

ALASKA RAILROAD CORPORATION



INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH



NOTES:

1. ALL WIRING IN BUNGALOW TO BE #16 AWG FLEX TEFLON
UNLESS OTHERWISE NOTED.

LEGEND:

△ EQUALIZER ②

∠ LINE ARRESTER

○ CLEARVIEW ARRESTOR W/ BAKELITE BASE ③

○ CLEARVIEW ARRESTOR W/ 3 POST PORCELAIN BASE ④

△ NO 6 AWG THNN/THWN FLEX WIRE WITH RED SHEATH (B12)

△ NO 6 AWG THNN/THWN FLEX WIRE WITH BLACK SHEATH (N12)

△ NO 6 AWG THNN/THWN FLEX WIRE WITH GREEN SHEATH
(SAFETY GROUND)

Ⓢ TWISTED WIRE TWO TURNS PER FOOT

MATERIAL REFERENCE IDENTIFICATION NUMBER

PTC DEVICE COUNT NUMBER

OS INSTALL
COLORED PLANS

YELLOW = ✕ = OUT

REVISIONS

The ALASKA RAILROAD CORPORATION		
P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500		
INDIAN		
SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90		
MANUAL MONITORED SWITCH		
DRAWN: BE	DWG NO. 008824-008924	SHEET 0 OF 56
DATE: 08-16-17		

008924_00.dwg 08-16-17

BURNS ENG. REVISIONS	SCALE:			INDIAN	SHEET NUMBER REF. 0
	AS DESIGNED-0.00	INITIAL	DATE		
	PTC OS INSTALLATION	WAW	08-16-17		
	DESIGNED:	SLF	10-13-17		
	CHECKED:	WDW	10-13-17	DRAWING NUMBER REF. 008824-008924	BURNS PROJECT REF. 2017-159
	BACK-CHECKED:	SLF	10-13-17		
	CORRECTED:	SLF	10-13-17		
	VERIFIED:	WDW	10-13-17		
	SCALE:	INITIAL	DATE	Burns BURNS ENGINEERING, INC. 215 978-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103	
	AS DESIGNED-0.01	SLF	10-13-17		
	PTC OS INSTALLATION	WDW	10-13-17		
	DESIGNED:	WDW	10-13-17		

DRAWING NO.	DESCRIPTION	REVISION DATE													
008924-00	TITLE SHEET														
008924-01	INDEX														
008924-02	INDEX														
008924-03	SPARE														
008924-04	TRACK LAYOUT														
008924-05	SPARE														
008924-06	SYSTEMS ARCHITECTURE														
008924-07	SYSTEMS ARCHITECTURE														
008924-08	SPARE														
008924-09	SWITCH CONTROL CIRCUITS (A SWITCH)														
008924-10	SPARE														
008924-11	SWITCH CONTROL CIRCUITS (B SWITCH)														
008924-12	SPARE														
008924-13	PSO 4000 SOST CIRCUITS														
008924-14	PSO 4000 SOSAT CIRCUIT														
008924-15	PSO 4000 NOST CIRCUITS														
008924-16	PSO 4000 NOSAT CIRCUIT														
008924-17	SSS INDIAN CIRCUITS														
008924-18	NSS INDIAN CIRCUITS														
008924-19	ROLL OUT PROTECTION CIRCUITS														
008924-20	NETGUARDIAN INTERFACE - M16 G2 UNIT														
008924-21	NETGUARDIAN INTERFACE - D-WIRE EXPANSION UNIT														
008924-22	SPARE														
008924-23	CURRENT SENSOR / DOOR ALARM CIRCUITS														
008924-24	ELECTROBLOX WIU, VIO & IMG-2 INTERFACE														
008924-25	SPARE														
008924-26	PTC CONFIGURATION TABLES														
008924-27	SPARE														
008924-28	COMMUNICATION CIRCUITS - RUGGEDCOM/FUSE BLK 1														
008924-29	WAYSIDE 220MHZ / CARLSON RADIO														
008924-30	COMMUNICATION CIRCUITS - FUSE BLK 2														
008924-31	SPARE														
008924-32	SPARE														
008924-33	RU6 RACK LAYOUT														
008924-34	SPARE														
008924-35	POWER DISTRIBUTION CIRCUITS														

REVISIONS

AS DESIGNED-0.00 08-16-17
INSTALL IEIMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

DRAWN: BE
DATE: 08-16-17

DWG NO. 008824-008924

SHEET 1 OF 56

BURNS ENG.
REVISIONS

AS DESIGNED-0.00
PTC OS INSTALLATION

SCALE:	INITIAL	DATE
DESIGNED:	WAW	08-16-17
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BACK-CHECKED:	WAW	08-17-17
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VERIFIED:	SLF	08-17-17

AS DESIGNED-0.01
PTC OS INSTALLATION

SCALE:	INITIAL	DATE
DESIGNED:	SLF	10-13-17
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BACK-CHECKED:	SLF	10-13-17
CORRECTED:	SLF	10-13-17
VERIFIED:	WDW	10-13-17

INDIAN

Burns

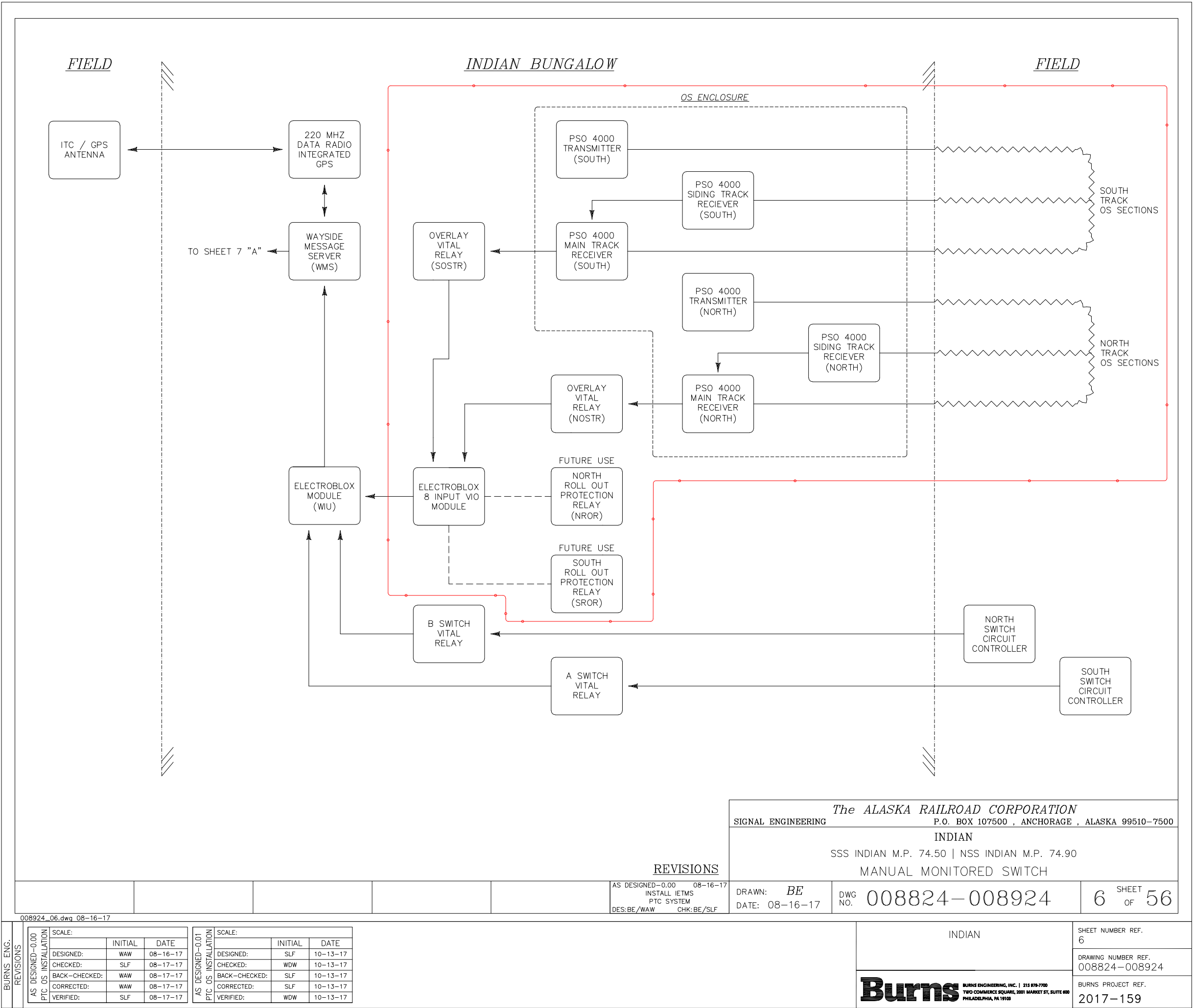
BURNS ENGINEERING, INC. | 215 978-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

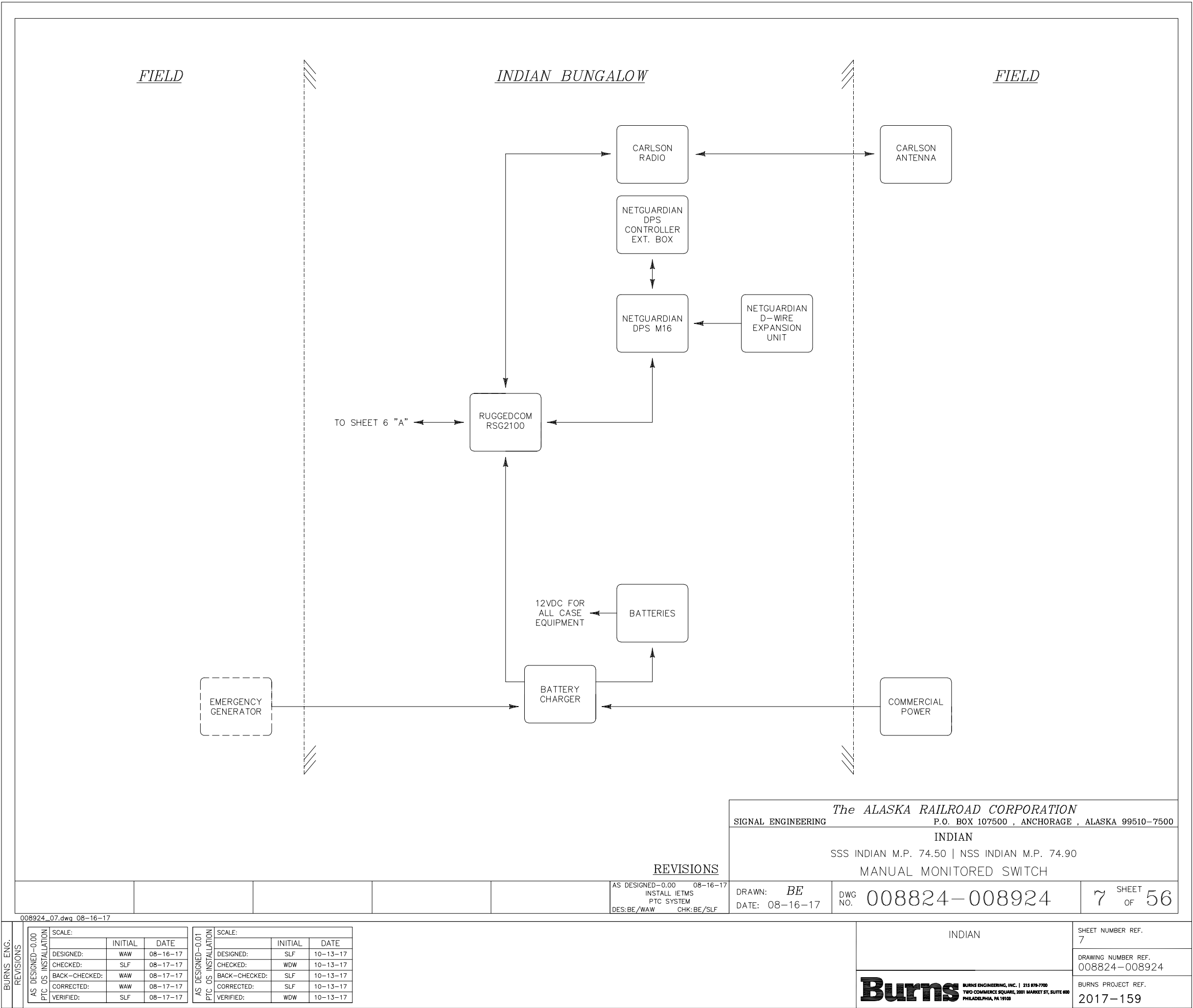
SHEET NUMBER REF.
1

DRAWING NUMBER REF.
008824-008924

BURNS PROJECT REF.
2017-159

SHEET NUMBER REF.	4
DRAWING NUMBER REF.	008824-008924
BURNS PROJECT REF.	2017-159

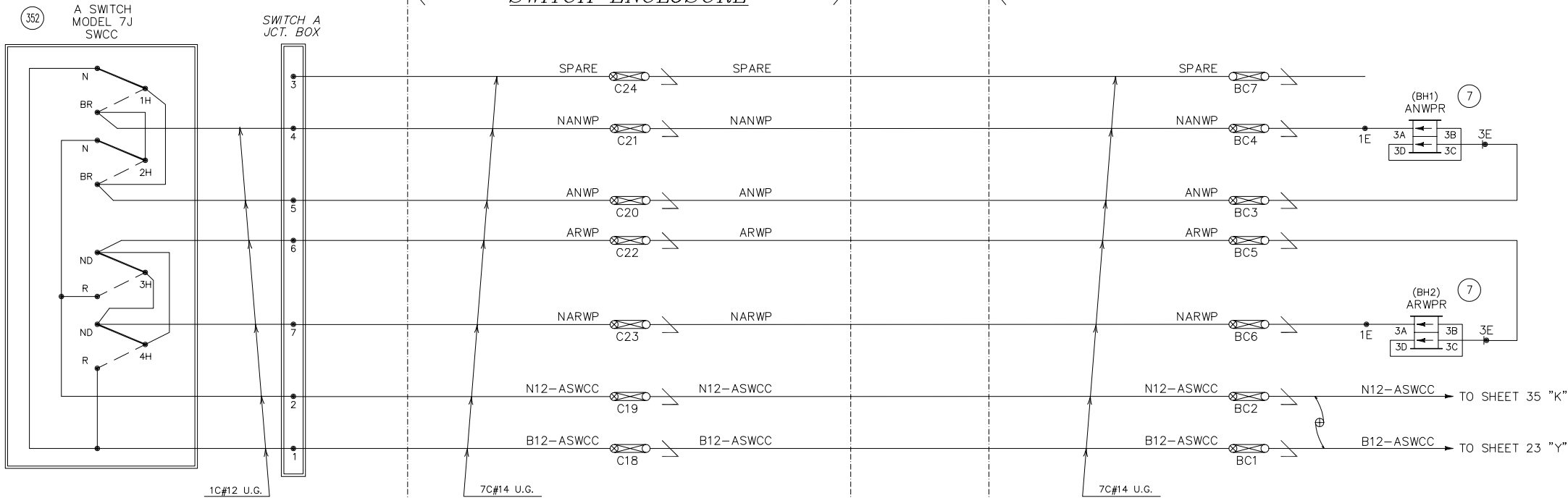




FIELD - SSS INDIAN

SSS INDIAN
SWITCH ENCLOSURE

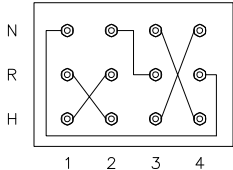
BUNGALOW



NOTES:

- ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.
- CONTACT ASSIGNMENT:
1 & 2 BREAK
3 & 4 SHUNT
- CONTACT ADJUSTMENT:
ADJUST CONTACTS 1 & 2 SO N CONTACTS ARE JUST MADE WITH 3/16" GAUGE IN POINT.
ADJUST CONTACTS 3 & 4 SO B-R CONTACTS ARE MADE WITH 1/4" GAUGE IN POINT.
- SWCC LEGEND:
N - FULL NORMAL TO, BUT NOT INCLUDING, 1/4" FROM NORMAL
BR - 1/4" FROM NORMAL TO FULL REVERSE
ND - 1/4" FROM REVERSE TO FULL NORMAL
R - FULL REVERSE TO, BUT NOT INCLUDING, 1/4" FROM REVERSE

SWCC JUMPER CONFIGURATION



SWITCH CIRCUIT CONTROLLER LOCATED ON NORMALLY CLOSED SIDE OF SWITCH.

The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING

INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH

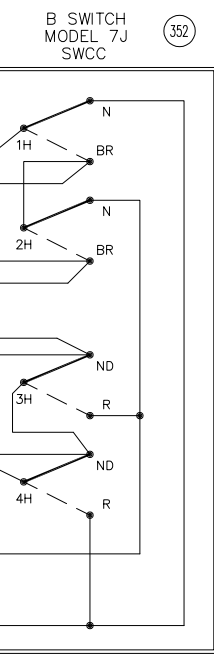
AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

DWG NO. 008824-008924

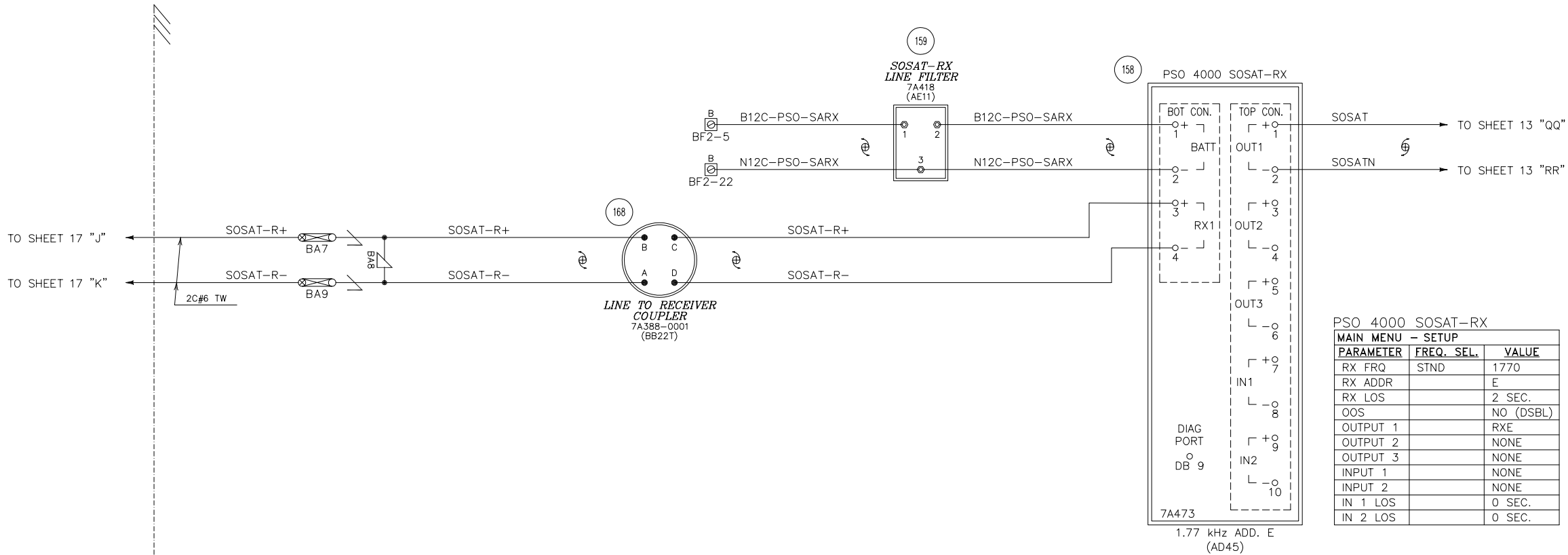
9 SHEET OF 56

BURNS ENG. REVISIONS	008924_09.dwg 08-16-17			INDIAN			SHEET NUMBER REF. 9 DRAWING NUMBER REF. 008824-008924 BURNS PROJECT REF. 2017-159	
	AS DESIGNED-0.00 PTC OS INSTALLATION			INDIAN				
	SCALE:			INDIAN				
	DESIGNED: WAW 08-16-17 CHECKED: SLF 08-17-17 BACK-CHECKED: WAW 08-17-17 CORRECTED: WAW 08-17-17 VERIFIED: SLF 08-17-17			INDIAN				
BURNS ENG. REVISIONS	AS DESIGNED-0.01 PTC OS INSTALLATION			INDIAN			SHEET NUMBER REF. 9 DRAWING NUMBER REF. 008824-008924 BURNS PROJECT REF. 2017-159	
	SCALE:			INDIAN				
	DESIGNED: SLF 10-13-17 CHECKED: WDW 10-13-17 BACK-CHECKED: SLF 10-13-17 CORRECTED: SLF 10-13-17 VERIFIED: WDW 10-13-17			INDIAN				
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Burns BURNS ENGINEERING, INC. | 215 879-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

INDIAN BUNGALOW JUNCTION BOX



NOTES:

1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.

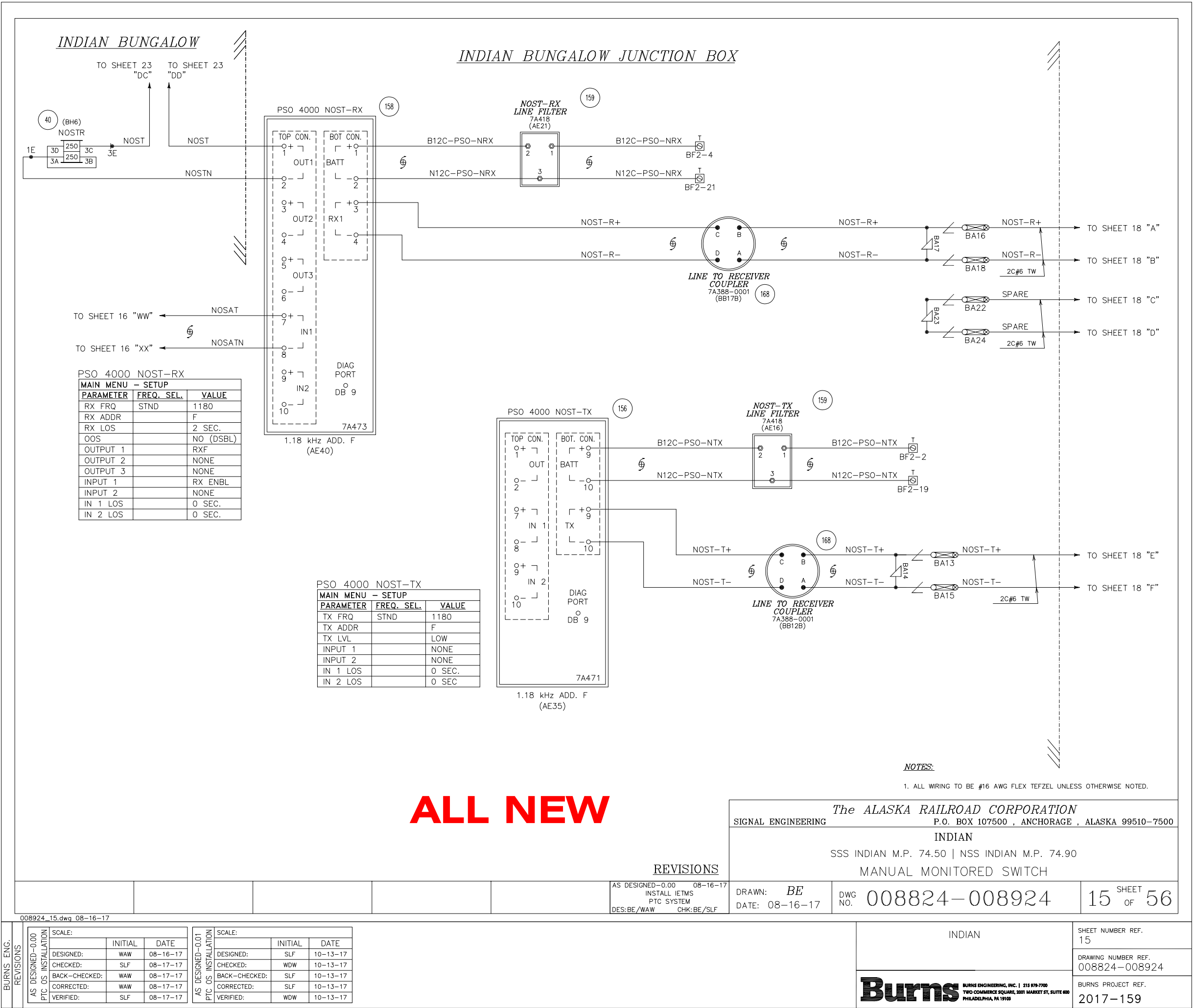
ALL NEW

REVISIONS

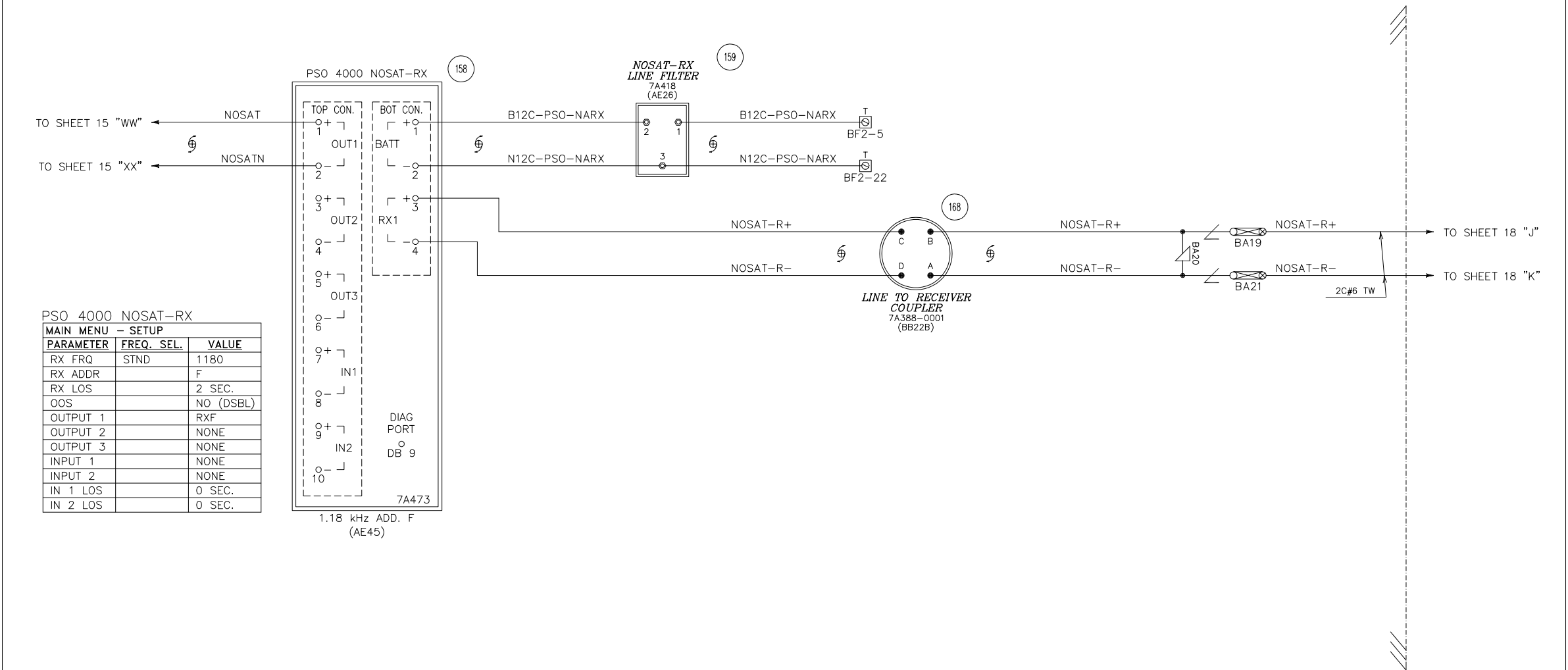
The ALASKA RAILROAD CORPORATION SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500		
INDIAN SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90 MANUAL MONITORED SWITCH		
DRAWN: BE DATE: 08-16-17	DWG NO. 008824-008924	14 SHEET OF 56

008924_14.dwg 08-16-17

BURNS ENG. REVISIONS	SCALE:			SCALE:			INDIAN	SHEET NUMBER REF. 14
	AS DESIGNED-0.00 PTC OS INSTALLATION	DESIGNED:	WAW	08-16-17	DESIGNED:	SLF		
		CHECKED:	SLF	08-17-17	CHECKED:	WDW		
		BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF		
		CORRECTED:	WAW	08-17-17	CORRECTED:	SLF		
		VERIFIED:	SLF	08-17-17	VERIFIED:	WDW		
	AS DESIGNED-0.01 PTC OS INSTALLATION	DESIGNED:	SLF	10-13-17	DESIGNED:	SLF	Burns BURNS ENGINEERING, INC. 215 878-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103	DRAWING NUMBER REF. 008824-008924
		CHECKED:	WDW	10-13-17	CHECKED:	WDW		
		BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF		
		CORRECTED:	WAW	08-17-17	CORRECTED:	SLF		
		VERIFIED:	SLF	08-17-17	VERIFIED:	WDW		
								BURNS PROJECT REF. 2017-159



INDIAN BUNGALOW JUNCTION BOX



PSO 4000 NOSAT-RX

MAIN MENU - SETUP		
PARAMETER	FREQ. SEL.	VALUE
RX FRQ	STND	1180
RX ADDR		F
RX LOS		2 SEC.
OOS		NO (DSBL)
OUTPUT 1		RXF
OUTPUT 2		NONE
OUTPUT 3		NONE
INPUT 1		NONE
INPUT 2		NONE
IN 1 LOS		0 SEC.
IN 2 LOS		0 SEC.

ALL NEW

NOTES:
1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.

SIGNAL ENGINEERING

The ALASKA RAILROAD CORPORATION

P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN

SSS INDIAN M.P. 361.45 | NSS INDIAN M.P. 362.93

MANUAL MONITORED SWITCH

					AS DESIGNED-0.00 08-16-17 INSTALL IETMS PTC SYSTEM DES:BE/WAW CHK:BE/SLF	DRAWN: <i>BE</i> DATE: 08-16-17	DWG NO. 008824-008924	16 SHEET OF 56
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BURNS ENG. REVISIONS

AS DESIGNED-0.00	SCALE:	INITIAL	DATE
PTC OS INSTALLATION	DESIGNED:	WAW	08-16-17
	CHECKED:	SLF	08-17-17
	BACK-CHECKED:	WAW	08-17-17
	CORRECTED:	WAW	08-17-17
	VERIFIED:	SLF	08-17-17

AS DESIGNED-0.01

PTC OS INSTALLATION	SCALE:	INITIAL	DATE
	DESIGNED:	SLF	10-13-17
	CHECKED:	WDW	10-13-17
	BACK-CHECKED:	SLF	10-13-17
	CORRECTED:	SLF	10-13-17
	VERIFIED:	WDW	10-13-17

INDIAN

Burns

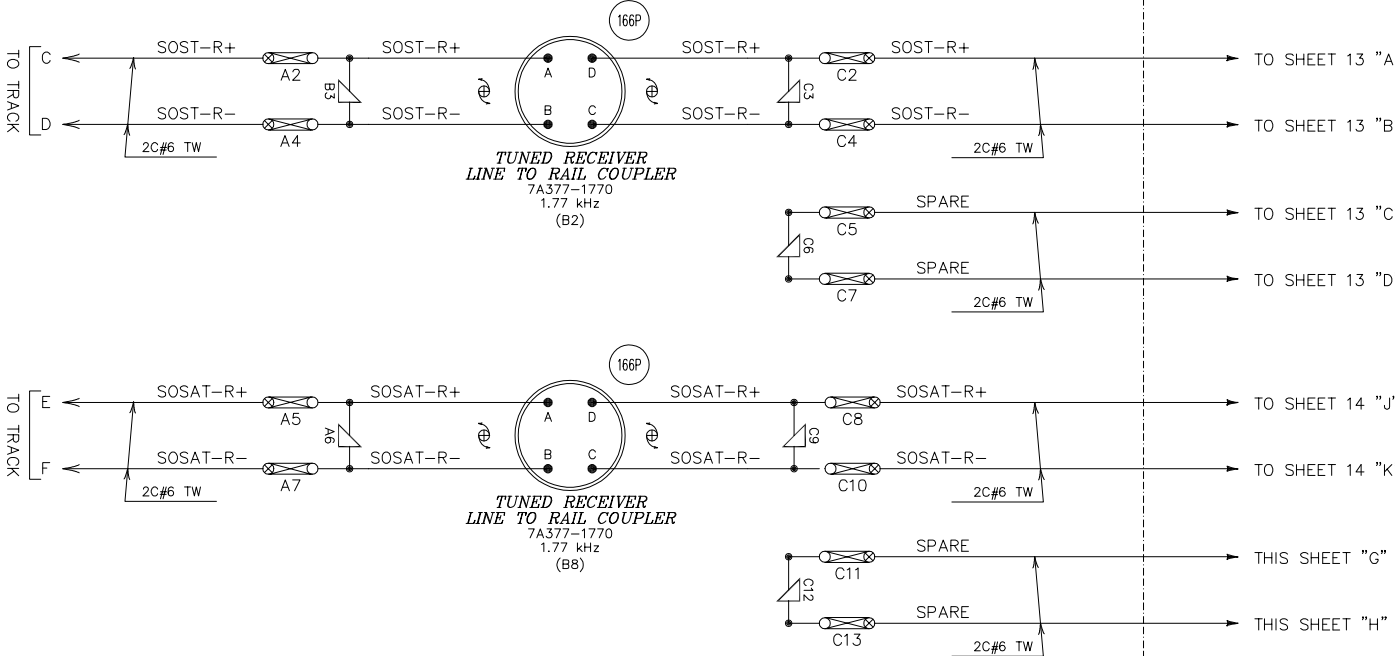
BURNS ENGINEERING, INC. | 215 878-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

SHEET NUMBER REF. 16

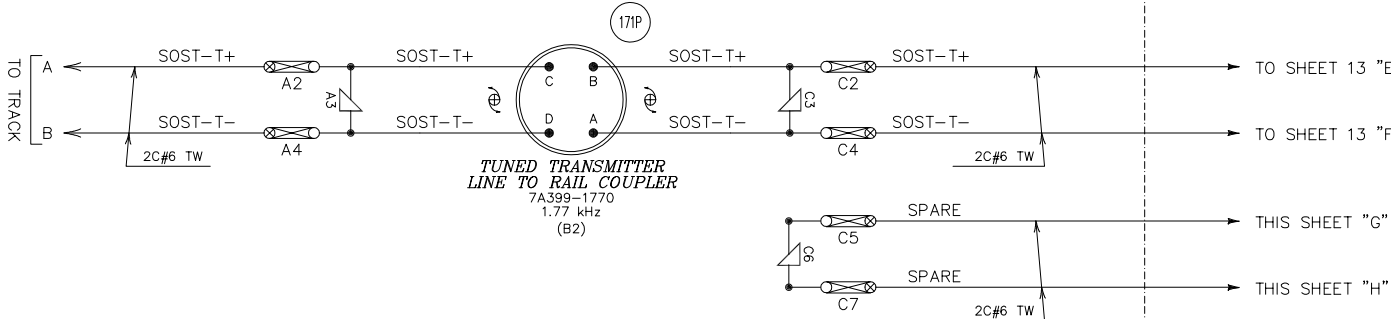
DRAWING NUMBER REF. 008824-008924

BURNS PROJECT REF. 2017-159

SSS CLEARANCE ENCLOSURE



SSS SWITCH POINT ENCLOSURE



ALL NEW

NOTES

1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED
2. ALL PSO LINE COUPLERS IN OUTLYING CASES SHOULD BE LOCATED WITHIN 100 FT. OF TRACK CONNECTIONS.

REVISIONS

AS DESIGNED-0.00 08-16-
INSTALL IETMS
PTC SYSTEM
DES:BF /WAW CHK:BF /SLE

<i>The ALASKA RAILROAD CORPORATION</i>		
SIGNAL ENGINEERING	P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500	
INDIAN		
SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90		
MANUAL MONITORED SWITCH		
DRAWN: <i>BE</i> DATE: 08-16-17	DWG NO. 008824-008924	17 ^{SHEET} OF 56

REVISIONS AS DESIGNED-0.00 PTC OS INSTALLATION	SCALE:		
	DESIGNED:	WAW	08-16-17
	CHECKED:	SLF	08-17-17
	BACK-CHECKED:	WAW	08-17-17
	CORRECTED:	WAW	08-17-17
	VERIFIED:	SLF	08-17-17
	AS DESIGNED-0.01 PTC OS INSTALLATION		
	SCALE:		
	DESIGNED:	SLF	10-13-17
	CHECKED:	WDW	10-13-17
BACK-CHECKED:			
SLF			
CORRECTED:			
SLF			
VERIFIED:			
WDW			

INDIAN

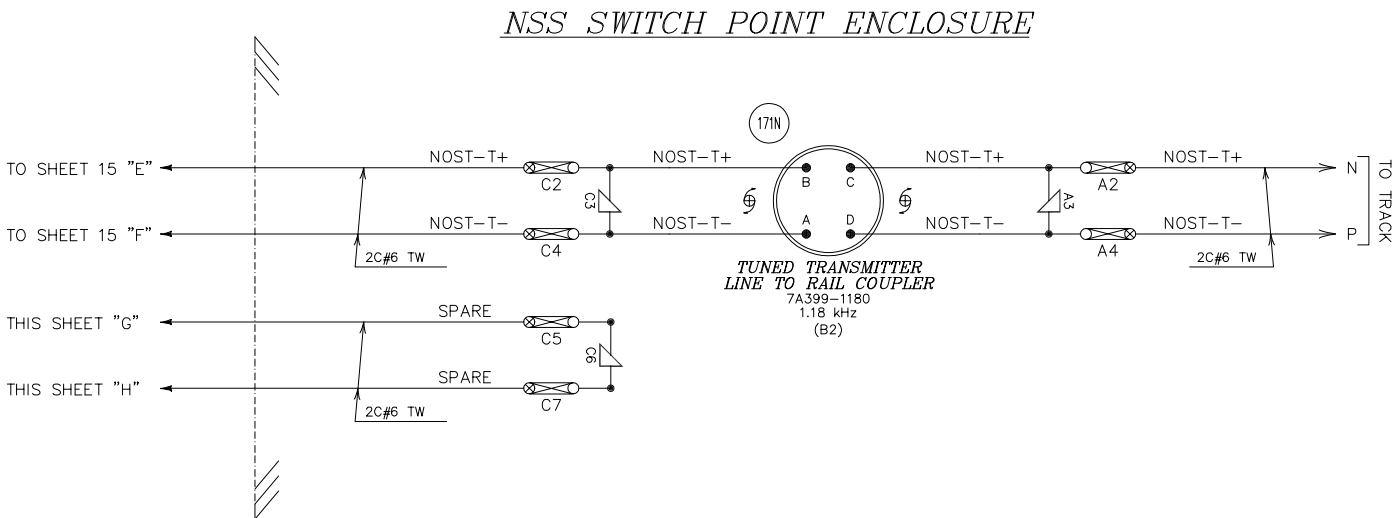
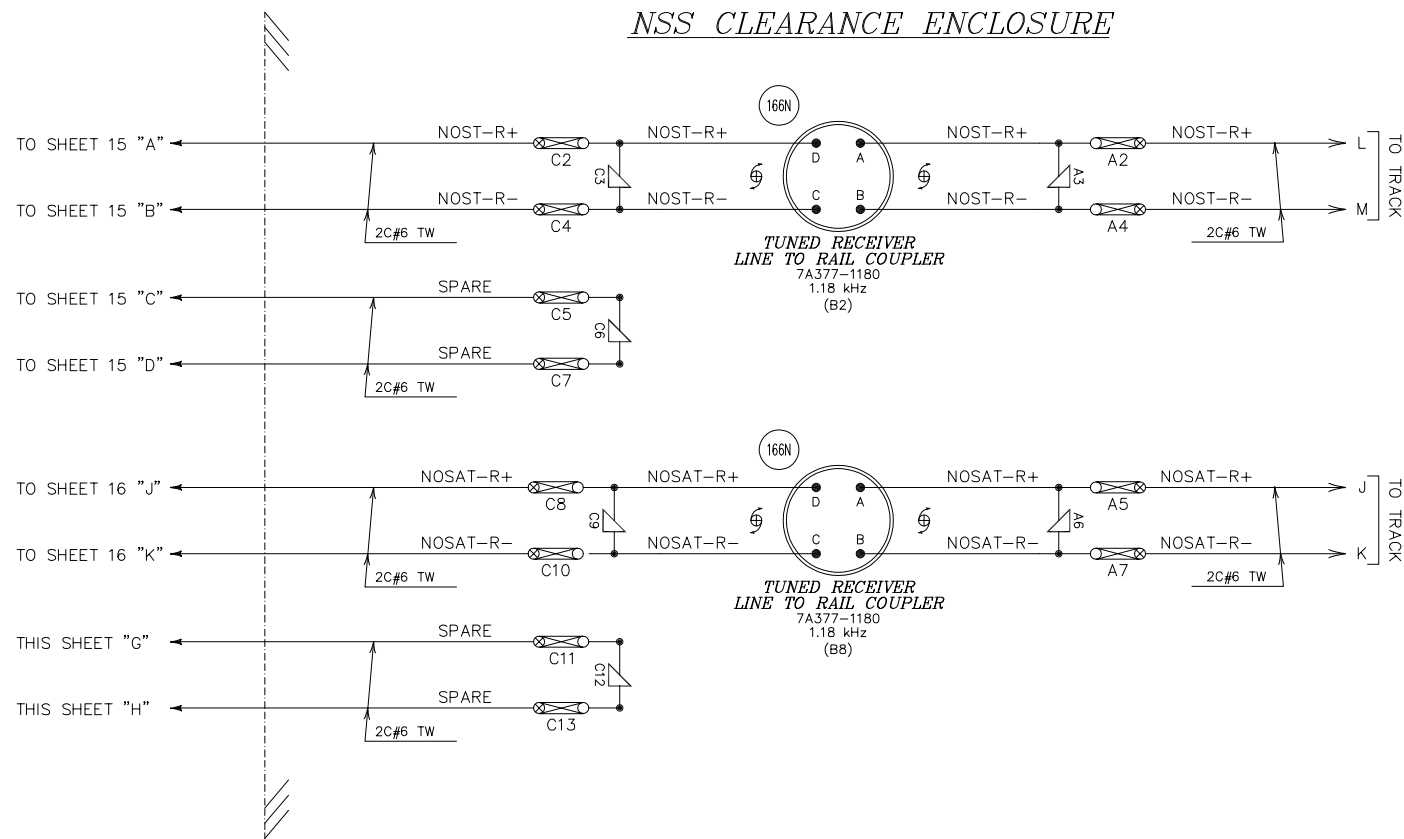


BURNS ENGINEERING, INC. | 213 878-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

SHEET NUMBER REF.
17

DRAWING NUMBER REF.
008824-008924

BURNS PROJECT REF.
2017-159



NOTES:

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2. ALL PSO LINE COUPLERS IN OUTLYING CASES SHOULD BE LOCATED WITHIN 100 FT. OF TRACK CONNECTIONS.

ALL NEW

REVISIONS

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: **BE**
DATE: 08-16-17

The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH

DWG NO. **008824-008924** 18 SHEET OF 56

BURNS ENG.

REVISIONS

SCALE:			
DESIGNED:	WAW	08-16-17	
CHECKED:	SLF	08-17-17	
BACK-CHECKED:	WAW	08-17-17	
CORRECTED:	WAW	08-17-17	
VERIFIED:	SLF	08-17-17	

SCALE:			
DESIGNED:	SLF	10-13-17	
CHECKED:	WDW	10-13-17	
BACK-CHECKED:	SLF	10-13-17	
CORRECTED:	SLF	10-13-17	
VERIFIED:	WDW	10-13-17	

INDIAN

Burns

BURNS ENGINEERING, INC. | 215 878-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

SHEET NUMBER REF.

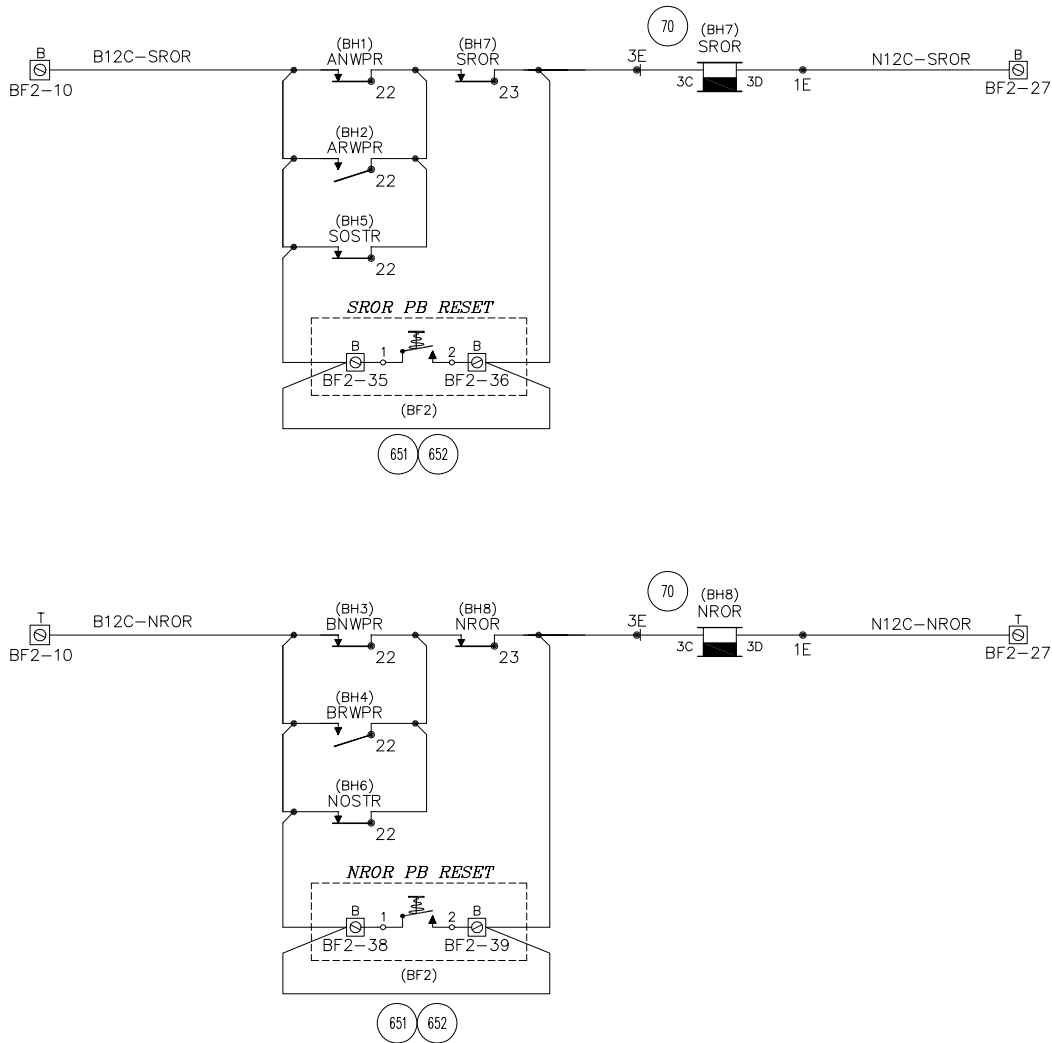
18

DRAWING NUMBER REF.

008824-008924

BURNS PROJECT REF.

2017-159



ALL NEW

NOTES:

1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.
2. CIRCUITS ON THIS SHEET FOR FUTURE USE.

REVISIONS

AS DESIGNED-0.00	08-16-17
INSTALL IETMS	
PTC SYSTEM	
DES:BE/WAW	CHK:BE/SLF

DRAWN: *BE*
DATE: 08-16-17

DWG NO. 008824-008924

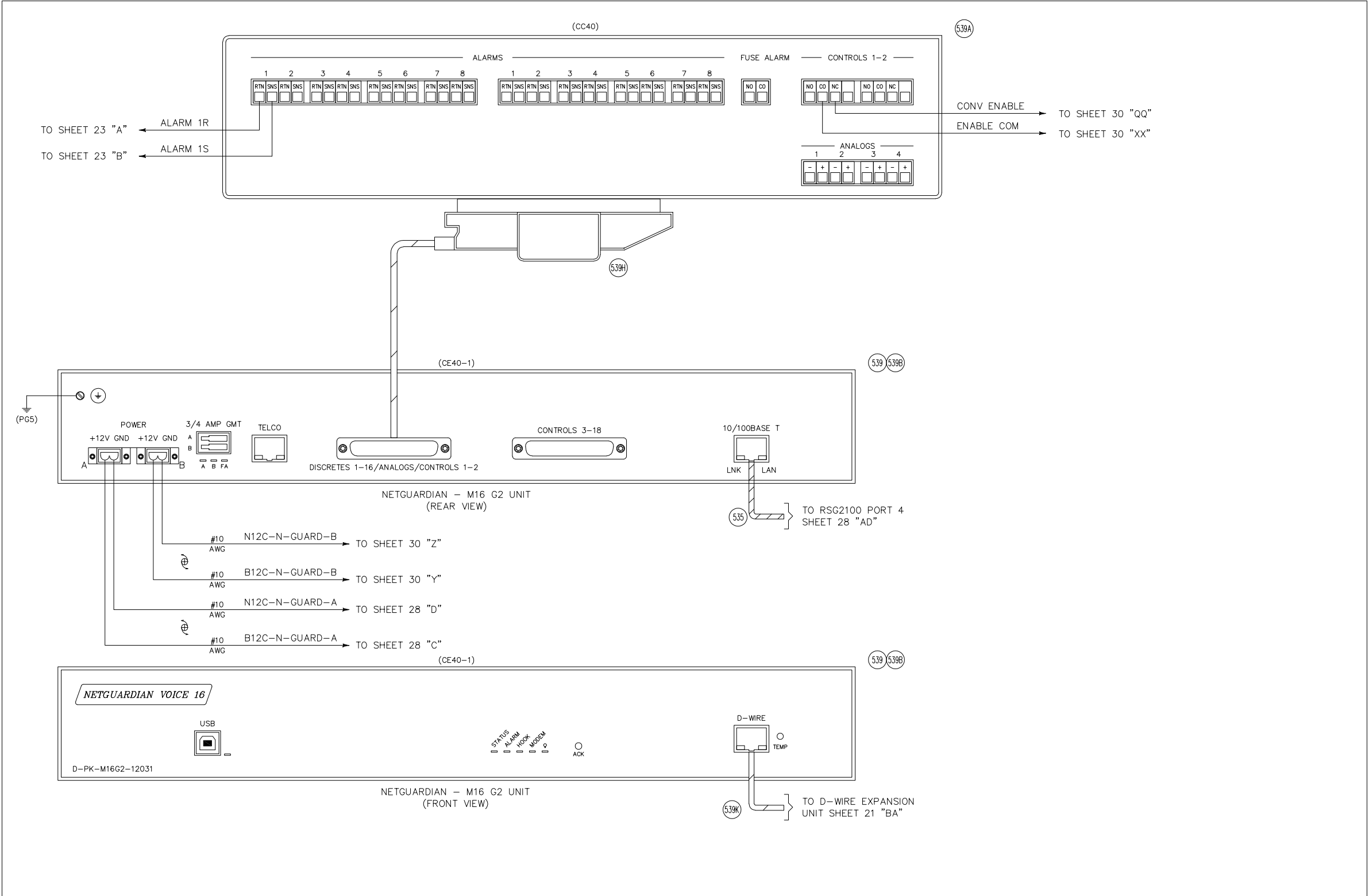
19 SHEET OF 56

The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING

INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH

P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

BURNS ENG. REVISIONS	008924_19.dwg 08-16-17			INDIAN			SHEET NUMBER REF. 19
	AS DESIGNED-0.00 PTC OS INSTALLATION			INDIAN			DRAWING NUMBER REF. 008824-008924
	SCALE:			INDIAN			BURNS PROJECT REF. 2017-159
	DESIGNED: WAW 08-16-17 CHECKED: SLF 08-17-17 BACK-CHECKED: WAW 08-17-17 CORRECTED: WAW 08-17-17 VERIFIED: SLF 08-17-17			INDIAN			



NOTES:

- 1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.
- 2. ALL GROUND WIRES TO BE #6 AWG GREEN FLEX TEFLON UNLESS OTHERWISE NOTED.

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

INDIAN

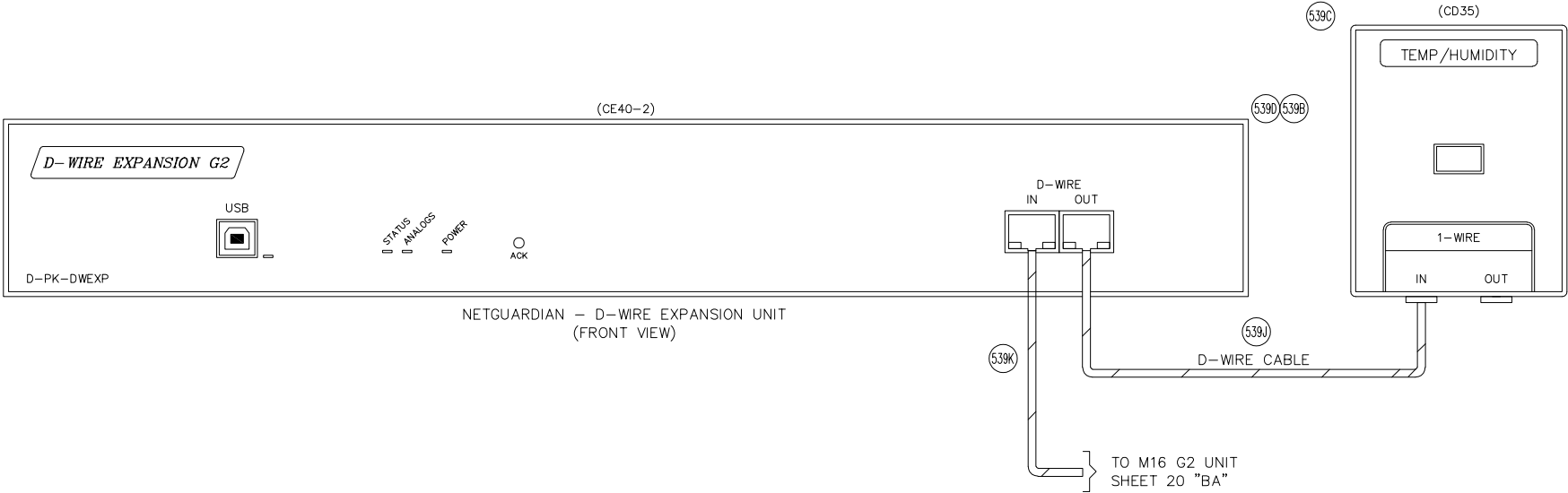
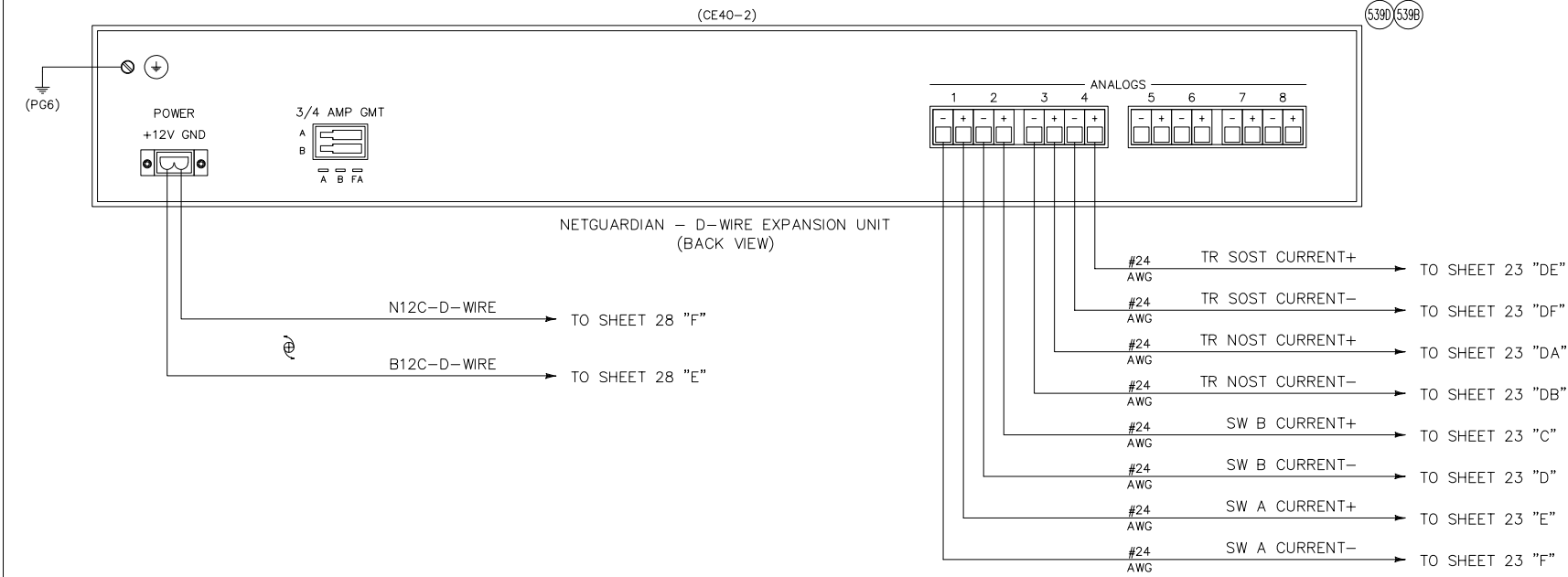
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

INDIAN

20 SHEET OF 56

008924_20.dwg 08-16-17				AS DESIGNED-0.00 08-16-17 INSTALL IETMS PTC SYSTEM DES:BE/WAW CHK:BE/SLF	DRAWN: BE DATE: 08-16-17	DWG NO. 008824-008924	20 SHEET OF 56
BURNS ENG. REVISIONS	SCALE:			INDIAN			
	AS DESIGNED-0.00 PTC OS INSTALLATION	INITIAL	DATE	DRAWING NUMBER REF. 008824-008924			
	DESIGNED:	WAW	08-16-17	BURNS PROJECT REF. 2017-159			
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BURNS ENG. REVISIONS	SCALE:						
	AS DESIGNED-0.01 PTC OS INSTALLATION	INITIAL	DATE				
	DESIGNED:	SLF	10-13-17				
	CHECKED:	WDW	10-13-17				
BURNS ENG. REVISIONS	SCALE:						
	AS DESIGNED-0.01 PTC OS INSTALLATION	INITIAL	DATE				
	DESIGNED:	SLF	10-13-17				
	CHECKED:	WDW	10-13-17				



NOTES:

- 1. ALL WIRING TO BE #10 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.
- 2. ALL GROUND WIRES TO BE #6 AWG GREEN FLEX TEFLON UNLESS OTHERWISE NOTED.

REVISIONS

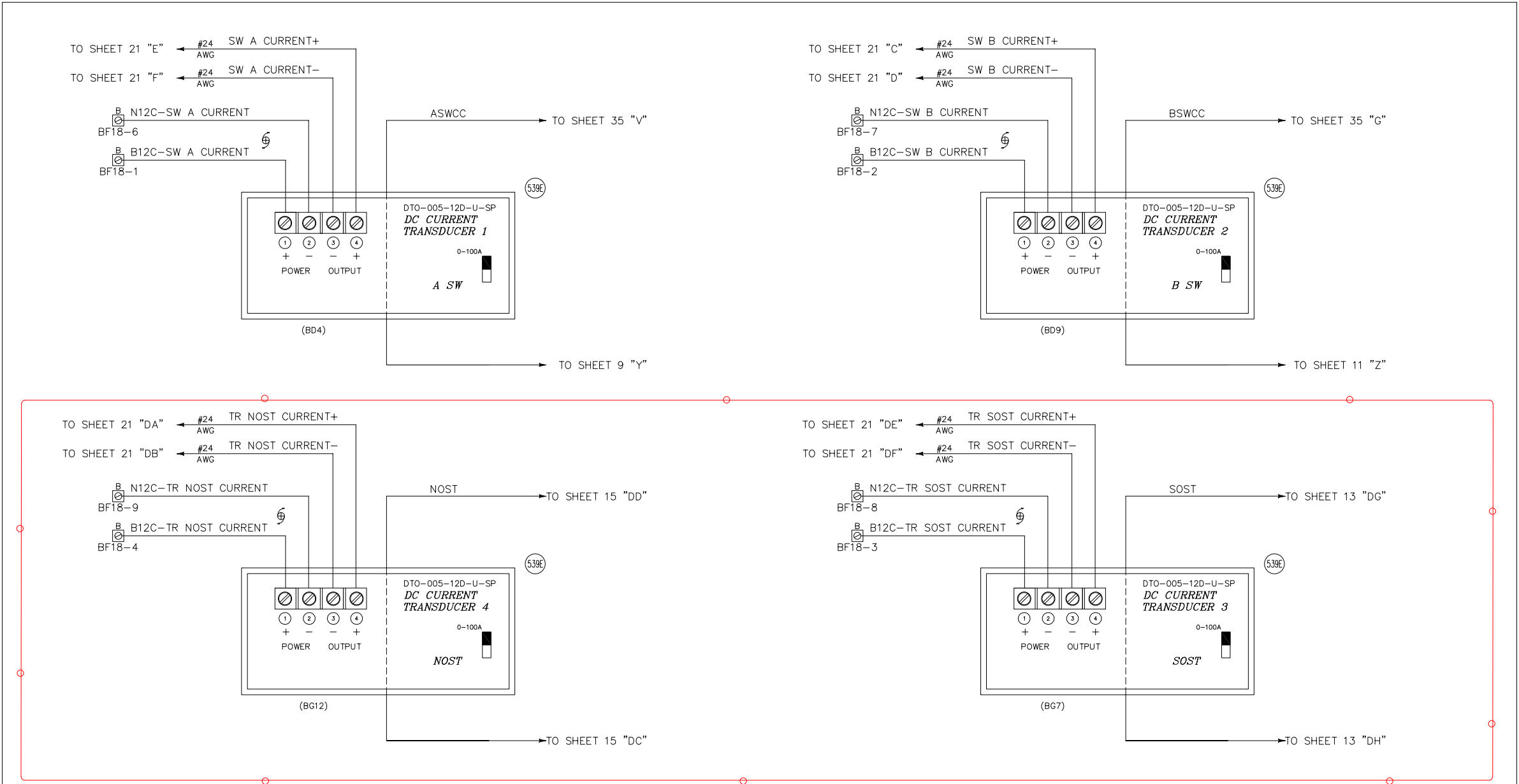
AS DESIGNED-0.00	08-16-17
INSTALL IETMS	
PTC SYSTEM	
DES:BE/WAW	CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

DWG NO. 008824-008924

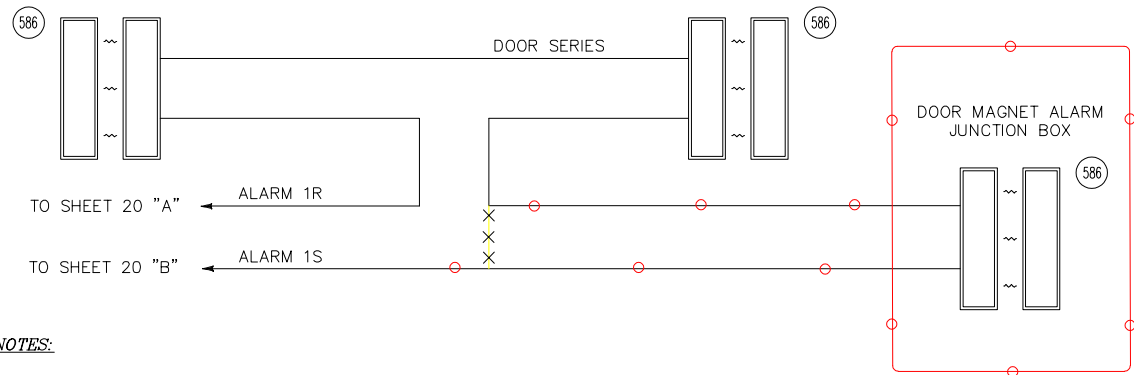
SHEET 21 OF 56

BURNS ENG. REVISIONS	SCALE:			SCALE:			INDIAN		SHEET NUMBER REF. 21
	AS DESIGNED-0.00	INITIAL	DATE	AS DESIGNED-0.01	INITIAL	DATE	Burns BURNS ENGINEERING, INC. 215 878-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103		DRAWING NUMBER REF. 008824-008924
	PTC OS INSTALLATION	WAW	08-16-17	PTC OS INSTALLATION	SLF	10-13-17			BURNS PROJECT REF. 2017-159
	DESIGNED:	SLF	10-13-17	CHECKED:	WDW	10-13-17			
	CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF	10-13-17			
	BACK-CHECKED:	WAW	08-17-17	CORRECTED:	SLF	10-13-17			
	CORRECTED:	WAW	08-17-17	VERIFIED:	WDW	10-13-17			
	VERIFIED:	SLF	08-17-17						



DOOR MAGNET ALARM
WALL "B" - NORTH SIDE

DOOR MAGNET ALARM
WALL "D" - SOUTH SIDE



NOTES:

1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.

REVISIONS

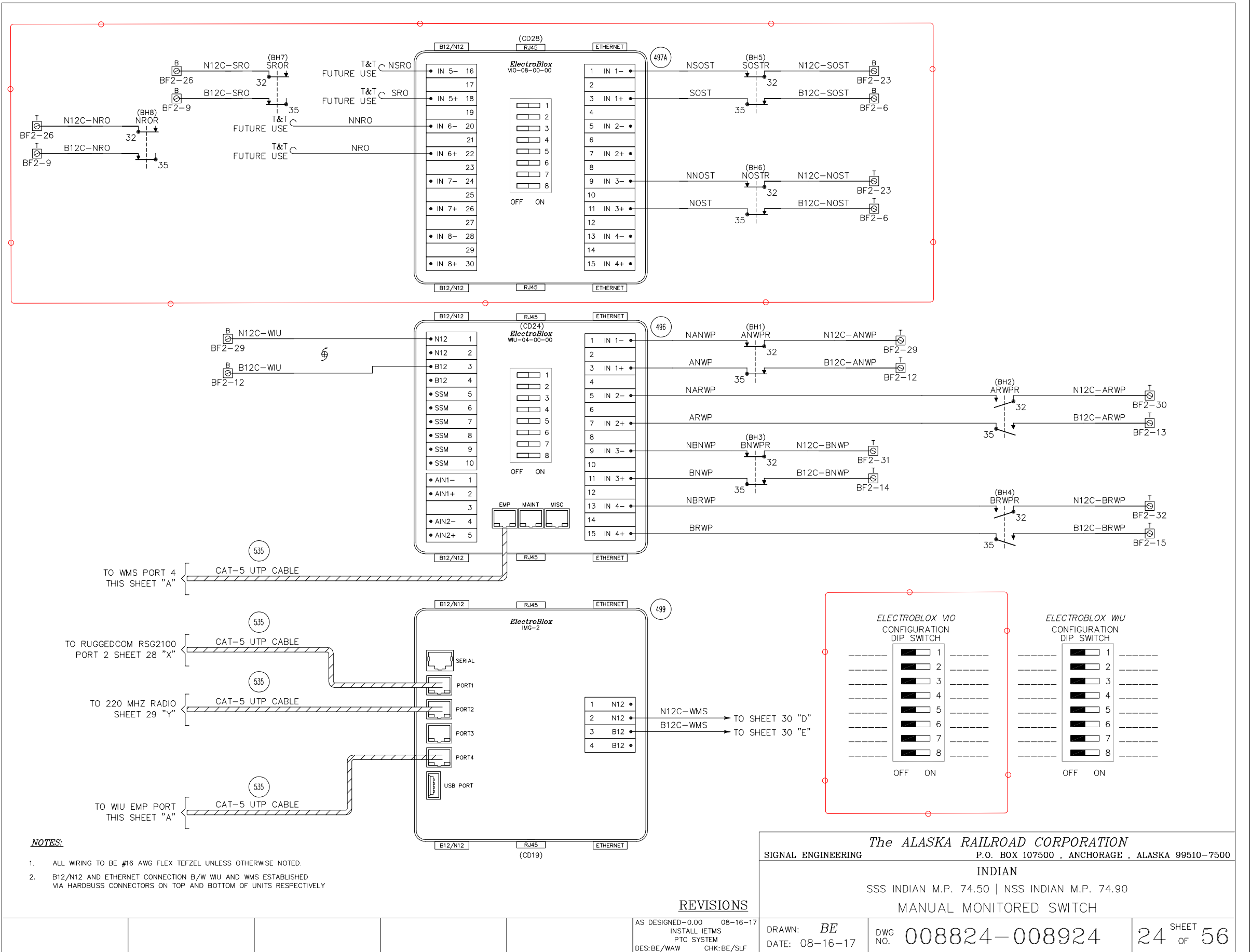
AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500
INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH

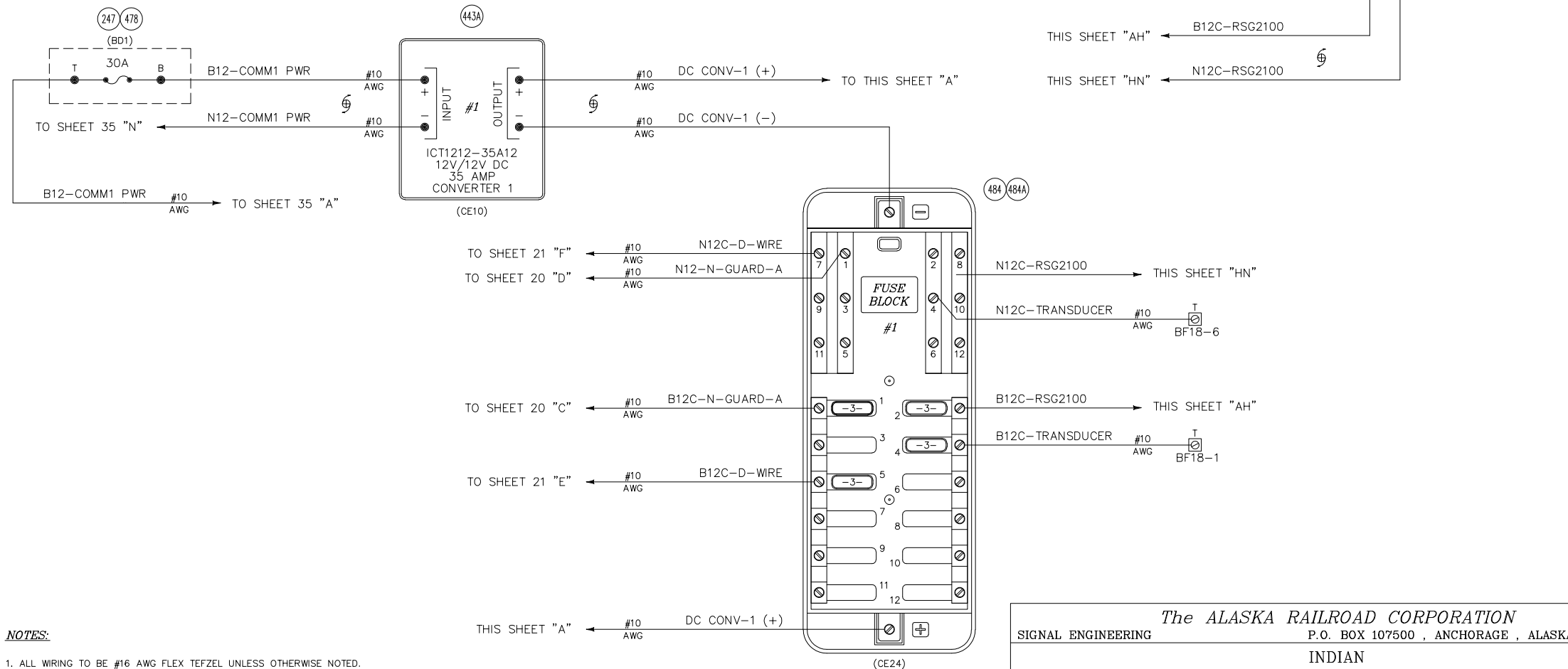
DWG NO. 008824-008924 SHEET 23 OF 56

BURNS ENG. REVISIONS	008924_23.dwg 08-16-17			INDIAN			SHEET NUMBER REF. 23
	AS DESIGNED-0.00 PTC OS INSTALLATION			INDIAN			DRAWING NUMBER REF. 008824-008924
	SCALE:			INDIAN			BURNS PROJECT REF. 2017-159
	DESIGNED: WAW 08-16-17 CHECKED: SLF 08-17-17 BACK-CHECKED: WAW 08-17-17 CORRECTED: WAW 08-17-17 VERIFIED: SLF 08-17-17			BURNS ENGINEERING, INC. 215 878-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103			



008924_24.dwg 08-16-17				AS DESIGNED-0.00 08-16-17 INSTALL IETMS PTC SYSTEM DES:BE/WAW CHK:BE/SLF	DRAWN: BE DATE: 08-16-17	DWG NO. 008824-008924	24 SHEET OF 56
008924_24.dwg 08-16-17				The ALASKA RAILROAD CORPORATION SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500 INDIAN SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90 MANUAL MONITORED SWITCH			
INDIAN				SHEET NUMBER REF. 24 DRAWING NUMBER REF. 008824-008924 BURNS PROJECT REF. 2017-159			

AS DESIGNED-0.00 PTC OS INSTALLATION	SCALE:		
	DESIGNED:	WAW	08-16-17
	CHECKED:	SLF	08-17-17
	BACK-CHECKED:	WAW	08-17-17
	CORRECTED:	WAW	08-17-17
AS DESIGNED-0.01 PTC OS INSTALLATION	SCALE:		
	DESIGNED:	SLF	10-13-17
	CHECKED:	WDW	10-13-17
	BACK-CHECKED:	SLF	10-13-17
	CORRECTED:	SLF	10-13-17

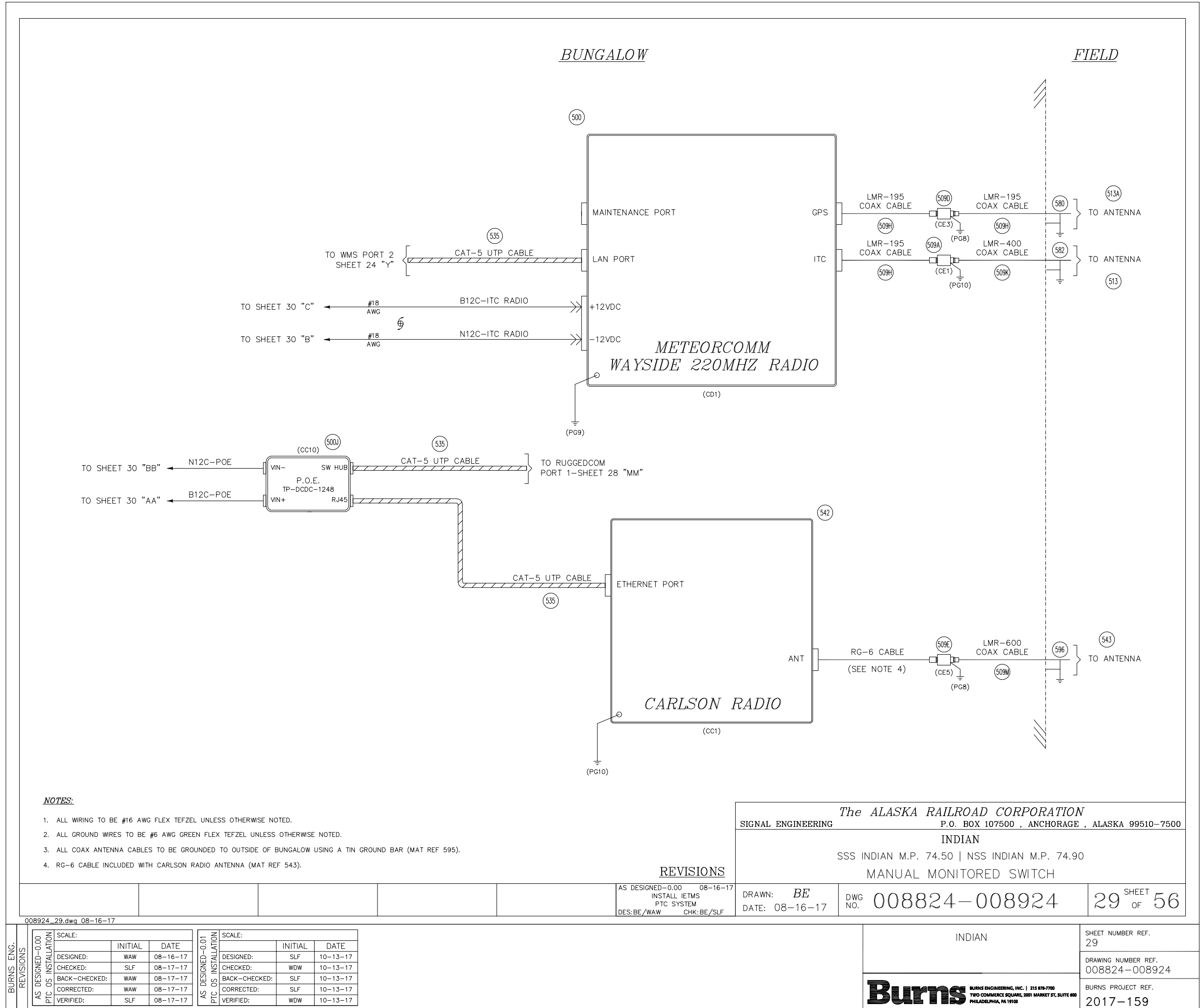


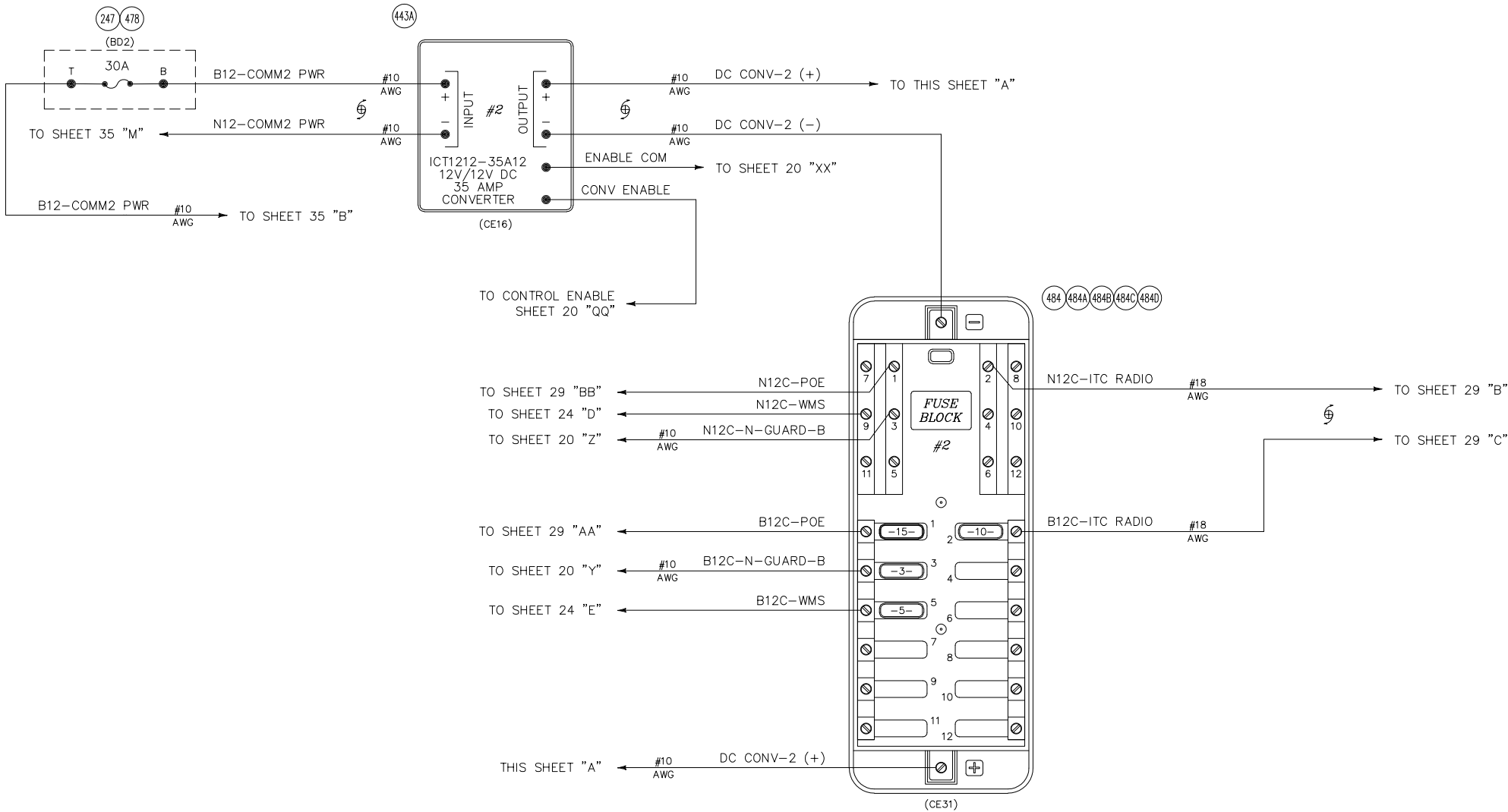
1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.
2. ALL GROUND WIRES TO BE #10 AWG GREEN FLEX TEFLON UNLESS OTHERWISE NOTED.

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

<i>The ALASKA RAILROAD CORPORATION</i> SIGNAL ENGINEERING		
P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500 INDIAN		
SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90 MANUAL MONITORED SWITCH		
DRAWN: <i>BE</i> DATE: 08-16-17	DWG NO. 008824-008924	28 ^{SHEET} OF 56

REVISIONS AS DESIGNED-0.01 P.T.C. 05 INSTALLATION	SCALE:			P.T.C. 05 INSTALLATION SCALE:	SCALE:				
	DESIGNED:	INITIAL	DATE		DESIGNED:	INITIAL	DATE		
		WAW	08-16-17			SLF	10-13-17		
	CHECKED:	SLF	08-17-17		CHECKED:	WDW	10-13-17		
	BACK-CHECKED:	WAW	08-17-17		BACK-CHECKED:	SLF	10-13-17		
	CORRECTED:	WAW	08-17-17		CORRECTED:	SLF	10-13-17		
	VERIFIED:	SLF	08-17-17		VERIFIED:	WDW	10-13-17		
						INDIAN		SHEET NUMBER REF. 28	
						Burns BURNS ENGINEERING, INC. 215 879-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19108		DRAWING NUMBER REF. 008824-008924	
								BURNS PROJECT REF. 2017-159	





NOTES:

1. ALL WIRING TO BE #16 AWG FLEX TEFLON UNLESS OTHERWISE NOTED.

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

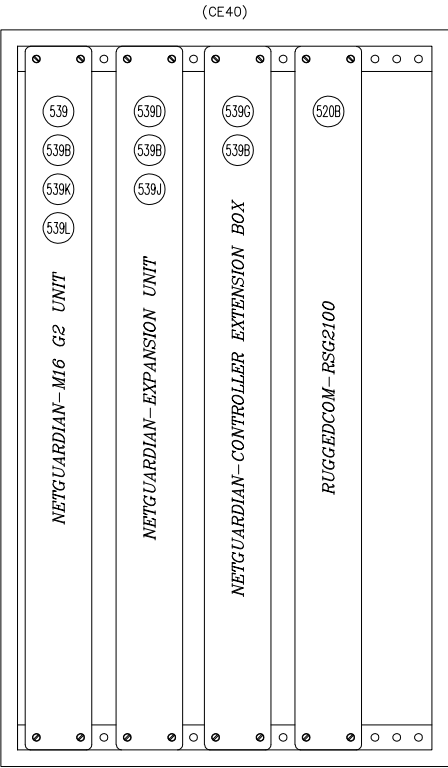
INDIAN

INDIAN

30

SHEET OF 56

			AS DESIGNED-0.00 08-16-17 INSTALL IETMS PTC SYSTEM DES:BE /WAW CHK:BE/SLF			DRAWN: BE DATE: 08-16-17		DWG NO. 008824-008924		30 SHEET OF 56				
008924_30.dwg 08-16-17														
BURNS ENG. REVISIONS	AS DESIGNED-0.00 PTC OS INSTALLATION			SCALE:			INDIAN					SHEET NUMBER REF. 30		
				INITIAL			DATE			DRAWING NUMBER REF. 008824-008924				
	DESIGNED:			WAW			08-16-17			Burns BURNS ENGINEERING, INC. 215 978-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103				
	CHECKED:			SLF			08-17-17							
	BACK-CHECKED:			WAW			08-17-17							
	CORRECTED:			WAW			08-17-17							
	VERIFIED:			SLF			08-17-17			BURNS PROJECT REF. 2017-159				
	AS DESIGNED-0.01 PTC OS INSTALLATION			SCALE:										
				INITIAL			DATE							
	DESIGNED:			SLF			10-13-17							
CHECKED:			WDW			10-13-17								
BACK-CHECKED:			SLF			10-13-17								
CORRECTED:			SLF			10-13-17								
VERIFIED:			WDW			10-13-17								



RU6 FLUSH MOUNT WALL RACK
(SIDE VIEW)

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

AS DESIGNED-0.0008-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAWCHK:BE/SLF

DRAWN: *BE*

DATE: 08-16-17

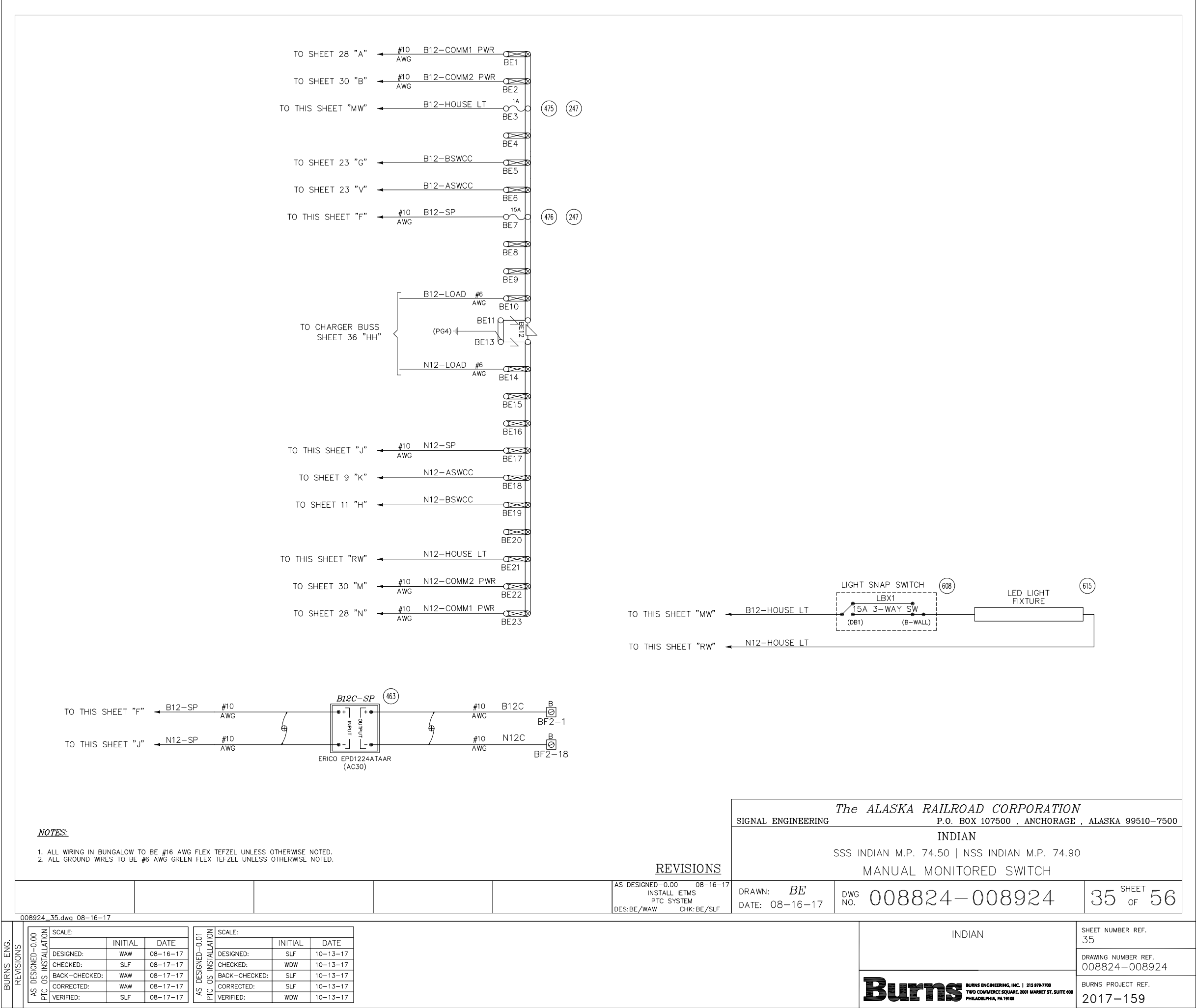
DWG NO.

008824-008924

33

SHEET OF 56

008924_33.dwg 08-16-17										
BURNS ENG. REVISIONS	AS DESIGNED-0.00 PTC OS INSTALLATION	SCALE:			AS DESIGNED-0.01 PTC OS INSTALLATION	SCALE:			INDIAN	
				INITIAL				INITIAL		
				DATE				DATE		
		DESIGNED:	WAW	08-16-17		DESIGNED:	SLF	10-13-17		
		CHECKED:	SLF	08-17-17		CHECKED:	WDW	10-13-17		
		BACK-CHECKED:	WAW	08-17-17		BACK-CHECKED:	SLF	10-13-17		
		CORRECTED:	WAW	08-17-17		CORRECTED:	SLF	10-13-17	DRAWING NUMBER REF. 008824-008924	
		VERIFIED:	SLF	08-17-17		VERIFIED:	WDW	10-13-17		
								BURNS PROJECT REF. 2017-159		



BUNGALOW OS ENCLOSURE

ENCLOSURE TYPE: NEMA 3R
SIZE: 48H X 36W X 16D

719

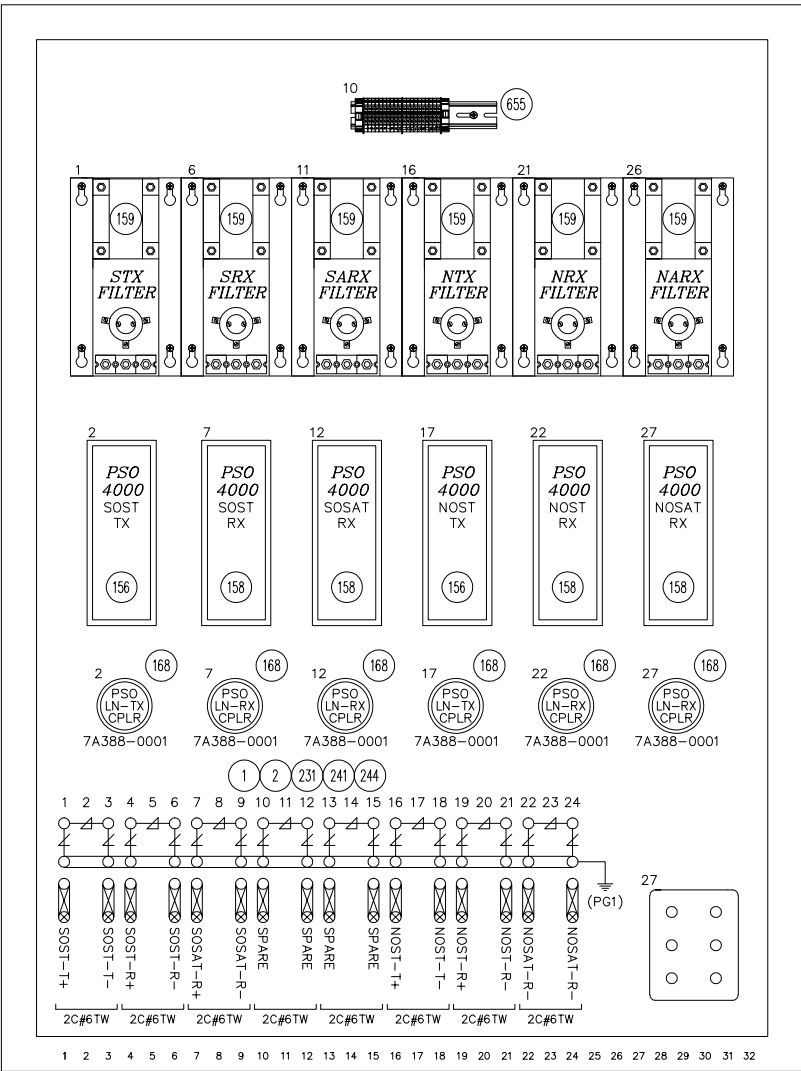
E

D

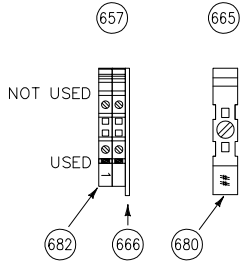
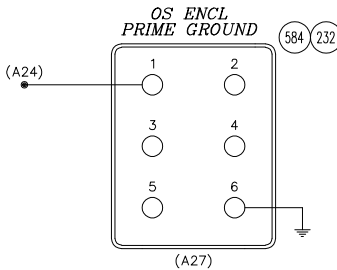
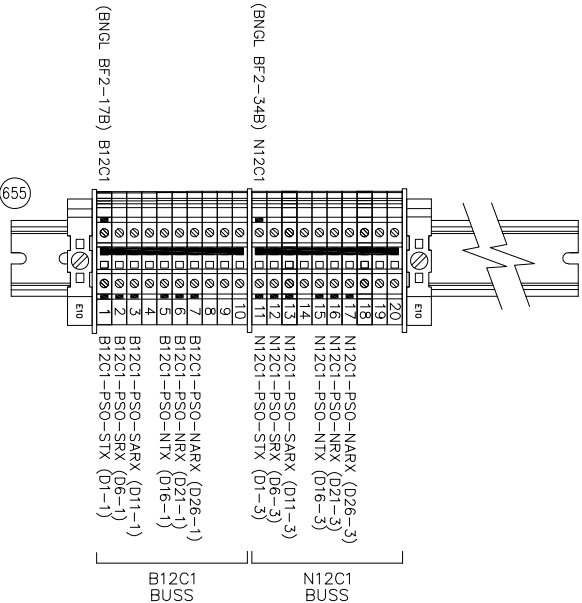
C

B

A



E10



NOTES:

- ALL GROUND WIRES IN ENCLOSURE TO BE #6 AWG GREEN TEFLON UNLESS OTHERWISE NOTED.
- USE 10 POLE JUMPER MAT REF 668 FOR TERMINAL 657 (1-10 & 11-20)

ALL NEW

REVISIONS

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

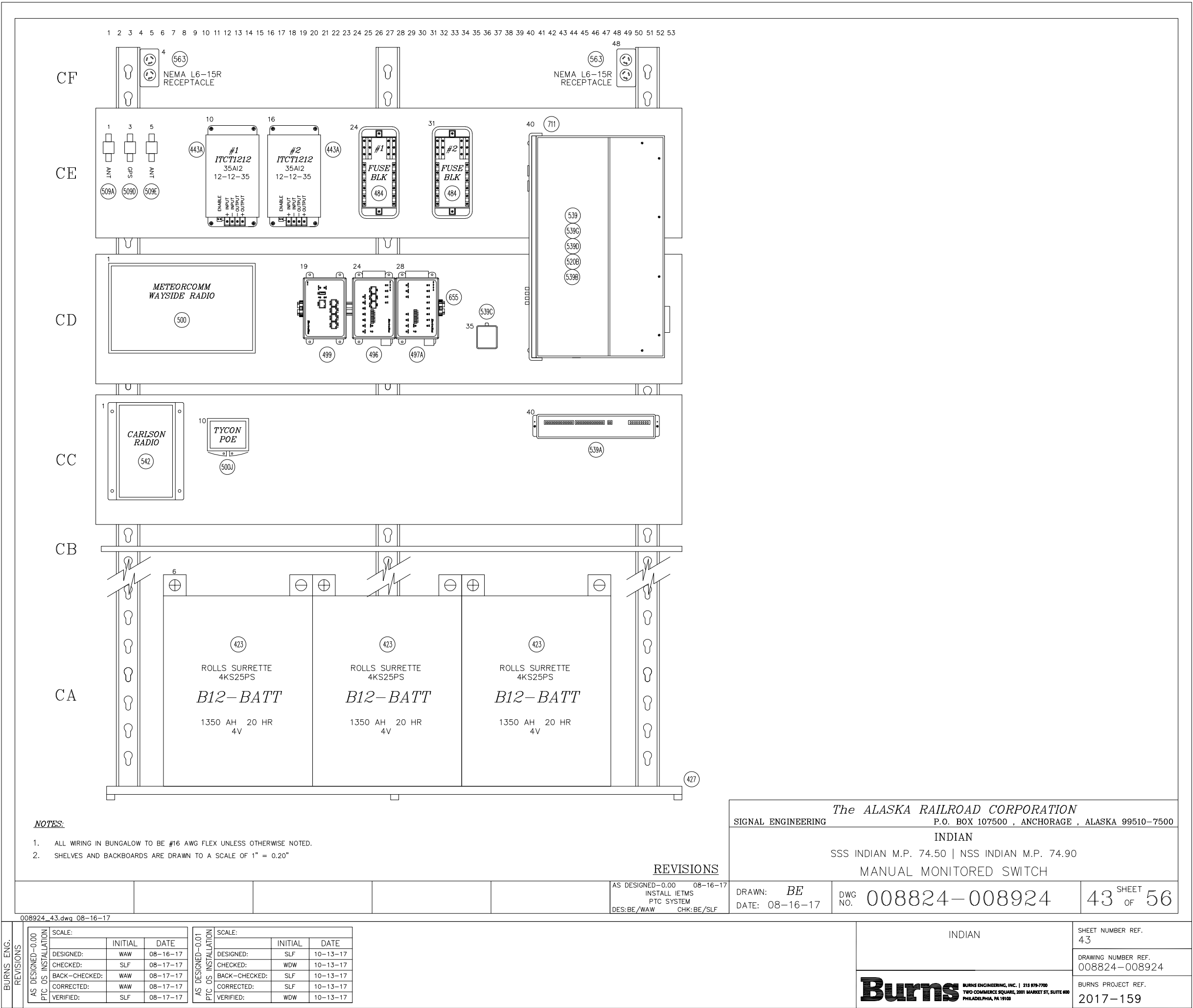
The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500
INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH
DRAWN: BE DATE: 08-16-17
DWG NO. 008824-008924
SHEET 41 OF 56

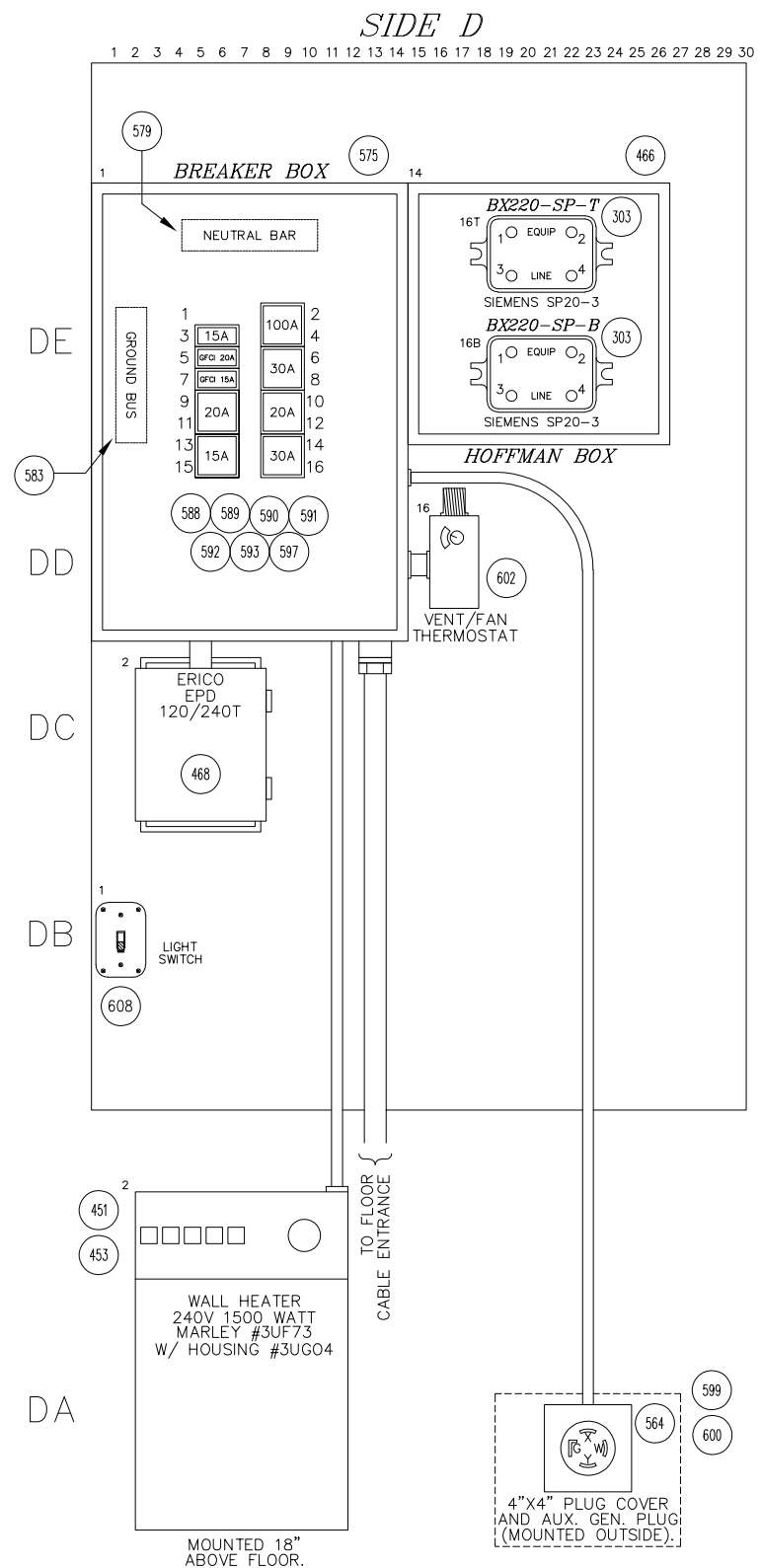
BURNS ENG. REVISIONS	SCALE:			SCALE:		
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	CHECKED:	SLF	08-17-17	CHECKED:	WDW	10-13-17
	BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF	10-13-17
PTC OS INSTALLATION	CORRECTED:	WAW	08-17-17	CORRECTED:	SLF	10-13-17
	VERIFIED:	SLF	08-17-17	VERIFIED:	WDW	10-13-17
	SCALE:			SCALE:		
	DESIGNED:	WAW	08-16-17	DESIGNED:	SLF	10-13-17
AS DESIGNED-0.01	CHECKED:	SLF	08-17-17	CHECKED:	WDW	10-13-17
	BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF	10-13-17
	CORRECTED:	WAW	08-17-17	CORRECTED:	SLF	10-13-17
	VERIFIED:	SLF	08-17-17	VERIFIED:	WDW	10-13-17

INDIAN

Burns
BURNS ENGINEERING, INC. | 215 878-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

SHEET NUMBER REF. 41
DRAWING NUMBER REF. 008824-008924
BURNS PROJECT REF. 2017-159



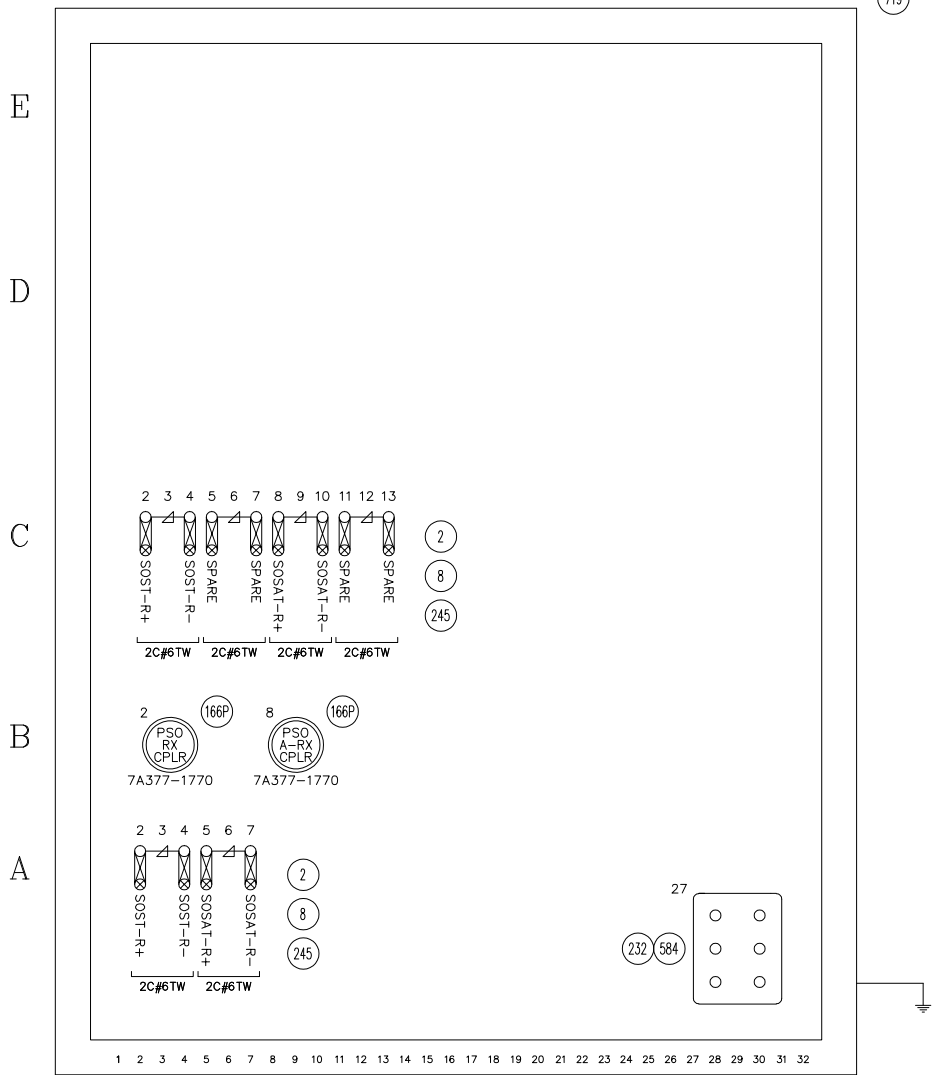


<i>The ALASKA RAILROAD CORPORATION</i> SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500 INDIAN SSS INDIAN M.P. 74.50 NSS INDIAN M.P. 74.90 MANUAL MONITORED SWITCH		
DRAWN: <i>BE</i> DATE: 08-16-17	DWG NO. 008824-008924	SHEET 44 OF 56

BURNS ENG. REVISIONS	AS DESIGNED-0.00 PTC OS INSTALLATION	SCALE:		
			INITIAL	DATE
		DESIGNED:	WAW	08-16-17
		CHECKED:	SLF	08-17-17
		BACK-CHECKED:	WAW	08-17-17
		CORRECTED:	WAW	08-17-17
		VERIFIED:	SLF	08-17-17
	AS DESIGNED-0.01 PTC OS INSTALLATION	SCALE:		
			INITIAL	DATE
		DESIGNED:	SLF	10-13-17
CHECKED:		WDW	10-13-17	
BACK-CHECKED:		SLF	10-13-17	
CORRECTED:		SLF	10-13-17	
VERIFIED:		WDW	10-13-17	
 BURNS ENGINEERING, INC. 215 879-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103		INDIAN	SHEET NUMBER REF. 44	
			DRAWING NUMBER REF. 008824-008924	
			BURNS PROJECT REF. 2017-159	

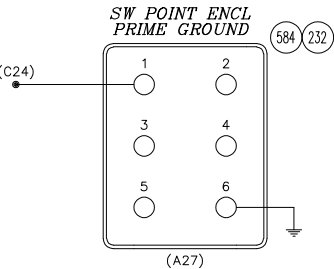
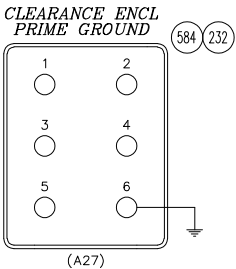
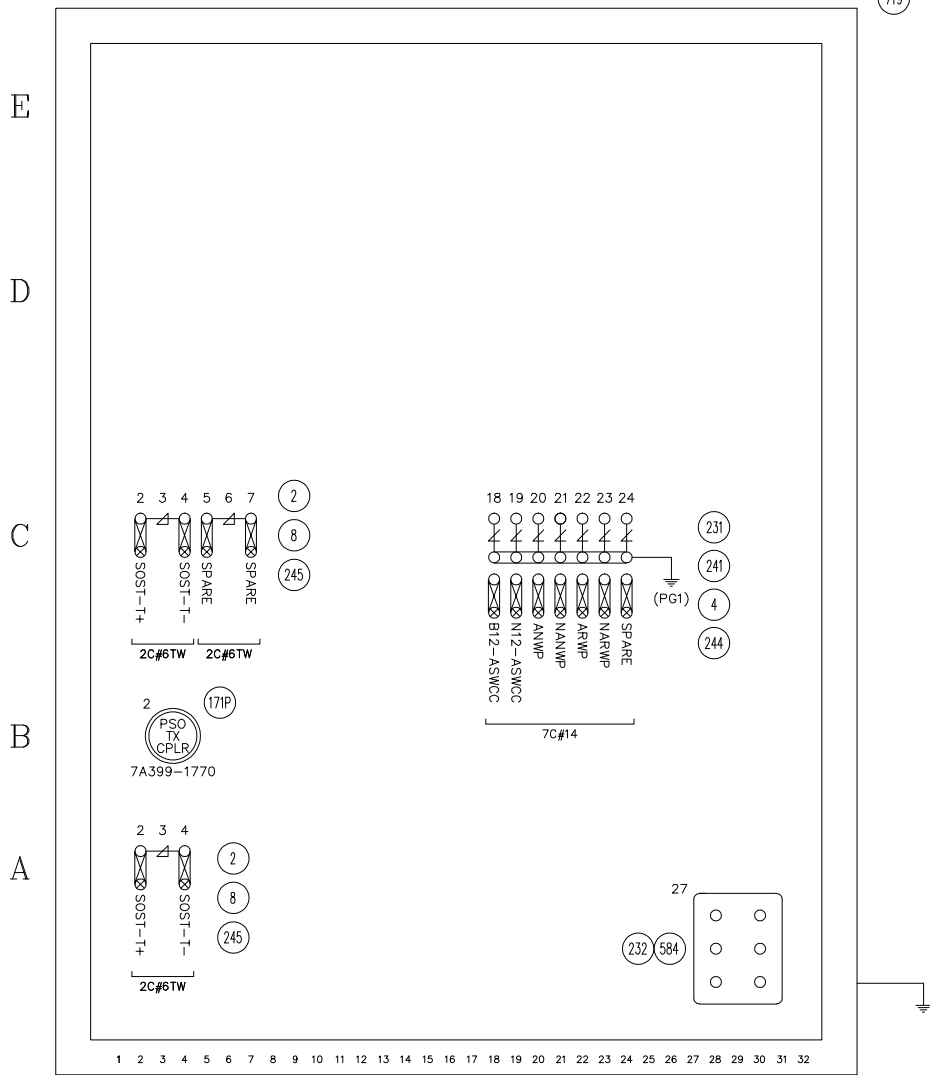
SSS CLEARANCE ENCLOSURE

ENCLOSURE TYPE: NEMA 3R
SIZE: 48H X 36W X 16D



SSS SWITCH POINT ENCLOSURE

ENCLOSURE TYPE: NEMA 3R
SIZE: 48H X 36W X 16D



NOTES:

- ALL GROUND WIRES TO BE #6 AWG GREEN TEFLON UNLESS OTHERWISE NOTED.
- FROM GROUND PLATE TO GROUND ROD SOFT DRAWN #6.

ALL NEW

REVISIONS

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

The ALASKA RAILROAD CORPORATION
SIGNAL ENGINEERING P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN
SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90
MANUAL MONITORED SWITCH

DWG NO. 008824-008924

46 SHEET OF 56

BURNS ENG.

REVISIONS

SCALE:	INITIAL	DATE
DESIGNED:	WAW	08-16-17
CHECKED:	SLF	08-17-17
BACK-CHECKED:	WAW	08-17-17
CORRECTED:	WAW	08-17-17
VERIFIED:	SLF	08-17-17

SCALE:	INITIAL	DATE
DESIGNED:	SLF	10-13-17
CHECKED:	WDW	10-13-17
BACK-CHECKED:	SLF	10-13-17
CORRECTED:	SLF	10-13-17
VERIFIED:	WDW	10-13-17

INDIAN

Burns BURNS ENGINEERING, INC. | 215 878-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

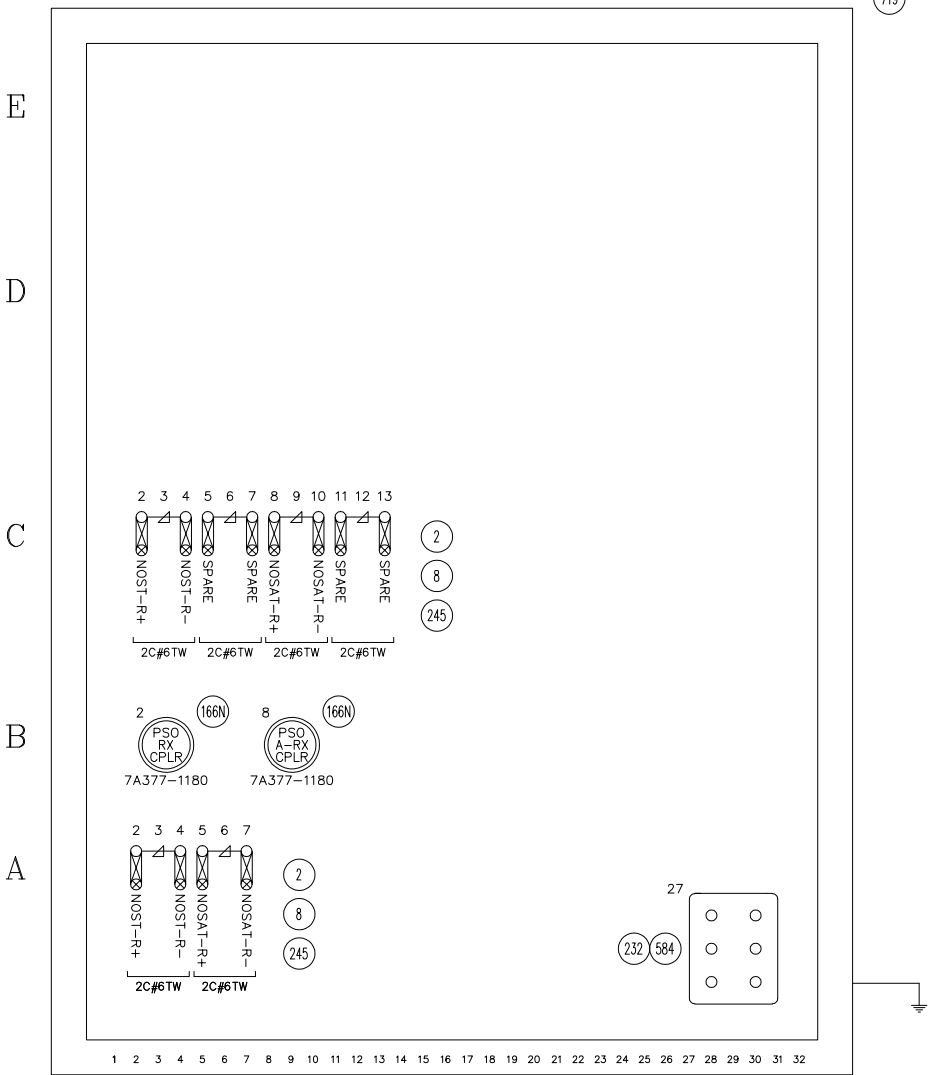
SHEET NUMBER REF.
46

DRAWING NUMBER REF.
008824-008924

BURNS PROJECT REF.
2017-159

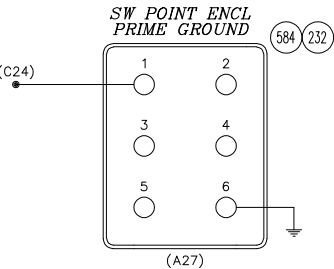
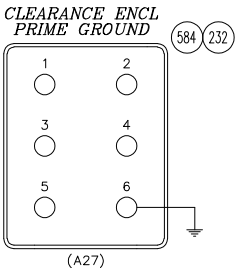
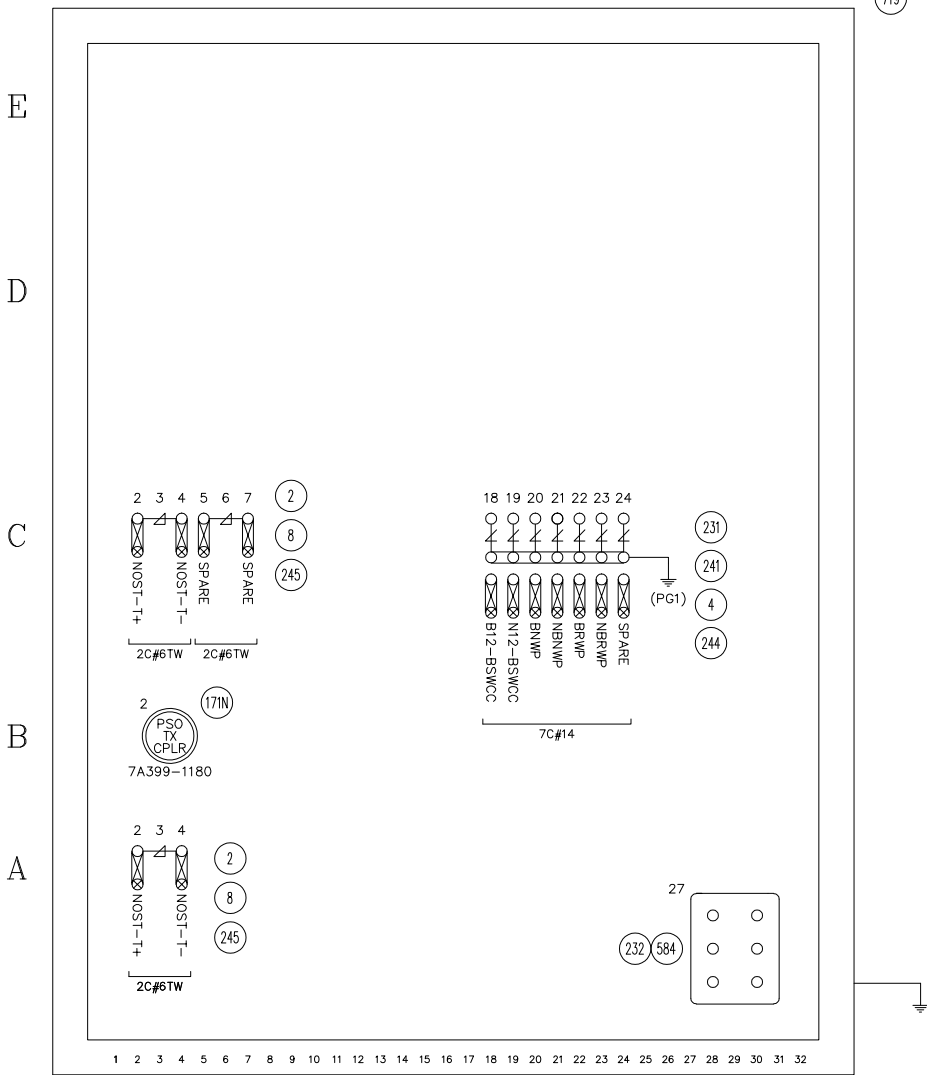
NSS CLEARANCE ENCLOSURE

ENCLOSURE TYPE: NEMA 3R
SIZE: 48H X 36W X 16D



NSS SWITCH POINT ENCLOSURE

ENCLOSURE TYPE: NEMA 3R
SIZE: 48H X 36W X 16D



NOTES:

- ALL GROUND WIRES TO BE #6 AWG GREEN TEFLON UNLESS OTHERWISE NOTED.
- FROM GROUND PLATE TO GROUND ROD SOFT DRAWN #6.

ALL NEW

REVISIONS

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

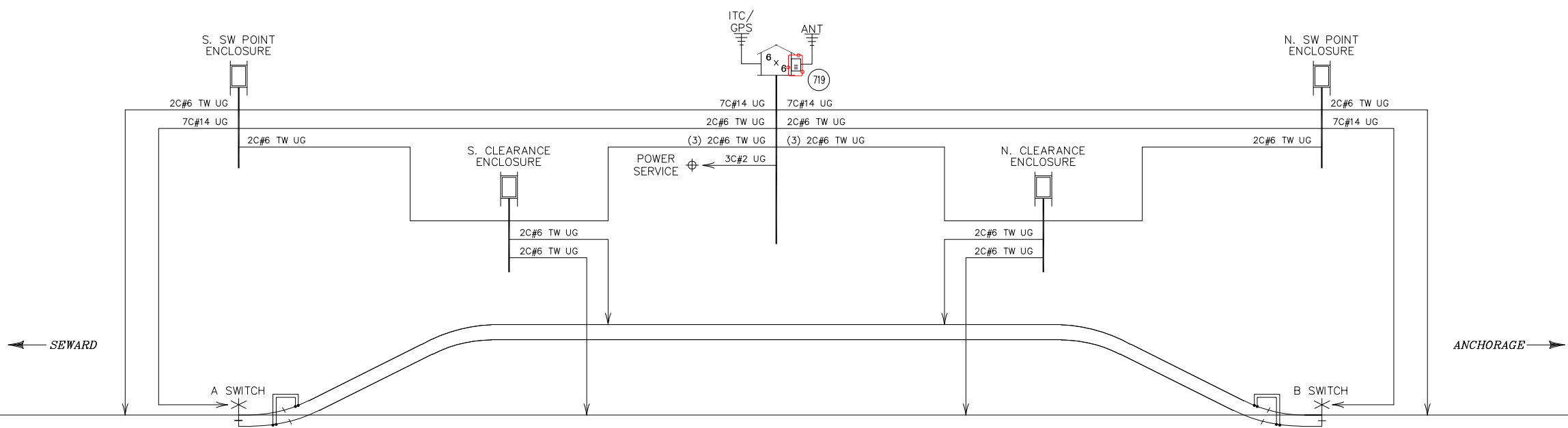
DWG NO. 008824-008924

47 SHEET OF 56

BURNS ENG. REVISIONS	SCALE:			SCALE:			INDIAN			SHEET NUMBER REF. 47	
	AS DESIGNED-0.00	INITIAL	DATE	AS DESIGNED-0.01	INITIAL	DATE	Burns BURNS ENGINEERING, INC. 215 878-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103			DRAWING NUMBER REF. 008824-008924	
	PTC OS INSTALLATION	WAW	08-16-17	PTC OS INSTALLATION	SLF	10-13-17				BURNS PROJECT REF. 2017-159	
	CHECKED:	SLF	08-17-17	CHECKED:	WDW	10-13-17					
	BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF	10-13-17					
	CORRECTED:	WAW	08-17-17	CORRECTED:	SLF	10-13-17					
	VERIFIED:	SLF	08-17-17	VERIFIED:	WDW	10-13-17					

SSS INDIAN

NSS INDIAN



NOTES:

1. NEMA JUNCTION BOX TO BE INSTALLED ON EXISTING 6X6 BUNGALOW.

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

AS DESIGNED-0.00 08-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAW CHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

DWG NO. 008824-008924

50 SHEET OF 56

BURNS ENG. REVISIONS	SCALE:			SCALE:			INDIAN		SHEET NUMBER REF. 50
	AS DESIGNED-0.00	INITIAL	DATE	AS DESIGNED-0.01	INITIAL	DATE	Burns BURNS ENGINEERING, INC. 215 978-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103		DRAWING NUMBER REF. 008824-008924
	PTC OS INSTALLATION	WAW	08-16-17	PTC OS INSTALLATION	SLF	10-13-17			BURNS PROJECT REF. 2017-159
	CHECKED:	SLF	08-17-17	CHECKED:	WDW	10-13-17			
	BACK-CHECKED:	WAW	08-17-17	BACK-CHECKED:	SLF	10-13-17			

MAT. REF. NO.	MANUFACTURERS PART NO.	DESCRIPTION	MANUFACTURER	QTY	REMARKS
1	022615-4X	HEAVY DUTY ARRESTOR W/ 3 POST PORCELAIN BASE	SIEMENS	16	OR APPROVED EQUAL
2	022700-1X	HD EQUALIZER	SIEMENS	28	OR APPROVED EQUAL
3	022485-31X	CLEARVIEW ARRESTOR W/ BAKELITE BASE	SIEMENS	4	OR APPROVED EQUAL
4	022485-33X	CLEARVIEW ARRESTOR W/ 3 POST PORCELAIN BASE	SIEMENS	28	
7	A62-125	RELAY - BIASED NEUTRAL, 500 OHM, 6FB	ALSTOM	4	ORDER NUMBER 56001-922-07
8	023612-5X	BAKELITE TERMINAL BLOCK	SIEMENS	36	BLOCK FOR ARRESTORS, RESISTORS & EQUALIZERS
40	A62-262	RELAY - NEUTRAL, 500 OHM, 6FB	ALSTOM	2	ORDER NUMBER 56001-762-02
70	A62-614	RELAY - SLOW RELEASE, 194 OHM, 4FB-2F-1B	ALSTOM	2	
156	7000-7A471-0001	PSO 4000 TRANSMITTER	SIEMENS	2	
158	7000-7A473-0001	PSO 4000 RECEIVER	SIEMENS	4	
159	7000-7A418-0001	PSO BATTERY LINE FILTER	SIEMENS	6	
166N	7000-7A377-1180	RECEIVER LINE TO RAIL COUPLER - 1.18 KHz	SIEMENS	2	LAST FOUR DIGITS REPRESENT FREQUENCY SELECTED
166P	7002-7A377-1770	RECEIVER LINE TO RAIL COUPLER - 1.77 KHz	SIEMENS	2	
168	7000-7A388-0001	LINE TO RECIEVER COUPLER	SIEMENS	6	
171N	7000-7A399-1180	TRANSMITTER LINE TO RAIL COUPLER - 1.18 KHz	SIEMENS	1	LAST FOUR DIGITS REPRESENT FREQUENCY SELECTED
171P	7000-7A399-1770	TRANSMITTER LINE TO RAIL COUPLER - 1.77 KHz	SIEMENS	1	
224	59686-005-04	RELAY - MOUNTING BASE (B1 TYPE)	ALSTOM	8	
231	023390-11X	TERMINAL - UNIVERSAL MODEL 390 (12 POST)	SIEMENS	3	OR APPROVED EQUAL
232	023390-11-6X	TERM. - UNIVERSAL MODEL 390 (6 POST)	SIEMENS	7	OR APPROVED EQUAL
241	023839-5	BUSS CONNECTOR - 1" (ORDER TO LENGTH)	SIEMENS	8	OR APPROVED EQUAL
243	23836	BUSS CONNECTOR - 2 3/8"	SIEMENS	2	OR APPROVED EQUAL
244	024620-1X	STRAIGHT INSULATED LINK - 1"	SIEMENS	84	OR APPROVED EQUAL
245	024620-4X	STRAIGHT INSULATED LINK - 2 3/8"	SIEMENS	36	INCLUDES SPECIAL NUT & NUT CLAMP
247	027614-1X	FUSE BLOCK - BAKELITE MODEL 614	SIEMENS	4	OR APPROVED EQUAL
303	010807-BX	230V SURGE PROTECTOR (SP20-3)	SIEMENS	2	
352	53530-030-01	MODEL 7J SWITCH CIRCUIT CONTROLLER	ALSTOM	0	EXISTING
423	4KS 25PS	BATTERY - 1350 A.H. @ 20HR	ROLLS SURRETTE	6	
427		BATTERY TRAY		2	
429E	28470HAA40B500CD	BATTERY CHARGER - 80A, HF-MAX 12V	NRS	1	
443A	ICT1212-35A12	DC/DC 12V CONVERTER	ICT	2	
451	3UF73	240v 1500 WATT WALL HEATER	MARLEY	1	
453	3UG04	WALL HEATER HOUSING	MARLEY	1	
458	DS50PVS-500	SURE PROTECTOR - PV APPLICATION	CITEL	1	
463	EPD1224ATAAR	SURGE PROTECTOR - 12V	ERICO	1	
466	AHE-12X12X6	HOFFMAN ENCLOSURE	HOFFMAN	1	CLEAR COVER PREFERRED
468	EPD120/240T	SURGE PROTECTOR - AC PRIMARY	ERICO	1	
475	FRN-R-1	FUSE - 1 AMP	BUSSMAN	1	
476	FRN-R-15	FUSE - 15 AMP	BUSSMAN	1	
478	FRN-R-30	FUSE - 30 AMP	BUSSMAN	2	
484	5026	ST BLADE FUSE BLOCK - 12 CIRCUITS	BLUE SEA SYSTEMS	2	
484A	5237	ATO-ATC BLADE FUSE - 3 AMP	BLUE SEA SYSTEMS	7	
484B	5239	ATO-ATC BLADE FUSE - 5 AMP	BLUE SEA SYSTEMS	1	
484C	5241	ATO-ATC BLADE FUSE - 10 AMP	BLUE SEA SYSTEMS	1	
484D	5242	ATO-ATC BLADE FUSE - 15 AMP	BLUE SEA SYSTEMS	1	

ALL NEW

EXCEPT WHERE NOTED

REVISIONS

The ALASKA RAILROAD CORPORATION

SIGNAL ENGINEERING

P.O. BOX 107500 , ANCHORAGE , ALASKA 99510-7500

INDIAN

SSS INDIAN M.P. 74.50 | NSS INDIAN M.P. 74.90

MANUAL MONITORED SWITCH

AS DESIGNED-0.0008-16-17
INSTALL IETMS
PTC SYSTEM
DES:BE/WAWCHK:BE/SLF

DRAWN: BE
DATE: 08-16-17

DWG NO. 008824-008924

53^{SHEET} OF 56

008924_53.dwg 08-16-17

BURNS ENG.
REVISIONS

AS DESIGNED-0.00
PTC OS INSTALLATION

SCALE:	INITIAL	DATE
DESIGNED:	WAW	08-16-17
CHECKED:	SLF	08-17-17
BACK-CHECKED:	WAW	08-17-17
CORRECTED:	WAW	08-17-17
VERIFIED:	SLF	08-17-17

AS DESIGNED-0.01
PTC OS INSTALLATION

SCALE:	INITIAL	DATE
DESIGNED:	SLF	10-13-17
CHECKED:	WDW	10-13-17
BACK-CHECKED:	SLF	10-13-17
CORRECTED:	SLF	10-13-17
VERIFIED:	WDW	10-13-17

INDIAN

Burns

BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

SHEET NUMBER REF.
53

DRAWING NUMBER REF.
008824-008924

BURNS PROJECT REF.
2017-159

