

CLEMENT J. ZABLOCKI VAMC

5000 W National Ave
Milwaukee, WI 53295

ARTISTE (KLYSTRON LINEAR ACCELERATOR)



Contents:

Sheet No.	Description
A-101	EQUIPMENT PLAN-LEGEND, DETAILS AND NOTES
A-102	REFLECTED CEILING, SAFETY/SERVICE CLEARANCE PLAN
S-101	STRUCTURAL PLAN-DETAILS AND NOTES
S-501	DETAILS AND NOTES
E-101	ELECTRICAL PLAN(S)-LEGEND AND NOTES
E-102	ELECTRICAL PLAN-LEGEND AND NOTES
E-501	ELECTRICAL DIAGRAMS AND NOTES
M-101	MECHANICAL PLAN-CHILLED WATER & ENVIRONMENTAL

Project Contacts:

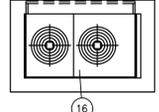
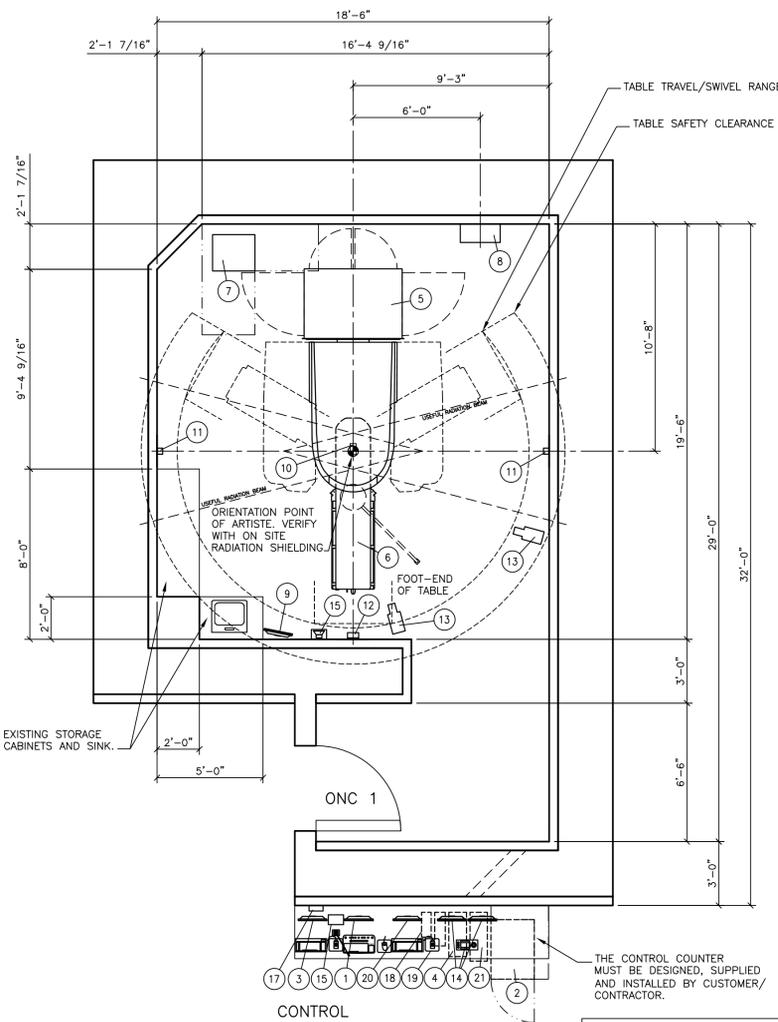
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Planner
Robert Suthers

Project #: 1101472

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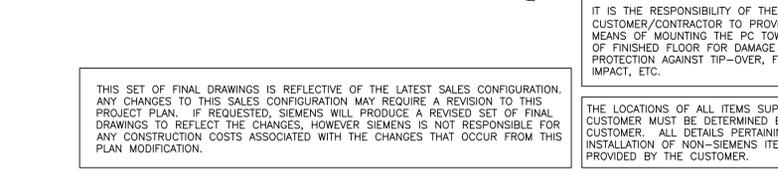
NOTES:
 1. CHILLER TO BE REMOTELY LOCATED BY CUSTOMER/CONTRACTOR.
 2. CHILLER MUST BE LOCATED WITHIN 148 FT OF THE TRANSFER STATION.
 3. MAXIMUM DIFFERENCE IN ELEVATION BETWEEN CHILLER AND TREATMENT ROOM FLOOR IS 20 FT.

EXAM RESTRICTIONS:
 DUE TO EXISTING CASEWORK, THE TABLE TRAVEL/SWIVEL RANGE IS LIMITED.

SERVICE RESTRICTIONS:
 N/A

WARNING NOTES:
 DUE TO THE SIZE OF THE TREATMENT ROOM, THE TABLE TRAVEL SAFETY CLEARANCE CANNOT BE MAINTAINED.

MISCELLANEOUS NOTES:
 N/A



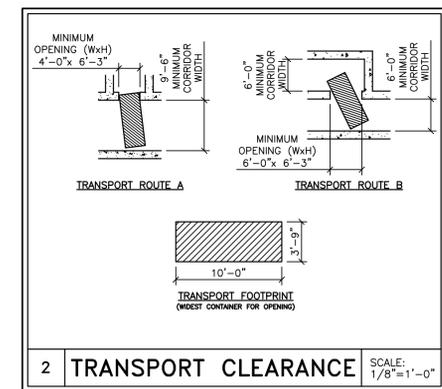
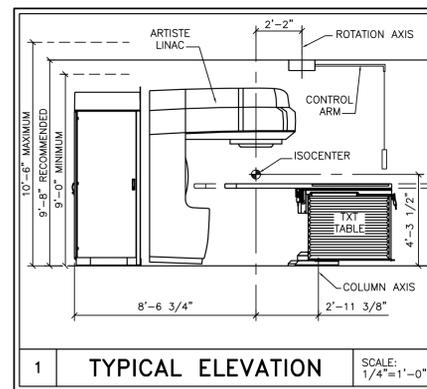
IT IS THE RESPONSIBILITY OF THE CUSTOMER/CONTRACTOR TO PROVIDE A MEANS OF MOUNTING THE PC TOWER OFF OF FINISHED FLOOR FOR DAMAGE PROTECTION AGAINST TIP-OVER, FLUIDS, IMPACT, ETC.

THE LOCATIONS OF ALL ITEMS SUPPLIED BY THE CUSTOMER MUST BE DETERMINED BY THE CUSTOMER. ALL DETAILS PERTAINING TO THE INSTALLATION OF NON-SIEMENS ITEMS MUST BE PROVIDED BY THE CUSTOMER.

THIS SET OF FINAL DRAWINGS IS REFLECTIVE OF THE LATEST SALES CONFIGURATION. ANY CHANGES TO THIS SALES CONFIGURATION MAY REQUIRE A REVISION TO THIS PROJECT PLAN. IF REQUESTED, SIEMENS WILL PRODUCE A REVISED SET OF FINAL DRAWINGS TO REFLECT THE CHANGES, HOWEVER SIEMENS IS NOT RESPONSIBLE FOR ANY CONSTRUCTION COSTS ASSOCIATED WITH THE CHANGES THAT OCCUR FROM THIS PLAN MODIFICATION.

ARCHITECTURAL EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"



ATTENTION:

- THIS DRAWING IS DESIGNED TO CONFORM TO FEATURES AND EQUIPMENT REQUIREMENTS PRESENTED AT THE TIME OF THEIR PREPARATION. SINCE BOTH THESE FACTORS ARE SUBJECT TO DESIGN MODIFICATION, THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES.
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- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.

EQUIPMENT LEGEND								
NO	DESCRIPTION	SMS SYM	WEIGHT (LBS)	BTU/HR TO AIR	DIMENSIONS (INCHES)			REMARKS
					W	D	H	
1	CONTROL CONSOLE MONITOR, KEYBOARD, MOUSE	Ⓢ	---	---	---	---	---	ON COUNTER
2	CONTROL CONSOLE CABINET	Ⓢ	187	800	24 1/2	33 1/2	22.3/8	INCLUDES ROUTER, 160 MLC, SCC, CC NODE
3	SYNGO THERAPIST MONITOR, KEYBOARD, MOUSE	Ⓢ	---	---	---	---	---	ON COUNTER
4	SYNGO THERAPIST COMPUTER TOWER	Ⓢ	40	1,400	8	22	15	UNDER COUNTER
5	ARTISTE	Ⓢ	17,200	22,000	56 1/2	124 1/2	101	IN TREATMENT ROOM
6	TXT TREATMENT TABLE	Ⓢ	2,646	1,023	24 1/4	97 5/8	---	TABLE HEIGHT UP TO 67"
7	POWER CONDITIONER	Ⓢ	715	2,200	24	21	42	FLOOR MOUNTED
8	TRANSFER STATION	Ⓢ	79	---	22 5/8	10 3/8	36 1/2	WALL MOUNTED
9	IN-ROOM MONITOR AND KEYBOARD - REMOTE CONSOLE	Ⓢ	29	240	18 1/2	9 1/2	18 1/2	WALL/CEILING MOUNTED
10	LAP CEILING LASER	Ⓢ	---	---	---	---	---	CEILING MOUNTED
11	LAP LATERAL LASER - 2X	Ⓢ	---	---	---	---	---	WALL MOUNTED
12	LAP SAGITTAL LASER	Ⓢ	---	---	---	---	---	WALL/CEILING MOUNTED
13	CLOSED CIRCUIT CAMERA - 2 X	Ⓢ	2	---	3	7	3	WALL MOUNTED
14	CLOSED CIRCUIT MONITORS AND CONTROL UNIT	Ⓢ	---	---	---	---	---	ON COUNTER
15	INTERCOM - 2 X	Ⓢ	---	---	---	---	---	WALL MOUNTED
16	KKT KRAUS WATER CHILLER	Ⓢ	1,477	102,364	66	36	64 1/2	LOCATED BY CUSTOMER
17	KKT KRAUS WATER CHILLER REMOTE CONTROL	Ⓢ	---	---	8	3	8	IN CONTROL ROOM
18	APC SUA750 UPS (550 TXT TABLE)	Ⓢ	29	90	5 1/2	14	6 1/4	UNDER COUNTER
19	RTT UPS (THERAPIST WORKSTATION)	Ⓢ	33	90	6	19	9	UNDER COUNTER
20	MOSAIQ SEQUENCER MONITOR, KEYBOARD, MOUSE	Ⓢ	---	---	---	---	---	ON COUNTER
21	MOSAIQ SEQUENCER COMPUTER TOWER	Ⓢ	---	---	---	---	---	UNDER COUNTER

STATE AGENCY REVIEW

PRIOR TO SIEMENS EQUIPMENT INSTALLATION, APPROVAL OF CONSTRUCTION OR STRUCTURAL MODIFICATIONS UTILIZING X-RAY FOR DIAGNOSTIC OR THERAPEUTIC PURPOSES, MUST BE OBTAINED BY THE CUSTOMER FROM THE APPROPRIATE STATE AGENCY, IF APPLICABLE.

ROOM MEASUREMENTS

ALL ROOM MEASUREMENTS AND ROOM DETAIL SPECIFICATIONS MUST BE VERIFIED ON SITE PRIOR TO BEGINNING ANY CONSTRUCTION WORK.

SHIELDING REQUIREMENTS

SHIELDING REQUIREMENTS MUST ACCOUNT FOR SPECIFIC ROOM LAYOUT, ACCELERATOR TYPE, AND CHARACTERISTICS OF USE. SHIELDING CALCULATIONS MUST BE MADE BY A SUBJECT MATTER EXPERT, CHOSEN BY THE CUSTOMER, AND MUST ADHERE TO PERTINENT LOCAL/NATIONAL/INTERNATIONAL STANDARDS AND REGULATIONS, E.G. NUCLEAR REGULATORY COMMISSION (NRC), NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS (NCRP), INTERNATIONAL COMMISSION ON RADIOLOGICAL PROTECTION (ICRP).

MAGNETIC FIELD PRECAUTIONS

THE PRESENCE OF MAGNETIC FIELDS IN THE VICINITY OF EQUIPMENT MAY HAVE AN ADVERSE EFFECT. IT IS THE CUSTOMER'S RESPONSIBILITY TO VERIFY THAT THE FOLLOWING VALUES ARE NOT EXCEEDED.

MAGNETIC ALLOWABLE MAGNETIC FIELD	DEVICES
1.0mT (10 GAUSS)	COMPUTERS, MAGNETIC DISK DRIVES, OSCILLOSCOPES, PROCESSORS
0.5mT (5 GAUSS)	X-RAY TUBES, B/W MONITORS, MAGNETIC DATA CARRIERS, DATA STORAGE DRIVES
0.2mT (2 GAUSS)	SIEMENS CT SCANNERS
0.15mT (1.5 GAUSS)	COLOR MONITORS, SIEMENS LINEAR ACCELERATORS
0.05mT (0.5 GAUSS)	X-RAY IMAGE INTENSIFIERS, GAMMA CAMERAS, PET/CYCLOTRON, OTHER LINEAR ACCELERATORS

MAGNETIC FIELDS SHOULD BE MEASURED PRIOR TO DELIVERY

MINIMUM CEILING HEIGHT W/RESTRICTION	CEILING HEIGHT WITHOUT RESTRICTION	RECOMMENDED CEILING HEIGHT
9'-0"	9'-6"	9'-8"

CASEWORK & ACCESSORY NOTES

- ALL CASEWORK IS EITHER EXISTING OR IS TO BE DESIGNED, DETAILED, FURNISHED AND INSTALLED BY THE CUSTOMER AND/OR CONTRACTOR. FOLLOW DESIGN RECOMMENDATIONS INCLUDED HEREWITH, AS THEY ARE ESSENTIAL FOR THE SUCCESSFUL INSTALLATION & OPERATION OF THE SIEMENS EQUIPMENT.
- THE SOUND SYSTEM AND INTERCOM BETWEEN THE EXAMINATION AND CONTROL ROOMS ARE TO BE LOCATED, FURNISHED AND INSTALLED BY THE CUSTOMER/CONTRACTOR.
- ALL FURNITURE (CHAIRS, ETC.) FOR THE CONTROL ROOM ARE TO BE PROVIDED BY THE CUSTOMER.

CONTRACTORS RESPONSIBILITIES

- THE CONTRACTOR IS RESPONSIBLE FOR RECEIVING AND DELIVERING THE UNIVERSAL BASE FRAME (OR UPGRADE KIT) AND POWER CONDITIONER TO THE TREATMENT ROOM IN GOOD CONDITION.
- MOUNTING PROVISIONS MUST BE PROVIDED FOR LASER INSTALLATION (CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR INSTALLING NON-SIEMENS-PURCHASED LASER SYSTEMS).

ENVIRONMENTAL/POWER AUDIT

AS AN INDICATION OF OUR COMMITMENT TO QUALITY, SIEMENS MAY, AT NO COST TO YOUR FACILITY, CHECK THE OPERATING ENVIRONMENT AFTER SYSTEM TURNOVER TO DETERMINE IF THE REQUIREMENTS FOR TEMPERATURE, HUMIDITY, POWER, AND GROUNDING ARE MET AS PER SIEMENS' PUBLISHED SPECIFICATIONS. SIEMENS WILL GENERATE A WRITTEN REPORT DETAILING THE ENVIRONMENTAL AND ELECTRICAL CONDITION OF THE SITE AFTER TURNOVER AND WILL SHARE THE REPORT WITH YOU. IN THE EVENT WE IDENTIFY ANY ENVIRONMENTAL/POWER DEFICIENCIES AT THE SITE, YOUR FACILITY WILL BE REQUESTED TO CORRECT DEFICIENCIES WITHIN THIRTY (30) DAYS. SHOULD ANY CORRECTIVE ACTIONS BE NECESSARY, AND UPON REQUEST, SIEMENS WILL PROVIDE GUIDANCE IN AN EFFORT TO FACILITATE RESOLUTION. PLEASE BE ADVISED THAT AFTER 30 DAYS NOTICE ANY REPAIR OR MAINTENANCE SERVICES NECESSITATED BY SEVERE DEFICIENCIES WILL FALL OUTSIDE YOUR WARRANTY COVERAGE.

ARCHITECTURAL NOTES

- ALL PRELIMINARY EQUIPMENT LAYOUTS SUBMITTED BY SIEMENS MEDICAL SOLUTIONS, INC. (SMS HEREAFTER) ARE BASED ON THE RECOMMENDED SPACE NECESSARY FOR THE OPERATION AND SERVICEABILITY OF THE EQUIPMENT BEING PROPOSED. SMS WILL NOT SUBMIT AN EQUIPMENT LAYOUT THAT IS NOT IN THE BEST INTEREST OF BOTH THE CUSTOMER AND SMS. ALL EQUIPMENT LAYOUTS ARE BASED EITHER ON AN ACTUAL SITE LOCATION SURVEY OR ARCHITECTURAL DRAWINGS SUPPLIED TO SMS. SMS WILL NOT BE RESPONSIBLE FOR ANY ALTERATIONS THAT ENCROUGH WITHIN DESIGNATED SAFETY AND SERVICE CLEARANCE ZONES AS INDICATED ON DRAWINGS (IE. PIPE CHASES, VENTILATION DUCTS, CASEWORK, AND SOFFITS, ETC.) MADE BY THE CUSTOMER OR REQUIRED BY A CUSTOMER'S ARCHITECTURAL FIRM. ONCE PRELIMINARY DRAWINGS HAVE BEEN SUBMITTED AND APPROVED, DO NOT ALTER ANY SPECIFICATIONS AND/OR DIMENSIONS WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SMS PROJECT MANAGER.
- SMS IS NOT AN ARCHITECTURAL OR ENGINEERING FIRM. DRAWINGS SUPPLIED BY SMS ARE NOT CONSTRUCTION DRAWINGS. THEREFORE, THESE DRAWINGS ARE TO BE USED ONLY FOR INFORMATION TO COMPLEMENT ACTUAL CONSTRUCTION DRAWINGS AVAILABLE FROM A CUSTOMER APPOINTED ARCHITECTURAL REPRESENTATIVE OR A CUSTOMER'S ENGINEERING DESIGN GROUP. SMS REQUIRES THAT ONCE THE FINAL CONSTRUCTION DRAWINGS HAVE BEEN PREPARED, THEY SHALL BE MADE AVAILABLE TO SMS PROJECT MANAGER TO VERIFY THAT ALL SMS REQUIREMENTS HAVE BEEN ADHERED TO. THE CUSTOMER'S ARCHITECT AND GENERAL CONTRACTOR SHALL BE ULTIMATELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CODES AND PROFESSIONAL DESIGN REQUIREMENTS.
- THE CUSTOMER IS RESPONSIBLE FOR ALL ROOM AND AREA PREPARATION COSTS, PROFESSIONAL FEES, PERMITS, REPORTS, AND INSPECTION FEES.
- EQUIPMENT WARRANTIES, EXPRESSED OR IMPLIED ON THE PART OF SMS SHALL BE CONTINGENT UPON STRICT COMPLIANCE WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND RECOMMENDATIONS AND REQUIREMENTS CONTAINED IN THESE DRAWINGS, UNLESS SPECIFIED OTHERWISE.
- ALL DIMENSIONS SHOWN ARE TAKEN FROM FINISHED SURFACES UNLESS SPECIFIED OTHERWISE.
- THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR A REGISTERED RADIATION PHYSICIST. ACTUAL PROTECTION REQUIREMENTS SHALL BE SPECIFIED BY A REGISTERED RADIATION PHYSICIST AT CUSTOMER'S ENGAGEMENT AND EXPENSE. RESPONSIBILITY FOR ALL INFORMATION AS TO THE ROOM LOCATION, USE, AND NUMBER OF ANTICIPATED EXAMINATIONS TO BE PERFORMED PER TIME PERIOD SHALL BE PROVIDED TO THE PHYSICIST BY THE CUSTOMER. THE CUSTOMER SHALL FURTHER TAKE ALL RESPONSIBILITY IN THE COMMUNICATION AND COORDINATION OF ACTIVITIES OF THE RADIATION PHYSICIST AND THE ARCHITECTURAL REPRESENTATIVE.
- SMS SHALL BE RESPONSIBLE FOR SMS EQUIPMENT INSTALLATION AND CALIBRATION, CONNECTION AND INSTALLATION OF SMS PROVIDED CABLES, AND CONNECTION OF CONTRACTOR PROVIDED WIRES TO SMS EQUIPMENT. IN THE EVENT THAT SPECIFIC TRADE RULES OR LICENSE REQUIREMENTS PROHIBIT THIS, THE CUSTOMER SHALL INITIATE THE SERVICES OF APPROVED OTHER CONTRACTORS AND PAY FOR SELECTED, APPROVED PARTIES TO PERFORM THIS WORK WITH JOB SUPERVISION TO BE PROVIDED BY SMS. CALIBRATION WHEN ACCOMPLISHED OUTSIDE OF NORMAL INSTALLATION SEQUENCES DUE TO CONTRACTOR OR TRADE RULE ACTIONS OR REQUIREMENTS SHALL BE SUPPORTED BY, CHARGED TO, AND ACCEPTED BY THE CUSTOMER AS AN ADDITIONAL INSTALLATION EXPENSE.
- THE CUSTOMER SHALL VERIFY WITH SMS PROJECT MANAGER FINAL INSTALLATION DRAWINGS THE LOCATIONS AND TRAVEL OF ALL ANCILLARY EQUIPMENT TO BE CEILING OR WALL MOUNTED (IE. O.R. LIGHTS, MEDICAL GAS COLUMNS, PHYSIOLOGICAL MONITORING INJECTORS, CRT PLATFORMS, SPRINKLER HEADS, SMOKE DETECTORS, ELECTRICAL OUTLETS, HVAC GRILLES, SPEAKERS, AND GENERAL ROOM LIGHTING, ETC.).
- THE GENERAL CONTRACTOR/CUSTOMER SHALL BE RESPONSIBLE FOR ALL FINAL PAINT, TOUCH-UP AND ANY COSMETIC OR TRIM WORK WHICH NEEDS TO BE OR IS REQUIRED TO BE COMPLETED AFTER THE INSTALLATION OF THE SMS EQUIPMENT AND ANY ASSOCIATED SUPPORT APPARATUS.

SITE READINESS GUIDELINES

- THE FOLLOWING GENERAL CONDITIONS ARE NECESSARY TO HAVE THE STATUS OF "READY SITE":
- PROPER POWER AVAILABLE AT SIEMENS EQUIPMENT POWER CABINET LOCATION AND ALL POWER OUTLETS FUNCTIONING.
 - AIR CONDITIONING/HUMIDIFICATION SYSTEMS COMPLETE, TESTED, AND FUNCTIONING PROPERLY ACCORDING TO SIEMENS SPECIFICATIONS.
 - PROPER LIGHTING INSTALLED AND FUNCTIONING.
 - PLUMBING COMPLETE EXCEPT FOR ANY FINAL CONNECTIONS TO SIEMENS EQUIPMENT.
 - ALL CABLE TRAYS/DUCTS/CONDUITS CORRECTLY SIZED, LOCATED, AND INSTALLED ACCORDING TO THE SIEMENS DRAWINGS.
 - ALL REINFORCEMENT PLATES/UNISTRUT INSTALLED AS REQUIRED.
 - ROOM FOR EQUIPMENT INSTALLATION AND IMMEDIATE VICINITY IS DUST-FREE AND IS TO REMAIN SO FOR THE DURATION OF THE INSTALLATION.
 - A SECURE AREA (APPROXIMATELY 10' x 10') IS AVAILABLE AT EQUIPMENT DELIVERY FOR PARTS AND INSTALLATION TOOLS.
 - CUSTOMER SUPPLIED CAMERAS AND PROCESSORS INSTALLED.
 - CUSTOMER APPROVAL FOR SIEMENS REMOTE SERVICES (SRS) CONNECTION, AND CUSTOMER'S I.T. CONTACT INFORMATION AND IP ADDRESSES ESTABLISHED.
 - WALLS TO BE PRIMED AND PAINTED, FLOORS TO BE TILED EXCEPT IN AREAS OF THE EQUIPMENT BASE PLATES.
- IF THESE CONDITIONS ARE NOT MET, THE SIEMENS PROJECT MANAGER AND THE DESIGNATED SIEMENS INSTALLATION SUPERVISOR SHALL RESCHEDULE THE INSTALLATION START DATE. NOTE: ADDITIONAL COST MAY BE INCURRED BY THE CUSTOMER/CONTRACTOR AND DELIVERY DATES MAY NEED TO BE RESCHEDULED, WHEN THE SIEMENS SITE READINESS GUIDELINES ARE NOT MET.

RESOURCE LIST (SMS USE ONLY)

DESIGNATION	PG NUMBER	DATE
ARTISTE LINEAR ACCELERATOR	TH02-ART.891.01.03.02	07.11

PROJECT MANAGER: DAVE DRAEGER
 TEL: (920) 279-5176 EXT: _____
 FAX: _____
 EMAIL: DAVID.DRAEGER@SIEMENS.COM

SIEMENS
CLEMENT J. ZABLOCKI VAMC
 5000 W NATIONAL AVE., MILWAUKEE, WI 53295
 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)

PROJECT #: **1101472**
 SHEET: **A-101**

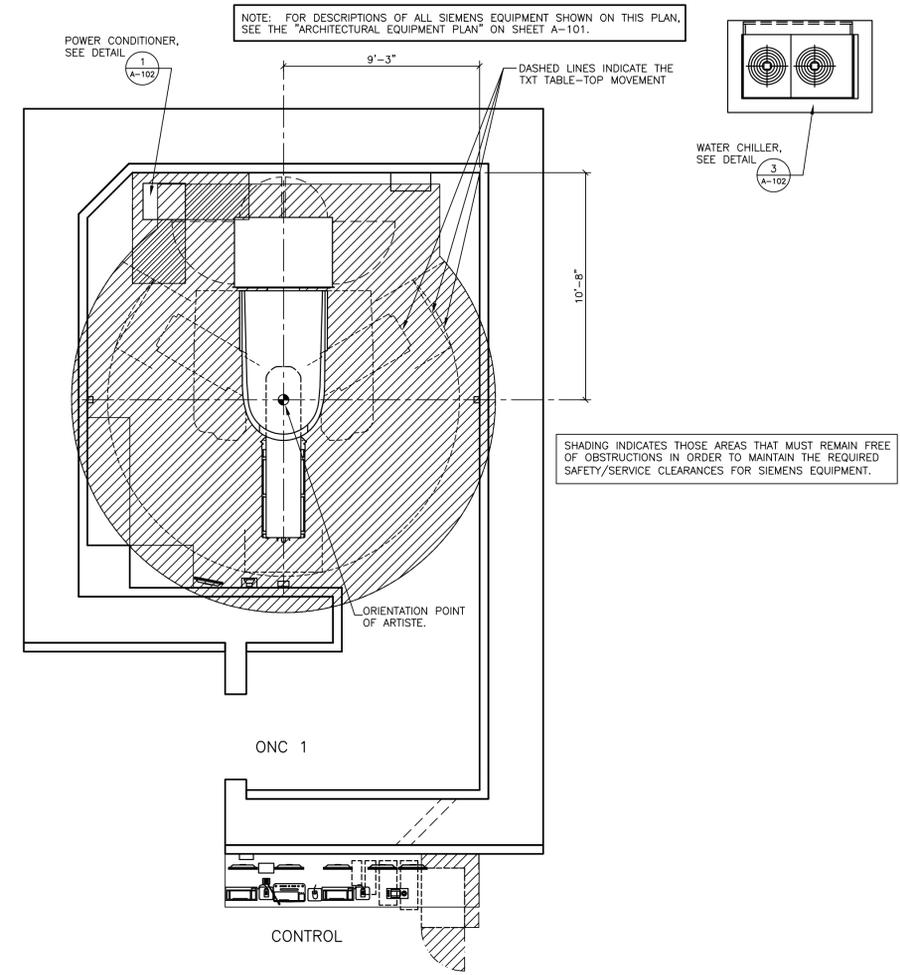
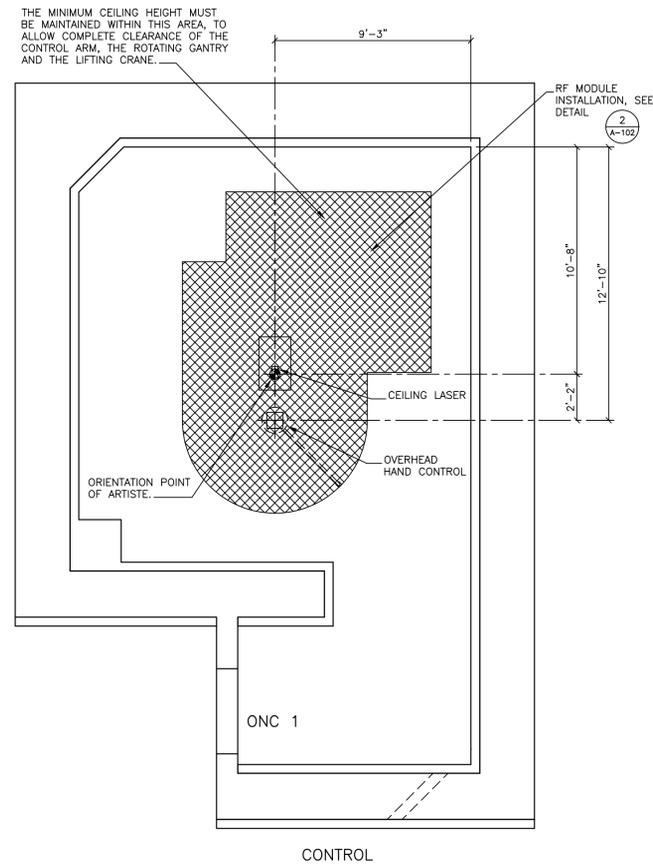
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SCALE: AS NOTED REF. # 50153553

DATE: 01/17/12 CHECKED: _____
 SHEET 1 OF 8 DRAWN BY: R. SUTHERS

01/17/12 R-101 RA VERSION DATED 05/24/11 APPROVED BY CUSTOMER FOR FINLS.

SYMBOLS: **-ISSUE BLOCK-**

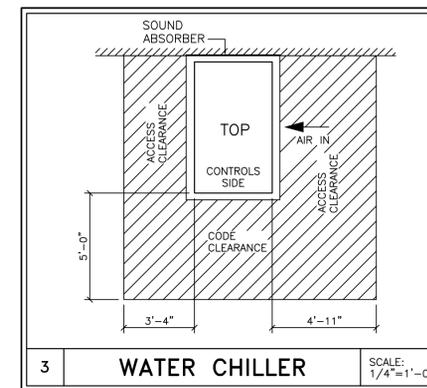
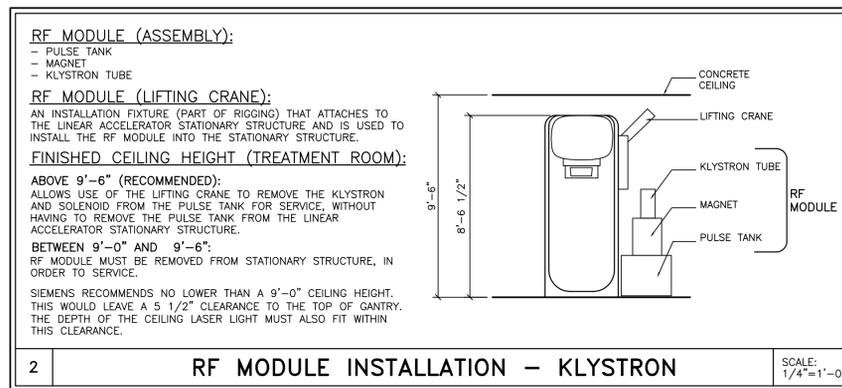
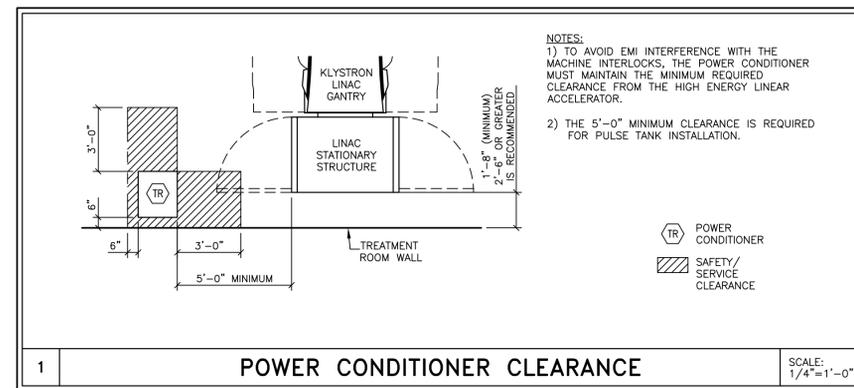


REFLECTED CEILING PLAN

SAFETY/SERVICE CLEARANCE PLAN

SCALE: 1/4" = 1'-0"

SCALE: 1/4" = 1'-0"



CEILING NOTES

- 1) ALL CEILING MOUNTED LIGHT FIXTURES, MECHANICAL REGISTERS AND SPRINKLER HEADS SHALL BE FLUSH WITH FINISHED CEILING, SHALL BE OUTSIDE OF ALL HATCHED AREAS AND SHALL BE SPECIFIED BY THE ARCHITECT OF RECORD AND HIS SUBSEQUENT CONSULTING ENGINEERS.
- 2) THE ACTUAL CEILING DESIGN AND COORDINATION OF LIGHTING AND MECHANICAL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ARCHITECT OF RECORD AND HIS SUBSEQUENT CONSULTING ENGINEERS.
- 3) THE CUSTOMER/CONTRACTOR SHALL BE RESPONSIBLE FOR FABRICATING, SUPPLYING AND INSTALLING ALL LIGHT, MECHANICAL AND STRUCTURAL SUPPORTING SYSTEMS. SIEMENS MEDICAL SYSTEMS, INC. IS ONLY RESPONSIBLE FOR THE SUPPLYING, INSTALLING AND CALIBRATION OF SMS EQUIPMENT AS SPECIFIED ON THE EQUIPMENT SCHEDULE AS SHOWN ON SHEET A-101.
- 4) ALL ELECTRICAL AND STRUCTURAL SYSTEMS SHOWN ON THE REFLECTED CEILING PLAN HAVE BEEN COORDINATED WITH THE EQUIPMENT LOCATIONS AS SHOWN ON THE 1/4" SCALE ARCHITECTURAL EQUIPMENT PLAN (SHEET A-101). ANY CHANGES TO THE SMS EQUIPMENT CONFIGURATION AS SHOWN, DUE TO PLACEMENT OF LIGHTING, STRUCTURAL, ELECTRICAL AND MECHANICAL SYSTEMS, MUST BE APPROVED IN WRITING BY THE SMS PROJECT MANAGER PRIOR TO THE COMPLETION OF CONSTRUCTION DOCUMENTS.

1 POWER CONDITIONER CLEARANCE SCALE: 1/4"=1'-0"

2 RF MODULE INSTALLATION - KLYSTRON SCALE: 1/4"=1'-0"

3 WATER CHILLER SCALE: 1/4"=1'-0"

LIGHTING GUIDELINES

ROOM LIGHTING IS THE RESPONSIBILITY OF THE CUSTOMER. HOWEVER, SIEMENS OFFERS THE FOLLOWING RECOMMENDATIONS, AS A GENERAL GUIDE ONLY, WHEN PLANNING FOR LIGHTING.

- 1) OVERALL GENERAL ILLUMINATION IS NECESSARY FOR CLEAN UP AND MAINTENANCE OF EQUIPMENT. FLUORESCENT LIGHTING IS USUALLY PROVIDED FOR THIS PURPOSE AND SHOULD BE A MINIMUM LEVEL OF 50 FOOTCANDLES. TO MINIMIZE GLARE AND PROVIDE VISUAL COMFORT, AN INDIRECT LIGHTING SYSTEM SHOULD BE CONSIDERED TOGETHER WITH COLOR IMPROVED FLUORESCENT LAMPS.
- 2) THE GENERAL LIGHTING SHOULD HAVE A MULTI-LEVEL SWITCHING CAPABILITY TO ALLOW FLEXIBILITY OF AMBIENT LIGHTING LEVELS.

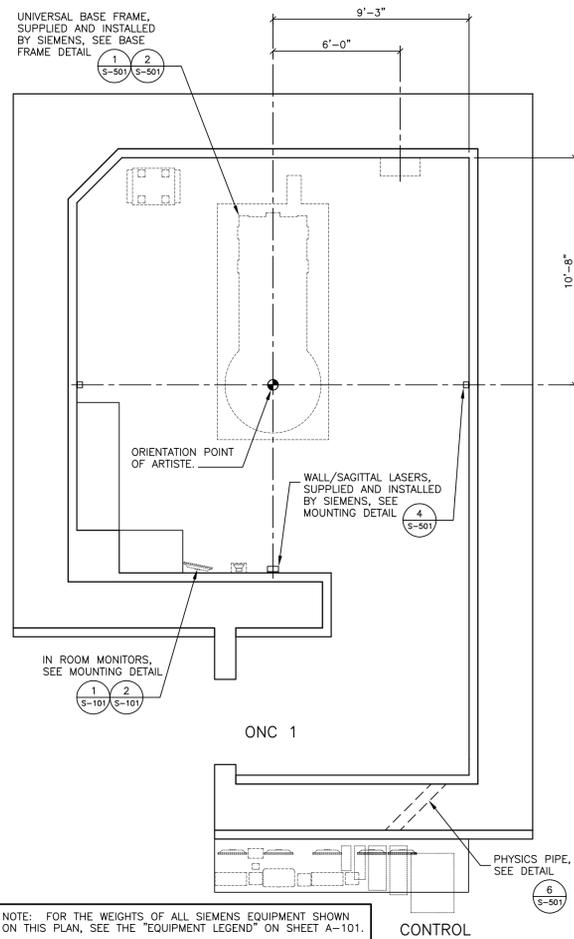
MINIMUM CEILING HEIGHT W/RESTRICTION	CEILING HEIGHT WITHOUT RESTRICTION	RECOMMENDED CEILING HEIGHT
9'-0"	9'-6"	9'-8"

PROJECT MANAGER: DAVE DRAEGER TEL: (920) 279-5176 EXT: VMAIL: (920) 279-5176 FAX: EMAIL: DAVID.DRAEGER@SIEMENS.COM		SIEMENS	
PROJECT #: 1101472		CLEMENT J. ZABLOCKI VAMC	
SHEET 2 OF 8		5000 W NATIONAL AVE., MILWAUKEE, WI 53295 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)	
DATE: 01/17/12		DRAWN BY: R. SUTHERS	
SYMBOL: 01/17/12		DESCRIPTION: R-101 RA VERSION DATED 05/24/11 APPROVED BY CUSTOMER FOR FINALS.	
-ISSUE BLOCK-		ALL RIGHTS ARE RESERVED.	
SCALE: AS NOTED		REF. # 50153553	
DATE: 01/17/12		CHECKED:	
		A-102	

ATTENTION:

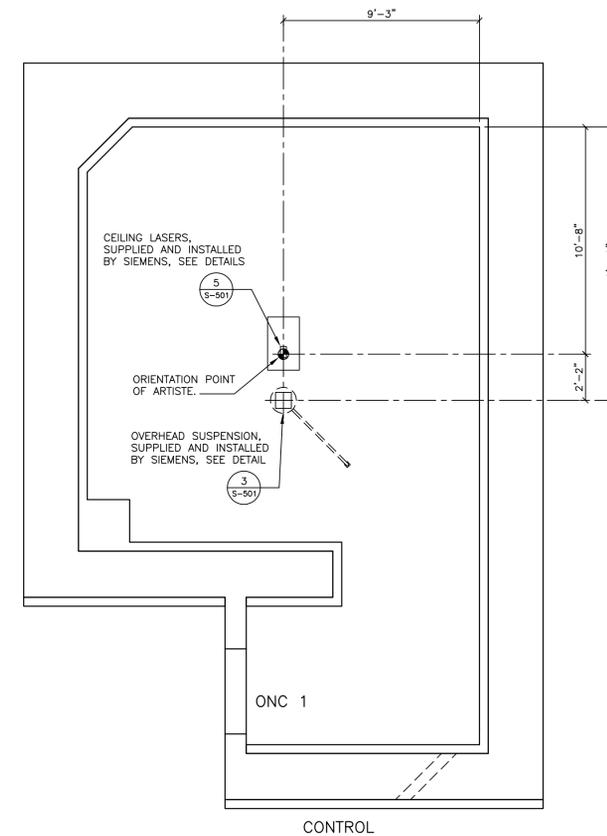
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ARTISTE
11/17/11



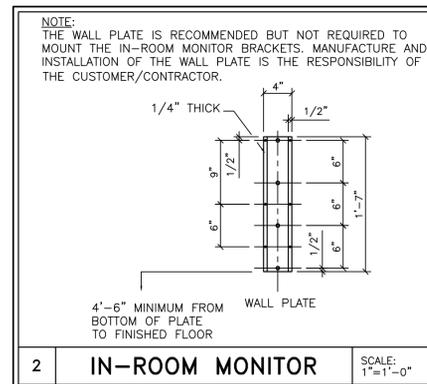
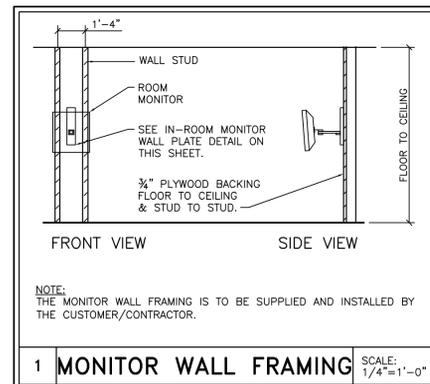
STRUCTURAL FLOOR PLAN

SCALE: 1/4" = 1'-0"



STRUCTURAL CEILING PLAN

SCALE: 1/4" = 1'-0"



MINIMUM CEILING HEIGHT W/RESTRICTION	CEILING HEIGHT WITHOUT RESTRICTION	RECOMMENDED CEILING HEIGHT
9'-0"	9'-6"	9'-8"

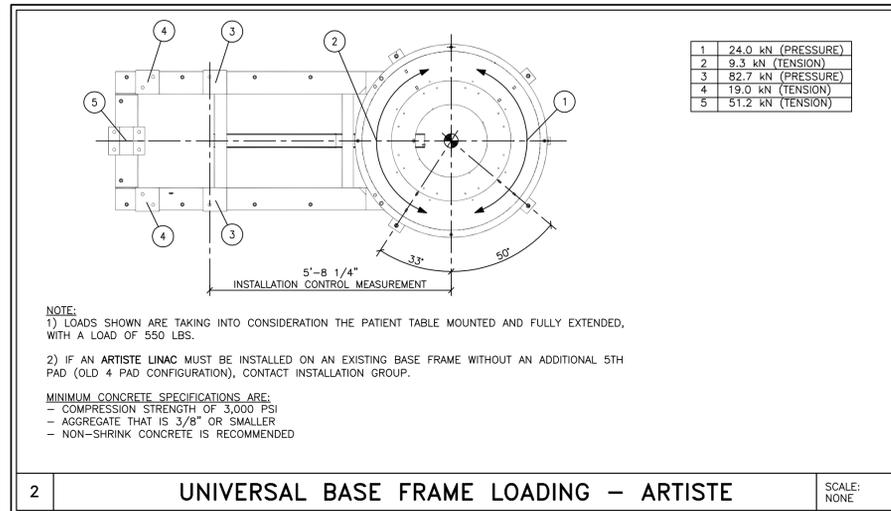
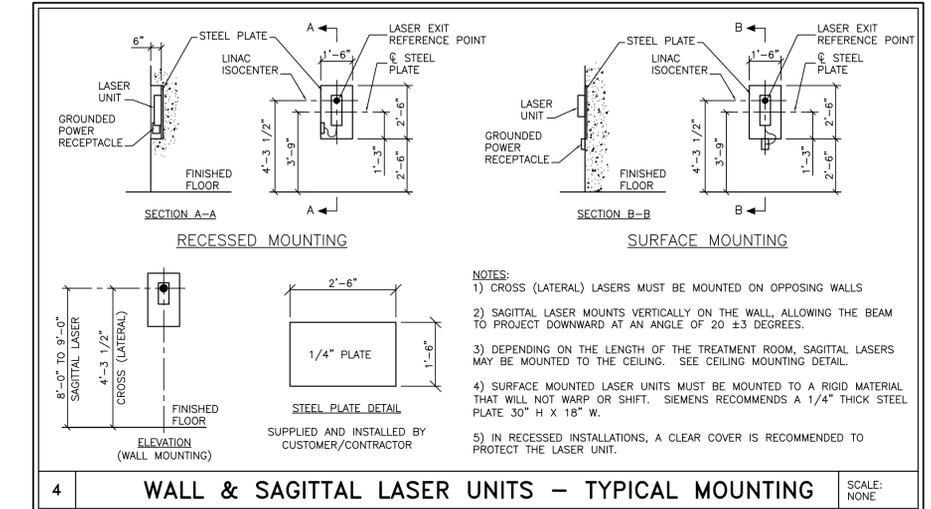
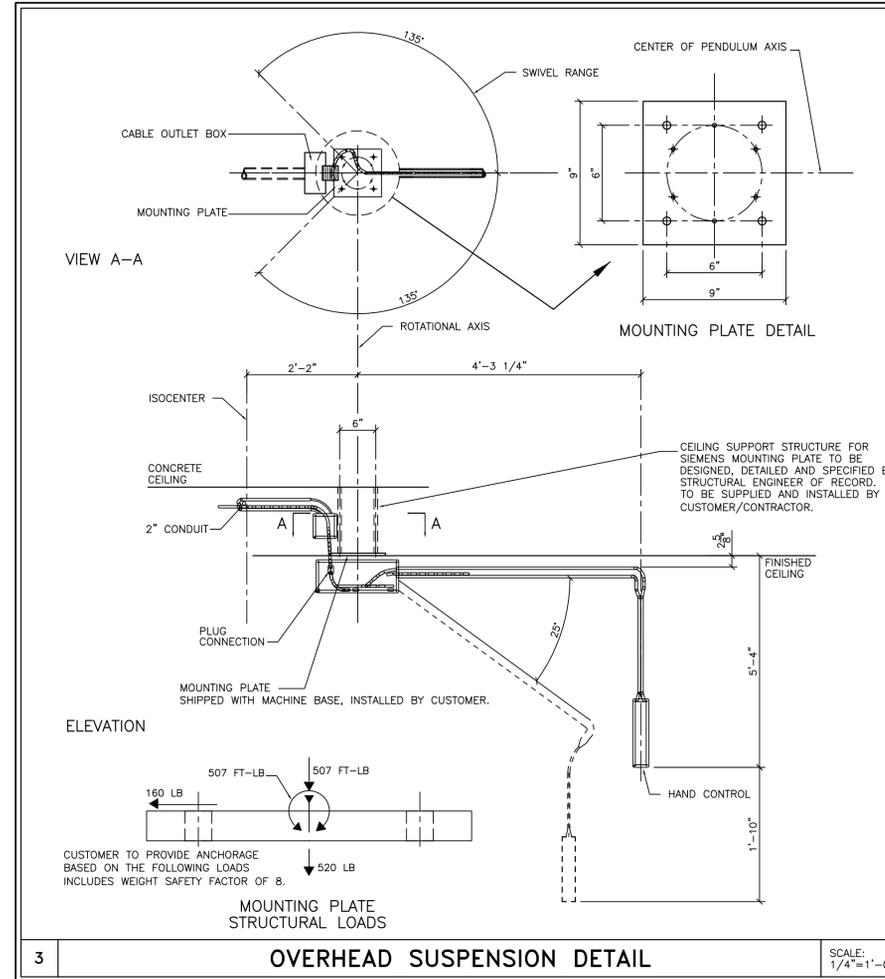
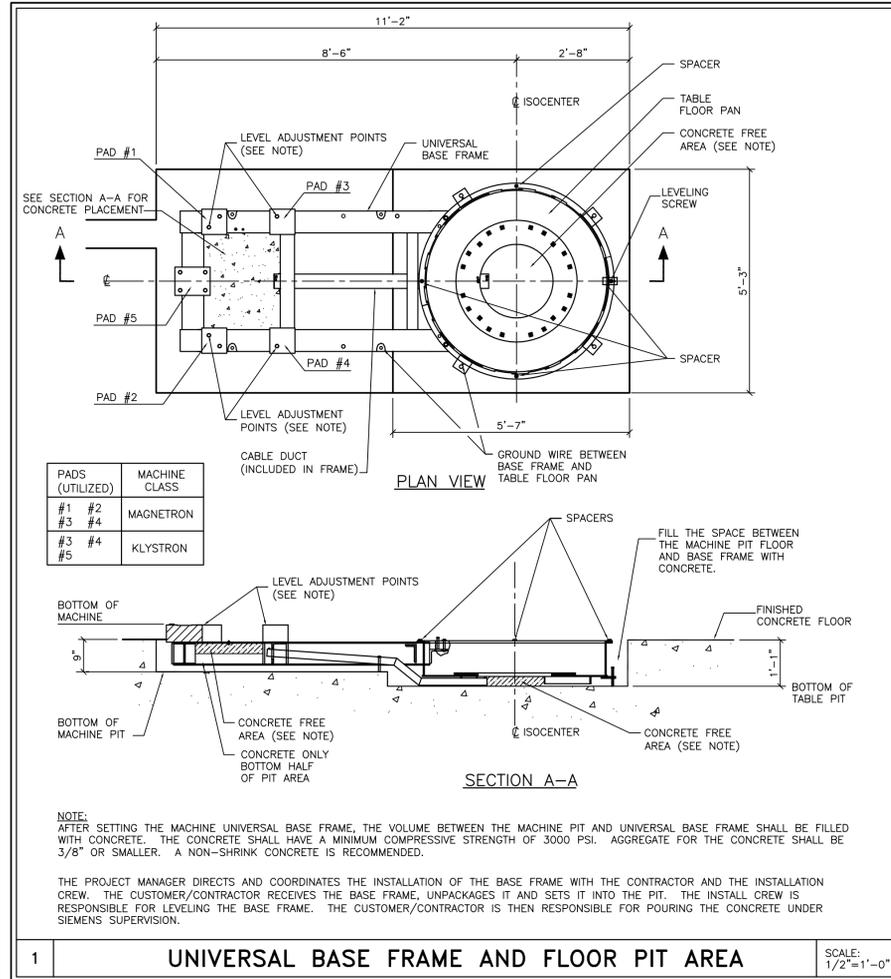
PROJECT MANAGER: DAVE DRAEGER TEL: (920) 279-5176 EXT: VMAIL: FAX: EMAIL: DAVID.DRAEGER@SIEMENS.COM		SIEMENS	
CLEMENT J. ZABLOCKI VAMC 5000 W NATIONAL AVE., MILWAUKEE, WI 53295 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)			
THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.		PROJECT #: 1101472	SHEET: S-101
ALL RIGHTS ARE RESERVED.		SHEET 3 OF 8 DRAWN BY: R. SUTHERS	CHECKED:
SCALE: AS NOTED	REF. # 50153553	DATE: 01/17/12	

ATTENTION:

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- ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.
- THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

ARTISTE
11/17/11

REFERENCE DOCUMENT - NOT FOR CONSTRUCTION



STRUCTURAL NOTES

- THE CUSTOMER/CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURAL SUPPORT MEMBERS AND NEEDED HARDWARE FOR THE INSTALLATION OF THE SIEMENS EQUIPMENT.
- THE OVERHEAD STRUCTURAL SUPPORT SYSTEM SHALL BE FIXED, RIGID AND BRACED FOR SWAY.
- ALL STRUCTURAL SUPPORT MEMBERS SHALL BE TRUE, SQUARE, LEVEL, PARALLEL AND COPLANAR WITH RESPECT TO EACH OTHER, WITH A HORIZONTAL STRUCTURAL SUPPORT MEMBER TO BE LOCATED AND SET WITH A TRANSIT.
- ALL STRUCTURAL SUPPORT DETAILS SHOWN ARE SAMPLE DETAILS BASED UPON TYPICAL AND STANDARD BUILDING PRACTICES AND ARE NOT INTENDED AS ACTUAL CONSTRUCTION DETAILS. ALL CONSTRUCTION DETAILS AND SUPPORT CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER AT THE CUSTOMER'S EXPENSE. IN THE EVENT AN EXISTING SUPPORT SYSTEM IS TO BE USED, IT WILL BE THE CUSTOMER'S RESPONSIBILITY TO VERIFY THE INTEGRITY OF THAT SYSTEM.
- WHERE SHOWN ON THE 1/4" STRUCTURAL FLOOR PLAN, THESE FRAMES ARE TO BE SET BY THE CONTRACTOR, UNDER THE SUPERVISION OF SMS PERSONNEL. THE CUSTOMER/CONTRACTOR IS RESPONSIBLE FOR ALL FRAMES INSTALLED BY HIM TO BE WATER LEVEL AND ANCHORED PROPERLY.
- ALL CEILING FIXTURES (I.E. AIR SUPPLY GRILLES, AIR RETURN GRILLES, EXHAUST GRILLES, SPRINKLER HEADS, INCANDESCENT AND FLUORESCENT LIGHT FIXTURES, INTERCOM SPEAKERS, MEDICAL GAS COLUMNS, ETC.) SHALL BE INSTALLED FLUSH MOUNTED WITH THE FINISHED CEILING TO PROVIDE FREE AND UNRESTRICTED TRAVEL OF THE SMS CEILING MOUNTED EQUIPMENT.
- THE BOTTOM SIDE OF THE UNISTRUT CEILING GRID AND ANY CEILING MOUNTED SUPPORT PLATES ARE TO BE INSTALLED FLUSH WITH THE FINISHED CEILING. THE CUSTOMER/CONTRACTOR SHALL ALSO PROVIDE COVERSTRIPS FOR THE UNISTRUT.
- THE STRUCTURAL PLANNING AS SHOWN ON THE 1/4" STRUCTURAL PLAN HAS BEEN COORDINATED WITH THE EQUIPMENT LOCATION AS SHOWN ON THE 1/4" EQUIPMENT LAYOUT PLAN. FOR THIS REASON, ANY DEVIATIONS FROM THE STRUCTURAL PLANNING AS SHOWN MUST BE APPROVED BY SMS PLANNING DEPARTMENT.
- THE STRUCTURAL ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR THE DESIGN AND DETAIL OF FLOOR, WALL AND CEILING STRUCTURES IN ACCORDANCE WITH THE WEIGHTS, MOMENTS AND FORCES AS SHOWN ON OUR STRUCTURAL CALCULATIONS, OR INFORMATION, IN CONSIDERATION OF FORCES AS DETERMINED PER LOCAL GOVERNING BUILDING CODES.

BASE FRAME NOTES

DELIVERY IS APPROXIMATELY 30 DAYS PRIOR TO INSTALLATION. SHIPMENT WILL INCLUDE BASE FRAME, POWER CONDITIONER, OVERHEAD SUSPENSION MOUNTING PLATE, AND ASSOCIATED EQUIPMENT.

BASE FRAME WEIGHS 800 LBS. FLOOR PAN WEIGHS 500 LBS.

AFTER SETTING THE BASE FRAME, THE VOLUME BETWEEN THE MACHINE PIT AND FRAME SHALL BE FILLED WITH CONCRETE. THE CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. AGGREGATE FOR THE GROUT SHALL BE 3/8" OR SMALLER. A NON-SHRINK CONCRETE IS RECOMMENDED. CONCRETE SHOULD BE ALLOWED TO SET FOR 30 DAYS.

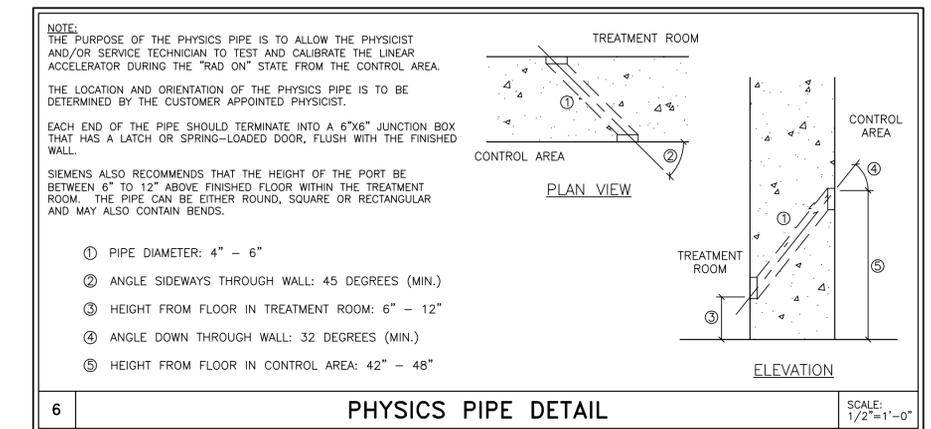
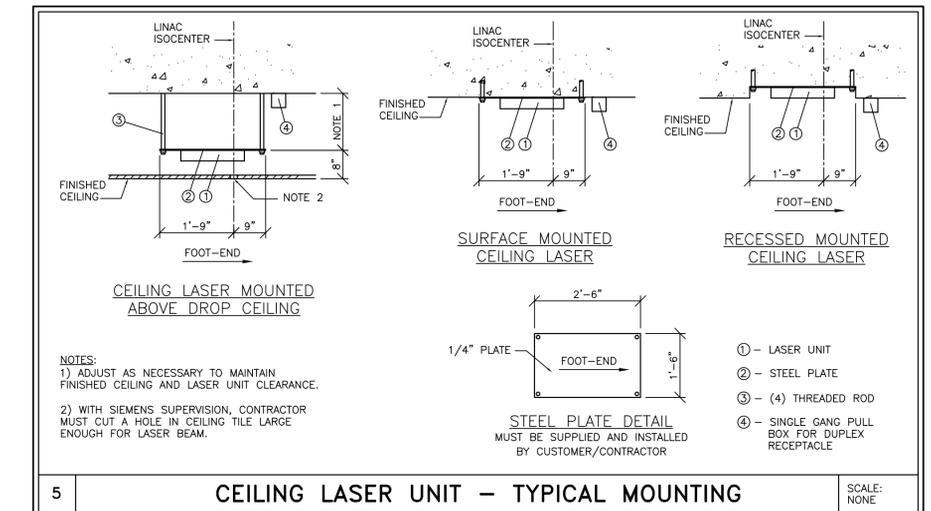
THE PROJECT MANAGER DIRECTS AND COORDINATES THE INSTALLATION OF THE BASE FRAME WITH THE CONTRACTOR AND THE INSTALLATION CREW. THE CUSTOMER/CONTRACTOR RECEIVES THE BASE FRAME, UNPACKAGES IT AND SETS IT INTO THE PIT. THE INSTALL CREW IS RESPONSIBLE FOR LEVELING THE BASE FRAME. THE CUSTOMER/CONTRACTOR IS THEN RESPONSIBLE FOR POURING THE CONCRETE UNDER SIEMENS SUPERVISION.

THE ZXT TABLE IS DESIGNED FOR NOMINAL INSTALLATION WHERE THE FINISHED FLOOR COVERING IS LESS THAN OR EQUAL TO 1/2" ABOVE THE BASE FLANGE. THIS INCLUDES THE ENTIRE FLOOR SURFACE WITHIN A 4'-3 3/16" RADIUS OF THE ISOCENTRIC AXIS.

CONTRACTORS RESPONSIBILITIES

- CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND POURING THE CONCRETE UNDER SIEMENS SUPERVISION.
- THE CONCRETE FOUNDATION FOR THE BASE FRAME MUST SET FOR A MINIMUM OF 4 WEEKS.
- THE CONCRETE FLOOR MUST BE FLAT AND LEVEL WITH A TOLERANCE OF 0.197" IN A 51" RADIUS OF ISOCENTER TO PREVENT THE TREATMENT TABLE FROM INTERFERING WITH HIGH SPOTS IN THE FLOOR DURING ROTATION AROUND THE ISOCENTER.
- CONTRACTOR MUST INSTALL WATER AND DRAIN LINES BEFORE COMPLETING UNIVERSAL BASE FRAME INSTALLATION AND PRIOR TO THE FINAL CONCRETE POUR.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE OVERHEAD SUSPENSION MOUNTING PLATE FOR THE CEILING MOUNTED CONTROL ARM.

NOTE: SIEMENS IS RESPONSIBLE FOR ALIGNING AND SECURING THE UNIVERSAL BASE FRAME IN THE PIT.



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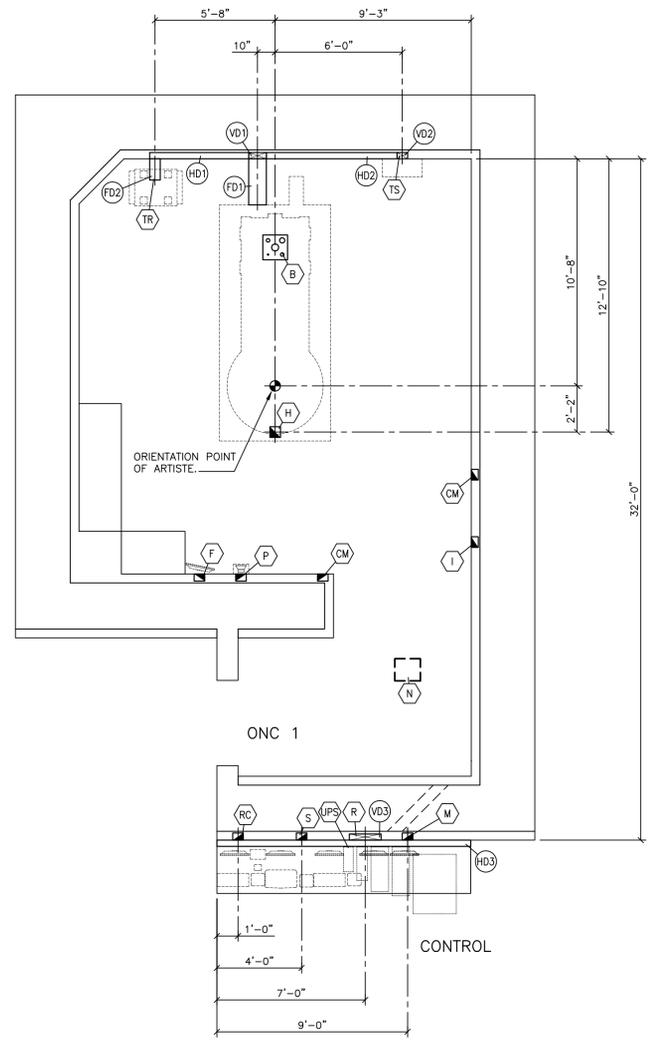
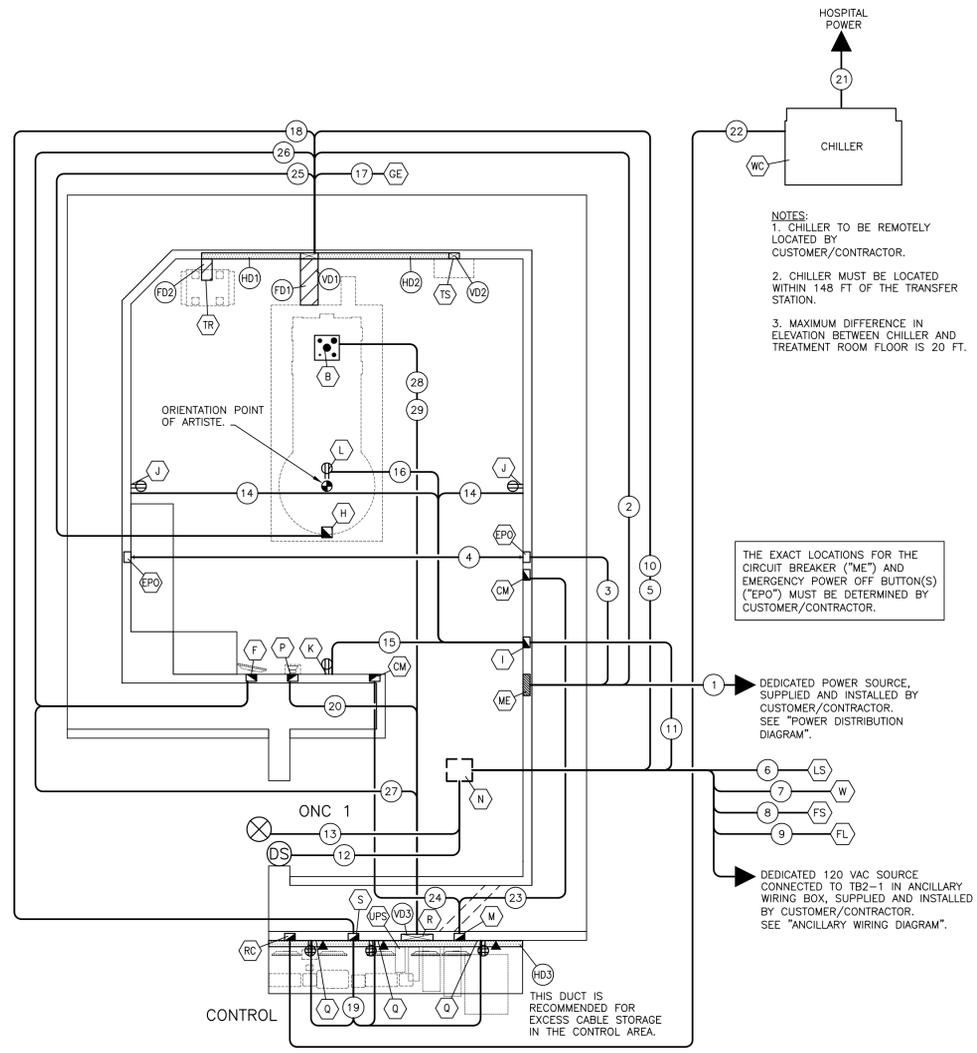
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PROJECT #: 1101472		CLEMENT J. ZABLOCKI VAMC	
SHEET 4 OF 8 DRAWN BY: R. SUTHERS		5000 W NATIONAL AVE., MILWAUKEE, WI 53295 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)	
DATE: 01/17/12		SHEET: S-501	
-ISSUE BLOCK-		SCALE: AS NOTED REF. # 50153553	

ARTISTE 11/17/11



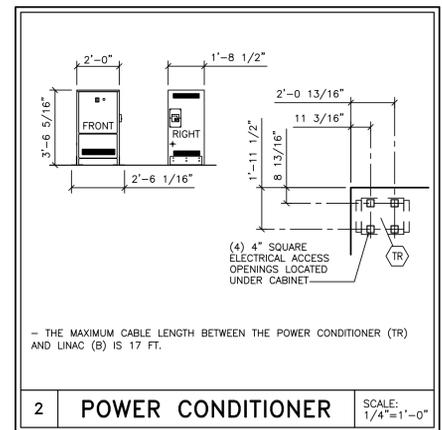
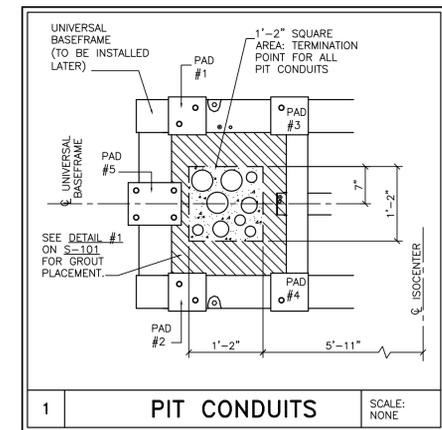
ELECTRICAL RACEWAY PLAN

SCALE: 1/4" = 1'-0"

ELECTRICAL DIMENSION PLAN

SCALE: 1/4" = 1'-0"

SYMBOLS	
ALL MAY NOT APPLY	
	CAUTION OR WARNING
	MAIN PANEL OR ENCLOSURE BY CUSTOMER/CONTRACTOR
	OPENING IN RACEWAY OR TRENCHDUCT
	PULLBOX IN (FLOOR/WALL/CEILING)
	OPENING IN ACCESS FLOORING
	WARNING LIGHT (X-RAY ON)
	DOOR SAFETY SWITCH
	(EPO) EMERGENCY POWER OFF BUTTON
	FLUSH MOUNTED DUCT, TRENCHDUCT
	SURFACE MOUNTED DUCT
	UNDER FLOOR DUCT
	VERTICAL DUCT
	ETHERNET CONNECTION TO CUSTOMER'S INFORMATION SYSTEMS NETWORK (VERIFY WITH SMS PROGRAM MANAGER)
	120 VOLT, 20 AMP, HOSPITAL GRADE DUPLEX OUTLET UNLESS OTHERWISE STATED.
	120 VOLT, 20 AMP, HOSPITAL GRADE QUAD OUTLET UNLESS OTHERWISE STATED.



MINIMUM CEILING HEIGHT W/RESTRICTION	CEILING HEIGHT WITHOUT RESTRICTION	RECOMMENDED CEILING HEIGHT
9'-0"	9'-6"	9'-8"

PROJECT MANAGER: DAVE DRAEGER TEL: (920) 279-5176 EXT: VMAIL: FAX: EMAIL: DAVID.DRAEGER@SIEMENS.COM		SIEMENS	
PROJECT #:		CLEMENT J. ZABLOCKI VAMC	
5000 W NATIONAL AVE., MILWAUKEE, WI 53295		ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)	
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ALL RIGHTS ARE RESERVED.		PROJECT #: 1101472	
SCALE: AS NOTED		SHEET 5 OF 8	
REF. # 50153553		DRAWN BY: R. SUTHERS	
DATE: 01/17/12		CHECKED:	
—ISSUE BLOCK—			

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ARTISTE
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REFERENCE DOCUMENT - NOT FOR CONSTRUCTION

CONDUIT LEGEND			
SYM	SIZE	DESCRIPTION	REMARKS
①	---	CONDUIT FROM PANELBOARD TO CIRCUIT BREAKER (ME).	SEE POWER DIAGRAM
②	---	CONDUIT FROM "ME" TO "VD1" (TR) [POWER CONDITIONER]	SEE POWER DIAGRAM
③	---	CONDUIT FROM "ME" TO "EPO" [EMERGENCY POWER OFF]	SEE POWER DIAGRAM
④	---	CONDUIT FROM "EPO" TO "EPO"	SEE POWER DIAGRAM
⑤	3/4"	CONDUIT FROM "VD1" (B) TO "N" [ANCILLARY WIRING BOX]	SEE ANCILLARY WIRING DIAGRAM
⑥	1/2"	CONDUIT FROM "N" TO "LS"	LASER LIGHT SUPPLY
⑦	1/2"	CONDUIT FROM "N" TO "W"	WARNING LIGHT SUPPLY
⑧	1/2"	CONDUIT FROM "N" TO "FS"	FLUORESCENT LIGHT SUPPLY
⑨	1/2"	CONDUIT FROM "N" TO "FL"	FLUORESCENT LIGHTING
⑩	1/2"	CONDUIT FROM "N" TO "VD1" (TS)	TRANSFER STATION
⑪	3/4"	CONDUIT FROM "N" TO "I"	LASER JUNCTION BOX
⑫	3/4"	CONDUIT FROM "N" TO "DS" [WIRING FROM "B"]	DOOR SWITCH
⑬	1/2"	CONDUIT FROM "N" TO "WL"	WARNING LIGHT
⑭	1/2"	CONDUIT FROM "I" TO "J" [TWO LOCATIONS]	WALL LASERS - 2X
⑮	1/2"	CONDUIT FROM "I" TO "K"	SAGITTAL LASER
⑯	1/2"	CONDUIT FROM "I" TO "L"	OVERHEAD LASER
⑰	---	CONDUIT FROM "VD1" (TR) TO "GE"	GROUND ELECTRODE
⑱	3/4"	CONDUIT FROM "VD1" (TR) TO "S"	120 VAC POWER - CTRL AREA
⑲	3/4"	CONDUIT FROM "S" TO "Q"	DEDICATED OUTLETS
⑳	3/4"	CONDUIT FROM "VD3" (R) TO "P"	INTERCOM - TREATMENT ROOM SPEAKER
㉑	---	CONDUIT FROM "MAIN POWER PANEL" TO "WC"	WATER CHILLER
㉒	---	CONDUIT FROM "WC" TO "RC"	WC REMOTE CONTROL
㉓	2 1/2"	CONDUIT FROM "CM" TO "M" [REMOTE CONTROL CCTV CAMERA]	MAX. LENGTH 99 FT
㉔	2 1/2"	CONDUIT FROM "CM" TO "M" [REMOTE CONTROL CCTV CAMERA]	MAX. LENGTH 99 FT
㉕	2"	CONDUIT FROM "VD1" (B) TO "H" [HAND CONTROL]	MAX. LENGTH 61 FT
㉖	2"	CONDUIT FROM "VD1" (B) TO "F" [IN-ROOM MONITORS]	MAX. LENGTH 68 FT
㉗	2 1/2"	CONDUIT FROM "VD3" (R) TO "F" [IN-ROOM MONITORS]	MAX. LENGTH 115 FT
㉘	(2) 4"	CONDUITS FROM "B" TO "VD3" (R) [CCC, UPS]	MAX. LENGTH 100 FT
㉙	(1) 4"	CONDUITS FROM "B" TO "VD3" (R) [CCC, RTT & TXT UPS]	MAX. LENGTH 79 FT (SHORT SET)

ELECTRICAL LEGEND			
SYM	SIZE	DESCRIPTION	REMARKS
ⓑ	14" x 14"	CONDUIT TERMINATION POINT IN ACCELERATOR PIT.	LINAC PIT AREA
ⓓ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL. LOCATION TO BE DETERMINED BY CUSTOMER. (SEE NOTE 1)	CCTV CAMERAS
ⓔ	---	EMERGENCY POWER OFF BUTTONS FOR CIRCUIT BREAKERS. EPO'S MUST PREVENT RESETTING OF CIRCUIT BREAKERS WHEN IN OFF POSITION. EPO'S MUST BE RECESSED OR SHIELDED.	EMERGENCY POWER OFF BUTTONS
ⓕ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL BEHIND SIEMENS MONITORS WITH REMOVABLE COVER AND 2" KNOCKOUT. LOCATION TO BE DETERMINED BY CUSTOMER.	TREATMENT ROOM MONITORS
ⓖ	---	FLUORESCENT ROOM LIGHT, SUPPLIED BY ELECTRICAL CONTRACTOR.	TREATMENT ROOM LIGHTING
ⓗ	---	FLUORESCENT LIGHT SUPPLY, SUPPLIED BY ELECTRICAL CONTRACTOR.	LIGHTING SUPPLY
ⓓ	---	GROUND ELECTRODE, SUPPLIED BY ELECTRICAL CONTRACTOR	GROUND ELECTRODE
ⓔ	---	PULL BOX MOUNTED ABOVE FINISHED CEILING, AS SHOWN.	HAND CONTROL
ⓕ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL. LOCATION TO BE DETERMINED BY CONTRACTOR.	LASER JUNCTION BOX
ⓖ	---	WALL MOUNTED LASER LOCALIZER LIGHT POWER.	LATERAL LASERS
ⓗ	---	SAGITTAL LASER LOCALIZER LIGHT POWER.	SAGITTAL LASER
ⓓ	---	CEILING LASER LOCALIZER LIGHT POWER.	CEILING LASER
ⓔ	---	120V, 15A LASER SUPPLY, SUPPLIED BY ELECTRICAL CONTRACTOR	LASER SUPPLY
ⓕ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL. LOCATION TO BE DETERMINED BY CUSTOMER.	CCTV MONITOR
ⓖ	3-PHASE	CIRCUIT BREAKER WITH A SWITCH LEVER AND SWITCH POSITION INDICATOR, MOUNTED 5'-0" A.F.F., EXACT LOCATION DETERMINED BY CUSTOMER/CONTRACTOR. IT IS RECOMMENDED THAT THE MAIN LINE POWER CIRCUIT BREAKER(S) BE LOCATED IN AN ACCESSIBLE AREA OF THE TREATMENT ROOM	SEE POWER DIAGRAM
ⓗ	14 1/2"x12 1/2"x 6 1/2"	ANCILLARY WIRING BOX. LOCATION TO BE DETERMINED BY ELECTRICAL CONTRACTOR.	ANCILLARY WIRING BOX
ⓔ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL. LOCATION TO BE DETERMINED BY CUSTOMER.	INTERCOM - TREATMENT ROOM SPEAKER
ⓕ	---	DEDICATED 120V QUAD OUTLETS, SUPPLIED BY ELECTRICAL CONTRACTOR.	QUAD OUTLETS
ⓖ	18" x 3 1/2"	OPENING IN "VD3" IN CONTROL AREA, OPENING AT 18" A.F.F.	CONTROL CONSOLE
ⓗ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL FOR WATER CHILLER REMOTE CONTROL PANEL. LOCATION TO BE DETERMINED BY CUSTOMER.	WC REMOTE CONTROL PANEL
ⓔ	---	PULL BOX MOUNTED FLUSH WITH FINISHED WALL FOR DEDICATED 120V QUAD OUTLETS USED FOR CONTROL EQUIPMENT.	DEDICATED PULL BOX
ⓕ	---	OPENING IN END OF "FD2" UNDER THE POWER CONDITIONER CABINET. (SEE NOTE 3)	POWER CONDITIONER
ⓖ	---	OPENING IN "VD2" BEHIND OR UNDER THE WALL MOUNTED TRANSFER STATION.	TRANSFER STATION
ⓗ	---	CABLE TERMINATIONS AT THE UPS UNIT.	TXT UPS UNIT
ⓔ	---	WARNING LIGHT SUPPLY, SUPPLIED BY ELECTRICAL CONTRACTOR. (SEE NOTE 2)	WARNING LIGHT SUPPLY
ⓕ	---	OUTDOOR WATER CHILLER UNIT. LOCATION TO BE DETERMINED BY CUSTOMER/ELECTRICAL CONTRACTOR.	WATER CHILLER
ⓖ	12" x 3 1/2"	FLOOR DUCT SURFACE MOUNTED ON FINISHED FLOOR, CONNECTED TO "VD1". DUCT TO BE DIVIDED INTO (2) EQUAL SECTIONS FOR CABLE SEPARATION AND WITH REMOVABLE COVERS.	FLOOR DUCT
ⓗ	6" x 3 1/2"	FLOOR DUCT SURFACE MOUNTED ON FINISHED FLOOR, CONNECTED TO "HD1" AND TO END UNDER THE POWER CONDITIONER "TR". DUCT TO BE DIVIDED INTO (2) EQUAL SECTIONS FOR CABLE SEPARATION AND WITH REMOVABLE COVERS.	FLOOR DUCT
ⓔ	10"x3 1/2"	HORIZONTAL DUCT FLUSH MOUNTED IN WALL AT THE FLOOR LINE FROM "FD2" TO "VD1". THIS DUCT MUST BE DIVIDED INTO THREE SECTIONS: ONE 4" AND TWO 3" SECTIONS FOR SEPARATION OF CABLES.	HORIZONTAL DUCT
ⓕ	10"x3 1/2"	HORIZONTAL DUCT FLUSH MOUNTED IN WALL AT THE FLOOR LINE FROM "VD1" TO "VD2". THIS DUCT MUST BE DIVIDED INTO THREE SECTIONS: ONE 4" AND TWO 3" SECTIONS FOR SEPARATION OF CABLES.	HORIZONTAL DUCT
ⓖ	10"x3 1/2"	HORIZONTAL DUCT SURFACE MOUNTED ON WALL AT 18" A.F.F. AND CONNECTED TO "VD3" (R). THIS DUCT SHALL BE UTILIZED TO ACCOMMODATE EXCESS CABLE AS REQUIRED. THIS DUCT MUST BE DIVIDED INTO THREE SECTIONS: ONE 4" AND TWO 3" SECTIONS FOR SEPARATION OF CABLES.	HORIZONTAL DUCT
ⓗ	12"x3 1/2"	VERTICAL DUCT MOUNTED FLUSH WITH FINISHED WALL FROM ABOVE THE FINISHED CEILING TO END AT THE FLOOR LINE. THIS DUCT MUST BE DIVIDED INTO THREE SECTIONS: ONE 4" AND TWO 3", TO PROVIDE FOR SEPARATION OF CABLES.	VERTICAL DUCT
ⓔ	6"x3 1/2"	VERTICAL DUCT FLUSH MOUNTED IN WALL FROM "HD2" TO END BELOW OR BEHIND THE TRANSFER STATION "TS".	VERTICAL DUCT
ⓕ	18"x 3 1/2"	VERTICAL DUCT SURFACE MOUNTED ON WALL FROM ABOVE THE FINISHED CEILING TO END BELOW THE FLOOR LINE. THIS DUCT MUST BE DIVIDED INTO THREE EQUAL SECTIONS TO PROVIDE FOR SEPARATION OF CABLES.	VERTICAL DUCT
ⓖ	-	NOTES: 1. ALL CONDUIT SIZES MARKED "----" SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR. 2. WARNING LIGHTS AND DOOR SWITCHES ARE THE RESPONSIBILITY OF THE CUSTOMER/CONTRACTOR. (SEE "ANCILLARY WIRING DIAGRAM") 3. DUE TO VOLTAGE DROP CONSIDERATIONS, THE MAXIMUM CABLE LENGTH FROM "TR" TO "B" MUST NOT EXCEED 17'-0".	

CONTRACTOR SUPPLIED CABLES				
FROM	VIA	TO	DESCRIPTION	REMARKS
POWER SOURCE	1	ME	DETERMINED BY ELECTRICAL CONTRACTOR	SEE POWER DIAGRAM
ME	2,VD1,HD1,FD2	TR	DETERMINED BY ELECTRICAL CONTRACTOR	POWER TO POWER CONDITIONER
ME	3	EPO	DETERMINED BY ELECTRICAL CONTRACTOR	EMERGENCY POWER OFF
EPO	4	EPO	DETERMINED BY ELECTRICAL CONTRACTOR	EMERGENCY POWER OFF
TR	FD2,HD1,FD1	B	DETERMINED BY ELECTRICAL CONTRACTOR (MAX. LENGTH 17 FT)	LINAC POWER - INCOMING
B	FD1,VD1,5	N	DETERMINED BY ELECTRICAL CONTRACTOR	ANCILLARY WIRING, "DS"
N	6	LS	DETERMINED BY ELECTRICAL CONTRACTOR	LASER POWER
N	7	W	DETERMINED BY ELECTRICAL CONTRACTOR	WARNING LIGHT SUPPLY
N	8	FS	DETERMINED BY ELECTRICAL CONTRACTOR	FLUORESCENT LIGHT SUPPLY
N	9	FL	DETERMINED BY ELECTRICAL CONTRACTOR	FLUORESCENT LIGHTING
N	10,VD1,HD2,VD2	TS	DETERMINED BY ELECTRICAL CONTRACTOR	TRANSFER STATION VALVE ACTUATOR
N	11	I	DETERMINED BY ELECTRICAL CONTRACTOR	LASER JUNCTION BOX
N	12	DS	DETERMINED BY ELECTRICAL CONTRACTOR	"DS" WIRING FROM LINAC
N	13	WL	DETERMINED BY ELECTRICAL CONTRACTOR	"WL" WIRING FROM LINAC
I	14	J	DETERMINED BY ELECTRICAL CONTRACTOR (2 LOCATIONS)	WALL LASERS - 2X
I	15	K	DETERMINED BY ELECTRICAL CONTRACTOR	SAGITTAL LASER
I	16	L	DETERMINED BY ELECTRICAL CONTRACTOR	OVERHEAD LASER
TR	FD2,HD1,VD1,17	GE	DETERMINED BY ELECTRICAL CONTRACTOR	GROUND ELECTRODE
TR	FD2,HD1,VD1,18	S	DETERMINED BY ELECTRICAL CONTRACTOR	DEDICATED POWER FOR CONTROL AREA
S	19	Q	DETERMINED BY ELECTRICAL CONTRACTOR	DEDICATED QUAD OUTLETS - CONTROL AREA
R	VD3,20	P	DETERMINED BY ELECTRICAL CONTRACTOR	INTERCOM - TREATMENT ROOM SPEAKER
POWER SOURCE	21	WC	DETERMINED BY ELECTRICAL CONTRACTOR	POWER TO WATER CHILLER
WC	22	RC	DETERMINED BY ELECTRICAL CONTRACTOR	WC REMOTE CONTROL
CM	23	M	REMOTE CTRL CCTV CAM [1 MULTI-CONDUCTOR, 1 COAX CABLE]	MAX. CABLE LENGTH 99 FT
CM	24	M	REMOTE CTRL CCTV CAM [1 MULTI-CONDUCTOR, 1 COAX CABLE]	MAX. CABLE LENGTH 99 FT

SIEMENS SUPPLIED CABLES				
FROM	VIA	TO	DESCRIPTION	REMARKS
B	FD1,VD1,25	H	HAND CONTROL	MAX. CABLE LENGTH 75 FT
B	FD1,VD1,26	F	IN-ROOM MONITORS [POWER CABLES]	MAX. CABLE LENGTH 88 FT
R	VD3,27	F	IN-ROOM MONITORS [VIDEO CABLES]	MAX. CABLE LENGTH 135 FT
B	28,VD3	R	SIGNAL - ROUTER, TXT UPS, SCU, ETH, IAB & HIB	MAX. CABLE LENGTH 100 FT
B	29,VD3	R	POWER/SIGNAL - CC NODE, POWER - RTT & TXT UPS (SHORT CABLE SET)	MAX. CABLE LENGTH 79 FT
R	LOOSE	UPS	(2) POWER, (1) SIGNAL [TXT UPS]	MAX. CABLE LENGTH 18 FT

ATTENTION:

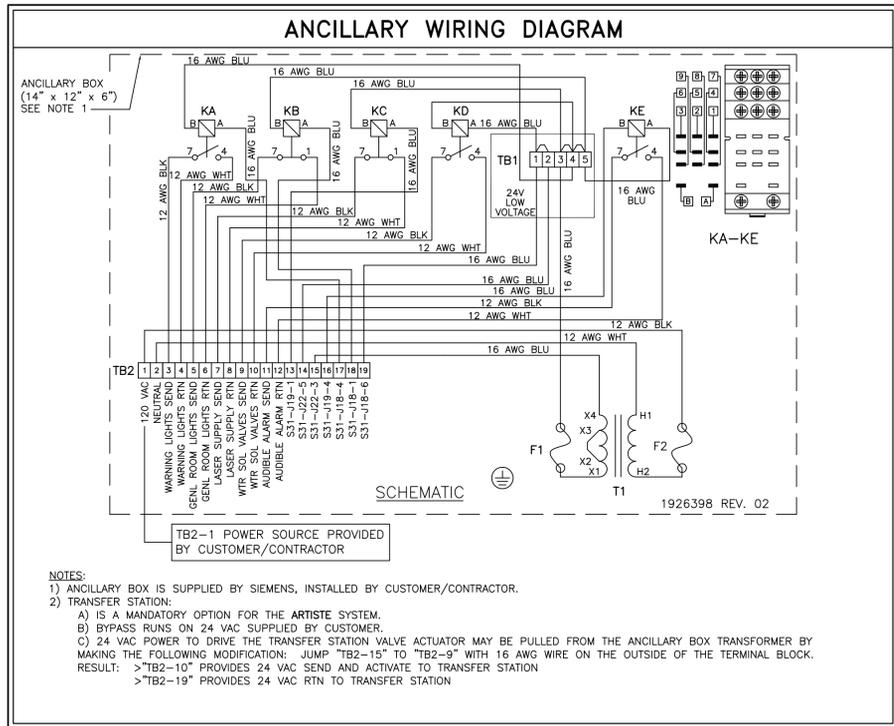
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- THIS SET OF PLANS REPRESENTS A COMPLETE SET OF DETAILS AND SHOULD NOT BE SEPARATED.

- IT IS RECOMMENDED THAT THE SIEMENS DRAWINGS BE INCORPORATED WITH THE CONSTRUCTION DOCUMENTS FOR REFERENCE.

- ALL DIMENSIONS SHOWN ON THIS DRAWING ARE FROM FINISHED SURFACES.
- THIS DRAWING DOES NOT PROVIDE RADIATION SHIELDING REQUIREMENTS FOR X-RAY AND ASSOCIATED EQUIPMENT. THE CUSTOMER IS RESPONSIBLE FOR CONSULTING WITH A REGISTERED RADIATION PHYSICIST TO SPECIFY RADIATION PROTECTION.

PROJECT MANAGER: DAVE DRAEGER TEL: (920) 279-5176 EXT: VMAIL: FAX: EMAIL: DAVID.DRAEGER@SIEMENS.COM		SIEMENS	
R-101 RA VERSION DATED 05/24/11 APPROVED BY CUSTOMER FOR FINALS.		CLEMENT J. ZABLOCKI VAMC	
		5000 W NATIONAL AVE., MILWAUKEE, WI 53295 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)	
01/17/12	PROJECT #: 1101472	SHEET: E-102	
SYM	DATE	DESCRIPTION	DRAWN BY: R. SUTHERS
-ISSUE BLOCK-		SCALE: AS NOTED	REF. #: 50153553
		DATE: 01/17/12	CHECKED:

ARTISTE
11/17/11



POWER REQUIREMENTS

LINEAR ACCELERATOR

3 PHASE POWER & GROUND, DELTA - TO A SEPARATELY DERIVED POWER SOURCE (I.E. POWER CONDITIONER) FROM THE STATED VOLTAGE BELOW.

INPUT VOLTAGE:	480 VAC
INPUT CIRCUIT BREAKER:	70 AMPS ¹
INCOMING FREQUENCY:	60 Hz ± 1.0 Hz
INPUT POWER:	42 KVA
LINE VOLTAGE VARIATION:	±5% MAX.
LINE IMPEDANCE:	282 MOHMS MAX. ²
VOLTAGE PHASE BALANCE	2% MAX. BETWEEN ANY TWO PHASES
VOLTAGE SURGES:	10% MAX. ABOVE NOMINAL VOLTAGE 20 msec. MAX. DURATION
VOLTAGE SAGS:	10% MAX. BELOW LINE VOLTAGE 20 msec. MAX. DURATION

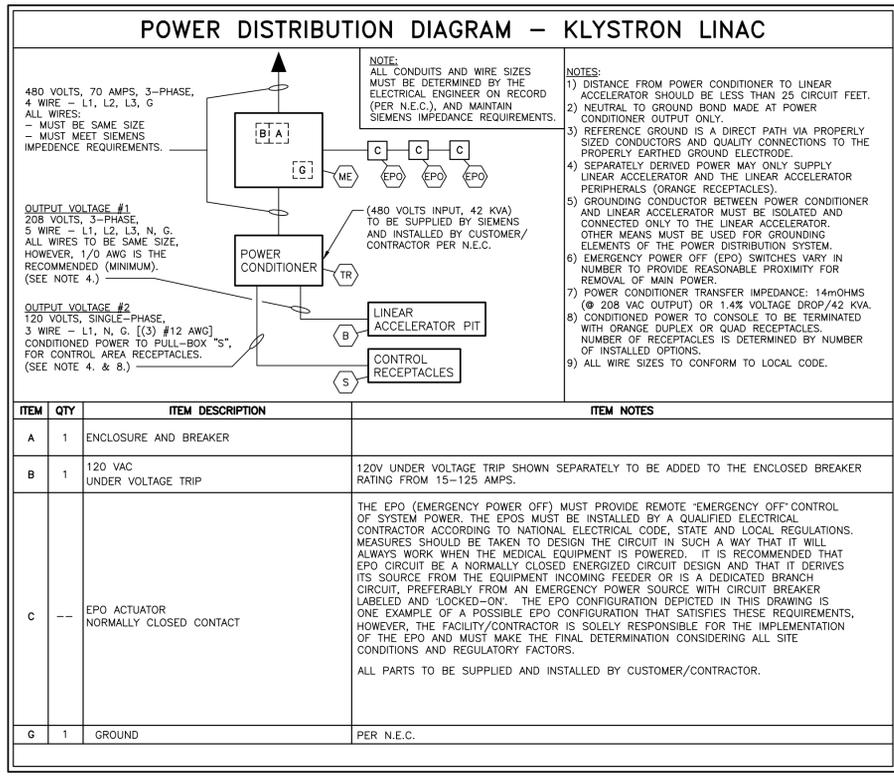
NOTES:
1) BREAKER IS REQUIRED TO BE UNDER VOLTAGE RELEASE TYPE.
2) MAXIMUM IMPEDANCE AS MEASURED AT THE POWER CONDITIONER INPUT.
3) POWER CONDITIONER IS A DELTA TO WYE ISOLATION TRANSFORMER PROVIDING 208 VAC, 3 PHASE PLUS NEUTRAL AND GROUND.

CONTRACTOR SUPPLIED ITEMS

ALL ITEMS, INCLUDING BUT NOT LIMITED TO CONDUITS, DUCTS, CIRCUIT BREAKERS, EMERGENCY OFF BUTTONS, DOOR SWITCHES, AND WARNING LIGHTS, SHOWN IN THESE PLANS ARE TO BE SUPPLIED AND INSTALLED BY THE CUSTOMER/ELECTRICAL CONTRACTOR, UNLESS OTHERWISE SPECIFIED.

CABLE LENGTH LIMITATIONS

THE CONDUITS ARE SHOWN SCHEMATICALLY IN THIS PLAN AND MUST BE RUN IN THE SHORTEST POSSIBLE DISTANCE BETWEEN TERMINATION POINTS. ANY VARIATION IN THE ROUTING OF DUCTS COULD RESULT IN CABLE LENGTH LIMITATIONS BEING EXCEEDED. THEREFORE, ANY CHANGES MUST BE APPROVED BY THE SIEMENS PROJECT MANAGER.

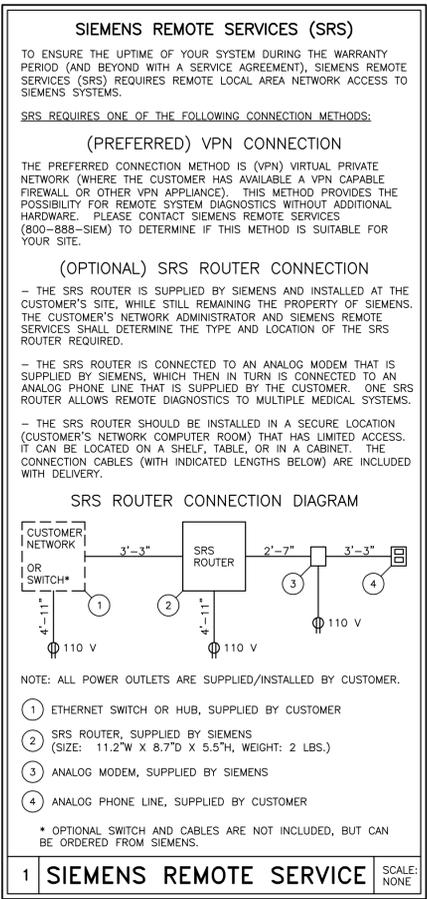


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POWER QUALITY

POOR POWER WILL ALTER EQUIPMENT PERFORMANCE

IT IS IN THE CUSTOMER'S INTEREST THAT THE ELECTRICAL CONTRACTOR BE RESPONSIBLE FOR TESTING AND VERIFYING THAT THE EQUIPMENT POWER SUPPLY COMPLIES WITH THE SIEMENS SPECIFICATIONS.

GROUNDING NOTES

EQUIPMENT GROUND CONDUCTOR TO COMPLY WITH THE FOLLOWING:

- SIZED EQUIVALENT TO THE PHASE CONDUCTORS (FULL SIZED GROUND).
- DERIVED FROM THE ELECTRICAL SERVICE, TRANSFORMER OR MAIN DISTRIBUTION PANEL FEEDING THE SIEMENS EQUIPMENT.
- RUN IN THE SAME CONDUIT, TROUGH OR RACEWAY AS THE PHASE CONDUCTORS.
- CONTINUOUS, WITH NO BREAKS OR USE OF CONDUIT, CHASSIS OR EARTH AS THE SOLE GROUNDING PATH.
- BONDED TO CHASSIS AND/OR CONDUIT IN ACCORDANCE WITH THE NEC REQUIREMENTS.
- MINIMIZE CONNECTIONS OR TERMINALS TO ENSURE CONTINUITY OVER THE LIFE OF THE INSTALLATION.
- AS A NORM, THERE SHOULD NOT BE ANY CURRENT PRESENCE ON THE GROUND CONDUCTOR, BUT IT IS ACCEPTABLE TO HAVE $\leq 500\mu A$ DURING OPERATION OF THE IMAGING EQUIPMENT.
- THERE MAY BE SOME APPLICATIONS WHICH REQUIRE AN ISOLATED GROUND AS PER NEC 250-96B.

ELECTRICAL NOTES

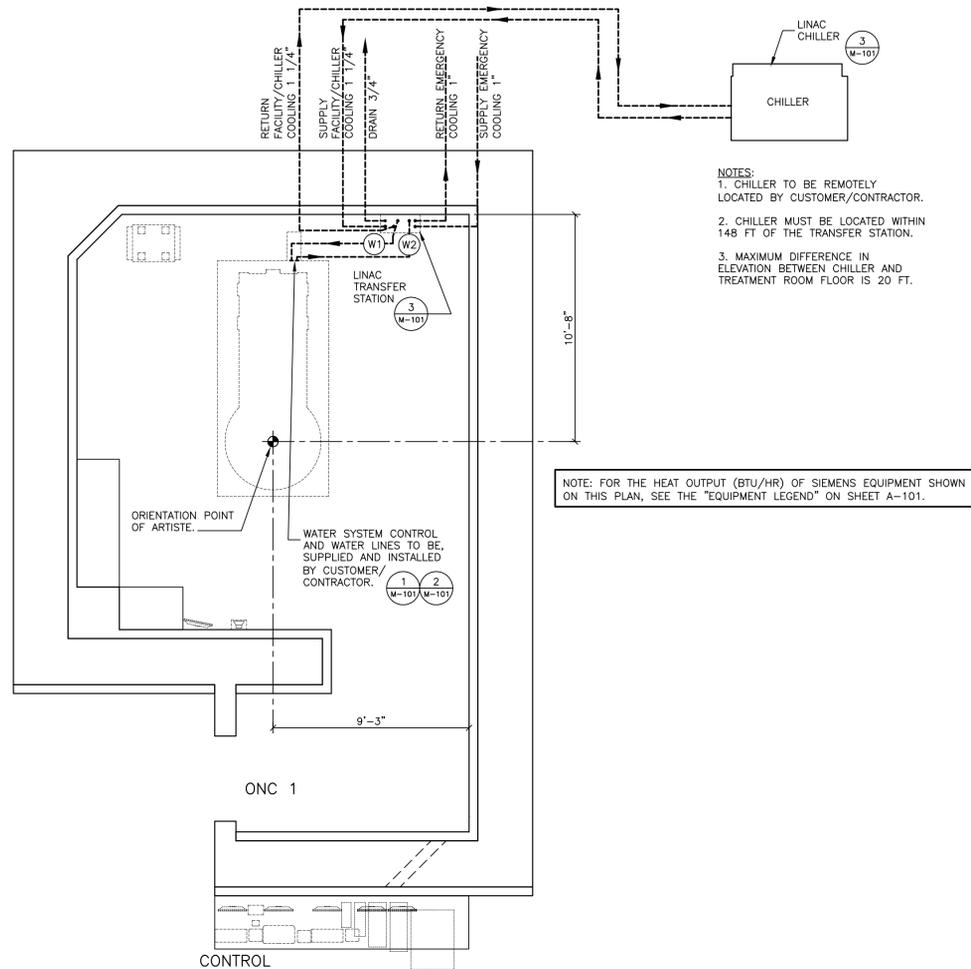
- COMPLIANCE: ELECTRICAL WORK SHALL BE IN COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC-70), O.S.H.A. REGULATIONS, AS WELL AS APPLICABLE REGULATIONS OF CITY, COUNTY, STATE AND FEDERAL AGENCIES. PROVIDE MATERIALS AND EQUIPMENT THAT COMPLY TO ANSI, IEEE AND NEMA STANDARDS. WHERE APPLICABLE, PROVIDE ONLY MATERIALS AND PRODUCTS THAT ARE U.L. LISTED AND LABELED. CUSTOMER'S/CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF NECA STANDARD OF INSTALLATION.
- QUALITY ASSURANCE: THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD TO INSURE THAT THE NEW WORK WILL FIT TO THE EXISTING STRUCTURE AS SHOWN ON THE DRAWINGS. SHOULD ANY CONDITIONS EXIST OR BE DISCOVERED THAT PREVENT THE INSTALLATION OF WORK AS SHOWN, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE PRIOR TO FABRICATION OF EQUIPMENT, OR THE PERFORMANCE OF ANY WORK THAT MAY BE AFFECTED. DO NOT ALTER DRAWINGS, DIMENSIONS, OR SPECIFICATIONS IN ANY WAY WITHOUT CONTACTING AND RECEIVING WRITTEN CONFIRMATION FROM SMS PROGRAM MANAGER. ALL DIMENSIONS ARE FROM FINISHED SURFACES. CONDUIT AND PULL BOXES TO BE INSTALLED BY THE CUSTOMER/CONTRACTOR WITH LOCATIONS BEING FIELD VERIFIED BY SMS PROJECT MANAGER.
- POWER SUPPLY SOURCE: POWER SUPPLIES FOR SIEMENS MEDICAL SOLUTIONS EQUIPMENT SHALL BE DEDICATED SERVICES KEPT ENTIRELY FREE AND INDEPENDENT OF ALL OTHER BUILDING WIRING AND EQUIPMENT, SUCH AS: ELEVATORS, GENERATORS, PUMPS, HVAC SYSTEMS, ETC. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CUSTOMER/UTILITY COMPANY FIELD REPRESENTATIVE.
- WORK FURNISHED BY CUSTOMER/CONTRACTOR: WORK NOT PROVIDED BY SIEMENS MEDICAL SOLUTIONS BUT SHOWN ON DRAWINGS TO BE FURNISHED AND INSTALLED BY CUSTOMER/CONTRACTOR INCLUDES THE FOLLOWING BUT IS NOT LIMITED TO UNLESS NOTED OTHERWISE: ELECTRICAL RACEWAYS AND DUCTS, WIRING TROUGHS, PULL BOXES, CONDUITS, CIRCUIT BREAKERS, EMERGENCY OFF BUTTONS, DOOR SWITCHES, WARNING LIGHTS, WIRING, WIRING DEVICES, CONNECTORS, LIGHTING EQUIPMENT AND GROUNDING.
- RACEWAY AND CONDUIT NOTES: RACEWAY SHALL BE ELECTRIC METALLIC TUBING (EMT) FOR RIGID CONDUIT WORK, OR WHERE SHORT SET-UP CONNECTIONS ARE REQUIRED LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE USED. FIELD BENDS SHALL NOT BE LESS THAN AS SHOWN IN TABLE 346-10 OF THE NATIONAL ELECTRICAL CODE. PROVIDE A JETLINE "SUPER TRUE TAPE", OR EQUIVALENT CONDUIT MEASURING TAPE FISH LINE IN ALL RACEWAYS AND CONDUITS.
CONDUIT BODIES SHALL NOT BE USED. WHERE A CONDUIT ENTERS A BOX, ENCLOSURE, OR OTHER ENCLOSURE, AN INSULATED THROAT CONNECTOR SHALL BE PROVIDED TO PROTECT THE WIRE FROM ABRASION. CONNECTORS SHALL BE DOUBLE SET SCREW TYPE, STEEL CONCRETE TIGHT.
KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES OR STEAM AND HOT WATER PIPES. INSTALL RACEWAY RUNS ABOVE WATER AND STEAM PIPES PROVIDED THAT CABLE RUN DISTANCES ARE MAINTAINED. USE TEMPORARY CLOSURES TO PREVENT FOREIGN MATTER FROM ENTERING RACEWAY.
CONDUIT RUNS ARE SHOWN SCHEMATICALLY. INSTALL CONDUIT WITH A MINIMUM OF BENDS IN THE SHORTEST PRACTICAL DISTANCE CONSIDERING THE BUILDING CONSTRUCTION AND OBSTRUCTIONS, EXCEPT AS OTHERWISE INDICATED. THE CONTRACTOR SHALL MAKE CERTAIN THAT ANY CONDUIT/RACEWAY RUNS CONTAINING SIEMENS MEDICAL SYSTEMS CABLES DO NOT EXCEED THE SPECIFIED MAXIMUM DISTANCES AS SHOWN ON THE ELECTRICAL DETAILS.
PROVIDE ENCLOSED METAL RACEWAY SYSTEM (WIRE DUCT) WHERE SHOWN ON DRAWINGS WITH DIVIDERS TO SEPARATE THE DUCT (FOR POWER AND SIEMENS MEDICAL SOLUTIONS CABLING). DIVIDERS AND CROSSOVER PIECES TO BE PROVIDED AS NECESSARY. FOR UL CERTIFIED SYSTEMS, THE CABLE TO CABLE AS WELL AS THE CIRCUIT TO CIRCUIT SEPARATION REQUIREMENT WAS EVALUATED DURING THE UL SYSTEM INVESTIGATION OF THIS EQUIPMENT. ADDITIONAL SEPARATION OF THE SYSTEM CABLE ASSEMBLIES INTO SEPARATE OR PARTITIONED RACEWAYS, UNLESS OTHERWISE NOTED, IS NOT NECESSARY TO INSURE SEPARATION OF CIRCUITS, AS THEY CAN BE IN THE SAME RACEWAY.
PROVIDE WIRE DUCT/RACEWAY WITH ACCESSIBLE REMOVABLE COVERS. LOCATIONS OF OPENINGS TO BE CUT IN FIELD ARE TO BE COORDINATED WITH SIEMENS PROJECT MANAGER. ELECTRICAL PULL BOXES AND RACEWAY COVERS SHALL BE INSTALLED IN A MANNER TO ALLOW ACCESSIBILITY FOR INSTALLATION AND MAINTENANCE. IN-FLOOR TRENCH DUCT AND FLOOR FLUSH BOXES SHALL BE PROVIDED WITH FULLY GASKETED REMOVABLE COVERS.
- WIRING: WIRING SHALL BE INSTALLED IN METAL RACEWAY, 600 VOLT CLASS, STRANDED TYPE, THHN-THWN, SINGLE CONDUCTOR, ANNEALED COPPER FOR A MAXIMUM OPERATING TEMPERATURE OF 75° C (165° F), SIZED AS INDICATED. THE CUSTOMER/CONTRACTOR SHALL LEAVE MINIMUM 10 FT. WIRE TAILS AT ALL OUTLET POINTS WITH WIRE IDENTIFICATION TAGGED AT BOTH ENDS FOR FINAL CONNECTION BY SIEMENS MEDICAL SOLUTIONS.
- IN ADDITION TO THE CIRCUIT BREAKER LOAD CURRENT RATING, CONSIDERATION MUST ALSO BE GIVEN TO SELECTING CIRCUIT BREAKERS THAT HAVE A HIGH ENOUGH SHORT CIRCUIT CURRENT WITHSTAND RATING TO SAFELY COORDINATE WITH THE POWER SYSTEM AVAILABLE SHORT CIRCUIT CURRENT. GENERALLY, WHEN THE 480 VOLT, 3 PHASE, X-RAY EQUIPMENT IS SERVED FROM A POWER SUPPLY SYSTEM THAT IS PROVIDED WITH A 500 KVA OR SMALLER TRANSFORMER, A STANDARD 14,000 RMS AMPERE WITHSTAND RATED CIRCUIT BREAKER WILL BE ADEQUATE. HOWEVER, IF THE POWER SUPPLY SYSTEM TRANSFORMER IS LARGER THAN 500 KVA, THEN THE CIRCUIT BREAKERS HAVING A SHORT CIRCUIT WITHSTAND RATING GREATER THAN 14,000 RMS AMPERES MAY BE REQUIRED.

CONTRACTORS RESPONSIBILITIES

- PER SYSTEM REQUIREMENTS, CONTRACTOR MUST INSTALL THE POWER CONDITIONER WITH EMI FILTER.
- IF SURFACE TRENCH CABLE RACEWAY IS USED: PROVIDE AN ENCLOSED METAL RACEWAY SYSTEM (WIRE DUCT) WHERE DETAILED ON THE PLANNING DRAWINGS WITH DIVIDERS TO SEPARATE THE POWER CABLES FROM THE SIGNAL CABLES.
- PER SYSTEM REQUIREMENTS, CONTRACTOR MUST PROVIDE AND INSTALL THE MIC CONTROLLER BASE CABINET:
 - THIS CABINET MAY BE CONSTRUCTED OF WOOD OR METAL.
 - METAL BASE CABINET MUST INCLUDE A GROUND CONNECTION BETWEEN THE CABINET DOORS, CABINET CHASSIS, AND THE LINAC PER IEC 60601-1.
 - THIS CABINET MUST BE CAPABLE OF SUPPORT FOR 220 LBS.
 - TWO CABINET DOORS MUST BE SECURED TO CONTROL ACCESS TO ELECTRICAL CABLES.

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CLEMENT J. ZABLOCKI VAMC		5000 W NATIONAL AVE., MILWAUKEE, WI 53295 ONC 1 - ARTISTE (KLYSTRON LINEAR ACCELERATOR)	
THE USE OR REPRODUCTION OF THIS TITLE BLOCK WITHOUT SIEMENS AUTHORIZATION WILL RESULT IN PROSECUTION UNDER FULL EXTENT OF THE LAW.		PROJECT #: 1101472	SHEET: E-501
ALL RIGHTS ARE RESERVED.		SHEET 7 OF 8	DRAWN BY: R. SUTHERS
DATE: 01/17/12	DESCRIPTION: R-101 RA VERSION DATED 05/24/11 APPROVED BY CUSTOMER FOR FINLS.	DATE: 01/17/12	CHECKED:
-ISSUE BLOCK-		SCALE: AS NOTED	REF. # 50153553

ARTISTE
11/17/11



- NOTES:**
1. CHILLER TO BE REMOTELY LOCATED BY CUSTOMER/CONTRACTOR.
 2. CHILLER MUST BE LOCATED WITHIN 148 FT OF THE TRANSFER STATION.
 3. MAXIMUM DIFFERENCE IN ELEVATION BETWEEN CHILLER AND TREATMENT ROOM FLOOR IS 20 FT.

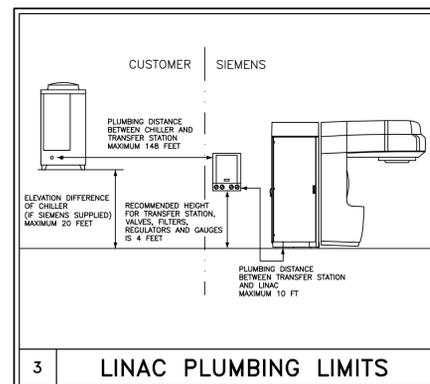
NOTE: FOR THE HEAT OUTPUT (BTU/HR) OF SIEMENS EQUIPMENT SHOWN ON THIS PLAN, SEE THE "EQUIPMENT LEGEND" ON SHEET A-101.

MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

PLUMBING LEGEND			
FROM	TO	DESCRIPTION	REMARKS
MAIN WATER SUPPLY	(WSC)	1" DIAMETER - WATER SYSTEM CONTROL, SURFACE MOUNTED	
(WSC)	(W1)	1" DIAMETER - LINAC "W1" (SUPPLY)	
(W2)	WATER DRAIN	1" DIAMETER - LINAC "W2" (RETURN)	

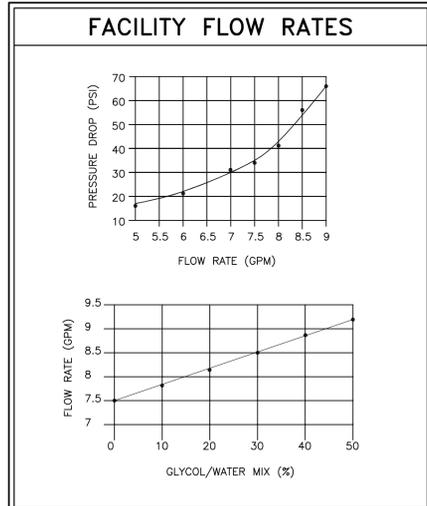
NOTE: COPPER PLUMBING INSTALLED IN CONCRETE MUST BE INSULATED. ALLOW FOR THERMAL EXPANSION USING THE FOLLOWING CALCULATIONS:
 1.6×10^{-5} PER LENGTH PER °C (9×10^{-6} PER UNIT LENGTH PER °F)



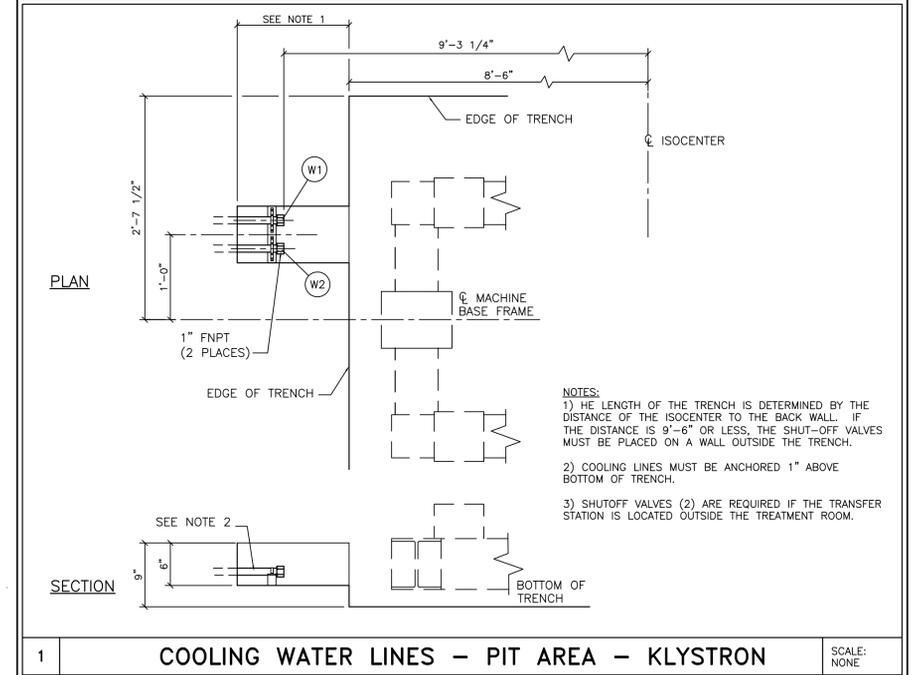
CONTRACTORS RESPONSIBILITIES

- MATERIAL:**
- 1) CONTRACTOR MUST PROVIDE ALL MATERIAL TO INSTALL COOLING WATER SYSTEM ON THE FACILITY SIDE OF CONNECTION POINTS "W1" AND "W2".
 - 2) MATERIALS INCLUDE, BUT ARE NOT LIMITED TO:
 - PLUMBING BETWEEN THE CHILLER AND TRANSFER STATION - 1 1/4" DIAMETER DRAWN COPPER TUBING (SIEMENS SUPPLIED CHILLER)
 - PLUMBING BETWEEN TRANSFER STATION AND "W1"/"W2" - EMERGENCY WATER SUPPLY: 1" DIAMETER DRAWN COPPER TUBING.
 - 1" (FEMALE) FNPT THREADED CONNECTIONS FOR "W1" AND "W2"
 - FITTINGS AND SOLDER
 - MANUAL VALVES, FILTER, PRESSURE GAUGES, PRESSURE REGULATOR
 - 3) ALL LABOR TO INSTALL COOLING WATER SYSTEM INCLUDING THE TRANSFER STATION AND CHILLER.
 - 4) FLUSHING AND LEAK DETECTION ON ALL LINES PRIOR TO INSTALLATION AND CONNECTION OF SIEMENS EQUIPMENT.
 - 5) MAINTAINING THE SPECIFIED WATER QUALITY.
 - 6) ELECTRICALLY CONNECTING THE SOLENOID VALVES TO THE WATER SOLENOID CIRCUIT.

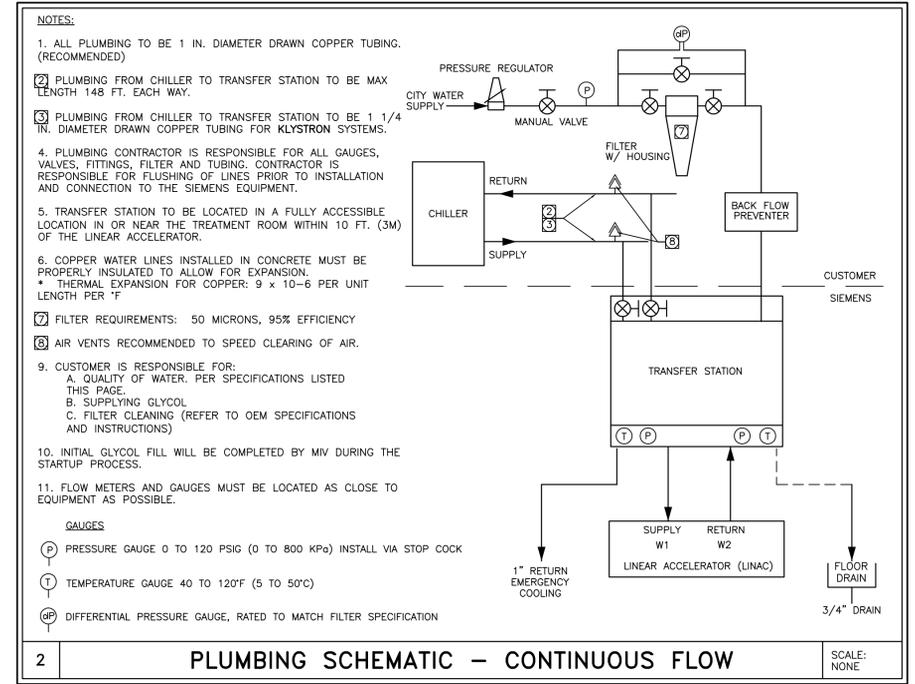
FACILITY COOLING WATER	
PLUMBING SPECIFICATIONS	
INLET PRESSURE:	80 PSI (MAXIMUM)
PRESSURE DROP:	35 PSI
INLET TEMPERATURE:	60°F (MINIMUM) 65°F (OPTIMUM) 77°F (MAXIMUM)
WATER FLOW RATE REQUIREMENT AT ACCELERATOR:	7.5 GPM (MINIMUM)
WATER QUALITY SPECIFICATIONS	
WATER ENTERING THE LINEAR ACCELERATOR IS REQUIRED TO MEET THE FOLLOWING CRITERIA LISTED BELOW TO INSURE OPTIMUM PERFORMANCE:	
TOTAL HARDNESS (CaCO ₃):	<85 PPM
TOTAL DISSOLVED SOLIDS (CaCO ₃):	<250 PPM
pH (SLIGHTLY ALKALINE):	7.0 TO 9.0
TOTAL CHLORIDES:	<250 PPM
TOTAL SULFATES:	<250 PPM
IRON:	<0.3 PPM
MANGANESE:	<0.05 PPM
DISSOLVED GASES: HYDROGEN SULFIDE (H ₂ S)	<0.05 PPM
TOTAL SUSPENDED SOLIDS: (ANNUAL AVERAGE)	<30 PPM
FILTERING - WATER SUPPLIED TO THE ACCELERATOR MUST BE FILTERED WITH A RECOMMENDED 50 MICRON IN-LINE FILTER WITH 95% EFFICIENCY. THE FILTER HOUSING MUST BE RATED AT 10 GPM AND BE PROVIDED WITH AN INDICATOR OF THE FILTER CONDITION, SUCH AS A DIFFERENTIAL PRESSURE GAUGE OR A COLOR CHANGE INDICATOR.	
BACTERIA - WATER SHOULD BE FREE OF IRON BACTERIA AND MANGANESE BACTERIA.	
HEAT DISSIPATION FROM ACCELERATOR TO FACILITY WATER	
STAND BY (RAD OFF):	24,000 BTU/HR
OPERATING (RAD ON):	102,000 BTU/HR
NOTES:	
1) THE USE OF GLYCOL IS REQUIRED WHEN CONNECTED TO SIEMENS SUPPLIED CHILLER. THE ON-SITE CONTRACTOR MUST ADJUST THE FACILITY WATER FLOW CAPACITY TO MEET THE SIEMENS HEAT TRANSFER REQUIREMENTS.	
2) FACILITY WATER CONSUMPTION WILL DEPEND ON INLET WATER TEMPERATURE AND CLINICAL OPERATING LOAD. INLET WATER FLOW IS CONTINUOUSLY AND AUTOMATICALLY CONTROLLED TO MAINTAIN PROPER OPERATING WATER TEMPERATURE OF THE CLOSED LOOP CIRCULATING CHILLER SYSTEM.	



ENVIRONMENTAL REQUIREMENTS	
AIR CONDITIONING	
1) THESE CONDITIONS SHOULD BE MET AND TAKEN INTO CONSIDERATION 24 HOURS A DAY, 7 DAYS A WEEK.	
2) OVERALL AIR CONDITIONING MUST MAINTAIN: <ul style="list-style-type: none"> ROOM TEMPERATURE: BETWEEN 68°F AND 78°F RELATIVE HUMIDITY: BETWEEN 40% AND 65% BAROMETRIC PRESSURE: 700-1050 MBAR 	
3) HEAT DISSIPATED TO THE AIR FROM: <ul style="list-style-type: none"> KLZYSTRON LINEAR ACCELERATOR: <ul style="list-style-type: none"> STANDBY (RAD OFF): 9,200 BTU/H OPERATING (RAD ON): 22,000 BTU/H 	
TREATMENT ROOM VENTILATION	
1) THE TREATMENT ROOM MUST BE ADEQUATELY VENTILATED AT ALL TIMES. USE OF AN EXHAUST BLOWER IS RECOMMENDED DURING OPERATION OF THE LINEAR ACCELERATOR.	
2) MAINTAIN TREATMENT ROOM VENTILATION IN ACCORDANCE WITH ASHRAE STANDARD 52-76 ATMOSPHERIC DUST SPOT TEST.	
OZONE PRODUCTION	
THE SYSTEM PRODUCES A VERY SMALL AMOUNT OF OZONE DURING OPERATION. <10 PARTS PER BILLION PER HOUR DURING CONTINUOUS OPERATION, WITH A ROOM VOLUME OF 130M ³ . THERE ARE NO SPECIAL VENTILATION REQUIREMENTS CAUSED BY OZONE GENERATION.	
FLOORING	
STATIC DISSIPATIVE OR ANTISTATIC FLOOR COVERING IS RECOMMENDED FOR THE TREATMENT ROOM AND CONTROL AREA. MATERIALS USED MAY BE TILE OR CARPETING WITH A RESISTANCE RANGE OF 10 TO 10 OHMS, MEASURED PER ANSI/ESD 57.1.	



COOLING WATER LINES - PIT AREA - KLYSTRON SCALE: NONE



PLUMBING SCHEMATIC - CONTINUOUS FLOW SCALE: NONE

SINK RECOMMENDATION

IT IS RECOMMENDED THAT A SINK WITH HOSE CONNECTION IS INSTALLED CLOSE TO THE LINEAR ACCELERATOR FOR FILLING/DRAINING THE WATER PHANTOM.

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SCALE: AS NOTED REF. # 50153553		SHEET 8 OF 8 DRAWN BY: R. SUTHERS	
-ISSUE BLOCK-		DATE: 01/17/12 CHECKED:	

ARTISTE 11/17/11