TYPICAL APARTMENT LOAD, 1200SF

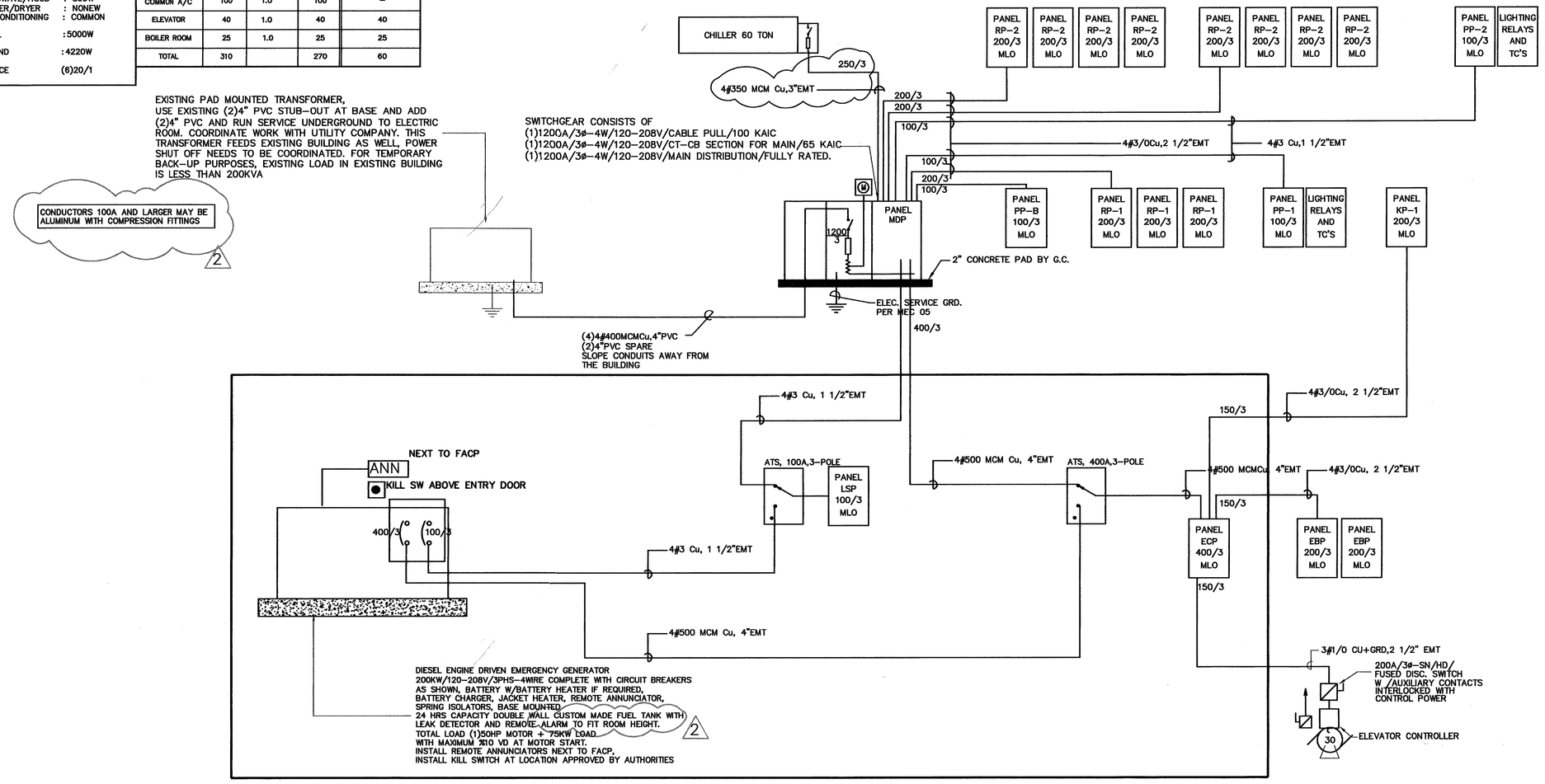
LIGHTING AND POWER: 1200W
KITCHEN : 3000W
RANGE : NONE
DISHWASHER/DISP : NONE
WATER HEATER : COMMON
MICROWAVE/HOOD : 800W
WASHER/DRYER : NONEW
AIR CONDITIONING : COMMON

TOTAL :5000W

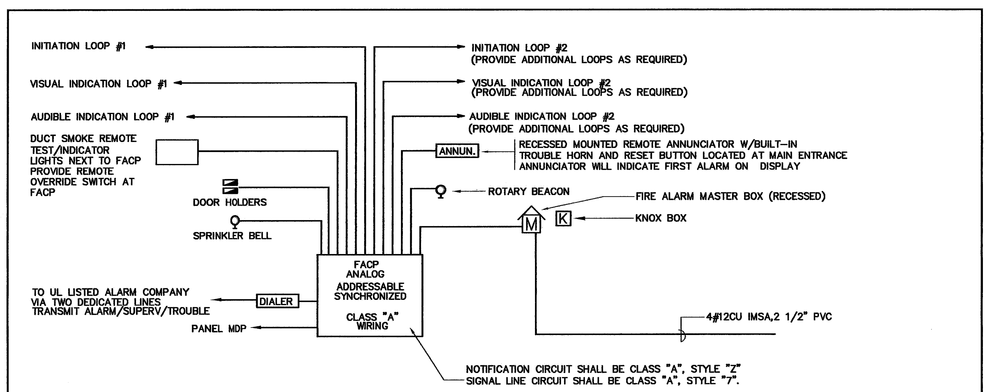
DEMAND :4220W

SERVICE (6)20/1

NORMAL LOAD BREAKDOWN				EM. LOAD
LOAD	KVA	FACTOR	KVA	KVA
RESIDENTIAL	150	0.30	60	–
COMMON/KITCHEN	60	1.0	60	40
COMMON A/C	100	1.0	100	–
ELEVATOR	40	1.0	40	40
BOILER ROOM	25	1.0	25	25
TOTAL	310		270	60



POWER RISER DIAGRAM



NOTES

PROVIDE ADDRESS MODULES FOR ALL FLOW & TAMPER SWITCHES
PROVIDE COMPLETE INTERLOCK WIRING FOR HVAC UNIT SHUT DOWN
PROVIDE COMPLETE INTERLOCK WIRING FOR ELEVATOR RECALL AND SHUNT TRIP SYSTEM
SEE FLOOR PLANS FOR DETECTOR TYPES AND LOCATIONS AND QUANTITIES.
SEE SPRINKLER DRAWINGS FOR FLOW/TAMPER SWITCH LOCATIONS AND QUANTITIES.
CARRY MINIMUM OF (1)FLOW AND (4)TAMPER SWITCH AT SPRINKLER SERVICE LOCATION AND (1) FLOW/TAMPER SWITCH PER FLOOR PER STAIR.
PROVIDE FLOW/TAMPER SWITCH AT TRASH CHUTE
PROVIDE MONITOR MODULE FOR KITCHEN ANSUL SYSTEM
PROVIDE COMPLETE SIGNAL WIRING FOR DOOR RELEASE
PROVIDE BATTERY CALCULATIONS AND ONE LINE WIRING DIAGRAM
PROVIDE TEST CERTIFICATE FROM UL LISTED ALARM COMPANY

SEQUENCE OF OPERATION

UPON ACTIVATION OF ANY FIRE DETECTOR, MANUAL PULL STATION OR FLOW SWITCH
-FIRE ALARM PANEL WILL TRIP AND CALL FIRE DEPARTMENT
-ALL AUDIO DEVICES WILL INITIATE ALARM SIGNAL TO ALERT ALL OCCUPANTS FOR ALARM CONDITION IN THE BUILDING FOR FULL EVACUATION.
-ALL VISUAL DEVICES WILL ACTIVATE, THEY SHALL BE SYNCHRONIZED TYPE.
-AIR HANDLER UNITS THAT HAS DUCT SMOKE DETECTORS WILL SHUT DOWN UPON ACTIVATION OF THE DUCT SMOKE DETECTOR.

UPON ACTIVATION OF ELEVATOR LOBBY SMOKE DETECTOR
-ELEVATOR RECALL SYSTEM WILL OPERATE. NO OTHER DEVICE WILL ACTIVATE RECALL SYSTEM.

SEE ELEVATOR SHUNT TRIP NOTE ON DRAWINGS FOR ELEVATOR POWER SHUT DOWN PROCEDURE FOR MACHINE ROOM FIRE CONDITION.

FIRE ALARM SYSTEM RISER DIAGRAM

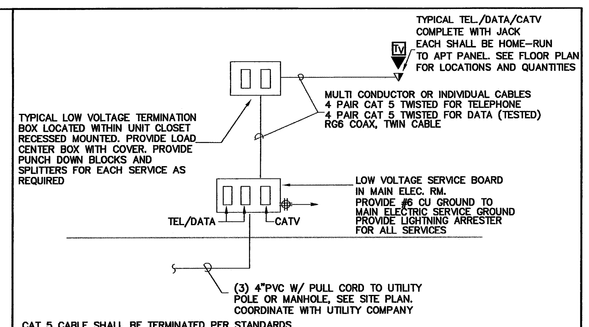
PANEL SCHEDULE

ITEM	VOLT/PHS/W	MLO	MCB	CIRC	F:Flush S:Surf.	P:Plug B:Bolt	BRANCH BREAKERS SPR=SPARE SPC=SPACE
PANEL MDP	208/3/4	1200	–	42	S	B	(1)400/3, (1)250/3, (4)200/3, (5)100/3, (3)100/3SPR
PANEL ECP	208/3/4	400	–	42	S	B	(3)150/3, (2)100/3 SPR
PANEL EBP	208/3/4	200	–	84	S	B	(2)60/3, (2)30/3, (3)20/3, (6)15/3, (34)20/1, (5)20/1SPR
PANEL RP-1	208/3/4	200	–	126	S	B	(70)20/1, (14)20/1AFI, (15)20/1 SPR, (5)20/1 AFI SPR
PANEL RP-2	208/3/4	200	–	336	S	B	(280)20/1, (18)20/1 AFI, (15)20/1 SPR, (5)20/1 AFI SPR
PANEL PP-B	208/3/4	100	–	30	S	B	(5)20/1, (15)20/1 SPR
PANEL PP-1	208/3/4	100	–	30	S	B	(1)50/2, (1)30/2, (10)20/1, (16)20/1 SPR
PANEL PP-2	208/3/4	100	–	30	S	B	(1)30/2, (15)20/1, (13)20/1 SPR
PANEL KP-1	208/3/4	200	–	42	F	B	(3)15/3, (2)20/2, (14)20/1, (3)20/1 SHUNT,(12)20/1 SPR
PANEL LSP	208/3/4	100	–	30	S	B	(15)20/1, (15)20/1 SPR
–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–

SWITCHGEAR AND PANELBOARDS SHALL BE MANUFACTURED BY SQUARE D, SIEMENS OR GENERAL ELECTRIC

MAIN SWITCH AND MAIN DISTRIBUTION PANEL AND ALL CONSECUTIVE PANELS UP TO LAST TWO PANELS IN THE DISTRIBUTION GRID SHALL BE FULLY RATED AND LAST TO PANELS MAY BE SERIES RATED FOR AVAILABLE SHORT CIRCUIT RATINGS.
IF SERIES RATINGS ARE APPLIED SUPPLIER SHALL BE RESPONSIBLE FOR PROVIDING PROPER SERIES RATED EQUIPMENT AS REQUIRED.
AVAILABLE SHORT CIRCUIT CURRENT FOR THE MAIN SERVICE IS 100KA.

FOR ALL RESIDENTIAL LOAD CENTERS, 15A AND 20A CIRCUITS SERVING THE UNIT EXCEPT KITCHENS AND BATHROOMS CIRCUITS SHALL BE ARC FAULT INTERRUPTER TYPE AS REQUIRED PER NEC 210-12(8)



CAT 5 CABLE SHALL BE TERMINATED PER STANDARDS
ALL CABLES SHALL BE IDENTIFIED AT PATCH PANEL

TEL./DATA/CATV RISER DIAGRAM

CATV INTERNAL UNIT WIRING SPECIFICATIONS

COAXIAL CABLE

ALL COAXIAL CABLE WITHIN THE UNIT, INCLUDING THE DROP CABLES BACK TO THE COMMON DISTRIBUTION ROOM SHOULD MEET OR EXCEED THE FOLLOWING REQUIREMENTS:

RG-6 QUAD SHIELD FOR DROP LENGTHS OF UP TO 150 FEET.

RG-11QUAD SHIELD FOR DROP LENGTHS BETWEEN 151 FEET AND 250 FEET. (DROP LENGTHS SHOULD NOT EXCEED 250 FEET.)

INTERNAL UNIT WIRING

EACH UNIT SHALL HAVE IT'S OWN SEPARATE HOME-RUN WIRE. PROVIDE A DUAL CABLE TO BE USED FOR ALL DROP WIRING.

EACH UNIT THAT HAS MORE THAN ONE OUTLET MUST HAVE AN INTERFACE ENCLOSURE. THE INTERFACE ENCLOSURE SHALL BE PLACED IN A CENTRAL LOCATION IN THE UNIT, TYPICALLY THE CLOSET. THE ENCLOSURE SHOULD BE LOCATED AS CLOSE AS POSSIBLE TO THE PHONE INTERFACE WITHIN THE UNIT.

NO OUTLETS SHOULD BE LOOP[-WIRED (NO DAISY CHAIN WIRING.) EVERY OUTLET IN THE UNIT SHOULD BE WIRED BACK TO AN INTERFACE ENCLOSURE WITHIN THE UNIT.

ALL OUTLET LOCATIONS SHOULD HAVE A MINIMUM OF 12 " OF EXTRA CABLE BEHIND THE WALLPLATE.

MUD RINGS SHOULD BE USED AS OPPOSED TO CLOSED BOXES.

THE COAXIAL HOME RUN AND TWISTED PAIR HOME RUN SHALL BE WIRED TO THE SAME DISTRIBUTION CLOSET ON EACH FLOOR.

DO NOT KINK, FORM TIGHT NINETY-DEGREE ANGLES, PIERCE THE OUTER JACKET, DAMAGE OR MISHANDLE THE COAXIAL CABLE IN ANY WAY. USE APPROVED COAXIAL FASTENERS ONLY. METAL STUDS REQUIRE THAT PLASTIC BUSHINGS BE INSTALLED PRIOR TO PULLING THE CABLE.

TELEPHONE SYSTEM

A. FURNISH AND INSTALL A COMPLETE SYSTEM OF CONDUITS AND BACKBOARDS FOR TELEPHONE INSTRUMENTS AS SHOWN ON THE PLANS.

B. TELEPHONE TERMINAL LOCATIONS AS SHOWN ON THE PLANS SHALL BE 30" X 48" X 3/4" PLYWOOD. GROUND CONNECTIONS SHALL BE MADE BY THE TELEPHONE COMPANY. ELECTRICAL CONTRACTOR SHALL PROVIDE PRIMARY ARRESTER WITH FUSE AND 1#6CU GROUNDING WIRE AND GROUND BOLT CONNECTED TO SERVICE GROUND

C. A NYLON FISH WIRE SHALL BE LEFT IN ALL CONDUITS TO FACILITATE PULLING-IN TELEPHONE WIRES. FURNISH AND INSTALL ONE NYLON PULL WIRE FOR PULLING IN TELEPHONE SERVICE IN ALL CONDUITS. SEE SITE PLAN FOR SERVICE ENTRANCE.

D. LOCAL TELEPHONE COMPANY SHALL BE RESPONSIBLE FOR TELEPHONE WIRING FROM THEIR OUTDOOR TERMINATION CABINET TO A NETWORK INTERFACE LOCATED IN THE TELEPHONE ROOM.

E. EACH TELEPHONE OUTLET SHALL BE WIRED TO INTERFACE BOX OR TERMINAL BOARD WITH PLENUM RATED CAT 5, #22/8 TWISTED TELEPHONE WIRE TERMINATED AT PUNCH DOWN PANEL CLEARLY RINGED AND IDENTIFIED.

F. EACH DATA OUTLET SHALL BE WIRED TO DATA INTERFEACE TERMINATION BOARD WITH PLENUM RATED CAT 5 , #20/8 TWISTED DATA WIRE TERMINATED IN TESTED AND CERTIFIED CAT 5 TERMINATION STYLE AT BOTH ENDS AND CLEARLY RINGED AND TAGGED.

G. EACH TEL/DATA COMBINATION OUTLET WILL HAVE (2) 4 PAIR CAT 5 WIRES TERMINATED AT CORESSPONDING TERMINATION BOARDS.

CONSTRUCTION AND TEST REQUIREMENTS

800.50 PREVENTS LAYING TELEPHONE WIRES ON CEILING TILES.

800.50 REQUIRES PRIMARY PROTECTOR FOR MOST UNDERGROUND AND ALL OVERHEAD SERVICES

800.30 (2) REQUIRES FUSED TYPE PRIMARY PROTECTOR AT SERVICE ENTRANCE

800.50 REQUIRES ALL METAL SHIELDS TO BE GROUNDED

800.50 REQUIRES INSULATED GROUNDING CONDUCTOR TO BE MINIMUM #14, NO LONGER THAN 20FT AND CONNECTED TO BUILDING GROUND SYSTEM. WITH MINIMUM #6 BONDING CABLE.

800.50 REQUIRES TYPE CMP FOR PLENUM, CMR FOR RISER APPLICATIONS,

800.51 REQUIRES MINIMUM 2" BETWEEN POWER LINES AND COMMUNICATION LINES, RECOMMENDED PRACTICE 6" FROM BALLASTS AND 8FT FROM LIGHTNING WIRES.
ALSO KEEP DISTANCE FROM HEAT SOURCES.
KEEP MINIMUM 6" FROM 20A/2KW CIRCUITS
KEEP MINIMUM 12" FROM 30A/5KW CIRCUITS
KEEP MINIMUM 24" FROM ANY FEEDER.
FOR SHIELDED CABLES THESE VALUES MAY BE TAKEN IN 1/3.

CAT 5 INSTALLATION RECOMMENDATIONS INCLUDE

CAT 5 INSTALLATION REQUIRES MINIMUM ½" UNTWIST
MINIMUM 1" BENDING RADIUS FOR FOUR PAIR OR 4X. FOR 25 PAIR 10XDIA.
PROVIDE MINIMUM TWO LINES AT EACH LOCATION ONE FOR TELEPHONE OTHER FOR DATA
WATCH FOR THAT A KINKED CABLE REDUCES 2.5DB; A SINGLE 1" RADIUS BEND REDUCES 2 DB.
CAT 5 TEST WILL INCLUDE (PER TSB-67)

-WIRE MAP TEST (TO IDENTIFY INSTALLATION ERRORS)
-LENGTH TEST (TO VERIFY MAXIMUM OPERATIONAL LENGTH IS 300FT)
-ATTENUATION TEST (TO MEASURE MAXIMUM SIGNAL LOSS AT 100MHZ LESS THAN 22)
-NEXT (TO MEASURE SIGNAL COUPLING BETWEEN THE PAIRS AT 100MHZ LESS THAN 32)
-PROPAGATION TEST (TO MEASURE TIME IT TAKES SIGNAL FROM ONE POINT TO OTHER)

TEL/CATV SERVICE SHALL ORIGINATE FROM NURSING HOME BUILDING TEL/CATV ROOM. RUN 100PAIR CAT5 TELEPHONE WIRE AND 0.75 COAX CABLE FROM MAIN SERVICE ROOM IN NURSING HOME BUILDING TO ELECTRIC ROOM IN BASEMENT. THIS SERVICE WILL BE ROUTED THROUGH EXISTING BUILDING, MAY BE THROUGH EXISTING BUILDING ATTIC SPACE. BEST ROUTING SHALL BE DETERMINED WITH CONTRACTOR AND OWNER BASED ON FEASIBILITY AND LIMITATION OF DISTURBANCE TO RESIDENCES. CARRY 300FT STRAIGHT DISTANCE ACTUAL CABLE LENGHT WILL VARY.

Revisions	No.	Date
GENERAL REVISIONS	1	03/20/06
FINAL PRICING	2	10/05/06
HUD FIRM COMMITMENT	3	11/22/06

Project:

THE INN AT CEDARS

PORTLAND, MAINE

Drawing Title

ELECTRICAL RISER DIAGRAM & SCHEDULES

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