



# WAUKEGAN RADIATION THERAPY CENTER

1605 GARDEN PLACE • WAUKEGAN, ILLINOIS 60185  
(312) 244-4113

Ms. Patty Whiston  
Materials Licensing Section  
U.S. Nuclear Regulatory Commission, Region III  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Log	July 31 <sup>st</sup>	July 16, 1986
Remitter		
Check No.	240532	
Product	7H	
Fee Category	AMD	
Type of Fee		
Date Check Rec'd.	7/30/86	
Date Completed		
By:		

Sub : Amendment to Cobalt Teletherapy License No. 12-24348-01,  
Docket or Reference No. 030-18508

- Ref : 1. Our Application of May 15, 1984  
2. Our Letters of June 21, 1984; November 2, 1984 and  
April 10, 1985  
3. My Phone Conversation with Ms. Patty Whiston on June 19, 86.

Dear Ms. Whiston :

As we discussed on June 19, 1986 on phone, we would like to replace the present ATC-Picker C-8m Cobalt Teletherapy Machine by a new ATC-Picker C-9m Cobalt Teletherapy Machine. The removal of the C-8m machine with the old Cobalt-60 source and the installation of the C-9 machine with a new Cobalt-60 source will be performed by NRC licensed engineers from ATC Medical Group. Please refer to the copies of attached quote.

The pertinent details of the machine are as follows :

## A) Teletherapy Machine

Manufacturer : ATC Medical Group, Advanced Medical Systems, Inc.  
Model No. : ATC-Picker C-9; Catalog No. 76296  
Maximum Field : 36 cm x 36 cm (1296 cm<sup>2</sup>) at 80 cm SSD  
Size  
Beam Stopper : Transmission Factor  $5 \times 10^{-3}$ . Intercepts primary beam and scatter at angles less than 30°.

## B) Sealed Source

Byproduct Material : Cobalt-60  
Manufacturer : ATC Medical Group, Advanced Medical Systems, Inc.  
Source Model No. : AMS 3802  
Maximum Activity : 8000 Ci per source  
No. of Sources : Two ( one in the treatment unit and one in its shipping container for the replacement of the source in unit )

Output : 7000 Rhm

C) Usage : 60,000 R at 1 meter .

Please refer to our original application of May 15, 1984 regarding Instrumentation, Facilities & Equipment, Beam Stops, Shielding Evaluation and Emergency Procedures. Please note that the Shielding Evaluation (Supplement # 4 of 5/15/84) was done for a C-9 Cobalt Teletherapy Machine which has a maximum field size of 36 cm x 36 cm (1296 Sq. cm) compared to the maximum field size of 25 cm x 25 cm (625 Sq. cm. )

CONTROL NO. 81765

JUL 24 1986

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REGION III

-(Letter to Ms. P. Whiston, Continued)

offered by the C-8 Cobalt Teletherapy Machine. The Patient Viewing and Communication System, Mechanical and/or Electrical Beam Stops, Area Security Safeguards will also remain the same as described in the application of 5/15/84.

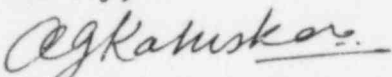
Please refer to our application of May 15, 1984 and letter of June 21, 1984 regarding the Calibration of Instruments, Wipe Tests of Sealed Source, Securing the Teletherapy Machine, Operating Procedure and Radiation Safety Officer.

We hope that the information furnished above is sufficient to secure the amendment to our Cobalt Teletherapy License so that we will be able to carry out the replacement of the C-8 unit by the C-9 Cobalt Teletherapy unit by the end of September or the beginning of October 1986.

Should you need, I will be happy to provide any more information. Please contact me at 312-878-8700, X-2325.

I thank you for your assistance and ever-present cooperation.

Sincerely,



Arun G. Kaluskar, Ph.D., D.A.B.R.  
Radiation Physicist / Radiation Safety Officer

Encl : A check for \$ 230.00  
Quotation

cc : Y. Mehta, M.D.  
Director



ATC Medical Technology, Inc.  
ATC Betatron Corporation  
Advanced Medical Systems, Inc.

121 North Eagle Street • Geneva, Ohio 44041  
(216) 466-4671 TWX 810-4272-183

Page 1 of 3  
Date 06-13-86  
No. 5420

QUOTATION

TO:

Yashbir Mehta, M.D.  
WAUKEGAN RADIATION THERAPY CENTER  
1605 Garden Place  
Waukegan, IL 60085

ADVANCED MEDICAL SYSTEMS, INC.,  
is pleased to submit the follow-  
ing and offers to sell the pro-  
ducts described herein at prices  
and terms stated, subject to  
your acceptance of the terms and  
conditions within -60- days.

EXPIRES August 13, 1986

DESCRIPTION

PRICE

C-9 Rotational <sup>60</sup>Cobalt Teletherapy unit, Catalog No. 76296,  
with:

1. Floor-Surface Mounted Isocentric Stand and Arm, eliminating a costly pit.
2. Radiation beam interceptor with optical back pointer.
3. Manual Collimator with 35cm X 35cm Maximum Field with trimmers.
4. Sourcehead with capacity of or 2.5cm (7000 R<sub>m</sub>). or 2.0cm (9000 R<sub>m</sub>)
5. Surface supported Isocentric Treatment Stretcher with float top and center opening.
6. Remote Control with key lock.
7. Accessory attachment post.
8. Foot operated table top-lock release.
9. Combination wedge compensator and block tray with (11) blocks and 45° wedge.

<sup>60</sup>Cobalt Teletherapy Source

Output: 7000 R<sub>m</sub>, \*117 R<sub>m</sub>, +0% -10% (measured with an aperture  
of 25cm X 25cm).

Diameter: 2.0 cm.

\*Source to be built as close to 7000 R<sub>m</sub> as possible.

Price includes at no additional cost:

1. The only Bi-Plane Sourcehead with Automatic Centering available.
2. All necessary drawings, layouts, and equipment specifications to provide a complete Cobalt Therapy Installation.
3. Complete assembly and system testing at the factory prior to shipment.
4. Installation by experienced NRC Licensed factory Engineers.
5. Equipment demonstration at the site.
6. Full twelve (12) month warranty on parts and on labor for the unit and accessories.

\* TOTAL F.O.B. SITE INSTALLED:

CONTROL NO. 81765



ATC Medical Technology, Inc.  
ATC Betatron Corporation  
Advanced Medical Systems, Inc.

121 North Eagle Street • Geneva, Ohio 44041  
(216) 466-6711 TWX 810-4272-183

Page 1 of 1  
Date 06-13-86  
No. 5420

ADDENDUM

TO:

Yashbir Mehta, M.D.  
WAUKEGAN RADIATION THERAPY CENTER  
1605 Garden Place  
Waukegan, IL 60085

ADVANCED MEDICAL SYSTEMS, INC.,  
is pleased to submit the follow-  
ing and offers to sell the pro-  
ducts described herein at prices  
and terms stated, subject to  
your acceptance of the terms and  
conditions within -60- days.

EXPIRES August 13, 1986

DESCRIPTION

PRICE

It is hereby understood and agreed upon between ATC MEDICAL GROUP  
and WAUKEGAN RADIATION THERAPY CENTER that with the purchase of the  
New ATC C-9, (Quote #5420) a trade-in allowance has been allowed for  
the existing Picker C-8 teletherapy unit, table accessories, source,  
and all documents

It is understood that the price of \_\_\_\_\_ was agreed upon because  
ATC will assume possession of the C-8 unit and therefore will remove  
it at the time of the installation at no cost to the facility.

CUSTOMER APPROVAL AS QUOTED

Mehta

CUSTOMER SIGNATURE

Owner / Director

TITLE

6.16.86

DATE

ADVANCED MEDICAL SYSTEMS, INC.

Johnny Fild

SALESMAN'S SIGNATURE

PREPARED BY

June 13, 1986

DATE

Supplement No. 3

Item No 14

- a) Please refer to Fig. 1 and 2 for the drawings.
- b) Patient Viewing and Communication Systems :
  - 1) A closed Circuit Camera and TV
  - 2) Large Convex Mirror aligned properly
  - 3) Talk-A-Phone Intercom
- c) Area Security Safeguards : The door leading into the teletherapy treatment room will be provided with an interlock to control the "On-Off" mechanism of the teletherapy unit. The interlock will cause the source to move to the "OFF" condition if the door is opened when the source is exposed. The source cannot be turned to the ON condition until the door is closed and the systems are reset at the control. "CAUTION HIGH RADIATION AREA" and "RADIOACTIVE MATERIAL" signs will be posted on the treatment room door.

Item No 15

Mechanical and /or Electrical Beam Stops : Please refer to Fig. 1 and 2.

- a) When the integral absorber (Beam Stopper) intercepts the primary beam the teletherapy head can be moved  $180^{\circ}$  in each direction using the gantry.
- b) Lateral Movement of the Head -
  - (1) When the gantry is at  $0^{\circ}$  (i.e. beam pointing down) the teletherapy head can be moved  $17^{\circ}$  from vertical to East wall (linear accelerator room) and  $30^{\circ}$  towards West wall (Grade). The beam does not hit the East wall under these conditions.
  - (2) At other gantry angles the head movement will be within  $6^{\circ}$ , the beam always intercepting the beam stopper (except in part 'd' below).
- c) Forward and Backward Movements of the Head -
  - (1) For all gantry angles the head can be moved on  $1^{\circ}$  forward (i.e. towards North Maze), the primary beam always intercepting the beam stopper.
  - (2) When the gantry is at  $0^{\circ}$ , the teletherapy head can be moved  $12^{\circ}$  backwards (towards South Wall Grade).
  - (3) At all angles the head movement will be restricted within  $6^{\circ}$  and the beam will always intercept the beam stopper.
- d) The beam can be directed towards the floor for large mantle treatments away from the beam stopper. However the machine can only be operated when the beam is directed within  $17^{\circ}$  towards East wall. Again under any circumstances the beam never hits the East and North Walls directly.
- e) When the Teletherapy beam is directed to all the forbidden directions the electrical circuit breakers are activated and the power to the machine is shut off (Zone Guard System).

CONTROL NO. 81765

5/15/84

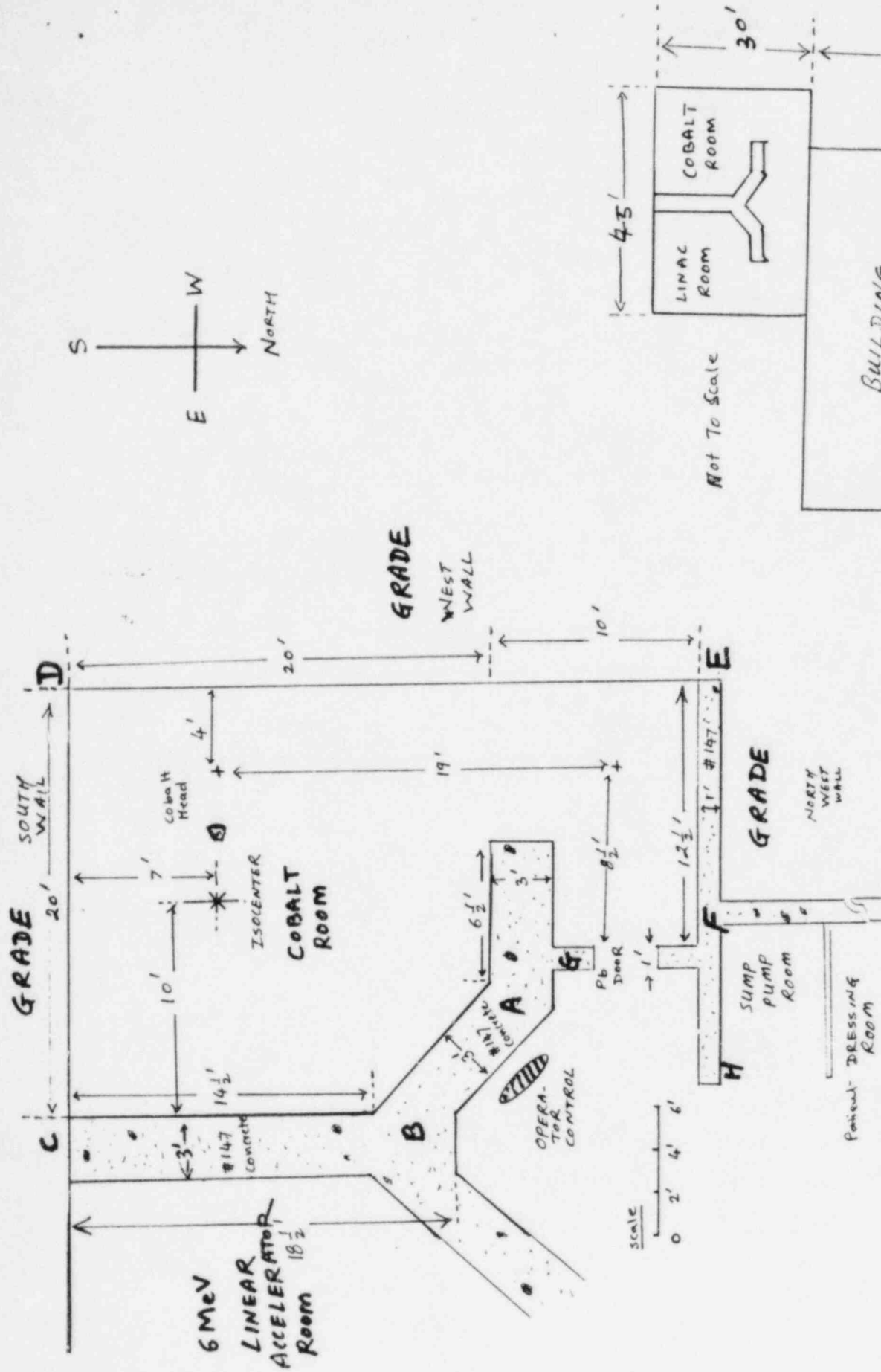


Fig. 1(A) : Partial Layout of the Lower Level

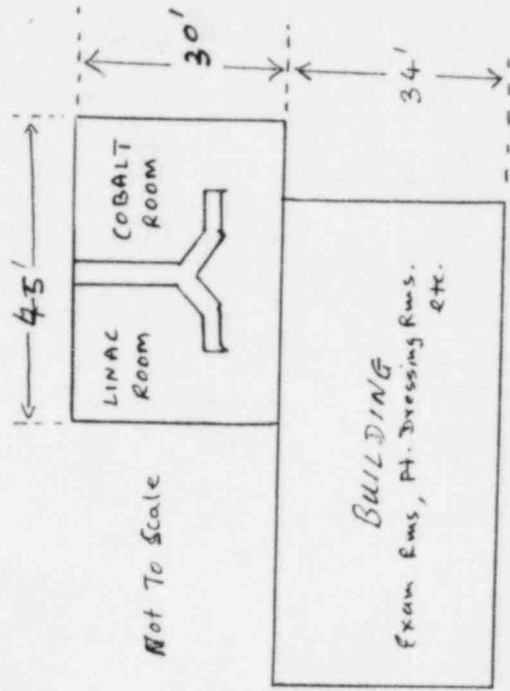


Fig. 1(B) : Center Layout at the Lower Level



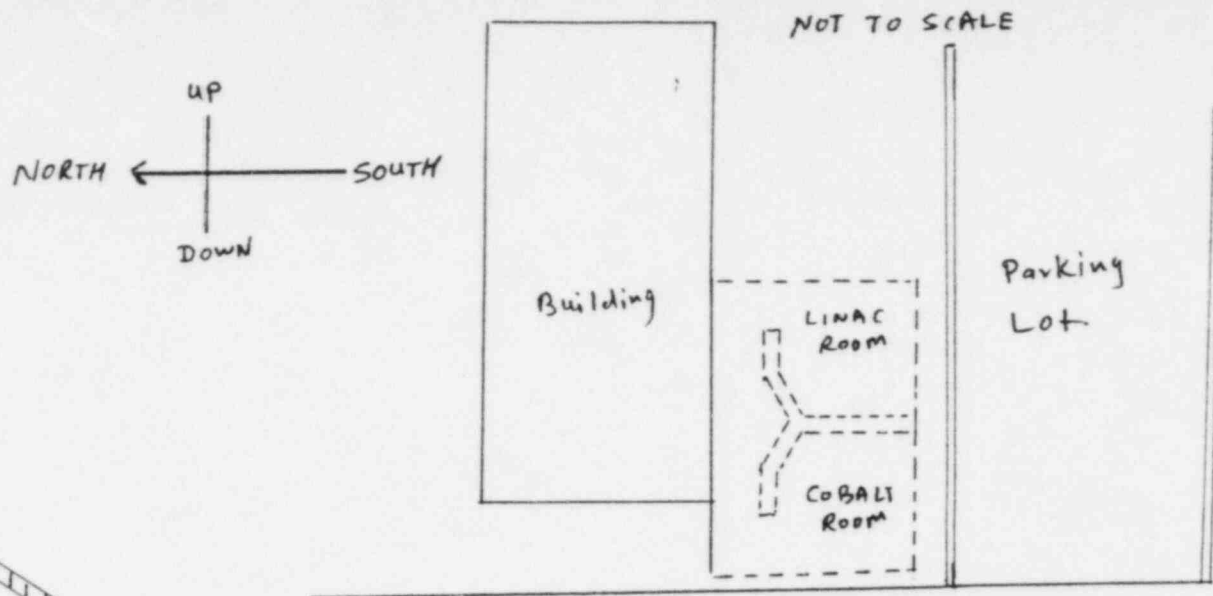


Fig. 2(B) : Layout of the Center at the First Level

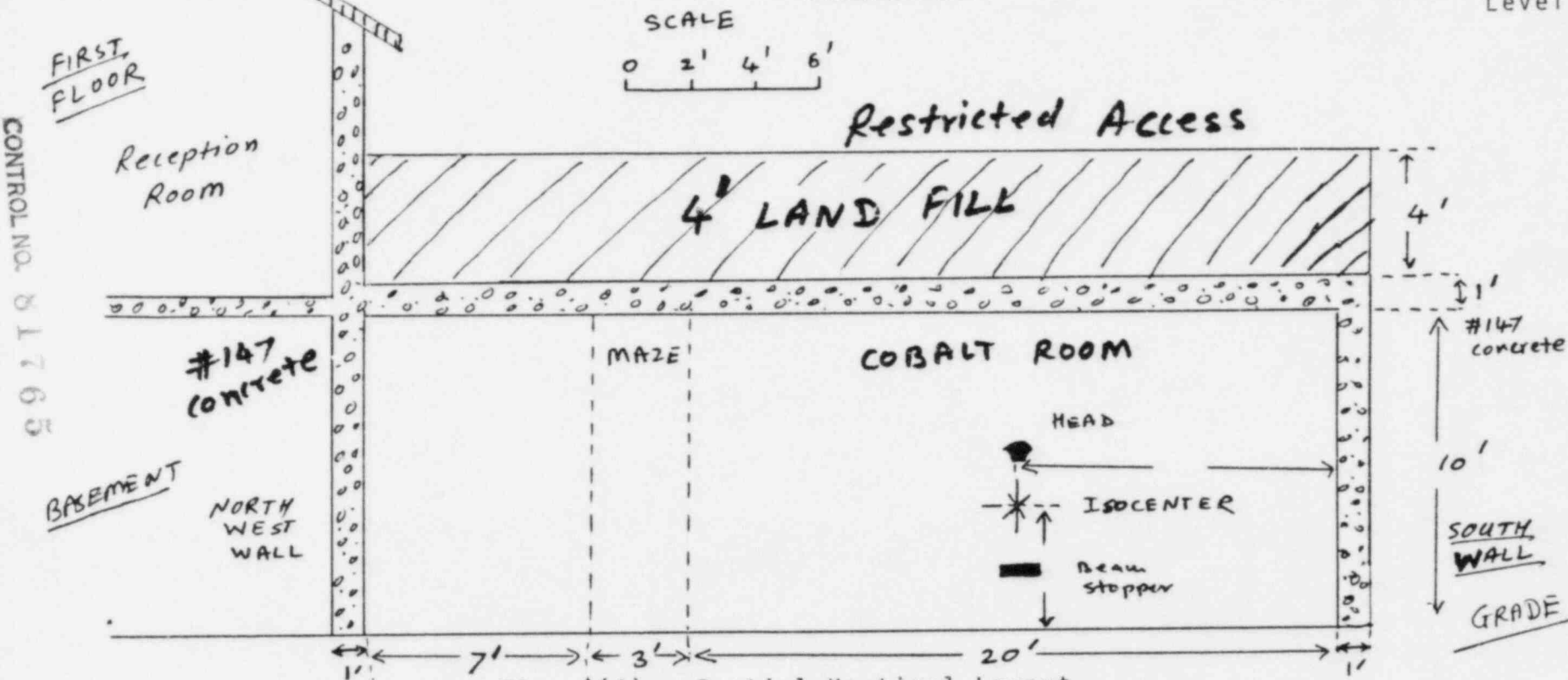


Fig. 2(A) : Partial Vertical Layout

CONTROL NO. 81765

T A B L E # 1

Summary of Estimated Exposures at the Walls :

<u>WALL</u>	<u>Description</u>	<u>Type*</u>	<u>Radiation**</u>	<u>Estimated Exposure</u>	
				mR/wk	mR/Hr
1) BC	Linear Accelerator Room	C	p + l + s	7.0	0.7
2) AB	Operator Area	C	l + s	1.54	0.15
3) CD	South Wall, Grade	-----	N o t A p p l i b l e -----		
4) DE	West Wall- Grade	-----	N o t A p p l i b l e -----		
5) EF	Noeth-West Wall- Grade	-----	N o t A p p l i b l e -----		
6) FL+OR	To Earth, Grade	-----	N o t A p p l i b l e -----		
7) DOOR FG	6 mm Lead Outside	C	l + s	5.6	0.6
8) CEILING	Restricted Area	NC	p + s + l	4.1	0.4

\* Type : C - Controlled, Radiation Workers Only ; NC - Non-controlled

\*\* Type of Radiation : p = Primary; l = Leakage; s = Scattered.

Note : No penetration or voids enter directly into first scatter area.

CONTROL NO. 81765

5/15/84