



1-Jan-00

Planning Department

Project Review Cover Sheet
2100C/D, CL2300C/D, 21EX, 23EX, iX, Trilogy

TO:

FAX:

FOR:

Review of Drawings Submitted by:

0	
0	
0	
0	
0	0
FAX: 0	PROJECT NUMBER:

Activity Data:

Record Number:	
Drawings received on:	
Review completed on:	1-Jan-00
Document Number:	
Revision:	

Contacts:

District Manager:	
Installation Project Mgr.	
Reviewed by:	

Attachments:

Attachment One - Notes

Dear , 0

Thank you for the opportunity to review these plans. The purpose of this review is to assist in the development and completion of this project. This review covers only the architectural requirements of our equipment. The checklist outlines the correct and incorrect elements of the plans and those that can not be determined. The notes referenced within the checklist may be found on Attachment One. All boxes marked "N" should be addressed by the architect and the revised documents may be resubmitted for review. The Varian Documents referenced are found in the Installation Data Package. Our review does not check for compliance with building codes and other regulatory agency requirements. Verification of shielding adequacy must be provided by the Physicist of Record for the project.

We look forward to answering questions you might have in connection with this project.

Sincerely,

0
Project Manager

16001T3.xls

12-Jul-05

Varian

Review Checklist - Appendix One

item comments

Clinac iX Review Notes

- 1 INFORMATION COULD NOT BE FOUND ON CONSTRUCTION DOCUMENTS
- 2 INFORMATION WAS "SHOWN" BUT NOT DIMENSIONED AND/OR SPECIFIED FOR LOCATION OR CONSTRUCTION.
- 3 VERIFY ALL SHIELDING AND ROOM PENETRATIONS WITH THE PHYSICIST OF RECORD.
- 4 VERIFY RIGGING PATH FROM UNLOADING POINT TO TREATMENT ROOMS.
- 5 NEED A NOTE
- 6 LOCATE ALL INSLAB PULLBOXES AND CONDUIT STUB-UPS
- 7 SHOW CONTROL EQUIPMENT
- 8 SHOW LOCATION DETAIL
- 9 SHOW INTERCONNECTION WIRING DIAGRAM DETAILS

16001T3.xls

12-Jul-05

Clinac iX

Customer

Varian

Vault Configuration

Refer to Installation Data Package
Section One FOC = Face of Concrete

Notes:
Attach. 1

Drawing
Location

Doc No.
[Page No.]

Couch rotation clearance

<input type="checkbox"/>	Recommended	9'-6" clear or 10'-0" FOC	8'-9" clear or 10'-0" FOC		861651
<input type="checkbox"/>	Acceptable	couch has obstruction OR load/unload not optimum			[1.25]
<input type="checkbox"/>	Unacceptable	less than 5'-10" clear	less than 5'-4" clear		861626
<input type="checkbox"/>	Cannot be determined				[1.23]

Gantry ceiling clearance

<input type="checkbox"/>	Recommended	at least 9'-0" clear			861654
<input type="checkbox"/>	Acceptable	8'-10" clear			[1.25]
<input type="checkbox"/>	Unacceptable				861626
<input type="checkbox"/>	Cannot be determined				[1.23]

Isocenter to back wall distance

<input type="checkbox"/>	Recommended	12'-6" to Face of Concrete			861651
<input type="checkbox"/>	Acceptable	11'-6" clear			[1.25]
<input type="checkbox"/>	Unacceptable	less than 11'-6" clear			861626
<input type="checkbox"/>	Cannot be determined				[1.23]

Service clearances at stand

<input type="checkbox"/>	Recommended	all service doors can open fully			861651
<input type="checkbox"/>	Acceptable	some/all doors can be opened and removed			[1.25]
<input type="checkbox"/>	Unacceptable	some/all doors cannot be accessed			1100789
<input type="checkbox"/>	Cannot be determined				[1.35]

Service clearances at modulator

<input type="checkbox"/>	Recommended	all service doors can open fully/std ceiling ht			861649
<input type="checkbox"/>	Acceptable	some/all doors can be opened and removed/7 ft ceiling ht			[1.36]
<input type="checkbox"/>	Unacceptable	some/all doors cannot be accessed/less than 7 ft clg ht			861651
<input type="checkbox"/>	Cannot be determined				[1.25]

Entrance Door & Maze

<input type="checkbox"/>	Recommended	48" by 84" net opening - 72" net width passage			861626
<input type="checkbox"/>	Acceptable	46" by 84" passage - accepted by Varian			[1.23]
<input type="checkbox"/>	Unacceptable	inadequate for rigging			861652
<input type="checkbox"/>	Cannot be determined				[1.24]

Console Area

<input type="checkbox"/>	Recommended	adequate counter area			1100793
<input type="checkbox"/>	Acceptable	less than recommended			[1.27]
<input type="checkbox"/>	Unacceptable	inadequate working area			1100758
<input type="checkbox"/>	Cannot be determined				[1.28]

Isocenter

			Y	N	
<input type="checkbox"/>	Isocenter height identified - 4'-3"				861654
<input type="checkbox"/>	Isocenter located from two inside walls				[1.26]
					861626
					[1.23]

Drawing
Location

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Treatment Room

Accessories and Supplies casework

	Notes	Y	N
Space for Varian-supplied Applicators			
Space for Varian-supplied Wedges			
Space for Varian-supplied FFDA's			
Space for Blocks			
Adequate linen/misc. storage space			
Sink and counter			

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1100776
[1.30]
1100777
[1.31]
1100730
[1.22]

Console

Control area casework

	Notes	Y	N
Counter Height <input checked="" type="checkbox"/> standing ht - 34/36" <input type="checkbox"/> sitting ht - 29/30"			
38" deep counter			
Counter length for: 3' Clinac 5' Aria 8' OBI/Trilogy			
Ded. four-plex: 1 Clinac 1 Aria 3 OBI/Trilogy			
Keyboard drawer: 1 Clinac			
Computer platform: 1 Paxscan image Control Processor, MLC			
Adequate clearance for Clinac Electronics Cabinet cooling			
Clinac Electronics Cabinet located to the left of the workstation			
Grommets for cables			
File or chart storage/Paper & supplies/Personal property			

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1100793
[1.27]

Shielding - Review with Physicist

	Notes	Y	N
Physicist report included with drawings			

Experimental/Physics Access

	Notes	Y	N
Routing restricts secondary radiation			
Location verified with Physicist			

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1102316
[1.36.0]

Primary beam shielding

	Notes	Y	N
<input type="checkbox"/> counterweight			
Proper alignment with isocenter	no requirements		
12" wider than beam at each side	no requirements		

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1102303
1100728

Secondary shielding

	Notes	Y	N
location and placement of penetrations restrict secondary radiation			
Door shielding corresponds to Physicist report			
Wall and ceiling shielding correspond to Physicist report			

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1102303
1100728
[1.23.0]

Pit Configuration

General

	Notes	Y	N
isocenter referenced to sides of pit			
Note: "Maintain level floor in 6'-0" radius of isocenter"			
Rebar shown to avoid anchors (VEO)			

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861644
[1.35]

Pit construction

	Notes	Y	N
Pit size: 13'-9"LX5'-6"WX12"D			
Slab thickness: 8" for anchors			
Seismic Details (if required)			
Utility Valves and Conduits Located and Dimensioned at Clinac			

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861644
[1.35]

Base frame installation

	Notes	Y	N
<input type="checkbox"/> Installed by Customer <input type="checkbox"/> Installed by Varian			
Fill grout specified			
Grout cure time indicated as at least seven days			
Note "Base frame installed into pit by Riggers".			
Note "Grouting of Base Frame by Contractor".			
Proper clearances from unloading area to treatment room			
Rigging clearances require 2-piece breakdown of Baseframe			

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861644
[1.35]
1101807
[1.02]

Drawing	Doc No.
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Mechanical

H.V.A.C. Notes Y N

Ventilation at room for gantry and stand			
Ventilation at modulator			
Ventilation at console			

	862544 [1.40]
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Cooling water Closed Loop system One-Pass Notes Y N

Shut-off Valve in secondary loop			
Domestic water back-up option primary source			
Waste return back-up option primary source			
Optional flow gauges on supply/return lines located near Clinac			
1" pipe at Clinac utility pit for final connection			
Valve at Clinac connection			

	862544 [1.40]
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Compressed Air House System New Compressor Notes Y N

1/2" pipe to Clinac			
Air dryer indicated (Instrument Quality Air)			
Oil filter indicated (Instrument Quality Air)			
Valve at Clinac connection			

	862544 [1.40]
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Final Connections

Plumbing By Customer By Varian Notes Y N

"Cooling water connections:" Responsibility note			
"Compressed air connections:" Responsibility note			

	862544 [1.40]
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Electrical

Power supply - Clinac Notes Y N

208VAC three phase- 150 amps, 60Hz(US)			
45 KVA supply capacity			
ground shown at supply transformer or power conditioner			
Power conditioner if required			

	861647 or 861648
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Power supply - OBI/Trilogy Notes Y N

480VAC three phase- 60 amps, 60Hz (US)			
60 KVA supply capacity			
ground shown at supply transformer or power conditioner			
Power conditioner if required			

	861647 or 861648
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Power panel - Clinac Notes Y N

Circuit breaker - GE # 2100CBB150A(US)			
UVR - GE 24VDC # TEDUXVERS Included in GE panel			
Start button Included in GE panel			
115/24v (US) control transformer Included in GE panel			
1 amp fuse(US) Included in GE panel			
Main Circuit Breaker Located within 10 feet of console			
note indicating 12 lin ft of conductor to be coiled in pull box			

	861647 [1.39]
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Power panel - OBI/Trilogy Notes Y N

Circuit breaker - GE # OBI60A480V(US)			
Main Circuit Breaker Located within 10 feet of console			
note indicating 12 lin ft of conductor to be coiled in pull box			

	861647 [1.39]
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Cable Access

General Notes Y N

Runs between equipment pull boxes do not exceed 75 feet			
conduit runs between pull boxes have 270 degrees of bend max			
conduit bend radii are at least 6 diameters			

	1100738 [1.37] 1100737 [1.36]
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Drawing
Location

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Pull boxes

Access Method	bottom			side			tray/duct			Notes	Y	N
	W	L	D	W	L	D	W	L	D			
Base Frame	12"	24"	10"	12"	24"	22"						
Console	18"	12"	6"	18"	12"	6"						
Modulator	18"	24"	10"	18"	24"	22"						

861649
[1.34]
1100737
[1.36]
1100738
[1.37]

Conduit

		Notes	Y	N
Base to Console	three each 4" dia	4"x 24" divided		
Cnsl to Modulator	two each 4" dia	4"x18" divided		
Modulator to Base	three each 4" dia	4"x24" divided		

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1100738
[1.37]

Facility Connections

	Notes	Y	N
Relay Junction Box (RJB) (12"x12"x6")			
Two 2" conduits from RJB to Modulator Pull Box			
One 1/2" conduit from RJB to Clinac warning lights			
One 1/2" conduit from RJB to On Board Imager warning lights			
2" conduit from Clinac power panel to modulator pull box			
2" conduit from OBI/Trilogy power panel to base frame pull box			

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1100738
[1.37]

In Room Monitor

	Notes	Y	N
2" Conduit with outlet boxes from control area to treatment room			
Bracket/Mounting detail for In Room Monitor			

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1100738
1100791
[1.33]

Operating and Safety Devices

Conduit routing for required devices

	Notes	Y	N
Warning light to Modulator via relay junction box.			
Door interlocks to Modulator via relay junction box			
Emergency-off switches to Modulator via relay junction box			
Room lights to relay junction box			
Laser positioning lights to relay junction box			

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C-Series
861647
[1.39]

Control relay

	Notes	Y	N
Potter Brumfield - PRD11DG0 -24 in relay junction box or Equal			
Room lights controlled by relay			
Lasers controlled by relay			
Clinac warning light controlled by relay			
On Board imager warning light controlled by relay			

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861647
[1.39]

Device locations

	Notes	Y	N
Warning light over entrance door			
Warning lights visible from all points in room			
12 volt and 120 volt Door interlocks			
Door activators, if required			
Emergency-off type: Manual reset - normally closed			
Emergency-off located outside of primary beam path			
Convenience outlet for each laser positioning light			
Radiation Monitor and Detector (Customer option)			
Adequate quantity and location of Room lights			
Setup lights located on both sides of couch			
Setup lights dimmable and independent of room lights			

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1100739
[1.38]
1100730
[1.22]
861647
[1.39]

Drawing Location

Doc No. [Page No.]

Lasers supplied by Varian supplied by Customer

Notes	Y	N
All lasers mounted rigidly to concrete or steel beams		
Overhead laser mounted perpendicular or parallel to axis		
Overhead laser beam port at Isocenter		
Side lasers beam port shown at Isocenter height		
Adequate clearance in laser recesses		
Side lasers protected from bumping, if not recessed		
7'-6" minimum height to sagittal laser beam port		
Sagittal mounted horizontal or verticle, shown correctly.		

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1100767 [1.29]

Service provisions

Notes	Y	N
Duplex outlet at stand		
Duplex outlet at modulator		
Phone at modulator if remote		

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1100739 [1.38]

Console convenience items

Notes	Y	N
Remote Diagnostics phone outlet		
Varis Network data outlet		
MLC Network data outlet		
Telephone outlet		
Dimmable console area lighting		

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1100793 [1.27]

Patient intercom provisions by Varian (option)

Notes	Y	N
Monitor located near couch		
Signal cable conduit to console		

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1100739 [1.38]

CCTV provisions camera(s) by Varian (option)

Notes	Y	N
Proper location of camera(s)		
Power outlets for camera(s) (120v system only)		
Video cable conduit to console		

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1100778 [1.32] 1100739

Final Connections

Electrical By Customer By Varian

Notes	Y	N
"Power connection made:" Responsibility note		
"Signal connections made:" Responsibility note		
"Varian-supplied cables pulled:" Responsibility note		

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861647 or 861648

Finishes

Floor

Notes	Y	N
"Install finished floor after equipment is rigged" note		
Anti-static floor covering specified control console		
Anti-static floor covering specified treatment room		

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861644 861626

Rigging By Customer By Varian

Notes	Y	N
Proper clearances from unloading area to treatment room		
Rigging clearances require factory breakdown of Clinac		
150 sq. feet secure storage area available during installation note		

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861652 [1.24]

Respiratory Gating

Customer

Varian

Treatment Room

Refer to Installation Data Package	
Gating Section	FOC = Face of Concrete

Notes:
Attach. 1

Drawing
Location

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Camera Position

	Notes	Y	N
15 degrees right or left of Isocenter (Plan)			
40 degrees up from Isocenter			
Camera positioned between 6 and 14 feet from Isocenter			
Camera bracket	Wall	X	Ceiling
Camera bracket construction detailed			

	G1.0
	G7.0

Electrical

	Notes	Y	N
1" conduit from camera power supply to Gating Equipment Console			
Standard computer signal cable outlet at each end of conduit			
Note: Conduit length not to exceed 75'-0"			

	G1.0
	G7.1

Power

	Notes	Y	N
Grounded 120V. 60HZ. Power receptical for Camera power supply			
Power receptical located with in 12" of Camera power supply			
Standard wall switch for camera power supply receptical			

	G1.0
	G7.1

Console

Control area casework

	Notes	Y	N
Gating Workstation located on Control counter			
20 Amp dedicated quad receptical			
Grommets for cables			

	G1.0
	G2.0

Notes

	Notes	Y	N
Mounting of Camera power supply by Customer/Contractor			
Mounting of Camera support Bracket by Customer/Contractor			
"Varian-supplied cables pulled:" Responsibility note			

	G1.0
	G2.0

CT Simulator

	Notes	Y	N
Customer supplied wall mount for Gating camera Support Assembly			
Customer supplied Curtain rail for Gating Camera cable support			

	1.5.0
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