

ROUTE NO.	SECTION	COUNTY	SHEET
F.A.L.	2626.2-R-1	LAKE COUNTY, INDIANA	1207
62/74			679

CONTRACT NO. 62114 INDOT DES. NO. 0100987

**PIERS 1 AND 2 - PHASE 2  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h20(E)	16	#15	15.12	—
h21(E)	62	#15	14.22	—
h22(E)	20	#15	5.26	—
h23(E)	10	#15	1.27	—
n20(E)	200	#30	2.80	⌋
n21(E)	14	#20	2.19	⌋
p20(E)	10	#30	14.32	—
p21(E)	14	#30	15.12	—
p22(E)	10	#30	1.38	—
s20(E)	52	#20	5.16	□
s21(E)	52	#20	4.98	□
s22(E)	16	#20	3.24	□
s23(E)	152	#20	8.60	□
s24(E)	152	#20	4.94	□
s25(E)	72	#15	2.28	□
sp20(E)	5	#15	5.75	AAA
sp21(E)	5	#15	6.00	AAA
t20(E)	136	#25	3.90	—
u20(E)	12	#20	3.15	⌋
u21(E)	28	#15	2.85	⌋
v20(E)	100	#30	6.64	—
v21(E)	100	#30	7.03	—
v22(E)	14	#20	3.80	—
w20(E)	28	#15	14.72	—
Test Pile, 356 mm	Each		2	
Excavation, Wet	m <sup>3</sup>		166	
Excavation, Dry	m <sup>3</sup>		455	
Concrete, A, Substructure	m <sup>3</sup>		371.7	
Reinforcing Bars, Epoxy Coated	kg		27,870	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		1,284.0	
Threaded Tie Bar Assembly, Epoxy Coated	Each		116	

Above quantities provided are for the total of Pier 1 and Pier 2 in Phase 2.

**PIERS 1 AND 2 - PHASE 3  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h24(E)	50	#15	5.26	—
h24(E)	74	#15	15.88	—
h25(E)	10	#15	2.20	—
h26(E)	24	#15	15.85	—
h27(E)	124	#15	15.40	—
h28(E)	8	#15	11.73	—
h29(E)	10	#15	2.03	—
h30(E)	10	#15	2.95	—
n20(E)	600	#30	2.80	⌋
n21(E)	14	#20	2.19	⌋
p22(E)	10	#30	1.38	—
p23(E)	24	#30	15.88	—
p24(E)	20	#30	16.03	—
p25(E)	22	#30	10.10	—
p26(E)	14	#30	13.39	—
p27(E)	14	#30	11.26	—
s21(E)	41	#20	4.98	□
s23(E)	500	#20	8.60	□
s24(E)	500	#20	4.94	□
s25(E)	208	#15	2.28	□
s26(E)	85	#20	4.40	□
s27(E)	85	#20	4.30	□
s28(E)	108	#20	4.08	□
s29(E)	42	#20	4.54	□
s30(E)	42	#20	4.48	□
s31(E)	41	#20	5.10	□
s32(E)	28	#20	2.42	□
sp20(E)	15	#15	5.75	AAA
sp21(E)	15	#15	6.00	AAA
t30(E)	428	#25	3.90	—
u20(E)	8	#20	3.15	⌋
u21(E)	28	#15	2.85	⌋
u22(E)	24	#20	2.58	⌋
u23(E)	56	#15	2.28	⌋
v22(E)	14	#20	3.80	—
v23(E)	300	#30	6.60	—
v24(E)	300	#30	6.90	—
w21(E)	28	#15	15.88	—
w22(E)	56	#15	15.67	—
Excavation, Wet	m <sup>3</sup>		498	
Excavation, Dry	m <sup>3</sup>		1,362	
Concrete, A, Substructure	m <sup>3</sup>		1,128.0	
Reinforcing Bars, Epoxy Coated	kg		86,590	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		4,259.0	

Above quantities provided are for the total of Pier 1 and Pier 2 in Phase 3.

**PIER 3 - PHASE 2  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h30(E)	4	#15	13.07	—
h31(E)	25	#15	12.17	—
h32(E)	20	#15	4.67	—
h33(E)	10	#15	1.00	—
n30(E)	80	#30	2.80	⌋
n31(E)	7	#20	2.19	⌋
p30(E)	5	#30	12.27	—
p31(E)	6	#30	13.07	—
p32(E)	5	#30	1.38	—
s30(E)	57	#20	4.90	□
s31(E)	8	#20	3.10	□
s32(E)	77	#15	2.33	□
s33(E)	66	#20	7.00	□
s34(E)	66	#20	4.94	□
sp30(E)	4	#15	6.85	AAA
t30(E)	51	#25	3.70	—
u30(E)	6	#20	3.15	⌋
u31(E)	11	#15	2.85	⌋
u32(E)	3	#15	1.09	⌋
u33(E)	3	#15	0.91	⌋
v30(E)	80	#30	7.74	—
v31(E)	7	#20	3.00	—
w30(E)	14	#15	12.67	—
Test Pile, 356 mm	Each		1	
Excavation, Foundation, Unclassified	m <sup>3</sup>		217	
Concrete, A, Substructure	m <sup>3</sup>		149.8	
Reinforcing Bars, Epoxy Coated	kg		11,950	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		389.0	
Threaded Tie Bar Assembly, Epoxy Coated	Each		56	
Surface Seal (Estimated)	m <sup>2</sup>		15	

Above quantities provided are for the total of Pier 3 in Phase 2.

**PIER 3 - PHASE 3  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h34(E)	37	#15	13.83	—
h35(E)	6	#15	6.68	—
h36(E)	6	#15	1.91	—
h37(E)	50	#15	13.35	—
h38(E)	12	#15	13.80	—
h39(E)	7	#15	6.27	—
h40(E)	30	#15	6.68	—
h41(E)	10	#15	3.77	—
n30(E)	240	#30	2.80	⌋
n31(E)	7	#20	2.19	⌋
p32(E)	5	#30	1.38	—
p33(E)	11	#30	13.83	—
p34(E)	10	#30	13.98	—
p35(E)	16	#30	14.40	—
s32(E)	241	#15	2.33	□
s33(E)	218	#20	7.00	□
s34(E)	218	#20	4.94	□
s35(E)	64	#20	4.24	□
s36(E)	120	#20	4.08	□
s37(E)	8	#20	2.42	□
sp30(E)	12	#15	6.85	AAA
t30(E)	162	#25	3.70	—
u30(E)	4	#20	3.15	⌋
u31(E)	11	#15	2.85	⌋
u34(E)	12	#20	2.58	⌋
u35(E)	5	#15	1.73	⌋
u36(E)	22	#15	2.28	⌋
u37(E)	3	#15	1.75	⌋
v30(E)	240	#30	7.74	—
v31(E)	7	#20	3.00	—
w31(E)	14	#15	13.83	—
w32(E)	28	#15	13.62	—
Excavation, Foundation, Unclassified	m <sup>3</sup>		667	
Concrete, A, Substructure	m <sup>3</sup>		458.9	
Reinforcing Bars, Epoxy Coated	kg		37,060	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		1,286.5	
Surface Seal (Estimated)	m <sup>2</sup>		45	

Above quantities provided are for the total of Pier 3 in Phase 3.

**PIERS 4 AND 5 - PHASE 2  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h40(E)	16	#15	13.07	—
h41(E)	68	#15	12.17	—
h42(E)	20	#15	4.67	—
h43(E)	10	#15	1.00	—
n40(E)	160	#30	2.80	⌋
n41(E)	14	#20	2.19	⌋
p40(E)	8	#30	12.27	—
p41(E)	14	#30	13.07	—
p42(E)	8	#30	1.38	—
s40(E)	48	#20	4.72	□
s41(E)	48	#20	4.66	□
s42(E)	16	#20	3.02	□
s43(E)	68	#20	13.20	□
s44(E)	136	#20	4.94	□
s45(E)	64	#15	2.28	□
s46(E)	68	#20	5.40	□
sp40(E)	4	#15	4.27	AAA
sp41(E)	4	#15	4.08	AAA
t40(E)	92	#25	3.70	—
u40(E)	12	#20	3.15	⌋
u41(E)	31	#15	2.85	⌋
v40(E)	80	#30	5.16	—
v41(E)	80	#30	4.97	—
v42(E)	7	#20	6.10	—
v43(E)	7	#20	2.20	—
w40(E)	28	#15	12.67	—
Test Pile, 356 mm	Each		2	
Excavation, Foundation, Unclassified	m <sup>3</sup>		519	
Concrete, A, Substructure	m <sup>3</sup>		304.4	
Reinforcing Bars, Epoxy Coated	kg		20,750	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		744.0	
Threaded Tie Bar Assembly, Epoxy Coated	Each		120	

Above quantities provided are for the total of Pier 4 and 5 in Phase 2.

**PIERS 4 AND 5 - PHASE 3  
BILL OF MATERIAL**

Bar	No.	Size	Length (m)	Shape
h42(E)	40	#15	4.67	—
h44(E)	80	#15	13.83	—
h45(E)	8	#15	10.26	—
h46(E)	24	#15	13.80	—
h47(E)	140	#15	13.35	—
h48(E)	10	#15	3.77	—
n40(E)	480	#30	2.80	⌋
n41(E)	14	#20	2.19	⌋
p42(E)	8	#30	1.38	—
p43(E)	22	#30	13.83	—
p44(E)	16	#30	13.98	—
p45(E)	14	#30	8.94	—
p46(E)	14	#30	11.91	—
p47(E)	14	#30	9.80	—
s43(E)	224	#20	13.20	□
s44(E)	448	#20	4.94	□
s45(E)	146	#15	2.28	□
s46(E)	224	#20	5.40	□
s47(E)	156	#20	4.08	□
s48(E)	80	#20	4.44	□
s49(E)	78	#20	4.88	□
s50(E)	16	#20	2.42	□
sp40(E)	12	#15	4.27	AAA
sp41(E)	12	#15	4.08	AAA
t40(E)	294	#25	3.70	—
u40(E)	8	#20	3.15	⌋
u41(E)	31	#15	2.85	⌋
u42(E)	24	#20	2.58	⌋
u43(E)	62	#15	2.28	⌋
v40(E)	240	#30	5.16	—
v41(E)	240	#30	4.97	—
v42(E)	7	#20	6.10	—
v43(E)	7	#20	2.20	—
w40(E)	28	#15	12.67	—
Excavation, Foundation, Unclassified	m <sup>3</sup>		1,598	
Concrete, A, Substructure	m <sup>3</sup>		945.1	
Reinforcing Bars, Epoxy Coated	kg		63,880	
Pile, Concrete, Steel Shell Encased, 6.35mm, 356 mm	m		2,488.5	

Above quantities provided are for the total of Pier 4 and 5 in Phase 3.

**BAR DIMENSIONS**

Bar	A	B
s20(E)	1.44m	—
s21(E)	1.35m	—
s22(E)	1.12m	1.00m
s23(E)	3.80m	1.00m
s24(E)	1.97m	1.00m
s25(E)	640	1.00m
s26(E)	1.06m	—
s27(E)	1.01m	—
s28(E)	900	—
s29(E)	1.13m	—
s30(E)	1.31m	—
s31(E)	1.05m	1.00m
s32(E)	940	450
s33(E)	3.00m	1.00m
s34(E)	1.97m	1.00m
s35(E)	980	—
s36(E)	900	—
s37(E)	710	1.00m
s40(E)	1.22m	—
s41(E)	1.19m	—
s42(E)	1.01m	1.00m
s43(E)	6.10m	1.00m
s44(E)	1.97m	1.00m
s45(E)	640	1.00m
s46(E)	2.20m	1.00m
s47(E)	900	—
s48(E)	1.08m	—
s49(E)	1.30m	—
s50(E)	1.10m	—
s51(E)	1.41m	—
s52(E)	710	1.00m
s53(E)	710	1.00m
u22(E)	790	1.00m
u23(E)	640	1.00m
u34(E)	790	1.00m
u35(E)	640	450
u36(E)	640	1.00m
u42(E)	790	1.00m
u43(E)	640	1.00m

DESIGNED	BHS
CHECKED	KFA
DRAWN	MJB
CHECKED	GSP

