

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Petition for permission to make a major change in crossing protection, or to install new protection under 92 Illinois Administrative Code 1535.400 (d)

Date: August 10, 2011

To the Illinois Commerce Commission:

The petitioner **BNSF Railway** shows

- (1) That it is a railroad company operating a line of railroad in the State of Illinois.
- (2) That petitioner proposes and hereby makes application for authority to make a major change in crossing protection, or to install new protection, under 92 Illinois Administrative Code 1535.400 (d) adopted by this Commission.
- (3) That the location of the crossing, the nature of protection now established and proposed to be established, and other pertinent facts in connection therewith, are set forth in the statement attached to and forming part of this petition.
- (4) That petitioner's reasons and purpose, with reference to its said proposal are

Install Constant Warning and Bungalow in accordance with ICC agreement #T11-0079

- (5) That the facts set forth in this petition and in the statement and plans or plats attached thereto, are, all of them, true and correct to the best of petitioner's knowledge and belief.

WHEREFORE, the petitioner prays that the Commission will, if deemed desirable by the Commission, set the aforesaid matter for hearing, and that the Commission enter an order or adopt a resolution consenting to and granting authority for the making of the said proposed changes in or additions to crossing protection.

BNSF Railway

By _____

**Daniel Dunn
General Construction Supervisor
309-345-6271**

(Attorney for Petitioner)

(Use Enter key for up to four additional lines.)

(Attorney's Address)

Statement, attached to and part of an application for permission to make a major change in crossing protection or to install new protection, under 92 Ill. Adm. Code 1535.400(d).

1. Name of Railroad Company **BNSF Railway**
2. Crossing Number **004465A**
3. Village or City **Near Ransom**
4. Name of Street or Highway **E 25th Road / TR 414**
5. Public Agency Maintaining Highway **(D.O.T., County, Township, City)**
6. Protection now established: (Give full description. Indicate the hours of any manual protection.)
Crossbucks
7. Protection desired: (Give details)
Install constant warning, gates, lights and bungalow
8. Number of main tracks **2** Other tracks **0**
9. Number of passenger train movements: 6 a.m. to 6 p.m. **0** 6 p.m. to 6 a.m. **0**
10. Number of freight train movements: 6 a.m. to 6 p.m. **31** 6 p.m. to 6 a.m. **30**
11. Approximate number of switch movements: 6 a.m. to 6 p.m. _____ 6 p.m. to 6 a.m. _____
12. Maximum speed of trains at crossing on each track in each direction
Track 1 N/E Bound **70** mph S/W Bound **70** mph
Track 2 N/E Bound _____ mph S/W Bound _____ mph
Track 3 N/E Bound _____ mph S/W Bound _____ mph
13. Passenger platforms served by tracks within the limits of track circuits, if any **0**
14. Where automatic signals or gates are proposed, approximately number of train or engine movements daily which would cause false indications or operation _____

15. Nature and approximate amount of street or highway traffic over crossing

AADT 25

16. In addition to the information listed hereinbefore in Form 3, attach a track plan or plat of the proposed crossing. This plan should show:

- (a) Width and surface of highway.
- (b) Highway intersections (including private driveways to be so indicated) and location of established highway signs or signals within 100 feet of crossing.
- (c) Location of tracks, switches and other railroad facilities such as block signals, etc. within limits of track circuits, present and/or proposed.
- (d) Where automatic protection is proposed, show proposed location of signals (sidelights, cantilevers, etc., if any).
- (e) Show the length of each operation track section within the control limits of the crossing protection and its function.

ADDITIONAL INFORMATION

VERIFICATION

I, (Daniel Dunn, first being duly sworn upon oath depose and say that I am General Construction Supervisor of BNSF Railway, an Deleware corporation; that I have read the above and foregoing petition by me subscribed and know the contents thereof; that said contents are true in substance and in fact, except as to those matters stated upon information and belief, and as to those, I believe same to be true.

Daniel Dunn
General Construction Supervisor

CROSSING DISABLE PROCEDURE

Street: E. 25th Rd.
Line Segment: 7000
Mile Post: 81.11
Plan Revision Date: June 30, 2011
DOT#: 004 465 A
Subdivision: Chillicothe

Note: If the date stamp on the lower left corner of the plan set does not match the Plan Revision Date above, then this procedure is **VOID**.

Before following the Crossing Disable Procedure, comply with Signal Instruction 7.2, 7.2A, 7.2B, 7.2C as appropriate. An understanding of the highway/railroad crossing circuits is required before any work is performed.

IF YOU ARE UNSURE OF ANY OF THESE PROCEDURES, CONSULT YOUR SUPERVISOR.

Disable one approach on either track (from Signal Instruction 7.2):

- a. Shunt affected approach outside of the island and as close to track work as practicable.
- b. Crossing should recover in approximately 20 seconds.
- c. Verify crossing island circuit is effective.
- d. Test unaffected tracks and approaches to make sure crossing warning system operates properly.

Note: Depending on location, the placement of the shunt may cause short or zero warning time for the opposite approach. Shunt placement may also cause short or zero warning time for the adjacent crossings. Before placing any shunts, verify if the adjacent crossings will be affected and insure that proper procedures have been followed to protect those crossings.

Note: AX starts still in service. See additional disable procedures to disable AX starts.

Disable both approaches on either track but not the island (from Signal Instruction 7.2):

- a. Shunt both approaches outside island and as close to track work as practicable in both directions.
- b. Crossing should recover in approximately 20 seconds.
- c. Verify crossing island circuit is effective.
- d. Test unaffected tracks and approaches to make sure crossing warning system operates properly.

Note: Depending on location, the placement of the shunt(s) may cause short or zero warning time for the adjacent crossings. Before placing any shunts, verify if the adjacent crossings will be affected and insure that proper procedures have been followed to protect those crossings.

Note: AX starts still in service. See additional disable procedures to disable AX starts.

To disable Track 1 including island:

- a. Jumper TRK. #1 OOS terminal (AA30 to AA33).
- b. Test unaffected tracks and approaches to make sure crossing warning system operates properly.

To disable Track 2 including island:

- a. Jumper TRK. #2 OOS terminal (AA20 to AA23).
- b. Test unaffected tracks and approaches to make sure crossing warning system operates properly..

Note: AX starts still in service. See additional disable procedures to disable AX starts.

To disable track 1 West AX start (1WAXR):

- a. Polarity must be observed to prevent damage.
- b. Open 1F2 and 1F3 test terminals on terminal board.
- c. Jumper MB battery to the positive terminal (3E) on the 1WAXR relay.
- d. Jumper MN battery to the negative terminal (1E) on the 1WAXR relay.
- e. Test unaffected tracks and approaches to make sure crossing warning system operates properly.

To disable track 2 West AX start (2WAXR):

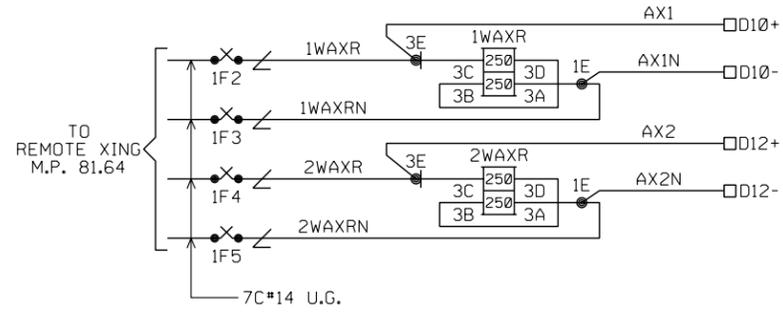
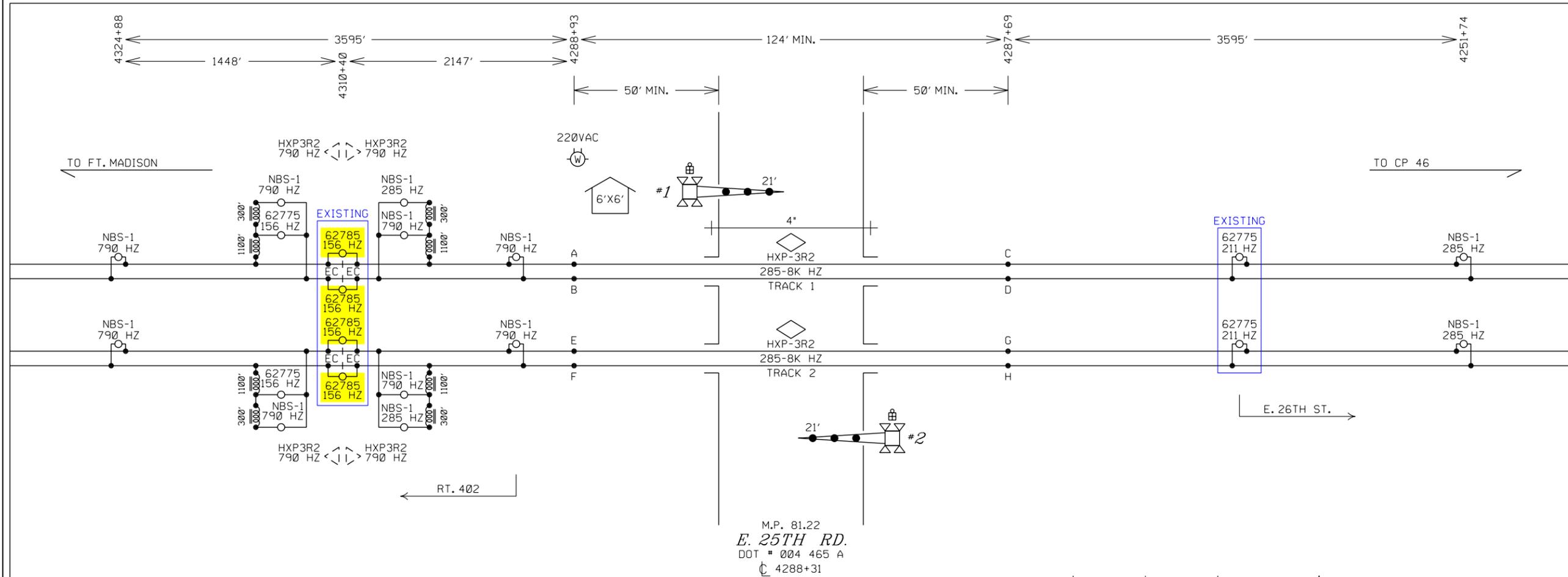
- a. Polarity must be observed to prevent damage.
- b. Open 1F4 and 1F5 test terminals on terminal board
- c. Jumper MB battery to the positive terminal (3E) on the 2WAXR relay.
- d. Jumper MN battery to the negative terminal (1E) on the 2WAXR relay.
- e. Test unaffected tracks and approaches to make sure crossing warning system operates properly.

Disable entire crossing if islands are affected on both tracks (from Signal Instruction 7.2):

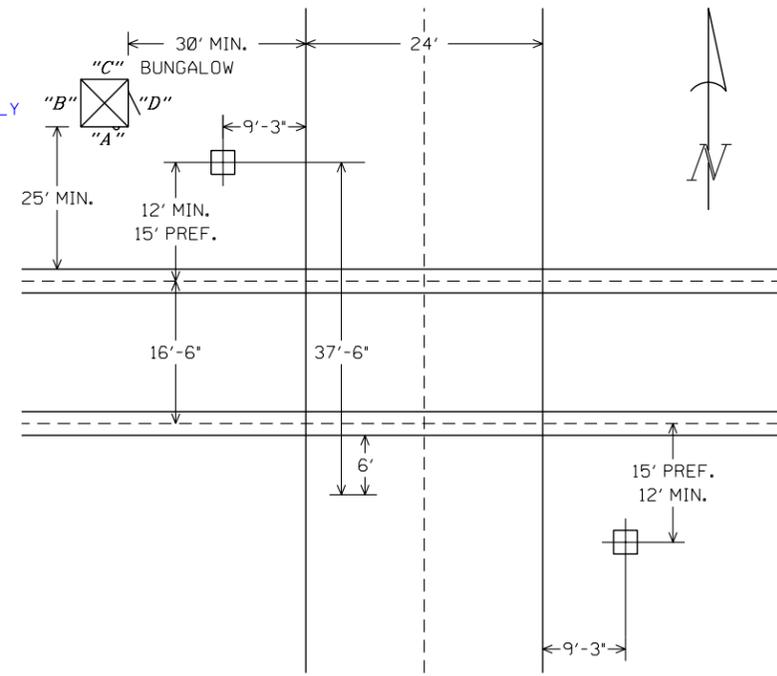
- a. Polarity must be observed to prevent damage.
- b. Jumper MB battery to the positive terminal (3E) on the XR relay.

Note: You have now energized the XR relay and crossing signals are now inoperative.

WHEN RESTORING SYSTEM, VERIFY THAT ALL SHUNTS, SIMULATED TRACKS (DONUTS) AND / OR TEST JUMPERS HAVE BEEN REMOVED AND ACCOUNTED FOR, AND CROSSING SIGNALS ARE TESTED FOR PROPER OPERATION.



FIELD VERIFY ALL DISTANCES AND CLEARANCE
ADJUST WARNING TIME ACCORDINGLY



NOTES:

EQUIPMENT IS DESIGNED FOR 20 SECONDS MINIMUM WARNING TIME AT 70 MPH.
 APPROACHES WERE LENGTHENED 1 SECOND(S) FOR WIDE OR ANGLED CROSSING (CT).
 APPROACHES WERE LENGTHENED 10 SECONDS FOR SPEED VARIANCE AND BALLAST CHANGES (BT).
 APPROACHES WERE LENGTHENED 4 SECONDS FOR EQUIPMENT RESPONSE TIME (ERT).
 ALL LAMPS TO BE LED
 GATE LENGTH SHOWN IS MEASURED FROM MAST C/L TO GATE TIP.

- NOTES:
- ⊗ -TEST TERMINAL
 - △ -EQUALIZER
 - ∟ -LINE ARRESTER
 - ⌊ -HEAVY DUTY ARRESTER
 - ⊕ -TWISTED WIRE
2 TURNS PER FOOT
 - -CONNECTION TO REC./RTU
- ALL WIRES #16 AWG UNLESS OTHERWISE NOTED

ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ.# 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
CROSSING CIRCUIT PLAN E. 25TH RD. RANSOM, IL		
LS 7000	MP 81.22	SH 01 OF 12

PROGRAM INFORMATION

PROGRAM VERSION 42.0 OR LATER

*=FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE HXP-3 INSTRUCTION MANUAL 100052-001 ADO & SUPPLEMENTS.

HXP-3R2 ADJUST SELECT ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	APPROACH LENGTH	3595'	3595'
2	WARNING TIME	31 SEC.	31 SEC.
3	LIA	*	*
4	TC	*	*
5	MD RESTART	*	*

NOTE:

BEFORE PROGRAMMING ANY PARAMETERS/OPTIONS FOR THE HXP GO TO 'OPTION 49' AND RESET ALL LOCAL PARAMETERS TO FACTORY DEFAULT VALUES. SEE HXP-3 MANUAL 100052-001 ADO PAGE 4-14.

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-ENA	*UP*	*UP*
2	TK FO	285 HZ	285 HZ
3	CW/MD	*C*	*C*
4	UNI-BI	*b* (BI)	*b* (BI)
5	NBS-C	* RX * FEET	* RX * FEET
6	CWEWT	DL (80 SEC.)	DL (80 SEC.)
7	LOS	DL (16 SEC.)	DL (16 SEC.)
8	IJ-LOS	DL (5 SEC.)	DL (5 SEC.)
9	BC	*	*
10	P-COMP	*	*
11	AX1	SEE AX ADJ.	SEE AX ADJ.
12	AX2	SEE AX ADJ.	SEE AX ADJ.
13	AX3	SEE AX ADJ.	SEE AX ADJ.
17	MDR-AX/OF-TK	0'	0'
	CJ-LOS	DL (0)	DL (0)
	PJ-DET	DL (15 SEC.)	DL (15 SEC.)
	PJ-RX	DL (15)	DL (15)
18	MD-TMR	DL (10 MIN.)	DL (10 MIN.)
19	MIN-WT	DL (0)	DL (0)
20	FS-RX	DL (0)	DL (0)
	FS-TM	DL (10 MIN.)	DL (10 MIN.)
21	POS-RX	DL (0)	DL (0)
	POS-TM	DL (0)	DL (0)
22	AR-RX	DL (0)	DL (0)
	AR-TM	DL (10 MIN.)	DL (10 MIN.)
47	ATO-RX	UP	UP
48	PF-ENA	*dn*	*dn*

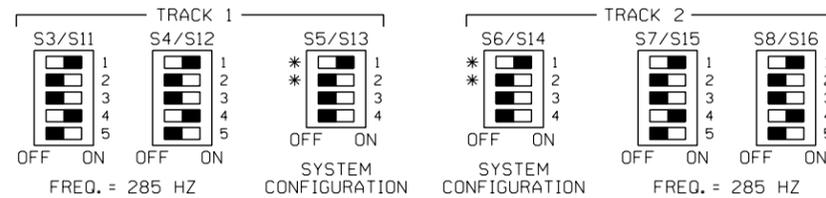
AX ADJUSTMENTS

NO.	ABBREVIATION	AX 1	AX 2	AX 3
1	TK-ASN	1	2	1&2
2	OF-TK1	0'	NA	0'
3	OF-TK2	NA	0'	0'
4	WT	31 SEC.	31 SEC.	31 SEC.
5	MD-RST	(0)	(0)	(0)
6	CW/MD	*C*	*C*	*C*
7	CJ-LOS	DL (0)	DL (0)	DL (0)
8	PJ-DET	DL (15 SEC.)	DL (15 SEC.)	DL (15 SEC.)
9	PJ-RX	DL (15)	DL (15)	DL (15)
10	POS-ST	*dn*	*dn*	*dn*

SWITCH INFORMATION

SWITCH	TRACK 1	TRACK 2
MASTER/SLAVE	MASTER	SLAVE
RSI FAULT JUMPER	0	0
RSI-LOS JUMPER	1	1
TLM W1 JUMPER	PINS 1-2	
TLM W2 JUMPER	PINS 1-2	
TLM W3 JUMPER	PINS 1-2	
MINUTE TIMEOUT	5 MIN	
CW/MD	CW	
STANDBY/AUTO/NORMAL	AUTO	

NOTES: DL= DEFAULT LEVEL
NA= NON APPLICABLE



NOTES: FOR S5/S13 AND S6/S14

- *1.) ACTUATOR 1 SELECTS NORMAL APPROACH WHEN SET TO ON POSITION.
- *2.) WITH ACTUATOR 1 IN OFF POSITION ACTUATOR 2 SELECTS SHORT APPROACH WHEN OFF AND SELECTS VERY SHORT WHEN ON.
- 3.) ACTUATOR 3 OFF SELECTS HXP OPERATION.
- 4.) ACTUATOR 4 OFF = NORMAL MUX TABLE
ACTUATOR 4 ON = ALTERNATE MUX TABLE

FIELD VERIFY ALL DISTANCES AND ADJUST UNIT ACCORDINGLY

ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

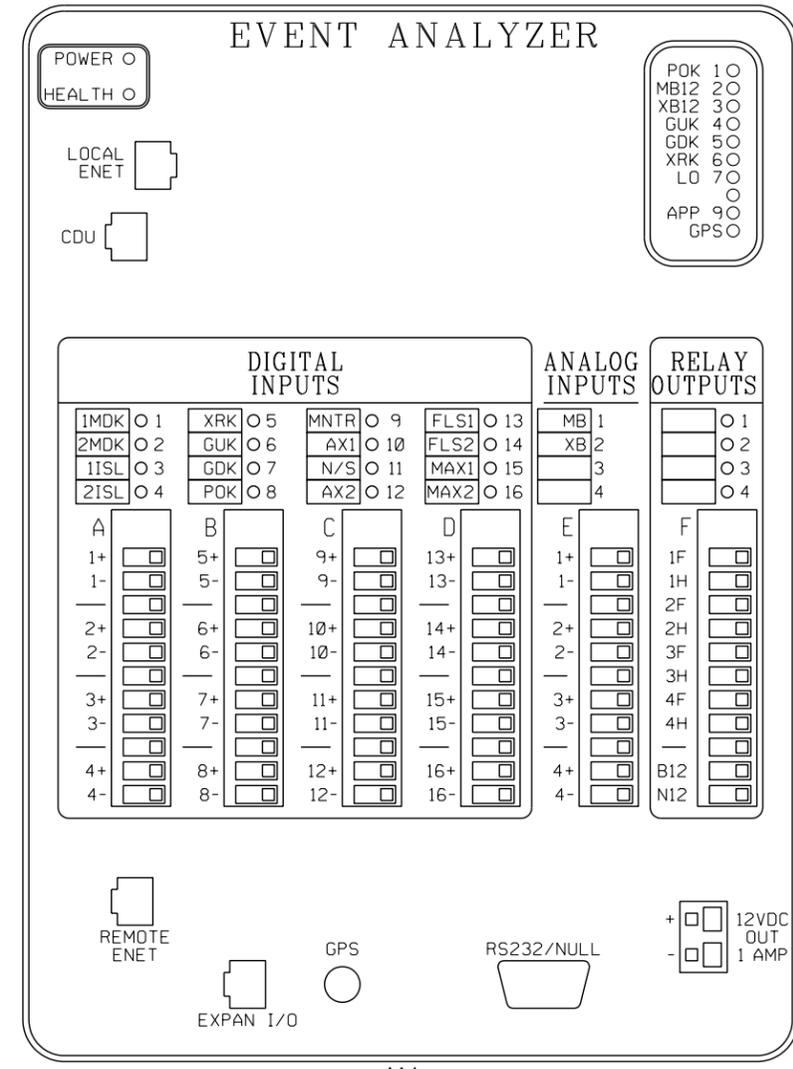
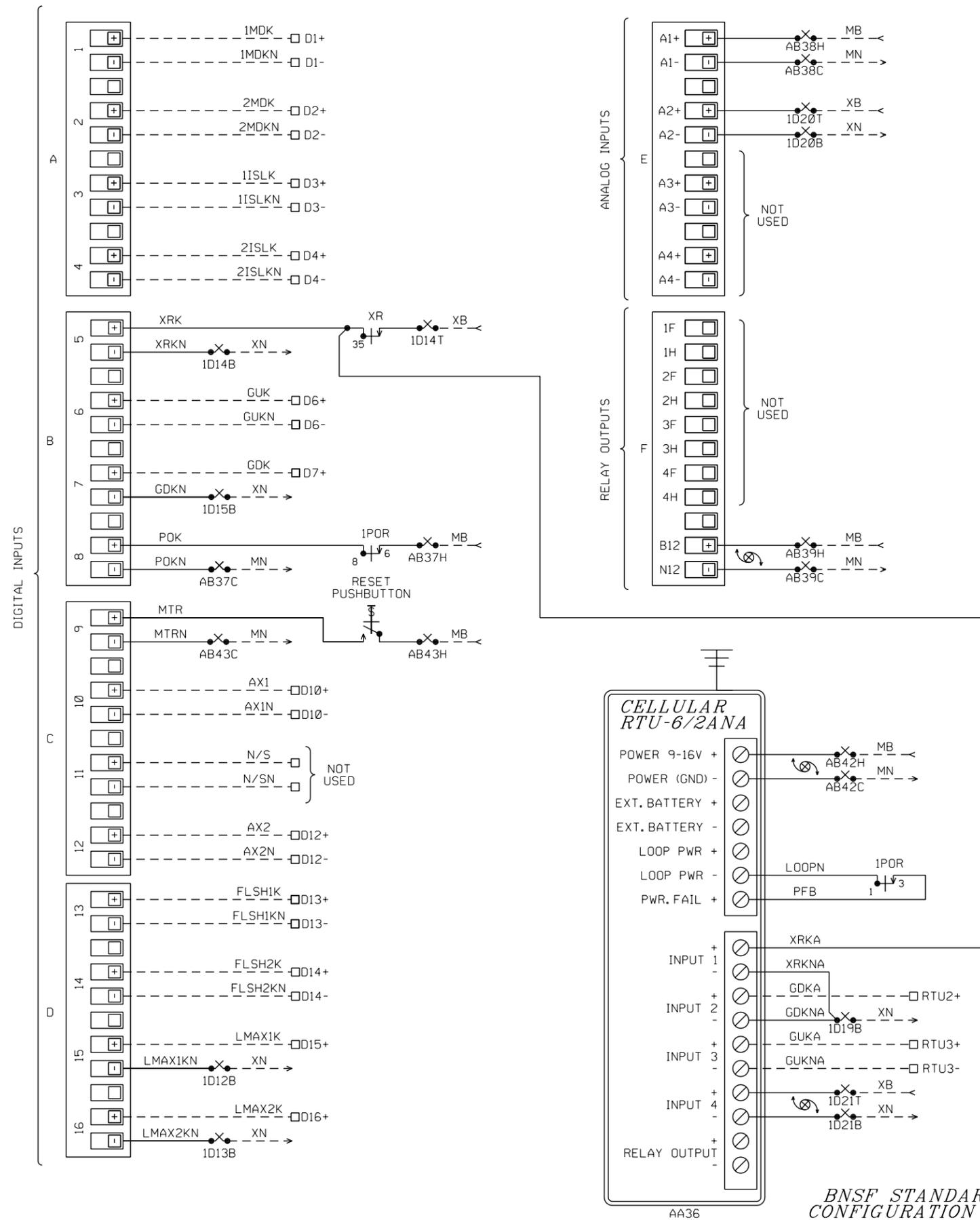
BURLINGTON NORTHERN SANTA FE RAILWAY

HXP-3R2 PROGRAM INFORMATION
E. 25TH RD. RANSOM, IL

LS 7000

MP 81.22

SH 03 OF 12



BNSF 1.0 APPLICATION CONFIGURATION INFORMATION DIGITAL INPUTS

INPUT NO.	INPUT DESCRIPTIVE NAME	ID
1	MOTION DETECTOR #1	1MDK
2	MOTION DETECTOR #2	2MDK
3	ISLAND #1	1ISLK
4	ISLAND #2	2ISLK
5	CROSSING RELAY	XRK
6	GATES UP	GUK
7	GATES DOWN	GDK
8	AC POWER	POK
9	MAINTAINER SWITCH	MTR
10	AUX INPUT 1	AX1
11	NORMAL/STANDBY	N/S
12	AUX INPUT 2	AX2
13	FLASHING LIGHTS 1	FLSH1
14	FLASHING LIGHTS 2	FLSH2
15	LOD MAX INPUT 1	LMAX1
16	LOD MAX INPUT 2	LMAX2

BNSF STANDARD CONFIGURATION 32

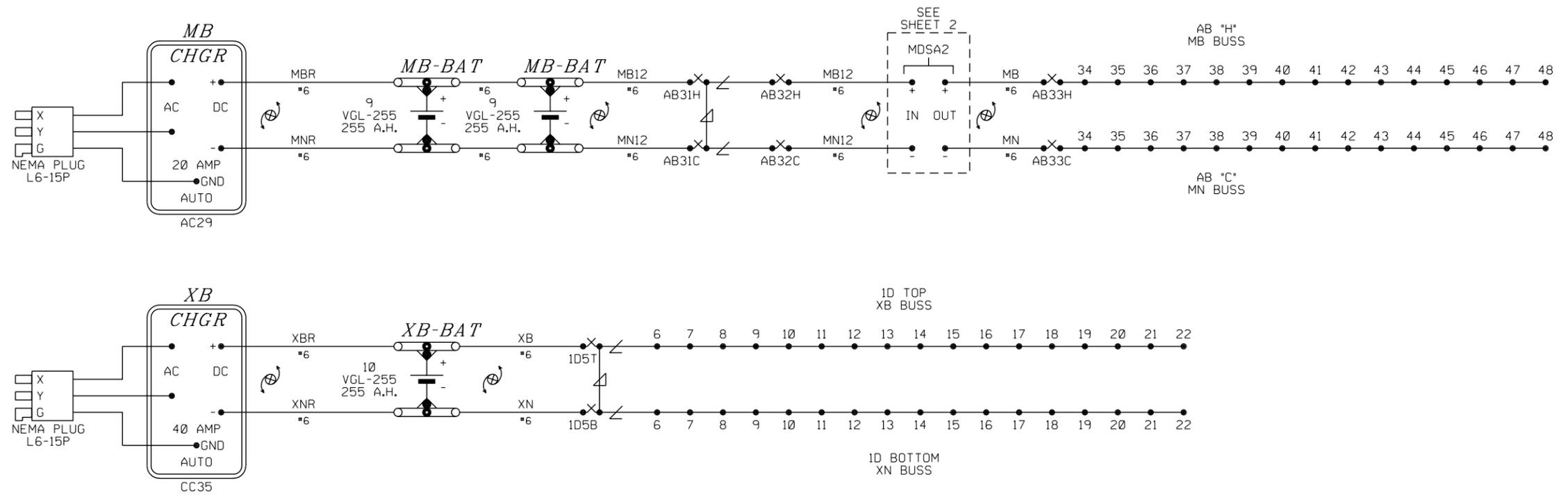
ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

BURLINGTON NORTHERN SANTA FE RAILWAY

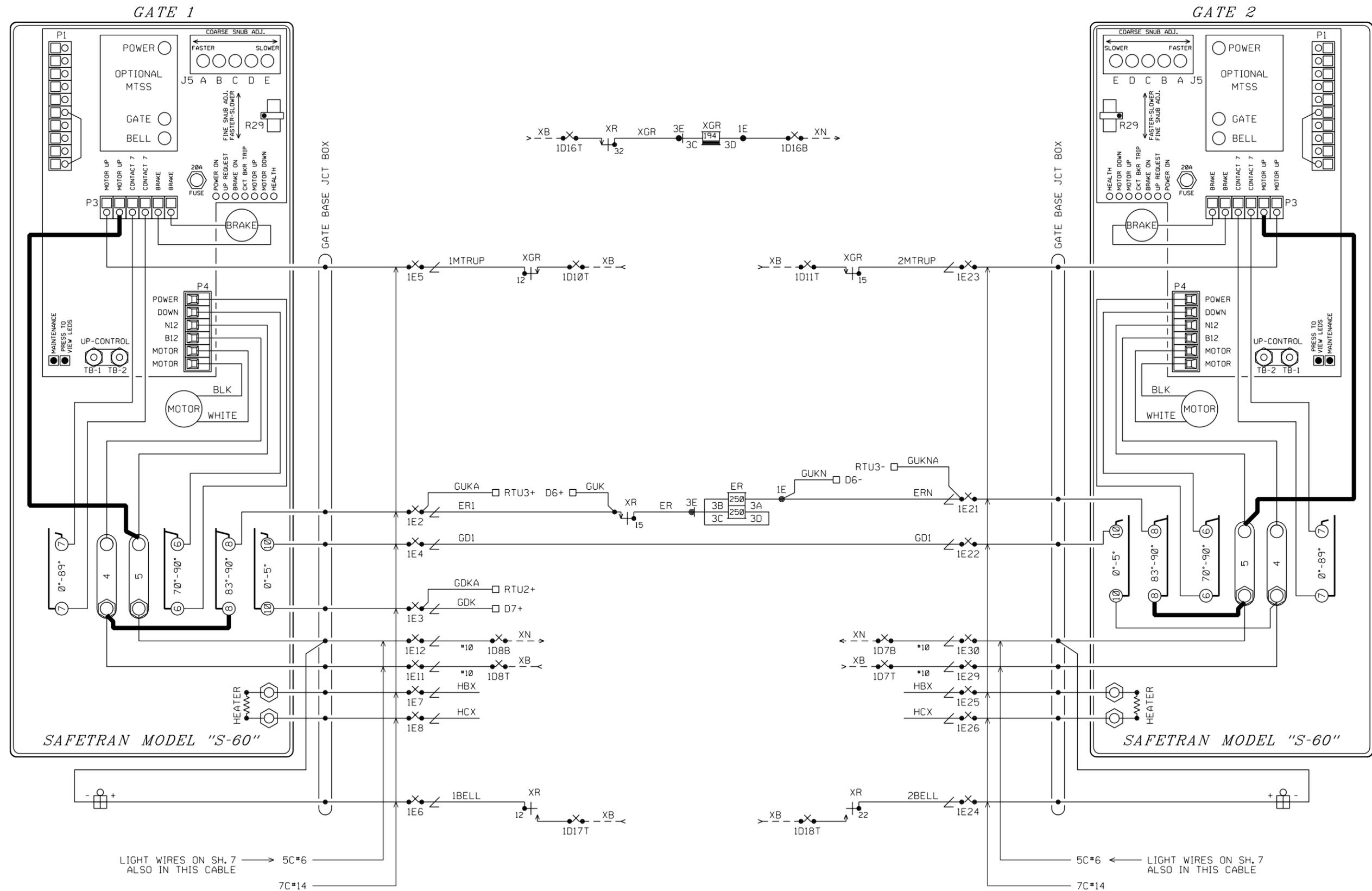
RECORDER CIRCUITS
E. 25TH RD. RANSOM, IL

LS 7000 MP 81.22 SH 04 OF 12



ALL NEW
 DESIGNED 06-30-11
 INSTALL NEW XING
 RSS/JML SEQ. 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
BATTERY CIRCUITS		
E. 25TH RD.		RANSOM, IL
LS 7000	MP 81.22	SH 05 OF 12



- NOTES:
1. ADD JUMPERS IN GATE SHOWN IN BOLD.
 2. MAXIMUM WIRE SIZE FOR TERMINAL 5 TO MOTOR UP CONTROL (-) IS #12 AWG.

ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ.# 46280

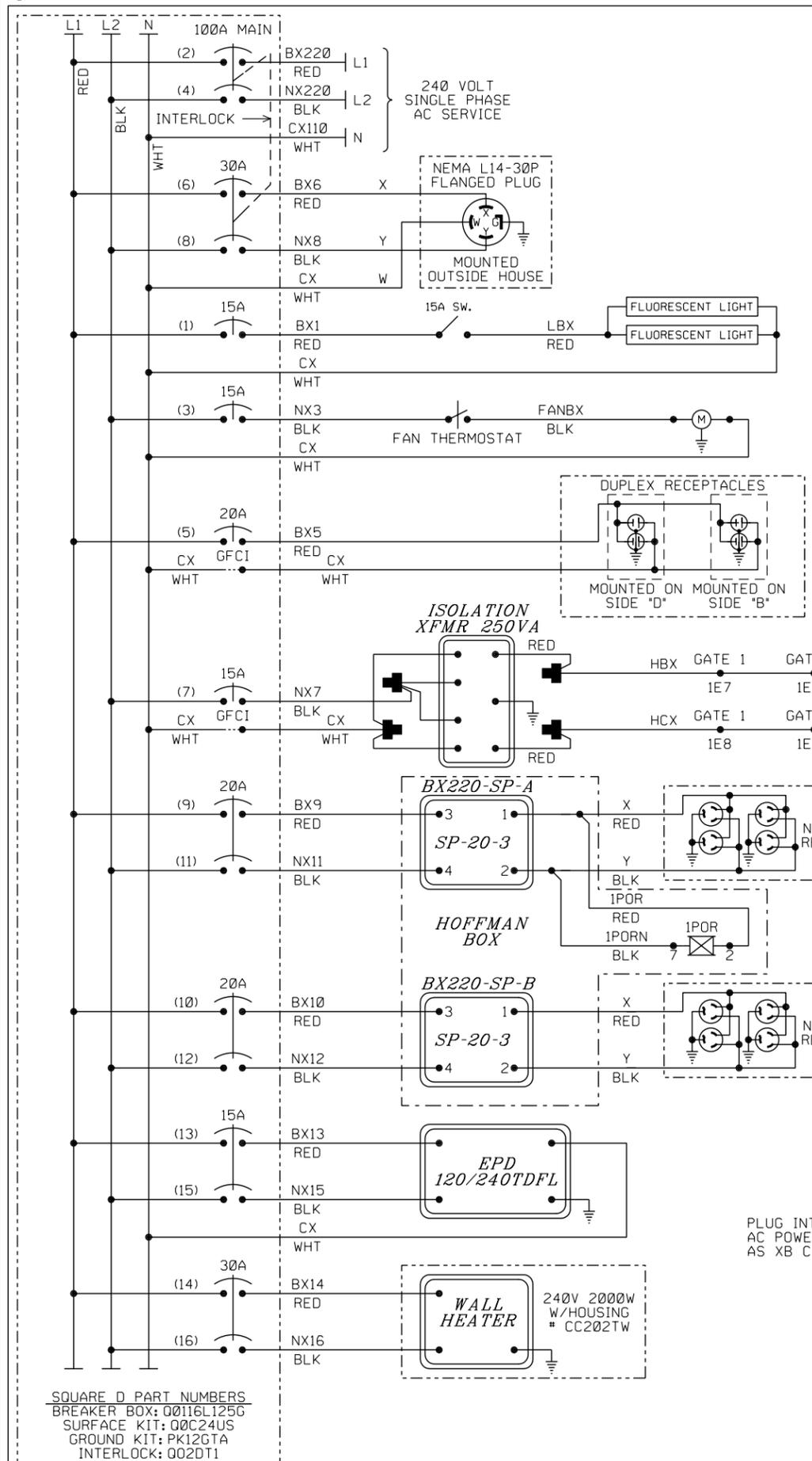
BURLINGTON NORTHERN SANTA FE RAILWAY

GATE CIRCUIT PLAN
E. 25TH RD. RANSOM, IL

LS 7000

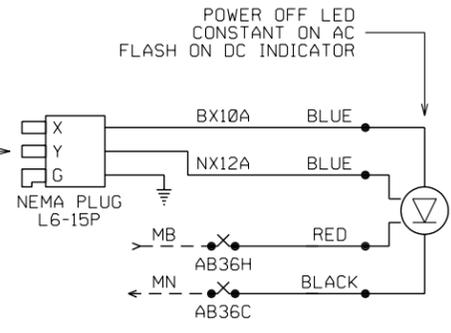
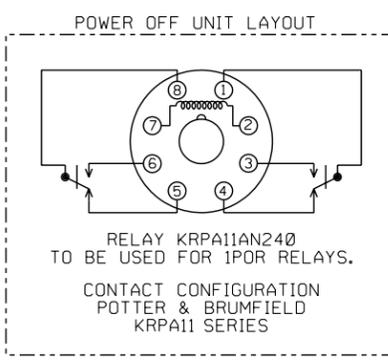
MP 81.22

SH 06 OF 12

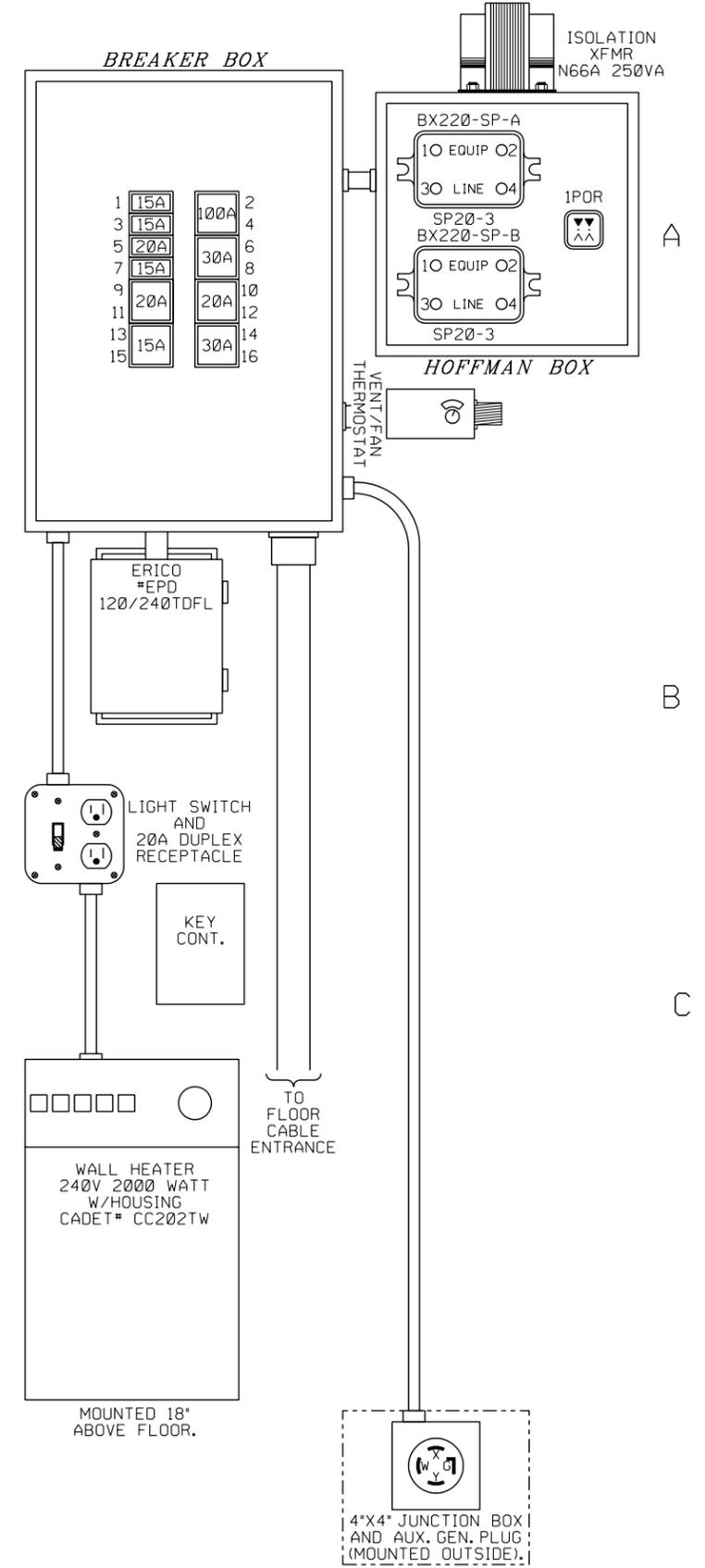


NOTES:

- USE THE FOLLOWING COLOR CODE:
 GRN - GREEN - SAFETY EQUIPMENT GROUND
 WHT - WHITE - CX110 (NEUTRAL)
 BLK - BLACK - NX220 (L2)
 RED - RED - BX220 (L1)
 EXCEPTIONS TO THE ABOVE COLOR CODE ARE THE PRE-WIRED, SEALED ARRESTOR UNITS MOUNTED ON THE BREAKER BOX WHICH HAVE TWO BLACK AND ONE WHITE WIRE EACH.
- = WIRE NUT
- MINIMUM WIRE SIZE
 10 AMP - NO. 14 AWG THHN OR THWN SOLID
 20 AMP - NO. 12 AWG THHN OR THWN SOLID
 30 AMP - NO. 10 AWG THHN OR THWN SOLID
- GROUND FAULT INTERRUPT (GFCI) MUST BE USED ON ALL CIRCUITS SERVING CONVENIENCE OUTLETS AND ANY EQUIPMENT OUTSIDE THE BUNGALOW. RECEPTACLE MOUNTED GFCI MAY BE USED INSTEAD OF BREAKER TYPE.
- ISOLATION TRANSFORMER IF INSTALLED, JUMPER WIRES BLK/YEL TO BLK/GRN WITH CX (WHT) OLD JUMPER WIRES BLK TO BLK/RED WITH NX7 (BLK) JUMPER WIRES YEL TO BRN WITH CX (WHT) NEW JUMPER WIRES BLK TO BLU WITH NX7 (BLK)
- ALL GROUND WIRES RUN TO BREAKER BOX GROUND BUSS



SIDE D

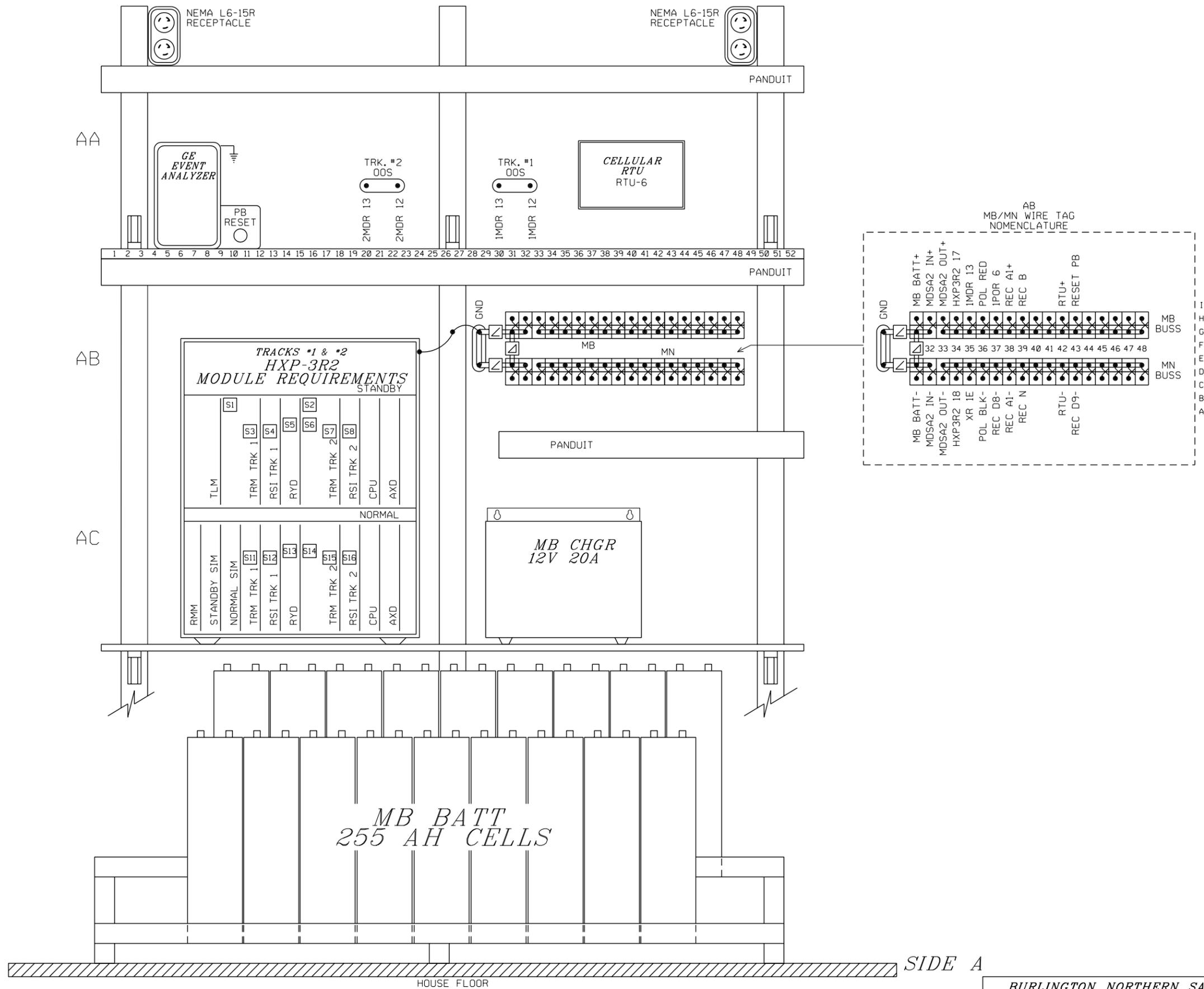


BURLINGTON NORTHERN SANTA FE RAILWAY

POWER DISTRIBUTION
E. 25TH RD. RANSOM, IL

ALL NEW
DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

LS 7000 MP 81.22 SH 08 OF 12



SIDE A

BURLINGTON NORTHERN SANTA FE RAILWAY

SIDE "A" SHELF LAYOUT
E. 25TH RD. RANSOM, IL

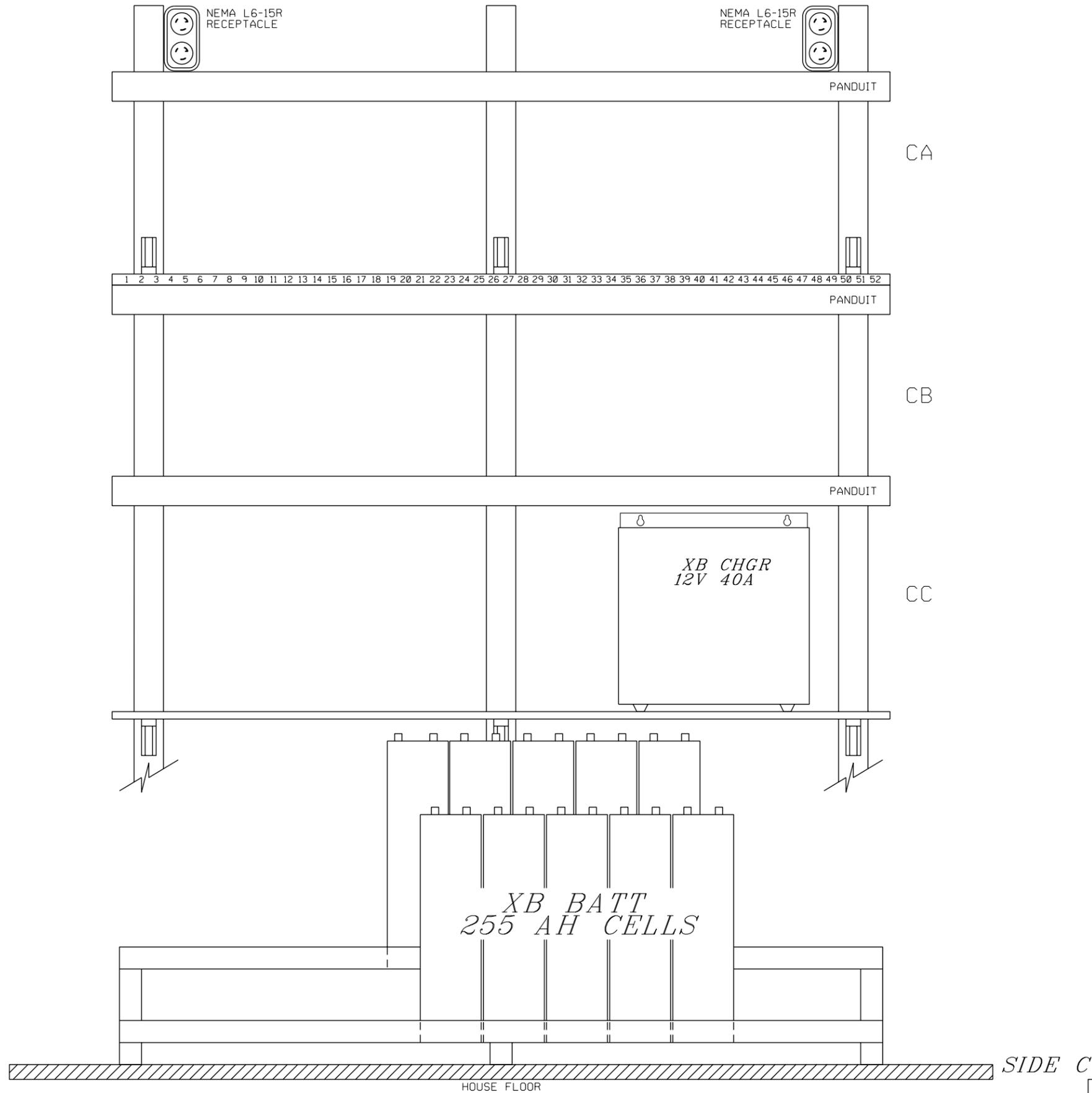
ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

LS 7000

MP 81.22

SH 10 OF 12



BURLINGTON NORTHERN SANTA FE RAILWAY

SIDE "C" SHELF LAYOUT
E. 25TH RD. RANSOM, IL

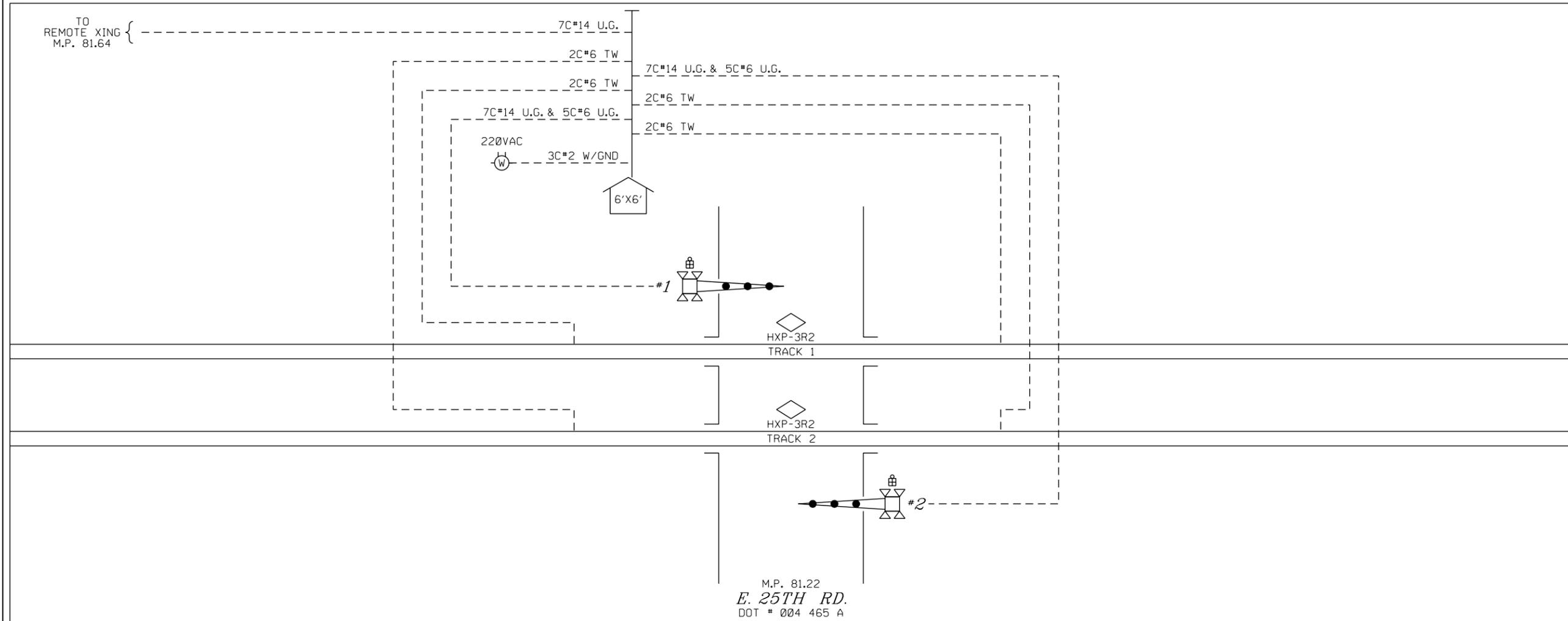
ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ.# 46280

LS 7000

MP 81.22

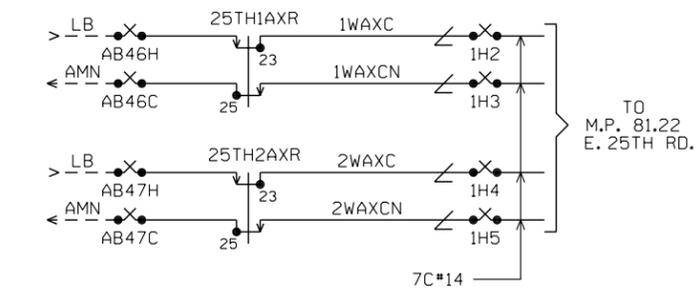
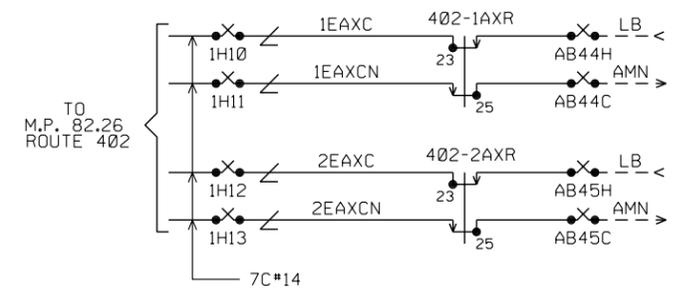
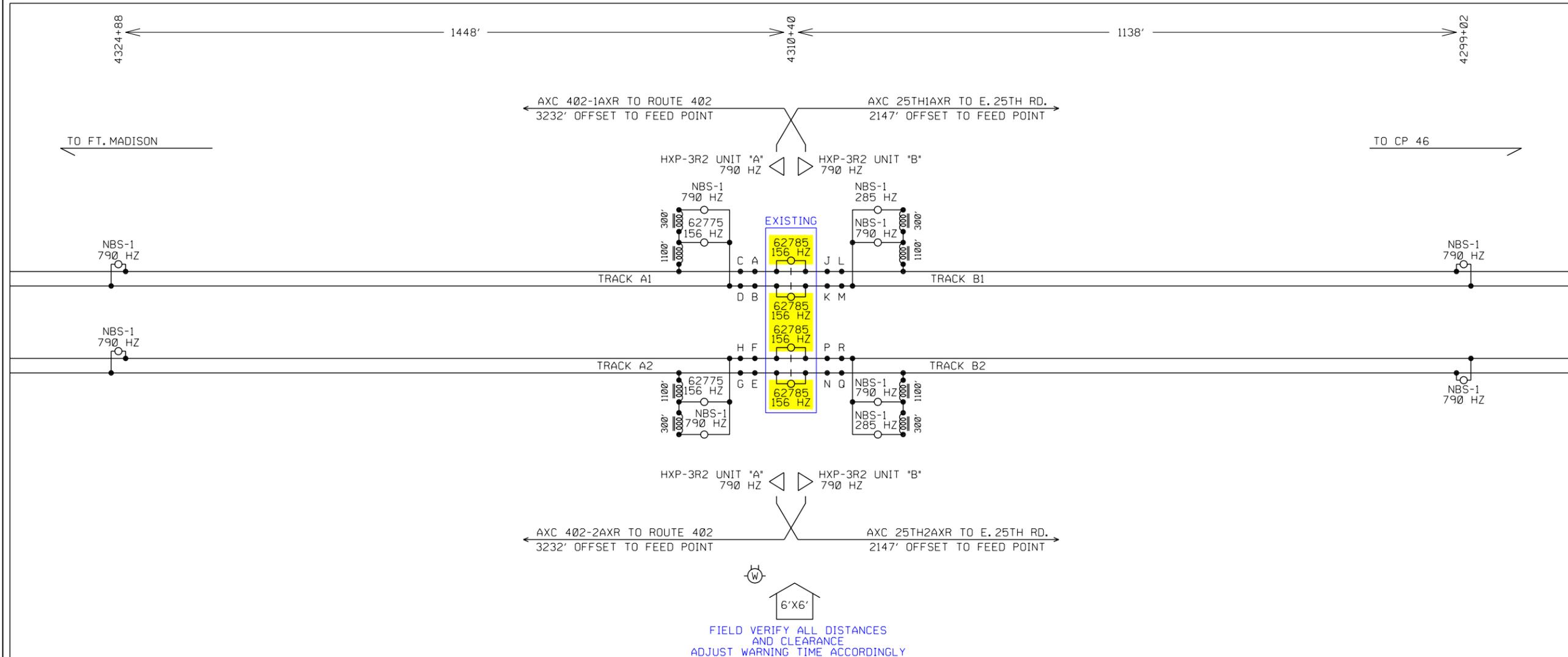
SH 11 OF 12



ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ.# 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
CABLE LAYOUT		
E. 25TH RD.		RANSOM, IL
LS 7000	MP 81.22	SH 12 OF 12



NOTES:

EQUIPMENT IS DESIGNED FOR 20 SECONDS MINIMUM WARNING TIME AT 70 MPH.
 APPROACHES WERE LENGTHENED 1 SECOND(S) FOR WIDE OR ANGLED DOWNSTREAM CROSSING (CT).
 APPROACHES WERE LENGTHENED 10 SECONDS FOR SPEED VARIANCE AND BALLAST CHANGES (BT).
 APPROACHES WERE LENGTHENED 4 SECONDS FOR EQUIPMENT RESPONSE TIME (ERT).

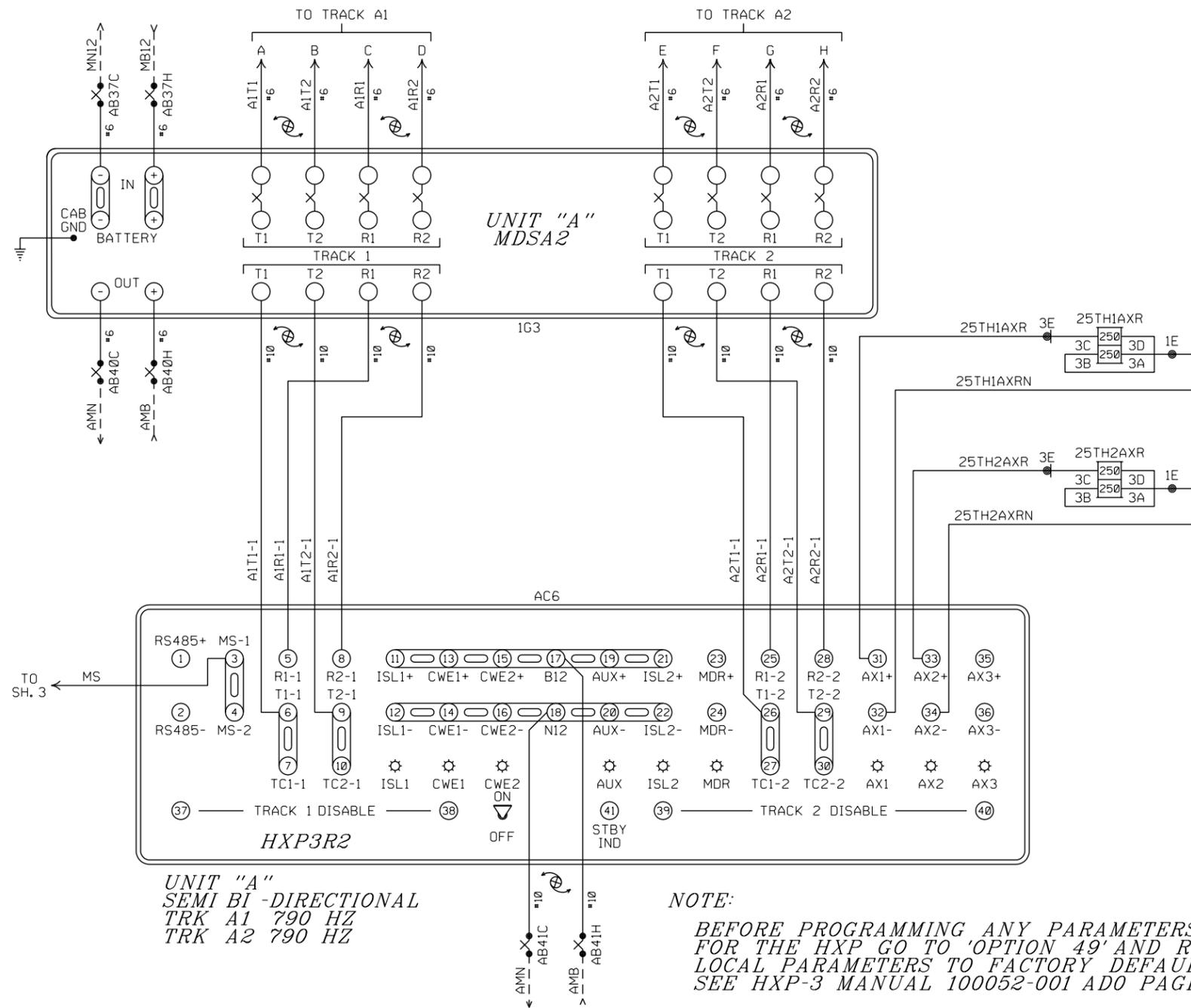
NOTES:

- ⊗ -TEST TERMINAL
 - △ -EQUALIZER
 - ∟ -LINE ARRESTER
 - ⌊ -HEAVY DUTY ARRESTER
 - ⊕ -TWISTED WIRE
2 TURNS PER FOOT
- ALL WIRES #16 AWG UNLESS OTHERWISE NOTED

ALL NEW

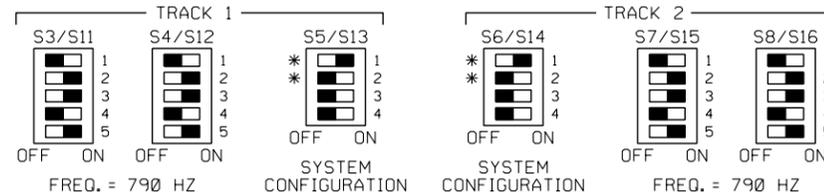
DESIGNED 06-30-11
 INSTALL NEW XING
 RSS/JML SEQ. 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
REMOTE CROSSING CIRCUIT PLAN		
REMOTE XING		RANSOM, IL
LS 7000	MP 81.64	SH 01 OF 09



UNIT "A"
SEMI BI-DIRECTIONAL
TRK A1 790 HZ
TRK A2 790 HZ

NOTE:
BEFORE PROGRAMMING ANY PARAMETERS/OPTIONS
FOR THE HXP GO TO 'OPTION 49' AND RESET ALL
LOCAL PARAMETERS TO FACTORY DEFAULT VALUES.
SEE HXP-3 MANUAL 100052-001 ADO PAGE 4-14.



- NOTES: FOR S5/S13 AND S6/S14
- *1.) ACTUATOR 1 SELECTS NORMAL APPROACH WHEN SET TO ON POSITION.
 - *2.) WITH ACTUATOR 1 IN OFF POSITION ACTUATOR 2 SELECTS SHORT APPROACH WHEN OFF AND SELECTS VERY SHORT WHEN ON.
 - 3.) ACTUATOR 3 OFF SELECTS HXP OPERATION.
 - 4.) ACTUATOR 4 OFF = NORMAL MUX TABLE
ACTUATOR 4 ON = ALTERNATE MUX TABLE

PROGRAM INFORMATION
PROGRAM VERSION 42.0 OR LATER
*-FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE
HXP-3 INSTRUCTION MANUAL 100052-001 ADO & SUPPLEMENTS.
HXP-3R2 ADJUST SELECT ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	APPROACH LENGTH	1448'	1448'
2	WARNING TIME	31 SEC.	31 SEC.
3	LIA	*	*
4	TC	*	*
5	MD RESTART	*	*

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-ENA	*UP*	*UP*
2	TK FO	790 HZ	790 HZ
3	CW/MD	*C*	*C*
4	UNI-BI	*b* (BI)	*b* (BI)
5	NBS-C	* FEET	* FEET
6	CWEWT	DL (80 SEC.)	DL (80 SEC.)
7	LOS	DL (16 SEC.)	DL (16 SEC.)
8	IJ-LOS	DL (5 SEC.)	DL (5 SEC.)
9	BC	*	*
10	P-COMP	*	*
11	AX1	SEE AX ADJ.	SEE AX ADJ.
12	AX2	SEE AX ADJ.	SEE AX ADJ.
13	AX3	SEE AX ADJ.	SEE AX ADJ.
17	MDR-AX/OF-TK	0'	0'
	CJ-LOS	DL (0)	DL (0)
	PJ-DET	DL (15 SEC.)	DL (15 SEC.)
	PJ-RX	DL (15)	DL (15)
18	MD-TMR	DL (10 MIN.)	DL (10 MIN.)
19	MIN-WT	DL (0)	DL (0)
20	FS-RX	DL (0)	DL (0)
	FS-TM	DL (10 MIN.)	DL (10 MIN.)
21	POS-RX	DL (0)	DL (0)
	POS-TM	DL (0)	DL (0)
22	AR-RX	DL (0)	DL (0)
	AR-TM	DL (10 MIN.)	DL (10 MIN.)
47	ATO-RX	UP	UP
48	PF-ENA	*dn*	*dn*

AX ADJUSTMENTS

NO.	ABBREVIATION	AX 1	AX 2	AX 3
1	TK-ASN	1	2	1&2
2	OF-TK1	2147'	NA	2147'
3	OF-TK2	NA	2147'	2147'
4	WT	31 SEC.	31 SEC.	31 SEC.
5	MD-RST	(0)	(0)	(0)
6	CW/MD	*C*	*C*	*C*
7	CJ-LOS	DL (0)	DL (0)	DL (0)
8	PJ-DET	DL (15 SEC.)	DL (15 SEC.)	DL (15 SEC.)
9	PJ-RX	DL (15)	DL (15)	DL (15)
10	POS-ST	*dn*	*dn*	*dn*

SWITCH INFORMATION

SWITCH	TRACK 1	TRACK 2
MASTER/SLAVE	MASTER	SLAVE
RSI FAULT JUMPER	0	0
RSI-LOS JUMPER	1	1
TLM W1 JUMPER	PINS 1-2	
TLM W2 JUMPER	PINS 2-3	
TLM W3 JUMPER	PINS 2-3	
MINUTE TIMEOUT	5 MIN	
CW/MD	CW	
STANDBY/AUTO/NORMAL	AUTO	

NOTES: DL= DEFAULT LEVEL
NA= NON APPLICABLE

**FIELD VERIFY ALL DISTANCES
AND ADJUST UNIT ACCORDINGLY**

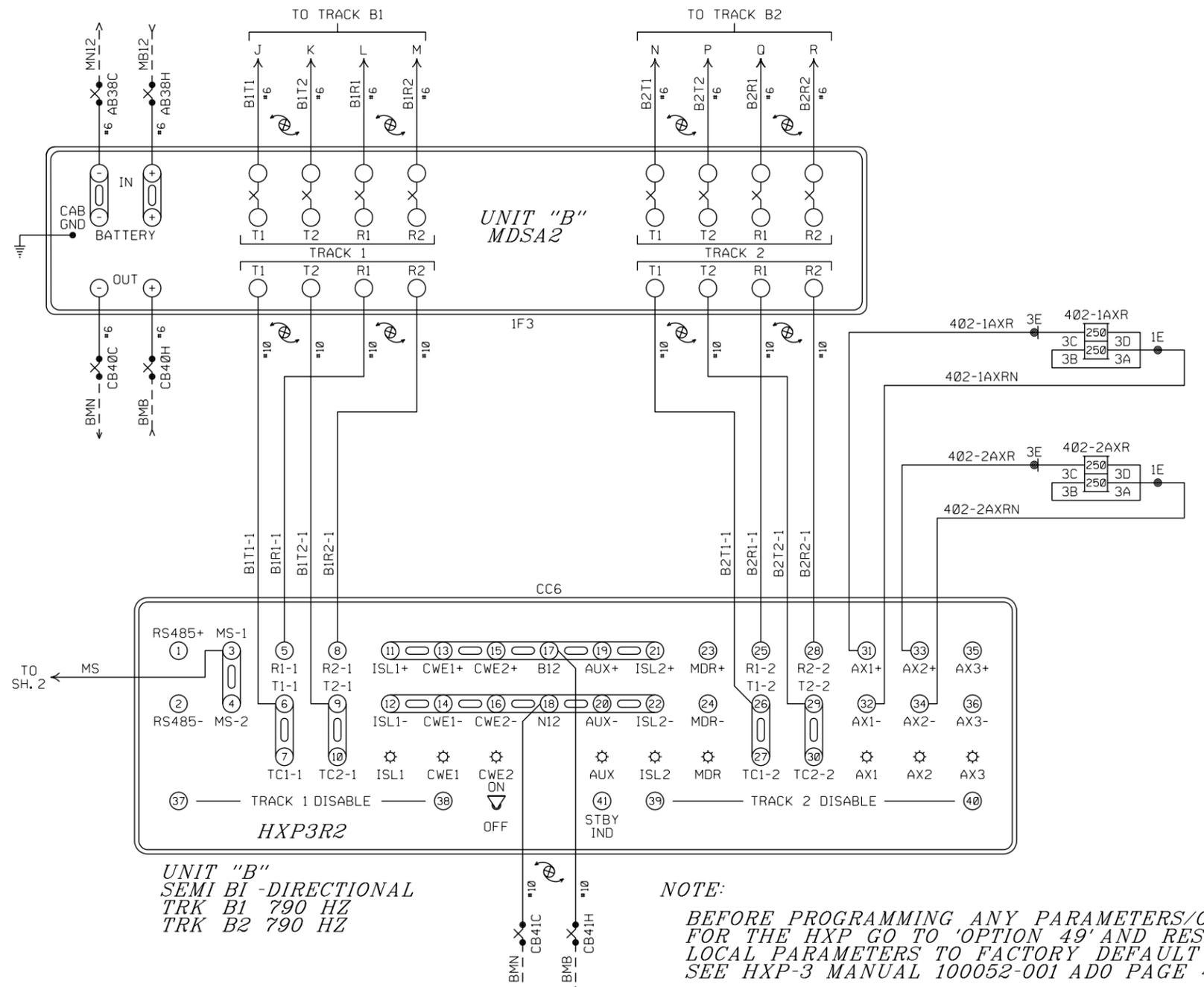
BURLINGTON NORTHERN SANTA FE RAILWAY

HXP-3R2 TRACK CIRCUITS
REMOTE XING RANSOM, IL

ALL NEW

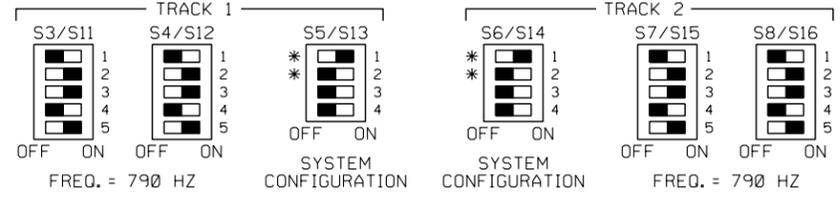
DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

LS 7000 MP 81.64 SH 02 OF 09



UNIT "B"
SEMI BI-DIRECTIONAL
TRK B1 790 HZ
TRK B2 790 HZ

NOTE:
BEFORE PROGRAMMING ANY PARAMETERS/OPTIONS
FOR THE HXP GO TO 'OPTION 49' AND RESET ALL
LOCAL PARAMETERS TO FACTORY DEFAULT VALUES.
SEE HXP-3 MANUAL 100052-001 ADO PAGE 4-14.



- NOTES: FOR S5/S13 AND S6/S14
- *1.) ACTUATOR 1 SELECTS NORMAL APPROACH WHEN SET TO ON POSITION.
 - *2.) WITH ACTUATOR 1 IN OFF POSITION ACTUATOR 2 SELECTS SHORT APPROACH WHEN OFF AND SELECTS VERY SHORT WHEN ON.
 - 3.) ACTUATOR 3 OFF SELECTS HXP OPERATION.
 - 4.) ACTUATOR 4 OFF = NORMAL MUX TABLE
ACTUATOR 4 ON = ALTERNATE MUX TABLE

PROGRAM INFORMATION

PROGRAM VERSION 42.0 OR LATER
*-FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE
HXP-3 INSTRUCTION MANUAL 100052-001 ADO & SUPPLEMENTS.
HXP-3R2 ADJUST SELECT ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	APPROACH LENGTH	1138'	1138'
2	WARNING TIME	31 SEC.	31 SEC.
3	LIA	*	*
4	TC	*	*
5	MD RESTART	*	*

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-ENA	*UP*	*UP*
2	TK FO	790 HZ	790 HZ
3	CW/MD	*C*	*C*
4	UNI-BI	*b* (BI)	*b* (BI)
5	NBS-C	* FEET	* FEET
6	CWEWT	DL (80 SEC.)	DL (80 SEC.)
7	LOS	DL (16 SEC.)	DL (16 SEC.)
8	IJ-LOS	DL (5 SEC.)	DL (5 SEC.)
9	BC	*	*
10	P-COMP	*	*
11	AX1	SEE AX ADJ.	SEE AX ADJ.
12	AX2	SEE AX ADJ.	SEE AX ADJ.
13	AX3	SEE AX ADJ.	SEE AX ADJ.
17	MDR-AX/OF-TK	0'	0'
	CJ-LOS	DL (0)	DL (0)
	PJ-DET	DL (15 SEC.)	DL (15 SEC.)
	PJ-RX	DL (15)	DL (15)
18	MD-TMR	DL (10 MIN.)	DL (10 MIN.)
19	MIN-WT	DL (0)	DL (0)
20	FS-RX	DL (0)	DL (0)
	FS-TM	DL (10 MIN.)	DL (10 MIN.)
21	POS-RX	DL (0)	DL (0)
	POS-TM	DL (0)	DL (0)
22	AR-RX	DL (0)	DL (0)
	AR-TM	DL (10 MIN.)	DL (10 MIN.)
47	ATO-RX	UP	UP
48	PF-ENA	*dn*	*dn*

AX ADJUSTMENTS

NO.	ABBREVIATION	AX 1	AX 2	AX 3
1	TK-ASN	1	2	1&2
2	OF-TK1	3232'	NA	3232'
3	OF-TK2	NA	3232'	3232'
4	WT	31 SEC.	31 SEC.	31 SEC.
5	MD-RST	(0)	(0)	(0)
6	CW/MD	*C*	*C*	*C*
7	CJ-LOS	DL (0)	DL (0)	DL (0)
8	PJ-DET	DL (15 SEC.)	DL (15 SEC.)	DL (15 SEC.)
9	PJ-RX	DL (15)	DL (15)	DL (15)
10	POS-ST	*dn*	*dn*	*dn*

SWITCH INFORMATION

SWITCH	TRACK 1	TRACK 2
MASTER/SLAVE	SLAVE	SLAVE
RSI FAULT JUMPER	0	0
RSI-LOS JUMPER	1	1
TLM W1 JUMPER	PINS 1-2	
TLM W2 JUMPER	PINS 2-3	
TLM W3 JUMPER	PINS 2-3	
MINUTE TIMEOUT	5 MIN	
CW/MD	CW	
STANDBY/AUTO/NORMAL	AUTO	

NOTES: DL= DEFAULT LEVEL
NA= NON APPLICABLE

FIELD VERIFY ALL DISTANCES AND ADJUST UNIT ACCORDINGLY

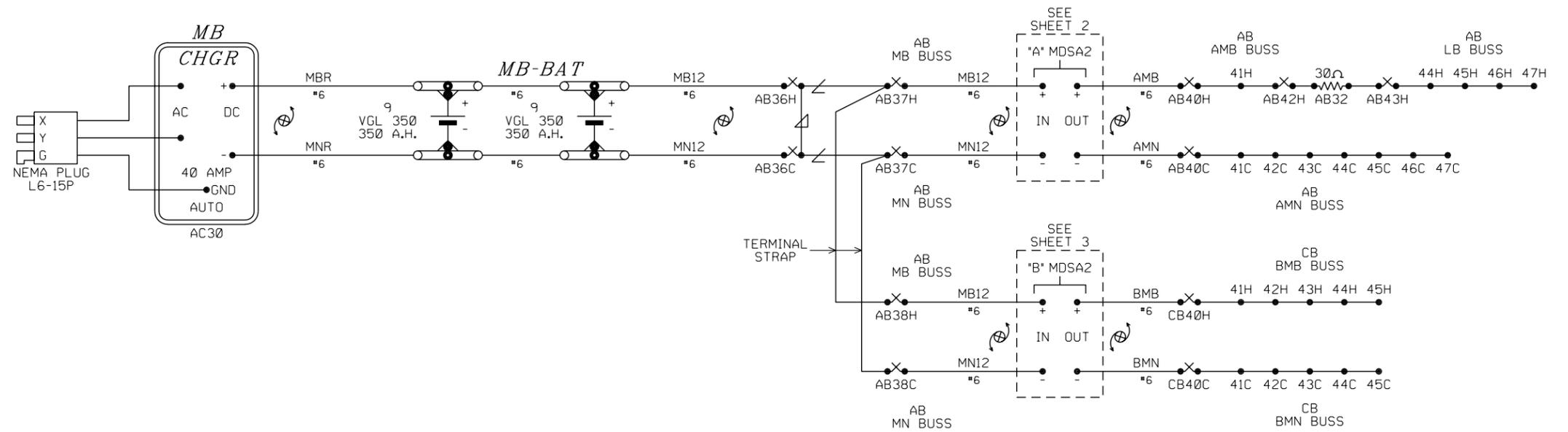
BURLINGTON NORTHERN SANTA FE RAILWAY

HXP-3R2 TRACK CIRCUITS
REMOTE XING RANSOM, IL

ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

LS 7000 MP 81.64 SH 03 OF 09

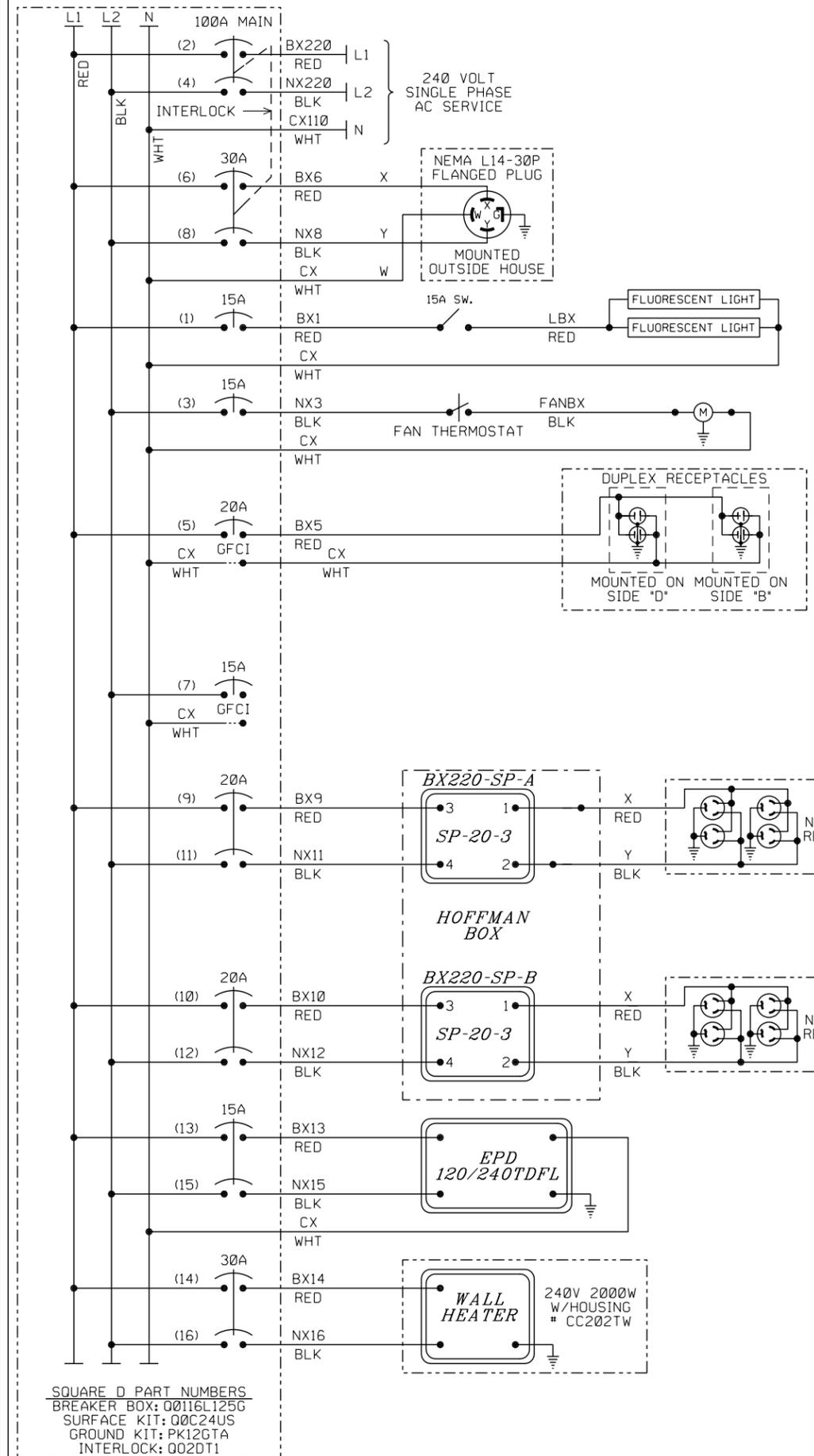


ALL NEW

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INSTALL NEW XING
RSS/JML SEQ.# 46280

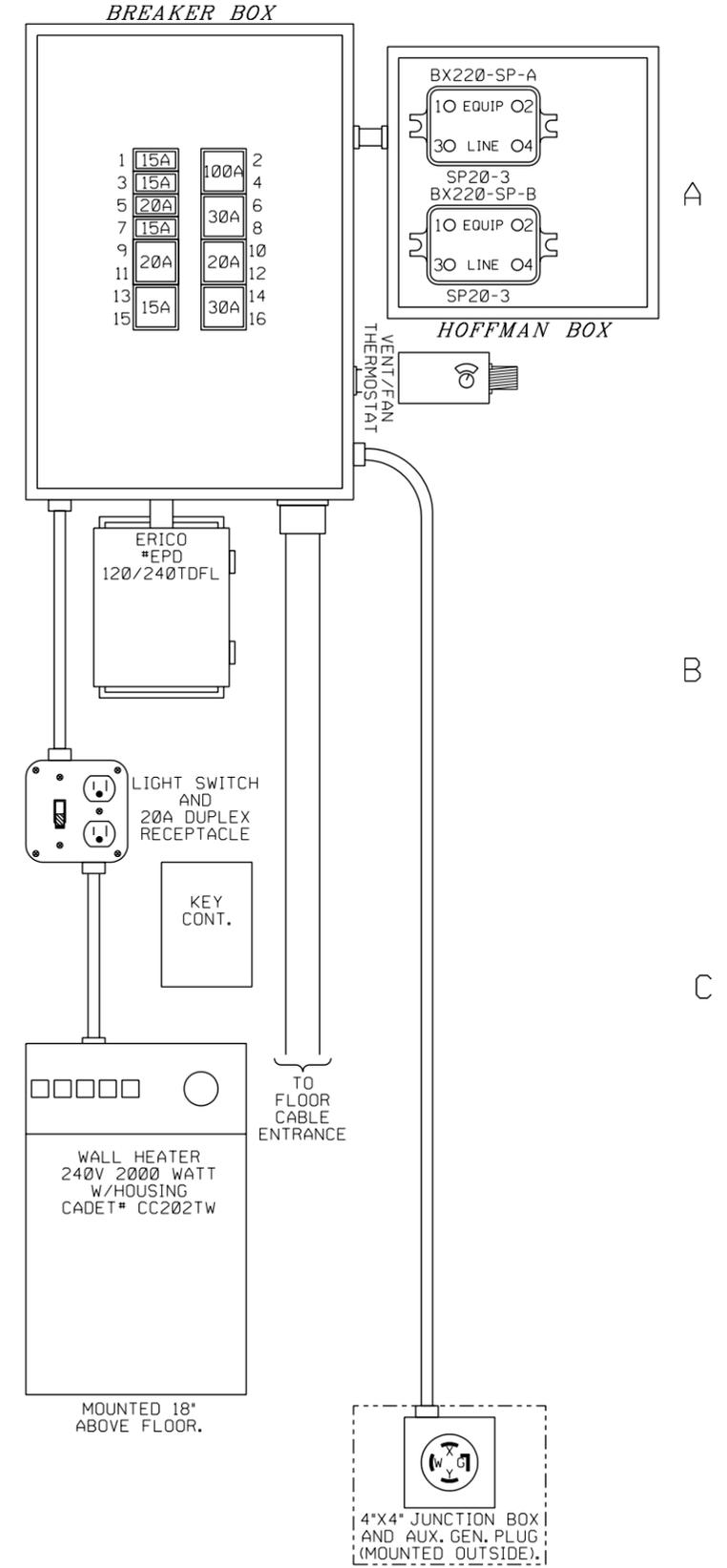
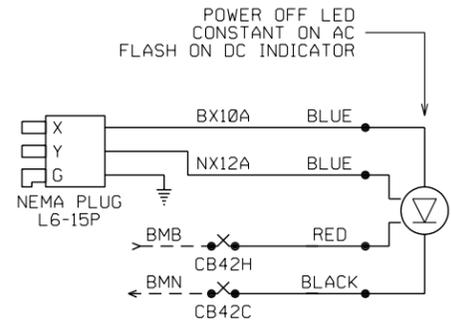
<i>BURLINGTON NORTHERN SANTA FE RAILWAY</i>		
BATTERY CIRCUITS		
REMOTE XING	RANSOM, IL	
LS 7000	MP 81.64	SH 04 OF 09

SIDE D



- NOTES:
- USE THE FOLLOWING COLOR CODE:
 GRN - GREEN - SAFETY EQUIPMENT GROUND
 WHT - WHITE - CX110 (NEUTRAL)
 BLK - BLACK - NX220 (L2)
 RED - RED - BX220 (L1)
 EXCEPTIONS TO THE ABOVE COLOR CODE ARE THE PRE-WIRED, SEALED ARRESTOR UNITS MOUNTED ON THE BREAKER BOX WHICH HAVE TWO BLACK AND ONE WHITE WIRE EACH.
 - = WIRE NUT
 - MINIMUM WIRE SIZE
 10 AMP - NO. 14 AWG THHN OR THWN SOLID
 20 AMP - NO. 12 AWG THHN OR THWN SOLID
 30 AMP - NO. 10 AWG THHN OR THWN SOLID
 - GROUND FAULT INTERRUPT (GFCI) MUST BE USED ON ALL CIRCUITS SERVING CONVENIENCE OUTLETS AND ANY EQUIPMENT OUTSIDE THE BUNGALOW. RECEPTACLE MOUNTED GFCI MAY BE USED INSTEAD OF BREAKER TYPE.
 ISOLATION TRANSFORMER IF INSTALLED, JUMPER WIRES BLK/YEL TO BLK/GRN WITH CX (WHT) OLD JUMPER WIRES BLK TO BLK/RED WITH NX7 (BLK) JUMPER WIRES YEL TO BRN WITH CX (WHT) NEW JUMPER WIRES BLK TO BLU WITH NX7 (BLK)
 - ALL GROUND WIRES RUN TO BREAKER BOX GROUND BUSS

SQUARE D PART NUMBERS
 BREAKER BOX: Q0116L125G
 SURFACE KIT: Q0C24US
 GROUND KIT: PK12GT1
 INTERLOCK: Q02DT1



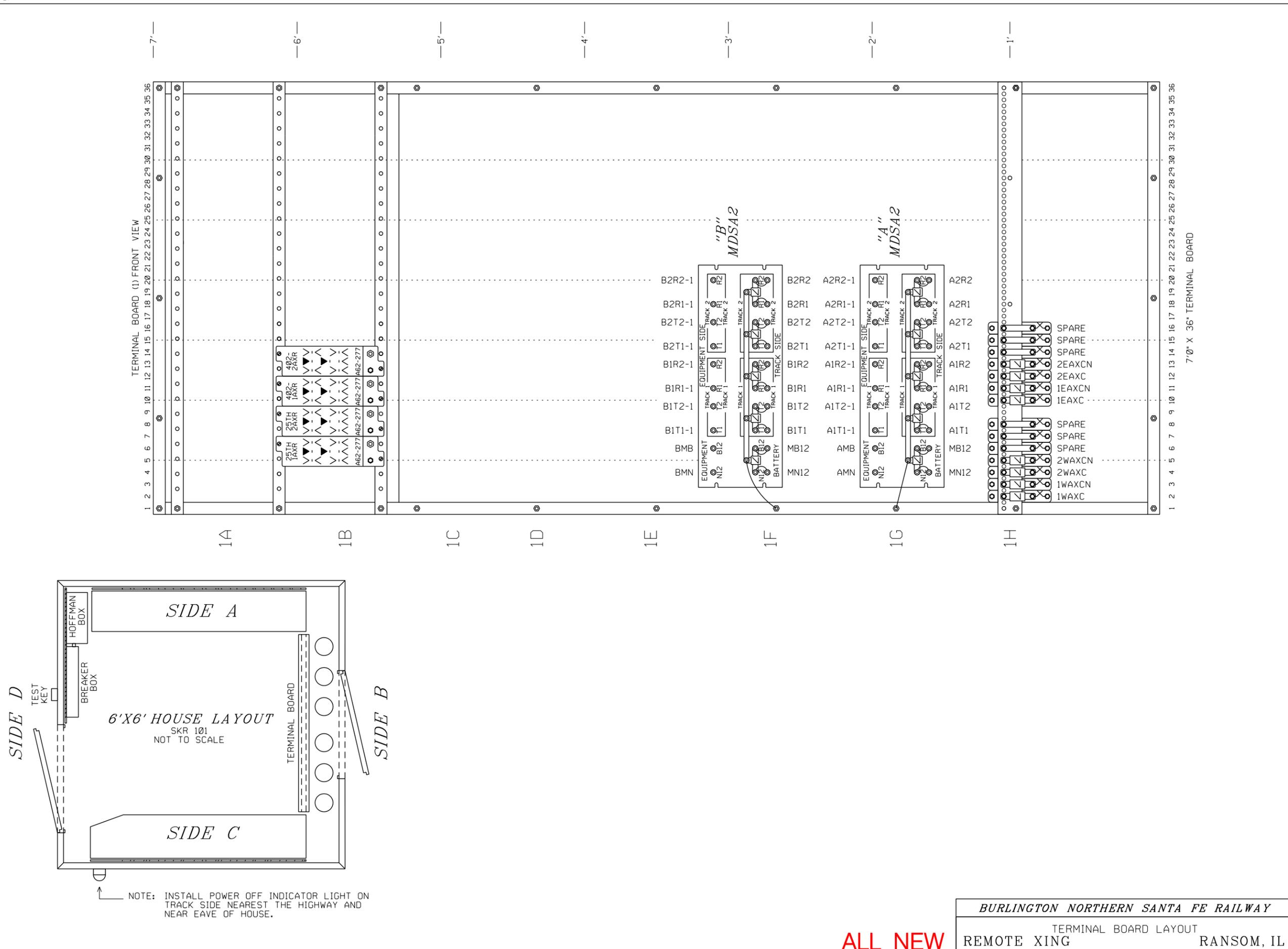
BURLINGTON NORTHERN SANTA FE RAILWAY

POWER DISTRIBUTION
 REMOTE XING RANSOM, IL

ALL NEW

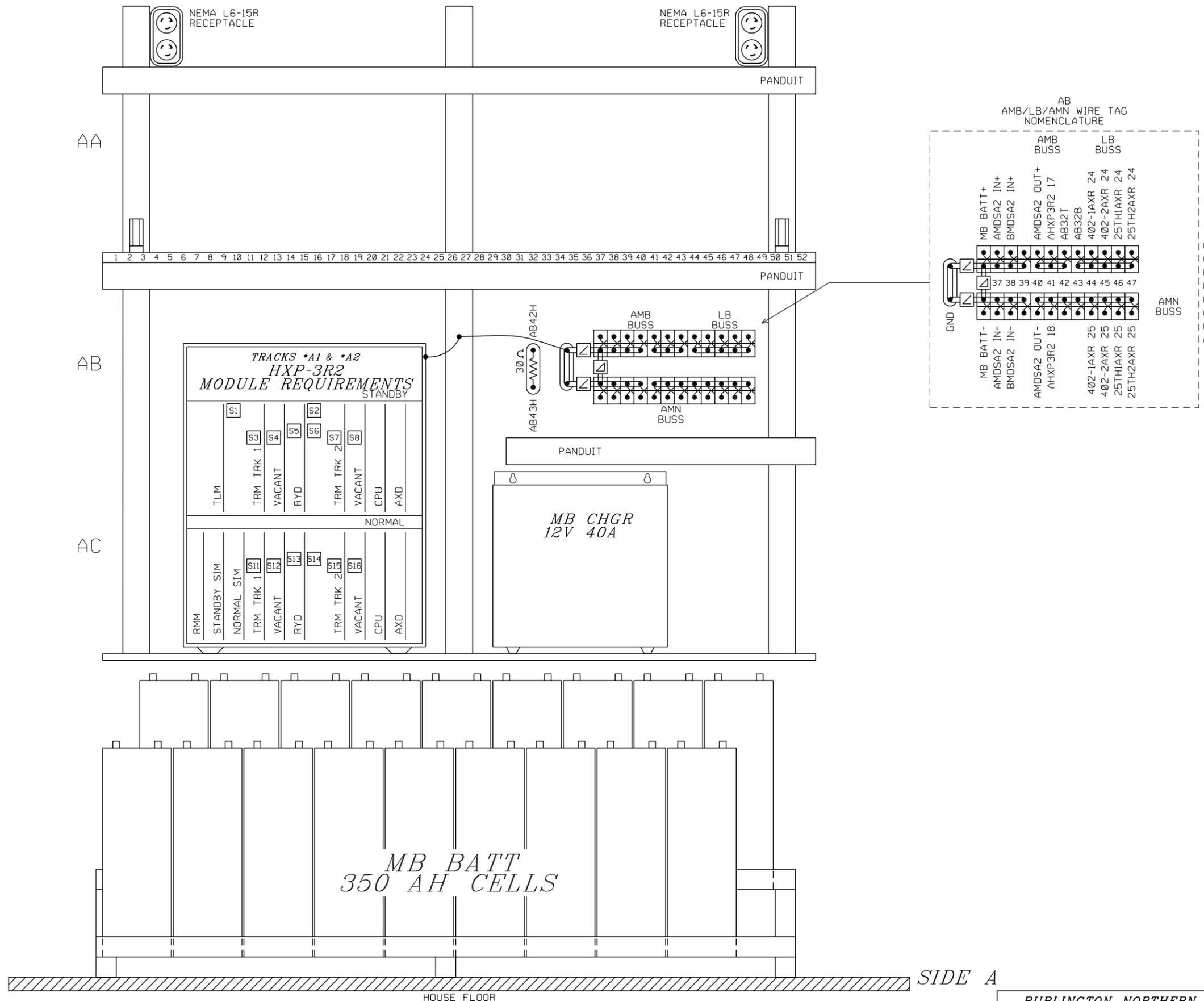
DESIGNED 06-30-11
 INSTALL NEW XING
 RSS/JML SEQ.# 46280

LS 7000 MP 81.64 SH 05 OF 09



ALL NEW
DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ. 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
TERMINAL BOARD LAYOUT		
REMOTE XING		RANSOM, IL
LS 7000	MP 81.64	SH 06 OF 09



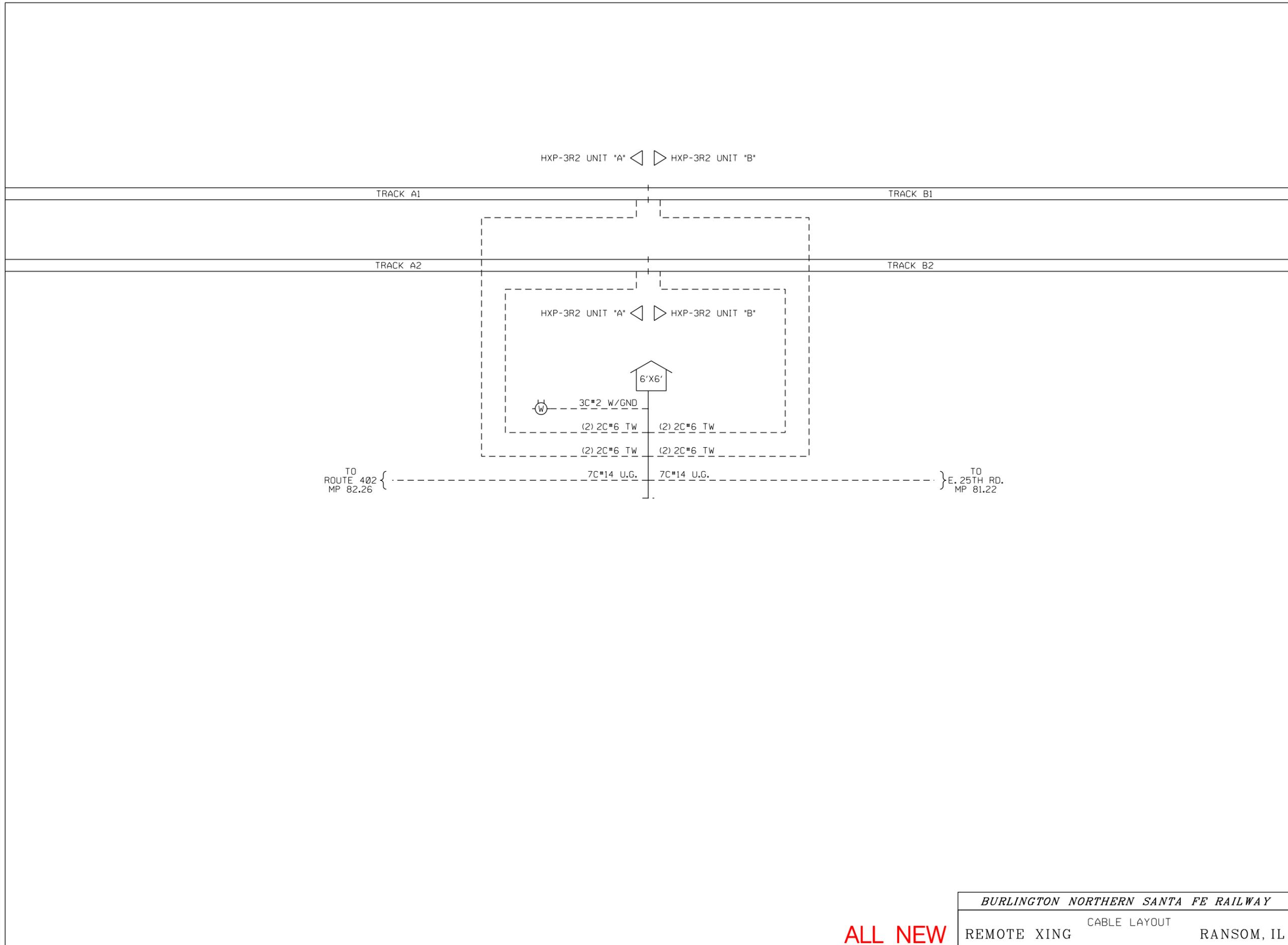
*TRACKS *A1 & *A2
HXP-3R2
MODULE REQUIREMENTS
STANDBY*

	S1		S2				
TLM		TRM TRK 1		RYD		TRM TRK 2	
		VACANT				VACANT	
						CPU	AXD
NORMAL							
RMM		STANDBY SIM		S11	S12	S13	S14
		NORMAL SIM					
		TRM TRK 1					
		VACANT					
		TRM TRK 2					
		VACANT					
						CPU	AXD

SIDE A

BURLINGTON NORTHERN SANTA FE RAILWAY		
SIDE "A" SHELF LAYOUT		
REMOTE XING		RANSOM, IL
LS 7000	MP 81.64	SH 07 OF 09

ALL NEW
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INSTALL NEW XING
RSS/JML SEQ. 46280



ALL NEW

DESIGNED 06-30-11
INSTALL NEW XING
RSS/JML SEQ.# 46280

BURLINGTON NORTHERN SANTA FE RAILWAY		
CABLE LAYOUT		
REMOTE XING		RANSOM, IL
LS 7000	MP 81.64	SH 09 OF 09