

# Sample Engineering Package

PREPARED BY

**BLUE RIDGE**  
**TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

1800 SANDY PLAINS INDUSTRIAL PARKWAY  
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[WWW.BRTINT.COM](http://WWW.BRTINT.COM)

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Note: Module datasheets included in separate document.

REV:	TYPE: TABLE OF CONTENTS	DATE:
		JOB #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL		ENGINEERED BY: DRAWN BY: CHECKED BY: PAGE:

**Note:**

Lighting control system furnished by Division 23/25 (Controls Contractor) and installed by Division 26. CANbus Network is daisy-chain only.

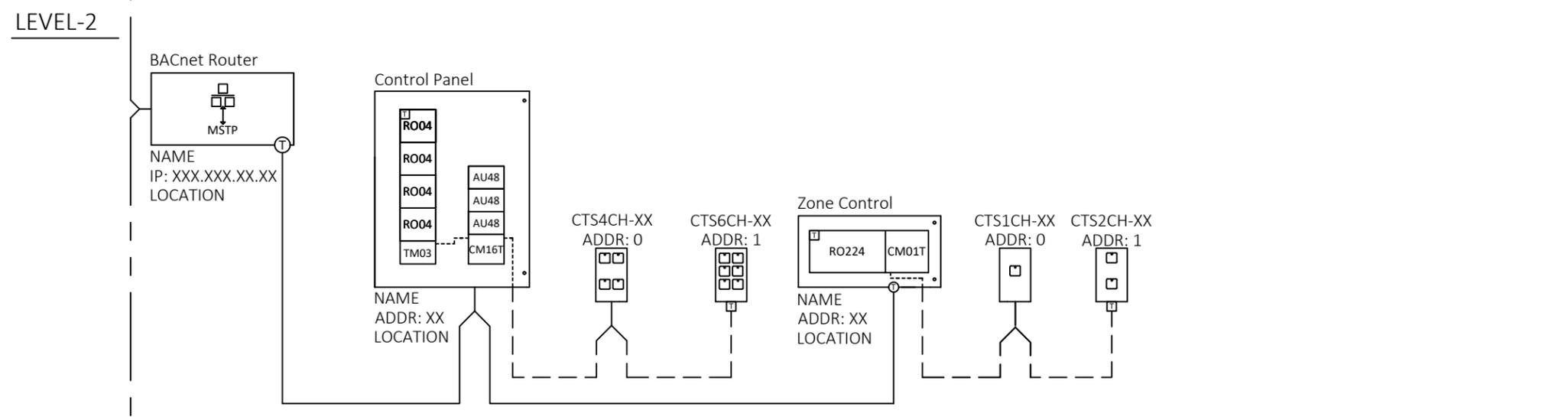
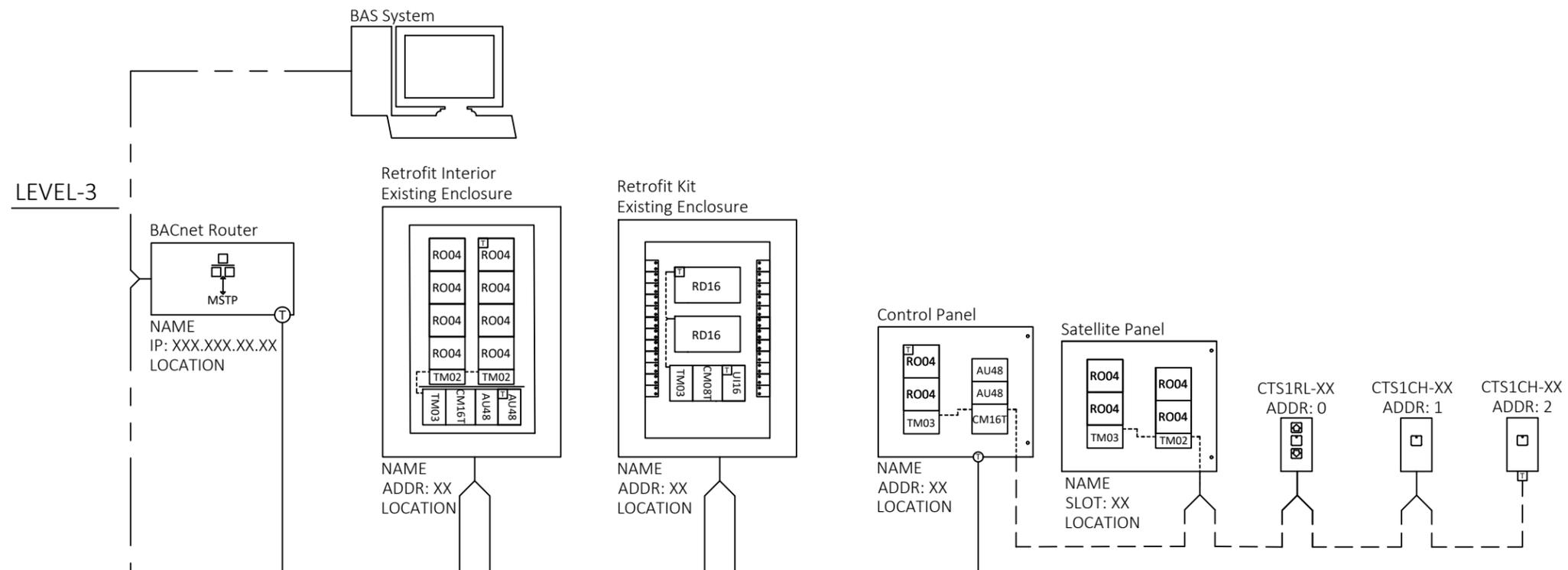
———— BACnet: CL3P 22/2 Shielded, Low Cap, Max 4,000'

- - - - - CANbus Network: CL3P 18/4, Max 1,300'

———— IP Network: CAT-5e, Max 328'

Ⓣ BACnet MS/TP Network Terminator

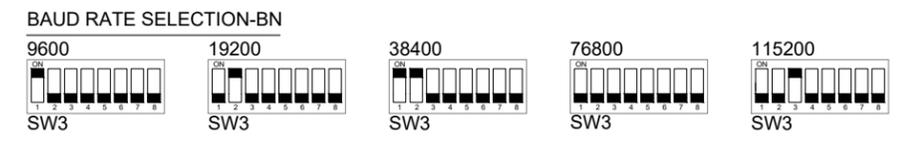
Ⓣ CANbus Network Terminator



**BACnet MS/TP NETWORK- COM1**  
TOPOLOGY: RS-485 ( Half Duplex) Daisy Chain  
WIRE: CL3P-22/2-LC-S, Max 4000'

**CANbus NETWORK**  
TOPOLOGY: Daisy Chain  
COMM WIRE: CL3P-22/2-LC, Max 1000'  
POWER WIRE: CL3P-22/2, Max 1000'

**DMX NETWORK- COM 2**  
TOPOLOGY: Daisy Chain  
GENERAL WIRE: CL3P 22/2-LC-S Max 4000'



To LEVEL-1

**Engineering Standards**  
SYS\_03.00

**Lighting Control System Riser**

Rev: 1.01	Type: RISER	Date: 05-11-20	Job #:
<p style="margin: 0;"><b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL</p>			Engineered: WCD
			Drawn: BBL
			Checked: WCD
Page: 1 of 19			

**Note:**

Lighting control system furnished by Division 23/25 (Controls Contractor) and installed by Division 26. CANbus Network is daisy-chain only.

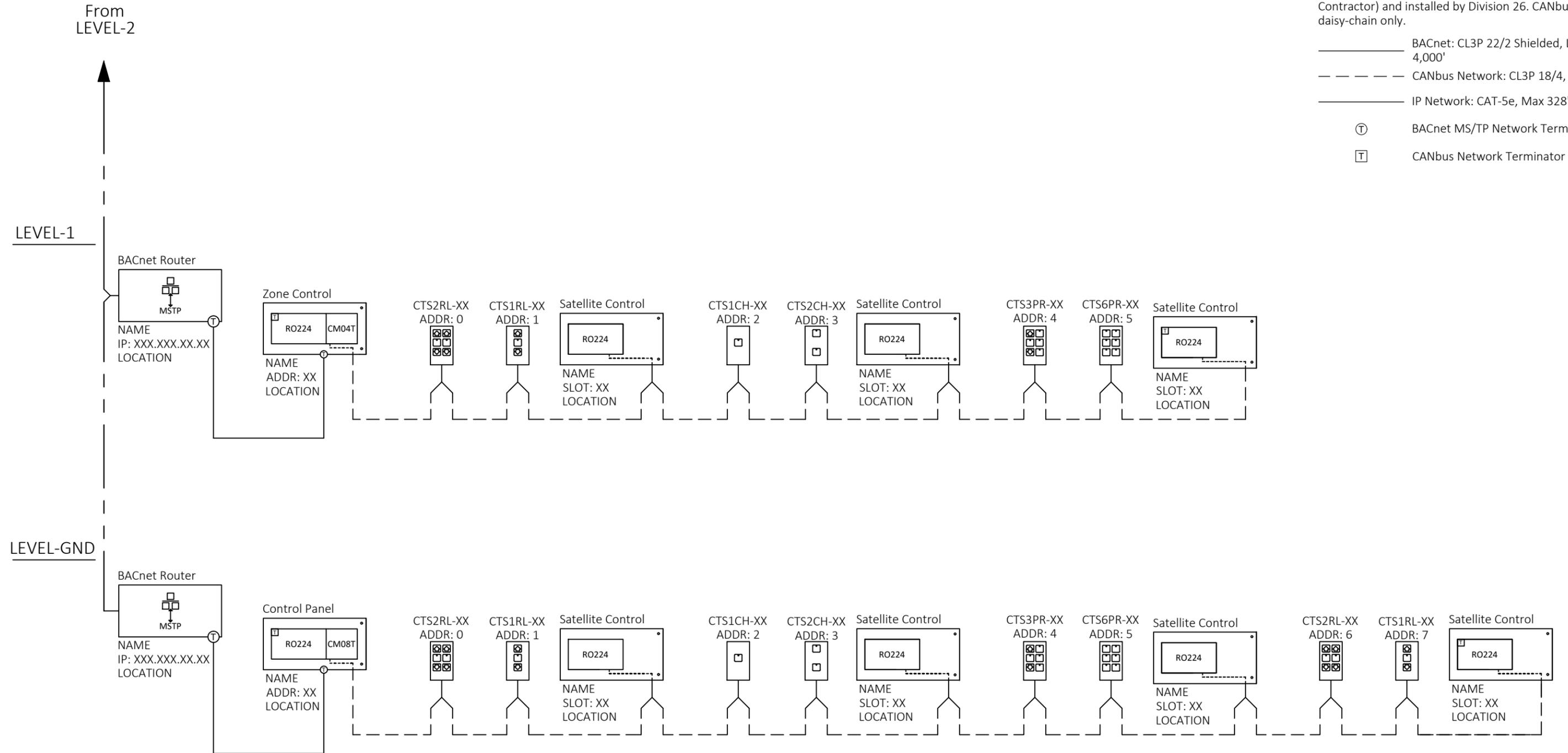
———— BACnet: CL3P 22/2 Shielded, Low Cap, Max 4,000'

- - - - - CANbus Network: CL3P 18/4, Max 1,300'

———— IP Network: CAT-5e, Max 328'

Ⓣ BACnet MS/TP Network Terminator

Ⓣ CANbus Network Terminator



Engineering Standards  
SYS\_03.00

Lighting Control System Riser

Rev: 1.00 Type: RISER Date: 05-11-20 Job #:

**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

Engineered: WCD  
Drawn: BBL  
Checked: WCD  
Page: 2 of 19

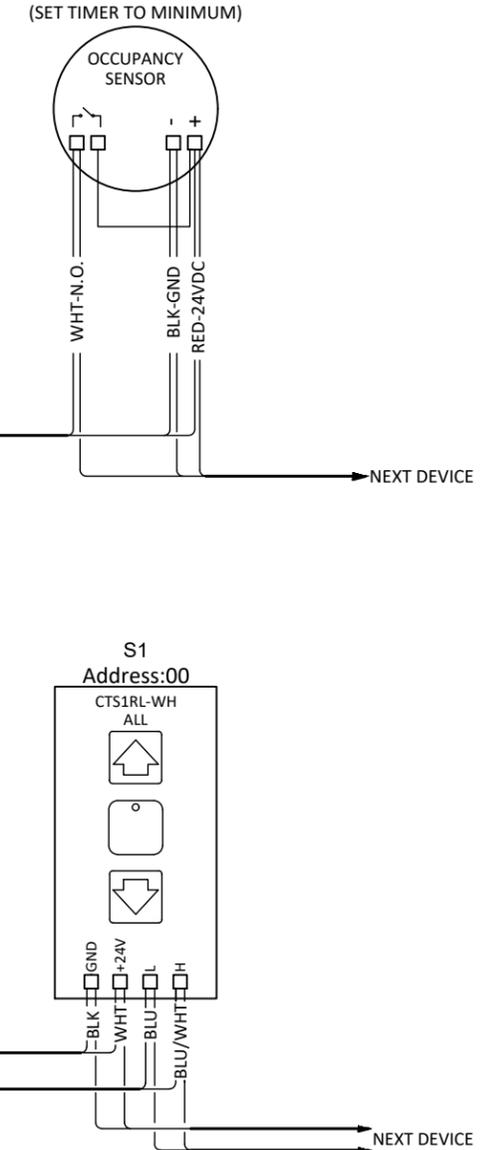
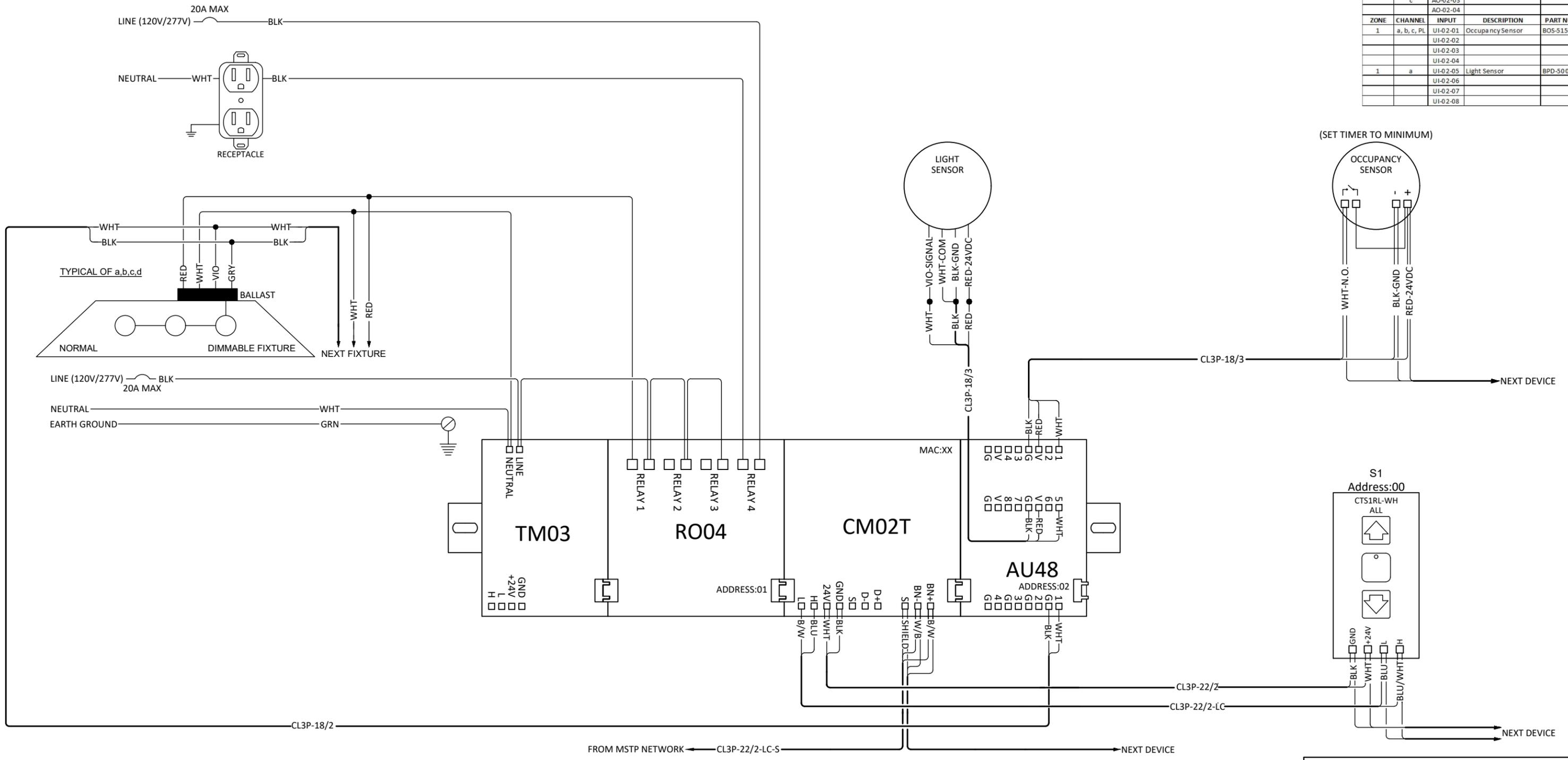
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ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01		
	b	RE-01-02		
	c	RE-01-03		
	PL	RE-01-04		

MODULE: AU48		ADDRESS: 02		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	AO-02-01		
	b	AO-02-02		
	c	AO-02-03		
		AO-02-04		

ZONE	CHANNEL	INPUT	DESCRIPTION	PART NUMBER	
1	a, b, c, PL	UI-02-01	Occupancy Sensor	BOS-515NSA	
		UI-02-02			
		UI-02-03			
		UI-02-04			
	1	a	UI-02-05	Light Sensor	BPD-500SS
			UI-02-06		
			UI-02-07		
			UI-02-08		



**ENGINEERING STANDARDS**  
TZW-CP0231B0-00100-00010

Typical Zone Wiring

Rev: 1.01	Type: Wiring Typical	Date: 05-11-20	Job #:
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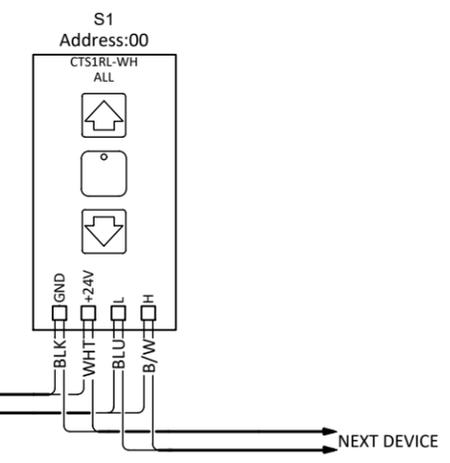
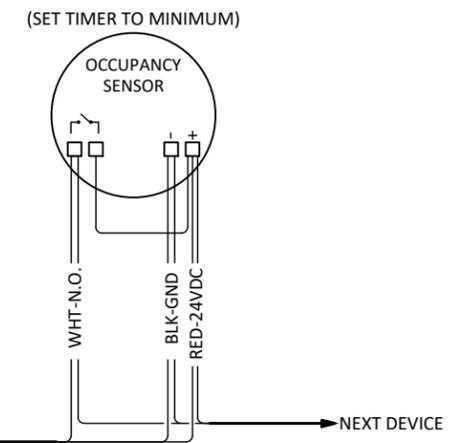
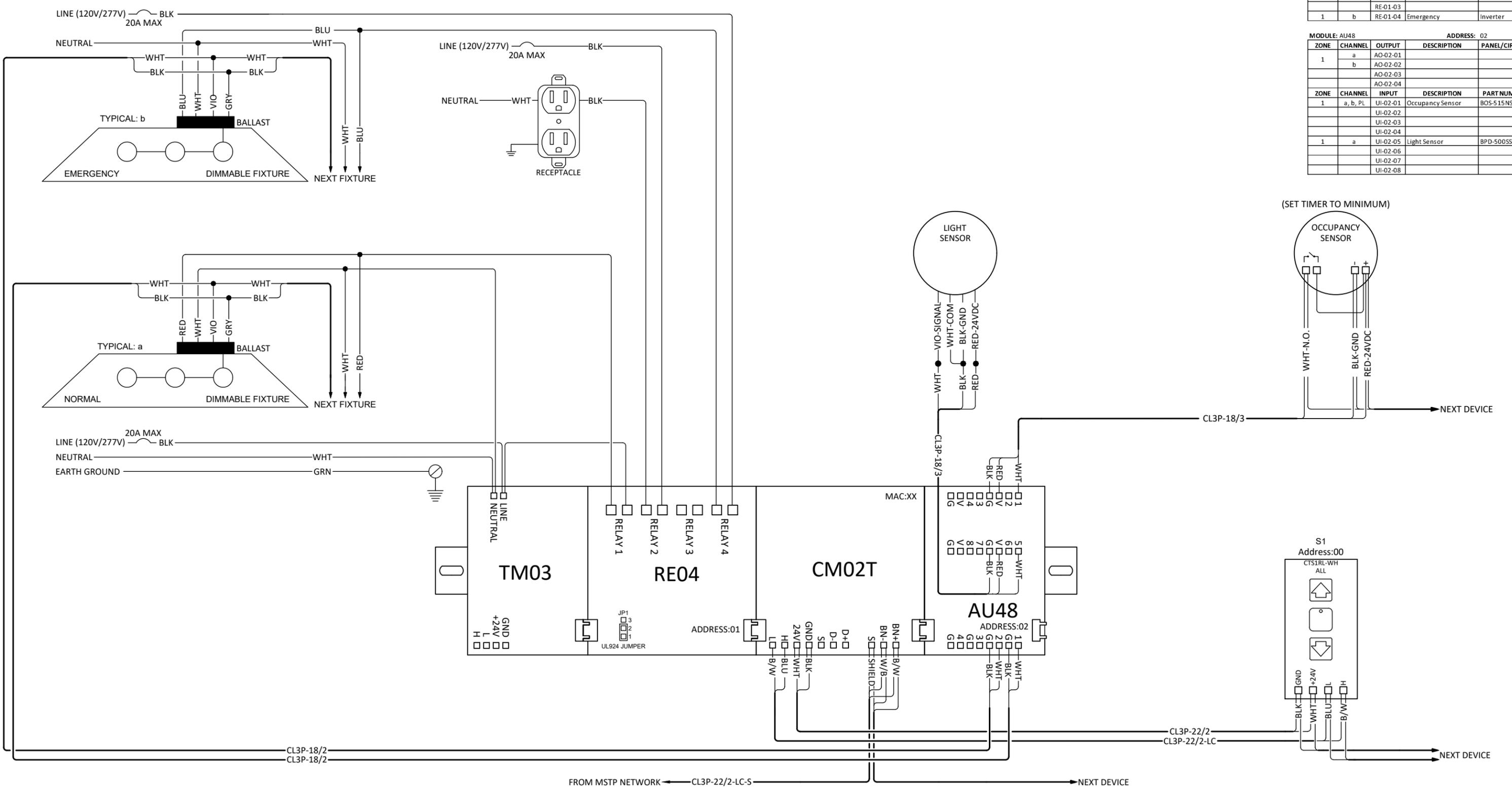
**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

Engineered: WCD
Drawn: AWD
Checked: BBL
Page: 3 of 19

NOTE: For wire requirements see Cabling Data Sheet.

MODULE: RE04			ADDRESS: 01	
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01		
	PL	RE-01-02		
		RE-01-03		
1	b	RE-01-04	Emergency	Inverter

MODULE: AU48			ADDRESS: 02	
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	AO-02-01		
	b	AO-02-02		
		AO-02-03		
		AO-02-04		
ZONE	CHANNEL	INPUT	DESCRIPTION	PART NUMBER
1	a, b, PL	UI-02-01	Occupancy Sensor	BOS-515NSA
		UI-02-02		
		UI-02-03		
		UI-02-04		
1	a	UI-02-05	Light Sensor	BPD-5005S
		UI-02-06		
		UI-02-07		
		UI-02-08		



**ENGINEERING STANDARDS**  
TZW-CP0231B0-00010-00010

Typical Zone Wiring

Rev: 1.01	Type: Wiring Typical	Date: 05-11-20	Job #:
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Engineered: WCD
Drawn: AWD
Checked: BBL
Page: 4 of 19

**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

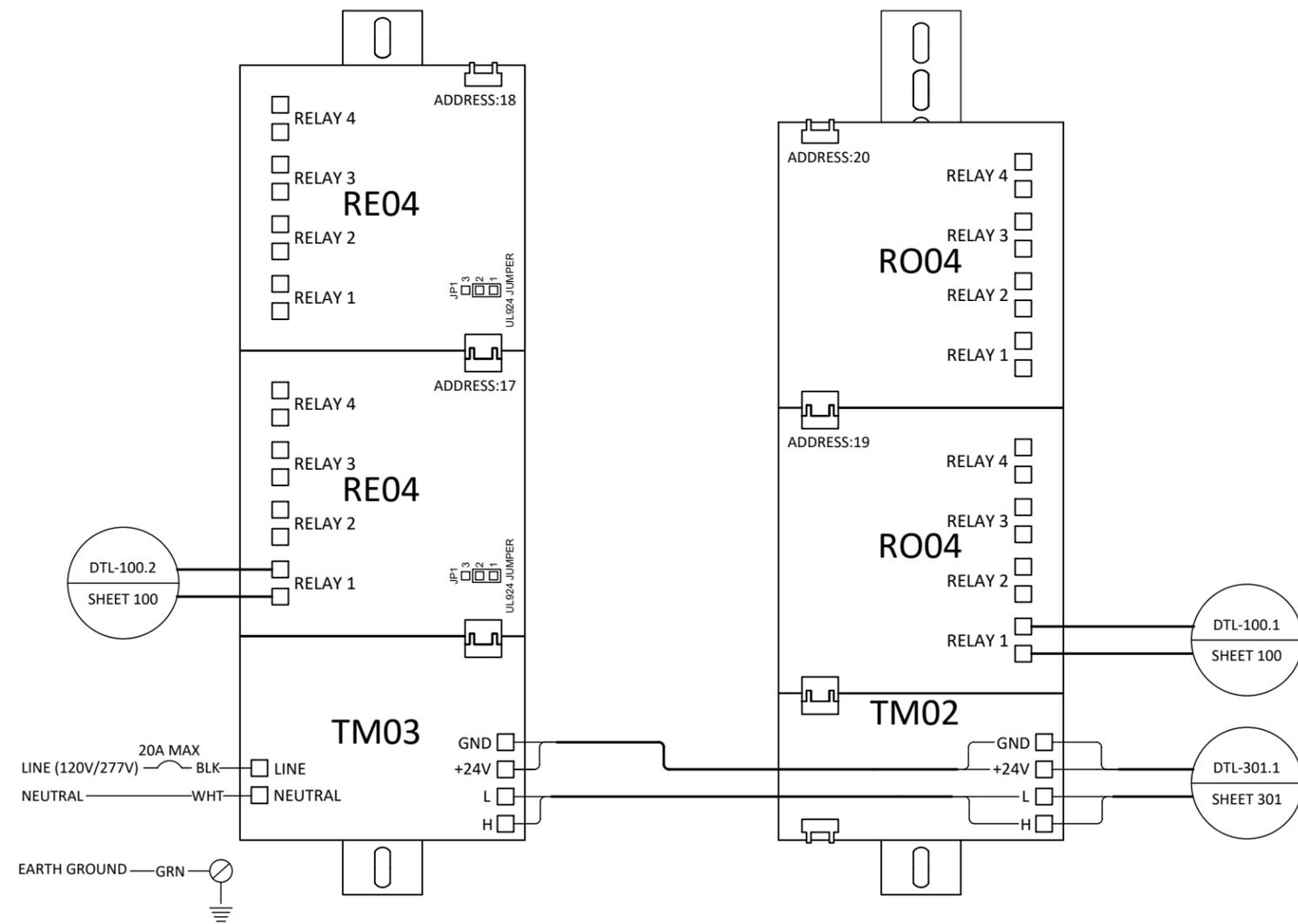
NOTE: For wire requirements see Cabling Data Sheet.

MODULE: RE04		ADDRESS: 18		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RE-18-04		
		RE-18-03		
		RE-18-02		
		RE-18-01		

MODULE: RO04		ADDRESS: 20		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RO-20-04		
		RO-20-03		
		RO-20-02		
		RO-20-01		

MODULE: RE04		ADDRESS: 17		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RE-17-04		
		RE-17-03		
		RE-17-02		
1	a	RE-17-01	Emergency	

MODULE: RO04		ADDRESS: 19		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RO-19-04		
		RO-19-03		
		RO-19-02		
1	a	RO-19-01	Normal	

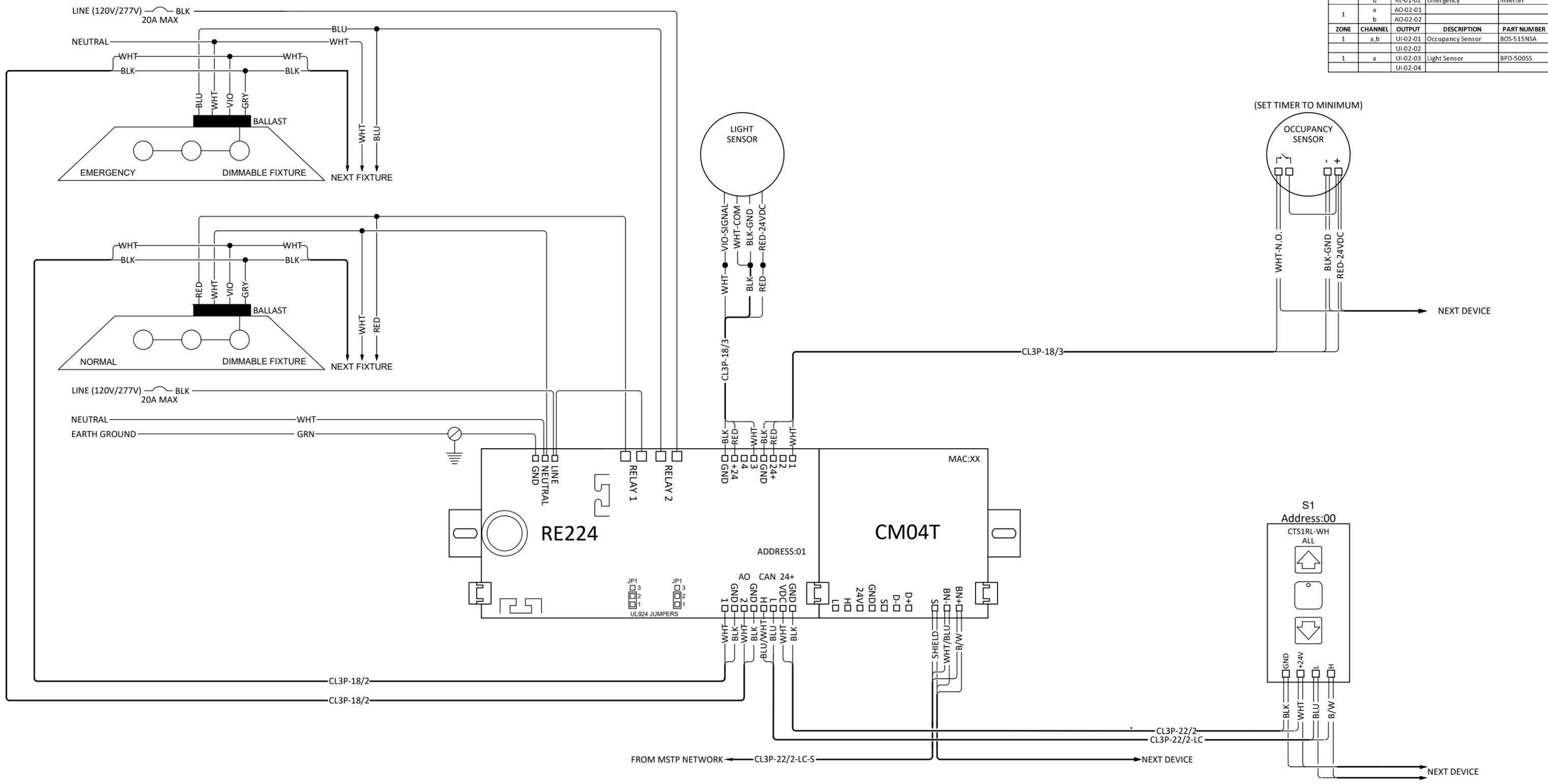


NOTE: For wire requirements see Cabling Data Sheet.

ENGINEERING STANDARDS TZW-SP0031C0-00220-0			
Typical Zone Wiring			
Rev: 1.00	Type: Wiring Typical	Date: 05-11-20	Job #:
 <b>BLUE RIDGE</b> <b>TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: WCD
			Drawn: BBL
			Checked: WCD
			Page: 5 of 19



MODULE: RE224		ADDRESS: 01		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01		
	b	RE-01-02	Emergency	Inverter
1	a	AO-02-01		
	b	AO-02-02		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PART NUMBER
1	a,b	UI-02-01	Occupancy Sensor	BOS-515NSA
		UI-02-02		
1	a	UI-02-03	Light Sensor	BPD-500SS
		UI-02-04		



NOTE: For wire requirements see Cabling Data Sheet.

**ENGINEERING STANDARDS**  
TZW-ZC0330A0-01

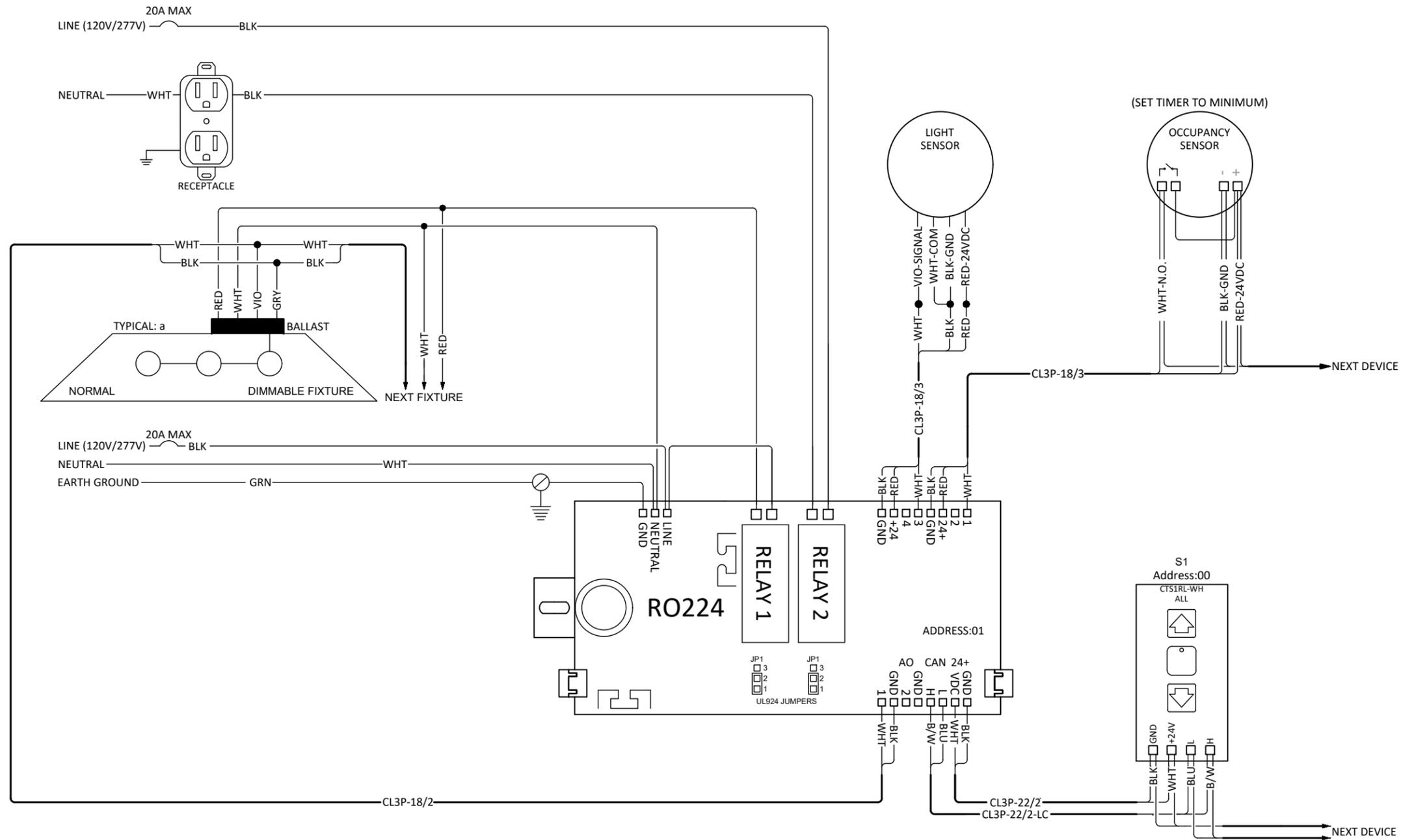
Typical Zone Wiring

Rev: 1.01	Type: Wiring Typical	Date: 05-11-20	Job #:
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Engineered: WCD  
Drawn: SWA  
Checked: WCD  
Page: 7 of 19

**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

MODULE: R0224			ADDRESS: 01	
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01		
1	PL	RE-01-02		
1	a	AO-02-01		
1	a	AO-02-02		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PART NUMBER
1	a, PL	UI-02-01	Occupancy Sensor	BOS-515 NSA
		UI-02-02		
1	a	UI-02-03	Light Sensor	BPD-500SS
		UI-02-04		



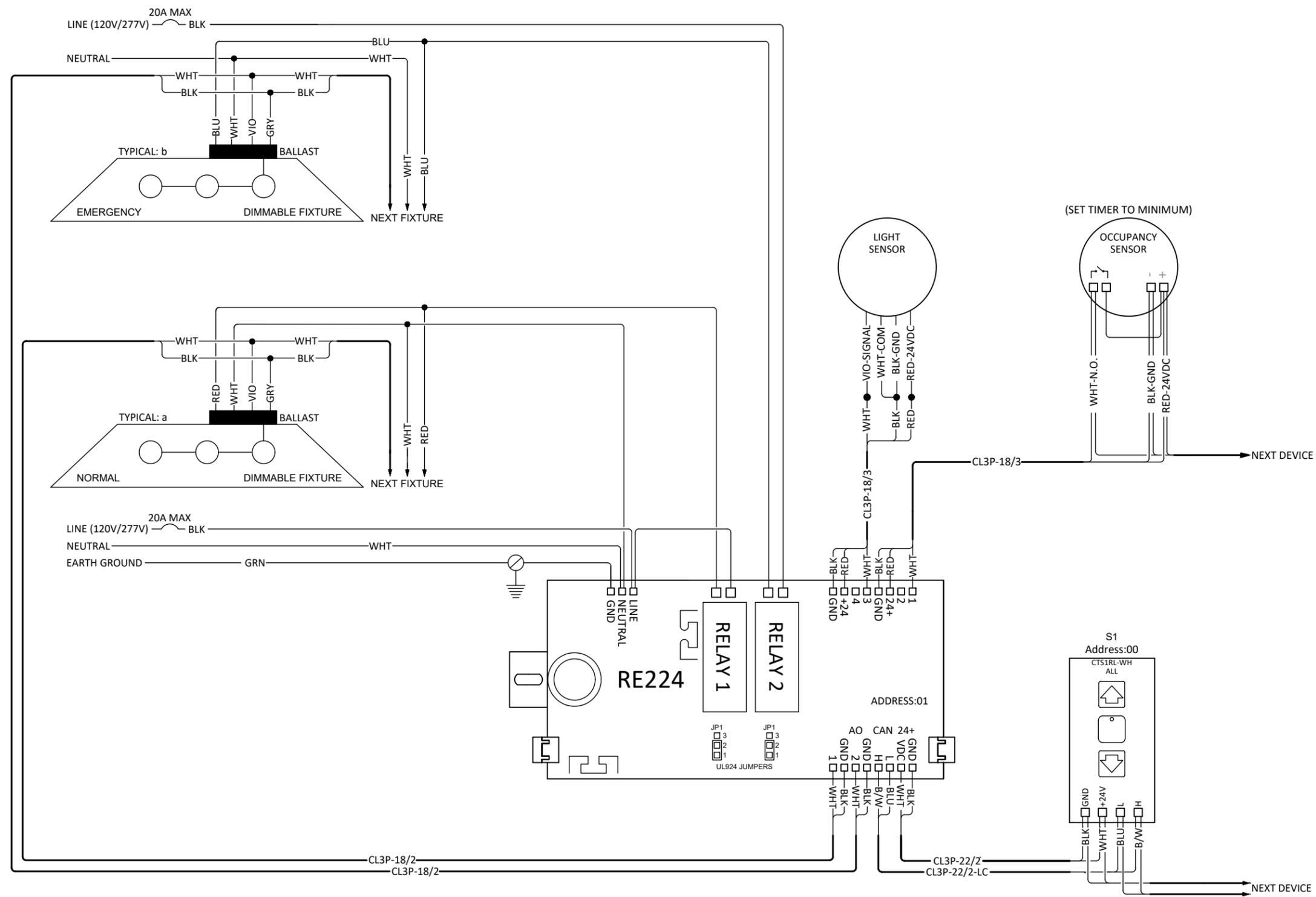
**ENGINEERING STANDARDS**  
TZW-SC0030A0-10

Typical Zone Wiring

Rev: 1.02	Type: Wiring Typical	Date: 05-11-20	Job #:
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			Drawn: BBL
<b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Checked: WCD
			Page: 8 of 19

NOTE: For wire requirements see Cabling Data Sheet.

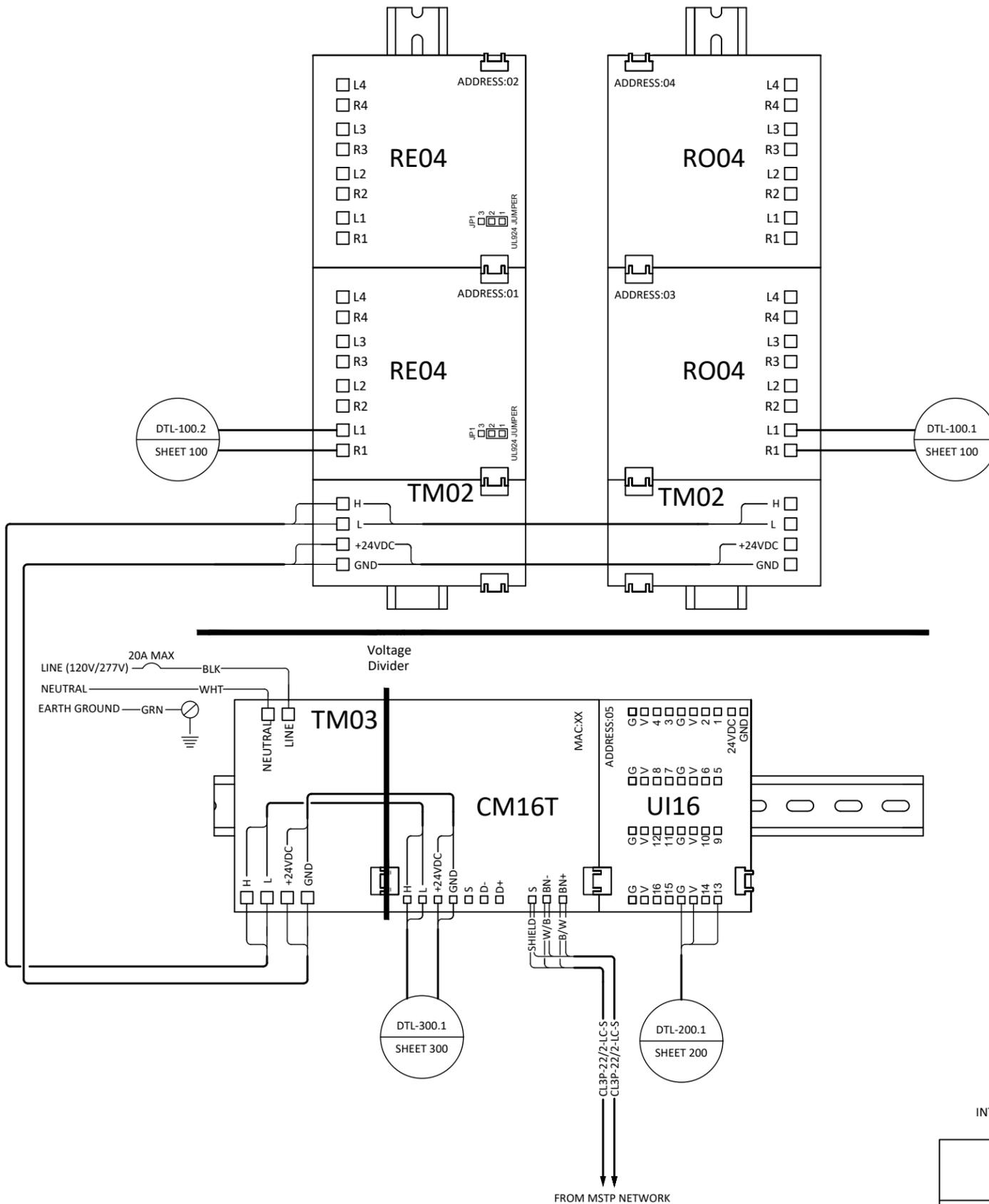
MODULE: RE224			ADDRESS: 01	
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01		
		RE-01-02	Emergency	Inverter
1	b	AO-02-01		
		AO-02-02		
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PART NUMBER
1	a,b	UI-02-01	Occupancy Sensor	BOS-515NSA
		UI-02-02		
1	a	UI-02-03	Light Sensor	8PD-500SS
		UI-02-04		



NOTE: For wire requirements see Cabling Data Sheet.

ENGINEERING STANDARDS TZW-SC0030A0-01			
Typical Zone Wiring			
Rev: 1.02	Type: Wiring Typical	Date: 05-11-20	Job #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: WCD
			Drawn: BBL
			Checked: WCD
			Page: 9 of 19

MODULE:	RE04		ADDRESS:	01
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RE-01-01	EMERGENCY	
		RE-01-02		
		RE-01-03		
		RE-01-04		
MODULE:	RE04		ADDRESS:	02
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RE-02-01		
		RE-02-02		
		RE-02-03		
		RE-02-04		
MODULE:	RO04		ADDRESS:	03
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RO-03-01	NORMAL	
		RO-03-02		
		RO-03-03		
		RO-03-04		
MODULE:	RO04		ADDRESS:	04
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
		RO-04-01		
		RO-04-02		
		RO-04-03		
		RO-04-04		
MODULE:	UI16		ADDRESS:	05
ZONE	CHANNEL	INPUT	DESCRIPTION	PART NUMBER
		UI-05-01		
		UI-05-02		
		UI-05-03		
		UI-05-04		
		UI-05-05		
		UI-05-06		
		UI-05-07		
		UI-05-08		
		UI-05-09		
		UI-05-10		
		UI-05-11		
		UI-05-12		
1	a	UI-05-13	Occupancy Sensor	BOS-515NSA
		UI-05-14		
		UI-05-15		
		UI-05-16		



INTERIOR DIMENSIONS (H x W x D): 14.250 x 12.00 x 3.75

ENGINEERING STANDARDS  
TZW-RI0531D0-00220-00001

Typical Zone Wiring

Rev: 1.00 Type: Wiring Typical Date: 05-11-20 Job #:

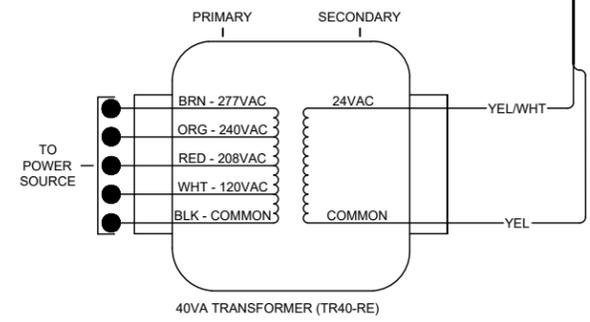
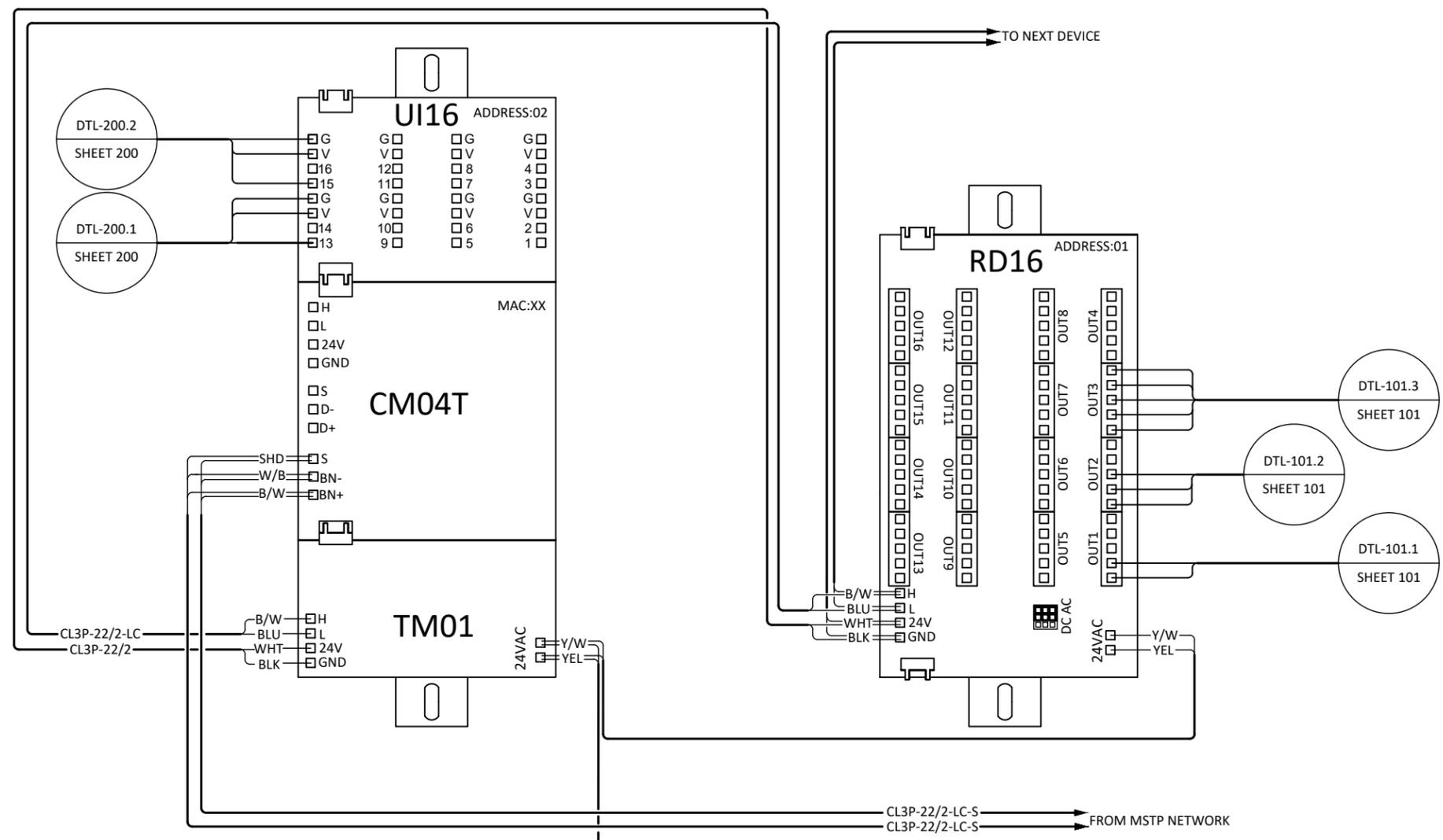
**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

Engineered: WCD

Drawn: BBL

Checked: WCD

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MODULE:	RD16	Address:	01	
ZONE	CHANNEL	OUTPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	RD-01-01	WR-6	
1	b	RD-01-02	RR7	
1	c	RD-01-03	RR9	
		RD-01-04		
		RD-01-05		
		RD-01-06		
		RD-01-07		
		RD-01-08		
		RD-01-09		
		RD-01-10		
		RD-01-11		
		RD-01-12		
		RD-01-13		
		RD-01-14		
		RD-01-15		
		RD-01-16		
MODULE:	UI16	Address:	02	
ZONE	CHANNEL	INPUT	DESCRIPTION	PANEL/CIRCUIT
1	a	UI-02-01	BOS-515NSA	
	a	UI-02-02	BPD-500SS	
		UI-02-03		
		UI-02-04		
		UI-02-05		
		UI-02-06		
		UI-02-07		
		UI-02-08		
		UI-02-09		
		UI-02-10		
		UI-02-11		
		UI-02-12		
		UI-02-13		
		UI-02-14		
		UI-02-15		
		UI-02-16		

**ENGINEERING STANDARD**  
TZW-RK031100-0-10001

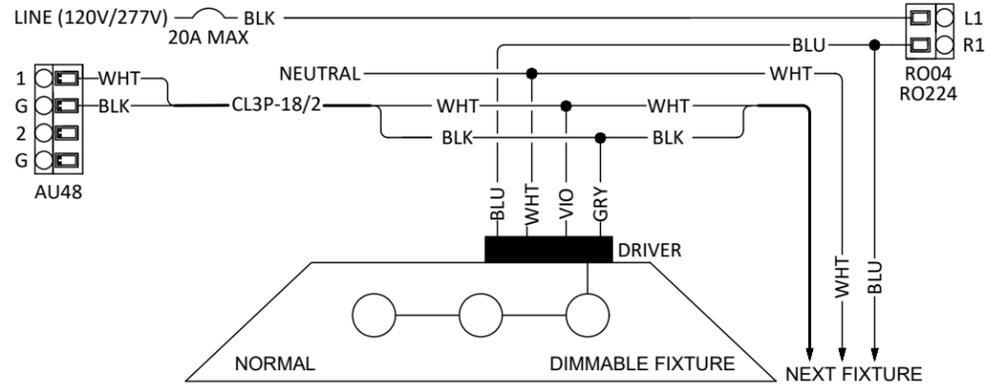
Typical Zone Wiring

Rev: 1.00	Type: Wiring Typical	Date: 05-11-20	Job #:
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**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

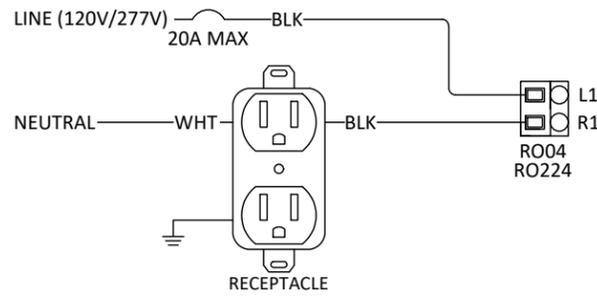
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Drawn: EFM
Checked: WCD
Page: 11 of 19

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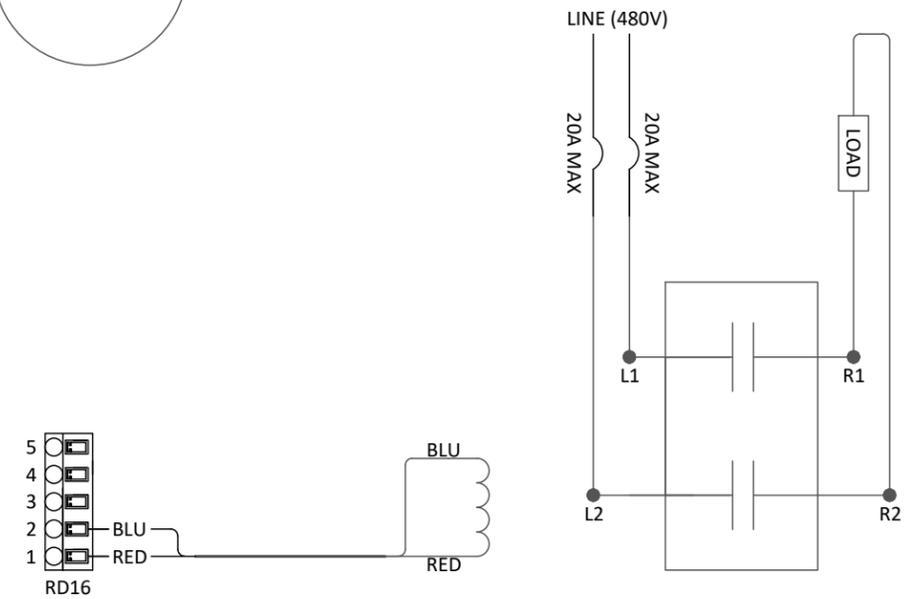
NORMAL FIXTURE

DTL-100.3



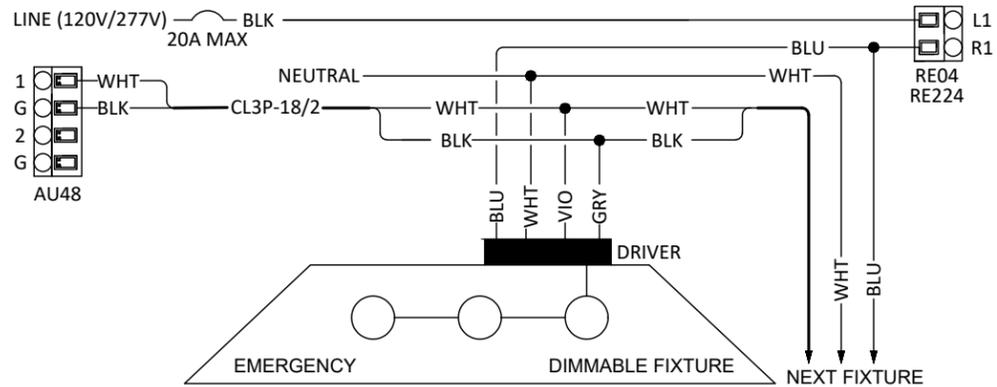
PLUG LOAD

DTL-100.5



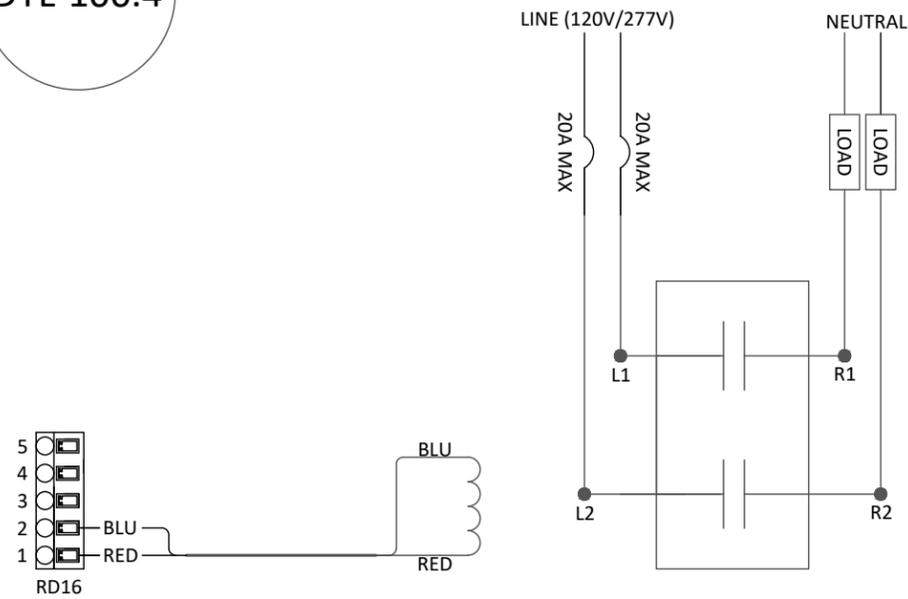
WR6172 CONTACTOR

DTL-100.2



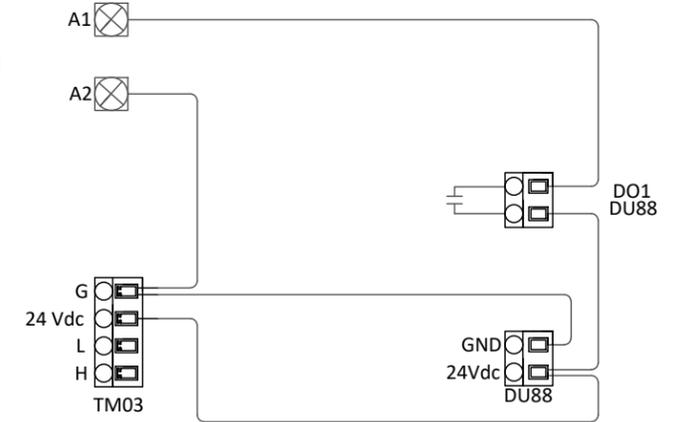
EMERGENCY FIXTURE

DTL-100.4



WR6172 CONTACTOR

DTL-100.6



AFO9Z-40-00-21 CONTACTOR

ENGINEERING STANDARDS  
DETAIL SHEET 100

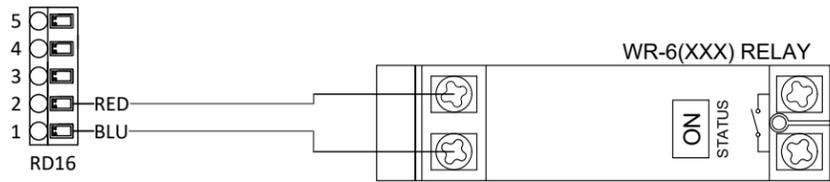
Typical Class-I Wiring

Rev: 1.02 | Type: Wiring Typical | Date: 05-11-20 | Job #:

**BLUE RIDGE TECHNOLOGIES™**  
UNIFIED LIGHTING CONTROL

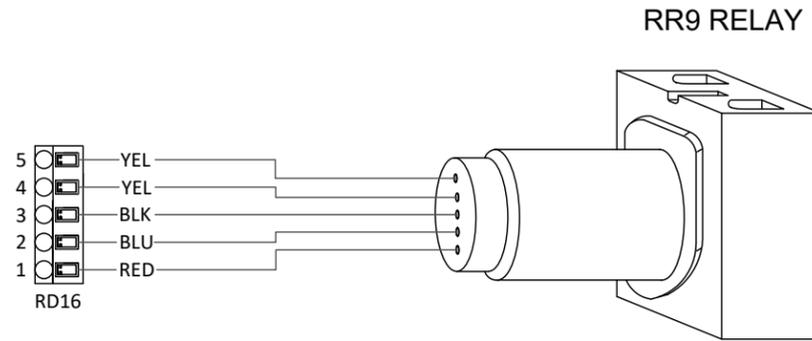
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Checked: WCD  
Page: 12 of 19

DTL-101.1



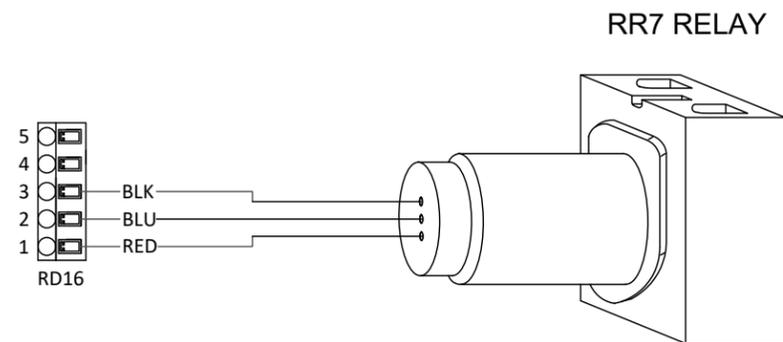
RETROFIT KIT - RD16, WR-6(XXX) RELAY

DTL-101.3



RETROFIT KIT - RD16, RR9 RELAY

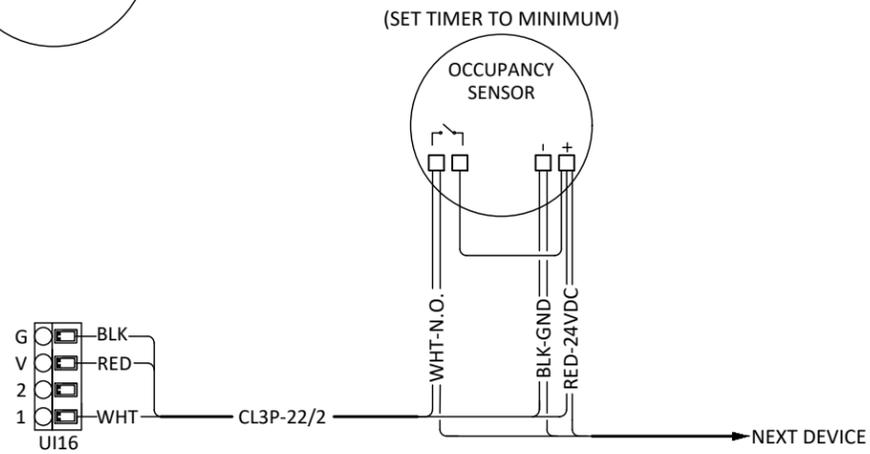
DTL-101.2



RETROFIT KIT - RD16, RR7 RELAY

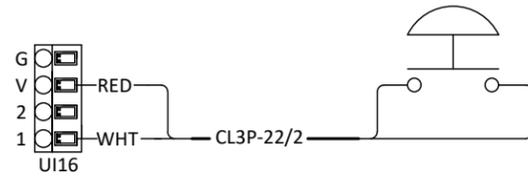
ENGINEERING STANDARDS DETAIL SHEET 101			
Typical Class-I Wiring			
Rev: 1.03	Type: Wiring Typical	Date:05-11-20	Job #:
 <b>BLUE RIDGE</b> <b>TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: WCD
			Drawn: EFM
			Checked: WCD
			Page: 13 of 19

DTL-200.1



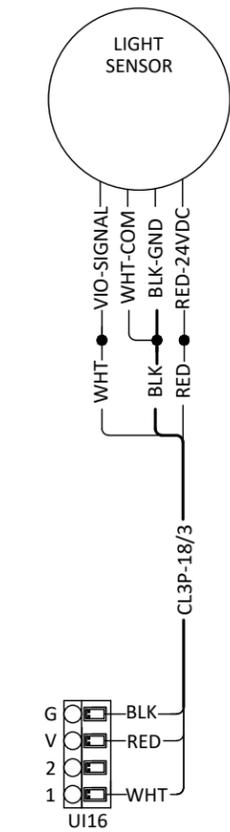
OCCUPANCY SENSOR

DTL-200.3



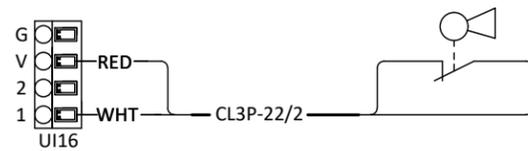
MOMENTARY PUSH BUTTON

DTL-200.2



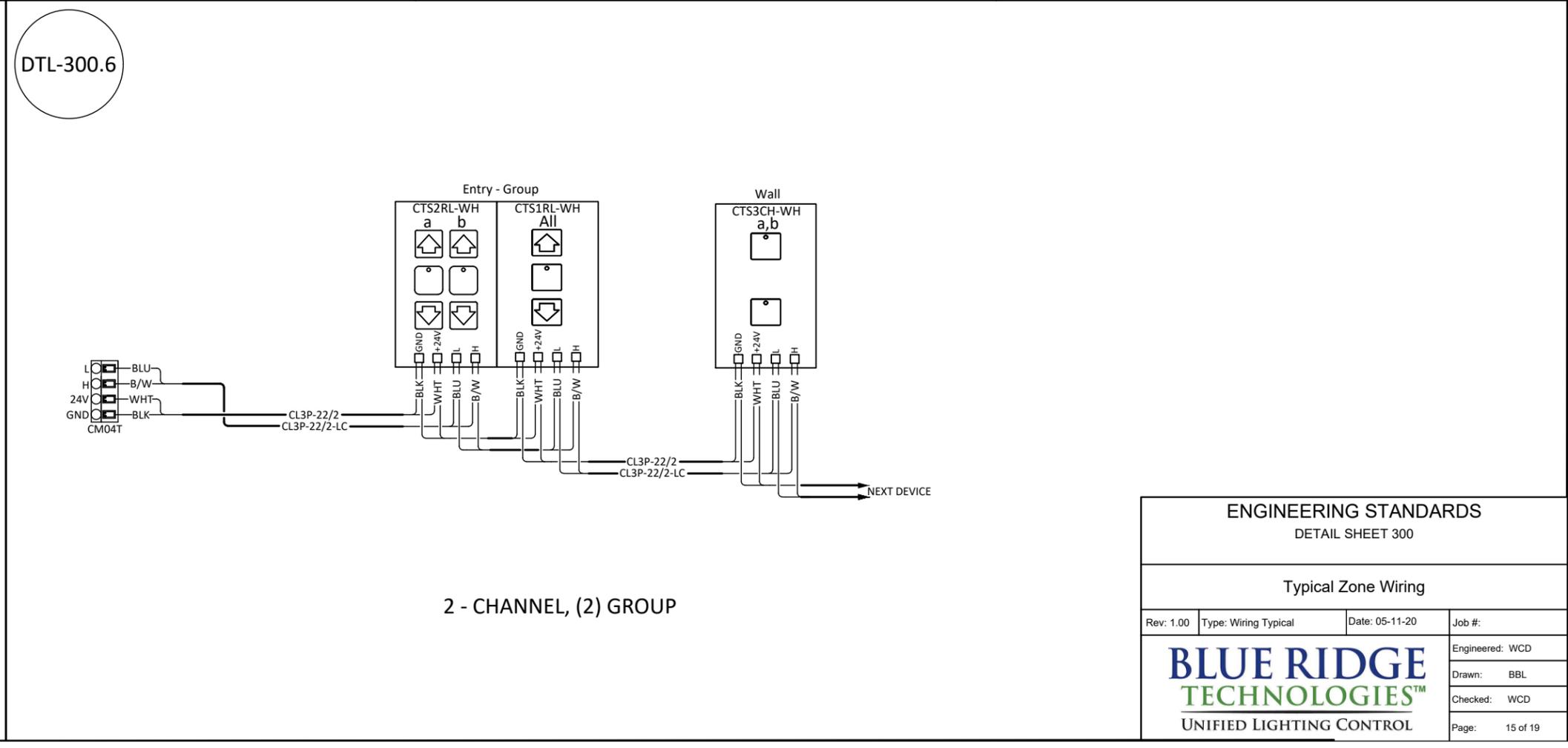
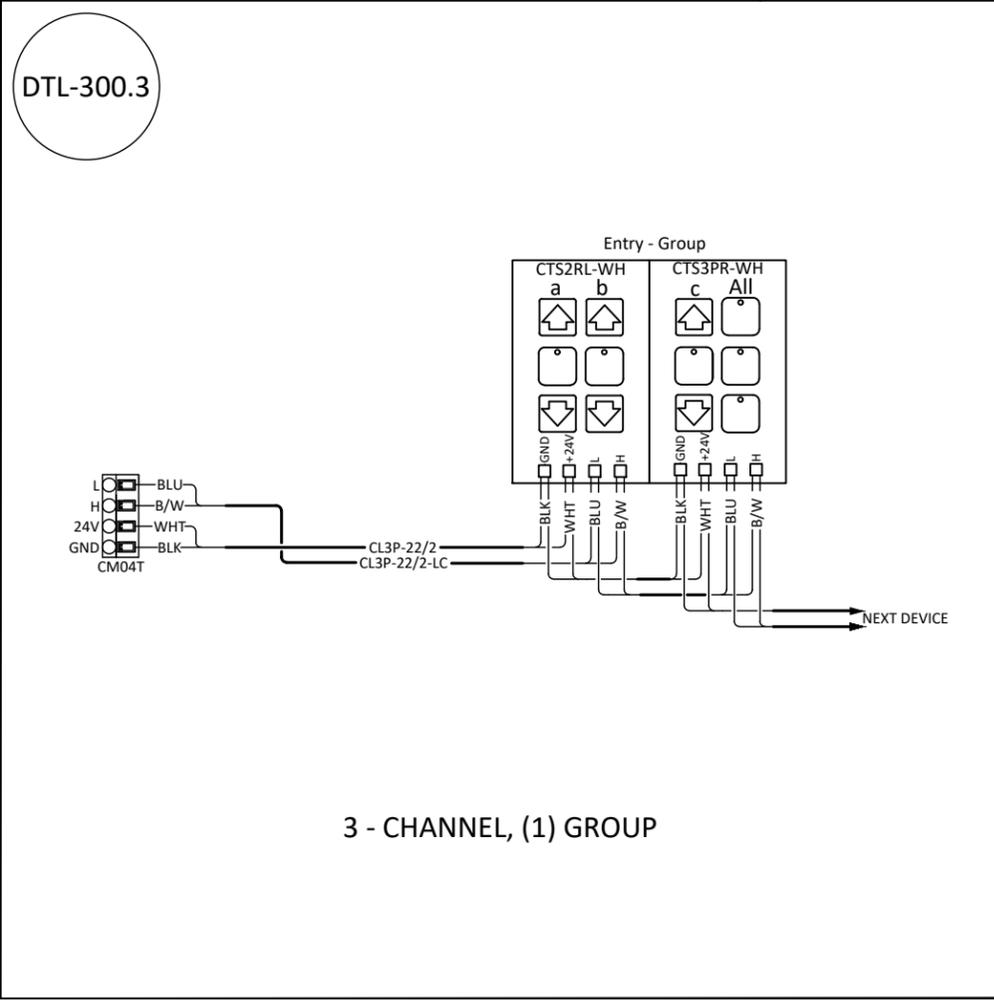
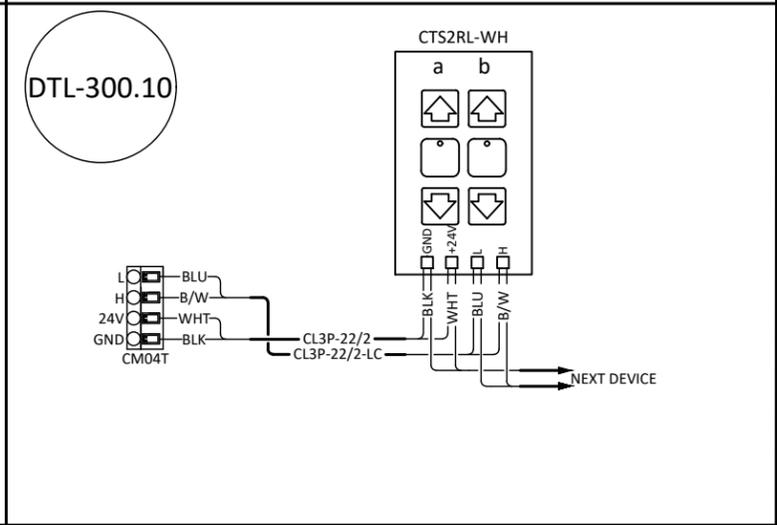
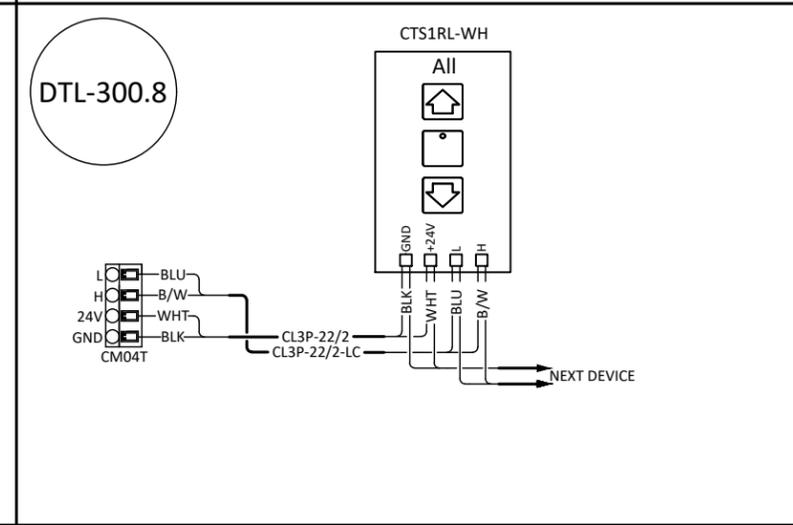
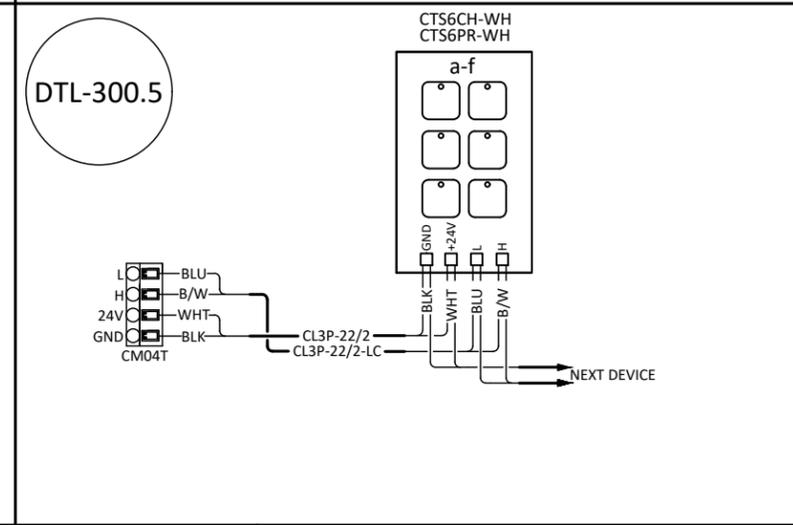
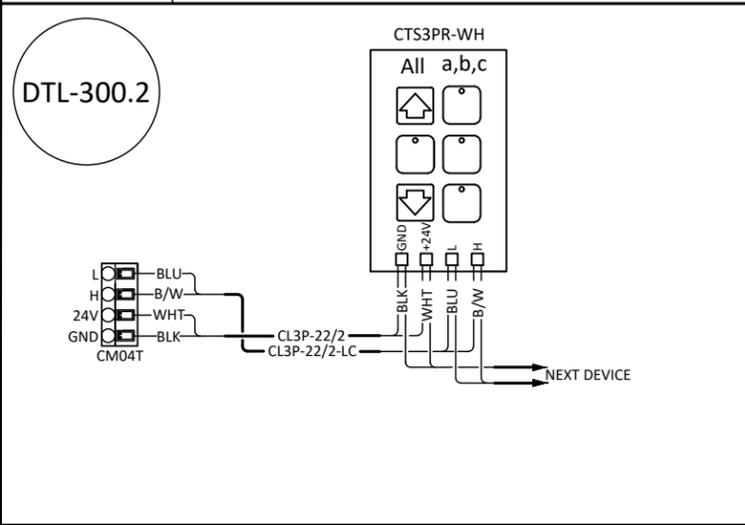
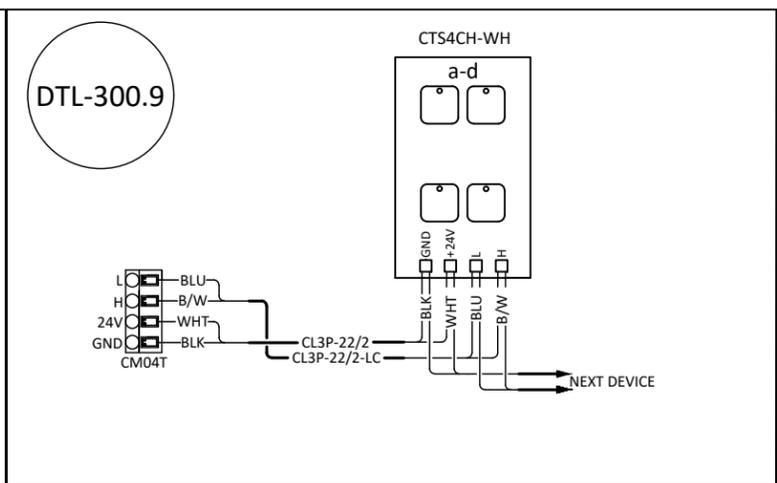
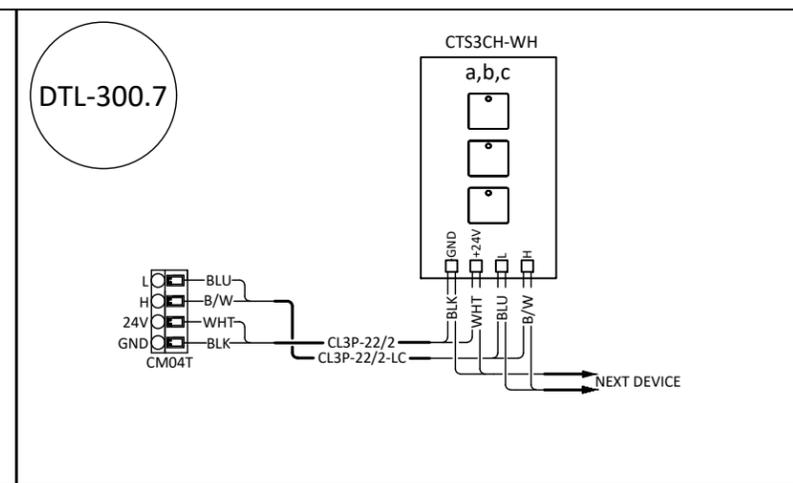
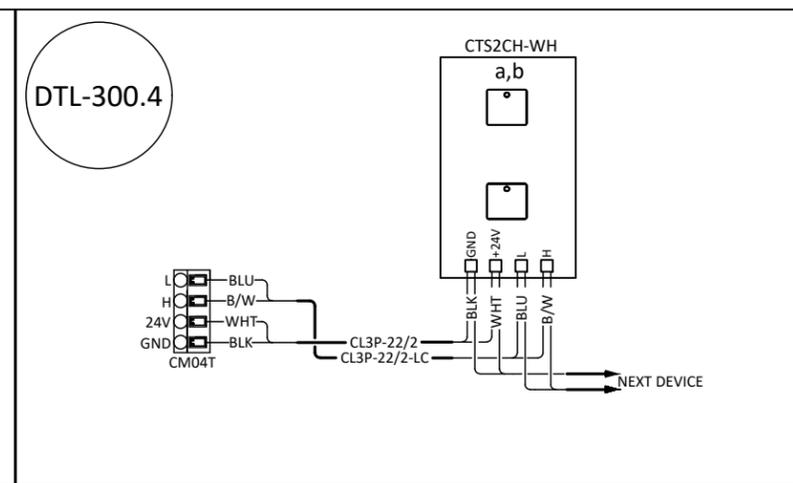
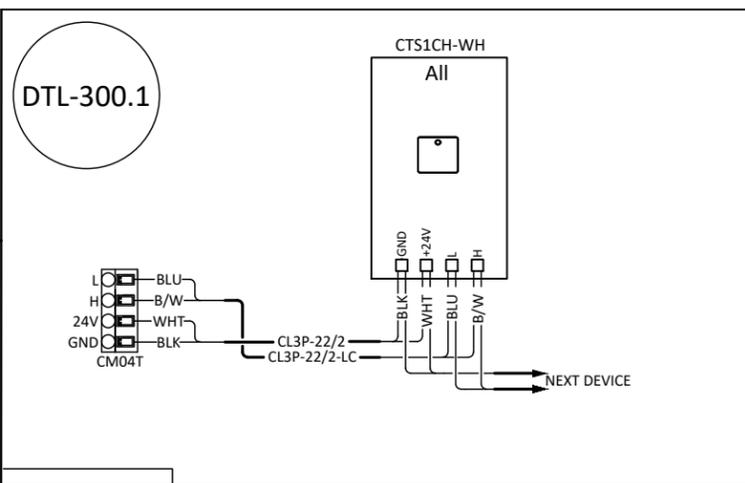
LIGHT SENSOR

DTL-200.4



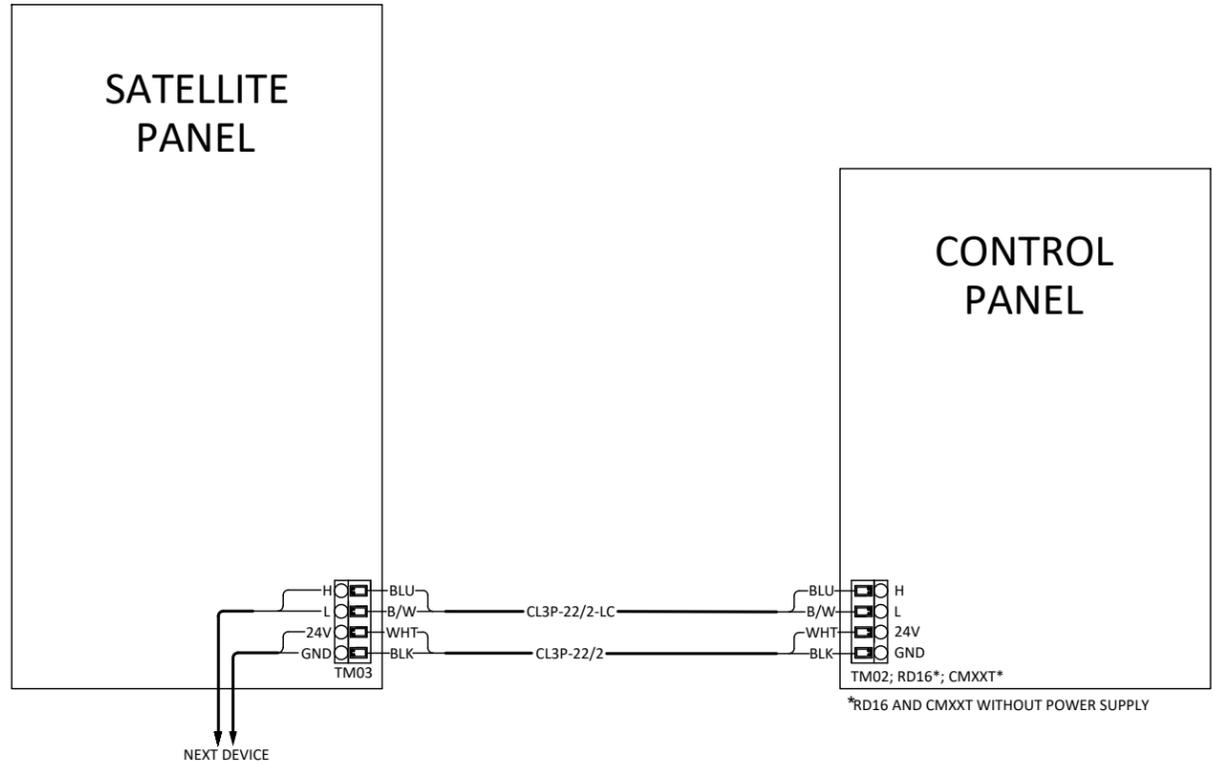
KEY SWITCH

ENGINEERING STANDARDS DETAIL SHEET 200			
Typical Class-II Wiring			
Rev: 1.01	Type: Wiring Typical	Date: 05-11-20	Job #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: WCD
			Drawn: BBL
			Checked: WCD
			Page 14 of 19

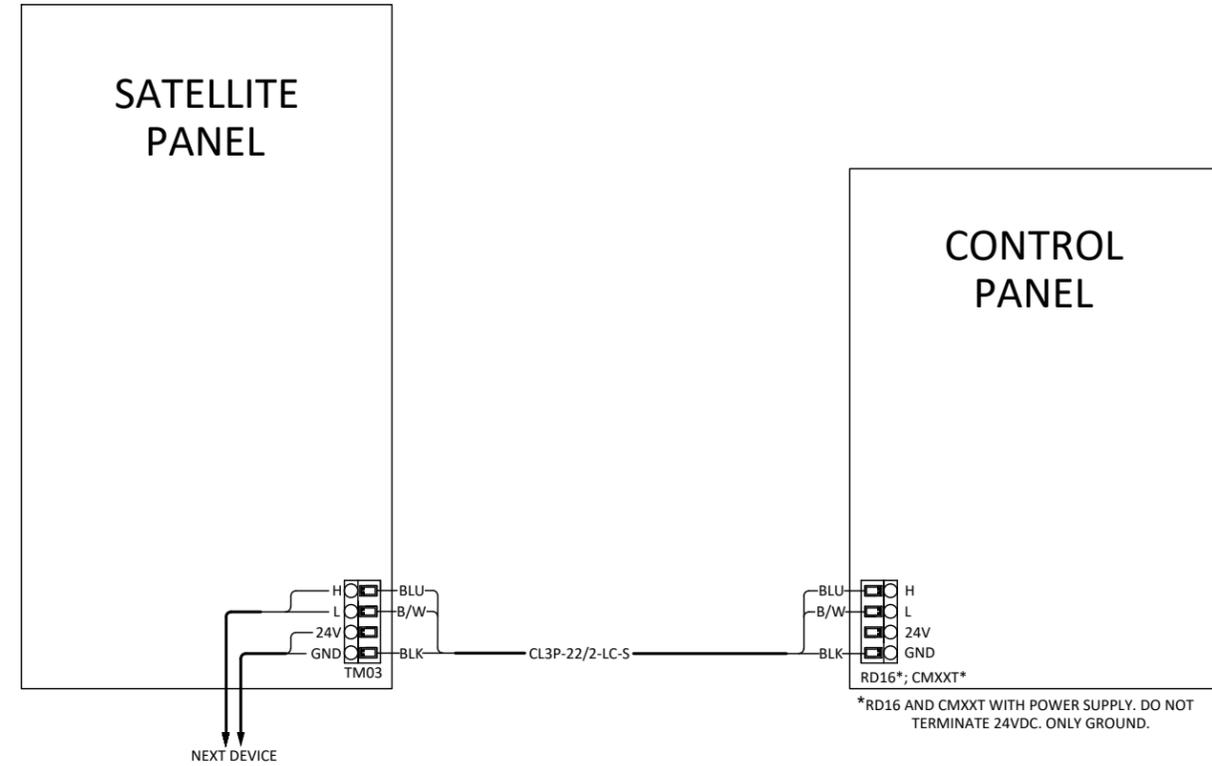


<b>ENGINEERING STANDARDS</b>			
DETAIL SHEET 300			
Typical Zone Wiring			
Rev: 1.00	Type: Wiring Typical	Date: 05-11-20	Job #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: WCD
			Drawn: BBL
			Checked: WCD
			Page: 15 of 19

DTL-301.1



DTL-301.2



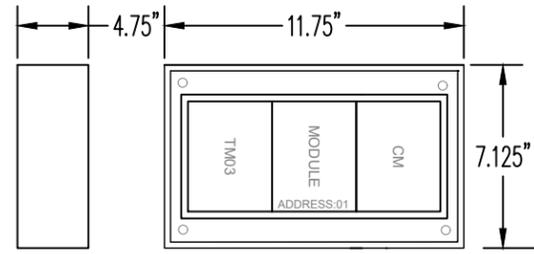
ENGINEERING STANDARDS  
DETAIL SHEET 301

Typical Zone Wiring

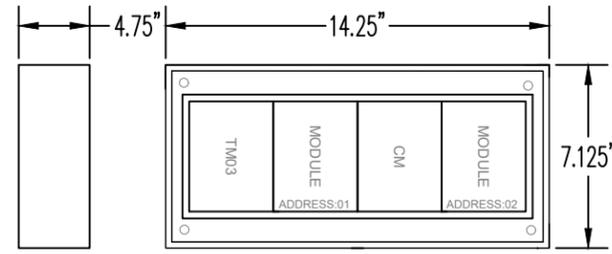
Rev: 1.00	Type: Wiring Typical	Date: 05-11-20	Job #:
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**BLUE RIDGE**  
TECHNOLOGIES™  
UNIFIED LIGHTING CONTROL

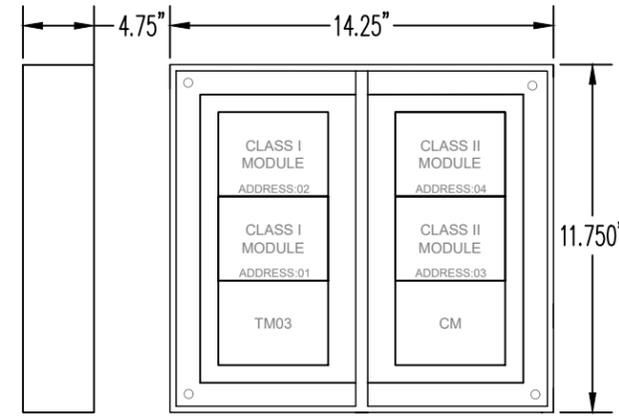
Engineered: WCD
Drawn: BBL
Checked: WCD
Page: 16 of 19



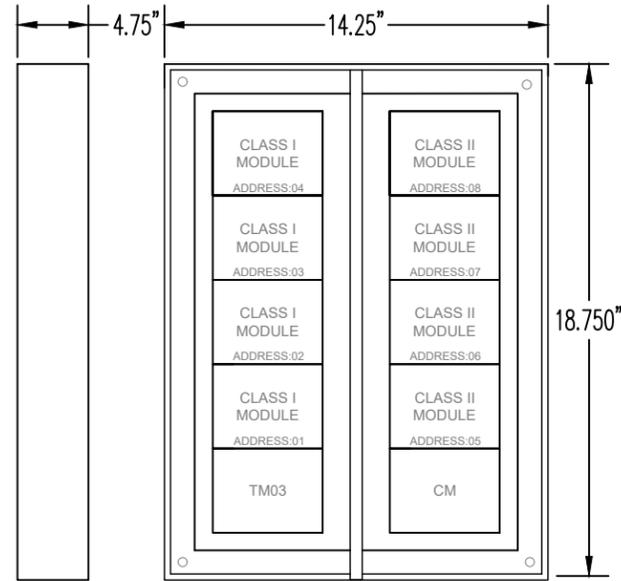
**BOX A**  
1 Module



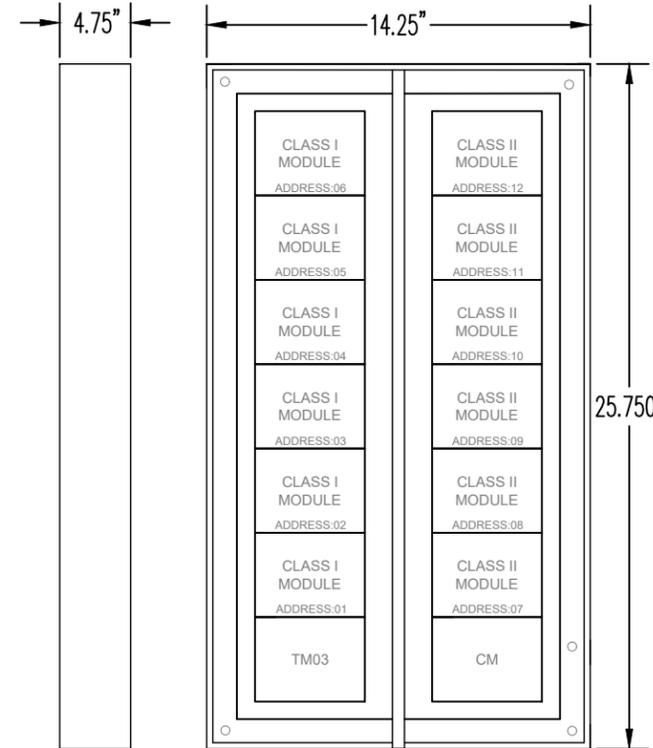
**BOX B**  
2 Modules



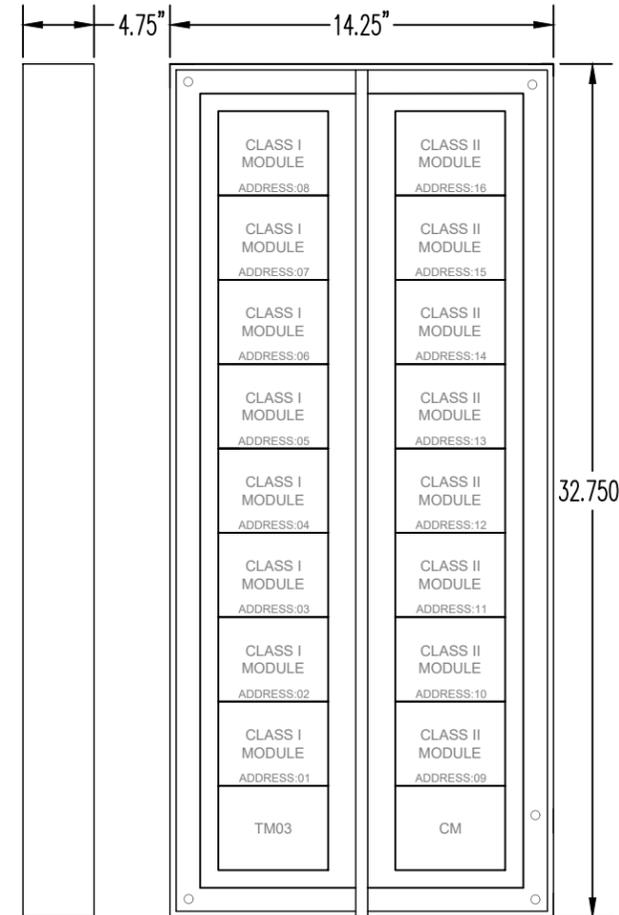
**BOX C**  
2 Class I Modules  
2 Class II Modules



**BOX D:**  
4 Class I Modules  
4 Class II Modules

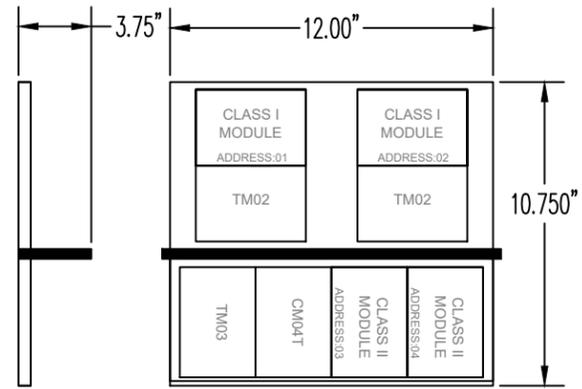


**BOX E:**  
6 Class I Modules  
6 Class II Modules

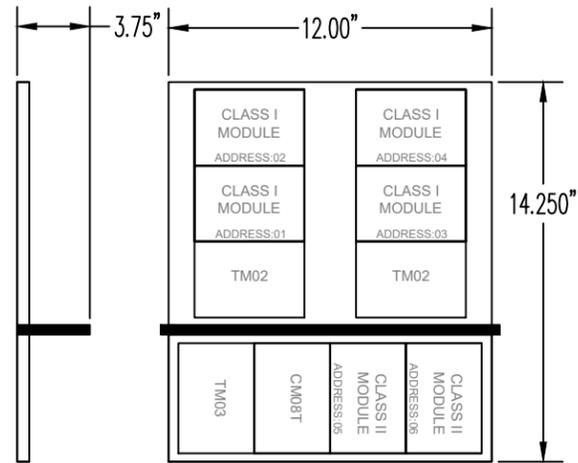


**BOX F:**  
8 Class I Modules  
8 Class II Modules

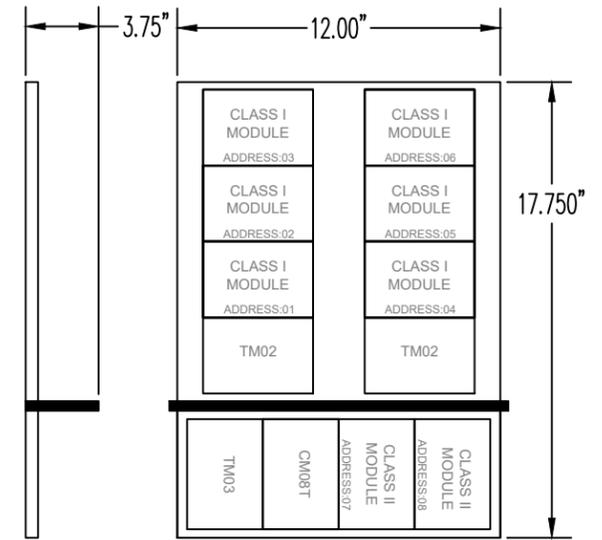
Engineering Standards CPDTL_01.30			
Control Panel Module Layout			
Rev: 1.30	Type: DETAIL	Date: 05-11-20	Job #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: CLO
			Drawn: BBL
			Checked: WCD
			Page: 17 of 19



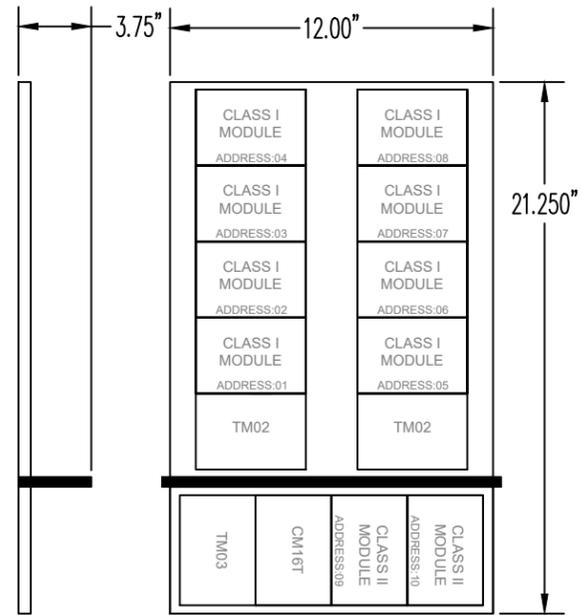
**INTERIOR C**  
 2 Class I Modules  
 2 Class II Modules



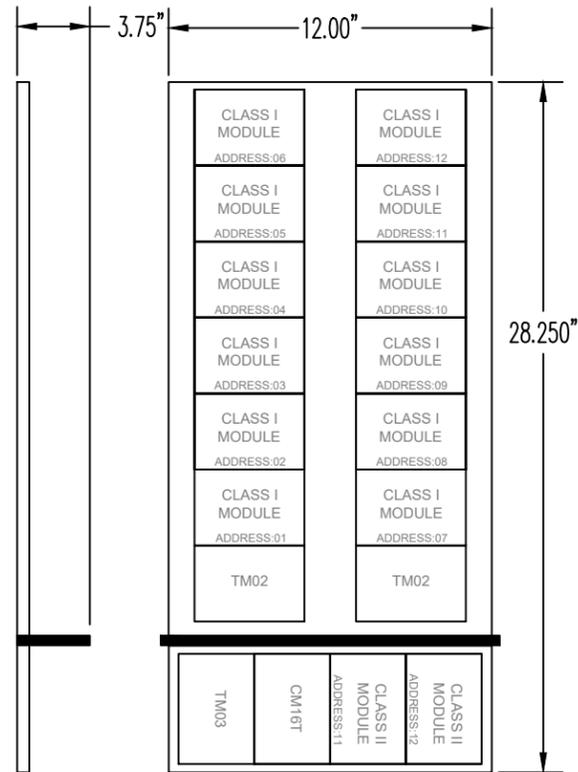
**INTERIOR D**  
 4 Class I Modules  
 2 Class II Modules



**INTERIOR E**  
 6 Class I Modules  
 2 Class II Modules



**INTERIOR F**  
 8 Class I Modules  
 2 Class II Modules

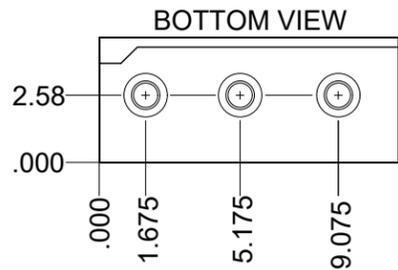
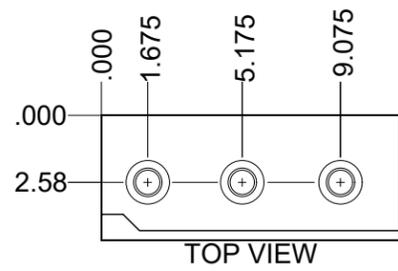


**INTERIOR G**  
 12 Class I Modules  
 2 Class II Modules

Engineering Standards RIDTL_01.00			
Retrofit Interior Module Layout			
Rev: 1.01	Type: DETAIL	Date: 05-11-20	Job #:
 <b>BLUE RIDGE TECHNOLOGIES™</b> UNIFIED LIGHTING CONTROL			Engineered: BBL
			Drawn: EFM
			Checked: WCD
			Page: 18 of 19

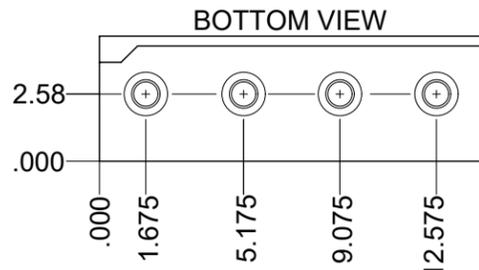
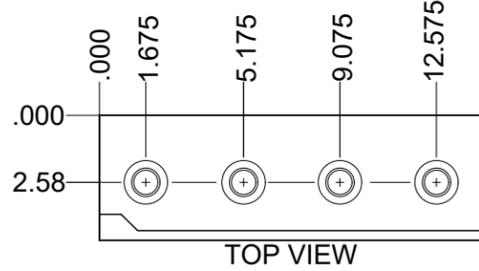
ENCL  
DTL - 1

SIZE A  
FRONT VIEW



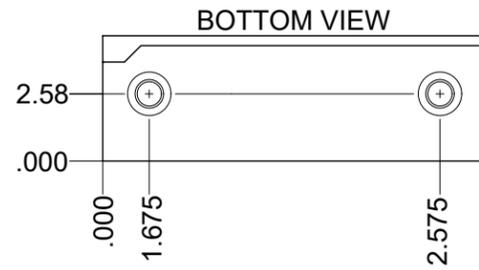
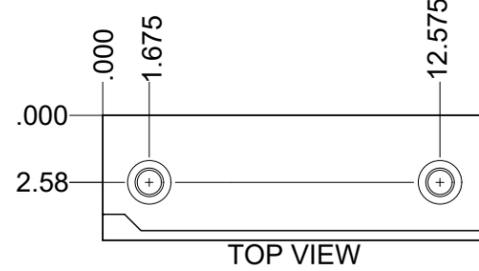
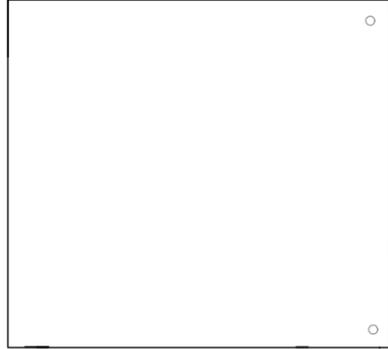
ENCL  
DTL - 2

SIZE B  
FRONT VIEW

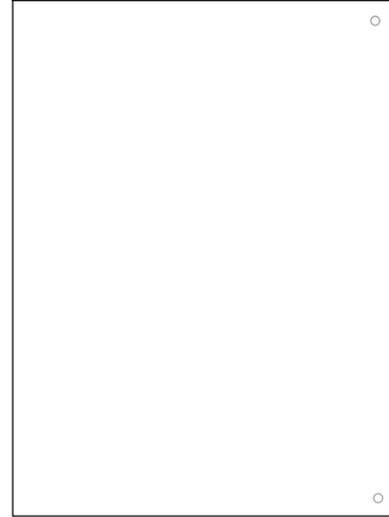


ENCL  
DTL - 3

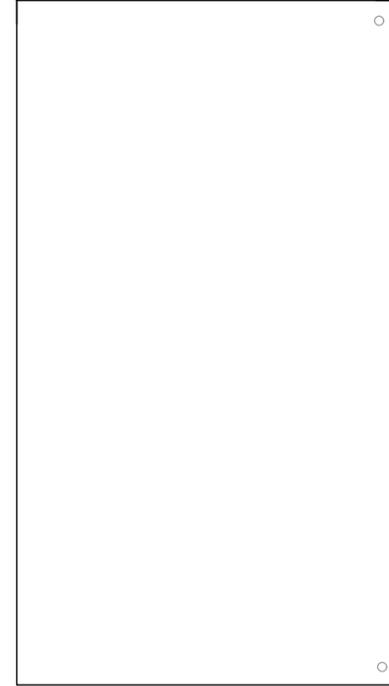
SIZE C  
FRONT VIEW



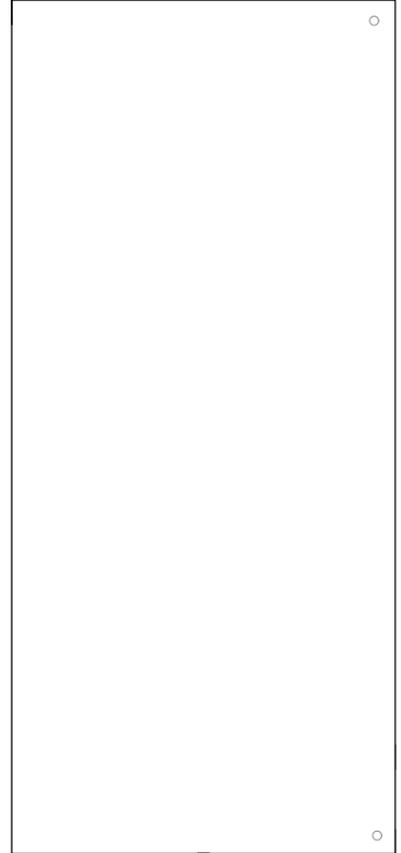
SIZE D  
FRONT VIEW



SIZE E  
FRONT VIEW



SIZE F  
FRONT VIEW



- NOTES:**  
 ① ENCLOSURES C-F HAVE THE SAME CONDUIT HOLE LAYOUT  
 ② SEE CPDTL\_01.30 FOR ENCLOSURE MEASUREMENTS AND MODULE CAPACITIES

Enclosure Detail ENCLDTL_01.00			
Engineering Standards			
Rev: 1.01	Type: DETAIL	Date: 05-11-20	Units: INCHES
			Engineered: BBL
			Drawn: EFM
			Checked: WCD
			Page: 19 of 19