2010 DECEMBER
1994 BMW 318

ELECTRIC VEHICLE CALCULATIONS
PREPARED BY
ELECTRIC VEHICLES OF AMERICA, INC
(603) 569-2100

VEHICLE DESCRIPTION		**SYSTEM DESIGN**	
INITIAL CURB WEIGHT (LB)	2866	1. MOTOR	WarP 9
FINISHED VEHICLE WEIGHT (LB)	3620	2. BATTERY	US Battery XVC
DRAG COEFFICIENT	0.35	3. 20 HR RATE	155
FRONTAL AREA (SQ FT)	18	75 AMP RATE	77
TIRE SIZE		C FACTOR	0.93
RR RADIAL TIRE	0.01	4. VOLTAGE	144
REV/MILE (HIGH GEAR)	900	5. MOTOR EFF	0.88
		6. DRIVE EFF	0.9

RESULTS OF CALCULATION (BASED ON 60 MPH - 2% GRADE)	**HP REQUIRED 30**		**ESTIMATEI MIN 30**	**RANGE AVG 40**	**(MILES) MAX 57**
SPEED (MPH)	**40**	**50**	**55**	**60**	**65**
DRAG (LBS)	26	40	49	58	68
ROLLING RESISTANCE (RR)	36	36	36	36	36
TRACTIVE FORCE (0% GRADE)	62	76	85	94	104
GRADE FORCE + Tf					
0% GRADE	62	76	85	94	104
1% GRADE	98	113	121	130	140
2% GRADE	134	149	157	167	177
5% GRADE	243	257	266	275	285
WHEEL TORQUE, FT-LBS					
0% GRADE	58	71	79	88	97
1% GRADE	92	105	113	122	131
2% GRADE	125	139	147	156	165
5% GRADE	227	240	248	257	266
REQUIRED MOTOR HP					
0% GRADE	7	11	14	17	20
1% GRADE	12	17	20	23	27
2% GRADE	16	22	26	30	34
5% GRADE	29	38	43	49	55
CURRENT REQUIRED (AMPS)					
0% GRADE	43	67	81	99	118
1% GRADE	69	98	116	136	159
2% GRADE	94	130	151	174	200
5% GRADE	170	225	255	288	323
AVAILABLE MOTORING TIME (MINUTES)					
0% GRADE	138	88	71	57	47
1% GRADE	85	58	48	40	33
2% GRADE	61	42	36	30	25
5% GRADE	31	22	19	16	14
CALCULATED RANGE(MILES)					
0% GRADE	92	73	65	57	51
1% GRADE	57	48	44	40	36
2% GRADE	40	35	33	30	27
5% GRADE	21	18	17	16	15