

Memo

To: Docketing Division

From: Thomas Persinger, Rail Project Specialist, Rail Division

Cc: PUCO Legal Department

Date: 8-17-2022

Re: PUCO Case No. 22-782-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the CSX Transportation, Inc. Grade Crossing, DOT# 262-068L at CR 175/Fairground Road in Marion County, Ohio.

On March 2, 2022, the Ohio Rail Development Commission (ORDC) authorized funding for CSX Transportation, Inc. (CSX) to install lights and gates at CR 175/Fairground Road (DOT#262068L) in Marion County, Ohio. The crossing was surveyed, on July 27, 2021, and was found to warrant the upgrade. The electric utility provider for this crossing is First Energy – Ohio Edison.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$396,919.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

- **Any ancillary work to make the warning devices function as designed and visible to the roadway user, and**
- **MUTCD compliance, including minor roadway work if necessary.**

Please serve the following parties of record:

CSX Transportation, Inc.
Amanda DeCesare
Project Manager – Public Projects
4802 Decoursey Pike
Taylor Mill, KY 41015

Ohio Rail Development Commission
Alan Bell
Manager, Grade Crossing Programs
1980 West Broad Street
Mail Stop #3140
Columbus, OH 43223

Marion County Engineer
Bradley K. Irons
222 W. Center St.
Marion, OH 43302

First Energy – Ohio Edison

**OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION**

TO: John Williams, Director, Transportation Department, PUCO
FROM: Allen Bell, Manager, Safety Section, ORDC
BY: Greg Gronbach, Project Manager, ORDC
SUBJECT: MAR CSX CR175/Fairground Rd DOT# 262068L PID# 116013
DATE: August 16, 2022

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on July 27, 2021. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC accepts the site plans and estimates as provided. Please issue a construction-only order for the project outlined above. ORDC recommends a nine (9) month construction timeline. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

- any ancillary work to make warning devices function as designed and visible to the roadway user, and
- MUTCD compliance – including minor roadway work if necessary.

Thank you for your assistance with these matters.


Greg Gronbach
Project Manager

Attachment: Diagnostic Review
Letter Agreement
PE Authorization
Plan, Estimate & Material List
Construction Authorization

c: John Williams, Director, Transportation Department, PUCO
Jill Henry, Rail Chief, PUCO
Tom Persinger, Rail Specialist, PUCO

Heather Hamilton, ORDC
ORDC (file)



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

August 16, 2022

CSX Transportation
Ms. Amanda DeCesare
Project Manager – Public Projects
500 Meijer Drive
Suite 305
Florence, KY 41042

RE: Construction Authorization for MAR CSX CR175/Fairground Rd DOT# 262068L PID# 116013

Dear Ms. DeCesare:

The plan dated 6/29/22 and estimate dated 7/22/22, for the referenced project has been reviewed and is acceptable. **Please note that the railroad must provide ORDC with a plan stamped by a professional engineer licensed in the State of Ohio prior to acceptance and close out of the project.** CSX may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan.

The estimate of \$396,919.00 is acceptable. Reimbursement of eligible actual cost is limited to \$396,919.00. Fuel cells system components are not included in the reimbursement amount and if installed are to be installed at CSX expense. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon CSX accepting the following instructions:

1. CSX's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Greg Gronbach, ORDC, email Gregory.Gronbach@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.henry@puco.ohio.gov & thomas.persinger@puco.ohio.gov. CSX's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. CSX will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by CSX Transportation.
3. CSX's project foremen will notify Greg Gronbach at 614-745-6760 (telephone) or Gregory.Gronbach@dot.ohio.gov (email) of any changes in the scope of work, cost overruns,



material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.

4. Open cut of roadways is *not permitted* except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.
5. CSX will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. CSX will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,


Greg Gronbach
Project Manager

C: John Williams, Director, Transportation Department, PUCO
Jill Henry, Rail Chief, PUCO
Tom Persinger, Rail Specialist, PUCO
Heather Hamilton, ORDC
ORDC (file)



RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

MT. VICTORY SUBDIVISION

GRADE CROSSING

PROJECT NUMBER: OH2022021

OP: OH1473

BOOK 1 OF 1





Signal South




12276 SAN JOSE BLVD. SUITE 525
JACKSONVILLE, FLORIDA 32223
TEL. 904-240-1020

FOR REFERENCE

INDEX
CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	X	X	○						
S01	TRACK AND SIGNAL PLAN	X		○						
P01	ELECTROLOGIXS PROGRAM	X								
P02	MINIMUM PROGRAM STEPS REPORT CWE-63	X								
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS	X								
E01	POWER DISTRIBUTION	X								
E02	ELECTROLOGIXS MODULE CONFIGURATION	X								
C01	ELECTROLOGIXS CIRCUITS	X								
C02	ELECTROLOGIXS TRACK CIRCUITS	X	X							
C03	ELECTROLOGIXS TRACK CIRCUITS	X								
C04	ELECTROLOGIXS I/O CIRCUITS	X								
C05	DETECTION DEVICE CONSIST CWE-63	X								
C06	DETECTION CIRCUITRY CWE-63	X								
C07	DETECTION CIRCUITRY CWE-63	X								
C08	SEAR II: CONFIGURATION & FUNCTIONS	X								

 = PLANS SENT TO FIELD (DISTRIBUTED)
 = PLANS AS-IN-SERVICED (UP TO DATE)

 = NOTE
 = IN
 = OUT

0H2022021
22-1731CSX
 SSE/HMB/CCV
07-05-22
Signal South


RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

ELECTRIC LOCK

INDEX AND REVISIONS
MARION, OH M.P. 01-98.63

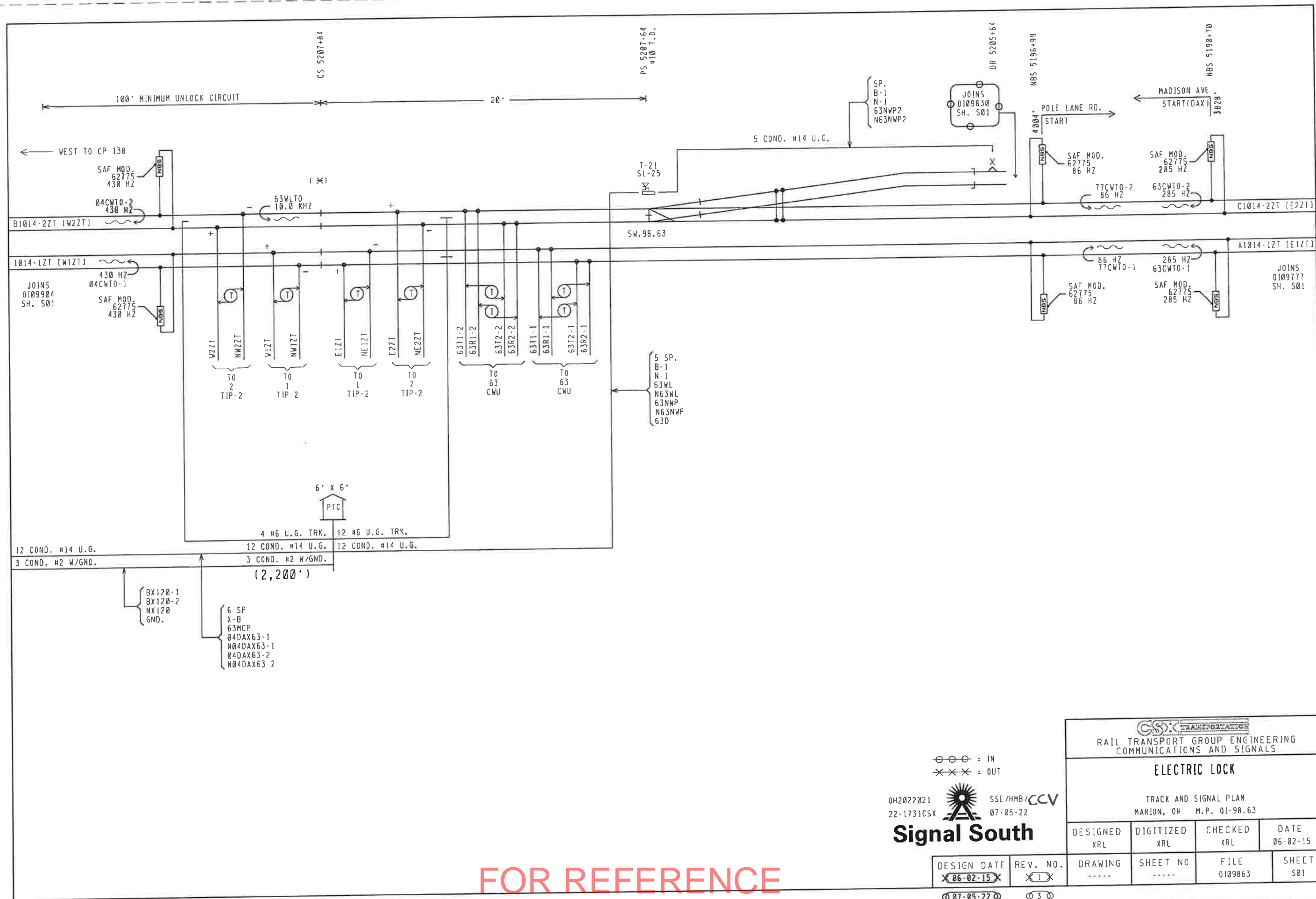
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DRAWING *****	SHEET NO *****	FILE 0109863	SHEET 101

REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2014093	06-02-15	03-29-16	09-12-16
2	0H2017382 0H2017383 0H2017384 0H2017385 0H2017386 0H2017440 0H2017445 0H2017446	10-26-16	02-27-20	06-08-20
3	0H2022021	07-05-22		

TO BE COMPLETED
ON A.I.S.

FOR REFERENCE

07-05-22 3



FOR REFERENCE

0H2022021 22-1731CSX

SSS/HMB/CCV 07-05-22

Signal South

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
TRACK AND SIGNAL PLAN			
MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING	SHEET NO
06-02-15	1	0109863	S01

07-05-22 030

VITAL APPLICATION INFORMATION	
ITEM	SETTING
NAME	CSX2RPT4_VIV
CHASSIS ID	227
INDEX	001
EPT CRC	E2F7
EPT CHECKSUM	6795

TRACK 1 VITAL SELECTION SETTINGS				
SETT.	BIT NAME	TRUE	FALSE	BIT MEANING
1	N_W1MCODE		X	TRUE IF MAINTENANCE CODE WILL BE RECEIVED FROM THE NORTH/WEST AND WILL BE PASSED SOUTH/EAST. FALSE IF NO MAINTENANCE CODE IS RECEIVED FROM THE NORTH/WEST AND IT IS TO BE INITIATED TO THE SOUTH/EAST.
2	S_E1MCODE		X	TRUE IF MAINTENANCE CODE WILL BE RECEIVED FROM THE SOUTH/EAST AND WILL BE PASSED NORTH/WEST. FALSE IF NO MAINTENANCE CODE IS RECEIVED FROM THE SOUTH/EAST AND IT IS TO BE INITIATED TO THE NORTH/WEST.
3	N_W1C1SW		X	(FOR SETTING, SEE CHART BELOW)
4	N_W1C5SW		X	(FOR SETTING, SEE CHART BELOW)
5	S_E1C1SW		X	(FOR SETTING, SEE CHART BELOW)
6	S_E1C5SW		X	(FOR SETTING, SEE CHART BELOW)
7	BDE0_MODE1		X	TRUE WHEN LIMITED TUMBLEDOWN (BDE0) MODE REQUIRED. FALSE WHEN TRADITIONAL TUMBLEDOWN (TMDAT) MODE REQUIRED.
8	SLOT3_ON		X	TRUE WHEN SLOT 3 IS USED FOR ELECTRIC LOCK. FALSE WHEN SLOT 3 NOT USED.
9	S_EP0K	X		SETTING 9 TRUE AND SETTING 10 FALSE MAINTENANCE CODE FOR BLOCK POWER-OFF INDICATION WILL BE TRANSMITTED INTO THE SOUTH/EAST TRACK. IF BOTH SETTING ARE TRUE OR BOTH FALSE MAINTENANCE CODE WILL NOT BE TRANSMITTED IN EITHER DIRECTION.
10	N_WP0K		X	SETTING 9 FALSE AND SETTING 10 TRUE MAINTENANCE CODE FOR BLOCK POWER-OFF INDICATION WILL BE TRANSMITTED INTO THE NORTH/WEST TRACK. IF BOTH SETTING ARE TRUE OR BOTH FALSE MAINTENANCE CODE WILL NOT BE TRANSMITTED IN EITHER DIRECTION.

TRACK 2 VITAL SELECTION SETTINGS				
SETT.	BIT NAME	TRUE	FALSE	BIT MEANING
11	N_W2MCODE	X		TRUE IF MAINTENANCE CODE WILL BE RECEIVED FROM THE NORTH/WEST AND WILL BE PASSED SOUTH/EAST. FALSE IF NO MAINTENANCE CODE IS RECEIVED FROM THE NORTH/WEST AND IT IS TO BE INITIATED TO THE SOUTH/EAST.
12	S_E2MCODE	X		TRUE IF MAINTENANCE CODE WILL BE RECEIVED FROM THE SOUTH/EAST AND WILL BE PASSED NORTH/WEST. FALSE IF NO MAINTENANCE CODE IS RECEIVED FROM THE SOUTH/EAST AND IT IS TO BE INITIATED TO THE NORTH/WEST.
13	N_W2C1SW		X	(FOR SETTING, SEE CHART BELOW)
14	N_W2C5SW	X		(FOR SETTING, SEE CHART BELOW)
15	S_E2C1SW		X	(FOR SETTING, SEE CHART BELOW)
16	S_E2C5SW		X	(FOR SETTING, SEE CHART BELOW)
17	BDE0_MODE2	X		TRUE WHEN LIMITED TUMBLEDOWN (BDE0) MODE REQUIRED. FALSE WHEN TRADITIONAL TUMBLEDOWN (TMDAT) MODE REQUIRED.
18	SLOT4_ON	X		TRUE WHEN SLOT 4 IS USED FOR ELECTRIC LOCK. FALSE WHEN SLOT 4 NOT USED.

CHART FOR SETTING CODE 5	
SETTING COMBINATION	RESULTANT
N_WC1SW + TRUE AND N_WC5SW + FALSE	CODE 1 IN SOUTH/EAST, CODE 5 OUT NORTH/WEST
N_WC1SW + FALSE AND N_WC5SW + TRUE	CODE 5 IN SOUTH/EAST, CODE 5 OUT NORTH/WEST
N_WC1SW + FALSE AND N_WC5SW + FALSE	CODE 5 NOT TRANSMITTED NORTH/WEST
N_WC1SW + TRUE AND N_WC5SW + TRUE	CODE 5 TRANSMITTED NORTH/WEST CONTINUOUSLY
S_EC1SW + TRUE AND S_EC5SW + FALSE	CODE 1 IN NORTH/WEST, CODE 5 OUT SOUTH/EAST
S_EC1SW + FALSE AND S_EC5SW + TRUE	CODE 5 IN NORTH/WEST, CODE 5 OUT SOUTH/EAST
S_EC1SW + FALSE AND S_EC5SW + FALSE	CODE 5 NOT TRANSMITTED SOUTH/EAST
S_EC1SW + TRUE AND S_EC5SW + TRUE	CODE 5 TRANSMITTED SOUTH/EAST CONTINUOUSLY

GFD-1 SETTINGS	
ITEM	SETTING
BATTERY 1 NAME	B-1
BATTERY 1 FAULT STATUS	NO FAULT
BATTERY 1 CALIBRATED VOLTAGE	13.5
BATTERY 1 GROUND FAULT THRESHOLD	8
BATTERY 1 GROUND FAULT TIME	30
BATTERY 1 LOW BATTERY ALARM VOLTAGE	8.0
BATTERY 1 HIGH BATTERY ALARM VOLTAGE	16.5
BATTERY 2 NAME	NONE
BATTERY 2 FAULT STATUS	NO FAULT
BATTERY 2 CALIBRATED VOLTAGE	13.5
BATTERY 2 GROUND FAULT THRESHOLD	8
BATTERY 2 GROUND FAULT TIME	30
BATTERY 2 LOW BATTERY ALARM VOLTAGE	8.0
BATTERY 2 HIGH BATTERY ALARM VOLTAGE	16.5
BATTERY 3 NAME	NONE
BATTERY 3 FAULT STATUS	NO FAULT
BATTERY 3 CALIBRATED VOLTAGE	13.5
BATTERY 3 GROUND FAULT THRESHOLD	8
BATTERY 3 GROUND FAULT TIME	30
BATTERY 3 LOW BATTERY ALARM VOLTAGE	8.0
BATTERY 3 HIGH BATTERY ALARM VOLTAGE	16.5

LOCK RELEASE TIME	
10 MIN. 0 SEC.	LONG TIME
0 MIN. 20 SEC.	SHORT TIME

- NOTES:
- ✖ = STATUS SET/CHANGED USING THE CDU-1.
ALL OTHERS SET IN THE ACE PROGRAM.
 - VPM-3 ETHERNET PORT ENET1 IP ADDRESS IS 192.168.0.11, ENET2 IS 192.168.1.12.
 - POK SETTINGS 9 AND 10 ARE FOR BOTH TRACKS.

NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

DESIGN DATE	REV. NO.	DRAWING	SHEET NO.	FILE	SHEET
06-02-15	1	*****	*****	0109863	P01

FOR REFERENCE

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
ELECTROLOGIXS PROGRAM MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET P01

Minimum Program Steps Report

Location and SIN

DOT Number: 009863Z
Milepost Number: 01-98.63
Site Name: REMOTE HOUSE

SIN: 712544202016 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name: GCP-T6X-02-1.mcf
MCF Revision: 021
MCFCRC: 6076E435

Template = 4A.6 Remotes *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, module configuration
Track 2/RIO 1 Slot = Track *

TEMPLATE, track 1-Remote Dax
Track 1, GCP Frequency = 285 Hz
Track 1, Approach Distance = 1714 ft
Track 1, Dax A Warning Time = 35 sec (See Plans)
Track 1, Dax A Offset Distance = 2114 ft
Track 1, GCP Transmit Level = Medium (Set in Field)

TEMPLATE, track 2-Remote Dax
Track 2, GCP Frequency = 285 Hz
Track 2, Approach Distance = 1714 ft
Track 2, Dax A Warning Time = 35 sec (See Plans)
Track 2, Dax A Offset Distance = 2114 ft
Track 2, GCP Transmit Level = Medium (Set in Field)

TEMPLATE, SSCC
Gates Used = No *
SSCC 1, Lamp Neutral Test = Off (Set in Field)

TEMPLATE, OOS
OOS Control = Display+OOS IPs *
T2 OOS Control = OOS Input 1 *

TEMPLATE, OP assignment 1
OUT 1.1 = T1 Dax A *
OUT 2.1 = T2 Dax A *

TEMPLATE, IP assignment SSCC
IN 7.2 = Out Of Service IP 1 *
IN 7.4 = Not Used *
IN 7.5 = Not Used *

BASIC, module configuration
SSCC-1 Slot = SSCC31 *
SEAR Used = Yes *

ADVANCED, site options
Daylight Savings = On *

SEAR
DI 1 = Gnd Flt Tester 1 *
Rly 1 = Ground Fault Test *
Rly 2 = AC Control *

SEAR, slot 7-8 inputs
IN 7.3 = POK 2 *

* Parameter is part of office check number calculation.

Check Numbers

Office Check No. (DT 4.6.0), 22D45BBD
Office Check Number: 22D45BBD
Config. Check Number: 171A628C
(Based on MCF Revision 021)

Parameters not part of office check number calculation:

Track 1, GCP Frequency = 285 Hz
Track 1, Approach Distance = 1714 ft
Track 1, Dax A Warning Time = 35 sec (See Plans)
Track 1, Dax A Offset Distance = 2114 ft
Track 1, GCP Transmit Level = Medium (Set in Field)
Track 2, GCP Frequency = 285 Hz
Track 2, Approach Distance = 1714 ft
Track 2, Dax A Warning Time = 35 sec (See Plans)
Track 2, Dax A Offset Distance = 2114 ft
Track 2, GCP Transmit Level = Medium (Set in Field)
SSCC 1, Lamp Neutral Test = Off (Set in Field)

Comments

<none>

Configuration Package File

Filename: Config-009863Z.poc
Path: F:\ZCSXZDGNZCwm1538714 (Mount Victory 0H2014093)Z
Xr11538714ZProgramsZNew folderZ
Date/Time: 7/23/2015 10:26:10

NO CHANGES

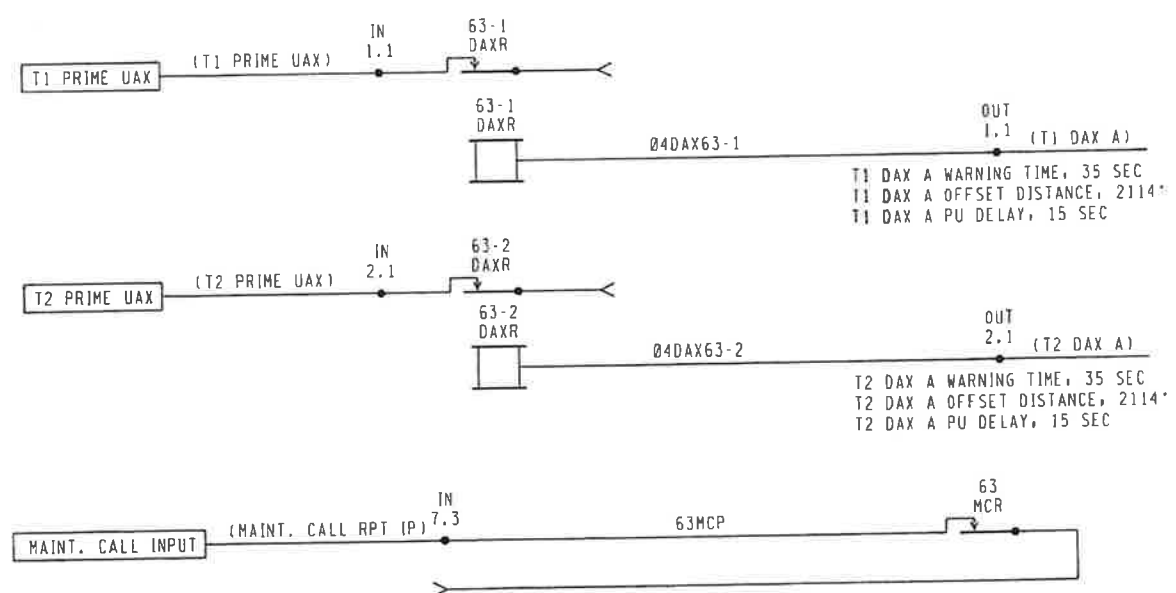
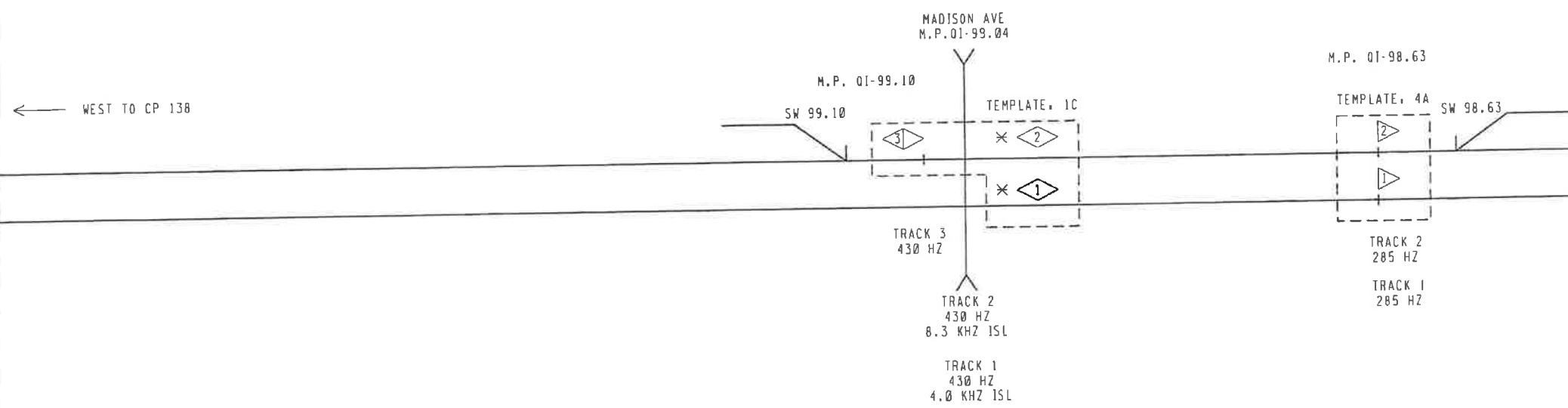
0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
06-02-15	1	*****	*****	0109863	P02

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
MINIMUM PROGRAM STEPS REPORT CWE-63 MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE	REV. NO.	DRAWING	SHEET
06-02-15	1	*****	P02

FOR REFERENCE



NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE	SYMBOL	DEFINE
	BI-DIRECTIONAL		SIMULATED BI-DIRECTIONAL		UNI-DIRECTIONAL		GCP 4000 UNIT		ISLAND		SOFTWARE UAX INPUT		EXTERNAL VITAL AND GATE		INTERNAL SOFTWARE GATE

FOR REFERENCE

DESIGN DATE
06-02-15

REV. NO.
1

DRAWING

SHEET NO

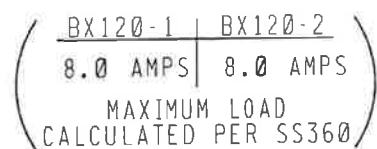
FILE
0109863

SHEET
G01

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DRAWING *****	SHEET NO *****	FILE 0109863	SHEET G01

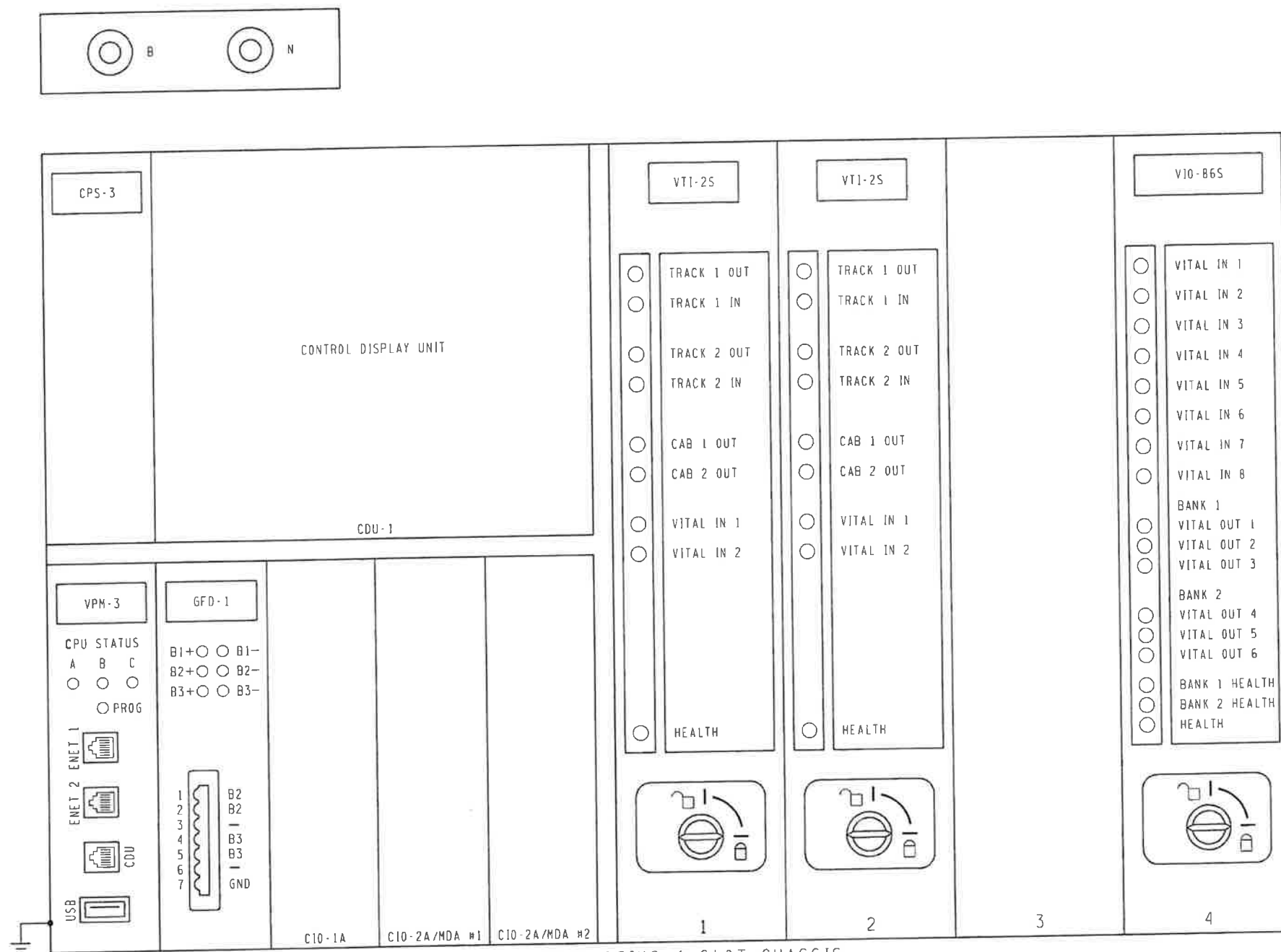
				(TOP ROW)							
--	--	--	--	-----------	--	--	--	--	--	--	--

WALL/DIN RAIL MOUNTED



- 1 - REFERENCES ARE PER SCMS-13.
- 2 - ARRESTERS ARE PER SS302.
- 3 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
- 4 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
- 5 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
- 6 - WIRING
 - A - FEED TO ALL BUSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - B - 120-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - C - ALL TRACK WIRES TO BE #10 FLEX.
 - D - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.
 - E - ALL BATTERY OUTPUTS TO BE #6 PER SS360.
 - F - GROUND WIRE NOT NECESSARY WHEN GE ARRESTER IS MOUNTED ON GROUND PLANE OR METAL ENCLOSURE AFFIXED DIRECTLY TO BUNGALOW METALLIC STRUCTURAL MEMBER.
- 7 - CIRCUIT INTERRUPTERS 2 & 4 ARE MECHANICALLY INTERLOCKED WITH CIRCUIT INTERRUPTERS 6 & 8.
- 8 - CHARGERS TO BE WIRED FOR 240VAC
- 9 - CIRCUIT BREAKER PANEL - 001241125G (24 SPACES)
- 10 - SOLID STATE VOLTAGE MONITOR BENDER MOD. VME420-D-1 DIN RAIL MOUNTED. OUTPUTS CONFIGURED NORMALLY CLOSED (NC). UNDERVOLTAGE SENSING. MINIMUM OF 210 VOLTS AC.

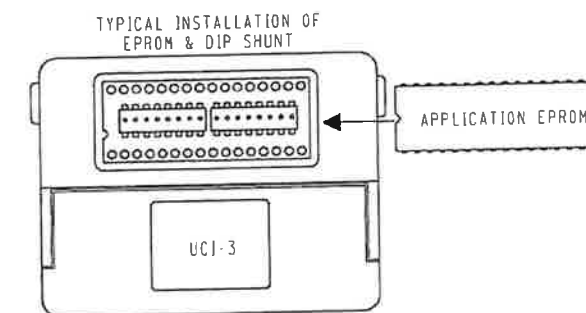
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DRAWING *****	SHEET NO *****	FILE 0109863	SHEET E01



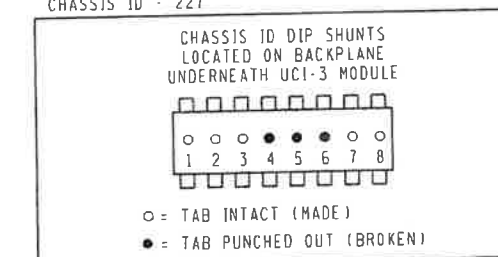
ELECTROLOGIXS 4-SLOT CHASSIS

MODULE LEGEND:

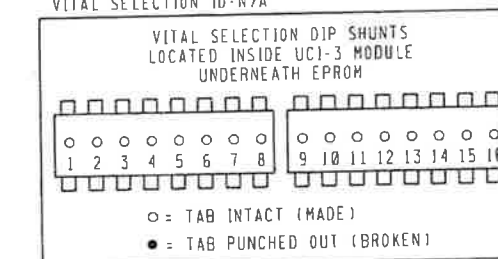
CDU-1 = CONTROL DISPLAY UNIT
 CPS-3 = CENTRAL POWER SUPPLY
 VPM-3 = VITAL PERIPHERAL MASTER
 GFD-1 = GROUND FAULT DETECTOR
 CIO-1A = COMMUNICATION INPUT/OUTPUT
 CIO-2A = COMMUNICATION INPUT/OUTPUT
 CIO-MDA = COMMUNICATION INPUT/OUTPUT
 UCI-3 = CHASSIS INFORMATION
 VTI-2S = VITAL TRACK INTERFACE
 VIO-B6S = VITAL INPUTS/OUTPUTS



CHASSIS ID - 227



VITAL SELECTION ID-N/A



NO CHANGES

042022021 SSE/HMB
 22-1731CSX 07-05-22

Signal South

RAIL TRANSPORT GROUP ENGINEERING
 COMMUNICATIONS AND SIGNALS

ELECTRIC LOCK

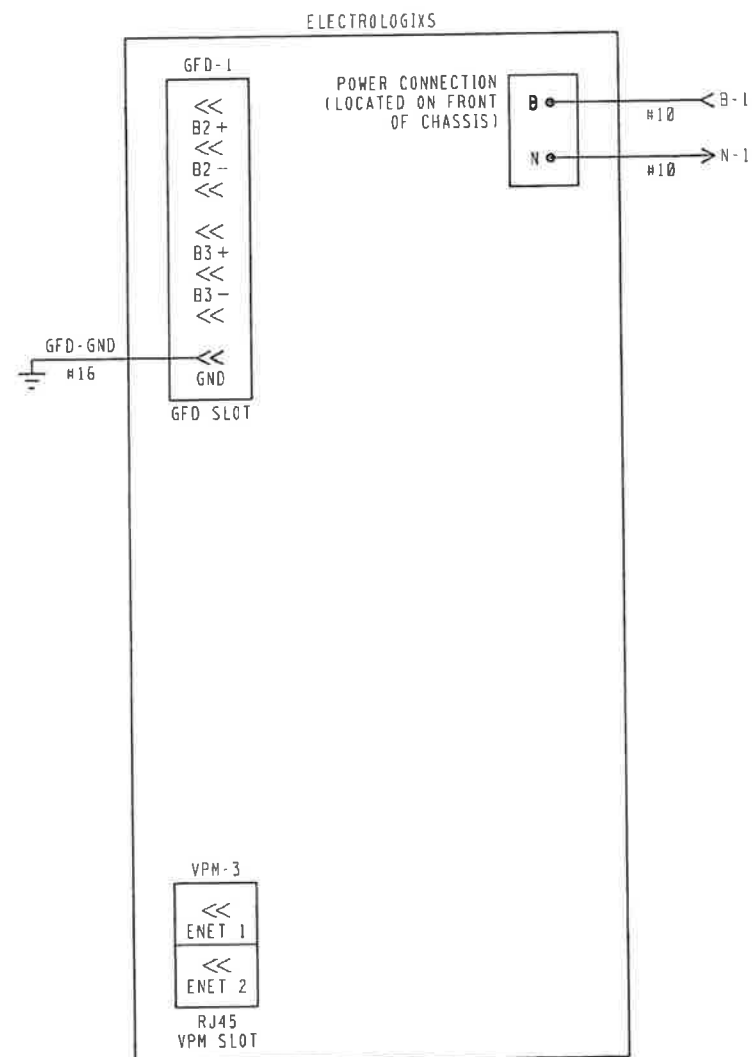
ELECTROLOGIXS MODULE CONFIGURATION
 MARION, OH M.P. 01-98.63

DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
*****	*****	*****	*****

DESIGN DATE 06-02-15	REV. NO. 1
-------------------------	---------------

FILE 0109863	SHEET E02
-----------------	--------------

FOR REFERENCE



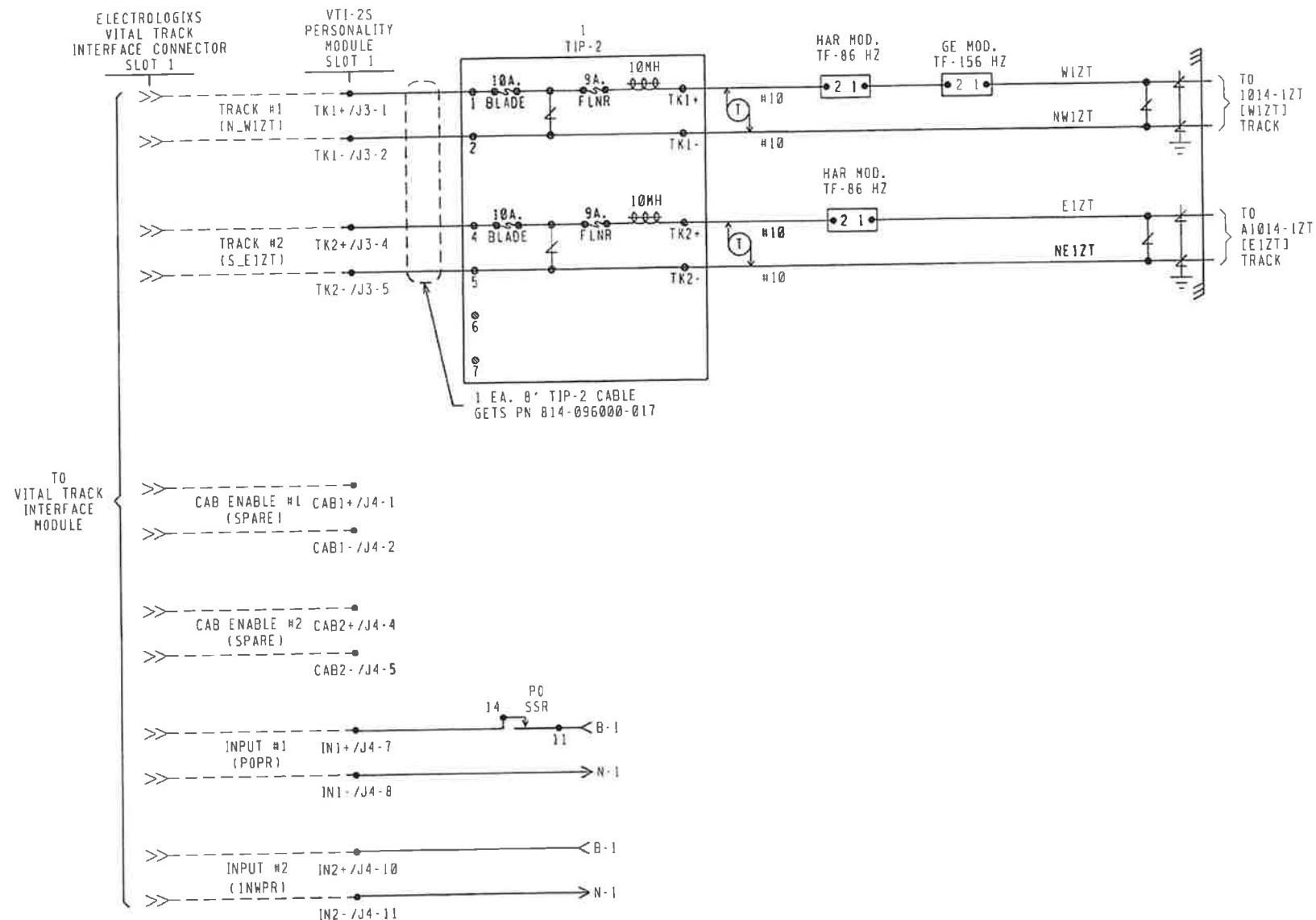
FOR REFERENCE

NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

CSX TRANSPORTATION					
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS					
ELECTRIC LOCK					
ELECTROLOGIXS CIRCUITS MARION, OH M.P. 01-98.63					
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15		
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET NO *****	FILE 0709863	SHEET 001



VT1-2S
PERSONALITY MODULE
SLOT 1
PLUG CONNECTORS

TK1+	1	CAB1+	1
TK1-	2	CAB1-	2
	3		3
TK2+	4	CAB2+	4
TK2-	5	CAB2-	5
	6		6
	7	IN1+	7
J3		IN1-	8
			9
		IN2+	10
		IN2-	11
		J4	

■ = WIRE PRESENT

- NOTES:
- = INTERNAL CONNECTION
 - [] = TAGGING PURPOSE ONLY
 - POK INPUT PROGRAMMED TO ACTIVATE CODE 10 ON BOTH TRACKS.

TRACK 1

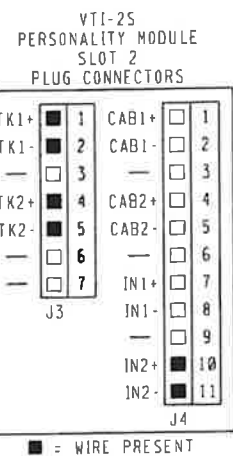
 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
ELECTROLOGIXS TRACK CIRCUITS MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE	REV. NO. 2	DRAWING	SHEET 002

NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

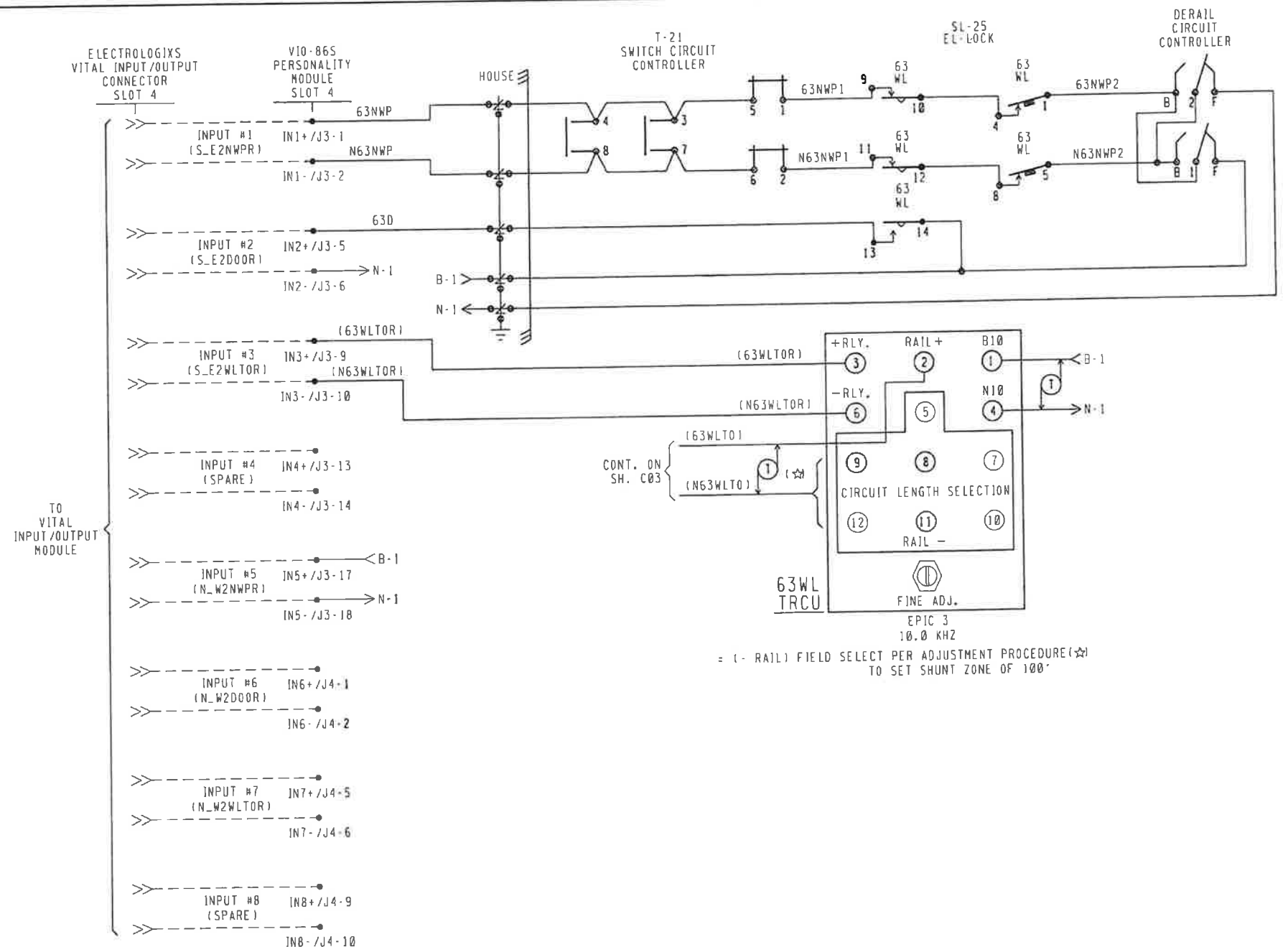
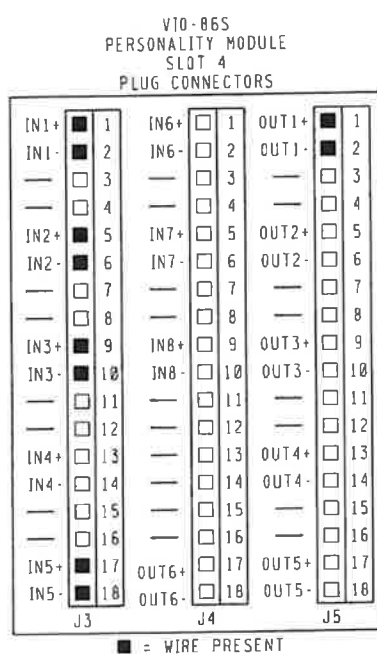
Signal South

FOR REFERENCE



DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DRAWING *****	SHEET NO *****	FILE Q109863	SHEET C03

FOR REFERENCE



NOTE:
---- = INTERNAL CONNECTION

TRACK 2

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

ELECTRIC LOCK

ELECTROLOGIXS I/O CIRCUITS
MARION, OH M.P. Q1-98.63

NO CHANGES

0H2022021
22-1731CSX

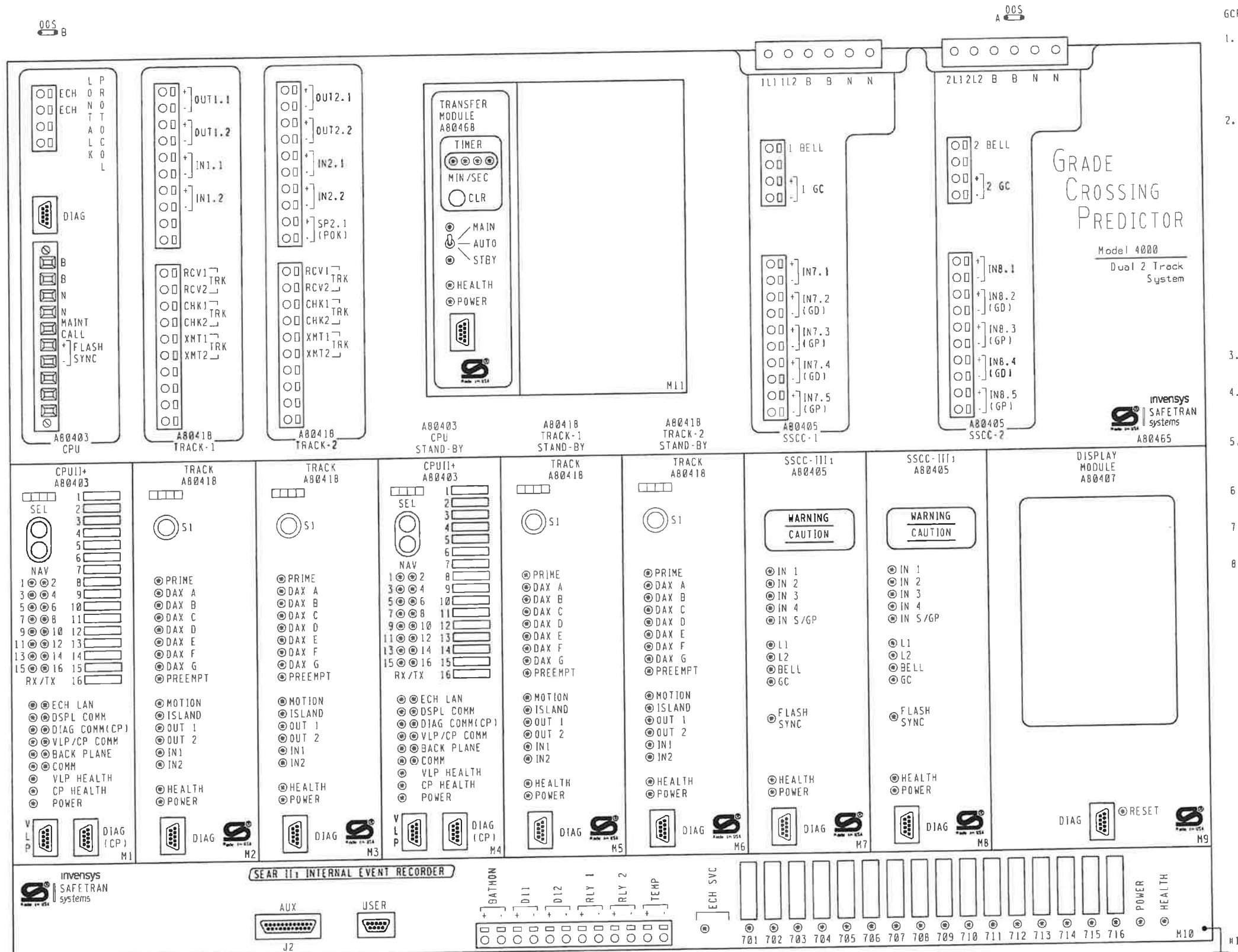


SSE/HMB
07-05-22

Signal South

DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET NO *****	FILE 0109863	SHEET C04
-------------------------	---------------	------------------	-------------------	-----------------	--------------

FOR REFERENCE



DIMENSIONS 23.25"W X 22.15"H X 12.38"D

- GCP 4000 APPLICATION NOTES:
1. THE GRADE CROSSING PREDICTOR (GCP) IS A MODULAR MICROPROCESSOR CONTROLLED SYSTEM THAT IS DEPLOYED TO CONTINUALLY MONITOR THE APPROACHES TO RAILROAD GRADE CROSSINGS AND TO CONTROL THE LAMPS, GATES AND BELLS ASSOCIATED WITH THOSE CROSSINGS. WHEN EQUIPPED WITH THE SEAR II: MODULE THE GCP 4000 WILL RECORD EVENTS AND REPORT ALARMS WHEN CONNECTED TO AN OFFICE SYSTEM.
 2. THE GCP 4000 GCP (A80465) IS A TWO TRACK REDUNDANT UNIT CAPABLE OF DRIVING 4 INDEPENDENT FLASHER AND GATE SIGNALS AND RECORDING EVENTS AND REPORTING ALARMS. THIS A80465 INCLUDES THE FOLLOWING MODULES:
- | SLOT | MODULE | FUNCTION | PART NO. |
|------------|----------------|----------|----------|
| M1 | CPU-11+ | MAIN | A80403 |
| M2 | TRACK-1 | MAIN | A80418 |
| M3 | TRACK-2 | MAIN | A80418 |
| M4 | CPU-11+ | STANDBY | A80403 |
| M5 | TRACK-1 | STANDBY | A80418 |
| M6 | TRACK-2 | STANDBY | A80418 |
| M7 | SSCC-1111 | A SIGNAL | A80405 |
| M8 | SSCC-1111 | B SIGNAL | A80405 |
| M9 | DISPLAY MODULE | | A80407 |
| TOP CENTER | TRANSFER UNIT | | A80468 |
| LOWER BAY | SEAR II: | RECORDER | A80410 |
3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.
 4. THE SEAR II: INTERNAL EVENT RECORDER HAS INPUTS FOR ONE BATTERY MONITOR, TWO NON-VITAL INPUTS AND TWO PROGRAMMABLE RELAY DRIVES (HEEL/FRONT).
 5. LOCATED ON THE FRONT OF EACH MODULE THERE ARE LED LIGHTS TO INDICATE THE ACTIVITY OF CERTAIN FUNCTIONS OCCURRING INSIDE THE GCP.
 6. BETWEEN SLOT 1 & 2 THERE IS A CHASSIS IDENTIFICATION CHIP (CIC) SOCKET AND AN ECD CONNECTOR (DB-25 FEMALE).
 7. UPON THE FAILURE OF A MODULE IN SLOTS M1-M3 THE AUTOMATIC TRANSFER UNIT SWITCHES TO THE STANDBY MODULES IN SLOTS M4-M6.
 8. THE GCP 4000 GCP (A80465) MAY USE RIO MODULES IN SLOTS M3 AND M6.

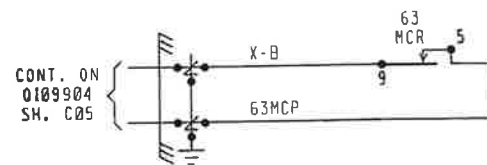
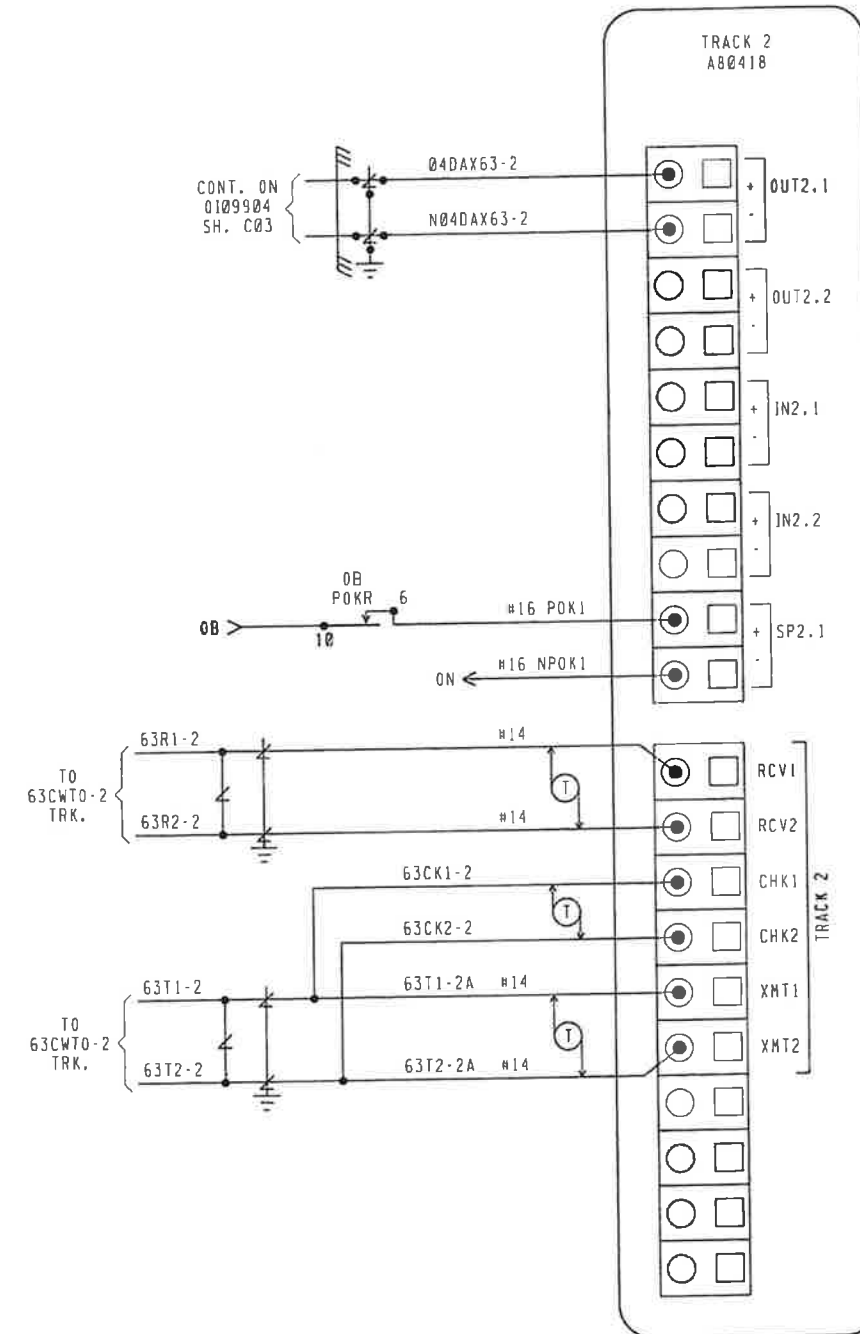
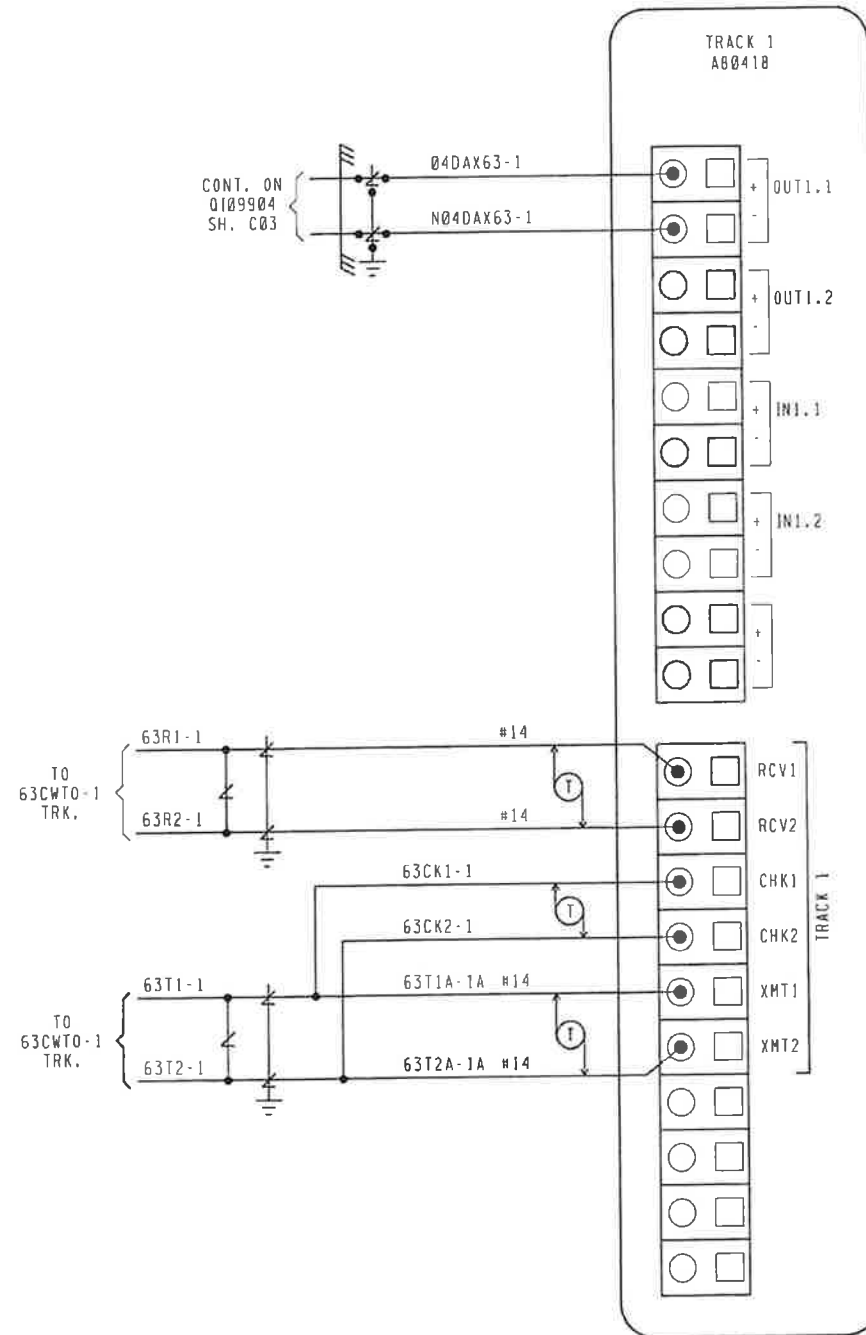
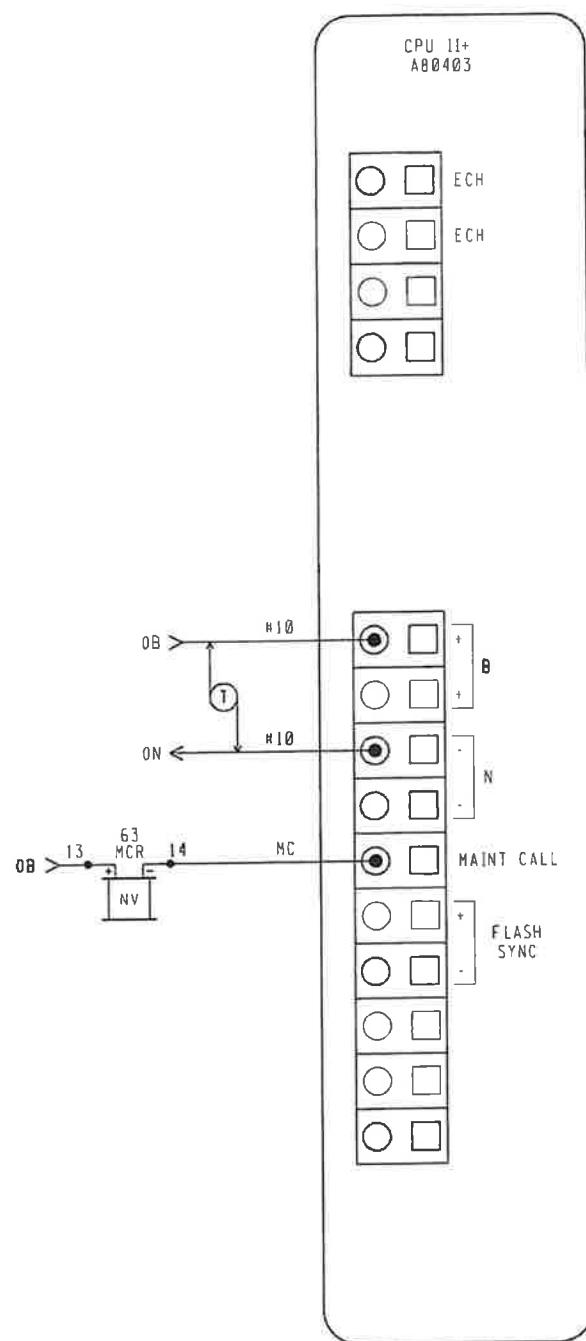
NO CHANGES

0H2022021 SSE/HNB
22-1731CSX 07-05-22

Signal South

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
DETECTION DEVICE CONSIST CWE-63 MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET C05

FOR REFERENCE



NOTE:
ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH
AND TOTAL LENGTH COMBINED NOT TO EXCEED 430'
WITH A MAXIMUM OF 8 NODES. RECOMMEND USE BELDEN
WIRE CABLE #8461 OR EQUIVALENT.

NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

**RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS**

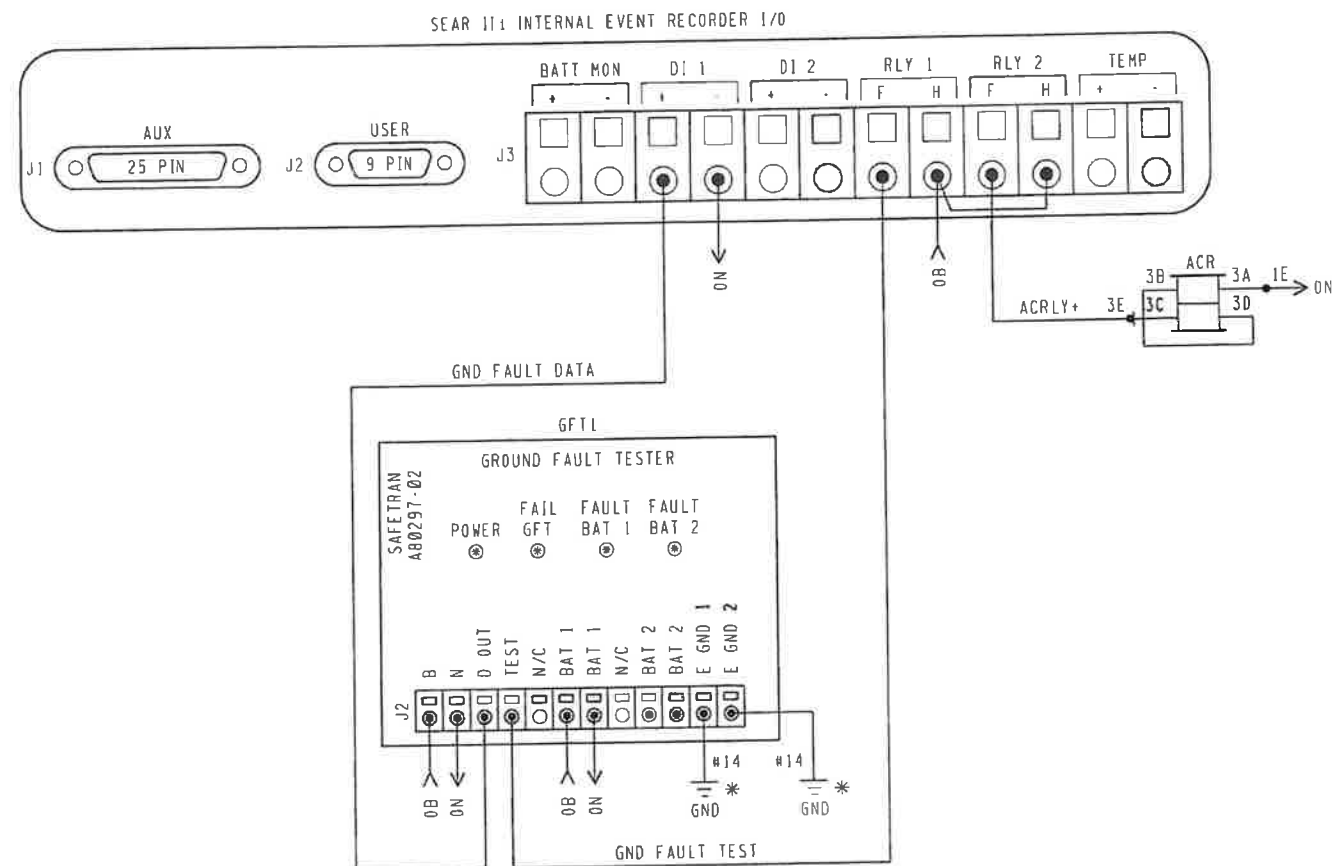
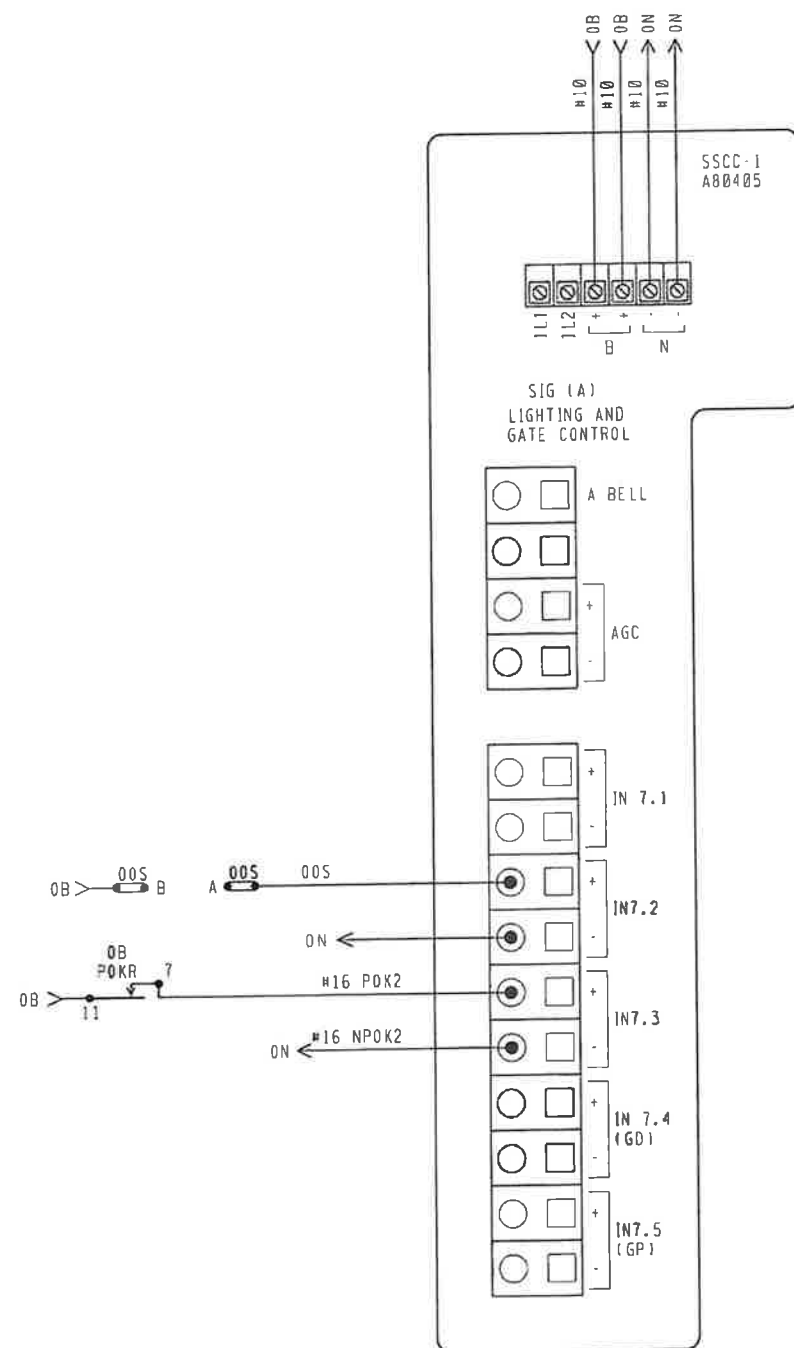
ELECTRIC LOCK

DETECTION CIRCUITRY CWE-63
MARION, OH M.P. 01-98.63

DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DRAWING XXXX	SHEET NO XXXX	FILE 0109863	SHEET C06

DESIGN DATE 06-02-15	REV. NO. 1
-------------------------	---------------

FOR REFERENCE



WARNING

BEFORE REMOVING A TRACK FROM SERVICE COMPLIANCE WITH TRAIN CONTROL JUMPER POLICY, TCR 1525-01, MUST BE ASSURED. TO ENABLE THE REMOVAL OF A TRACK FROM SERVICE, APPLY A JUMPER CONNECTING 00S TERMINAL (A) TO 00S TERMINAL (B).

NOTES:

1. * = EARTH GROUND REF. TERMINALS REQUIRED FOR DETECTION, DO NOT JUMPER TERMINALS. MUST BE CONNECTED TO DIFFERENT POINTS OF BUNGALOW.

NO CHANGES

0H2022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET C07

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

ELECTRIC LOCK

DETECTION CIRCUITRY CWE-63
MARION, OH M.P. 01-98.63

FOR REFERENCE

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II: EXECUTIVE PROGRAM	VERSION: 9V725A01	VERSION: _____
APPLICATION PROGRAM (IF LOADED)	VERSION: 9V864A01	VERSION: _____
SITE SET UP MENU		
FUNCTION	LED DISPLAY	
DATE/TIME	XX-XX-XXXX XX:XX:XX	
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EASTERN	
SITE NAME	REMOTE HOUSE	
MILEPOST	01-98.63	
DOT NUMBER	000000A	
TESTER TYPE	HOUSE	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS ADDRESS	7.125.442.020.99.01 (7.RRR.LLL.GGG.99.01)	
SITE TYPE	COLLECTOR	
OFFICE ADDRESS	2.125.00.0000 (2.RRR.NN.DDDD)	

MEASURE BATTERY VOLTAGE AT INPUT	
BATTERY VOLTAGE 0B	12 VOLTS

PROGRAM MENU SELECT	
EDIT DIGITAL INPUTS	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT BATTERIES	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT RELAYS	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT TEST LED'S	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT ILOD1 SENSOR ☆	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT ILOD2 SENSOR ☆	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT ILOD3 SENSOR ☆	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT ILOD4 SENSOR ☆	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
EDIT VHF SETTINGS	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES
GCP4K ATCS SUBNODE	16

☆ STAR = OPTIONS SHOWN DEPENDANT ON NUMBER OF ILODS SELECTED

- NOTES:
1. ONLY YES IN SPECIAL CIRCUMSTANCES.
 2. BATTERY BANKS* = NUMBER OF BANKS EXCLUDING THE BANK APPLIED TO THE BAT MON SEAR INPUT
 3. YES ON INITIAL SETUP

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
OPTION	SELECTION
NOTE 3 - RESET NAMES / MODULES	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
RAILROAD NUMBER	125
CROSSING CONFIGURATION	NORMAL <input checked="" type="checkbox"/> SPLIT GATE <input type="checkbox"/> EXTERNAL ENTRANCE GATE CONTROLLER(S) <input type="checkbox"/>
AND1 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND2 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND3 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND4 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND5 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND6 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND7 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AND8 USED AS XR	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
ENTRANCE GATES*	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/>
NOTE 2 - BATTERY BANKS*	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
BATT MON USED*	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
0B RESOLUTION*	0.2 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1.0 <input checked="" type="checkbox"/>
X-B RESOLUTION*	0.2 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
X-B2 RESOLUTION*	0.2 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
BATT MON RESOLUTION*	0.2 <input type="checkbox"/> 0.5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
INTERNAL CROSSING CONTROLLERS*	0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>
EXTERNAL CROSSING CONTROLLERS*	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>
DTMF ACTVATION*	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
ILOD MODULES*	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
ANY LED BULBS USED*	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
AUTO INSPECTIONS*	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
BELL SENSORS*	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
GFT'S	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
BATTERIES ON GFT1	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>
GATE TIP SENSORS*	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
RTU	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
USE NON-CRITICAL FEATURE*	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>
FULL APPROACH MOVE ALARMS*	ACTIVATE <input type="checkbox"/> DO NOT ACTIVATE <input checked="" type="checkbox"/>
ENABLE PASSWORD	NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>

NO CHANGES

042022021 SSE/HMB
22-1731CSX 07-05-22

Signal South

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
ELECTRIC LOCK			
SEAR II: CONFIGURATION & FUNCTIONS MARION, OH M.P. 01-98.63			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-02-15
DESIGN DATE 06-02-15	REV. NO. 1	DRAWING *****	SHEET C08

FOR REFERENCE

INDEX
CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
101	INDEX AND REVISIONS									
S01	TRACK AND SIGNAL PLAN									
E01	POWER DISTRIBUTION									
E02	RELAY CONSIST									
C01	CROSSING DETECTION CIRCUITRY									
C02	CROSSING WARNING DEVICE GATE CIRCUITRY									
C03	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
C04	SEAR II CIRCUITS									
C05	SEAR II CONFIGURATION AND FUNCTIONS									
C06	SEAR II CHANNELS									
C07	WAYSIDE ACCESS GATEWAY									

 = DESIGN COMPLETED
 = REVISION COMPLETED

 = NOTE
NEW WORK
0H2022021 SSE/HMB/CCV
22-1731CSX 07-05-22
Signal South
IRING10-3TK.101
REV. 03-17-21

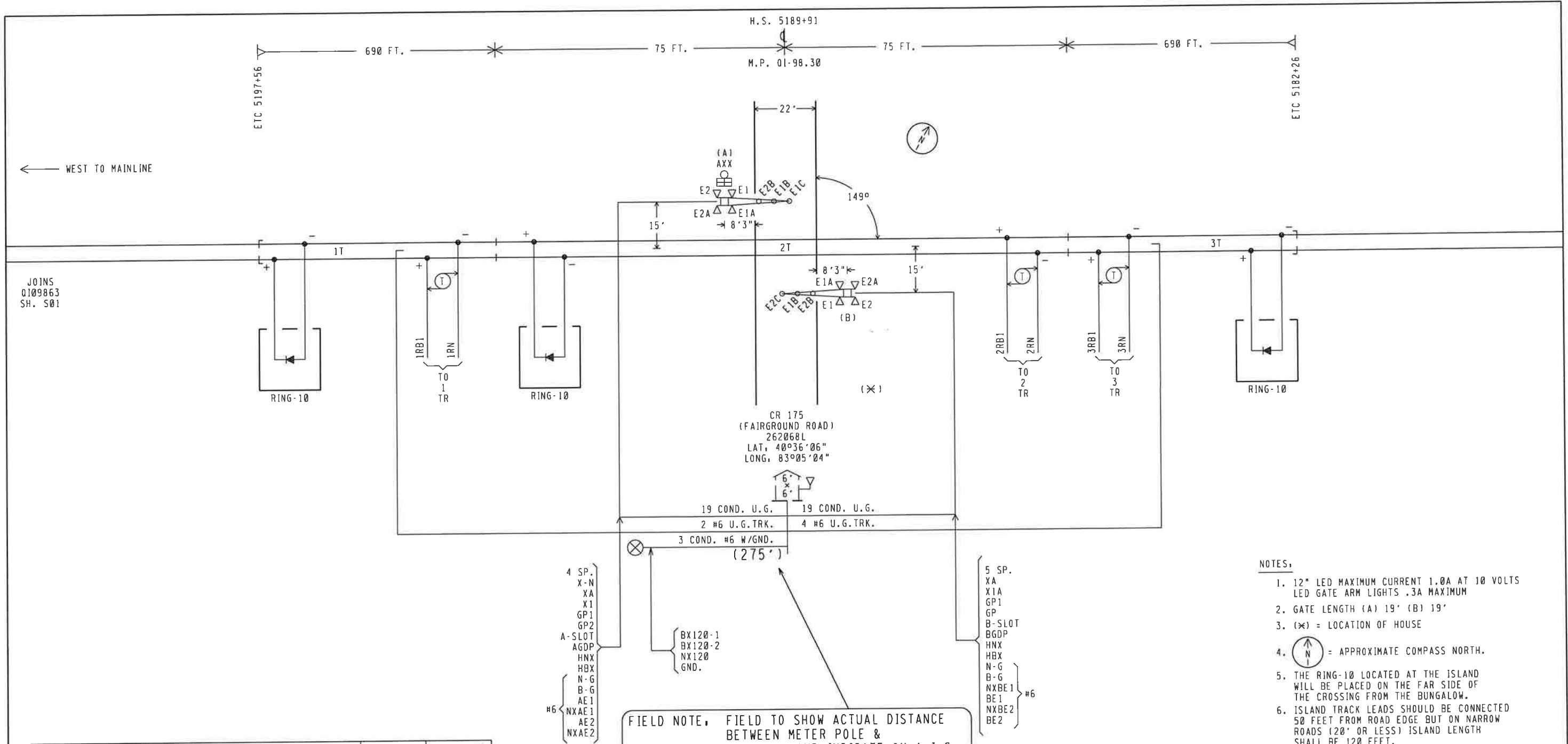
REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2022021	07-05-22		

TO BE COMPLETED ON A.I.S.

DESIGNED SSE		DIGITIZED SSE		CHECKED SSE	DATE 07-05-22
DESIGN DATE 07-05-22	REV. NO. 1	DRAWING *****	SHEET NO *****	FILE 0109030	SHEET 101

FOR REFERENCE

JOINS
0109863
SH. S01



- NOTES:
1. 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS
LED GATE ARM LIGHTS .3A MAXIMUM
 2. GATE LENGTH (A) 19' (B) 19'
 3. (X) = LOCATION OF HOUSE
 4. = APPROXIMATE COMPASS NORTH.
 5. THE RING-10 LOCATED AT THE ISLAND
WILL BE PLACED ON THE FAR SIDE OF
THE CROSSING FROM THE BUNGALOW.
 6. ISLAND TRACK LEADS SHOULD BE CONNECTED
50 FEET FROM ROAD EDGE BUT ON NARROW
ROADS (20' OR LESS) ISLAND LENGTH
SHALL BE 120 FEET.
 7. WARNING SYSTEM APPROACH CIRCUIT
DISTANCES ARE TO BE MEASURED FROM THE
ISLAND TRACK CONNECTIONS.

APPROACH LENGTHS TABLE	EASTBOUND TRACK 1 TYPE C	WESTBOUND TRACK 1 TYPE C
DC, AFO, TYPE C, MOTION, CWT, OR OTHER		
STANDARD MINIMUM WARNING TIME IN SECONDS	25	25
ROADWAY GATE TIME IN SECONDS	5	5
CLEARANCE TIME IN SECONDS	8	8
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS*	0	0
PRESCRIBED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	38 SEC.	38 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS *	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	0	0
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	38 SEC.	38 SEC.
TIME TABLE MAXIMUM TRAIN SPEED IN MILES PER HOUR	10	10
BUFFER SPEED IN MILES PER HOUR	3	3
TOTAL WARNING SYSTEM DESIGN SPEED IN MILES PER HOUR	13	13
APPROACH DISTANCE TO ISLAND EDGE IN FEET	690	690
HALF WIDTH OF ISLAND IN FEET	75	75
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	98.44	98.16

*AUTHORIZING AGENCY, NONE
*DATE OF REQUIREMENT, NONE
*AMOUNT OF TIME (SEC.), NONE

FIELD NOTE, FIELD TO SHOW ACTUAL DISTANCE
BETWEEN METER POLE &
BUNGALOW AND INDICATE ON A.I.S.

FOR AMPERAGES OF 15 AMPS OR
LESS PER LEG USE THE FOLLOWING
POWER CABLE DESIGN GUIDELINES

3 COND. #6 W/GND. (5% VD) $X \leq 402'$
3 COND. #4 W/GND. (5% VD) $403' < X \leq 618'$
* 3 COND. #2 W/GND. (10% VD) $619' < X \leq 1,856'$

* GREATER THAN 1,856' CABLE RUN
CALCULATE ACTUAL CABLE SIZE
REQUIREMENTS PER SS360.

NEW WORK

DH2022021 22-1731CSX

SSE/HMB/CCV 07-05-22

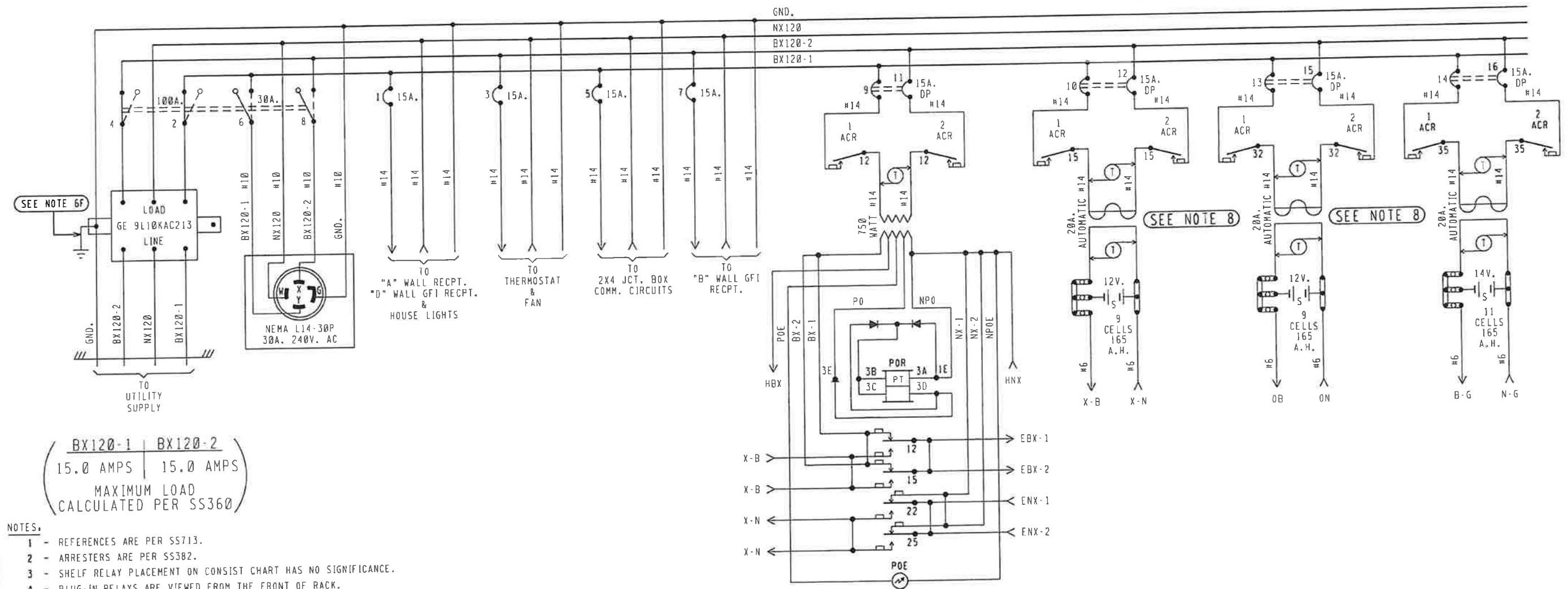
Signal South

1RING10-3TK.S01
REV. 03-17-21

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS					
CR 175 (FAIRGROUND ROAD) 262068L					
TRACK AND SIGNAL PLAN MARION, OH M.P. 01-98.30					
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22		
DESIGN DATE 07-05-22	REV. NO. 1	DRAWING *****	SHEET NO *****	FILE 0109830	SHEET S01

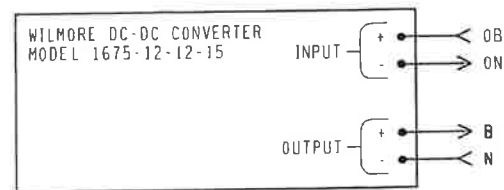
FOR REFERENCE

SHOP TO AFFIX LABEL ON CHARGERS -
CHARGERS WIRED FOR 240V



BX120-1 | BX120-2
15.0 AMPS | 15.0 AMPS
MAXIMUM LOAD
CALCULATED PER SS360

- NOTES:
- REFERENCES ARE PER SS713.
 - ARRESTERS ARE PER SS382.
 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
 - WIRING
 - A - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - B - 120-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - C - ALL TRACK WIRES TO BE #10 FLEX.
 - D - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.
 - E - ALL BATTERY OUTPUTS TO BE #6 PER SS360.
 - F - GROUND WIRE NOT NECESSARY WHEN GE ARRESTER IS MOUNTED ON GROUND PLANE OR METAL ENCLOSURE AFFIXED DIRECTLY TO BUNGALOW METALLIC STRUCTURAL MEMBER.
 - CIRCUIT INTERRUPTERS 2 & 4 ARE MECHANICALLY INTERLOCKED WITH CIRCUIT INTERRUPTERS 6 & 8.
 - CHARGERS WIRED FOR 240VAC
 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)



NEW WORK
042022021 22-1731CSX
SSE/HMB/CCV
07-05-22
Signal South

6' X 6' PTC RELAY HOUSE

POWER DISTRIBUTION			
DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-05-22
DESIGN DATE	REV. NO.	DRAWING	SHEET
07-05-22	1	0109030	E01

TOP ROW																							
XR			XPR			GPR			EOR			POR			IACR			2ACR			DTMFR		
12	FB	B8	22	F	B36	12	B	B02	12	FB	B01	12	B	B77	12	B	B77	9	B	11		N41	
15	FB	C30	25	F	C30	15	B	C30	15	FB	C30	15	B	C30	15	B	C30	10	F	12		C48	
22						22			22	FB		22			22							C49	
23						25			25	FB		25			25								
25	F					32	F		32	F		32	B		32	B							
32						35	B		35	FB		35	B		35	B							
35																							
									1TR			2TR			3TR			ISR			3SR		
									12	FB	B51	12	F	B51	12	B	B8	12	B	B8			
									15		C30	15		C30	15		C30	15		C30			
									22			22	B		22	B		22	B				
									23	F		23	F		23	F		23	F				
									25	F		25	F		25	F		25	F				
									32	F		32	F		32	B		32	B				
									35			35	B		35			35					

FOR REFERENCE

NEW WORK
042022021
22-1731CSX
SSE/HMB/CCV
07-05-22
Signal South

6'X 6' PTC RELAY HOUSE

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

CR 175 (FAIRGROUND ROAD) 262068L

RELAY CONSIST
MARION, OH M.P. 01-98.30

IRING10-3TK.E02
REV. 03-17-21

DESIGN DATE
07-05-22

REV. NO.
1

DESIGNED
SSE

DIGITIZED
SSE

CHECKED
SSE

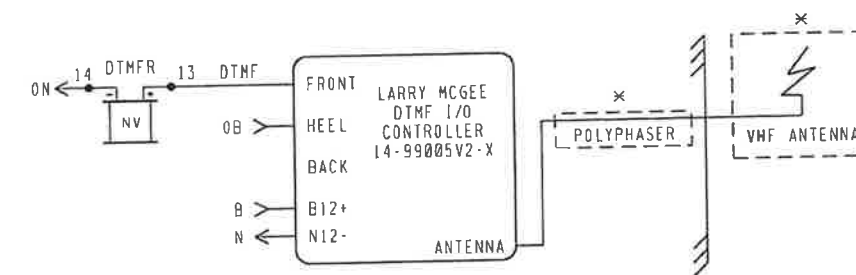
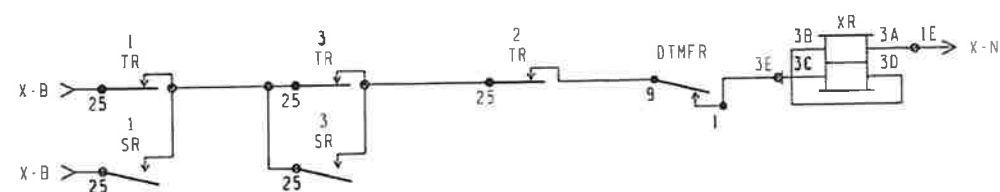
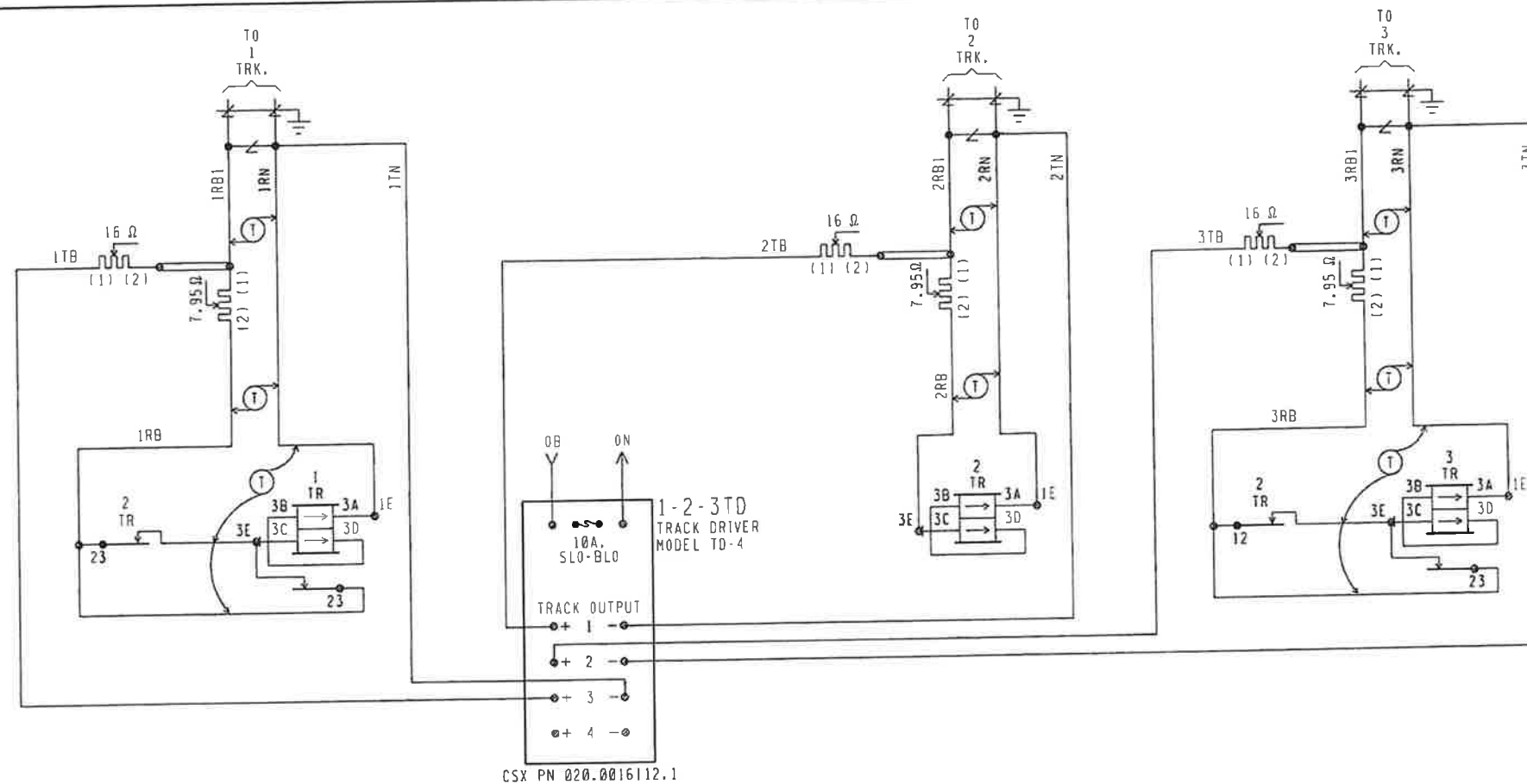
DATE
07-05-22

DRAWING

SHEET NO

FILE
0109830

SHEET
E02



PROGRAMMING FOR DTMF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)

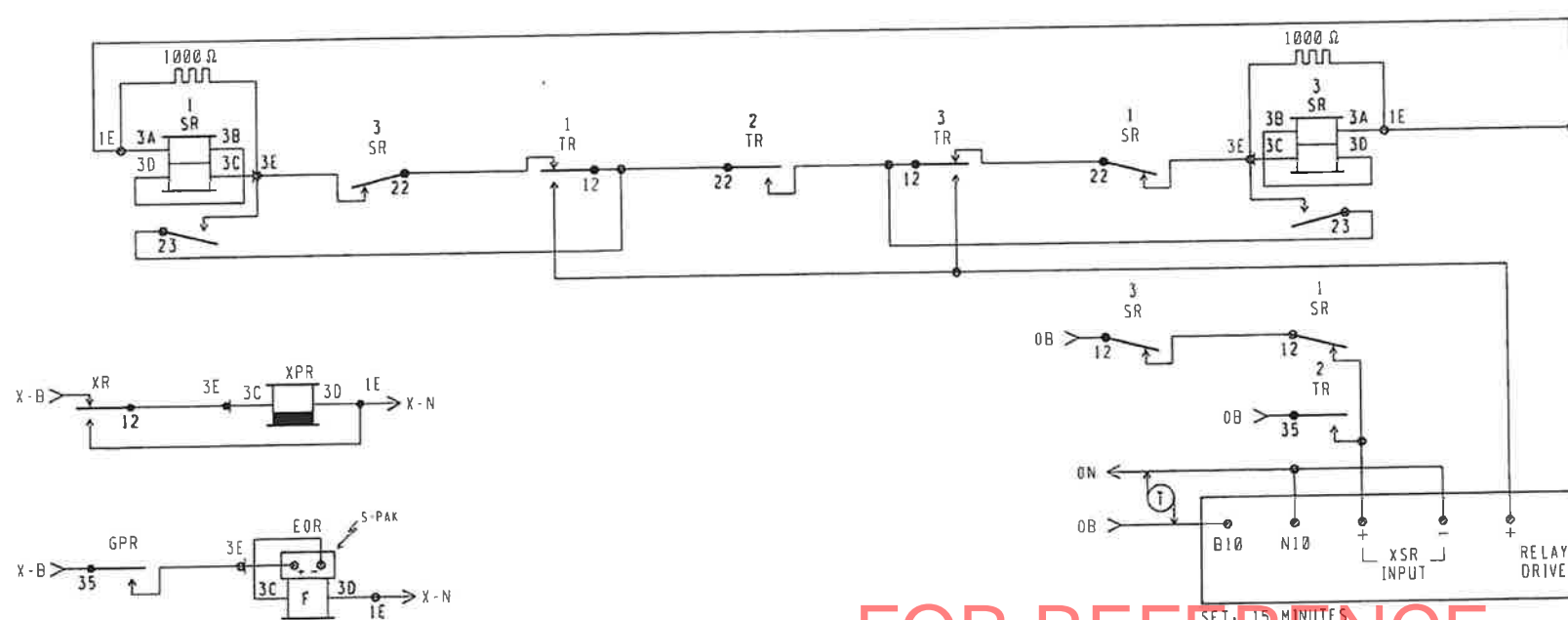
TO ACTIVATE PRESS, 068 #

TO DE-ACTIVATE PRESS, 068 *

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

NOTE:

1. * = COMMUNICATIONS TO SUPPLY



NEW WORK

0H2022021

22-1731CSX

SSE/HMB/CCV

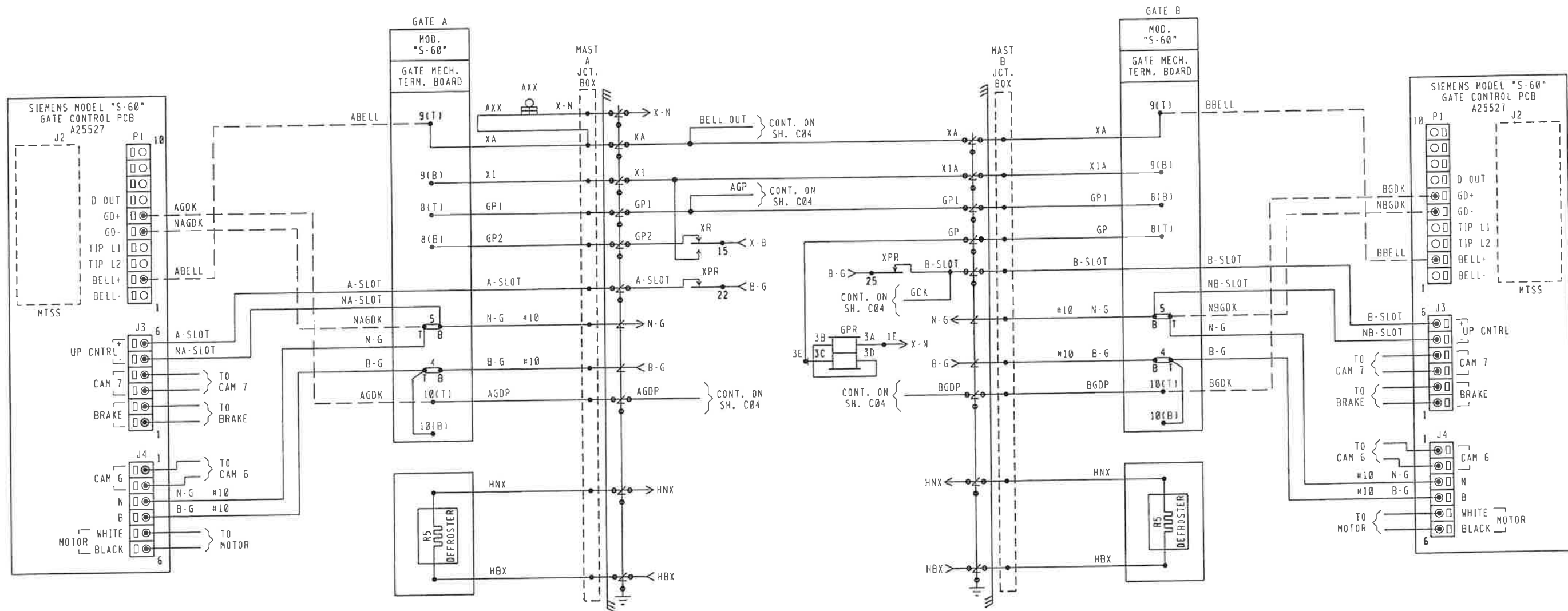
07-05-22

Signal South

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
CR 175 (FAIRGROUND ROAD) 262068L			
CROSSING DETECTION CIRCUITRY MARION, OH M.P. 01-98.30			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DRAWING	SHEET NO	FILE 0109830	SHEET C01

DESIGN DATE 07-05-22	REV. NO. 1
----------------------	------------

FOR REFERENCE



NEW WORK
 042022021 SSE/HMB/CCV
 22-1731CSX 07-05-22
Signal South
 IIRING10-3TK.C02
 REV. 09-04-15

CSX TRANSPORTATION
 RAIL TRANSPORT GROUP ENGINEERING
 COMMUNICATIONS AND SIGNALS

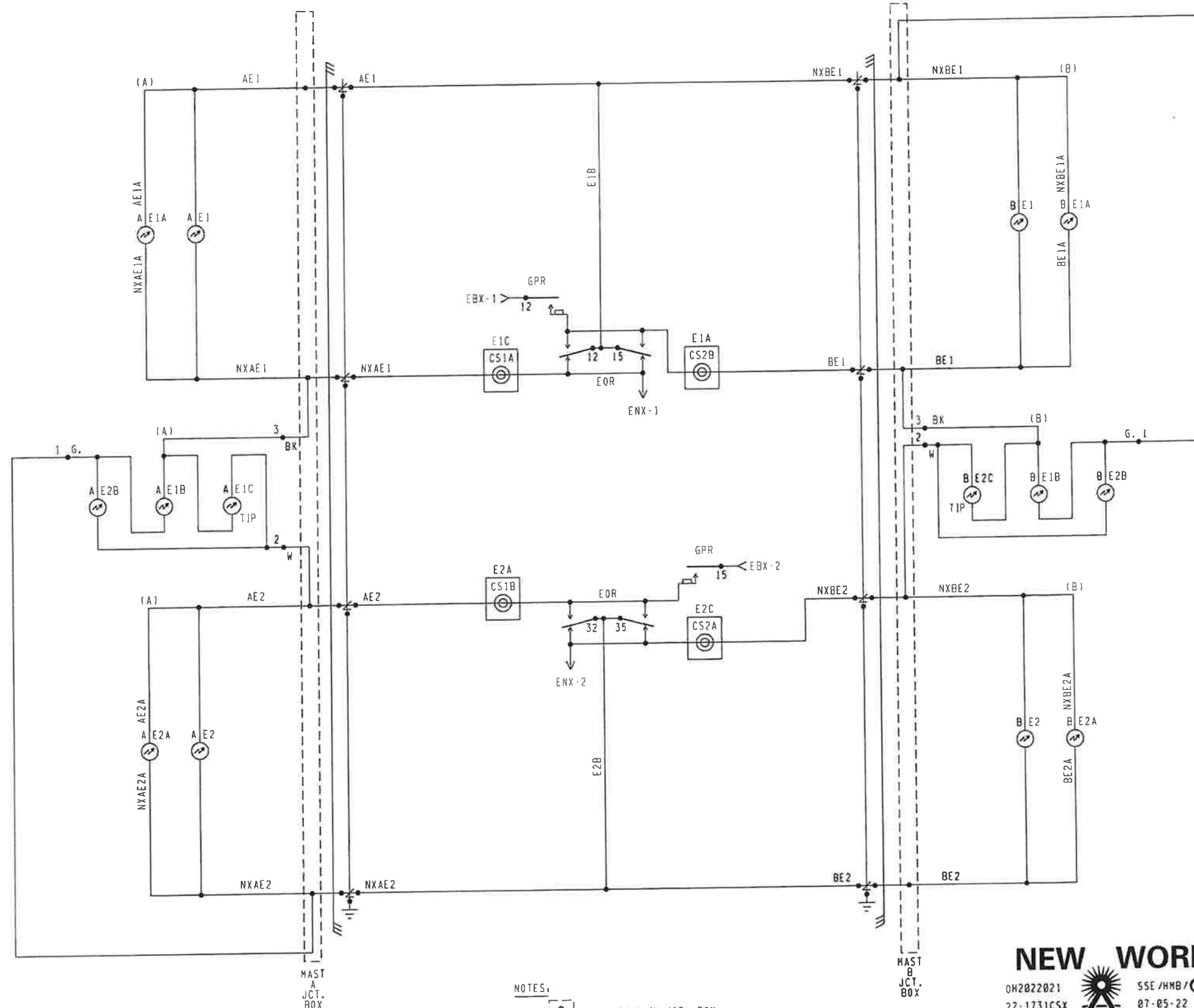
CR 175 (FAIRGROUND ROAD) 262068L

CROSSING WARNING DEVICE GATE CIRCUITRY
 MARION, OH M.P. 01-98.30

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-05-22
DRAWING	SHEET NO	FILE	SHEET
*****	*****	0109830	C02

DESIGN DATE	REV. NO.
07-05-22	1

FOR REFERENCE



NOTES:

1. [Symbol] = TERMINAL IN JCT. BOX
2. WHEN 7 OR MORE LIGHTS ON A SINGLE STRUCTURE REFER TO SS-382 FOR REQUIRED ARRESTER RATING.

NEW WORK
 0H2022021 22-1731CSX
 SSE/HMB/CCV 07-05-22
Signal South
 1RING10-3TK.C03
 REV. 09-04-15

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS

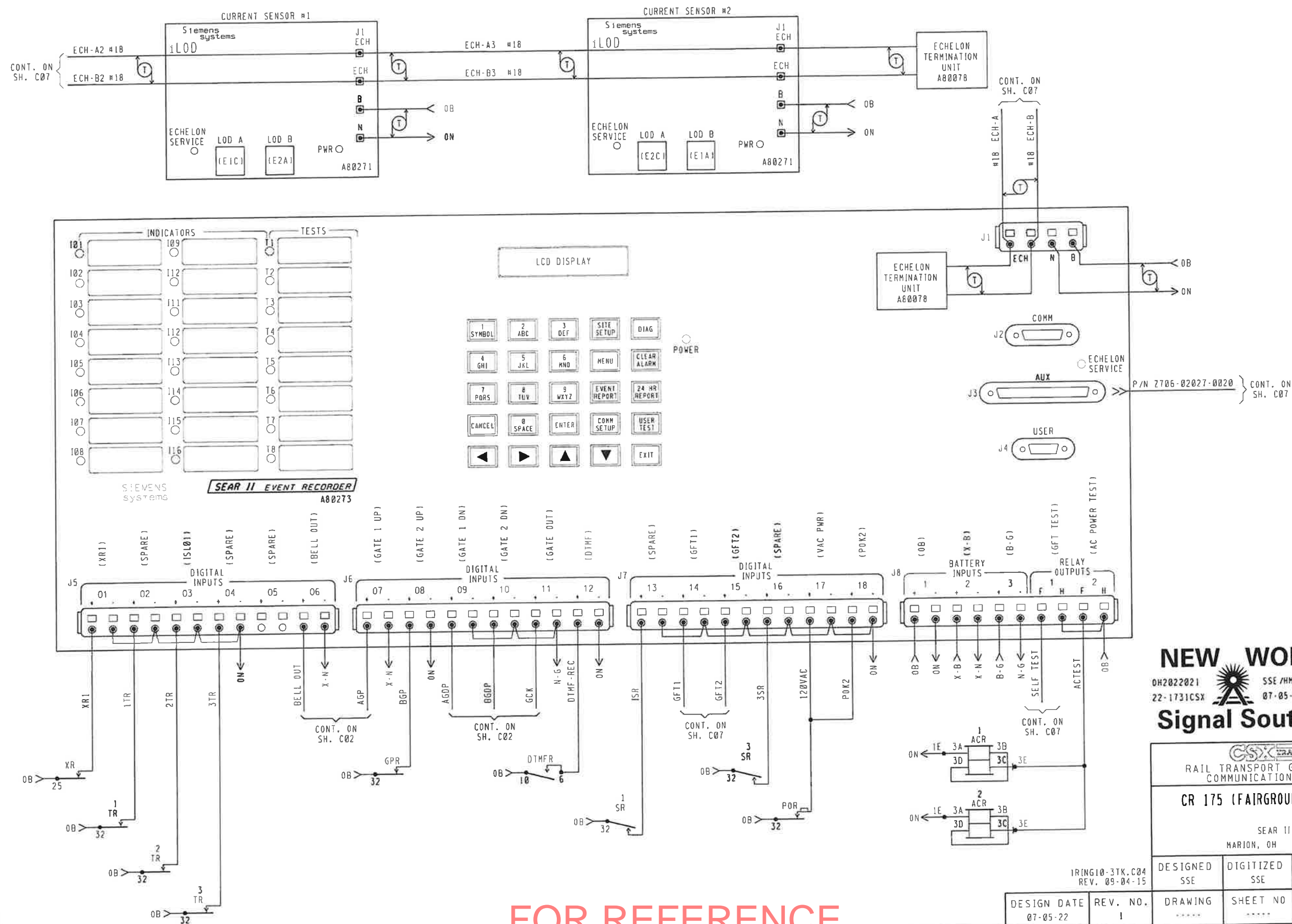
CR 175 (FAIRGROUND ROAD) 262068L

CROSSING WARNING DEVICE LIGHT CIRCUITRY
 MARION, OH M.P. 01-98.30

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DRAWING *****	SHEET NO *****	FILE Q109830	SHEET C03

DESIGN DATE 07-05-22	REV. NO. I
-------------------------	---------------

FOR REFERENCE



NEW WORK
 0H2022021 SSE/HMB/CCV
 22-1731CSX 07-05-22
Signal South

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
CR 175 (FAIRGROUND ROAD) 262068L			
SEAR II CIRCUITS MARION, OH M.P. 01-98.30			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DESIGN DATE 07-05-22	REV. NO. 1	DRAWING *****	SHEET 004

FOR REFERENCE

	DEFAULTS AND/OR STYLE	FIELD RECORD
SEAR II EXECUTIVE PROGRAM	VERSION, 9V645A01Y	VERSION,
APPLICATION PROGRAM (IF LOADED)	VERSION,	VERSION,

FIELD TO PROVIDE
SEARII PROGRAM
INFORMATION ON AIS

SITE SET UP OPTIONS	
OPTION	SELECTION
DATE	XX-XX-XXXX
TIME	[XX:XX:XX]
DAYLIGHT SAVINGS TIME	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
TIME ZONE	<input checked="" type="checkbox"/> EST <input type="checkbox"/> CST
SITE NAME	CR 175 (FAIRGROUND RD)
MILEPOST	01-98.30
DOT NUMBER	262060L
TESTER TYPE	<input checked="" type="checkbox"/> CROSSING <input type="checkbox"/> WAYSIDE
DATE FORMAT	<input checked="" type="checkbox"/> MM-DD-YYYY <input type="checkbox"/> DD-MM-YYYY
TEMP FORMAT	<input checked="" type="checkbox"/> FAHRENHEIT <input type="checkbox"/> CELSIUS
INDICATE HOLDOFF	0
INDICATE REFRESH	60
SITE TYPE	<input type="checkbox"/> NO COMMUNICATION <input type="checkbox"/> DIAL-UP <input checked="" type="checkbox"/> COLLECTOR <input type="checkbox"/> NODE <input type="checkbox"/> BULLHORN/MODE <input type="checkbox"/> CDS902X
SITE ATCS ADDRESS	7.125.442.042.99.01 (7.RRR.LLL.GGG.99.01)
OFFICE ADDRESS	2.125.00.0000 (2.RRR.NN.DDDD)
OFFICE SITE ADDRESS	NA
BACK UP SITE ADDRESS 1	NA
BACK UP SITE ADDRESS 2	NA
POLL ID (1-99)	1
GEN/ATCS MODE	<input type="checkbox"/> GENISYS <input checked="" type="checkbox"/> GEN/ATCS
XID DISABLED	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
OFFICE COM. DEVICE	<input type="checkbox"/> DIRECT <input type="checkbox"/> MCM (RS232) <input type="checkbox"/> MCM (ECH) <input checked="" type="checkbox"/> WAG (ECHELON) <input type="checkbox"/> DIAL UP (RS232) <input type="checkbox"/> S200 RADIO (RS422)
RADIO ATCS ADDRESS	7.125.442.042.99.01
OFFICE PHONE NUMBER	1-XXX-XXX-XXXX
INIT. STRING	
FIELD COMM	<input type="checkbox"/> VHF (ECH) <input type="checkbox"/> VHF (RS232) <input type="checkbox"/> WAG (ECH) <input type="checkbox"/> SS (RS232) <input checked="" type="checkbox"/> NONE
USER PORT	BAUD RATE (9600)
AUX PORT	BAUD RATE (9600)
COMM PORT	BAUD RATE (9600)

NOTE 5

NOTE 6

NOTE 7

NOTES

1. LARGE CONFIGURATION ASSIGNS RECORDER INPUTS FOR USE WHEN DIGITAL I/O MODULE REQUIRED.
2. IF WARNING DEVICE = NONE MAIN/STANDBY OPTION NOT SHOWN.
3. IF VHF COMMUNICATIONS = NO THEN DTMF ACTIVATION AND CHANNEL OPTIONS ARE NOT SHOWN.
4. LAST 3 DIGITS OF DOT NO. FOR FIRST ACTIVATION CODE.
5. DEFAULT ADDRESS 7.620.100.100.99.01 USED FOR STAND ALONE LOCATIONS.
6. OPTIONS NOT SHOWN IF SITE TYPE = NO COMMUNICATIONS.
7. FORMAT AS, BAUD, DATA BITS, PARITY STOP BITS, FLOW CONTROL.

FIELD TO VERIFY
BATTERY VOLTAGES AND
CURRENT READINGS ON AIS

LIT BULB COUNT ON EACH CIRCUIT	NO.	TYPE OF BULB	CURRENT READING IN AMP. AT APPROX. 10.0 V BULB VOLTAGE
CURRENT SENSOR (1) E1C, LAMP SET UP	4	<input type="checkbox"/> BULBS <input checked="" type="checkbox"/> LED	2.6
CURRENT SENSOR (1) E2A, LAMP SET UP	4	<input type="checkbox"/> BULBS <input checked="" type="checkbox"/> LED	2.6
CURRENT SENSOR (2) E2C, LAMP SET UP	4	<input type="checkbox"/> BULBS <input checked="" type="checkbox"/> LED	2.6
CURRENT SENSOR (2) E1A, LAMP SET UP	4	<input type="checkbox"/> BULBS <input checked="" type="checkbox"/> LED	2.6

MEASURE BATTERY VOLTAGE AT INPUT	
BATTERY VOLTAGE 0B	12 VOLTS
BATTERY VOLTAGE X-B	12 VOLTS
BATTERY VOLTAGE B-G	14 VOLTS

FOR REFERENCE

SITE SET UP OPTIONS CONT.	
OPTION	SELECTION
RAILROAD NUMBER	125
CROSSING CONFIGURATION	STANDARD <input checked="" type="checkbox"/> LARGE <input type="checkbox"/> REMOTE <input type="checkbox"/> SPLIT GATE <input type="checkbox"/> ISL ONLY <input type="checkbox"/> CP COLLECTOR <input type="checkbox"/>
NUMBER OF XR INPUTS	0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
NUMBER OF ISL INPUTS	0 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
CONSTANT WARNING DEVICE	GCP <input type="checkbox"/> OTHER <input type="checkbox"/> NONE <input checked="" type="checkbox"/>
TOTAL NUMBER OF GCP NODES	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
NUMBER OF REDUNDANT GCP	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
CROSSING CONTROLLER 1	SSCC IIIA / PLUS <input type="checkbox"/> SSCC IV <input type="checkbox"/> OTHER <input type="checkbox"/> NONE <input checked="" type="checkbox"/>
POK2	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
MAIN / STANDBY	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
AUXILIARY TRACKS	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>
ENTRANCE GATE	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/>
EXIT GATES	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
GATE POSITION FAIL 10-60 SEC	25
NUMBER OF UAX INPUTS	0 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>
BATTERY BANKS	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>
OB RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input checked="" type="checkbox"/>
X-B RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input checked="" type="checkbox"/> NOT PRESENT <input type="checkbox"/>
B-G RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input checked="" type="checkbox"/> NOT PRESENT <input type="checkbox"/>
X-B2 RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
B-G2 RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
X-B3 RESOLUTION	.2 <input type="checkbox"/> .5 <input type="checkbox"/> 1.0 <input type="checkbox"/> NOT PRESENT <input checked="" type="checkbox"/>
PREEMPTION	NORMAL <input type="checkbox"/> ADVANCED <input type="checkbox"/> NO <input checked="" type="checkbox"/>
KDR INPUT	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
VHF COMMUNICATOR	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
ACTIVATION CODE 1	XXX
ACTIVATION CODE 2	XXX
ACTIVATION CODE 3	XXX
ACTIVATION TIMEOUT (30 TO 600 SECONDS)	60
LOD MODULES	0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/>
ANY LED BULBS	NO <input type="checkbox"/> YES <input checked="" type="checkbox"/>
AUTO INSPECTIONS	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
BELL ON	GATES LOWERING <input checked="" type="checkbox"/> GATES MOVING <input type="checkbox"/> ALWAYS <input type="checkbox"/>
GROUND FAULT DETECTORS	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
BATTERIES ON GFT1	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/>
FULL APPROACH MOVE ALARMS	ACTIVATED <input checked="" type="checkbox"/> DO NOT ACTIVATE <input type="checkbox"/>

NOTE 1

NOTE 2

NOTE 3

NOTE 4

NEW WORK
0H2022021 22-1731CSX
SSE/HMB/CCV
07-05-22
Signal South

IRING10-3TK.C05
REV. 09-04-15

DESIGN DATE 07-05-22
REV. NO. 1

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
CR 175 (FAIRGROUND ROAD) 262060L			
SEAR II CONFIGURATION AND FUNCTIONS MARION, OH M.P. 01-98.30			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DRAWING *****	SHEET NO *****	FILE 0109030	SHEET C05

DISCRETE INPUTS	DI 01	DI 02	DI 03	DI 04	DI 05	DI 06
CHANNEL	1	2	3	4	5	6
NAME	XRI	(1TR)	ISLAND 1 (2TR)	(3TR)		BELL OUT (BELL PWR)
TAG	XRI (XR)	SP (1TR)	ISL1 (2TR)	SP (3TR)	SP	BELL OUT (BELL PWR)
OFF NAME	DOWN (XR)	DOWN (1TR)	DOWN (2TR)	DOWN (3TR)		OFF (BELL PWR)
ON NAME	UP (XR)	UP (1TR)	UP (2TR)	UP (3TR)		ON (BELL PWR)
ON DEBOUNCE TIME	100 ms	100 ms	100 ms	100 ms	1000 ms	100 ms
OFF DEBOUNCE TIME	100 ms	100 ms	100 ms	100 ms	1000 ms	100 ms
TOGGLE PERIOD	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms	1000 ms

TSS INPUTS	DI 07	DI 08	DI 09	DI 10
CHANNEL	7	8	9	10
NAME	AGP	BGP	AGDP	BGDP
TAG	AGP (GP)	BGP (GP)	AGDP	BGDP
OFF NAME	LIGHTS FLASH	LIGHTS FLASH	NOT HORIZ	NOT HORIZ
ON NAME	GATE VERTICAL	GATE VERTICAL	GATE HORIZ	GATE HORIZ
ON DEBOUNCE TIME	100 ms	100 ms	100 ms	100 ms
OFF DEBOUNCE TIME	100 ms	100 ms	100 ms	100 ms
TOGGLE PERIOD	1000 ms	1000 ms	1000 ms	1000 ms

DISCRETE INPUTS	DI 11	DI 12	DI 13
CHANNEL	11	12	13
NAME	GATE CONTROL	DTMF	(1SR)
TAG	GCONT1 (GCK)	DTMF-REC	SP (1SR)
OFF NAME	OFF (DESCENT)	OFF (NO GATE KEYED)	DOWN (1SR)
ON NAME	ON (ASCENT ON)	ON (ACTIVATE)	UP (1SR)
ON DEBOUNCE TIME	100 ms	100 ms	100 ms
OFF DEBOUNCE TIME	100 ms	100 ms	100 ms
TOGGLE PERIOD	1000 ms	1000 ms	1000 ms

GFT INPUTS	DI 14	DI 15
CHANNEL	14	15
NAME	GND FAULT TESTER 1 (GFT1,2)	GND FAULT TESTER 2 (GFT3,4)
TAG	GFT1 (GFT1 DATA)	GFT2 (GFT2 DATA)
BATTERY 1 NAME	OB (GND FAULT)	B-G (GND FAULT)
BATTERY 1 TAG	OB (GND FAULT)	B-G (GND FAULT)
BATTERY 2 NAME	X-B (GND FAULT)	SP.
BATTERY 2 TAG	X-B (GND FAULT)	SP.

DISCRETE INPUTS	DI 16	DI 17	DI 18
CHANNEL	16	17	18
NAME	(3SR)	120 VAC	POK2
TAG	SP (3SR)	120 VAC	POK2
OFF NAME	DOWN (3SR)	OFF (ALL POWER OFF)	OFF (ALL POWER OFF)
ON NAME	UP (3SR)	ON (ALL POWER ON)	ON (ALL POWER ON)
ON DEBOUNCE TIME	100 ms	100 ms	100 ms
OFF DEBOUNCE TIME	100 ms	100 ms	100 ms
TOGGLE PERIOD	1000 ms	1000 ms	1000 ms

BATTERY INPUTS	B11	B12	B13
CHANNEL	1	2	3
NAME	OB (ELECTRONIC BATT)	X-B (BULB BATT)	B-G (GATE BATT)
TAG	OB	X-B	B-G
SAMPLE PERIOD (ms)	500 (ms)	500 (ms)	500 (ms)
RESOLUTION (V)	0.2 (VOLTS)	0.2 (VOLTS)	1.0 (VOLTS)
AVGERAGING SAMPLES	32 SAMPLES	32 SAMPLES	32 SAMPLES

RELAYS	R01	R02
CHANNEL	1	2
NAME	GFT TEST	AC POWER TEST (ACRLY)
TAG	SELF TEST	AC POWER TEST (ACRLY)
OFF STATE NAME	NOT TESTING	OFF (ACR DN)
ON STATE NAME	TESTING	ON (ACR UP)
UNKNOWN STATE NAME	PULSE	PULSE
ON PULSE TIME (s)	1 (s)	1 (s)
OFF PULSE TIME (s)	1 (s)	1 (s)
TOGGLE PERIOD (s)	1 (s)	1 (s)
DUTY CYCLE	50	50

NOTE, () DENOTES NOMENCLATURE FOR CLARIFICATION AND WILL NOT DISPLAY ON LOG REPORTS.

NEW WORK
0H2022021
22-1731CSX
Signal South

1RING10-3TK.C06
REV. 09-04-15

SSE/HMB/CCV
07-05-22

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

CR 175 (FAIRGROUND ROAD) 262068L

SEAR 11 CHANNELS
MARION, OH M.P. 01-90.30

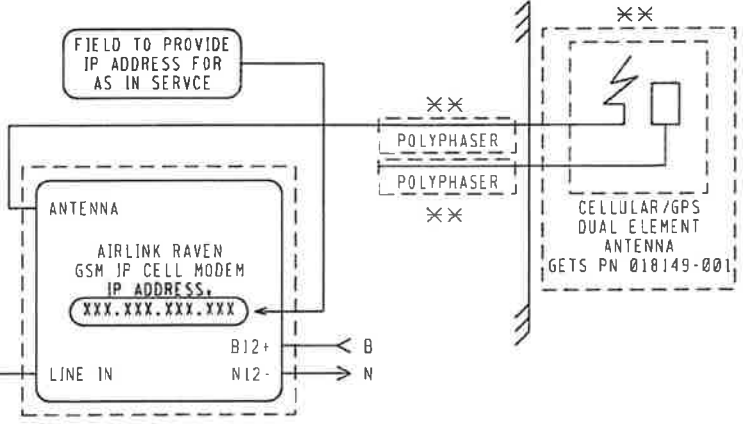
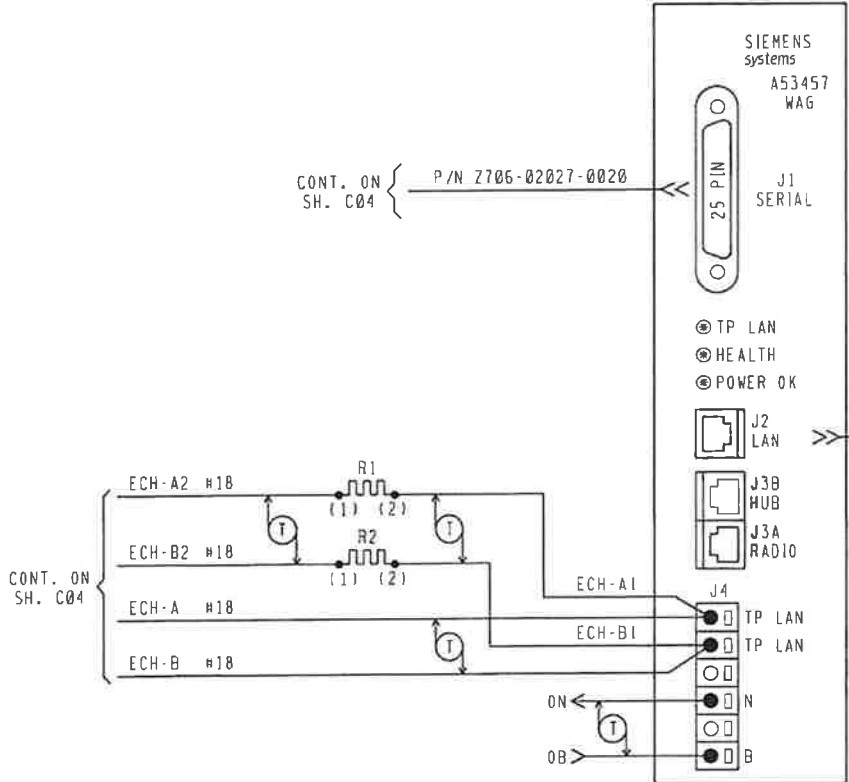
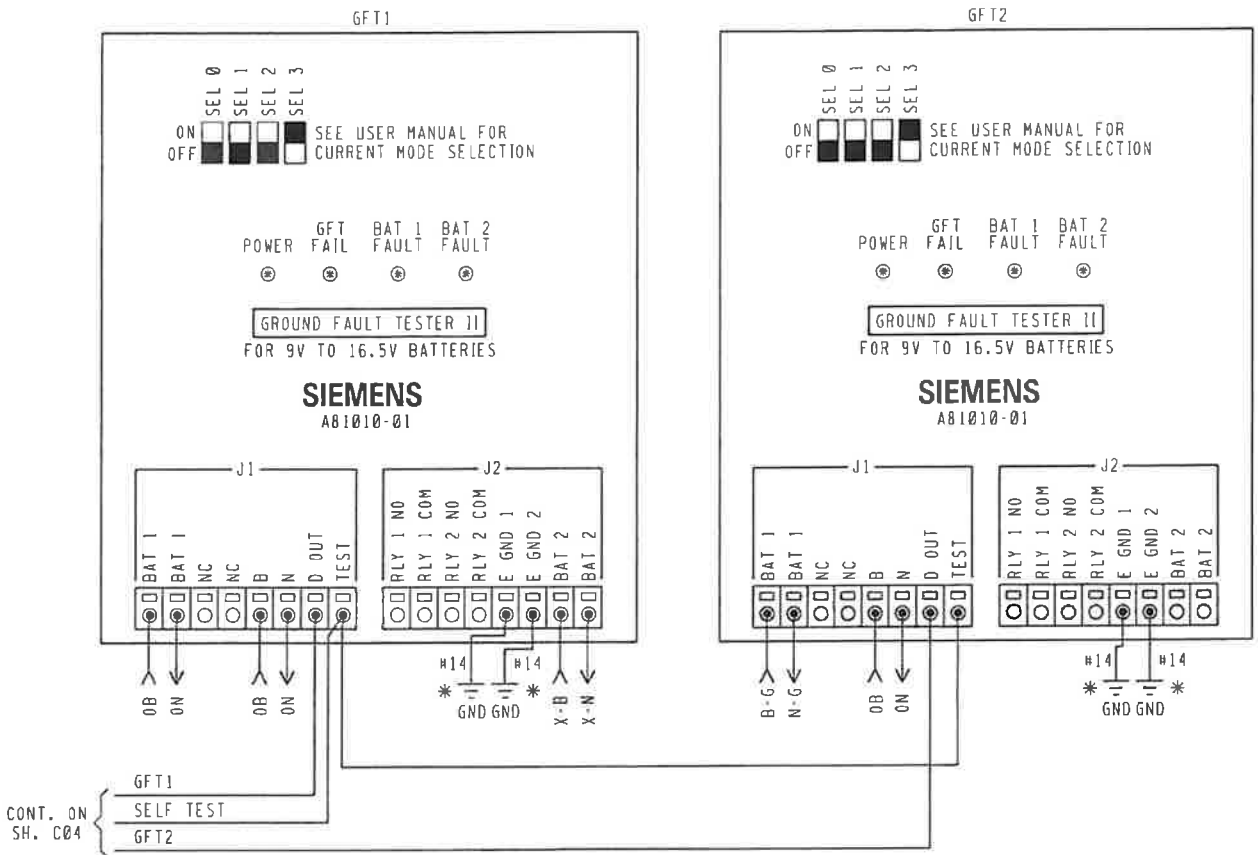
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DRAWING *****	SHEET NO *****	FILE 0109030	SHEET C06

DESIGN DATE 07-05-22	REV. NO. 1
-------------------------	---------------

FOR REFERENCE

WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.442.042.99.01 7.125.LLL.GGG.SS.DD
SERIAL INTERFACE	9600,NONE,B,1/NOFLOW
SERIAL FORMAT	RAW
WAG TEST MODE	DISABLED
ECHOLON ADDRESS	01.01
UDP PORTS	5000, 5001, 5002, 5003
ROUTE TABLE EXPIRY	5400 SEC
BROADCAST MEDIUM	IP ETHERNET
TCP PORTS	6001
DHCP SERVER	DISABLED
IP ADDRESS	192.168.13.1
TYPE 7 ROUTE LENGTH	12--7RRRLLLGGGSS
IP NETWORK MASK	255.255.255.000

NOTE TO INSPECTOR,
AT INSTALLATION OF CDMA BY COM.
MARK-UP CONFIGURATION TABLE FOR
AS IN SERVICE PLANS



COMM NOTES,
1. WAG J3A PINOUTS,
4 & 5 = +12VDC RADIO OUT
7 & 8 = GND RADIO RETURN

- NOTE,
1. ALL WIRING #16 UNLESS NOTED OTHERWISE.
 2. * = EARTH GROUND REF. TERMINALS REQUIRED FOR DETECTION. DO NOT JUMPER TERMINALS. MUST BE CONNECTED TO DIFFERENT POINTS OF BUNGALOW.
 3. R1 & R2 = .5 WATT, 20Ω RESISTOR
 4. ** = COMMUNICATIONS TO SUPPLY.

NEW WORK
0H2022021
22-1731CSX
SSE/HMB/CCV
07-05-22
Signal South
1RING10-31X.C07
REV. 09-04-15

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
CR 175 (FAIRGROUND ROAD) 262068L			
WAYSIDE ACCESS GATEWAY MARION, OH M.P. 01-98.30			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 07-05-22
DESIGN DATE 07-05-22	REV. NO. 1	DRAWING *****	SHEET C07

ESTIMATE SUBJECT TO REVISION AFTER: 7/22/2023

DOT NO.: 262068L

CITY: Marion

COUNTY: Marion

STATE: OH

DESCRIPTION: Fariground Rd. - Installation of FLS&Gs.

ZONE: Great Lakes

SUB-DIV: Mt. Victory

MILE POST: QI-98.30

AGENCY PROJECT NUMBER: PID 116013

PRELIMINARY ENGINEERING:

212	Contracted & Administrative Engineering Services	\$	12,000
	Subtotal	\$	12,000

CONSTRUCTION ENGINEERING/INSPECTION:

212	Contracted & Administrative Engineering Services	\$	8,000
	Subtotal	\$	8,000

FLAGGING SERVICE: (Contract Labor)

70	Labor (Conductor-Flagman)	0	Days @	\$ 350.00	\$	-
50	Labor (Foreman/Inspector)	0	Days @	\$ 504.00	\$	-
70	Additive	139.00%	(Transportation Department)		\$	-
50	Additive	160.00%	(Engineering Department)		\$	-
	Subtotal				\$	-

SIGNAL & COMMUNICATIONS WORK:

\$ 376,919

TRACK WORK:

\$ -

PROJECT SUBTOTAL:

\$ 396,919

900	<u>CONTINGENCIES:</u>	0.00%	\$	-
-----	------------------------------	-------	----	---

PROJECT TOTAL:

\$ 396,919

CURRENT AUTHORIZED BUDGET:

\$ -

TOTAL SUPPLEMENT REQUESTED:**\$ 396,919****DIVISION OF COST:**

Agency	<u>100.00%</u>	\$	396,919
Railroad	<u>0.00%</u>	\$	-
		\$	396,919

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by: se

Approved by: **AJD** CSXT Public Project Group

DATE: 07/22/22 REVISED: 01/00/00 DATE: 07/25/22

CSX TRANSPORTATION

Outside Party Estimate

Install Style "C" 6X6 and FLSG at CR 175 (Fairground Rd.)

Marion, Ohio

DOT: 262068L

OP: OH1473

CSX Project: OH2022021

Summary

Material	\$81,667
Sales Tax	\$5,880
Labor:	
Construction Labor (198 man-days)	\$84,470
Shop Labor (7 man-days)	\$2,975
Subsistence (0 man-days)	\$0
Railroad Engineering, Construction	\$12,671
Railroad Engineering, Preliminary	\$2,537
Additives to Construction Labor	\$135,152
Additives to Shop Labor	\$4,760
Additives to Track Labor	\$0
Additives to Engineering	\$0
Equipment Expense (0 work days)	\$0
Waste Management (40 work days)	\$480
Contract Engineering	\$17,224
Freight	\$6,100
Poleline Removal	\$0
AC Power Service	\$15,000
Salvage	\$0
VAC TRUCK	\$8,000

TOTAL ESTIMATE COST	\$376,916
---------------------------	-----------

Date: 07/18/2022

Estimated By: Michael Vorwaller

Note: This estimate should be considered void one year from date of estimate.

CSX TRANSPORTATION

Signal Project Estimation

Shop Material List for CSX Project: OH2022021 (Effective: 07/18/2022)
QI 98.30 - Fairground Rd.

CATALOG_NUM	QTY	Unit Price	COST	SHORT_DESC
020.0017120.1	6	17.05	102.30	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR 14.1.11 WASHER AND 1 AAR 14.1.11 CLAMP NUT TORQUED ONTO EACH TERMINAL AT 40 IN/LBS, 12 AAR 14.1.11 WASHERS AND 24 AAR 14.1.11 BINDING NUTS UNASSEMBLED SAFE 023390-11X TDH 800-0001
020.0017125.1	6	3.28	19.68	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11 WASHER AND 1 AAR 14.1.11 CLAMP NUT TORQUED ONTO EACH TERMINAL AT 40 IN/LBS, 2 AAR 14.1.11 WASHERS AND 4 AAR 14.1.11 BINDING NUTS UNASSEMBLED SAFE 023612-1X TDH 800-0002
020.0017211.1	1	1410.21	1410.21	TRANSFORMER LIGHT 750VA 010520-50X MODEL SLT-50 PRIMARY 115-230VAC SECONDARY .5 - 15.5V AC 50A INDOOR SERVICE ONLY AREMA MANUAL PART 14.2.10 OLSUN P/N 5995-50-RR
020.0021965.1	1	9.06	9.06	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF 18 1/16" STEEL WIRE COVERED W/INSULATING TUBING BILMAR 59688
020.0022651.1	12	109.65	1315.80	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH 14-10 CRIMP TERMINALS, 1 EACH VOLT/CURRENT (3E) AND (1E) TEST TERMINALS, INSULATORS AND CLIPS CSX REF NO C30 ALSTOM 59686-5 GR1, SAFETRAN P/N 420000-78X
020.0025595.1	1	20.96	20.96	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT P3-320 REF G NATIONAL ELEC GATE P/N EDG-5951
020.0053360.1	3	395.83	1187.49	CHARGER BATTERY ELC 12/20 D 20 AMP 10-19.9 VDC ROTARY SW VOLTAGE ADJ W/ 10' TEMP COMPENSATION PROBE 0.1 TO 0.25 V RIPPLE AT BATTERY TERMINALS 120V/240V AC INPUT ONLY NRS P/N 22290-10
020.0167501.1	26	38.80	1008.80	ARRESTER HYBRID LOW VOLTAGE, 2, 0-30V DC OR 0-24V AC RATED AT 15 AMP COMPLETE WITH FAIL SAFE OPEN MECHANISM, FUSED SEMICONDUCTOR, TEST EYE WITH NUT, 6" BLUE LEAD, SEE SS382 BOURNS P/N 1675-01
020.0660077.1	1	802.45	802.45	ARRESTER GE 9L10KAC213L FOR 240 VOLT SINGLE PHASE 3 WIRE CIRCUIT PROTECTOR INCLUDES LINE TO LINE AND LINE TO GROUND PROTECTION
020.0750090.1	3	0.13	0.39	NUT INSULATED USE ON AAR BINDING POST TERMINAL FOR VOLTAGES 120V AC/DC AND HIGHER RED COLOR TDH SOLUTIONS P/N 800-0009, CAPLUGS P/N VFC-521-16RED
020.0770060.1	10	20.96	209.60	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA 250V DC 175V AC W/O BASE (DO NOT USE ON AC CIRCUITS FOR NEW WORK, SEE SS382) US&S RSE-17A1
020.0770105.1	3	23.06	69.18	ARRESTER HARMON 202217-000 AGE-1 TRACK A
020.0055602.1	1	10.87	10.87	RELAY POTTER BRUMFIELD KHAU17D12-12V 160 OHMS CONTACTS 4FB CSX REFERENCE N41 SOC 1389 NEUTRAL NON-VITAL 12VDC USE WITH SOCKET BASE 020.0056514.1
020.1940055.1	1	14.50	14.50	CONTAINER TUBE HOLDER CIRCUIT PRINT PLAN 24" SCHD 20 4" PVC PIPE WITH SOLID PVC CAP GLUED ONE END AND VENTED PVC CAP VENT MUST BE NON CORROSIVE NON CONDUCTIVE MATERIAL REMOVABLE ON OTHER END CONTAINER MUST BE CLEANED OF ALL MILL MARK
020.2501400.1	1	1344.72	1344.72	CONTROLLER DTMF RADIO KEY DOWN MODE 6 SET TIMER TO 60 SECONDS COMPLETE WITH 50 OHM ANTENNA AND ANTENNA SHORTING PLUG WALL MOUNT FREQUENCIES(MHZ) - 160.560, 160.710, 160.785, 160.860, 160.875, 161.130, 161.550 LARRY MCGEE P/N 14-99005V2-B6
020.2503081.1	2	69.91	139.82	MODULE SAFETRAN ECHELON TERMINATION UNIT (A80078) USE WITH REMOTE MONITORING & ALARM REPORTING W/WAMS SAFETRAN P/N 8000-80078-0001
020.3180290.1	1	5288.94	5288.94	RECORDER SEAR II REMOTE MONITORING INCLUDES THE FOLLOWING KIT ALARMS & TESTING, (80290) APP SW (9V736-A02A), (2) ILODS (80271), (1) ECH (80078), (2) GFT2, (1) WAG (9000-53457-0001) & CABLE 20FT (Z706-02027-00200)
020.3430110.1	3	700.22	2100.66	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX REFERENCE S3 SOC 1252 NEUTRAL (REPLACES GRS 56001-783 GR2 TYPE B1 CAT A62-277 REF B8)
020.3430115.1	1	469.40	469.40	RELAY SAFETRAN 400005 500 OHMS CONTACTS 4FB HEAVY DUTY 10 AMP 2FB CSX REFERENCE S4 SOC 1253 NEUTRAL (REPLACES 020.0022872.1, GRS 56001-983 GR1 TYPE B1 CAT A62-0741 REF B82)
020.3430130.1	2	421.06	842.12	RELAY SAFETRAN 400023 500 OHMS CONTACTS 6FB HEAVY DUTY CSX REFERENCE S7
020.3430135.1	1	568.95	568.95	RELAY SAFETRAN 400213 460 OHMS CONTACTS 2FB CSX REFERENCE S8 SOC 1257 SLOW RELEASE (REPLACES GRS 56001-830 GR1 TYPE B1 CAT A62-353 REF B36)
020.3430170.1	1	464.13	464.13	RELAY SAFETRAN 400800-CSX 100/100 OHMS CONTACTS 6FB HEAVY DUTY CSX REFERENCE S15 SOC 1264 POWER TRANSFER COMPLETE WITH RECTIFIER 590000-X (REPLACES GRS 56001-745 GR1 TYPE B1 CATALOG A62-406 REF B62)
020.3430185.1	1	484.29	484.29	RELAY SAFETRAN 400700-X 60 OHMS CONTACTS 4FB CSX REFERENCE S18 SOC 1267 RELAY COMPLETE WITH FLASHER MODULE 400700-1X (REPLACES GRS 56001-985 GR1 TYPE B1 AND FLASH X-PAK MODULE 30733-1 GR4 CAT A62-673 REF B81)
020.0000367.1	1	1363.50	1363.50	KIT CROSSING COMPLETE TYPICAL 41 KIT INCLUDES RF AND DATA COMPONENTS FOR NEW INSTALLATIONS CSDA-30348
020.4200340.1	10	1.74	17.40	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET LINK DOES NOT REQUIRE BRASS TEST NUT, TDH SOLUTIONS P/N 800-0112
020.4200350.1	9	1.89	17.01	LINK TEST ASSEMBLY 2-3/8" CENTERS YELLOW INSULATOR ON OFFSET LINK DOES NOT REQUIRE BRASS TEST NUT, TDH SOLUTIONS P/N 800-0114
020.4201045.1	400	0.15	60.00	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT BRASS NICKEL PLATED FOR AAR BINDING POST W/14-24 THD SAFETRAN 023832 TDH SOLUTIONS 800-0006 MIN/MULT ORDER QTY 400
020.0016112.1	1	752.64	752.64	DRIVER MODEL TD-4 TRACK DRIVER HARMON 800-081033-100 ALSTOM P/N

CSX TRANSPORTATION

Signal Project Estimation

Shop Material List for CSX Project: OH2022021 (Effective: 07/18/2022)
QI 98.30 - Fairground Rd.

[illegible]

Total Cost: \$ 22,807.20

CSX TRANSPORTATION

Signal Project Estimation

Field Material List for CSX Project: OH2022021 (Effective: 07/18/2022)
QI 98.30 - Fairground Rd.

CATALOG_NUM	QTY	Unit Price	COST	SHORT_DESC
014.8006169.1	2	9.80	19.60	SIGN PERMANENT EMERGENCY NOTIFICATION VEHICLE BLOCKING RD CRSSING ALUM BLADE WHI HIGH INTENSITY PRISMATIC LTRS BLU BACKGROUND CSX DWG 2719(IN SUPPLIER NOTE ENTER DOT ID & MP, FOR MULT SIGNS USE COMMA AND UPDATE QTY) BLANK SIGN 014.8006170.1
020.0010447.1	3	11.53	34.59	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7" COVER TWO HEX HEAD 3/8" SS BOLTS AND 10" X 9" ENCLOSURE WITH 2 KNOCKOUTS FOR GROUND WIRE ENTRY AND EXIT PENCELL P/N PE6AHDH00009
020.0013475.1	16	3.79	60.64	CONNECTOR TRACK "CHICKEN HEAD" WITH 3/16" BOND STRAND SLEEVE USE J-GROOVE NICOPRESS TOOL MIN ORDER 100 ERICO P/N SBPAC3ACSX DWIGHT & WILSON P/N S8PT
020.0013686.1	3	86.70	260.10	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64 IN JKT 2 TK CONN ERICO SBPAC3-A/2 CLIP ERICO SBA248A 4 RL PT CDWELD STPL 3/8 X 1 3/4 IN 2 ERICO SBA2363 SLVES 2 RAYCHEM OR AMP 6 IN TUBIN 2 PLEXICO 3408 DWG&WILSON P/N BLTS-8-80B
020.0013908.1	400	8.31	3324.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13 CONDUCTOR #14 AWG SOLID AND 6 CONDUCTOR #6 AWG SOLID CSX SS360 SHOW LENGTH ON EACH REEL FURNISH IN 1000 FT LENGTHS OKONITE P/N 206-11-6283
020.0053220.1	275	3.23	888.25	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH REEL - FURNISH IN 1000 FT LENGTHS - OKOSEAL 45 MM PVC JACKET, OKONITE 112-10-3854
020.0055421.1	6	30.84	185.04	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS REQUIRING 5/16" BOLT L&W P/N 7A1041-1X1
020.0056678.1	2	6787.44	13574.88	SIGNAL 0221-L GCWD GATE ASSY DWG SS222 INCLS ADJ 19 TO 28 FBRGL ARM W/3 LGTS 2-WAY MAIN IND 12" LGTS 24" BACKGNDS HOODS LED LAMPS 5" ALUM MAST JCT BOX BASE XNG SIGN PINNACLE AND WIND BKT SAFE P/N 074000-0221-L
020.0052470.1	4	9.74	38.96	ARM EXTENSION 10-1/2" ALUM WITH 11/16" DIAMETER MOUNTING HOLES INCLUDES 1 EA 5/8"-11 X 2-1/2" SQ HD SS BOLT AND HEX NUT 2 EA SS FLAT WASH 1 EA SS LK WASH USE TO OFFSET SIGN FROM MAST CSX SS225 DETAIL 225XX SAFETRAN P/N 071367-X85S
020.0057275.1	400	1.51	604.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR WITH ONE RED AND ONE BLACK NEOPRENE JACKET SHOW LENGTH ON EACH REEL FURNISH IN 1050 FT REELS OKONITE P/N 150-12-3933
020.0000157.1	2	1268.62	2537.24	GATE SAVER 2 WAY - BI DIRECTIONAL SELF RESTORING BREAKAWAY DEVICE FOR USE WITH 18' TO 32' GATE ARMS MANUFACTURER - NATIONAL ELECTRIC GATE CO. P/N 385102GS2W90
020.1040322.1	29	118.29	3430.41	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM BATTERY FEATURING ULTRA LOW MAINTENANCE, GAS RECOMBINATION TECHNOLOGY
020.1040540.1	2	31.72	63.44	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG CSX DWG 82687 USE IN 4X6 HOUSE SEE SS390
020.1040550.1	3	48.14	144.42	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38" LENGTH CSX DWG 82687 FOR USE WITH FLOODED (NON-VALVE REGULATED) CELLS SS390
020.1150750.1	300	1.33	399.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH 12 STRS TINNED OUTER WIRES AROUND 7 NOT TINNED THE 6 TWISTED AROUND 1 CENTER STRAND OF 19 STRS NOT TINNED WITH 6/64" PVC FLORESCENT ORANGE JACKET INSULATION ERICO SBS8TINS664
020.1304014.1	90	7.76	698.40	KIT BOND, CADWELD PLUS WEB OF RAIL BOND 3/16 DIA. 4" LARGE TAB STYLE 100 EACH INCLUDES 5 EA. 4-1/2" COMBO GRINDING/CLEANING WHEEL, NEW MOLDS (L & R), PACKAGE OF 100, ERICO P/N SBTBU4ACWPW2
020.1360014.1	1	829.96	829.96	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE ON ALL MAJOR HIGHWAY CROSSING SIGNAL PROJECTS INCL GROUNDING MATERIALS BOOTLEGS BITS CASE WIRE DUCT SEAL AMP TERMINALS TAPE NO-OX-ID GREASE PADLOCKS TAGS PAINT PAINT BRUSHES
020.1360016.1	1	27.18	27.18	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE EACH SAFETY LOCK TAG 3-1/4" X 4-1/4" DOUBLE SIDED RED WITH WHITE LETTERS AND ONE EACH SIGNAL H10 PADLOCK (020.8000067.1) BURCO P/N 846-0003
020.1360104.1	1	1613.69	1613.69	LAYOUT AC METER SERVICE WITH 30' POLE CSX DWG SS351 SH 2 ITEMS 1 TO 40 W/100A LOAD CTR WITH UP TO #2 AWG WIRE CAPABILITY -INCLUDES 2P70A BREAKER-P/N 212-0009
020.3901895.1	2	122.65	245.30	TIP FLEX HWY CROSSING GATE 24 IN LONG ENGINEERING GRADE RED & WHITE STRIPES W/2 MTG BOLTS & INSTALL INSTRUCTIONS ONE SMALL & ONE LARGE RIBBED ADAPTERS USE W/FIBERGLASS GATE ARMS TIP MADE BY MARCUM DEVELOPMENT CO, MARCUM P/N RAC-230RFK
020.3920200.1	1	180.10	180.10	BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN EB-3-360-5 ASC PN 81848
020.3930010.1	2	3.70	7.40	KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3" STICKER 1-EA 5"X3" PADLOCK TAG 2-EA 11"X3" STICKER PER SS222
020.4200340.1	40	1.74	69.60	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET LINK DOES NOT REQUIRE BRASS TEST NUT, TDH SOLUTIONS P/N 800-0112
020.4200900.1	6	0.22	1.32	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020.4201042.1	20	0.14	2.80	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE SHAPE BRASS NICKLE PLATED FOR AAR BINDING POST W/14-24 THD SAFETRAN 023831 TDH SOLUTIONS 800-0005
020.4201043.1	150	0.10	15.00	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT BRASS NICKEL PLATED FOR AAR BINDING POST W/14-24 THD SAFETRAN 023832 TDH SOLUTIONS 800-0006
020.4201044.1	100	0.08	8.00	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR NO 14 BINDING POST SAFETRAN 023834 TDH SOLUTIONS 800-0007

Field Material List for CSX Project: OH2022021 (Effective: 07/18/2022)
QI 98.30 - Fairground Rd.

Total Cost: \$ 31,769.29

Consumable Material List for CSX Project: OH2022021 (Effective: 07/18/2022)
QI 98.30 - Fairground Rd.

Total Cost: \$ 27,090.86



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

March 2, 2022

Amanda DeCesare
CSX Transportation
Project Manager – Public Projects
500 Meijer Drive
Suite 305
Florence, KY 41042

RE: PE Authorization for MAR CSX CR175/Fairground Rd DOT# 262068L PID# 116013

Dear Mrs. DeCesare:

A diagnostic review was held at the above grade crossing on July 27, 2021. The crossing has been recommended for the installation of lights and gates.

CSX Transportation is authorized to proceed with the site plans and cost estimates or bid package for this project. This authorization is made with the stipulation and understanding that any field work needs prior approval before work begins. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Please note that the railroad must provide ORDC with a plan stamped by a professional engineer licensed in the State of Ohio prior to acceptance and close out of the project.

The diagnostic review form is attached. Please note any recommendations (page 7), if any, made by the team about requirements for this location. Any minor roadway work necessary for MUTCD compliance should be incorporated into the PE and such costs will flow through the railroad reimbursement process.

The Project Manager for this project is Greg Gronbach. Greg Gronbach can be reached at (614) 745-6760, or Gregory.Gronbach@dot.ohio.gov, if you have any questions.

Sincerely,


Greg Gronbach
Project Manager

C: John Williams, Director, Transportation Department, PUCO
Jill Henry, Rail Specialist, PUCO



Heather Hamilton, ORDC
ORDC (file)

Attachments: 3 (diagnostic review form, letter agreement, purchase order).



Public Utilities Commission

Mike DeWine, Governor
Jenifer French, Chair

Commissioners

M. Beth Trombold
Lawrence K. Friedeman
Dennis P. Deters
Daniel R. Conway

December 13, 2021

CSX Transportation, Inc.
Ms. Amanda DeCesare
CSX Public Projects
3131A Spring Grove Avenue
Cincinnati, OH 45225

Re: CR 175/Fairground Road
DOT#262-068L,
Marion County
Hereinafter referred to as the "Project"

Dear Ms. DeCesare:

The Public Utilities Commission of Ohio (PUCO) has identified and the Ohio Rail Development Commission (ORDC) surveyed, on July 27, 2021, the above mentioned grade crossing for warning device upgrades. The location has been approved for flashing lights and roadway gates.

The Projects shall comply with Agreement No. 17427, dated May 3, 2013, entered into by the State of Ohio and CSX Transportation (RAILROAD). Furthermore, the RAILROAD shall comply with all applicable state and federal laws governing grade crossing safety programs.

Reimbursable costs will be limited by ORDC based upon approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to the RAILROAD and may be amended by the ORDC based upon revised estimates and bid tabulations. Additional costs must be approved in writing by the ORDC prior to being incurred. Emergency verbal authorizations by ORDC may be permitted but must be confirmed in writing within ten (10) business days of the verbal approval.

The RAILROAD shall complete plans and estimates for the Projects within ninety (90) days after the RAILROAD is notified of authorization to proceed unless otherwise agreed by ORDC/PUCO and the RAILROAD.

The RAILROAD shall not commence construction prior to PUCO's Order and ORDC's construction authorization. The RAILROAD shall provide written notification of the construction start date to PUCO and ORDC no later than five (5) business days prior to such date.

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Chief, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793 or by email at jill.henry@puco.ohio.gov.

Sincerely,



John D. Williams
Director of Transportation
Public Utilities Commission of Ohio



Matthew Dietrich
Executive Director
Ohio Rail Development Commission

CSX Transportation, Inc.

By _____

Title _____

Date _____

Date 1/4/2022

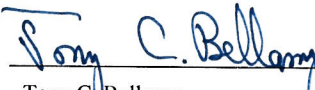
Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Chief, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793 or by email at jill.henry@puco.ohio.gov .

Sincerely,



John D. Williams
Director of Transportation
Public Utilities Commission of Ohio

CSX Transportation, Inc.

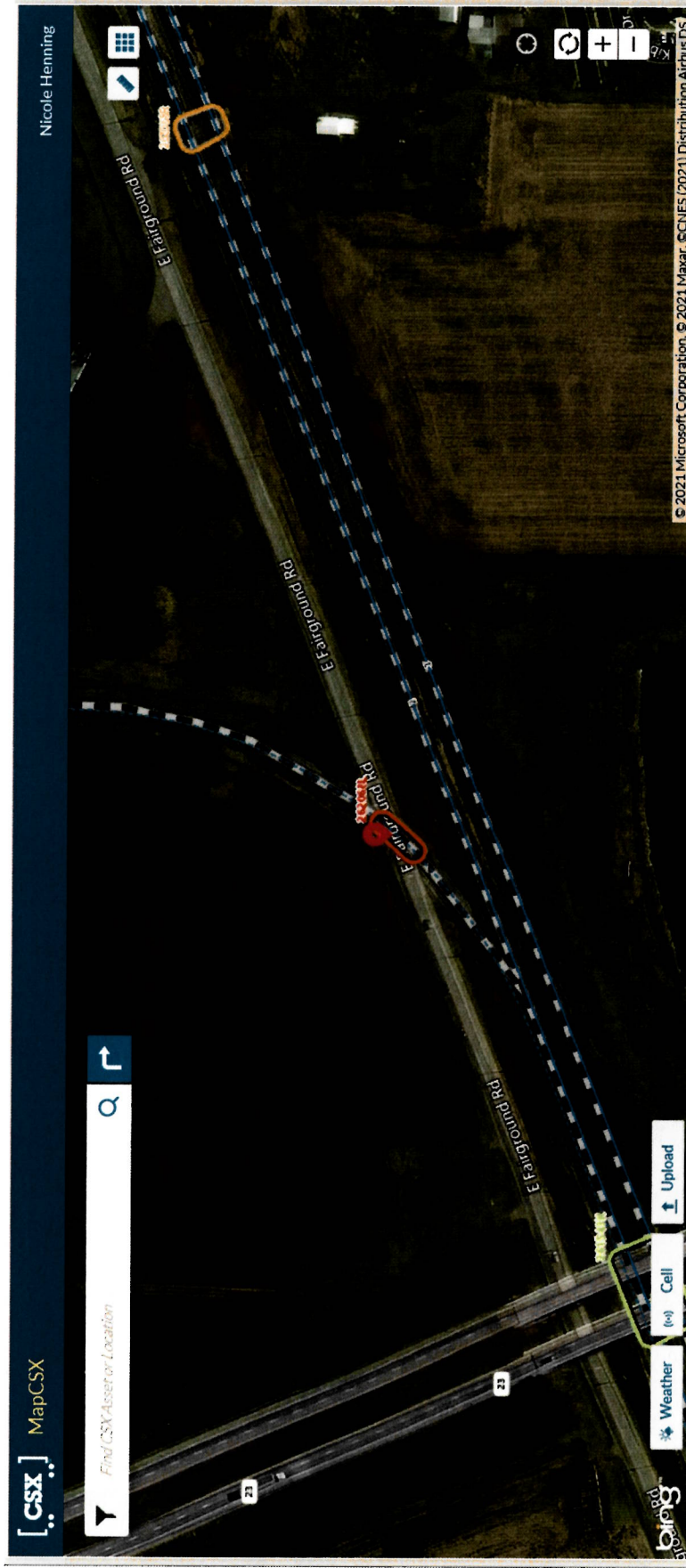
By 
Tony C. Bellamy
Director Project Management - Public Projects

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date 12/27/2021

Date _____

Project Location:



CR 175 / Fairground Road (DOT #262068L), Marion County, CSX

7/27/2021

Crossing at a glance: 262068L

ORDC Notes:

Please Sign In

Greg Gronbach PROJECT MANAGER ORDC
 Name Title Organization
 614-745-6760 GREGORY.GRONBACH@DOT.OHIO.GOV
 Phone Number Email Signature

Brad Irons Marion County
 Name Title Organization
 Phone Number Email Signature

~~Jonathon Appelfeller~~ CSX
 Name Title Organization
 317-294-9956
 Phone Number Email Signature

Jim Schneider Inspector PULC
 Name Title Organization
 James.Schneider@Pulc.ohio.gov
 Phone Number Email Signature

Brandon Pope Sig Maintainer CSX-T
 Name Title Organization
 937-935-0569 Brandon_Pope@CSX.com
 Phone Number Email Signature

Brad Irons Marion County Engineer Marion Engineers
 Name Title Organization
 746 223-4110 biron5@co.marion.oh.us
 Phone Number Email Signature

Name Title Organization
 Phone Number Email Signature

Name Title Organization
 Phone Number Email Signature

Reason for Request: formula
(e.g. formula, accident, constituent, etc.)

Date: 7/27/2021

Location Data		
Street or Road Name: Fairground Road - CR 175		
County: Marion	Township:	US DOT No.: 262068L
City (in or near): Marion	Railroad Name: CSX	RR Milepost: 98.07
Safety Data (Obtain crash reports, if possible)		
	Initial Information (from database)	Revised
Number & dates of vehicle crashes in previous 5 years:	n/a	
Number & dates of pedestrian/bicycle crashes in previous 5 years:	n/a	
Hazard Ranking: 1559	Date Run: 06/11/2021	

Existing Traffic Control Devices		
Type of Warning Devices	Installed?	Quantity/Comments
HIGHWAY		
Advance Warning Signs (condition?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2 - GOOD
'Stop' Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
'Stop Ahead' Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pavement Markings (condition?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2 - GOOD
Dynamic Envelope Markings (condition?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Illumination	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1 STREET LIGHT - SE QUAD
'No Turn' Signs (highway/passive)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Barriers/fencing (pedestrian/bicycle)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
LOOK Sign	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Do Not Stop On Track Sign	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
RAILROAD		
Crossbucks	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2 - GOOD
Crossbucks - assembly with Stop	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Crossbucks - assembly with Yield	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2 - GOOD
Mast-Mounted Flashing Lights	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Cantilever Flashing Lights	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number: Length:
Side Lights	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
LED or Incandescent Lights? Size?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Automatic Gates	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number: Length:
Bells	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number:
Sidewalk/Pedestrian Gate Arms	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number: Length:
'No Turn' Signs (railroad/active)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is crossing flagged by train crew?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
OTHER	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2 - BLUE ENS SIGNS

Railroad Data		
Type of Train: <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Commuter <input type="checkbox"/> Tourist/Other		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	2	4/week 4/week
<1 per day? Trains per week		8 TRAIN CROSSINGS PER WEEK
Day thru trains	0	ALL DAY MOVEMENTS
Night thru trains	0	
Switching	2	
Total number of tracks	1	
Number of main tracks		
Number of other tracks	1	
Maximum train speed	10	
Typical train speed		
Amtrak		
Are there other track(s) crossing this same roadway within 100ft of this crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, Crossing DOT# (if different) <u>N/A</u>		
If yes, distance <u>N/A</u> (take measurement between track centerlines at closest point along roadway)		
If multiple tracks, can two trains occupy crossing at the same time? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Can one train block the motorists' view of another train at the crossing? <input type="checkbox"/> Yes (explain below) <input checked="" type="checkbox"/> No		
Can one or more tracks be eliminated through the crossings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Comments:		
Circuitry: <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input checked="" type="checkbox"/> Other <u>NONE</u>		

Roadway Data		
Local Highway Authority: Marion County		
Roadway Characteristics	Initial Information (from database)	Revised
Average Daily Traffic	5925 (2007)	1619 ABOUT 3YRS AGO
Highway Paved	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Surface: <input checked="" type="checkbox"/> Blacktop <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete Other _____		
Roadway width (paved/travelled way): <u>22</u> ft		
Number of Highway Lanes	2	
Urban or Rural		
Vehicle Speed: <u>55</u> MPH		
School Bus Operation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount <u>OCCASIONAL - 1 OR LESS</u>		
Location of nearby schools: <u>MARION HARDING HIGH SCHOOL - 1/2 SW</u>		
Hazardous Materials Trucks: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount (from FRA) _____ LHA verified/changed?		
Shoulders: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Is the Shoulder Surfaced? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, shoulder width: _____ ft.		
Is there existing guardrail along the roadway in crossing vicinity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Crossing Angle <input type="checkbox"/> 0-29° <input checked="" type="checkbox"/> 30-59° <input type="checkbox"/> 60-90° Measured in _____ Quadrant?		
Quadrant <u>NE</u> Curb & Gutter:	Quadrant <u>SW</u> Curb & Gutter:	
<input type="checkbox"/> Functional (Curb height = 4" or more)	<input type="checkbox"/> Functional (Curb height = 4" or more)	
<input type="checkbox"/> Non-functional (Curb height = less than 4")	<input type="checkbox"/> Non-functional (Curb height = less than 4")	
<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> None	
Is there a nearby intersection that could cause queuing over the crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, distance <u>N/A</u>		
Is this intersection signalized? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Are there signals currently interconnected with the existing crossing warning devices? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is there a 'Do Not Stop on Track' sign? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes:		
Improvement type _____ Lead Agency _____ Timeline/completion _____		

Pedestrian & Bicycle Data	
Regular pedestrian usage:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volumes: <input type="checkbox"/> Occasional <input type="checkbox"/> <20 <input type="checkbox"/> 20-60 <input type="checkbox"/> >60
Is sidewalk present in the approach?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Quadrants:
Does crossing surface accommodate pedestrians?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Both sides of roadway?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, which side is paved?
Pedestrian generators in close proximity (e.g. schools, sports/entertainment venues)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Comments:	
Regular bicycle usage: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<input type="checkbox"/> Roadway <input type="checkbox"/> Dedicated Lane (on street) <input type="checkbox"/> Dedicated Path (off street) <input type="checkbox"/> Shared Use (pedestrian/bicycle) Path <input type="checkbox"/> Bikes must use sidewalk	
Future plans for pedestrian or bicycle routes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Comments:	

Utility Information	
Is commercial power available?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Utility Provider (Company Name)	OHIO EDISON
Nearest Available Power Source	AT CROSSING - TRANSFORMER AT STREET LIGHT SE QUAD.
What other utilities are present?	<input type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/> Telephone <input type="checkbox"/> Fiber Optic Cable (add locations to sketch) <input type="checkbox"/> Petroleum <input type="checkbox"/> Water <input type="checkbox"/> Sanitary Sewer <input checked="" type="checkbox"/> Other
Comments: OVERHEAD POWER LINE RUN PARALLEL TO ROADWAY ON SOUTHSIDE OF ROAD. NO UNDERGROUND UTILITIES.	

Surface	
Surface review form completed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Sight Preview (REFER TO TABLES)	
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No NW QUAD
Is stopping sight distance adequate? (See Table 2)	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, which quadrant? NW
When considering recommendations for bicycle treatments:	
Bicycle sight distance adequate?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, which quadrant? NW QUAD
When considering recommendations for pedestrian treatments:	
Pedestrian sight distance adequate?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, which quadrant? NW QUAD

Potential Red Flags / Project Challenges

Traffic Signal Preemption (include traffic signal intersection name and LHA with jurisdiction over traffic signal, if known):

N/A

Crossing Consolidation or Closure:

NO - MAJOR ROADWAY FOR CITY.

Real Estate or ROW:

N/A

Culvert / Drainage / Ballast Conditions:

N/A

Roadway and/or Sidewalks:

N/A

Circuitry (e.g. reaches out to other crossings, specific needs, etc.):

N/A

Environmental:

N/A

Utilities:

N/A

Other:

Potential Closure

Is it the consensus of the Diagnostic Review Team that this is a potential closure project? **NO**

Explain reasons: **MAJOR ROADWAY FOR CITY.**

Diagnostic Team Recommendations

<input type="checkbox"/> No improvements needed	Quadrants Needed
<input type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input type="checkbox"/> AFLS / Cants	
<input checked="" type="checkbox"/> AFLS / Gates	
<input type="checkbox"/> AFLS / Gates / Cants	
<input checked="" type="checkbox"/> Bells / number	1
<input type="checkbox"/> Upgrade circuitry / type	
<input type="checkbox"/> Sidelights	
<input type="checkbox"/> LED Upgrades	
<input type="checkbox"/> Guardrail Needed	
<input type="checkbox"/> Install/Replace curb	
<input checked="" type="checkbox"/> Bungalow placement & offset from rail & highway	NE QUAD
<input type="checkbox"/> Other (define)	

Comments:

☐ Install/upgrade traffic signal preemption

Other (define):

Diagnostic Team Recommendations (cont.)

PEDESTRIAN/BICYCLE Treatments (additional, not included above)

<input type="checkbox"/> Crossing Surface (specify)	<input type="checkbox"/> Sidewalk (specify)
<input type="checkbox"/> Detectable warning surfaces	<input type="checkbox"/> LOOK Sign (R15-8)
<input type="checkbox"/> Stop lines	<input type="checkbox"/> Illumination
<input type="checkbox"/> Dynamic envelop markings	<input type="checkbox"/> Channelization
<input type="checkbox"/> Path delineation	<input type="checkbox"/> Fencing/barriers
<input type="checkbox"/> Other	

Comments:

Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature/initial acknowledgement):

GWG **BKT**

BTP

JS

Field Sketch (optional)

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.

Clearing Sight Distances

Maximum Authorized Train Speed	Distance (dT) Along Railroad from Crossing (ft)
1 - 10	240
15	360
20	480
25	600
30	720
35	840
40	960
45	1080
50	1200
55	1320
60	1440
65	1560
70	1680
75	1800
80	1920
85	2040
90	2160

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers and level single track 90 degree crossings; and may need to be adjusted for multiple tracks, skewed crossings or approaches on grades.

Clearing Sight Distance is to be measured in each vehicle travel direction at non-gated crossings as viewed from a point 25 feet from centerline of nearest track in the center of whichever travel lane is nearest the direction along track being measured.

Stopping Sight Distances

Highway Vehicle Speed	Distance (dH) Along Roadway from Crossing (ft)
0	n/a
5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
45	410
50	490
55	570
60	660
65	760
70	865

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers on dry level pavements.

Stopping Sight Distance is to be measured on each roadway approach to crossing from stop bar.

Bicycle & Pedestrian Clearing Sight Distances

Clearing Sight Distance from Stop Position*											
Crossing of one track								Crossing 2 Tracks		Crossing 3 Tracks	
Train Speed	Car	Single-unit Truck	Bus	WB-50 Semitruck	65-foot Double Truck	Pedestrian ¹	Bicyclist ²	Pedestrian ¹	Bicyclist ²	Pedestrian ¹	Bicyclist ²
10	105	185	200	225	240	120	100	180	120	240	140
20	205	365	400	450	485	240	200	360	240	480	270
25	255	455	500	560	605	300	250	450	290	590	340
30	310	550	600	675	725	360	290	530	350	710	410
40	410	730	795	895	965	480	390	710	470	950	540
50	515	910	995	1,120	1,205	590	490	890	580	1,180	670
60	615	1,095	1,195	1,345	1,445	710	580	1,060	700	1,420	810
70	715	1,275	1,395	1,570	1,680	830	680	1,240	810	1,650	940
80	820	1,460	1,590	1,790	1,925	950	780	1,420	930	1,890	1,080
90	920	1,640	1,790	2,015	2,165	1,060	870	1,590	1,040	2,120	1,210

*A single track, 90-degree, level crossing

¹ Walking 3.5 feet per second across tracks 15 feet apart, with a 2-second reaction time to reach a decision point 10 feet before the center of the first track, and clearing 10 feet beyond the centerline of the second track.

² Bicycling 8 miles per hour across tracks 15 feet apart, from a stopped position 10 feet before the center of the first track with an acceleration of 2.5 feet per second, and clearing 10 feet beyond the centerline of the second track on a bike of 6 feet length.

**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

8/17/2022 3:58:48 PM

in

Case No(s). 22-0782-RR-FED

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the CSX Transportation, Inc. Grade Crossing, DOT# 262-068L at CR 175/Fairground Road in Marion County, Ohio. electronically filed by Mr. Thomas Persinger on behalf of PUCO/Rail Division