

2



1

B

RPI

W3
18 GAUGE -
4 CONDUCTOR

ESS

W12

18 GAUGE -
4 CONDUCTOR

EDS

W5
18 GAUGE -
4 CONDUCTOR

SCADA

SYSTEM
SHUTDOWN
SAFETY
INTERFACE

W20
18 GAUGE -
4 CONDUCTOR

A



A



2



1

B

LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

TITLE
Safety Interface - Top Level

SIZE	DWG NO	ASSIGNMENT	REV
B	A0	SENIOR DESIGN II	4

DRAWN BY	COURSE	SHEET	5 - 9 - 2009
JOHN MIKITSH	ECE492	1 of 7	

2

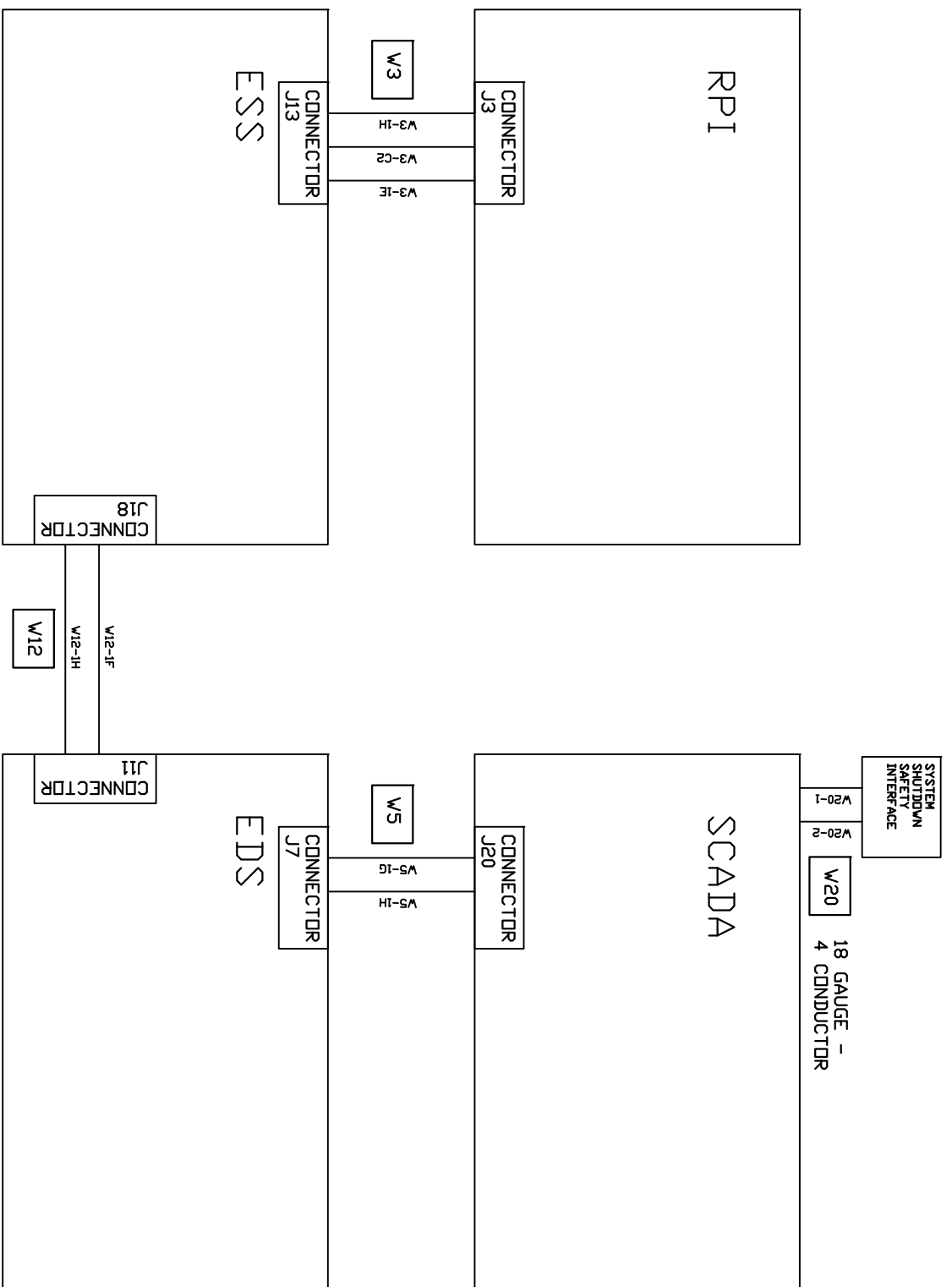
1

B

B

A

A



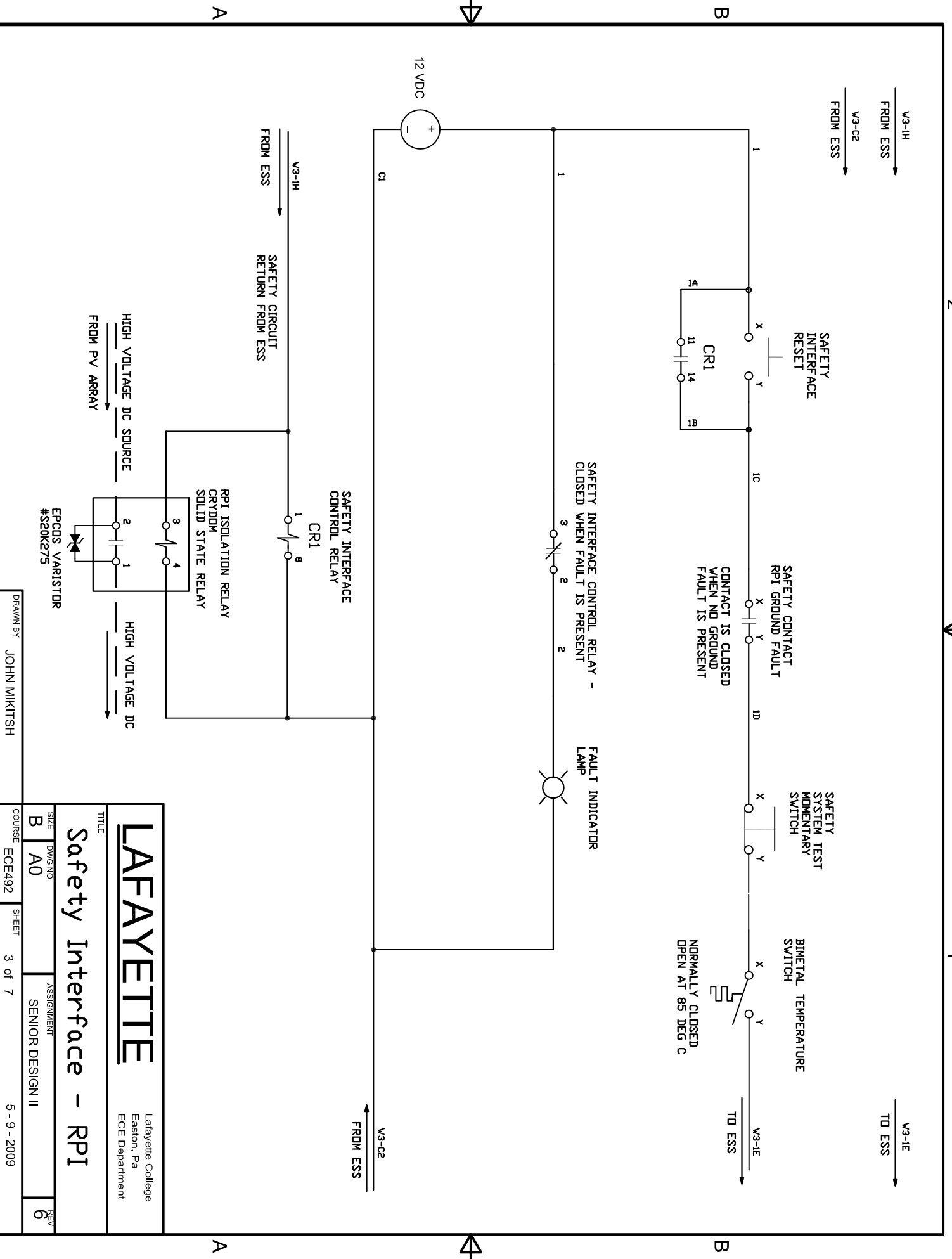
LAFAYETTE
 Lafayette College
 Easton, Pa
 ECE Department

TITLE
Safety Interface - Cable Detail

SIZE	DWG NO	ASSIGNMENT	REV
B	A0	SENIOR DESIGN II	4
DRAWN BY		JOHN MIKITSH	
COURSE		ECE492	
SHEET		2 of 7	
		5 - 9 - 2009	

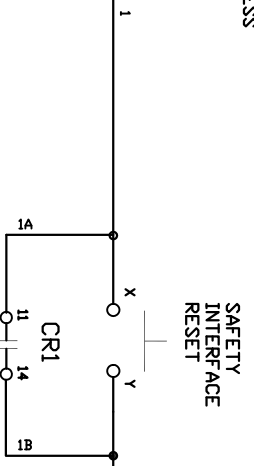
2

1



V3-1H
FROM ESS
V3-C2
FROM ESS

V3-1E
TO ESS



SAFETY CONTACT RPI GROUND FAULT

CONTACT IS CLOSED WHEN NO GROUND FAULT IS PRESENT

SAFETY SYSTEM TEST MOMENTARY SWITCH

BIMETAL TEMPERATURE SWITCH

NORMALLY CLOSED OPEN AT 85 DEG C

V3-1E
TO ESS

12 VDC

V3-1H
FROM ESS

SAFETY CIRCUIT RETURN FROM ESS

SAFETY INTERFACE CONTROL RELAY CRI1

SAFETY INTERFACE CONTROL RELAY - CLOSED WHEN FAULT IS PRESENT

FAULT INDICATOR LAMP

HIGH VOLTAGE DC SOURCE FROM PV ARRAY

HIGH VOLTAGE DC

RPI ISOLATION RELAY CRYDOM SOLID STATE RELAY

EPCCS VARISTOR #S20K275

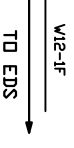
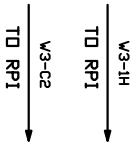
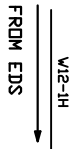
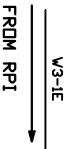
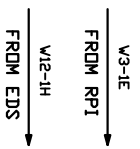
LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

Safety Interface - RPI

DRAWN BY JOHN MIKITSH

TITLE		LAFAYETTE	
SIZE		A0	
DWG NO		A0	
ASSIGNMENT		SENIOR DESIGN II	
COURSE		ECE492	
SHEET		3 of 7	
REV		6	
DATE		5 - 9 - 2009	



SAFETY CONTACT
ESS FATAL FAULT
ESS-FLT

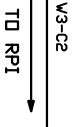
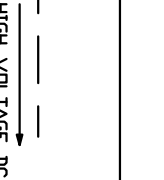
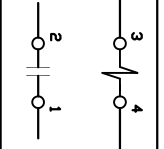
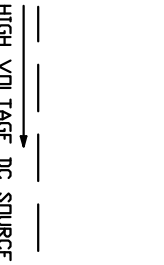
X Y

CONTACT IS CLOSED
WHEN NO ESS FATAL
FAULT IS PRESENT

BIMETAL TEMPERATURE
SWITCH

X Y

NORMALLY CLOSED
OPEN AT 85 DEG C



LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

Safety Interface - ESS

TITLE		Lafayette College Easton, Pa ECE Department	
SIZE	DWG NO	ASSIGNMENT	REV
B	A0	SENIOR DESIGN II	5
DRAWN BY		ECC492	
JOHN MIKITSH		SHEET 4 of 7	
COURSE		5 - 9 - 2009	

2

1

2

1

A

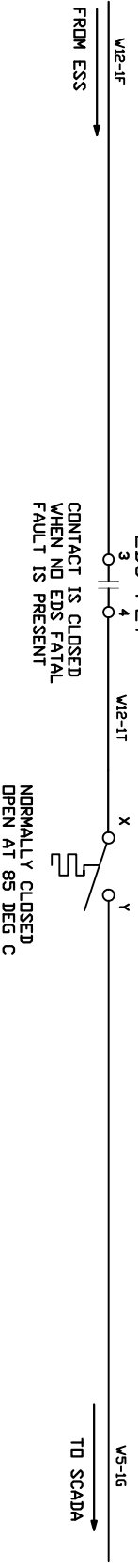
B

A

B

V12-1F
FROM ESS
V5-1H
FROM SCADA

V5-1G
TO SCADA
V12-1H
TO ESS



V5-1H
FROM SCADA

V12-1H
TO ESS

SAFETY CIRCUIT RETURN FROM SCADA

LAFAYETTE
Lafayette College
Easton, Pa
ECE Department

TITLE
Safety Interface - EDS

SIZE	DWG NO	ASSIGNMENT	REV
B	A0	SENIOR DESIGN II	5
COURSE	ECE492	SHEET	5 of 7
DRAWN BY		JOHN MIKITSH	
		5 - 9 - 2009	

2

2

1

1

A

B

A

B

V5-1G
FROM EDS
V20-2
FROM SYSTEM
SHUTDOWN
SWITCH

V5-1H
TO EDS
V20-1
TO SYSTEM
SHUTDOWN
SWITCH

V5-1G
FROM EDS

COTTO TECHNOLOGY
REED RELAY 9081-05-00
SCADA FATAL FAULT
SCADA-FLT

V20-1
TO SYSTEM
SHUTDOWN
SWITCH

SCADA DATA SIGNAL
12 VDC = NO SAFETY FAULT PRESENT

V20-2
FROM SYSTEM
SHUTDOWN
SWITCH

V5-1H
TO EDS

SAFETY CIRCUIT RETURN TO EDS

LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

Safety Interface - SCADA

SIZE	DWG NO	ASSIGNMENT	REV
B	A0	SENIOR DESIGN II	4

COURSE: ECE492 SHEET: 6 of 7 5 - 9 - 2009

DRAWN BY: JOHN MIKITSH

2



1

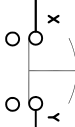
W5-1G
FROM EDS
W20-1
FROM SCADA

W5-1H
TO EDS
W20-2
TO SCADA

W20-1
FROM SCADA

W20-2
TO SCADA

SYSTEM SHUTDOWN
SAFETY SWITCH
2 POSITION
PUSH / PULL



B

B

A

A

LAFAYETTE

Lafayette College
Easton, Pa
ECE Department

Safety Interface - System Shutdown Sw.

TITLE		DRAWN BY		COURSE		SHEET		ASSIGNMENT		REV	
Safety Interface - System Shutdown Sw.		JOHN MIKITSH		ECE492		7 of 7		SENIOR DESIGN II		2	
SIZE	DWG NO										
B	A0										
5 - 9 - 2009											

2



1