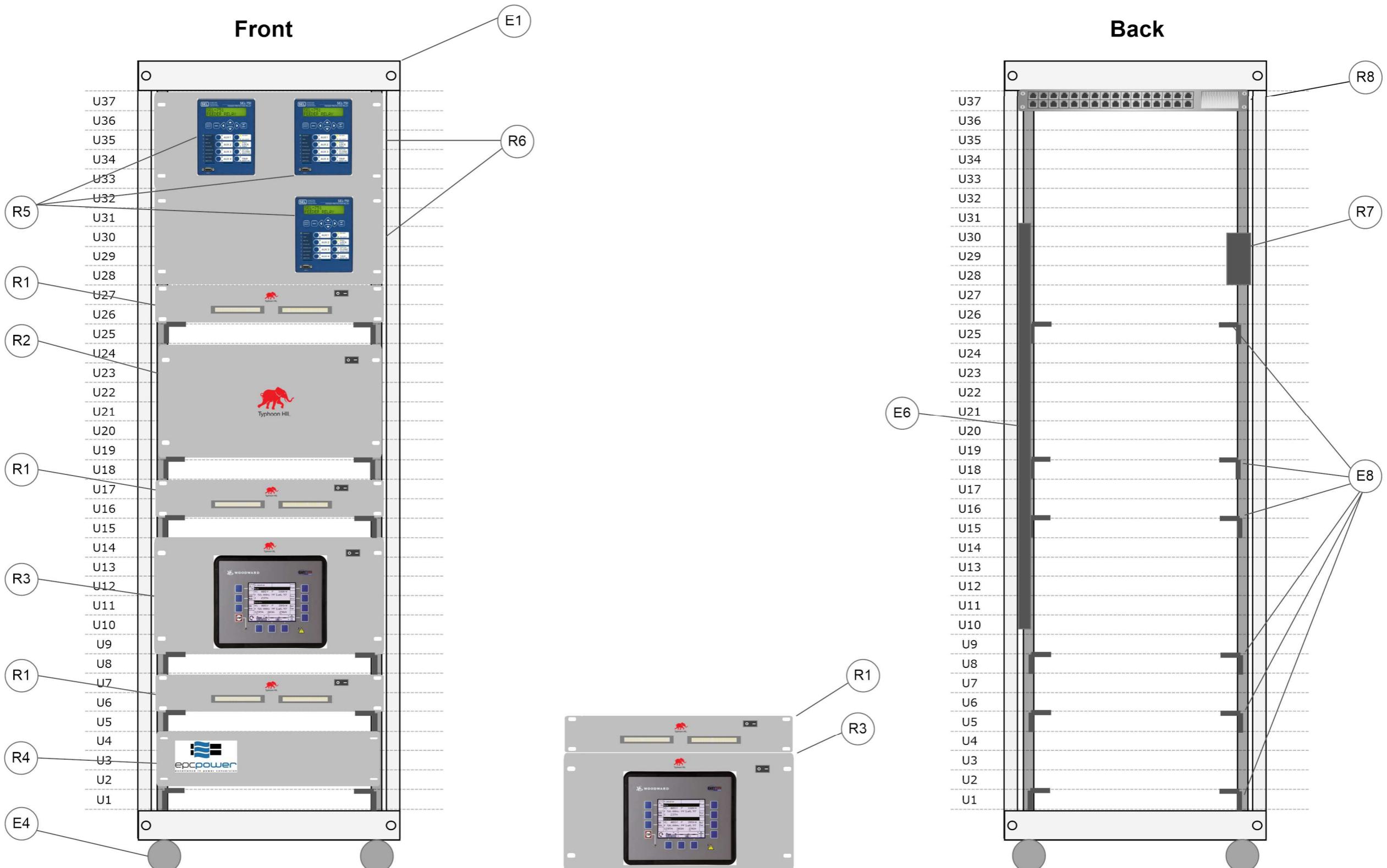




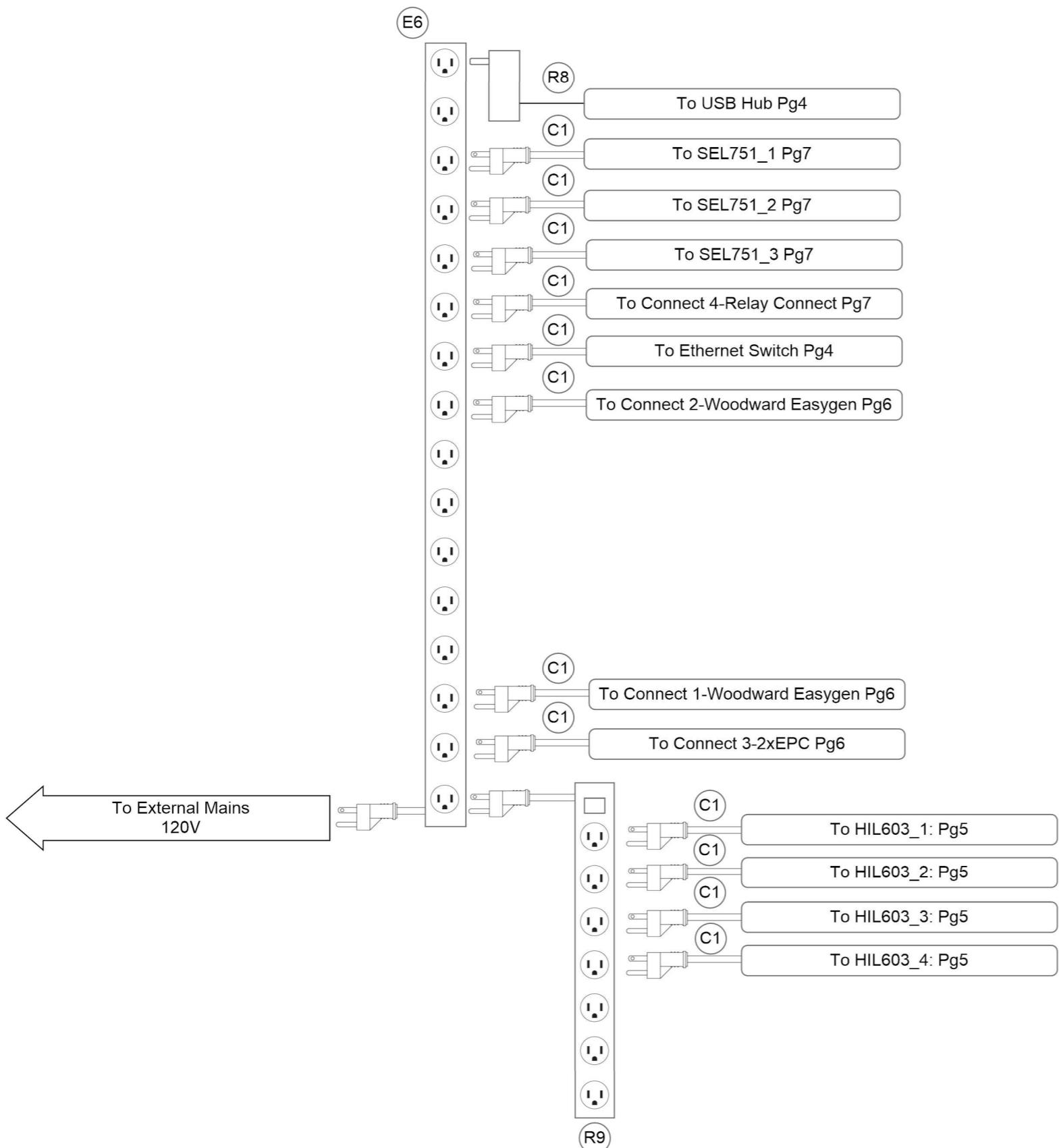
Hardware Documentation
MIT Lincoln Lab
Banshee Microgrid Testbed

Designator	Description	Manufacturer code	Manufacturer	Distributor	Quantity
E1	Rack Enclosure Frame with two (2) pairs of RED powder coated, universal 19" mounting, rails (M6) and M6 hardware, wt. cap. 1500 lbs, 37 RMU	7201E-2432	Great Lakes Cabinets	CPU Sales	1
E2	Mesh steel door for 72"H x 24"W enclosure frame color is RED	7202E-M24	Great Lakes Cabinets	CPU Sales	1
E3	Clear Plexi Door- RED door frame	7202E24	Great Lakes Cabinets	CPU Sales	1
E4	Heavy duty casters, set of 4 (all locking)	7208-EHD	Great Lakes Cabinets	CPU Sales	1
E5	Pair locking lift-off solid side panels for 72"H x 32"D enclosure frame	7210-32ELS	Great Lakes Cabinets	CPU Sales	1
E6	16 position power strip w/circuit breaker, 15 AMP, 125 volts, 15 ft. cord with surge protection	7215-S	Great Lakes Cabinets	CPU Sales	1
E7	Perfed Top Panel with knockouts RED	TPE-24P	Great Lakes Cabinets	CPU Sales	1
E8	Equipment Support Frame to support switches installed in CMR-45U16	ESF16	Great Lakes Cabinets	CPU Sales	6
E9	Vertical Cable Management Bar	VCB-7232	Great Lakes Cabinets	CPU Sales	1
E10	Red Paint all but shelves, rails, cable management, pdu and casters	CUSTOM COLOR-RED	Great Lakes Cabinets	CPU Sales	1
E11	Typhoon Logo Artwork 1 color	LOGOSETUP	Great Lakes Cabinets	CPU Sales	1
E12	Screen Printing on Side Panel (leadtime 7-10 days)	SCREEN	Great Lakes Cabinets	CPU Sales	2
Rack Internal Components					
R1	Typhoon HIL 603	HIL603	Typhoon HIL		4
R2	Typhoon HIL Connect - SEL 751 Controller 4x Connect	HIL Connect - SEL 751	Typhoon HIL		1
R3	Typhoon HIL Connect - Woodward Easygen 3500	HIL Connect - Woodward Easygen 3500	Typhoon HIL		2
R4	Typhoon HIL Connect - EPC Power 2x Inverter Controller	HIL Connect - EPC Power	Typhoon HIL		1
R5	SEL-751 LEA Feeder Protection Relay w/ Sync Check Card	751001B1B0XL0L10200 Key: 0659	SEL	Robinson Sales Inc	3
R6	Two Vertical Meter Bracket	915900051	SEL		2
R7	TP-Link 24-Port Gigabit Ethernet Unmanaged Rackmount Switch	TL-SG1024	TP-Link	Amazon	1
R8	Anker 7-Port USB 3.0 Data Hub with 36W Power Adapter and BC 1.2	AK-68ANHUB-BV7A	Anker	Amazon	1
R9	7 Outlet Surge Protector Power Strip 4ft Cord	TLP74RB	Tripp Lite	Amazon	1
Cables					
C1	Typhoon HIL Connect Harness - SEL 751 Controller	SEL 751 Connect Harness	Typhoon HIL		3
C2	CABLE ASSY IPASS X4 M-M 38POS 5M	745460405	Molex	Digikey	4
C3	Ethernet- Cable Matters 5-Pack, Cat6 Snagless Ethernet Patch Cable in Blue 10 Feet	160001-BLU-10x5	Cable Matters	Amazon	12
C4	SuperSpeed USB 3.0 Type A to B Cable in Black 10 Feet	200007-BLACK-10	Cable Matters	Amazon	1
C5	Heavy Duty Computer Monitor Power Cord in 10 Feet (NEMA 5-15P to	400003-10x2	Cable Matters	Amazon	12
C6	USB 2.0 Cable - A-Male to B-Male - 10 Feet (3 Meters)	A6TK	AmazonBasics	Amazon	4
C7	Typhoon Ribbon Cable- HIL to Connect	HIL Ribbon Cable	Typhoon HIL		8

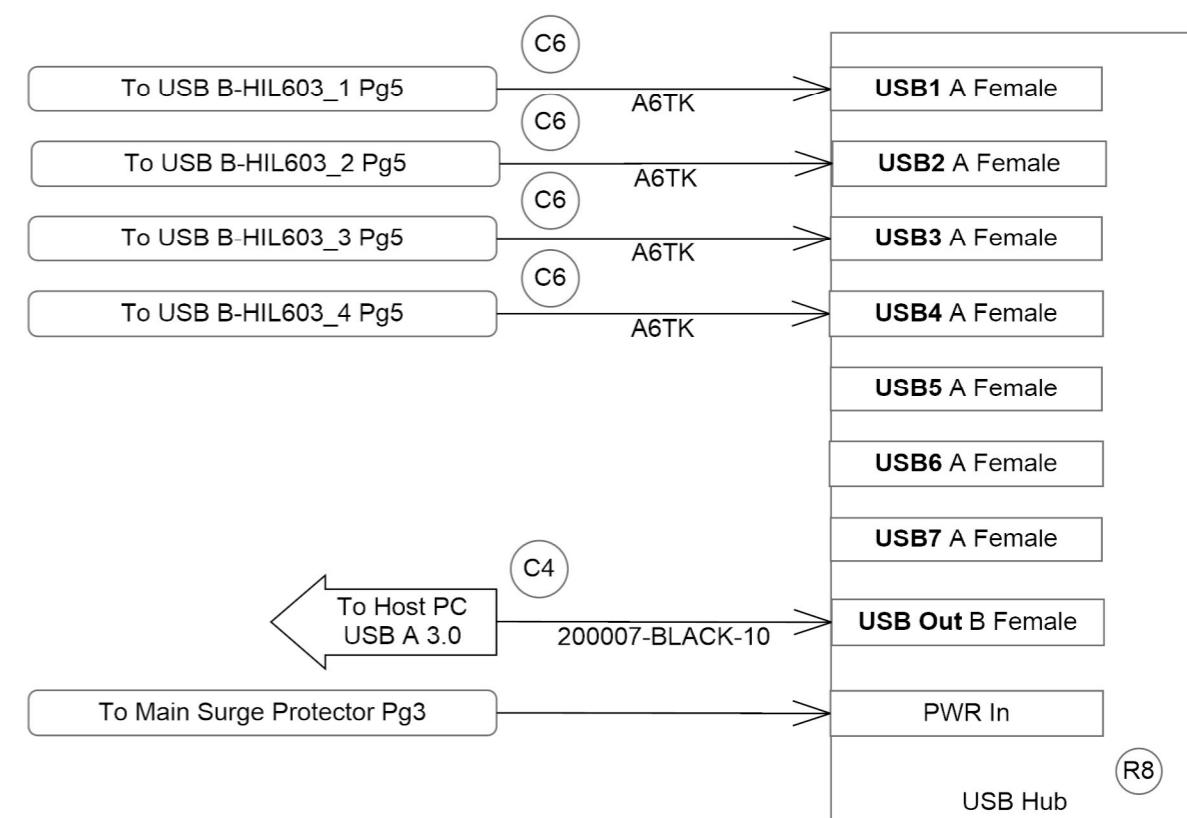
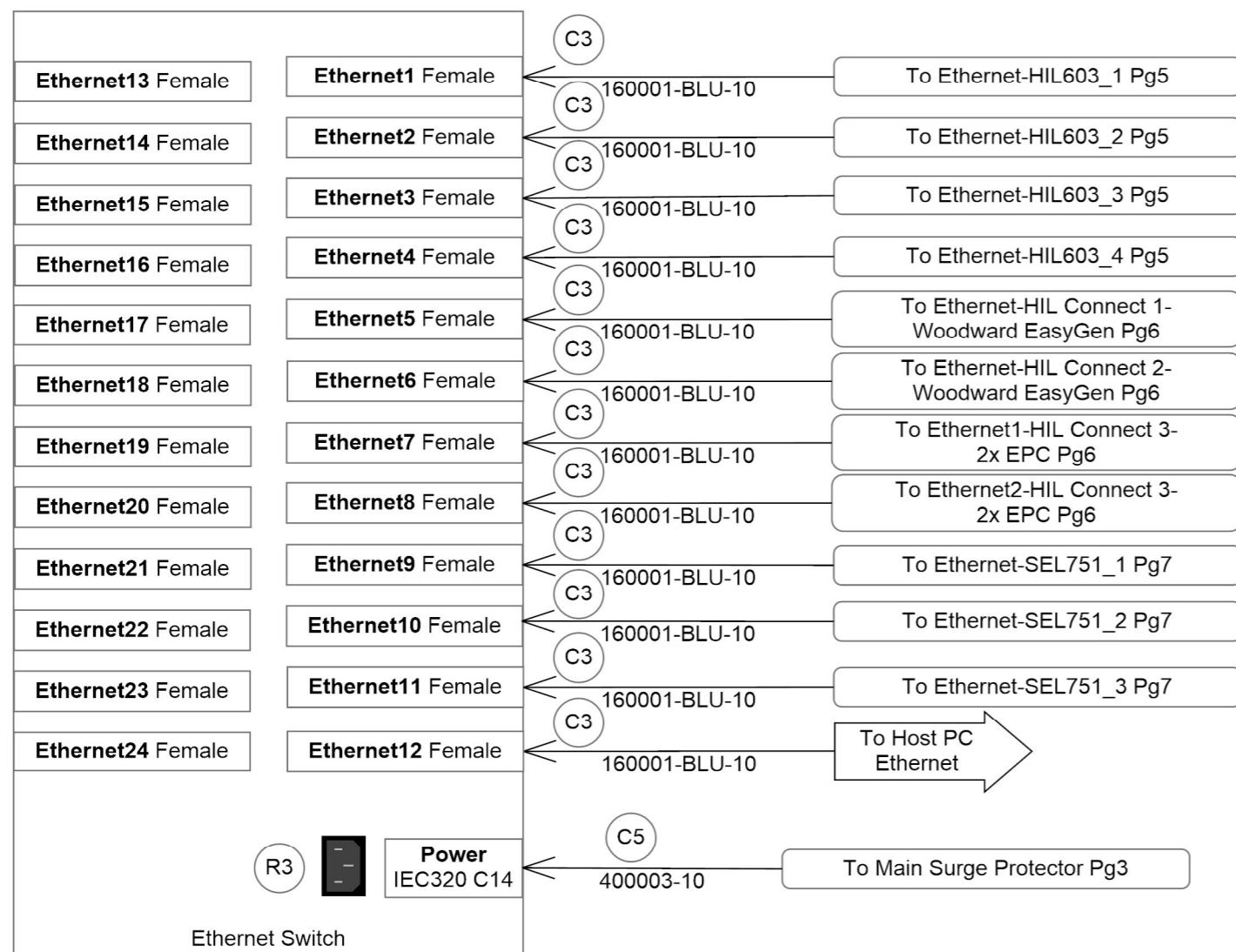
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Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



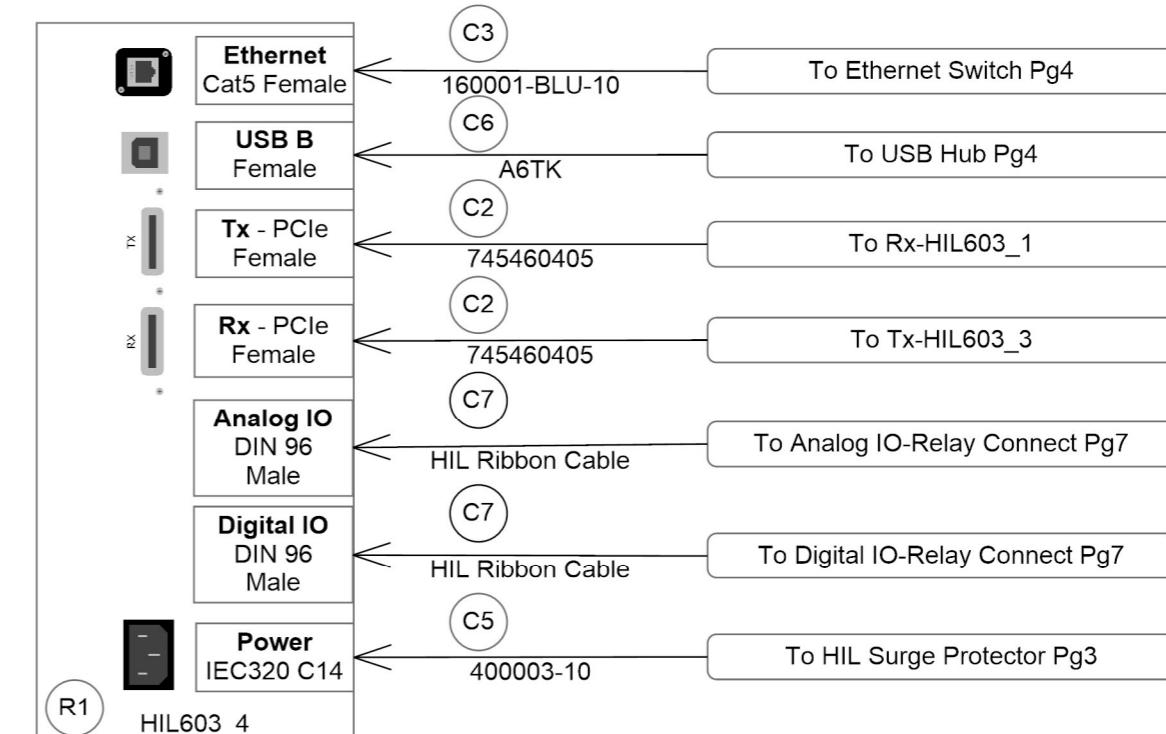
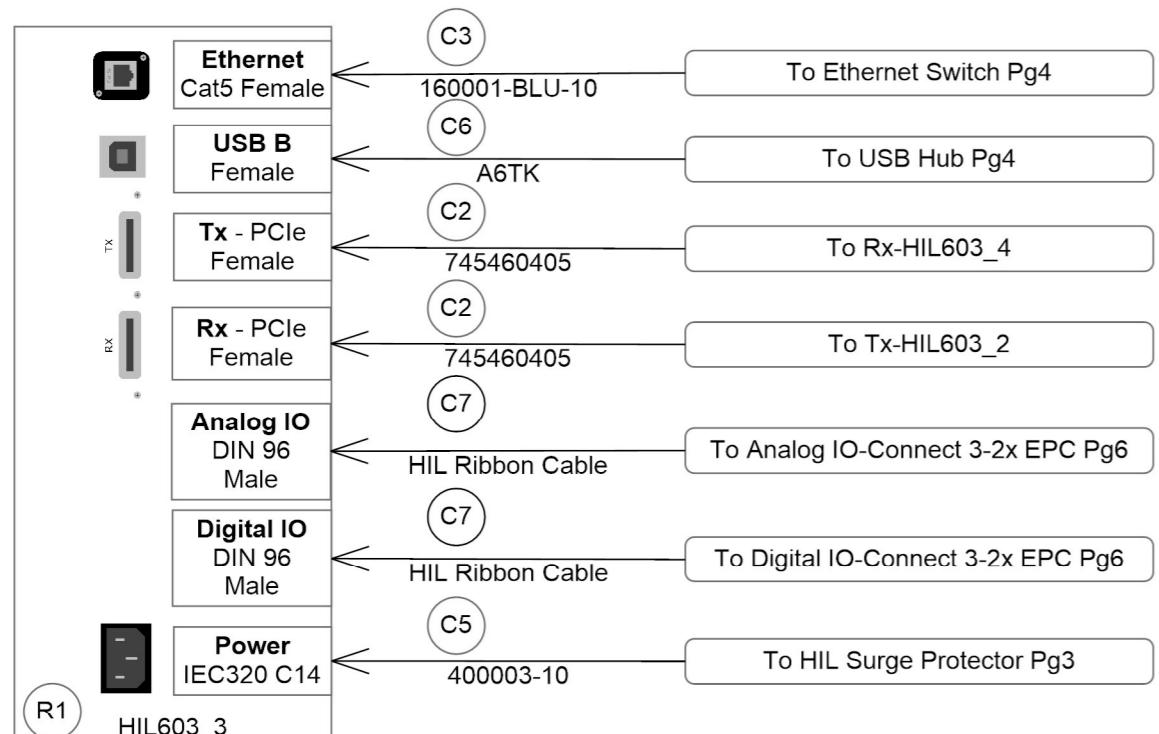
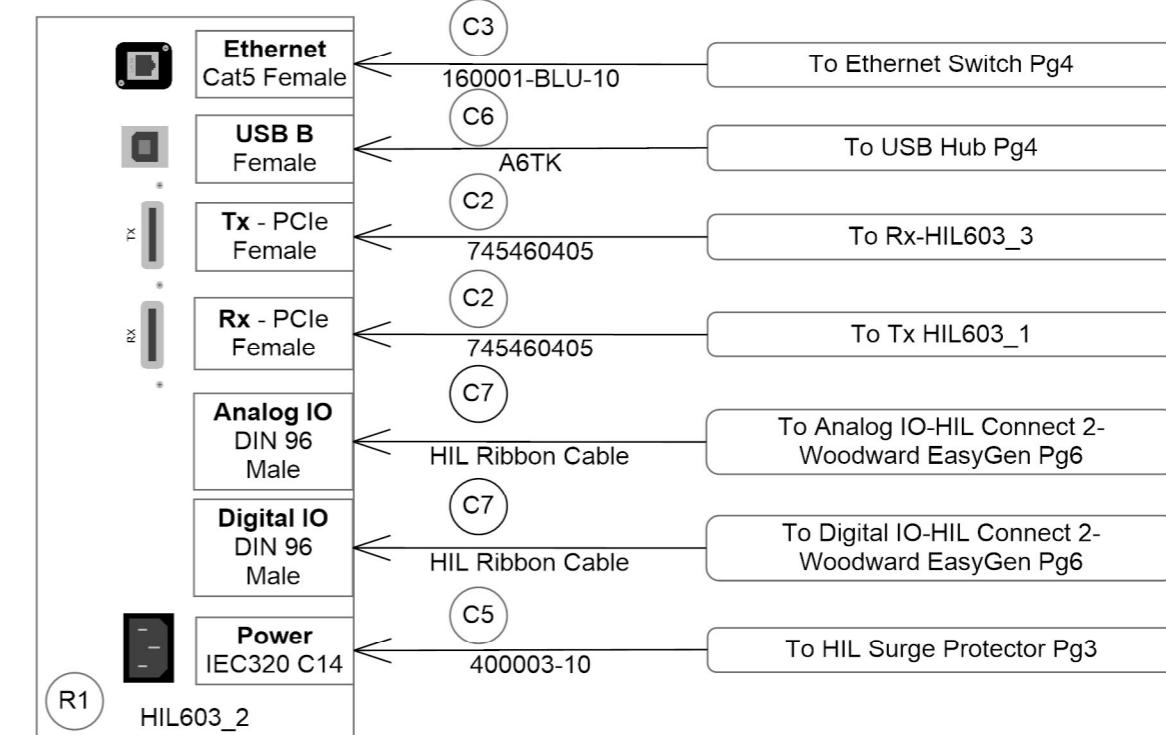
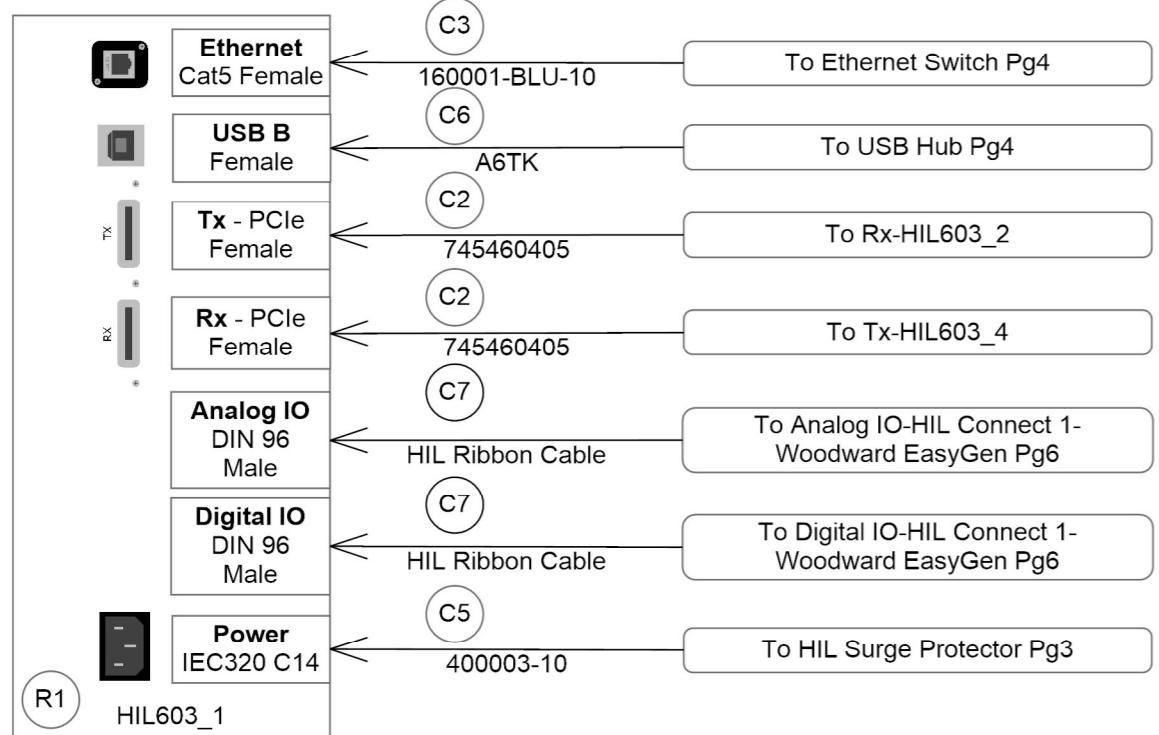
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Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		 Typhoon HIL



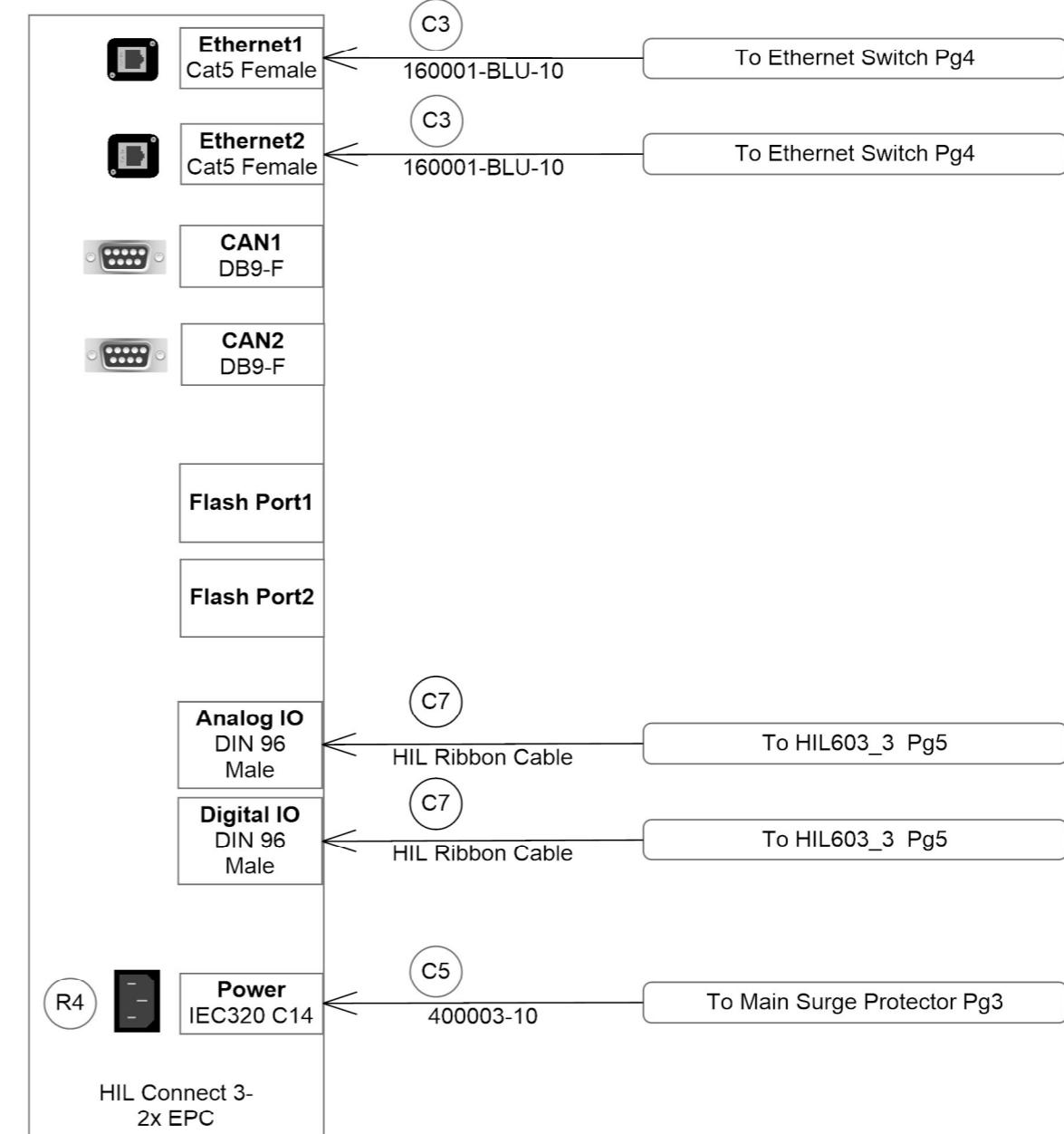
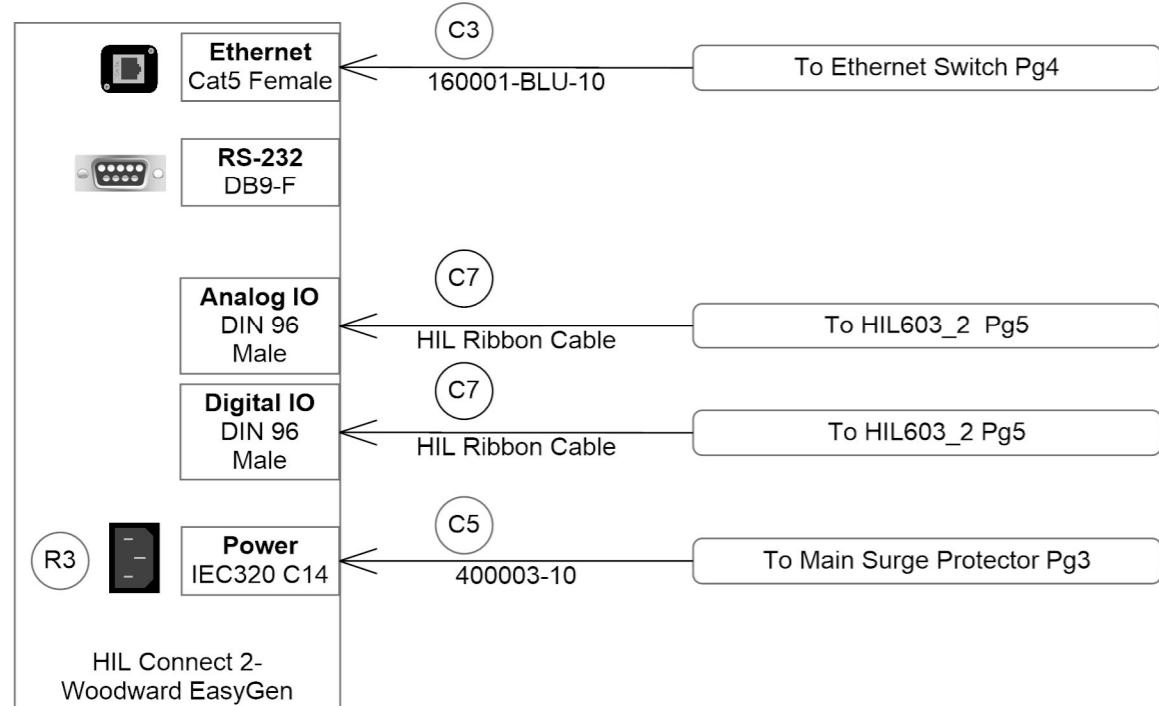
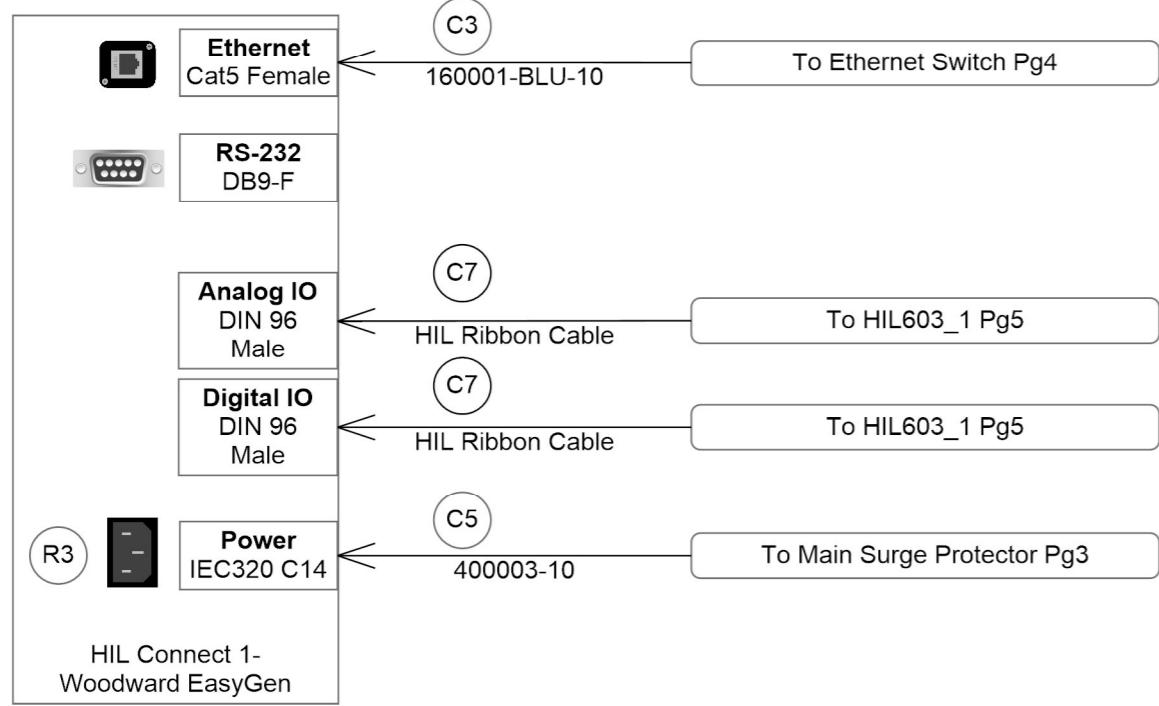
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Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



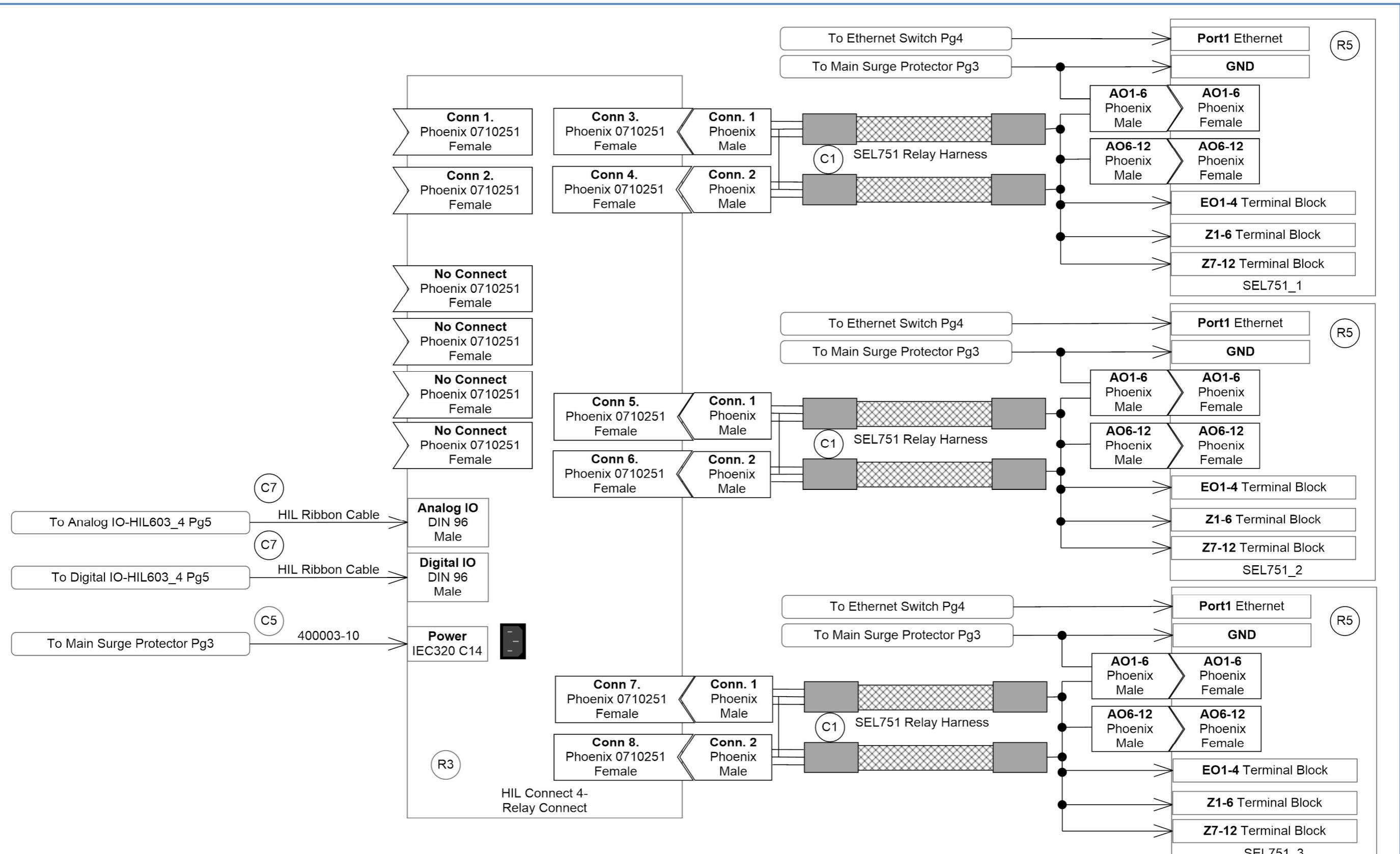
Name: Communications	Page: 4/8	Drawn: Ryan Deyo	Checked:	Notes:	 Typhoon HIL 35 Medford St. Suite 305 Somerville, 02143
Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



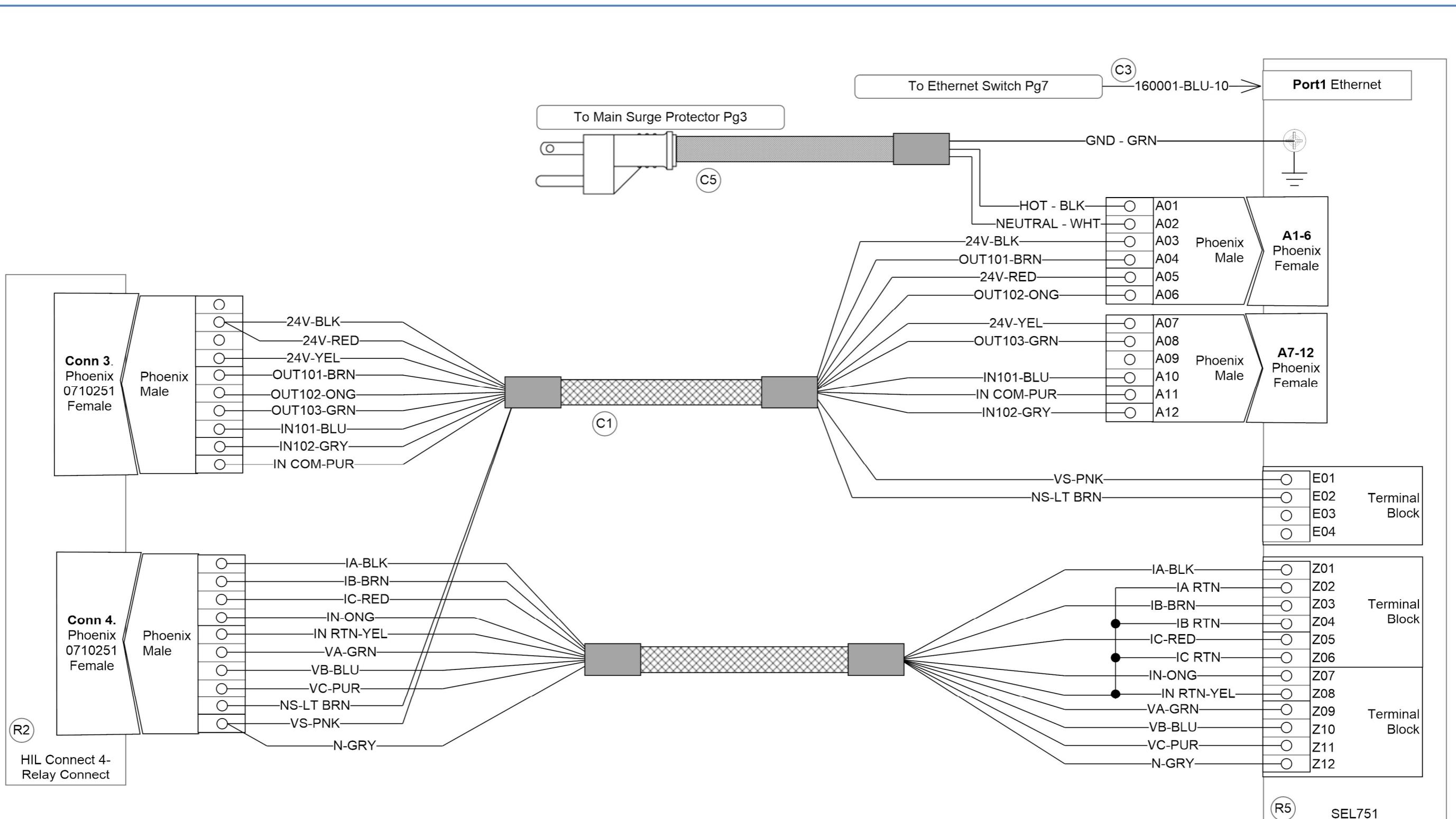
Name: HILs	Page: 5/8	Drawn: Ryan Deyo	Checked:	Notes:	 Typhoon HIL 35 Medford St. Suite 305 Somerville, 02143
Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



Name: HIL Connects	Page: 6/8	Drawn: Ryan Deyo	Checked:	Notes:	 Typhoon HIL 35 Medford St. Suite 305 Somerville, 02143
Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



Name: Relay Connect	Page: 7/8	Drawn: Ryan Deyo	Checked:	Notes:	 Typhoon HIL 35 Medford St. Suite 305 Somerville, 02143
Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		



Name: Relay Wire Diagram	Page: 8/8	Drawn: Ryan Deyo	Checked:	Notes:	 Typhoon HIL 35 Medford St. Suite 305 Somerville, 02143
Project: MIT Lincoln Lab Banshee Testbed	Scale: N/A	Date: 04/25/2017	Rev: A		