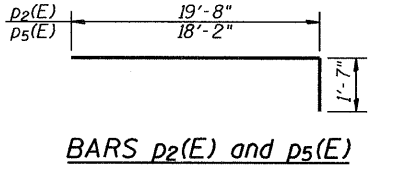
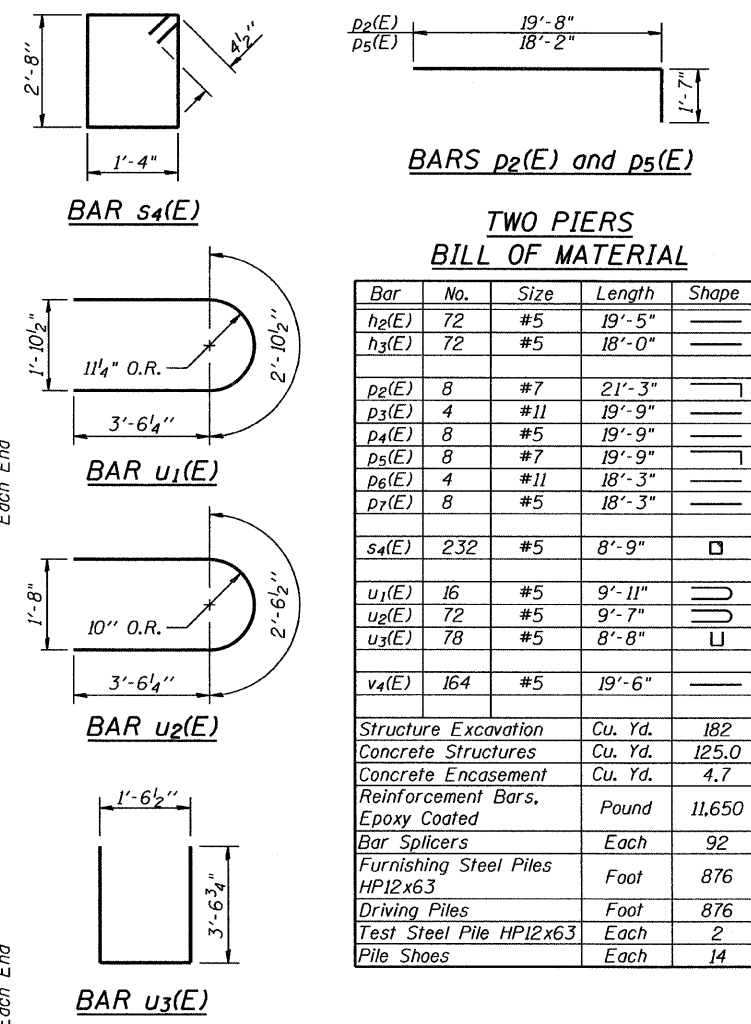
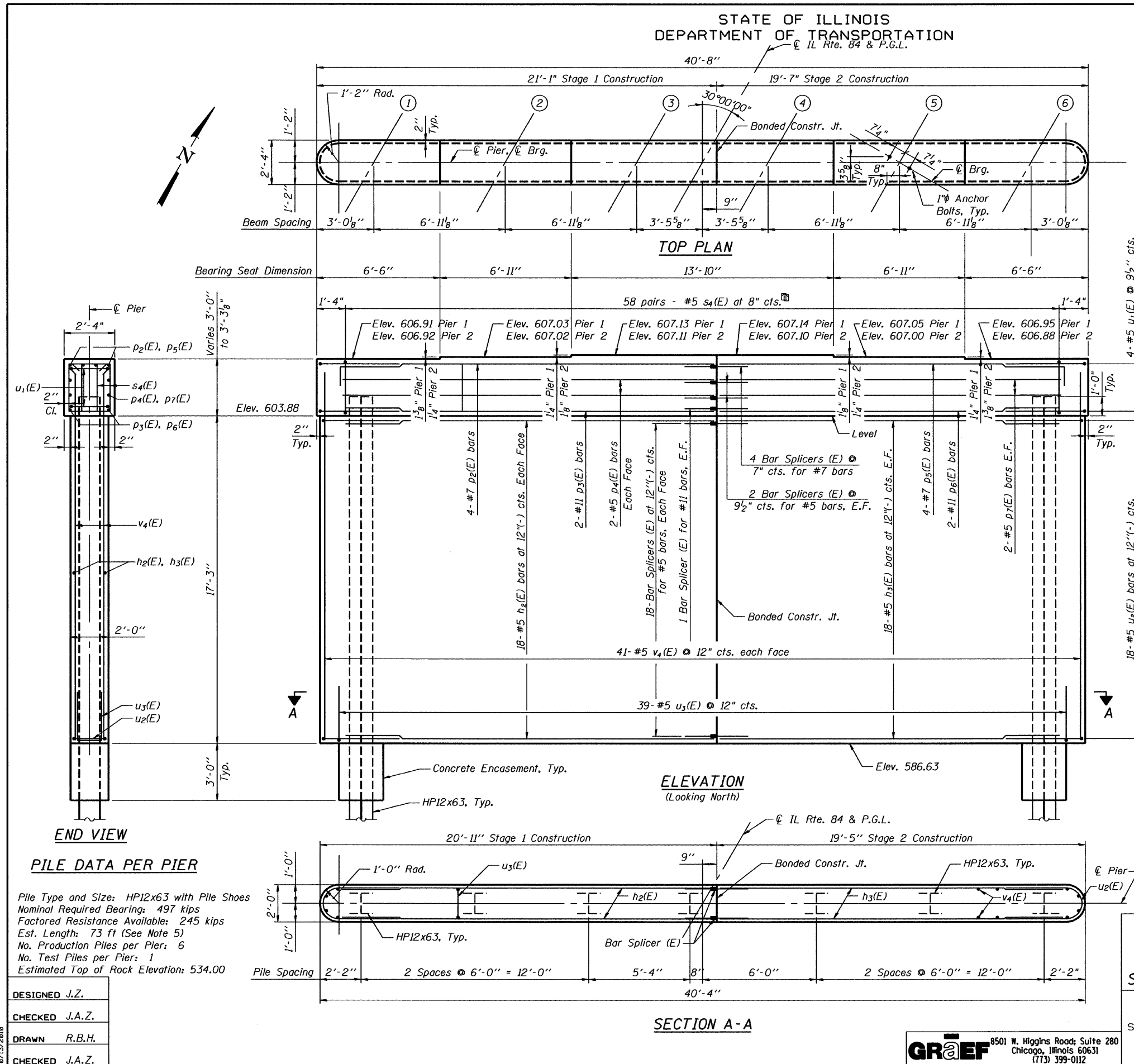


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



**TWO PIERS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h2(E)	72	#5	19'-5"	—
h3(E)	72	#5	18'-0"	—
p2(E)	8	#7	21'-3"	—
p3(E)	4	#11	19'-9"	—
p4(E)	8	#5	19'-9"	—
p5(E)	8	#7	19'-9"	—
p6(E)	4	#11	18'-3"	—
p7(E)	8	#5	18'-3"	—
s4(E)	232	#5	8'-9"	□
u1(E)	16	#5	9'-11"	U
u2(E)	72	#5	9'-7"	U
u3(E)	78	#5	8'-8"	U
v4(E)	164	#5	19'-6"	—
Structure Excavation		Cu. Yd.	182	
Concrete Structures		Cu. Yd.	125.0	
Concrete Encasement		Cu. Yd.	4.7	
Reinforcement Bars, Epoxy Coated		Pound	11,650	
Bar Splicers		Each	92	
Furnishing Steel Piles HPI2x63		Foot	876	
Driving Piles		Foot	876	
Test Steel Pile HPI2x63		Each	2	
Pile Shoes		Each	14	

NOTES

- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- For details of piles, see sheet SA19 of 25.
- If a portion of the pier wall or concrete encasement 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.
- Estimated pile lengths have been increased by 2' for penetration into rock.
- Underwater Structure Excavation Protection - Location 1 is at Pier 1. Underwater Structure Excavation Protection - Location 2 is at Pier 2.
- Cover from face of concrete to face of reinforcement bars is 2" unless shown otherwise.
- E.F. denotes each face.

PILE DATA PER PIER

Pile Type and Size: HPI2x63 with Pile Shoes
Nominal Required Bearing: 497 kips
Factored Resistance Available: 245 kips
Est. Length: 73 ft (See Note 5)
No. Production Piles per Pier: 6
No. Test Piles per Pier: 1
Estimated Top of Rock Elevation: 534.00

DESIGNED J.Z.
CHECKED J.A.Z.
DRAWN R.B.H.
CHECKED J.A.Z.

PIERS					
Illinois Rte. 84 Over Apple River Tributary					
STATION 165+50.00 STRUCTURE NO. 043-0078					
SHEET NO.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SA18 OF 25 SHEETS	308	104BR-1	JO DAVIESS	126	54
CONTRACT NO. 64B26					
10-15-2010		ILLINOIS FED. AID PROJECT			

GRAEF 8501 W. Higgins Road, Suite 280
Chicago, Illinois 60631
(773) 399-0112

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 10/12/2010