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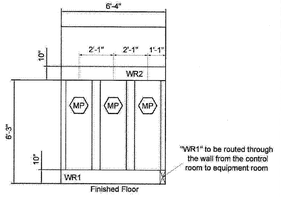
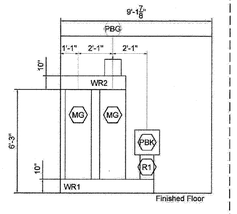
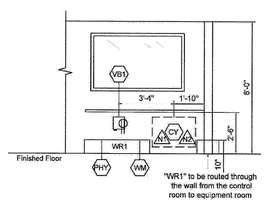
Equipment Closet - View 1
Site Specific



Equipment Closet - View 2
Site Specific



Control Room
Site Specific



Note: The use of 90 degree ells is not acceptable use 45 degree bends at all raceway corners. For conduit runs use the minimum bending radius specific to the conduit diameter. The use of crossover tunnels at all applicable locations is required. This recommendations will help to ensure the integrity of the cables and fiber optic runs.

* Countertop Height Guide:
30" for standard seated height.
38" for standard standing height.
* Ensure that the wall junction boxes are mounted perpendicular to the floor.
* Verify exact ceiling height of Equipment and Control Room Area.

PHILIPS

Project
Allura Biplane FD10/10
Maine Medical Center
Portland, ME
- Cath Lab #6

Philips Contacts
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Contact Number: (207) 851-0546
Email: wayne.erwin@philips.com

Drawn By: Kim, Woohee

Project Details
Drawing Number
N-EAS1011548
Date Drawn: 11-4-2010
Quote: 1-POB6D5 Rev 12
Order:8800107975,001000

E2

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Conduit Required

General Notes

1. All conduit runs must take most direct route point to point.
2. All conduit runs must have a pull string.

A Conduit supplied/installed by contractor - Philips cables installed by Philips
B Conduit supplied/installed by contractor - Philips cables installed by contractor
C Conduits and cables supplied and installed by contractor
D Conduit existing - cables supplied and installed by Philips
E Conduit existing - cables supplied by Philips, installed by contractor
F Conduit existing - cables supplied and installed by contractor
G Optional equipment, verify with local Philips Service

* P Power (AC), D Power (DC), G Ground, S Signal, H High Tension, C Cooling Hose, A Air Supply Hose

	Conduit Run No.	From	To	Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements
C	1	Power Panel	CB	1	(P)	Per N.E.C.	Per N.E.C.	
B	2	PBK	PDU Cabinet	1	(P)	1 1/2"	-	
B	3	PBK	PDU Cabinet	2	(P)	2"	-	
B	4	CB	PBK	1	(P)	2"	50'	
C	5	CB	ST	1	(P)	3/4"	50'	
C	6	PBK	GE	1	(P)	3/4"	25'	
C	7	PBG	Room Outlets	1	(P)	3/4"	-	See Sheet "ED2" for details.
C	8	MA	WL	1	(P)	3/4"	55'	
C	9	ATV	DS	1	(S)	3/4"	55'	
A	10	SP	MG	1	(H)	2 1/2"	44'	H.T. Cables.
A	11	SP	MG	1	(P)	1"	44'	
A	12	SP	MG	1	(S)	1 1/2"	44'	
A	13	SP	MP	1	(S)	2 1/2"	49'	
A	14	SP	MP	1	(P)	1"	49'	
A	15	SP	MP	2	(C)	2"	49'	Cooling fluid hoses for tube.
A	16	SP	MP	2	(C)	2 1/2"	49'	Cooling fluid hoses for detector.
A	17	SP	MA	1	(S)	2 1/2"	50'	
A	18	MSA	MP	1	(S)	2 1/2"	49'	
A	19	MSA	MP	1	(P)	1"	49'	
A	20	MSA	MA	1	(S)	2 1/2"	49'	
A	21	MSA	MA	1	(P)	3/4"	49'	
C	22	MP	Stub	1	(S)	1"	-	Stub above finished ceiling. Recommended for possible future network connection if desired by customer.
G	23	MP	HCU	1	(S)	3"	90'	Not needed if HCU is connected via network.
G	24	PHY	MSA	1	(S)	2 1/2"	-	
G	25	PHY	Physio Monitor	1	(S)	2"	33'	Optional for remote location.
A	26	TV	MA	1	(P)	2"	52'	
A	27	TV	MA	1	(S)	2 1/2"	52'	
A	28	TV	MP	1	(S)	1 1/2"	54'	
A	29	ATV	MA	1	(S)	2 1/2"	41'	
A	30	ATV	TV	1	(S)	3/4"	75'	

Conduit Required

General Notes

1. All conduit runs must take most direct route point to point.
2. All conduit runs must have a pull string.

A Conduit supplied/installed by contractor - Philips cables installed by Philips
B Conduit supplied/installed by contractor - Philips cables installed by contractor
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G Optional equipment, verify with local Philips Service

* P Power (AC), D Power (DC), G Ground, S Signal, H High Tension, C Cooling Hose, A Air Supply Hose

	Conduit Run No.	From	To	Conduit Quantity	Cable Type (*)	Minimum Conduit Size	Maximum Conduit Length	Special Requirements
A	31	PBK	MA	1	(P)	2"	50'	
A	32	PBG	MA	1	(P)	3/4"	50'	
A	33	MG	MA	1	(S)	2 1/2"	39'	
A	34	CMG	MA	1	(S)	2 1/2"	39'	
A	35	MG	MP	1	(S)	2"	39'	
A	36	CMG	CMP	1	(S)	2"	39'	
A	37	PB1	CMG	1	(H)	2 1/2"	44'	H.T. Cables.
A	38	PB1	CMG	1	(P)	1"	44'	
A	39	PB1	CMG	1	(S)	1 1/2"	44'	
A	40	PB1	CMP	2	(C)	2"	50'	Cooling fluid hoses for tube.
A	41	PB1	MP	2	(C)	2 1/2"	41'	Cooling fluid hoses for detector.
A	42	PB1	MP	1	(S)	2 1/2"	41'	
A	43	PB1	MP	1	(S)	1"	41'	
A	44	PB1	MA	1	(S)	2"	41'	
G	45	TV	Control Room	2	(S)	1 1/2"	-	Verify with local Philips Service (Physio Monitor).
G	46	TV	Control Room	2	(S)	1 1/2"	-	For optional equipment (Interventional Hardware, ViewForum, Xcelera, etc).
C	47	Power Panel	CB2	1	(P)	2"	-	Do not duplicate for each lab (See Sheet "ED4").
C	48	CB2	UPS	1	(P)	1 1/2"	-	Do not duplicate for each lab (See Sheet "ED4").
C	49	UPS	CB3	1	(P)	1 1/2"	-	
C	50	PBK	UTS	1	(P)	2"	75'	
C	51	UTS	CMG	1	(P)	2"	75'	
C	52	UTS	CMG	1	(P)	1"	75'	
C	53	UTS	MG	1	(P)	2"	75'	
C	54	UTS	MG	1	(P)	1"	75'	
C	55	UTS	MA	1	(P)	1"	75'	
C	56	UTS	MA	1	(P)	3/4"	75'	
C	57	CB3	UTS	1	(P)	1 1/2"	150'	
C	58	CB3	ST	1	(P)	3/4"	150'	
C	59	RC	UPS	1	(P)	2"	-	Do not duplicate for each lab (See Sheet "ED4").
C	60	RSM	UPS	1	(P)	1 1/2"	250'	Remote Status Monitor (Optional).

PHILIPS

Project
Allura Biplane FD10/10
Maine Medical Center
Portland, ME
- Cath Lab #6

Philips Contacts
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Email: wayne.erwin@philips.com

Drawn By: Kim, Woohee

Project Details
Drawing Number
N-EAS1011548
Date Drawn: 11-4-2010
Quote: 1-POB6D5 Rev 12
Order:8800107975,001000

E3

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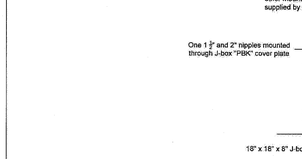
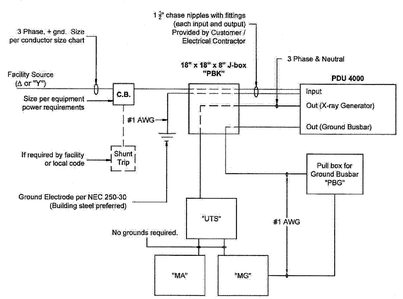
Detail - PDU 4000 Mounting Detail



PDU 4000 with J-box "PBK" flush or surface mounted behind unit.



Note: Conductors, destinations, and number of conduit runs from PDU to J-box "PBK" and from J-box to equipment will vary from system to system. Consult individual site plans for detailed conduit schedules.

Diagram - PDU 4000 Electrical Interface with UTS (08.0)

PBK

Power Quality Requirements
Velara 100KW with PDU 4000

Power Output:	100KW
Supply Configuration:	3 phase, 3 wire power and ground, Delta or wye 3 phase, 4 wire power w/ Neutral + ground, wye
Nominal Line Voltage:	480 VAC, 60 Hz
Line Voltage Variation:	± 10% steady-state
Line Voltage Balance:	2% maximum of nominal voltage between phases
Frequency Variation:	± 1.0 Hz
Voltage Surges:	To 110% of steady-state voltage 100 msecs. Maximum duration, 6 per hour maximum
Voltage Sags:	To 50% of steady-state voltage 100 msecs. Maximum duration, 6 per hour maximum
Line Impulses:	1000 VPK above phase-neutral RMS absolute maximum, No more than 1 impulse per hour to exceed 500 VPK.
Neutral-Ground Voltage:	2.0 volts maximum RMS value
Neutral-Ground Impulses:	No more than 1 per hour that exceeds 25 volts and 1 Mjoule
High Frequency Noise:	3.0 volts steady-state maximum. Over 3.0 volts permitted for 100 msec. maximum, 1 per hour max.
Grounded Conductor Impedance:	0.1 Ohms @ 60 hz. maximum

Branch Circuit and Wire Gauge Requirements
Velara 100KW with PDU 4000

Branch Power:	225 KVA
Max Stand by Current:	8 Amps. @ 3 mA, 110 KVP continuous
Circuit Breaker:	3 pole, 125 amperes
Maximum Instantaneous Power:	201 KVA (1000 mA @ 100 KVP)

Recommended conductor sizes for 1% impedance of branch conductors to circuit breaker (CB). Based on 20° copper conductors:

	480VAC
1/0 AWG	95ft
2/0 AWG	120ft
3/0 AWG	151ft
4/0 AWG	193ft
250 KCM	226ft
300 KCM	271ft
400 KCM	365ft
Inst. Current @ CB Panel	242 A
Max. Phase-phase impedance @ CB Panel	≤ 200 mΩ
Max. Load Voltage Drop @ CB Panel	18.2 V
Percent Regulation at Maximum Load @ CB Panel	3.8%
Output Voltage PDU 4000:	480 VAC ± 10%
Max Inst. Current @ PDU output:	305 Amps
Max Phase-Phase Impedance:	≤ 200 mΩ @ PDU output
Max Load Voltage Drop:	24.4 V @ PDU output
Percent Regulation at Max. Load:	6.4% @ PDU output
Minimum copper wire size, circuit breaker to PDU: #1 - Maximum 50' in length.	

CB

PHILIPS

Project
Allura Biplane FD10/10
Maine Medical Center
Portland, ME
- Cath Lab #6

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Email: wayne.erwin@philips.com

Drawn By: Kim, Woohee

Project Details
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Date Drawn: 11-4-2010
Quote: 1-POB6D5 Rev 12
Order:8800107975,001000

ED1

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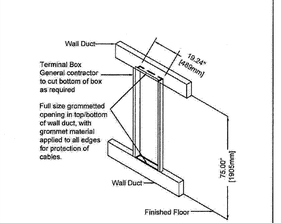
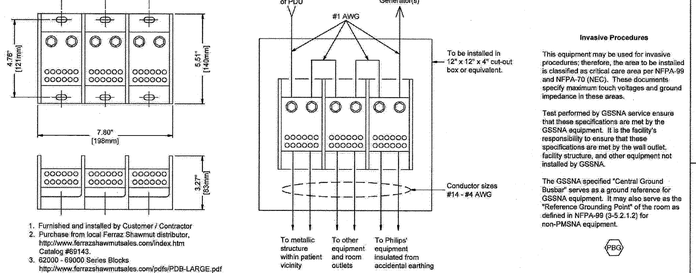
Detail - Wall Box Mounting
(Not to scale)



MG CMG MP CMP MA

(08.0)

Detail - Ground Busbar Application
(Not to scale)



1. Furnished and installed by Customer / Contractor
2. Purchase from local Ferraz Shawmut distributor, http://www.ferrazshawmutsales.com/index.htm Catalog #69143.
3. 62000 - 69000 Series Blocks http://www.ferrazshawmutsales.com/pdfs/PDB-LARGE.pdf

Invasive Procedures

This equipment may be used for invasive procedures; therefore, the area to be installed is classified as critical care area per NFPA-99 and NFPA-70 (NEC). These documents specify maximum touch voltages and ground impedance in these areas.

Test performed by GSSNA service ensure that these specifications are met by the GSSNA equipment. It is the facility's responsibility to ensure that these specifications are met by the wall outlet, facility structure, and other equipment not installed by GSSNA.

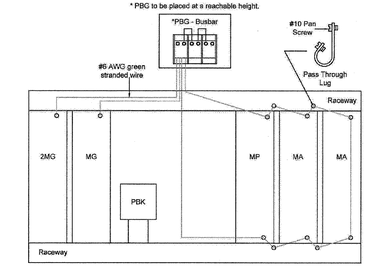
The GSSNA specified "Central Ground Busbar" serves as a ground reference for GSSNA equipment. It may also serve as the "Reference Grounding Point" of the room as defined in NFPA-99 (3-5.2.1.2) for non-PMSNA equipment.

PBG

(08.0)

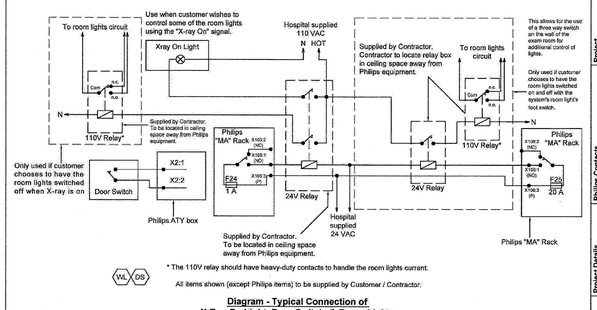
Detail - Grounding
(Not to scale)
(Not site specific)

* PBG to be placed at a reachable height.



(08.0)

Detail - Typical Connection of X-Ray On Light, Door Switch, & Room Lights



WL DS

* The 110V relay should have heavy-duty contacts to handle the room lights current.

All items shown (except Philips items) to be supplied by Customer / Contractor.

Diagram - Typical Connection of X-Ray On Light, Door Switch, & Room Lights

(08.0)

PHILIPS

Project
Allura Biplane FD10/10
Maine Medical Center
Portland, ME
- Cath Lab #6

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Drawn By: Kim, Woohee

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ED2

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ARCHITECTURE
ENGINEERING
PLANNING
INTERIOR DESIGN
COMMISSIONING

SMRT

PROJECT NORTH

MAINE MEDICAL CENTER
CATH. LAB # 6
PORTLAND, ME

ISSUED FOR CONSTRUCTION
12.21.10

CURRENT ISSUE STATUS:

REV	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	12.21.10

GRAPHIC SCALE: 0" 1"

SCALE:	
PROJECT MANAGER:	KO
JC/DRAWN BY:	
A/E OF RECORD:	
PROJECT NO:	10112-00
DATE:	12.21.10

SHEET TITLE:
VENDOR EQUIPMENT DRAWINGS, SHEET 6

SHEET No.
Q-006

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