BILL OF MATERIAL

BENT 21

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	53'-0"	2816	S10	2	#5	5	16'-5"	34	V1	36	#11	3	23'-3"	4447
B2	10	#11	STR	49'-10"	2648	S11	2	#5	5	16'-0"	33	V2	36	#11	3	24'-2"	4622
B3	10	#10	STR	40'-4"	1736	S12	2	#5	5	15'-6"	32	V3	72	#11	9	19'-7"	7491
B4	6	#10	STR	42'-4"	1093	S13	2	#5	5	15'-1"	31						
B5	10	#10	2	10'-6"	452	S14	2	#5	5	19'-7"	41						
B6	10	#10	2	10'-4"	445	S15	2	#5	5	19'-2"	40	EPOXY COATED REINFORCING STEEL				LBS.	164,984
B7	14	#7	STR	49'-10"	1426	S16	2	#5	5	18'-9"	39						
B8	2	#7	STR	47'-8"	195	S17	2	#5	5	18'-5"	38						
B9	2	#7	STR	45'-0"	184	S18	2	#5	5	18'-0"	38	SP-1	8	*	8	2438'-9"	20349
B10	40	#4	STR	6'-3"	167	S19	2	#5	5	17'-7"	37						
B11	10	#4	STR	5'-2"	35	S20	2	#5	5	17'-3"	36						
B12	24	#4	STR	5'-5"	87	S21	2	#5	5	16'-10"	35	EPOXY COATED SPIRAL DRILLED PIER REINFORCING STEEL				LBS.	20,349
						S22	2	#5	5	16'-5"	34						
D1	42	#10	STR	39'-4"	7109	S23	2	#5	5	16'-1"	34	CLASS "AA" CONCRETE BREAKDOWN					
D2	76	#5	7	10'-4"	819	S24	2	#5	5	15'-8"	33	POUR #2 - FOOTING				C.Y.	179.8
D3	14	#5	5	17'-11"	262	S25	26	#5	5	21'-4"	579	POUR #3 - STRUT				C.Y.	62.7
						S26	168	#5	6	14'-1"	2468	POUR #4 - COLUMNS				C.Y.	33.5
M1	160	#11	3	60'-0"	51005	S27	336	#5	10	4'-6"	1577	POUR #5 - CAP				C.Y.	87.5
M2	160	#11	STR	56'-2"	47746												
						T1	188	#9	STR	19'-4"	12358	CLASS "AA" CONCRETE				C.Y.	363.5
S1	118	#5	4	4'-9"	585	T2	136	#7	STR	19'-4"	5374						
S2	74	#5	5	19'-9"	1524	T3	72	#5	STR	19'-4"	1452	4'-0" "DRILLED PIERS QUANTIES:					
S3	2	#5	5	19'-5"	41	T4	312	#5	7	6'-10"	2224	DRILLED PIER				LIN. FT.	781.9
S4	2	#5	5	18'-11"	39	T5	110	#5	STR	7'-2"	822						
S5	2	#5	5	18'-7"	39							POUR 1 - DRILLED PIER				C.Y.	363.9
S6	2	#5	5	18'-1"	38	U1	50	#4	7	9'-5"	315						
S7	2	#5	5	17'-8"	37	U2	10	#4	7	8'-3"	55	PERMANENT STEEL CASING FOR 4'-0" "DRILLED PIERS				LIN. FT.	269.9
S8	2	#5	5	17'-3"	36	U3	6	#4	7	8'-2"	33						
S9	2	#5	5	16'-10"	35	U4	6	#4	7	8'-4"	33	CSL TUBES				LIN. FT.	3175.7

BENT 22

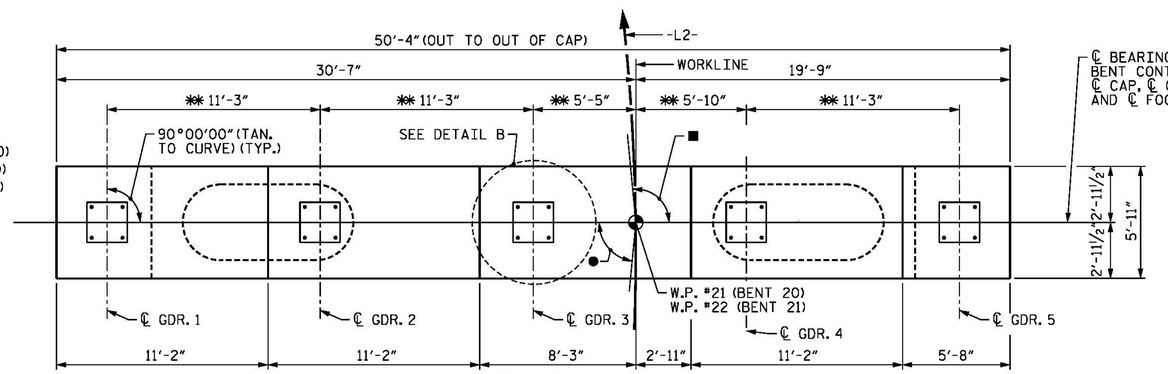
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	53'-0"	2816	S10	2	#5	5	16'-5"	34	V1	36	#11	3	18'-7"	3554
B2	10	#11	STR	49'-10"	2648	S11	2	#5	5	16'-0"	33	V2	36	#11	3	19'-5"	3714
B3	10	#10	STR	40'-4"	1736	S12	2	#5	5	15'-6"	32	V3	72	#11	9	19'-7"	7491
B4	6	#10	STR	42'-4"	1093	S13	2	#5	5	15'-1"	31						
B5	10	#10	2	10'-6"	452	S14	2	#5	5	19'-7"	41						
B6	10	#10	2	10'-4"	445	S15	2	#5	5	19'-2"	40	EPOXY COATED REINFORCING STEEL				LBS.	164,629
B7	14	#7	STR	49'-10"	1426	S16	2	#5	5	18'-9"	39						
B8	2	#7	STR	47'-8"	195	S17	2	#5	5	18'-5"	38						
B9	2	#7	STR	45'-0"	184	S18	2	#5	5	18'-0"	38	SP-1	8	*	8	2513'-1"	20969
B10	40	#4	STR	6'-3"	167	S19	2	#5	5	17'-7"	37						
B11	10	#4	STR	5'-2"	35	S20	2	#5	5	17'-3"	36						
B12	24	#4	STR	5'-5"	87	S21	2	#5	5	16'-10"	35	EPOXY COATED SPIRAL DRILLED PIER REINFORCING STEEL				LBS.	20,969
						S22	2	#5	5	16'-5"	34						
D1	42	#10	STR	39'-4"	7109	S23	2	#5	5	16'-1"	34	CLASS "AA" CONCRETE BREAKDOWN					
D2	76	#5	7	10'-4"	819	S24	2	#5	5	15'-8"	33	POUR #2 - FOOTING				C.Y.	179.8
D3	14	#5	5	17'-11"	262	S25	26	#5	5	21'-4"	579	POUR #3 - STRUT				C.Y.	62.7
						S26	120	#5	6	14'-1"	1763	POUR #4 - COLUMNS				C.Y.	22.0
M1	160	#11	3	60'-0"	51005	S27	240	#5	10	4'-6"	1126	POUR #5 - CAP				C.Y.	88.5
M2	160	#11	STR	59'-2"	50296												
						T1	188	#9	STR	19'-4"	12358	CLASS "AA" CONCRETE				C.Y.	353.0
S1	118	#5	4	4'-9"	585	T2	136	#7	STR	19'-4"	5374						
S2	74	#5	5	19'-9"	1524	T3	72	#5	STR	19'-4"	1452	4'-0" "DRILLED PIERS QUANTIES:					
S3	2	#5	5	19'-5"	41	T4	312	#5	7	6'-10"	2224	DRILLED PIER				LIN. FT.	805.9
S4	2	#5	5	18'-11"	39	T5	110	#5	STR	7'-2"	822						
S5	2	#5	5	18'-7"	39							POUR 1 - DRILLED PIER				C.Y.	375.1
S6	2	#5	5	18'-1"	38	U2	10	#4	7	8'-3"	55						
S7	2	#5	5	17'-8"	37	U3	6	#4	7	8'-2"	33	PERMANENT STEEL CASING FOR 4'-0" "DRILLED PIERS				LIN. FT.	157.9
S8	2	#5	5	17'-3"	36	U4	6	#4	7	8'-4"	33						
S9	2	#5	5	16'-10"	35	U5	100	#4	7	5'-6"	367	CSL TUBES				LIN. FT.	3271.7

NOTES:

FOR NOTES, SEE SHEET 1 OF 5.

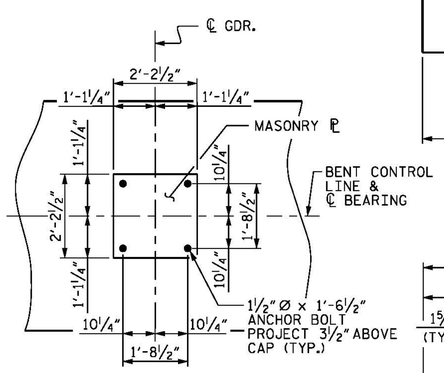
FOR BAR TYPES, SEE SHEET 4 OF 5.

■ 93°38'19" TO SHORT CHORD (BENT 20 AHEAD)
■ 92°53'09" TO SHORT CHORD (BENT 21 AHEAD)
● 87°06'52" TO SHORT CHORD (BENT 20 BACK)
● 86°21'42" TO SHORT CHORD (BENT 21 BACK)

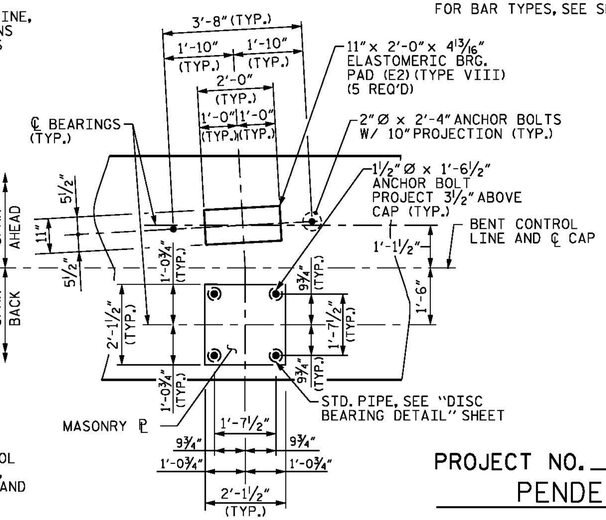


PLAN

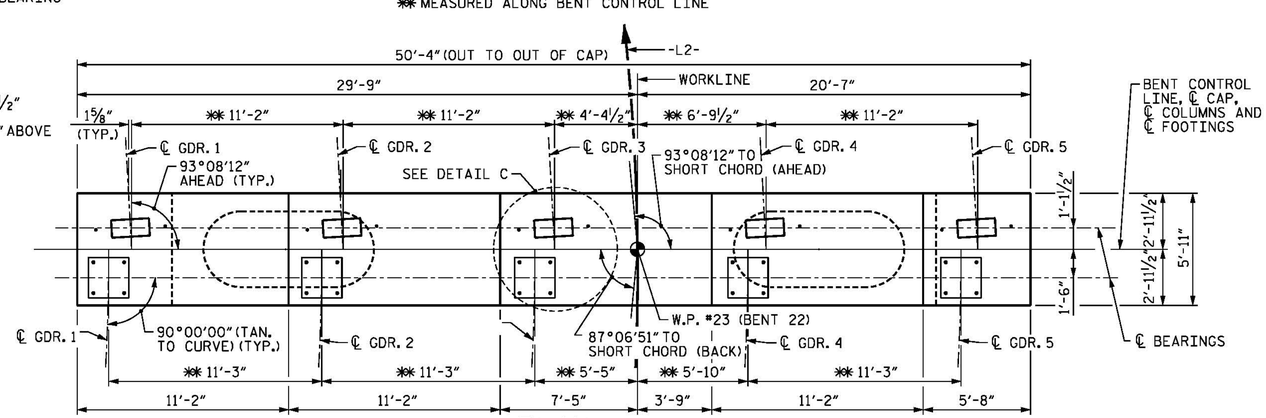
(BENTS 20 AND 21)
** MEASURED ALONG BENT CONTROL LINE



DETAIL B



DETAIL C



PLAN

(BENT 22)
** MEASURED ALONG BENT CONTROL LINE

PROJECT NO. B-4929

PENDER COUNTY

STATION: 38+13.81 -L2-

SHEET 5 OF 5 STEEL ALTERNATE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENTS 19 THROUGH 22 BILL OF MATERIALS

PARSONS BRINCKERHOFF
434 FAYETTEVILLE STREET
SUITE 1500
RALEIGH, NC 27601
LICENSE NO. F-0165

NORTH CAROLINA PROFESSIONAL SEAL 032967 ENGINEER JASON R. DOUGHTY
5/12/16
DocuSigned by: Jason R Doughty
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-278
1			3					TOTAL SHEETS
2			4					278

DESIGNED BY:	J. BORUTA	DATE :	MAR 2016
DRAWN BY:	K. WHITE	DATE :	MAR 2016
CHECKED BY:	J. DOUGHTY	DATE :	APR 2016
DESIGN ENGINEER OF RECORD:	J. DOUGHTY	DATE :	MAY 2016

5/13/2016
401_133_B4929_SMU_TB19_5s.dgn