



DL-060695-02

**RIVERSIDE**  
REGIONAL MEDICAL CENTER

June 6, 1995

U.S. Nuclear Regulatory Commission, Region II  
Material Radiation Protection Section  
101 Marietta Street, N.W., Suite 2900  
Atlanta, Georgia, 30323

RE: RENEWAL OF NRC TELETHERAPY LICENSE NO. 45-09001-03  
CONTROL NUMBER 256261

Dear Mr. Fuller:

I am responding to your letter for additional information about our teletherapy renewal request. It took several days longer than I expected to retrieve several blueprints that show the vicinity map of the Riverside Cancer Treatment Center. I will respond to your three requests by number.

1. Film Badges

We issue badges to personnel according to NRC regulations, to include individuals who enter high or very high radiation areas. While we issue approximately two hundred badges each month over various departments, we do so to document the success of our ALARA program. Since no individual at our facility who works with radioactive materials is likely to exceed 500 mR in one year, we consider these badges issued for purposes other than radiation safety. This interpretation agrees with your letter that we are not subject to the dose recording requirements of 10 CFR 20.2106. Accordingly, we do not seek exposure histories from previous employers and we do not maintain specific NRC-related exposure forms. We do maintain the summary report supplied by the film badge vendor. Please be assured that all individuals who would be expected to enter the teletherapy room in the event of an emergency are routinely issued film badges (and for physicians and physicists, ring badges) that are exchanged on a monthly basis.

2. Facility Drawings

Attached are several drawings taken from our initial request for the new cancer center many years ago. Each drawing is appropriately annotated. I have also enclosed a copy of the barrier survey conducted during our most recent source exchange. Please note that restricted areas are actually confined to within the treatment booths with all outside areas having unrestricted access. Also note that the exposure at the control booth is approximately 200 mrem in one year and no other area is likely to exceed 100 mrem in one year. These exposures reflect the effects of designing the room to accommodate a 10 MV accelerator at some time in the future.

James Wasson, MD, F.A.C.R., Joseph D. Lauser, MD, Leonard Kucias, PhD, Ronald Korsh, MD,  
David Smith, BS, D.A.C.R., Beverly Crowley, R.T.R.

DEPARTMENT OF RADIATION ONCOLOGY  
500 JUDY MORRIS BLVD  
NEWPORT NEWS VA 23601-1976  
804-594-2644

3 Patient Viewing System

The patient viewing system is comprised of three independent CCTV cameras multiplexed into two independent monitors. Each camera is equipped with pan/tilt/zoom. If either both monitors simultaneously fail, or all three cameras simultaneously fail, then we will suspend operation until the system has been repaired to permit at least one camera and one monitor to function.

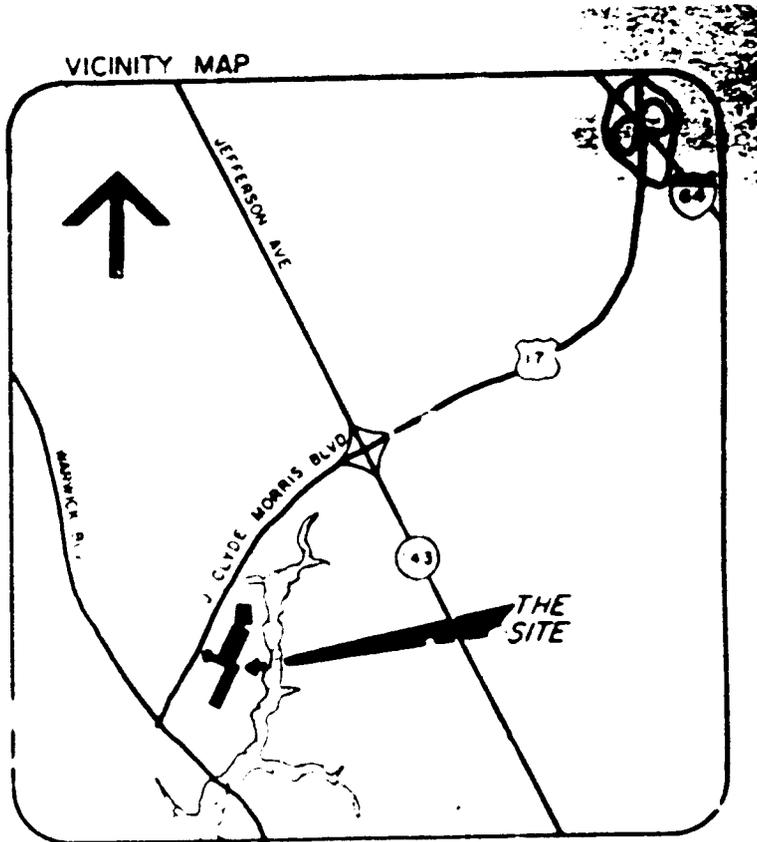
Thank you for your assistance in completing this license renewal. If there are additional questions, please telephone me at (804) 504-2757

Very truly yours,

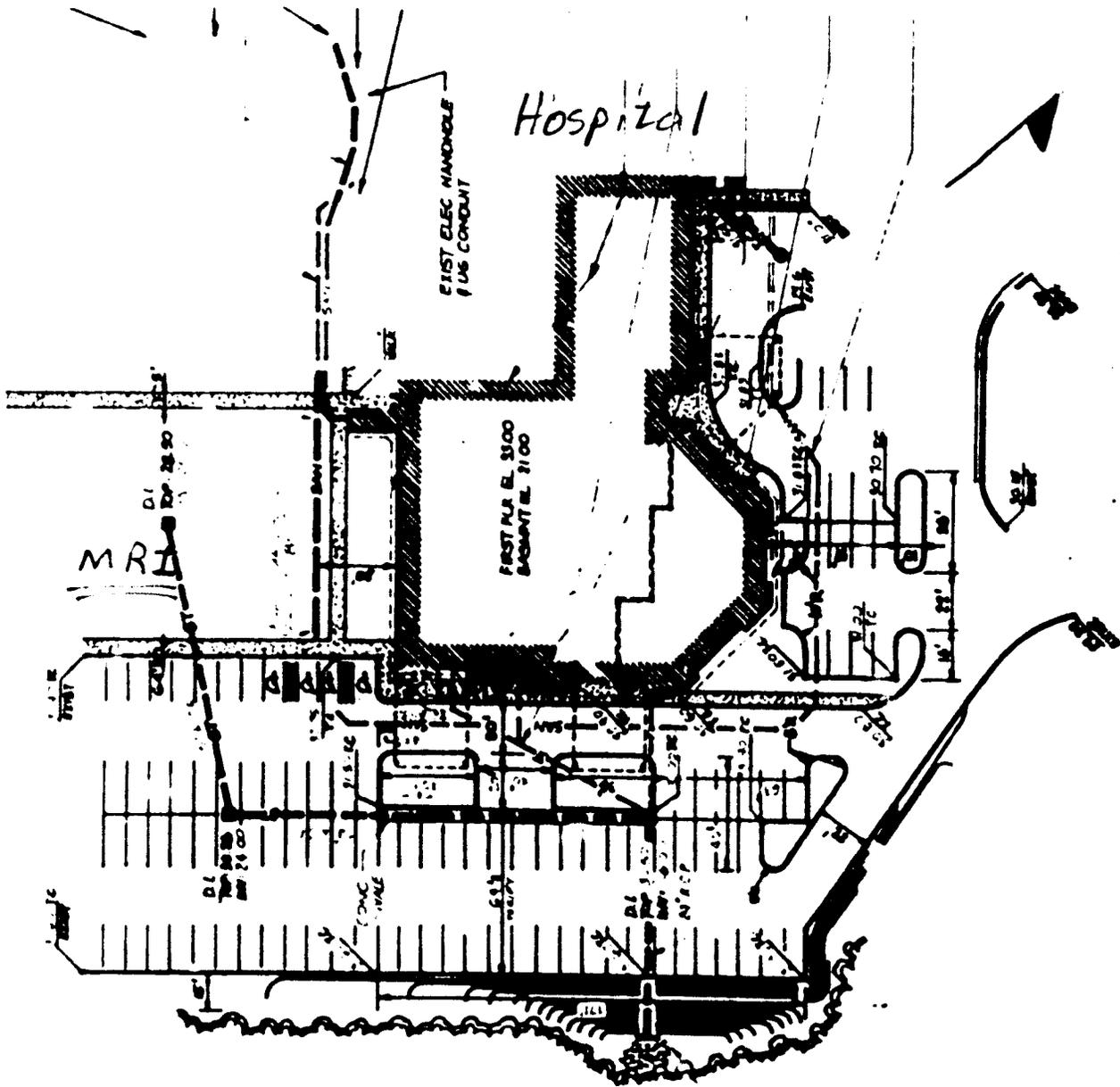
A handwritten signature in cursive script, reading "Leland R. Kirkland".

Leland R. Kirkland, Ph.D.  
Radiation Safety Officer

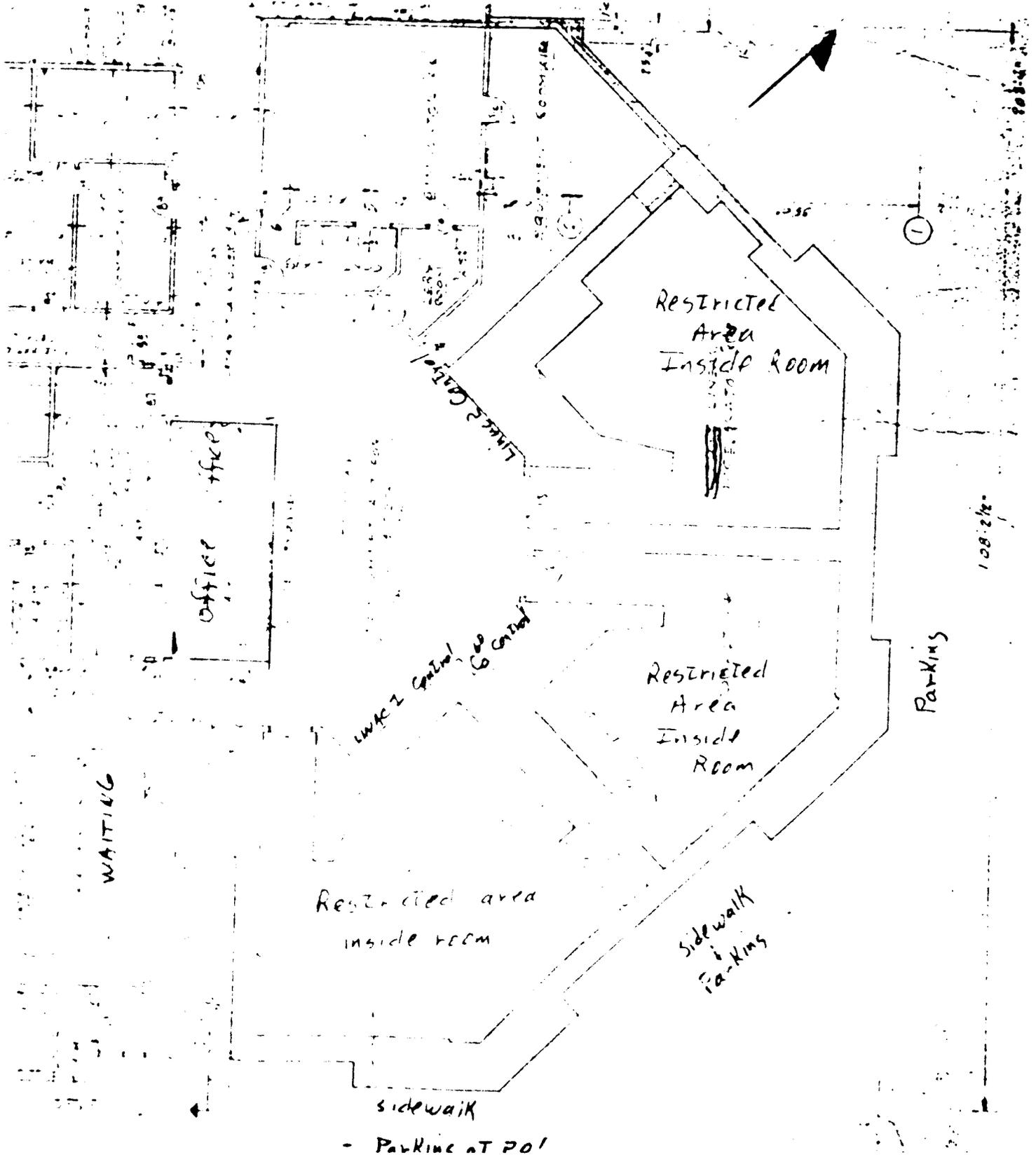
Vicinity Map showing that the Riverside Cancer Treatment Center is attached to the Riverside Regional Medical Center with the Cancer Center facing a lake.



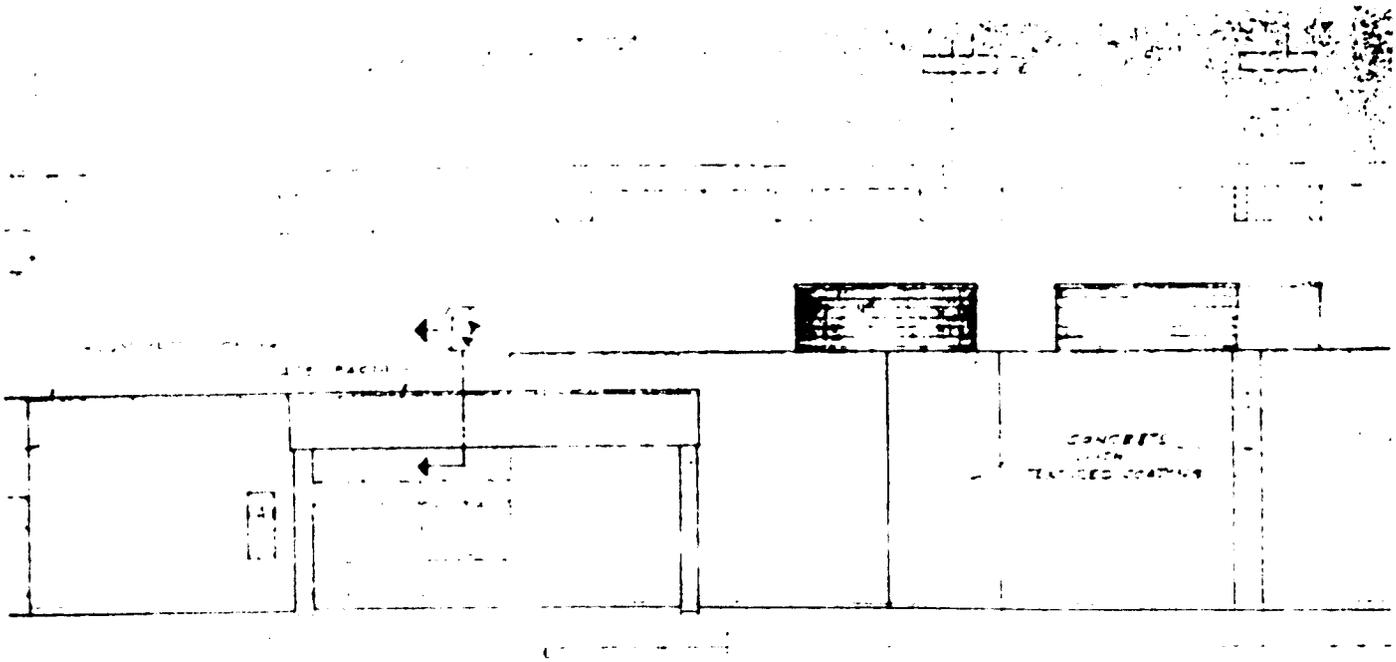
Site plan showing the Cancer Treatment Center relative to the parking lots, the MRI facility, and the rest of the Medical Center (formally Riverside Hospital).



Cancer Center Plan showing the location of the accelerators and the teletherapy unit relative to offices and clinic areas. Only the inside of the therapy rooms have restricted access for purposes of radiation safety. Radiation levels are sufficiently low that all other areas can have unrestricted access. In practice, entry into the Cancer Center is restricted for purposes of security and safety



Elevation of Cancer Center showing fences that preclude access to the area directly above the isocenter. Fences are five feet high, have no gates, and are constructed with brick masonry.



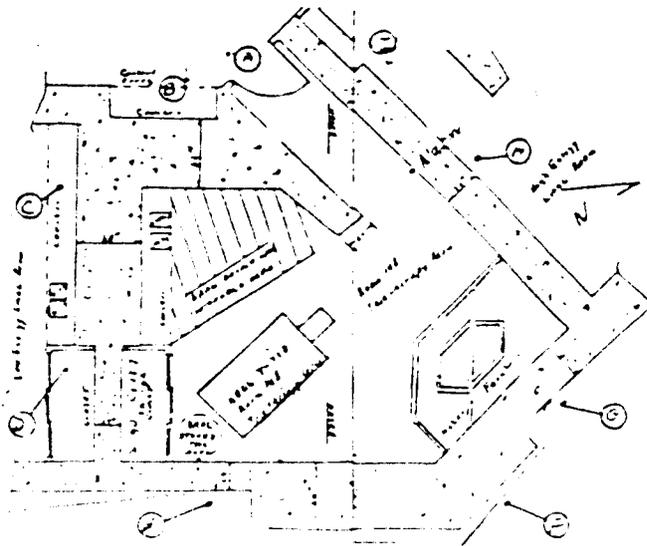
ELEVATION  
SCALE 1/8" = 1'-0"





Summary of environmental survey showing that areas outside the teletherapy unit are unlikely to exceed 100 mrem in one year except for the therapists who stand at the control console/door continuously where the exposure rate calculates to be 208 mrem in one year.

Radiation levels in adjacent areas must be measured under conditions that will cause maximum exposure rates. Primary barriers (P) are measured under direct exposure while secondary barriers (S) are measured with a phantom in the beam. The phantom must exceed 25 cm X 25 cm X 25 cm and must be centered at isocenter. The beam size must be maximum for the unit and oriented so as to direct the largest possible diameter toward the barrier being tested. Record maximum exposure levels below.



Point	Barrier Type	Exposure Rate (mR/hr)	Percent Dose Rate	Distance (ft)	Area (sq ft)	mR in 1 year (if barrier fails)	T
A	S	0.4	20	< 0.1	4	208	1
B	P	< 0.1	20	< 0.1	-	208	1
C	S	< 0.1	20	< 0.1	-	52	0.25
D	S	< 0.1	20	< 0.1	-	52	0.25
E	S	< 0.1	20	< 0.1	-	13	0.06
F	P	< 0.1	20	< 0.1	-	12	0.06
G	S	< 0.1	20	< 0.1	-	13	0.06
H	S	< 0.1	20	< 0.1	-	52	0.25
I	S	< 0.1	20	< 0.1	-	52	0.25
ROCF							
193 dec	P	< 0.1	20	< 0.1	4	2	0.01
200 dec	P	0.7	20	0.4	50	29	0.01

SURVEY METER

Victoreen Model 149C, S/N 24021, calibrated at RSMC on 4/23/92.

[Signature] 10/23/92  
 Signature Date