VOLTAGE: 240/120
AMPS: 200 - MCB
PANEL RMS SYM. AMPS: 10,000

NEW LOAD CENTER: 2 STORY

1-PHASE/3-WIRE
SURFACE
NEMA 3R ENCLOSURE

- DESCRIPTION -	VOLT	WIRE SIZE	BRK SIZE	CCT #	LOAD PER PHASE A	LOAD PER PHASE B	CCT #	BRK SIZE	WIRE SIZE	VOLT	- DESCRIPTION -
WATER HEATER	1	12	20	1	17 / .5		2	20	12	1	* BATHROOM RECPT
SPARE	1	-	20	3		0.0 / 1.5	4	20	12	1	* KITCHEN RECPT
LIGHTS	1	12	20	5	11 / 1.5		6	20	12	1	* KITCHEN RECPT
+ LIGHTS	1	12	20	7		13 / 1.5	8	20	12	1	REFRIGERATOR
RECPT	1	12	20	9	9 / 1.5		10	20	12	1	DISPOSAL
RECPT	1	12	20	11		1.5 / 1.5	12	20	12	1	DISHWASHER
RECPT	1	12	20	13	1.5 / 1.5		14	20	12	1	MICROWAVE/FAN
+ RECPT	1	12	20	15		1.5 / 4.5	16	50	6	2	RANGE
+ LIGHTS	1	12	20	17	9 / 4.5		18				
+ LIGHTS	1	12	20	19		8 / 1.5	20	20	12	1	WASHER
+ RECPT	1	12	20	21	5.0 / 1.5		22	30	10	2	DRYER
RECPT	1	12	20	23		5.0 / 2.0	24				
+ RECPT	1	12	20	25	1.5 / 1.5		26	20	12	1	FIRE PLACE
SPARE	1	-	20	27		0.0 / 0.0	28	20	-	1	SPARE
SPARE	1	-	20	29	0.0 / 0.0		30	20	-	1	SPARE
SPARE	1	-	20	31		0.0 / 0.0	32	20	-	1	SPARE
SPACE	-	-	-	33	0.0 / 0.0		34	-	-	-	SPACE
SPACE	-	-	-	35		0.0 / 0.0	36	60	4	2	AH-1
SPACE	-	-	-	37	0.0 / 0.0		38				
SPACE	-	-	-	39		0.0 / 0.0	40	60	4	2	HP-1
SPACE	-	-	-	41	0.0 / 0.0		42				
					31.5	28.5					

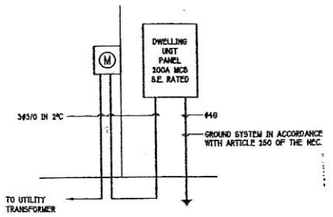
TOTAL CONNECTED KVA: 60.8
DEMAND KVA: 37.8
DEMAND AMPS: 157.8

* GFI CIRCUIT BREAKER
+ ARC FAULT CIRCUIT BREAKER

DWELLING UNIT DEMAND CALCULATION (OPTIONAL METHOD) NEC SECTION 220.30

UNIT TYPE : 2 STORY
SYSTEM VOLTAGE : 120/240
SERVICE SIZE : 200 AMPS
SQUARE FEET : 2,760

LOAD DESCRIPTION	KVA
LIGHTING & RECEPTACLES (SQUARE FEET X 3 VA)	8.3
SMALL APPLIANCE CIRCUITS (2 CIRCUITS X 1.5 KVA/CIRCUIT)	3.0
CLOTHES DRYER	4.0
CLOTHES WASHER	1.5
RANGE	8.0
DISHWASHER	1.5
WATER HEATER	1.7
MICROWAVE	1.8
DISPOSAL	1.5
REFRIGERATOR	1.5
TOTAL	35.7
FIRST 10 KVA AT 100%	10.0
REMAINDER AT 40%	10.3
AIR HANDLER	10.0
HEAT PUMP	7.6
TOTAL DEMAND	37.9



FAULT CURRENT NOTE:
FAULT CURRENT RATING OF PANEL IS BASED ON A 45kVA 240V-1# TRANSFORMER WITH 2% IMPEDANCE, PROVIDING 8,375AIC AT THE LUGS. IF TRANSFORMER OTHER THAN THIS IS USED, E.C. SHALL CONTACT THE ENGINEER.

1 / E6 TYPICAL 2 STORY POWER RISER
N.T.S.

VOLTAGE: 240/120
AMPS: 200 - MCB
PANEL RMS SYM. AMPS: 10,000

NEW LOAD CENTER: 3 STORY

1-PHASE/3-WIRE
SURFACE
NEMA 3R ENCLOSURE

- DESCRIPTION -	VOLT	WIRE SIZE	BRK SIZE	CCT #	LOAD PER PHASE A	LOAD PER PHASE B	CCT #	BRK SIZE	WIRE SIZE	VOLT	- DESCRIPTION -
WATER HEATER	1	12	20	1	17 / .5		2	20	12	1	* BATHROOM RECPT
SPARE	1	-	20	3		6.0 / 1.5	4	20	12	1	* KITCHEN RECPT
LIGHTS	1	12	20	5	11 / 1.5		6	20	12	1	* KITCHEN RECPT
+ LIGHTS	1	12	20	7		13 / 1.5	8	20	12	1	REFRIGERATOR
RECPT	1	12	20	9	9 / 1.5		10	20	12	1	DISPOSAL
RECPT	1	12	20	11		1.5 / 1.5	12	20	12	1	DISHWASHER
RECPT	1	12	20	13	1.5 / 1.5		14	20	12	1	MICROWAVE/FAN
+ RECPT	1	12	20	15		1.5 / 4.5	16	50	6	2	RANGE
+ LIGHTS	1	12	20	17	9 / 4.5		18				
LIGHTS	1	12	20	19		13 / 1.5	20	20	12	1	WASHER
+ RECPT	1	12	20	21	5.0 / 1.5		22	30	10	2	DRYER
RECPT	1	12	20	23		5.0 / 2.0	24				
+ RECPT	1	12	20	25	1.5 / 1.5		26	20	12	1	FIRE PLACE
LIGHTS	1	12	20	27	9 / 1.5		28	50	10	2	AH-5
RECPT	1	12	20	29	1.5 / 1.5		30				
RECPT	1	12	20	31		1.5 / 1.5	32	20	12	1	HP-3
SPARE	1	-	20	33	0.0 / 1.5		34	60	4	2	AH-1
SPARE	1	-	20	35		0.0 / 1.5	36				
SPARE	1	-	20	37	0.0 / 1.5		38	60	4	2	HP-1
SPARE	1	-	20	39		0.0 / 1.5	40				
					57.1	35.8					

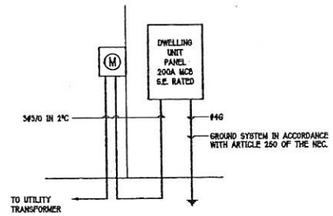
TOTAL CONNECTED KVA: 72.9
DEMAND KVA: 41.8
DEMAND AMPS: 174.2

* GFI CIRCUIT BREAKER
+ ARC FAULT CIRCUIT BREAKER

DWELLING UNIT DEMAND CALCULATION (OPTIONAL METHOD) NEC SECTION 220.30

UNIT TYPE : 3 STORY
SYSTEM VOLTAGE : 120/240
SERVICE SIZE : 200 AMPS
SQUARE FEET : 3,800

LOAD DESCRIPTION	KVA
LIGHTING & RECEPTACLES (SQUARE FEET X 3 VA)	11.7
SMALL APPLIANCE CIRCUITS (2 CIRCUITS X 1.5 KVA/CIRCUIT)	3.0
CLOTHES DRYER	4.0
CLOTHES WASHER	1.5
RANGE	8.0
DISHWASHER	1.5
WATER HEATER	1.7
MICROWAVE	1.8
DISPOSAL	1.5
REFRIGERATOR	1.5
TOTAL	38.1
FIRST 10 KVA AT 100%	10.0
REMAINDER AT 40%	11.6
AIR HANDLER	8.8
HEAT PUMP	10.4
TOTAL DEMAND	41.8



FAULT CURRENT NOTE:
FAULT CURRENT RATING OF PANEL IS BASED ON A 45kVA 240V-1# TRANSFORMER WITH 2% IMPEDANCE, PROVIDING 8,375AIC AT THE LUGS. IF TRANSFORMER OTHER THAN THIS IS USED, E.C. SHALL CONTACT THE ENGINEER.

2 / E6 TYPICAL 3 STORY POWER RISER
N.T.S.

VOLTAGE: 240/120
AMPS: 250 - MCB
PANEL RMS SYM. AMPS: 22,000

NEW LOAD CENTER: 4 STORY

1-PHASE/3-WIRE
SURFACE
NEMA 3R ENCLOSURE

- DESCRIPTION -	VOLT	WIRE SIZE	BRK SIZE	CCT #	LOAD PER PHASE A	LOAD PER PHASE B	CCT #	BRK SIZE	WIRE SIZE	VOLT	- DESCRIPTION -
WATER HEATER	1	12	20	1	17 / .5		2	20	12	1	* BATHROOM RECPT
SPARE	1	-	20	3		6.0 / 1.5	4	20	12	1	* KITCHEN RECPT
+ LIGHTS	1	12	20	5	11 / 1.5		6	20	12	1	* KITCHEN RECPT
LIGHTS	1	12	20	7		13 / 1.5	8	20	12	1	REFRIGERATOR
+ RECPT	1	12	20	9	9 / 1.5		10	20	12	1	DISPOSAL
RECPT	1	12	20	11		1.5 / 1.5	12	20	12	1	DISHWASHER
RECPT	1	12	20	13	1.5 / 1.5		14	20	12	1	MICROWAVE/FAN
RECPT	1	12	20	15		1.5 / 4.5	16	50	6	2	RANGE
+ LIGHTS	1	12	20	17	13 / 4.5		18				
+ LIGHTS	1	12	20	19		10 / 1.5	20	20	12	1	WASHER
+ RECPT	1	12	20	21	5.0 / 1.5		22	30	10	2	DRYER
+ RECPT	1	12	20	23		5.0 / 2.0	24				
+ RECPT	1	12	20	25	1.5 / 1.5		26	20	12	1	FIRE PLACE
LIGHTS	1	12	20	27	9 / 1.5		28	50	10	2	AH-2
RECPT	1	12	20	29		4.5 / 1.5	30				
RECPT	1	12	20	31	1.5 / 1.5		32	45	6	2	HP-2
SPARE	1	-	20	33	0.0 / 1.5		34				
++ HOIST LGTS/RECPT	1	12	20	35		9 / 1.5	36	50	8	2	AH-1
++ ELEV LGTS/CTRL	1	12	20	37	9 / 1.5		38				
++ ELEVATOR	2	12	20	39		5.0 / 2.0	40	60	4	2	HP-1
				41	5.0 / 2.0		42				
					43.6	42.8					

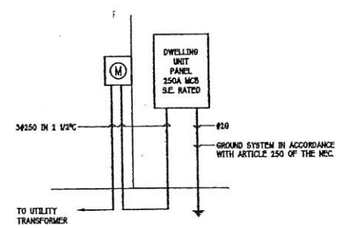
TOTAL CONNECTED KVA: 86.4
DEMAND KVA: 49.8
DEMAND AMPS: 207.8

* GFI CIRCUIT BREAKER
+ ARC FAULT CIRCUIT BREAKER
++ PROVIDE ONLY IF ELEVATOR IS BEING INSTALLED

DWELLING UNIT DEMAND CALCULATION (OPTIONAL METHOD) NEC SECTION 220.30

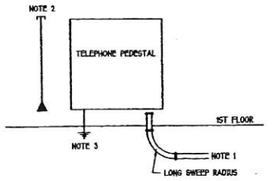
UNIT TYPE : 4 STORY
SYSTEM VOLTAGE : 120/240
SERVICE SIZE : 250 AMPS
SQUARE FEET : 3,535

LOAD DESCRIPTION	KVA
LIGHTING & RECEPTACLES (SQUARE FEET X 3 VA)	10.6
SMALL APPLIANCE CIRCUITS (2 CIRCUITS X 1.5 KVA/CIRCUIT)	3.0
CLOTHES DRYER	4.0
CLOTHES WASHER	1.5
RANGE	8.0
DISHWASHER	1.5
WATER HEATER	1.7
MICROWAVE	1.8
DISPOSAL	1.5
REFRIGERATOR	1.5
TOTAL	38.0
FIRST 10 KVA AT 100%	10.0
REMAINDER AT 40%	11.2
AIR HANDLER	12.1
HEAT PUMP	12.2
ELEVATOR MOTOR	2.8
ELEV MISC EQUIPMENT	1.6
TOTAL DEMAND	49.8



FAULT CURRENT NOTE:
FAULT CURRENT RATING OF PANEL IS BASED ON A 75kVA 240V-1# TRANSFORMER WITH 2% IMPEDANCE, PROVIDING 15,625AIC AT THE LUGS. IF TRANSFORMER OTHER THAN THIS IS USED, E.C. SHALL CONTACT THE ENGINEER.

3 / E6 TYPICAL 4 STORY POWER RISER
N.T.S.



4 / E6 RESIDENTIAL TELEPHONE RISER
N.T.S

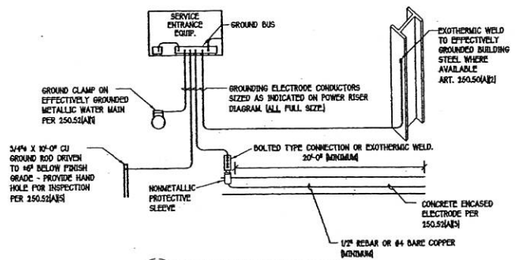
TELEPHONE RISER NOTES

1. 4" CONDUIT PROVIDED UNDER SLAB TO PROPERTY LINE. DETERMINE EXACT TERMINATION POINT IN THE FIELD WITH TELEPHONE COMPANY FIELD REP.
2. PROVIDE 2 PAIR RESIDENTIAL STYLE TELEPHONE CABLE BETWEEN ALL TELEPHONE OUTLETS AND TELEPHONE PEDESTAL.
3. PROVIDE #6 CU GROUND TO SERVICE GROUND BAR WITH ADEQUATE SLACK FOR GROUNDING OF TELEPHONE EQUIPMENT.

5 / E6 RESIDENTIAL CATV RISER
N.T.S

TELEPHONE RISER NOTES

1. 4" CONDUIT PROVIDED UNDER SLAB TO PROPERTY LINE. DETERMINE EXACT TERMINATION POINT IN THE FIELD WITH CABLE COMPANY FIELD REP.
2. PROVIDE CO-AXIAL STYLE TELEVISION CABLE BETWEEN ALL TV OUTLETS AND CATV PEDESTAL.
3. PROVIDE #6 CU GROUND TO SERVICE GROUND BAR WITH ADEQUATE SLACK FOR GROUNDING OF TELEPHONE EQUIPMENT.



6 / E6 SERVICE GROUNDING DETAIL
N.T.S

GROUNDING ELECTRODES SHALL BE PROVIDED IN ACCORDANCE WITH NEC 250-C.

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SOUTH CAROLINA REGISTERED No. 22658 KOSTA J. PAPPAS

SOUTH CAROLINA VRETTOS PAPPAS CONSULTING ENGINEERS, PA No. C02750 CERTIFICATE OF AUTHORIZATION

LAKE SHORE TOWN HOMES

Tega Cay,
South Carolina

DATE ISSUED: 06/09/05
PROJECT NO.: 2530
ISSUED FOR: Permit & Construction:

E6

ELECTRICAL PNL SCHEDULES, RISERS & DETAILS

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