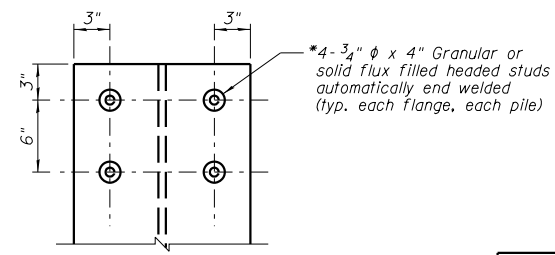
PLAN - PILE CAP



ELEVATION (Looking South)



SECTION A-A



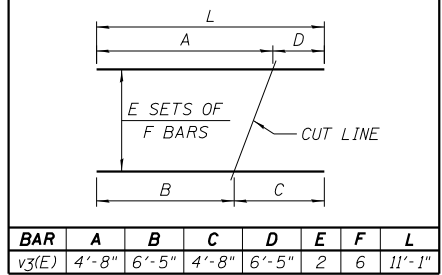
SEISMIC PILE DETAIL

*Typical each flange, each pile. Cost included with Furnishing Piles.

PILE DATA:

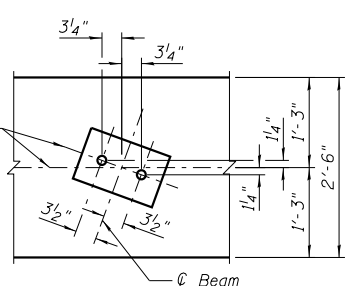
Pile Type and Size	Steel - HP14x117
Nominal Required Bearing	456 kips
Factored Resistance Available	251 kips
Estimated Pile Length	105 Feet
Number of Production Piles	5
Number of Test Piles	1

BAR CUTTING DIAGRAM



NOTES:

- 1.) Pour steps monolithically with cap.
- 2.) Order v3(E) bars full length. Cut according to Bar Cutting Diagram. Use remainder of bars in opposite face of wingwall.
- 3.) Bend or cut h(E) bars to miss piles.
- 4.) E.E. denotes Each End, F.F. denotes Front Face, B.F. denotes Back Face and E.F. denotes Each Face.



TYPICAL ANCHOR BOLT PLACEMENT DETAIL