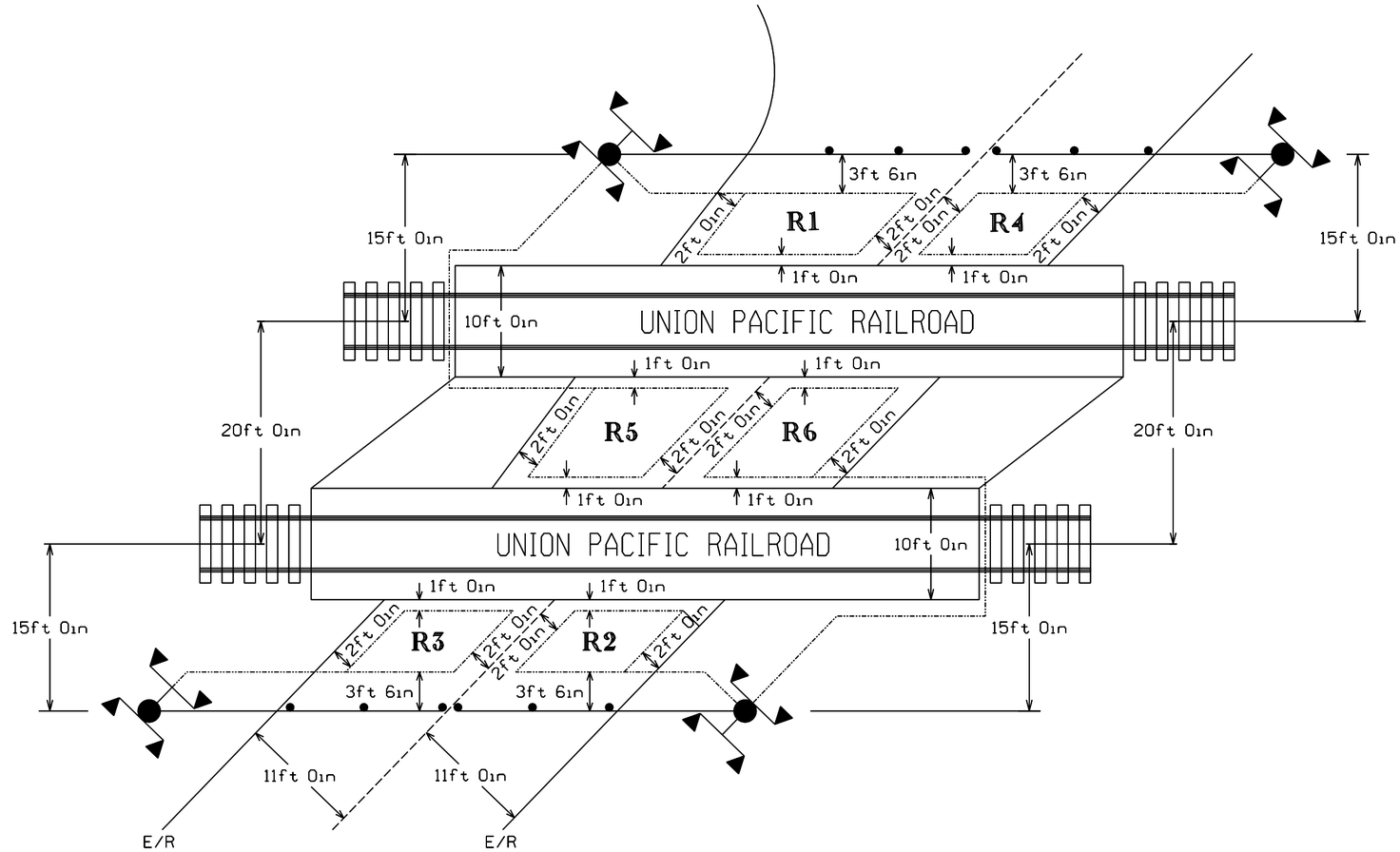
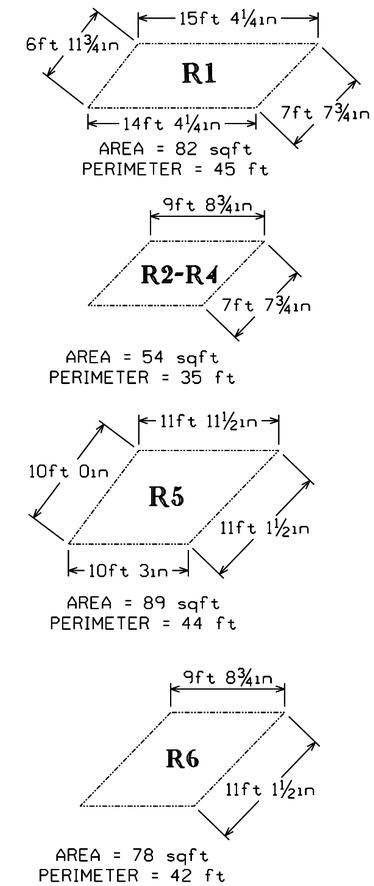




LOOP SIZES

LOOP #	LOOP PERIMETER	LOOP LEAD-IN	PART #
R1	45′	25′	PLC-45-25
R2	35′	25′	PLC-35-25
R3	35′	25′	PLC-35-25
R4	35′	25′	PLC-35-25
R5	44′	50′	PLC-44-50
R6	42′	75′	PLC-42-75

NOTES:

1.) DIMENSIONS ON THIS PAGE ARE SHOWN TO PROVIDE GUIDANCE FOR CONSTRUCTION CREWS AND FUTURE MAINTENANCE REPAIRS.

2.) REFER TO SAFETRAN EGMS STANDARDS AND RECOMENDED PRACTICES FOR LOOP LAYOUT DESIGN DETAILS.

3.) SAFETRAN EGMS JUNCTION BOX INSTALLED ON TOP OF EACH FOUNDATION.

4.) INSTALL SAFETRAN 6 PAIR #18 CABLE FROM JUNCTION BOX TO BUNGALOW.

5.) E/R = EDGE OF ROAD.

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: ✓ NBT
Rec#: / /WIT /JVJ

MODIFICATION LEVEL	
O.A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL?	Y

REV 01.24.11 4K 2TKEGMS.8B

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 8B
DOT 290507T
MP: 57.71
ID: CSL5771.8BX

(1) E-1400 SETUP PARAMETERS

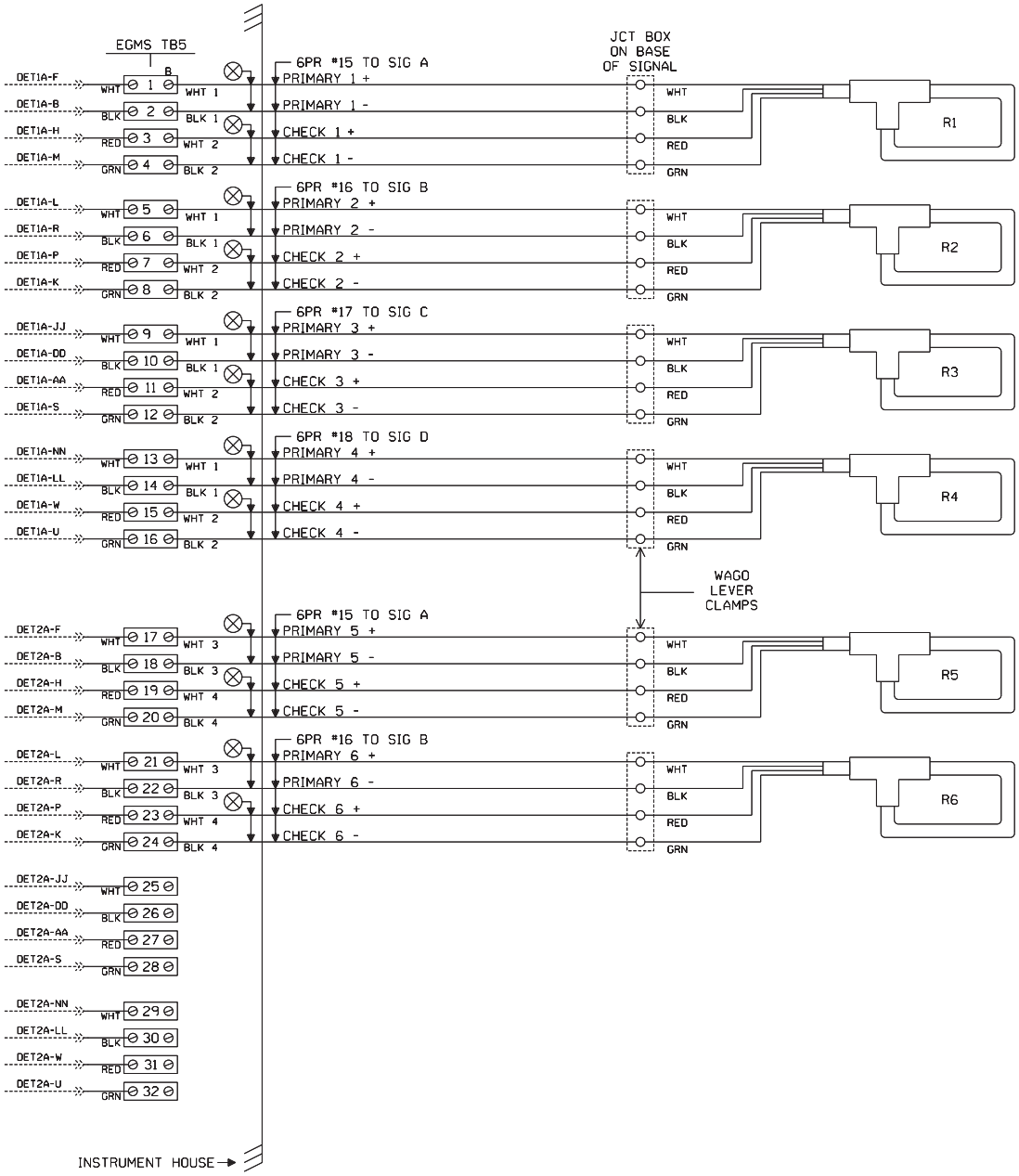
FUNCTION	CH. 1	CH. 2	CH. 3	CH. 4
FREQUENCY SETTING	2	4	6	8
SENSITIVIY SETTING	6•	6•	6•	6•
OPTION 1 (TEMP L DISPLAY)	OFF			
OPTION 2 (TEMP ΔL/L DISPLAY)	OFF			
OPTION 3 (NOISE FILTER)	3.00	3.00	3.00	3.00
OPTION 4 (TRACKING)	4.02	4.02	4.02	4.02
OPTION 5 (SENSITIVITY BOOST)	5.00	5.00	5.00	5.00
OPTION 6 (TEMP AUDIBLE SIGNAL)	OFF	OFF	OFF	OFF
CHECKLOOP INTERVAL	005	005	005	005
DETECTOR ID	000			
OPTION 7 (DETECTOR SYNC)	7.01			
OPTION 8 (ISL OPTION)	OFF			
OPTION 9 (SHUNT ENHANCEMENT SE)	OFF	OFF	OFF	OFF
MAIN VITAL OUTPUT DELAY	00.0	00.0	00.0	00.0
MAIN VITAL OUTPUT EXTENSION	00.0	00.0	00.0	00.0
MAIN VITAL OUTPUT MAPPING	10	20	40	80
AUX VITAL OUTPUT MAPPING	001	002	004	008
LOOP FREQUENCY (Khz)				
LOOP INDUCTANCE (MICRO HENRIES)				

SOFTWARE VERSION 4.02
• FIELD VERIFY

(2) E-1400 SETUP PARAMETERS

FUNCTION	CH. 1	CH. 2	CH. 3	CH. 4
FREQUENCY SETTING	2	4	6	8
SENSITIVIY SETTING	6•	6•	OFF•	OFF•
OPTION 1 (TEMP L DISPLAY)	OFF			
OPTION 2 (TEMP ΔL/L DISPLAY)	OFF			
OPTION 3 (NOISE FILTER)	3.00	3.00	3.00	3.00
OPTION 4 (TRACKING)	4.02	4.02	4.02	4.02
OPTION 5 (SENSITIVITY BOOST)	5.00	5.00	5.00	5.00
OPTION 6 (TEMP AUDIBLE SIGNAL)	OFF	OFF	OFF	OFF
CHECKLOOP INTERVAL	005	005	005	005
DETECTOR ID	001			
OPTION 7 (DETECTOR SYNC)	7.01			
OPTION 8 (ISL OPTION)	OFF			
OPTION 9 (SHUNT ENHANCEMENT SE)	OFF	OFF	OFF	OFF
MAIN VITAL OUTPUT DELAY	00.0	00.0	00.0	00.0
MAIN VITAL OUTPUT EXTENSION	00.0	00.0	00.0	00.0
MAIN VITAL OUTPUT MAPPING	10	20	40	80
AUX VITAL OUTPUT MAPPING	001	002	004	008
LOOP FREQUENCY (Khz)				
LOOP INDUCTANCE (MICRO HENRIES)				

SOFTWARE VERSION 4.02
• FIELD VERIFY



CABLE TABULATION

CABLE NO. (15) 6/PR #18 U.G.C. TO JCT BOX ON BASE OF GATE "A" (RCL PART #03-094-005)
CABLE NO. (16) 6/PR #18 U.G.C. TO JCT BOX ON BASE OF GATE "B" (RCL PART #03-094-005)
CABLE NO. (17) 6/PR #18 U.G.C. TO JCT BOX ON BASE OF GATE "C" (RCL PART #03-094-005)
CABLE NO. (18) 6/PR #18 U.G.C. TO JCT BOX ON BASE OF GATE "D" (RCL PART #03-094-005)

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL TIER 2 D/T M.P. 55 TO 63
PID: 89376 WO#: 27635
ISL Rev: / NBT / WIT / JVJ

MODIFICATION LEVEL	
O. A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL?	Y

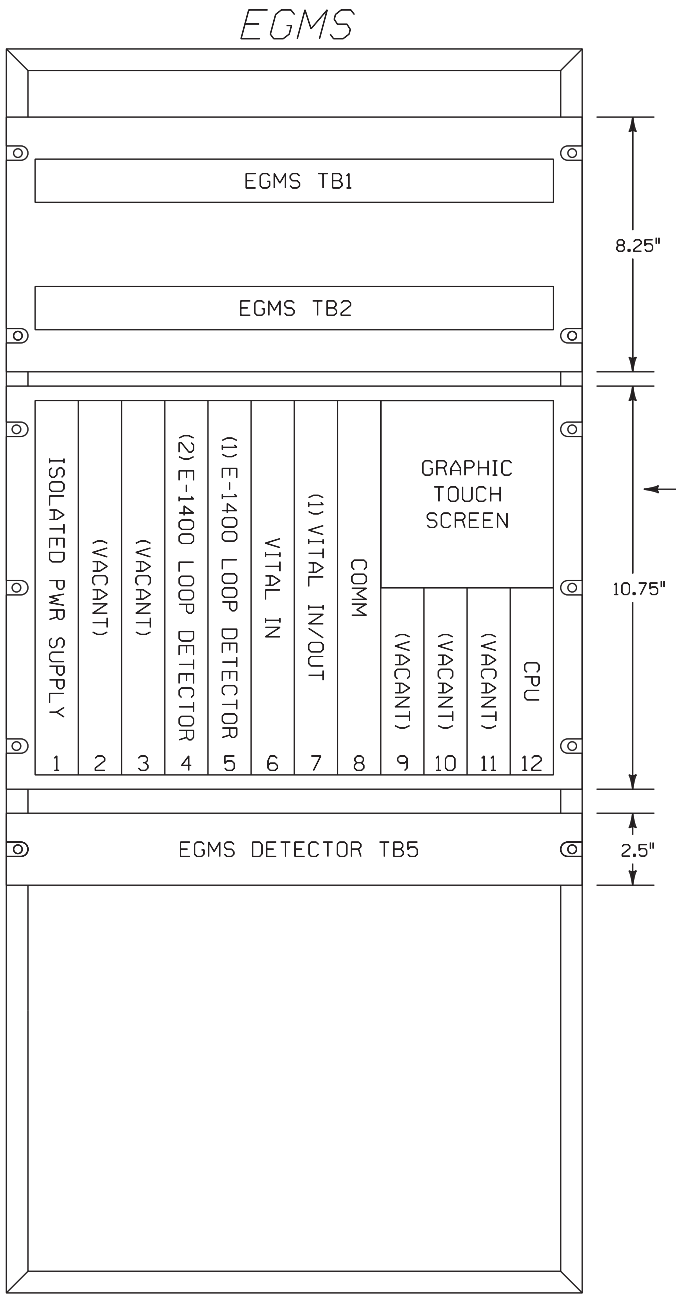
Rev 01.24.11 4K 2TKEGMS.9

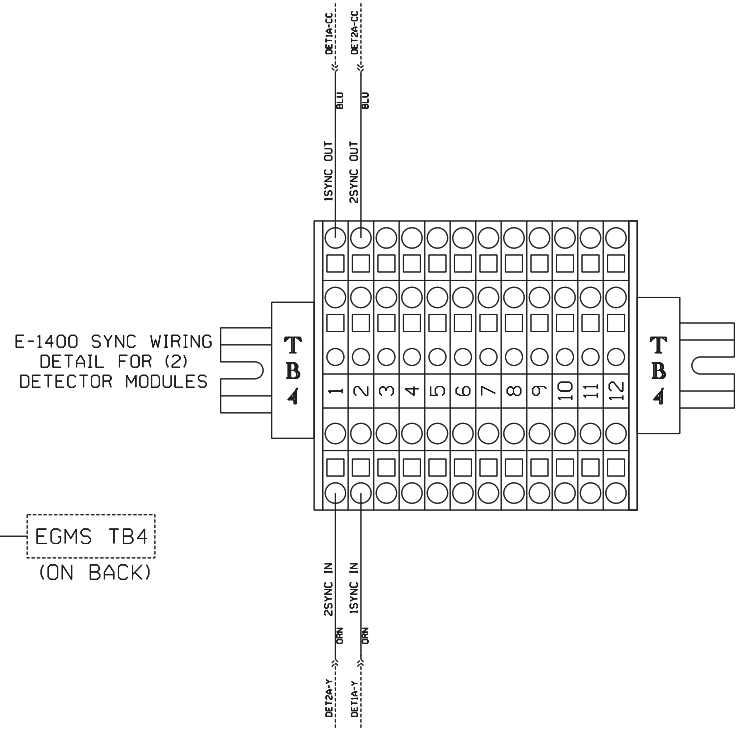
CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 9
DOT 290507T
MP: 57.71
ID: CSL5771.9X





NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: / NBT
Rec#: / /WIT /JVJ

MODIFICATION LEVEL	
O. A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL?	Y

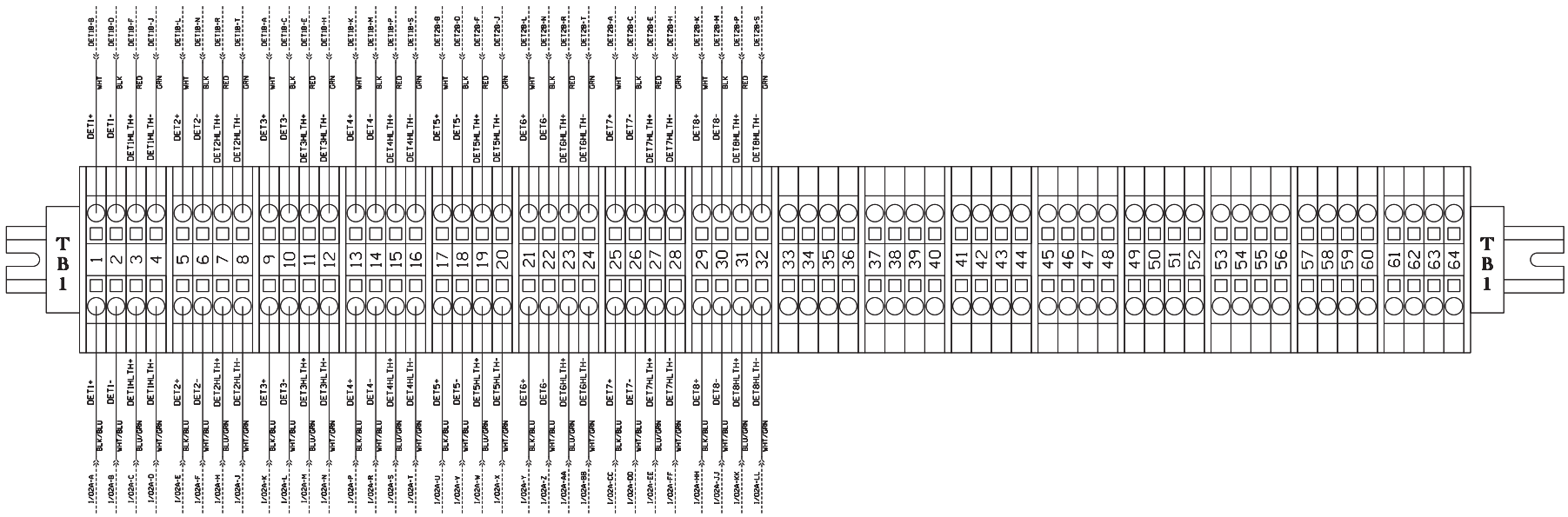
REV 01.24.11 4K 2TKEGMS.9B

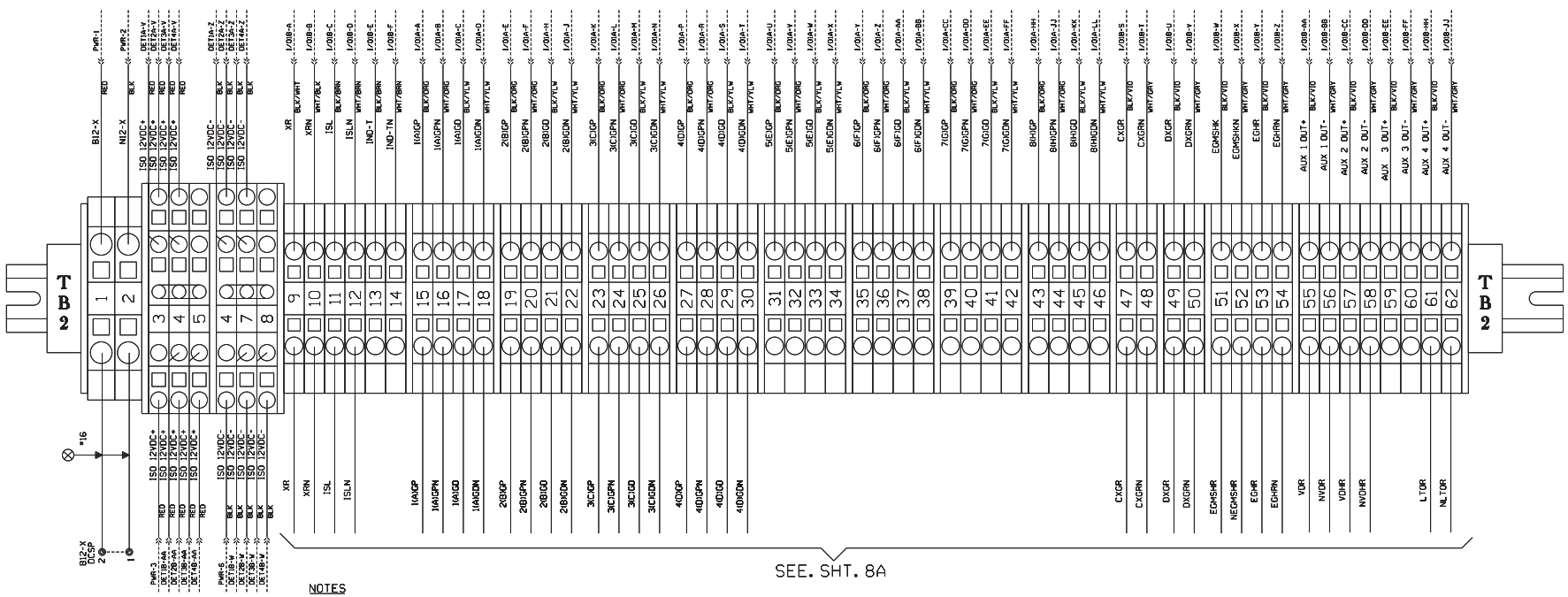
CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 9A
DOT 290507T
MP: 57.71
ID: CSL5771.9AX





NOTES

1. TB1 PROVIDES AN EXTERNAL PASS THROUGH BETWEEN THE E-1400 MODULES AND THE VITAL INPUT MODULE IN CHASSIS POSITION 6. EGMS OR EGMS+ UNITS CONFIGURED FOR LESS THAN 4 EACH E-1400 MODULES WILL ONLY BE WIRED AS REQUIRED.
2. TB2-3 THROUGH TB2-8 PROVIDE A CONNECTION BUS FOR INTERNAL SUPPLY VOLTAGES AND MUST NOT BE USED TO SUPPLY OTHER CIRCUITS.

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: /NBT
Rec#: / /WIT /JVJ

MODIFICATION LEVEL	
O. A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL?	Y

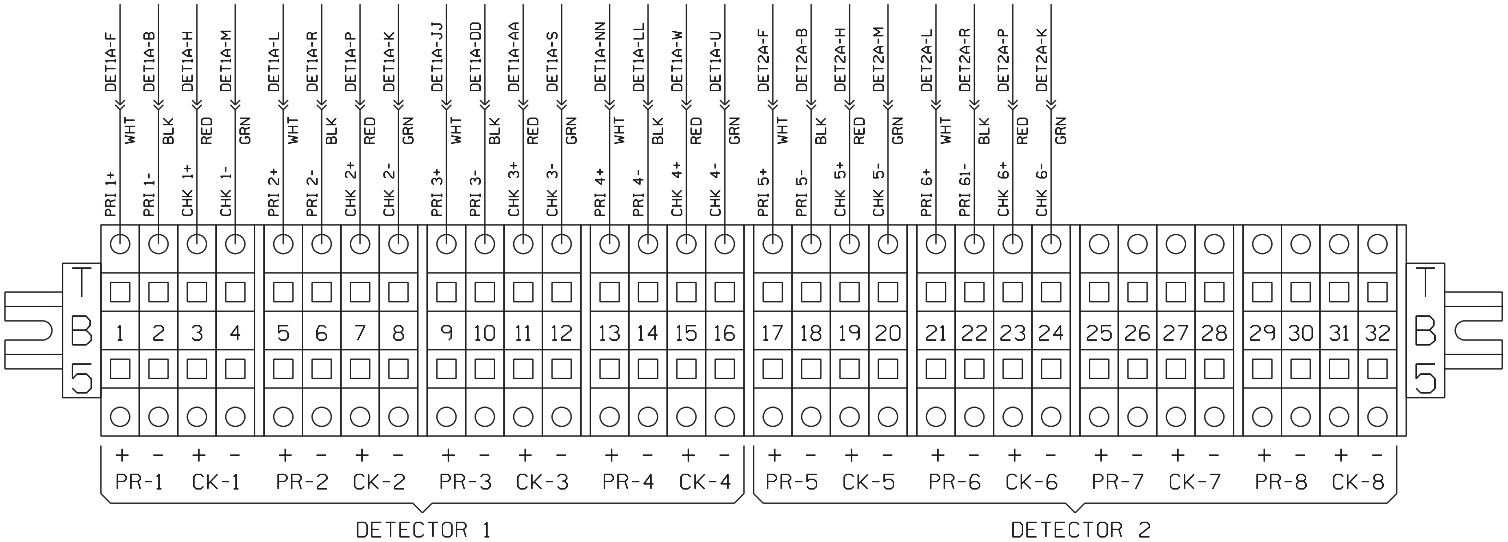
REV 01.24.11 4K 2TKEGMS.9C

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 9B
DOT 290507T
MP: 57.71
ID: CSL5771.9BX



NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 2 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: /NBT
Rec'd: / /WIT /JVJ

MODIFICATION LEVEL	
O. A. LAST LEVEL CHECKED	DU
LAST LEVEL MOD THIS TYPICAL	DU
LAST LEVEL BY DESIGNER	DU
CHANGED FROM TYPICAL?	Y

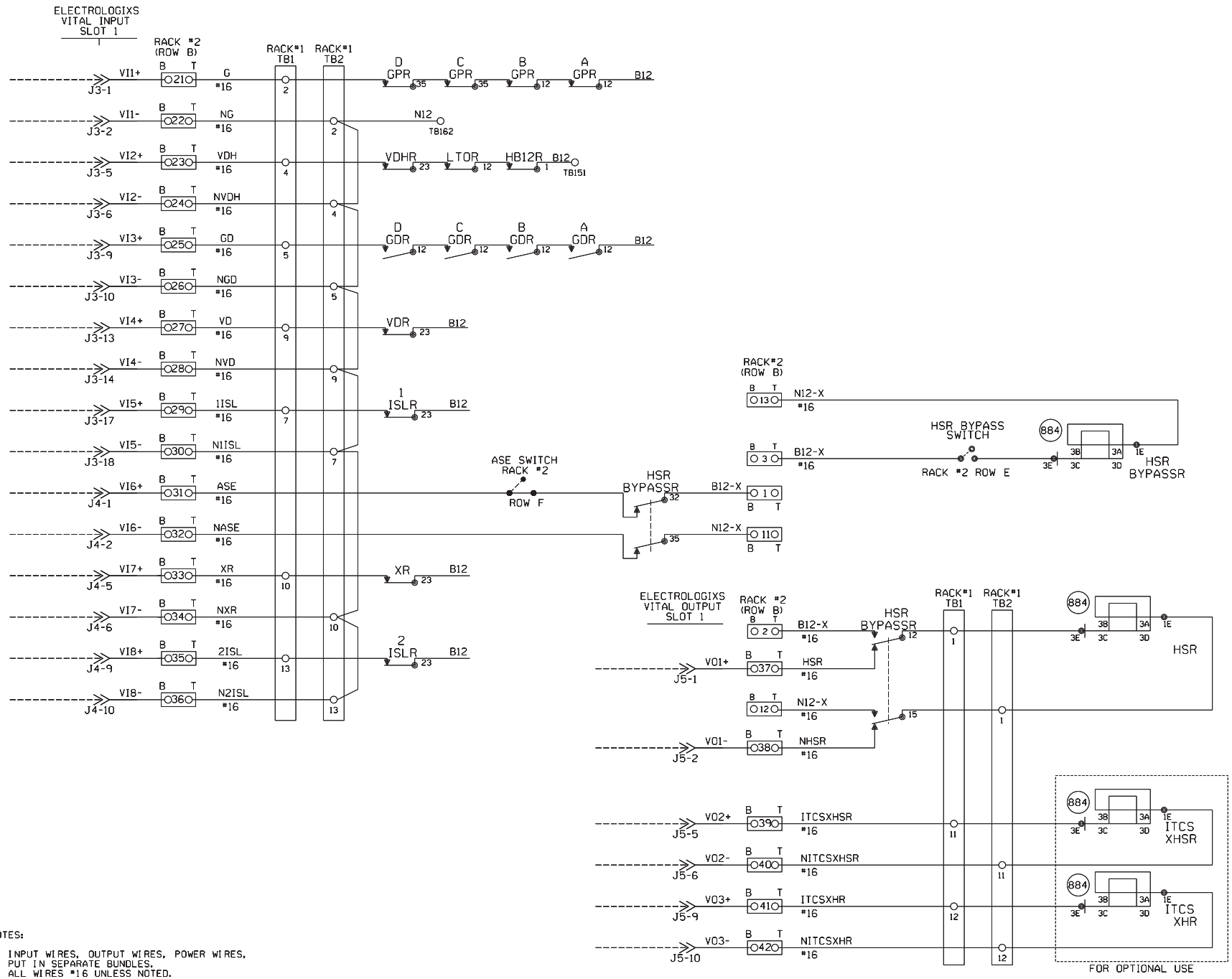
Rev 01.24.11 4K 2TKEGMS.9D

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 9C
DOT 290507T
MP: 57.71
ID: CSL5771.9CX



NOTES:

1. INPUT WIRES, OUTPUT WIRES, POWER WIRES, PUT IN SEPARATE BUNDLES.
2. ALL WIRES #16 UNLESS NOTED.
3. O??O 2 POSITION WAGO BLOCK.

NEW SHEET

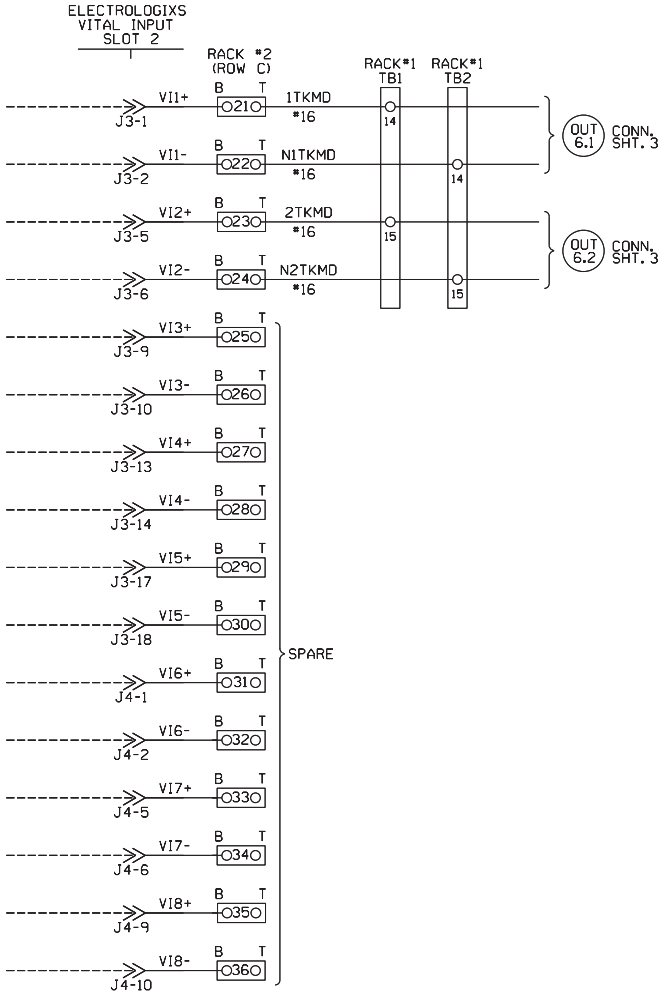
Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: /NBT
Rec#: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15	
Des: WIT Chk: NBT	
PID: 89376	
AFE: 27635	

UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

Sh.:	10
DOT	290507T
MP:	57.71
ID:	CSL5771.10X



NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: NBT
Rec'd: / / WIT JVJ

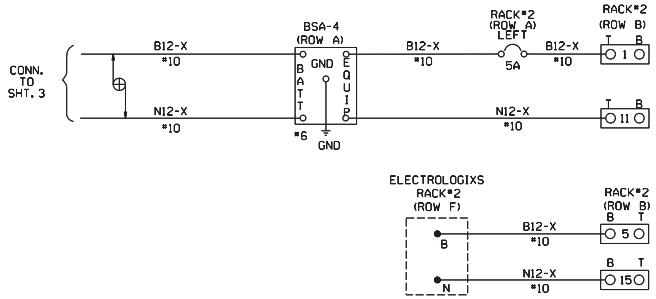
CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

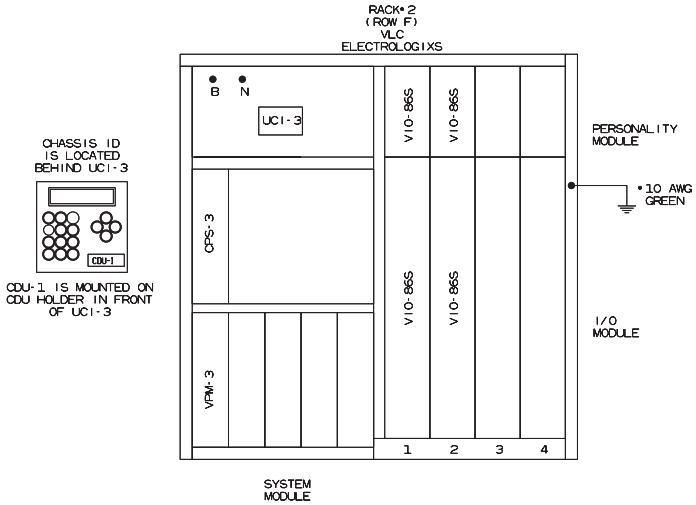
Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

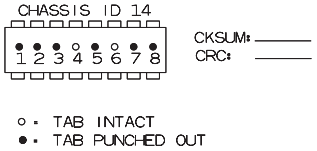
UNION PACIFIC RAILROAD
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION
Office of AVP Engineering - Signal Omaha, Nebraska

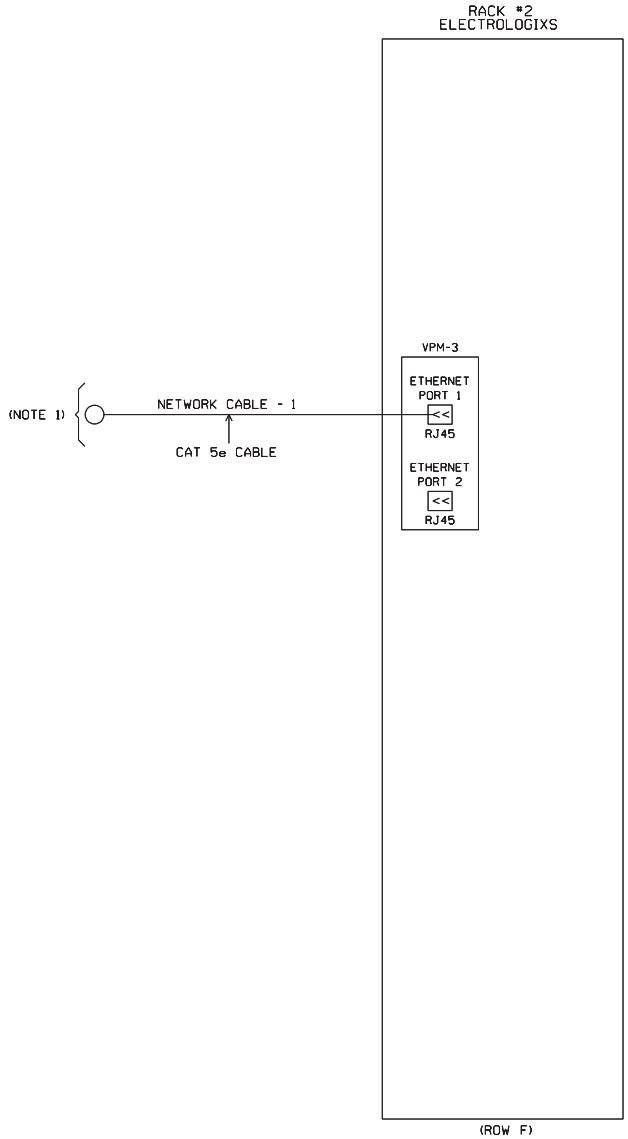
Sh.: 10A
DOT 290507T
MP: 57.71
ID: CSL5771.10AX

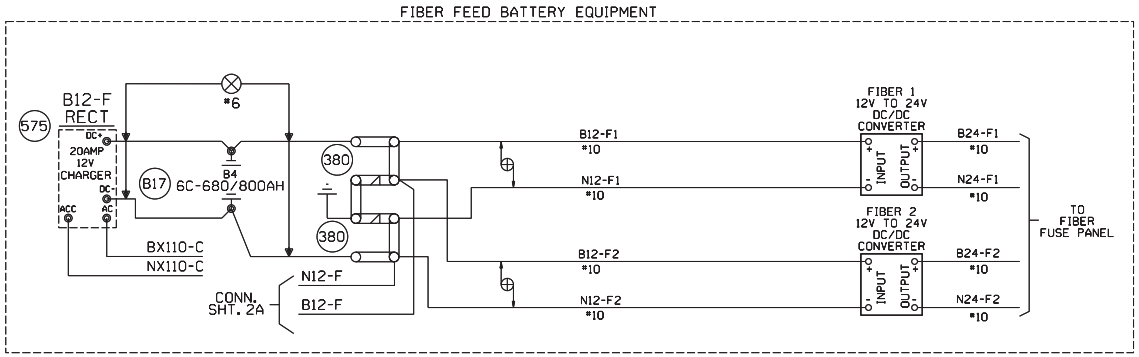
WIRING NOTE:
WIRE 30' LONG WIRES TO BSA-4











NOTES:

DENOTES TWISTED PAIR

2 POSITION WAGO BLOCK

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 2 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: NBT
Rec'd: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

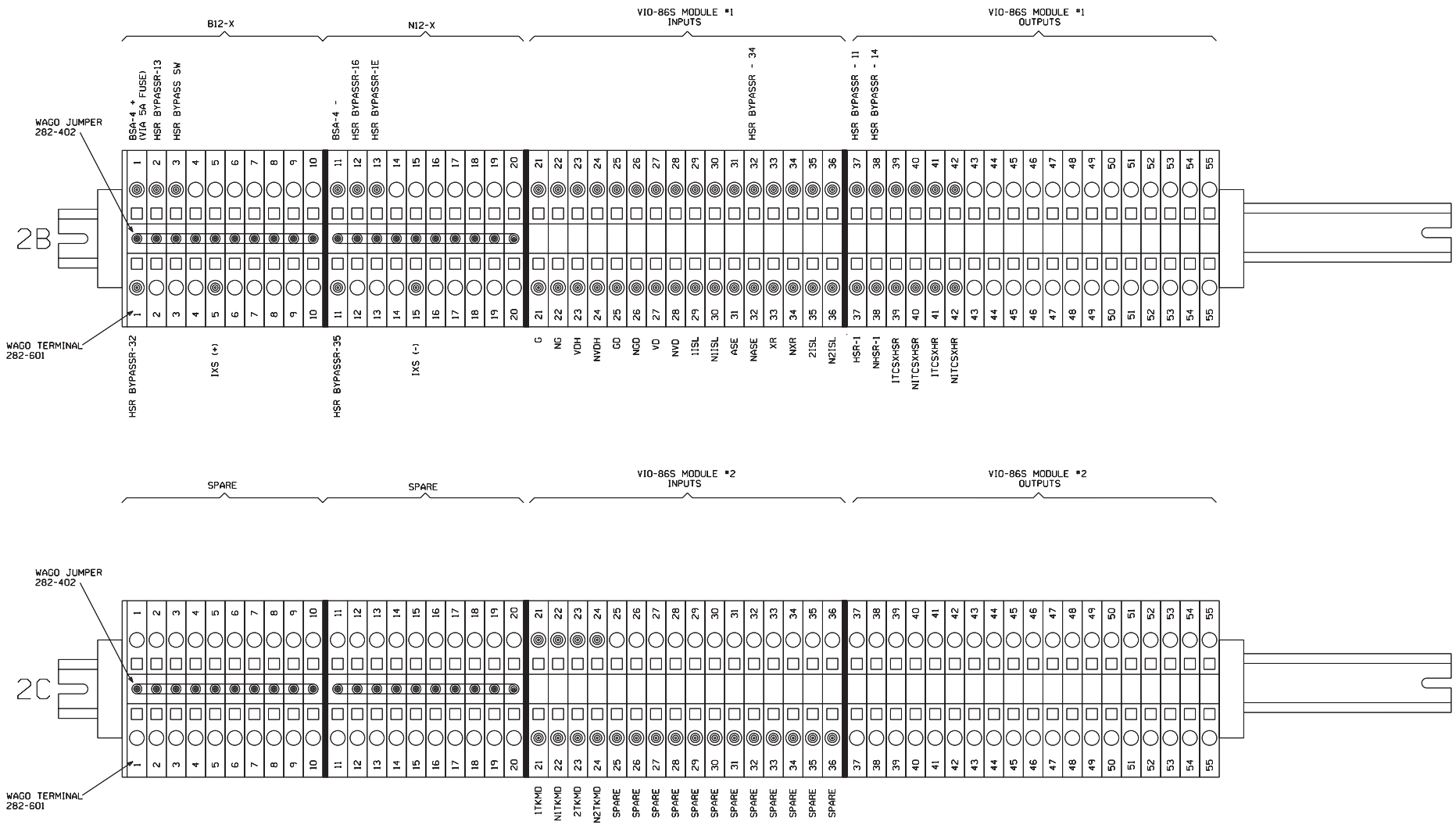
Date: 2-23-15	
Des: WIT Chk: NBT	
PID: 89376	
AFE: 27635	

UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal Omaha, Nebraska

Sh.:	10B
DOT	290507T
MP:	57.71
ID:	CSL5771.10BX



ELECTROLOGIXS WAGO BLOCKS

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 2 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: /NBT
Rec'd: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

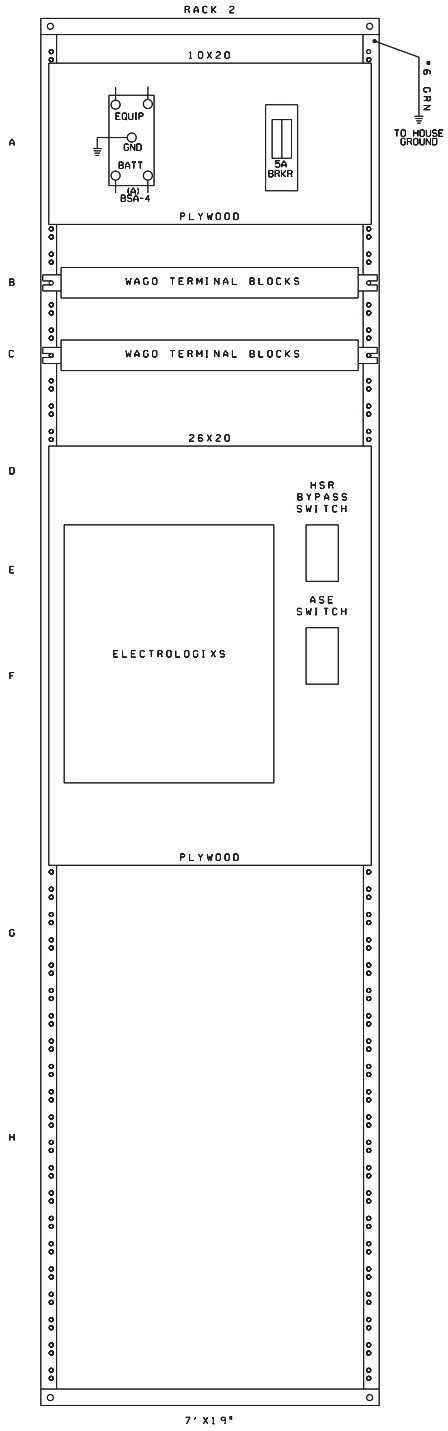
Date: 2-23-15	
Des: WIT Chk: NBT	
PID: 89376	
AFE: 27635	

UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal Omaha, Nebraska

Sh.:	10C
DOT	290507T
MP:	57.71
ID:	CSL5771.10CX



NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 2/ D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: /NBT
Rec'd: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15	
Des: WIT Chk: NBT	
PID: 89376	
AFE: 27635	

UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal Omaha, Nebraska

Sh.:	10D
DOT	290507T
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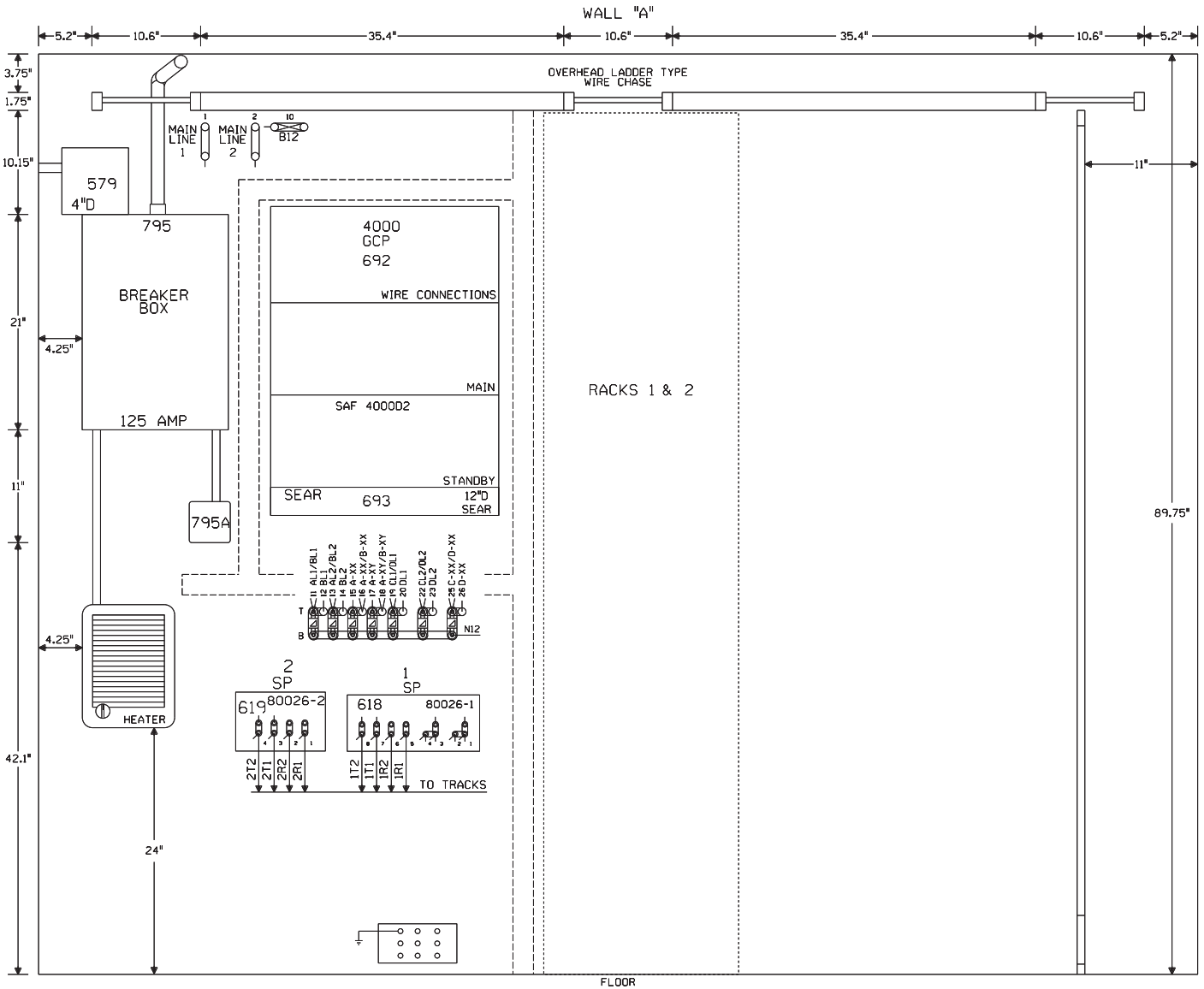


NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.

8X10 HOUSE WITH HEATER AND BLOWER U.P. PART#520-2532

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 2 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: NBT
Rec#: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

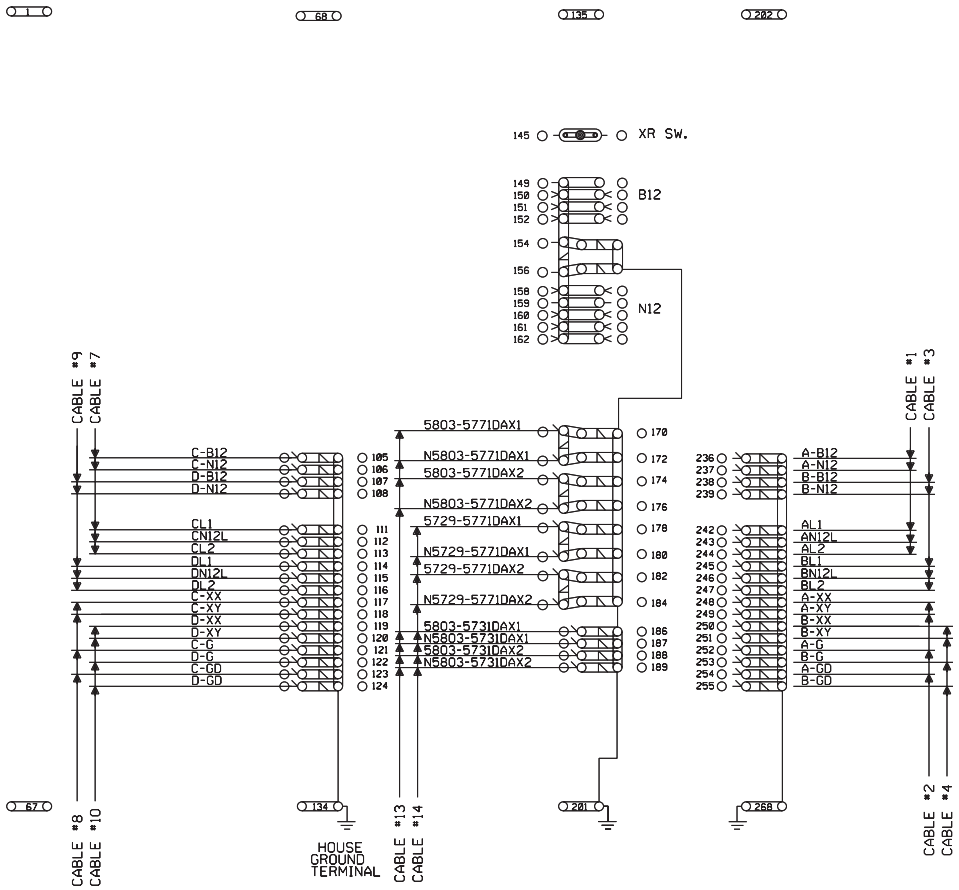
Date: 2-23-15	
Des: WIT Chk: NBT	
PID: 89376	
AFE: 27635	

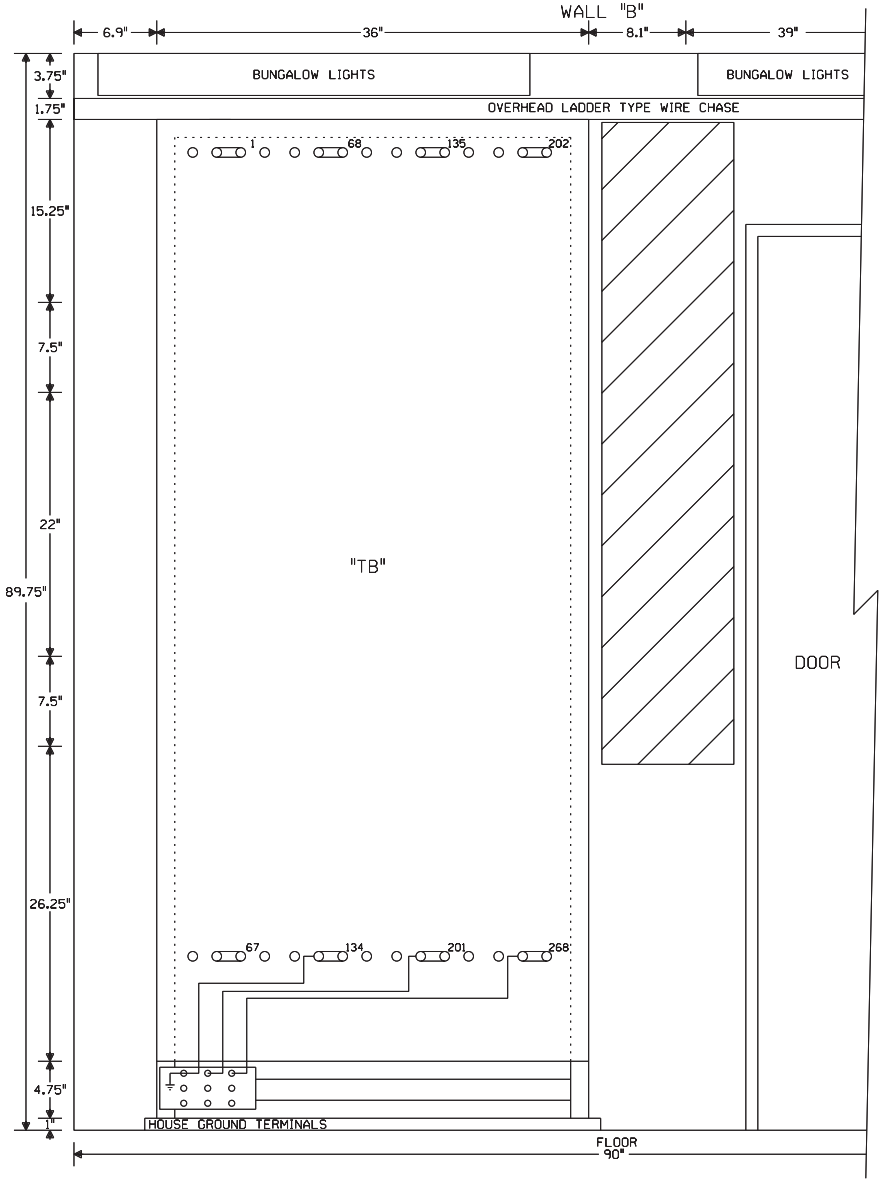
UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

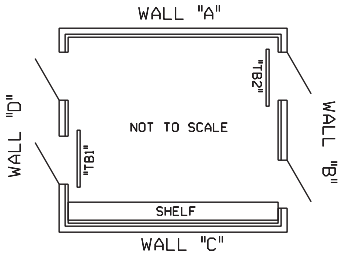
Office of AVP Engineering - Signal Omaha, Nebraska

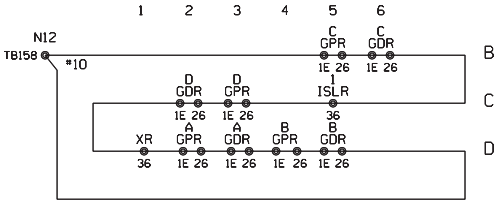
Sh.:	11
DOT	290507T
MP:	57.71
ID:	CSL5771.11X

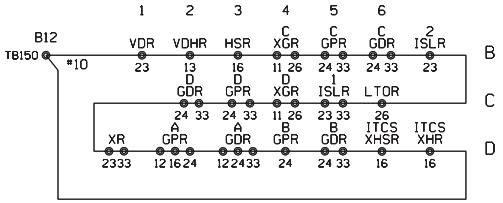




NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.







NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
S: /NBT
Rec'd: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date: 2-23-15
Des: WIT Chk: NBT
PID: 89376
AFE: 27635

UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal Omaha, Nebraska

Sh.: 12
DOT 290507T
MP: 57.71
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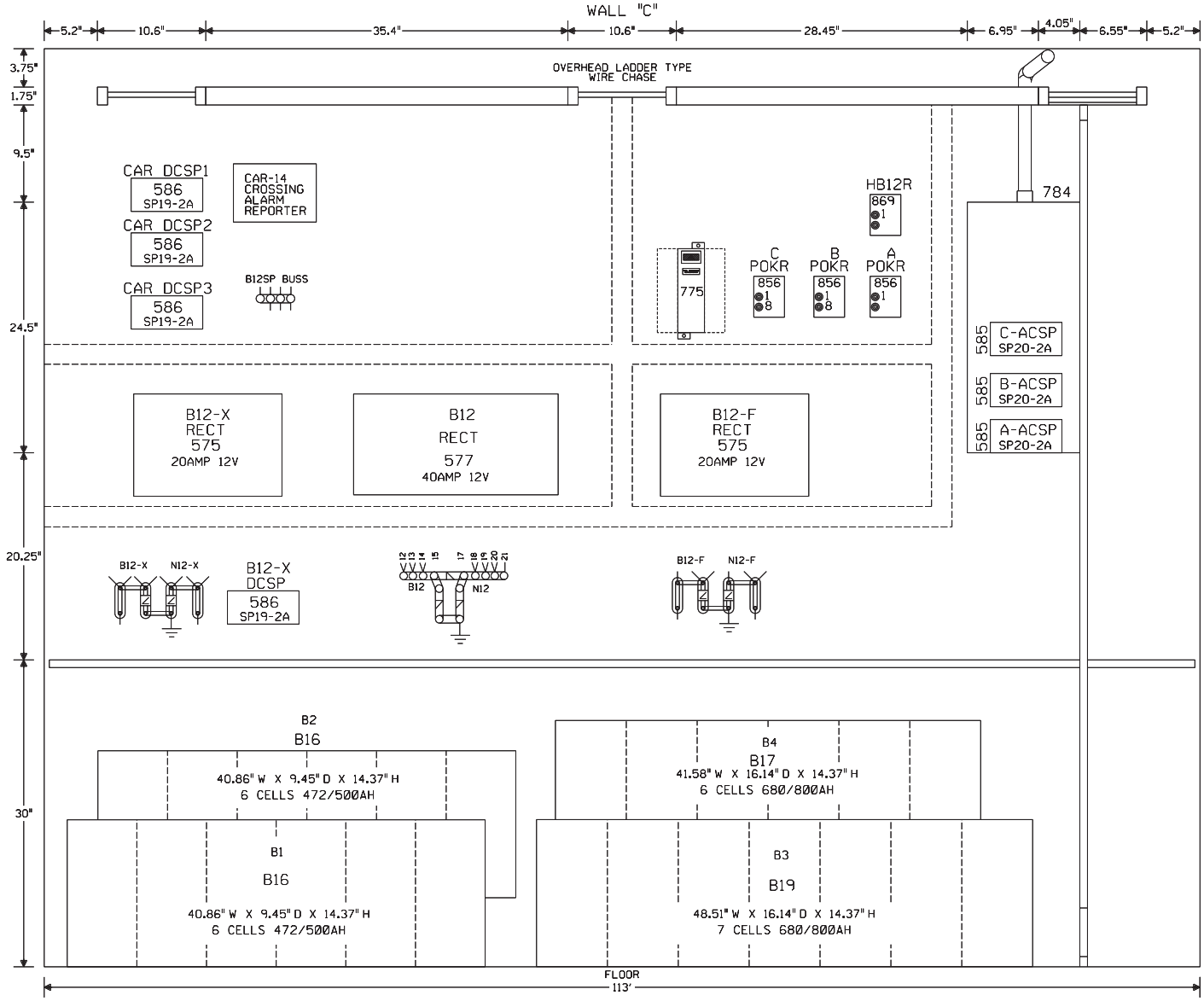
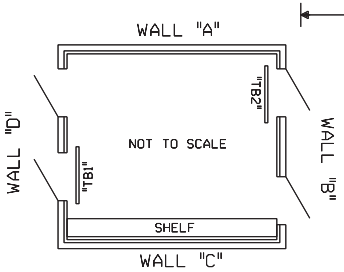




NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.

NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
IS: / NBT
Rec#: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

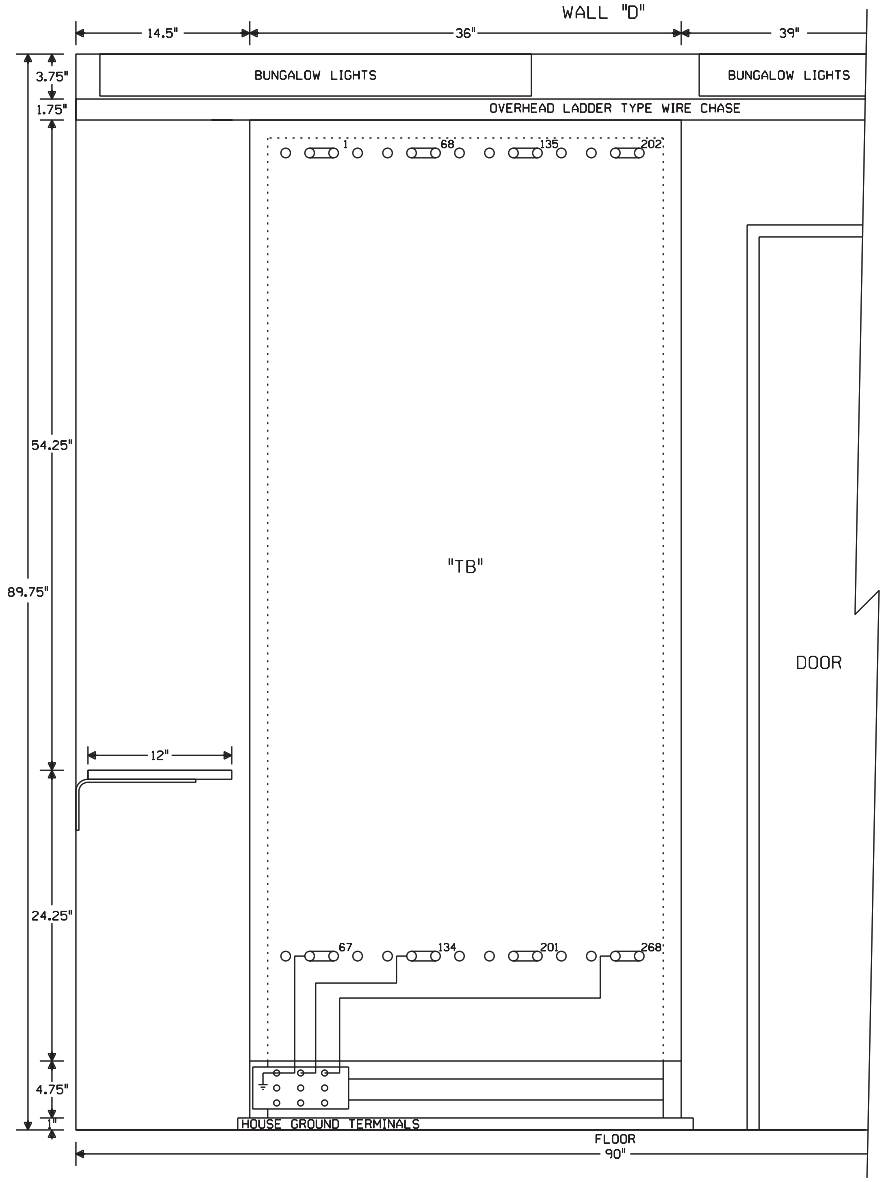
Date:	2-23-15
Des: WIT	Chk: NBT
PID:	89376
AFE:	27635

UNION PACIFIC RAILROAD

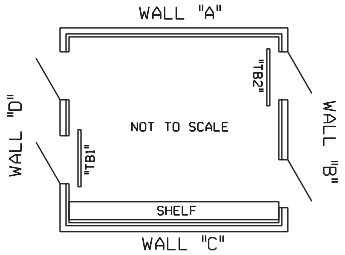
BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal Omaha, Nebraska

Sh.:	13
DOT	290507T
MP:	57.71
ID:	CSL5771.13X



NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.



NEW SHEET

Designed: 2-23-15
HIGH SPEED RAIL
TIER 7 D/T
M.P. 55 TO 63
PID: 89376 WO#: 27635
ISs: NBT
Rev#: / /WIT /JVJ

CIRCUIT MODIFICATIONS ARE NOT TO BE MADE WITHOUT AUTHORITY FROM THE OFFICE OF SIGNAL DESIGN

Date:	2-23-15
Des: WIT	Chk: NBT
PID:	89376
AFE:	27635

UNION PACIFIC RAILROAD

BRAIDWOOD, ILLINOIS
CENTER STREET
JOLIET SUBDIVISION

Office of AVP Engineering - Signal — Omaha, Nebraska

Sh.:	14
DOT	290507T
MP:	57.71
ID:	CSL5771.14X

Minimum Program Steps Report

Location and SIN

DOT Number: 290507T
Milepost Number: 57.71
Site Name: BRAIDWOOD, IL

SIN: 762010010016 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name: GCP-T6X-02-6.mcf
MCF Revision: 26
MCFCRC: 494D2656

Template = 1A:6 Trk Bi (OCCN) *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE: module configuration
Track 2/RIO 1 Slot = Track (OCCN) *
Track 6/RIO 3 Slot = RIO (OCCN) *

TEMPLATE: track 1-Bi, Island
Track 1 : GCP Frequency = 285 Hz (OCCN) *
Track 1 : Approach Distance = 2330 ft (OCCN) *
Track 1 : Prime Warning Time = 40 sec (OCCN) *
Track 1 : Prime UAX = IP (OCCN) *
Track 1 : Prime UAX Pickup = 15 sec (OCCN) *
Track 1 : GCP Transmit Level = Medium (Set in Field,TCN)
Track 1 : Isl Frequency = 15.2 kHz (OCCN) *

TEMPLATE: track 2-Bi, Island
Track 2 : GCP Frequency = 285 Hz (OCCN) *
Track 2 : Approach Distance = 2330 ft (OCCN) *
Track 2 : Prime Warning Time = 40 sec (OCCN) *
Track 2 : Prime UAX = IP (OCCN) *
Track 2 : Prime UAX Pickup = 15 sec (OCCN) *
Track 2 : GCP Transmit Level = Medium (Set in Field,TCN)
Track 2 : Isl Frequency = 10.0 kHz (OCCN) *

TEMPLATE: AND 1 XR
AND 1 Enable Used = Yes (OCCN) *

TEMPLATE: SSCC
SSCC-2 Number of GPs = 2 (OCCN) *
SSCC-2 Number of GDs = 2 (OCCN) *

TEMPLATE: OOS
OOS Control = OOS IPs (OCCN) *

TEMPLATE: OP assignment 1
OUT 1.1 = AND 1 XR (OCCN) *
OUT 1.2 = T1 Island (OCCN) *
OUT 2.1 = T2 Island (OCCN) *

TEMPLATE: OP assignment 2

```
OUT 6.1 = T1 Prime (OCCN) *
OUT 6.2 = T2 Prime (OCCN) *

TEMPLATE:  IP assignment 1
IN 1.1 = AND 1 XR Enable (OCCN) *
IN 1.2 = Out Of Service IP 1 (OCCN) *
IN 2.1 = GP 1.1 (OCCN) *
IN 2.2 = Out Of Service IP 2 (OCCN) *

TEMPLATE:  IP assignment 2
IN 6.1 = T1 Prime UAX (OCCN) *
IN 6.2 = T2 Prime UAX (OCCN) *
IN 6.3 = T1 Prime UAX (OCCN) *
IN 6.4 = T2 Prime UAX (OCCN) *

TEMPLATE:  IP assignment SSCC
IN 7.1 = AND 1 XR Enable (OCCN) *
IN 8.2 = GD 2.2 (OCCN) *
IN 8.3 = GP 2.2 (OCCN) *
IN 8.4 = GD 2.1 (OCCN) *
IN 8.5 = GP 2.1 (OCCN) *

TEMPLATE:  SEAR
SP 3.1 = General 3 (OCCN) *
SP 4.1 = General 4 (OCCN) *

MS4000 configuration
Track 1 : GCP Frequency = 285 Hz (OCCN,TCN) (Hidden) *
Track 1 : Prime UAX = IP (OCCN) (Hidden) *
Track 1 : Prime UAX Pickup = 15 sec (OCCN) (Hidden) *
Track 1 : Isl Frequency = 15.2 kHz (OCCN) (Hidden) *
Track 1 : Pickup Delay (2s +) = 2 sec (OCCN) (Hidden) *
IN 1.1 = AND 1 XR Enable (OCCN) (Hidden) *
IN 1.2 = Out Of Service IP 1 (OCCN) (Hidden) *

MS4000 Predictor
Track 1 : Prime Warning Time = 40 sec (OCCN) (Hidden) *

GCP:  track 1
Track 1 : Island Distance = 155 ft (Set in Field,TCN)

GCP:  track 2
Track 2 : Island Distance = 155 ft (Set in Field,TCN)

ISLAND:  track 1
Track 1 : Pickup Delay (2s +) = 2 sec (OCCN) *

ISLAND:  track 2
Track 2 : Pickup Delay (2s +) = 2 sec (OCCN) *

ADVANCED:  site options
Daylight Savings = Off (Set in Field)

SEAR:  slot 1-4 inputs
IN 4.1 = Vehicle Det Hlth (OCCN) *
IN 4.2 = 3 Vehicle Detect (OCCN) *

SEAR:  inputs slot 5
IN 5.1 = General 2 (OCCN) *
IN 5.2 = General 1 (OCCN) *

Express: MS4000 configuration
Track 1 : GCP Frequency = 285 Hz (OCCN,TCN) (Hidden) *
```

Track 1 : Prime UAX = IP (OCCN) (Hidden) *
Track 1 : Prime UAX Pickup = 15 sec (OCCN) (Hidden) *
Track 1 : Pickup Delay (2s +) = 2 sec (OCCN) (Hidden) *
IN 1.1 = AND 1 XR Enable (OCCN) (Hidden) *
IN 1.2 = Out Of Service IP 1 (OCCN) (Hidden) *

Express: MS4000 Predictor
Track 1 : Prime Warning Time = 40 sec (OCCN) (Hidden) *

* Parameter is part of office check number calculation.

Check Numbers

Office Check Number: 2AAECB92
Config. Check Number: 66EF13C3
(Based on MCF Revision 26)

Parameters not part of office check number calculation:

Track 1 : GCP Transmit Level = Medium (Set in Field)
Track 2 : GCP Transmit Level = Medium (Set in Field)
Track 1 : Island Distance = 155 ft (Set in Field)
Track 2 : Island Distance = 155 ft (Set in Field)
Daylight Savings = Off (Set in Field)

Comments

<none>

Configuration Package File

Filename: CSL5771_290507T.pac
Path: C:\PAC File\
Date/Time: 6/23/2015 7:28:26