

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 9/13/17

Re: PUCO Case No. 17-1983-RR-FED- In the Matter of a Request for Upgrades to the Active Warning Devices at CSX Transportation Inc. Grade Crossing, DOT# 154-079C, on Chestnut Street in Butler County, Ohio.

On March 31, 2017, the Ohio Rail Development Commission (ORDC) authorized funding for CSX Transportation, Inc. (CSX) to install traffic pre-emption at the Chestnut Street, DOT#154-079C, grade crossing in Butler County, Ohio. The crossing was surveyed on September 20, 2016 and was found to warrant the upgrades. The electric utility provider for this crossing is Duke Energy.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$163,943.00 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
CSX Public Projects
500 Meijer Drive
Suite 305
Florence, KY 41042

Ohio Rail Development Commission
Cathy Stout
1980 West Broad Street
Mail Stop #3140
43223

City of Oxford
Scott Otto
Service Engineering, Engineer
101 East High Street
Oxford, Ohio 45056

Duke Energy

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: Greg Gronbach, Project Manager, Safety Section, ORDC

SUBJECT: Butler County, Oxford, Ohio E. Chestnut St, DOT # 154079C, PID 105117

DATE: August 7, 2017

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on September 20, 2016. The Public Utilities Commission of Ohio (PUCO) attended the review. The Diagnostic Team recommended the improvement of the grade crossing warning system. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC approves the site plans and estimates as provided. Please issue a construction-only order for the project outlined above. 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
Plan & Estimate

c: Jill Henry, PUCO
Cathy Stout, ORDC
Susan Arduni, ORDC
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • Mark Policinski, ORDC Chairman

July 10, 2017

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

RE: Butler County, Oxford, Ohio E. Chestnut St, DOT # 154079C, PID 105117

Dear Mrs DeCesare:

The plan and estimate dated June 26, 2017, for the referenced project has been reviewed and is acceptable. CSX Transportation may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. 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. Reimbursement of eligible actual cost is limited to \$163,943.00. 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 Transportation accepting the following instructions:

1. CSX Transportation'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 Greg.Gronbach@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.Henry@puc.state.oh.us. CSX Transportation'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 Transportation 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 Transportation's project foremen will notify Greg Gronbach at 614-395-1824 (telephone) or Greg.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.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

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 Transportation will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. CSX Transportation 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.

This project is authorized for construction under the master agreement between Ohio Rail Development Commission, Public Utilities Commission of Ohio.

Thank you for your assistance with these matters.

Sincerely,


Greg Gronbach
Project Manager

C: Randall Schumacher, Rail Division Supervisor, PUCO
Jill Henry, Rail Specialist, PUCO
Cathy Stout, ORDC
Susan Arduini, ORDC
ORDC (file)

**CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE**

Page 1

ACCT. CODE : 709 - OH1176

ESTIMATE SUBJECT TO REVISION AFTER:	12/19/2017	DOT NO.: 154079C
CITY: Oxford	COUNTY: Butler	STATE: OH
DESCRIPTION: E. Chestnut St. - Add 25 seconds of advance preemption at this crossing.		

DIVISION: Louisville	SUB-DIV: Indianapolis	MILE POST: BD - 38.90
AGENCY PROJECT NUMBER: PID 105117		

PRELIMINARY ENGINEERING:

Contracted & Administrative Engineering Services	\$ 4,500
Subtotal	\$ 4,500

CONSTRUCTION ENGINEERING/INSPECTION:

Contracted & Administrative Engineering Services	\$ 1,500
Subtotal	\$ 1,500

FLAGGING SERVICE: (Contract Labor)

Labor (Conductor-Flagman)	\$ -
Labor (Foreman/Inspector)	\$ -
Additive 117.39% (Transportation Department)	\$ -
Additive 118.86% (Engineering Department)	\$ -
Per Diem (Engineering Department)	\$ -
Expenses	\$ -
Subtotal	\$ -

<u>SIGNAL & COMMUNICATIONS WORK:</u>	(Details Attached)	\$ 157,943
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<u>TRACK WORK:</u>	(Details Attached)	\$ -
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<u>PROJECT SUBTOTAL</u>	\$ 163,943
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<u>CONTINGENCIES:</u>	\$ -
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GRAND TOTAL *****	\$ 163,943
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DIVISION OF COST:

Agency	<u>100.00%</u>	\$ 163,943
Railroad		\$ -
TOTAL *****		\$ 163,943

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 Assistant Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by: BSE	Approved by: AJD	CSXT Public Project Group
DATE: 6/22/2017	REVISED:	DATE: 6/26/2017

Form Revised 11-21-2013

Estimate No. 129533
CSX Transportation

E. Chestnut St.& Main St.- Install 25 seconds of advance preemption, and upgrade signals with 12" LEDs at E. Chestnut St., and a 12" LED upgrade at Main St.

Oxford, OH

DOT: 154079C

OP: OH1176

CSX Project: OH2017026

Summary

Material	\$ 37,340
Sales Tax	\$ 0
Labor:	
Construction Labor (81 man-days).....	\$ 30,780
Shop Labor (0 man-days).....	\$ 0
Subsistence (81 man-days).....	\$ 12,150
Railroad Engineering, Preliminary	\$ 1,204
Railroad Engineering, Construction	\$ 4,617
Additives to Construction Labor	\$ 36,585
Additives to Shop Labor	\$ 0
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 0
Equipment Expenses (0 work days).....	\$ 0
Waste Management (17 work days).....	\$ 204
Contract Engineering	\$ 23,621
Freight	\$ 3,442
Poleline Removal	\$ 0
AC Power Service	\$ 0
Salvage	\$ 0
VAC-TRUCK	\$ 8,000

TOTAL ESTIMATE COST	\$ 157,943
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Date: 06/22/2017

Estimated By: Olonda McIver

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

Field Material List for CSX Project: OH2017026 (Effective: 06/22/2017)
Install 25 seconds of advance preemption (E. Chestnut St.)
Oxford , OH - BD 38.90

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0013555	1	268.95	1	268.95	BOX JUNCTION 8 WAY ALUMINUM INCLUDES 2 EACH 4 POST
020-0013880	1	1.59	1000	1590.00	CABLE UG 7 COND NO 14 AWG SOLID C CSX SPEC SS796 SHOW
020-0017120	1	11.31	1	11.31	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017620	1	0.18	100	18.00	WIRE CASE NO 14 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017630	1	0.13	100	13.00	WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0018178	1	814.94	2	1629.88	MODULE SAFETRAN GCP-4000 AND GEO THAT ACCOMMODATES
020-0022651	1	106.70	3	320.10	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0025145	1	363.99	7	2547.93	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0028610	1	0.23	20	4.60	TERMINAL RING PANDUIT PN12-14HDR-D YELLOW NYLON HVY
020-0053250	1	2.12	150	318.00	CABLE UG 5 COND NO 9 AWG SOLID C CSX SPEC SS796 SHOW
020-0057005	1	0.24	3	0.72	TAG TEXIT HEATEX WIRE MARK 2:1 WHITE 12.7MM X 38MM (1/2"
020-0167501	1	38.51	4	154.04	ARRESTER HYBRID LOW VOLTAGE,2, 0-30V DC OR 0-24V
020-0770060	1	15.17	7	106.19	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.06	2	44.12	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1150750	1	1.00	700	700.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.04	28	169.12	KIT BOND, CADWELD PLUS WEB OF RAIL BOND 3/16 DIA. 4" LARGE
020-2500447	1	86.02	1	86.02	INDUCTOR 8V617-3800 DUMMY LOAD SAFETRAN
020-2500590	1	470.76	1	470.76	SHUNT SAFETRAN P/N 6000-62775-8621 NARROW BAND
020-2500591	1	416.32	1	416.32	SHUNT SAFETRAN 62775-1543 MULTI-FREQUENCY NARROW BAND
020-2500605	1	390.73	2	781.46	SHUNT SAFETRAN 62775-86 NARROW BAND 86HZ
020-2500620	1	319.85	2	639.70	SHUNT SAFETRAN 62775-211 NARROW BAND 211HZ
020-2500630	1	258.93	1	258.93	SHUNT SAFETRAN 62775-348 NARROW BAND 348HZ
020-2503270	1	24759.37	1	24759.37	PREDICTOR SAFETRAN GCP-4000 6 TRK DUAL CASE FOR 2 TRKS
020-2530280	1	312.12	1	312.12	FILTER EPC 800-080055-107 TF-86
020-2530288	1	312.53	2	625.06	FILTER EPC 800-080055-109 TF-211

Field Material List for CSX Project: OH2017026 (Effective: 06/22/2017)
Install 25 seconds of advance preemption (E. Chestnut St.)
Oxford , OH - BD 38.90

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3430110	1	363.23	3	1089.69	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-4200340	1	1.73	2	3.46	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.26	3	0.78	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
Total Cost: \$				37,339.63	

R.R. WEST TO WE JULIETTA

H.S. 14925+74

4768 FT.

73 FT.

74 FT.

4694 FT.



NW

NE

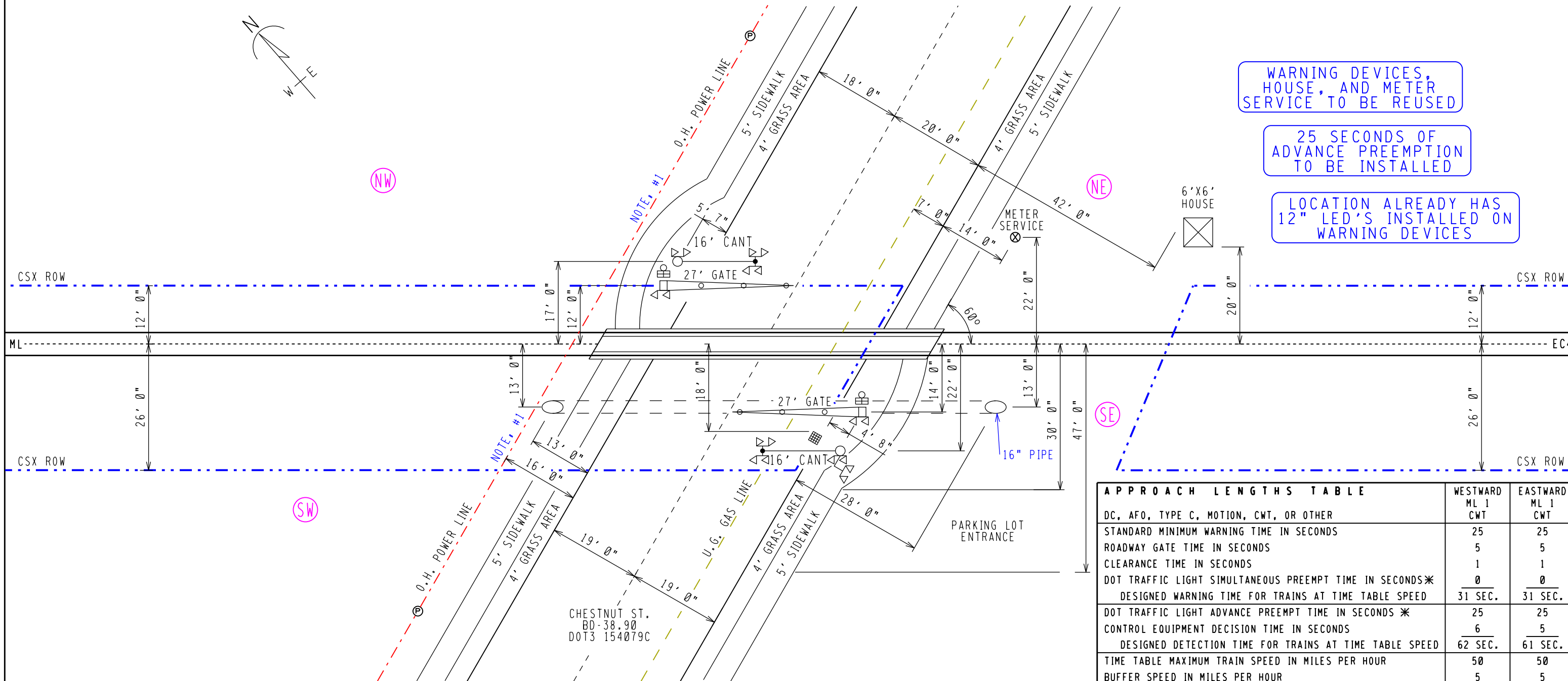
SE

SW

WARNING DEVICES,
HOUSE, AND METER
SERVICE TO BE REUSED

25 SECONDS OF
ADVANCE PREEMPTION
TO BE INSTALLED

LOCATION ALREADY HAS
12" LED'S INSTALLED ON
WARNING DEVICES



CHESTNUT ST.
BD-38.90
DOT3 154079C

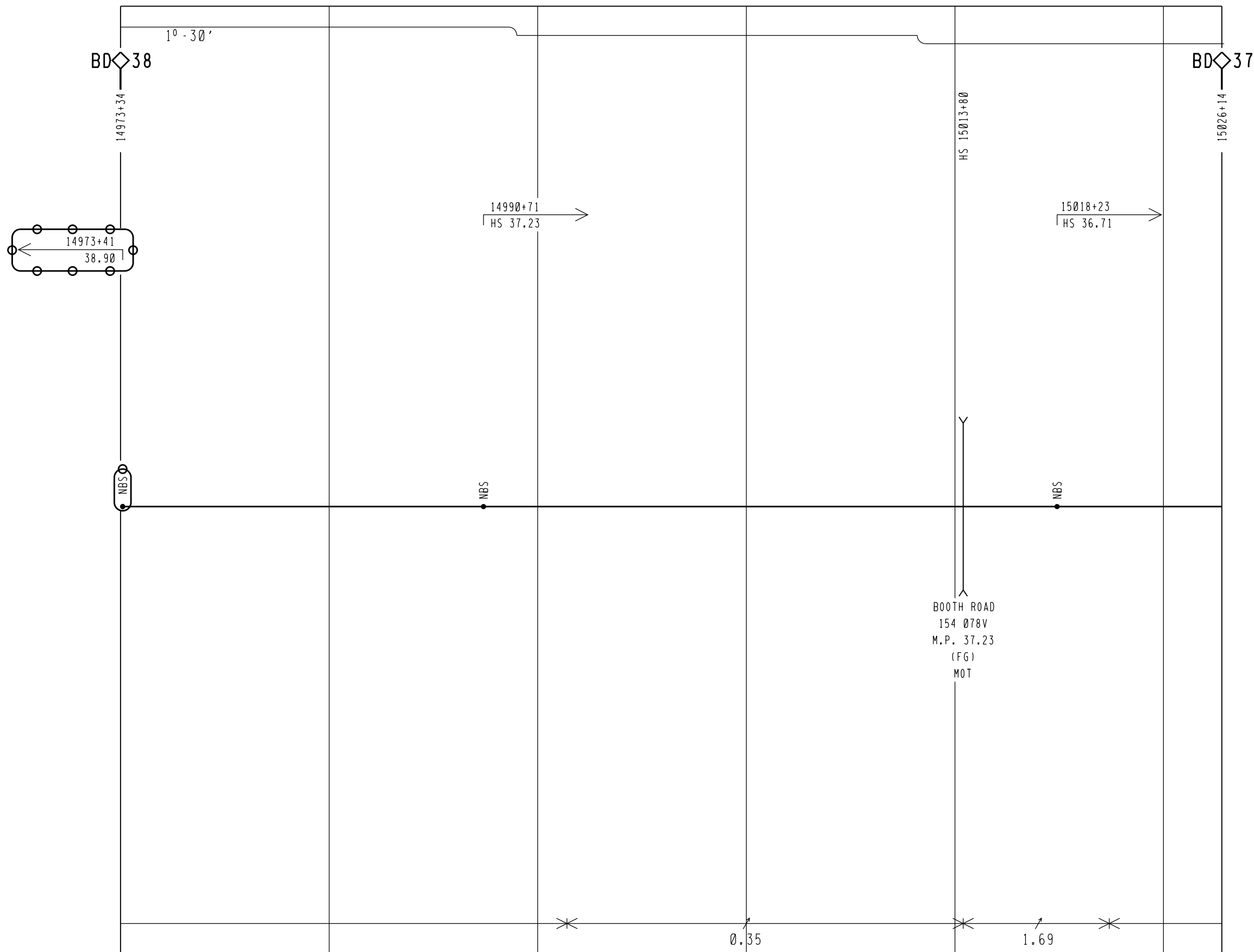
NOTE, #1
O.H. COMM. LINE (V.O.H.C 31')
O.H. POWER LINES-2 (V.O.H.C 39')
O.H. POWER LINES-3 (V.O.H.C 45')

APPROACH LENGTHS TABLE		WESTWARD	EASTWARD
DC, AFO, TYPE C, MOTION, CWT, OR OTHER		ML 1	ML 1
		CWT	CWT
STANDARD MINIMUM WARNING TIME IN SECONDS		25	25
ROADWAY GATE TIME IN SECONDS		5	5
CLEARANCE TIME IN SECONDS		1	1
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS*		0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED		31 SEC.	31 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS *		25	25
CONTROL EQUIPMENT DECISION TIME IN SECONDS		6	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED		62 SEC.	61 SEC.
TIME TABLE MAXIMUM TRAIN SPEED IN MILES PER HOUR		50	50
BUFFER SPEED IN MILES PER HOUR		5	5
TOTAL WARNING SYSTEM DESIGN SPEED IN MILES PER HOUR		55	55
APPROACH DISTANCE TO ISLAND EDGE IN FEET		4768	4694
HALF WIDTH OF ISLAND IN FEET		73	74
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT		39.82	38.00

*AUTHORIZING AGENCY, OHDOT
*DATE OF REQUIREMENT, 03-31-17
*AMOUNT OF TIME (SEC.), 25 ADVANCED

PRODUCED FOR,  RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	PRODUCED BY,  A Wabtec Company	LEGEND	GUARD RAIL 	METER SERVICE 	GPS COORDINATES	REVISION DATES	FILE NAME: BD03890.H01	STREET NAME: CHESTNUT ST.	
		CSX ROW 	O.H. POWER 	POLE 	39°30'03" N	05-18-2017	DATE DRAWN: 05-02-2017	CITY & STATE: OXFORD, OH / M.P. BD-38.90	
		R/R POLELINE 	FENCE 	FIRE PLUG 	84°44'31" W	-	DRAWN BY: XRL	DOT: 154079C	PROPOSED CROSSING LAYOUT SCALE = 20:1
		GAS 	WATER 	SEWER CAP 	ELEV. 891'	-	CHECKED BY: XRL	PROJECT #: 0H2017026	
		FIBER OPTIC 	SEWER 	GAS VENT 		-	XRL #: CXS1744284	OP #: 0H1176	

PROPOSED CROSSING LAYOUT
SCALE = 20:1

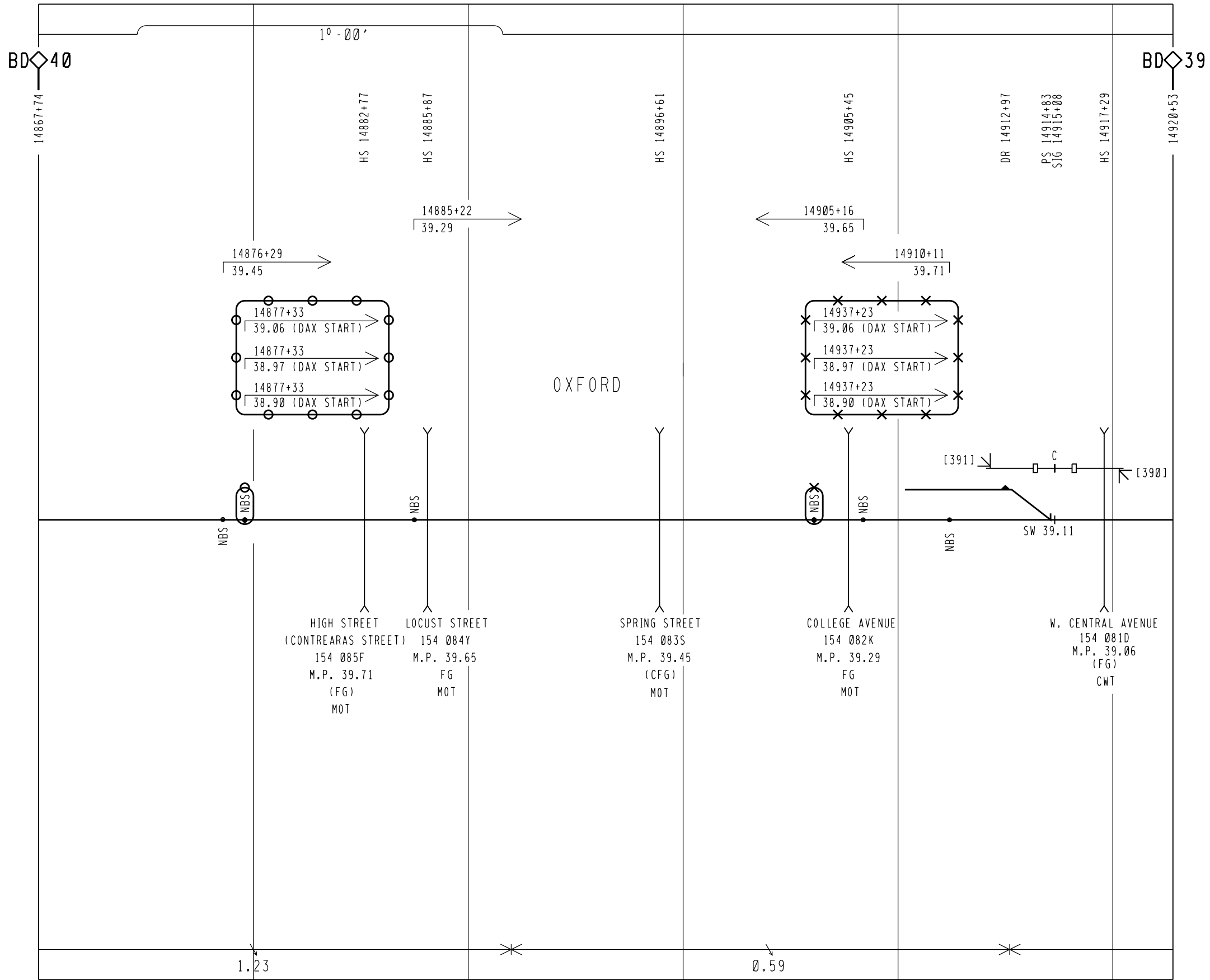


104575 06-05-17 XRL/JWG/0H2017026
xorail

REVISIONS					HORIZONTAL SCALE		M.P. BD-38 TO BD-37				CSX TRANSPORTATION			
	03-21-91	SAF	04-15-91	HAR	1 INCH = 500 FEET		TRACK PLAN				RAIL TRANSPORT GROUP ENGINEERING			
							DESIGNED	DIGITIZED	CHECKED	DATE	NEXT FILE	NEXT SH	FILE	SHEET
								MOD/KDS		08-31-90	BD03600	T01	BD03700	T01



REVISIONS	06-11-97 HAR 5/27/98 S.F. 00198115 06-08-99 HAR 00198153 06-13-07 S.F. 002006039 002006041 002006042	HORIZONTAL SCALE , 1 INCH = 500 FEET	M.P. BD-39 TO BD-38 TRACK PLAN BELT JCT. TO WE LYONSVILLE		 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
			DESIGNED	DIGITIZED MOD./KDS	CHECKED	DATE 08-31-90	NEXT FILE BD03700	NEXT SH T01



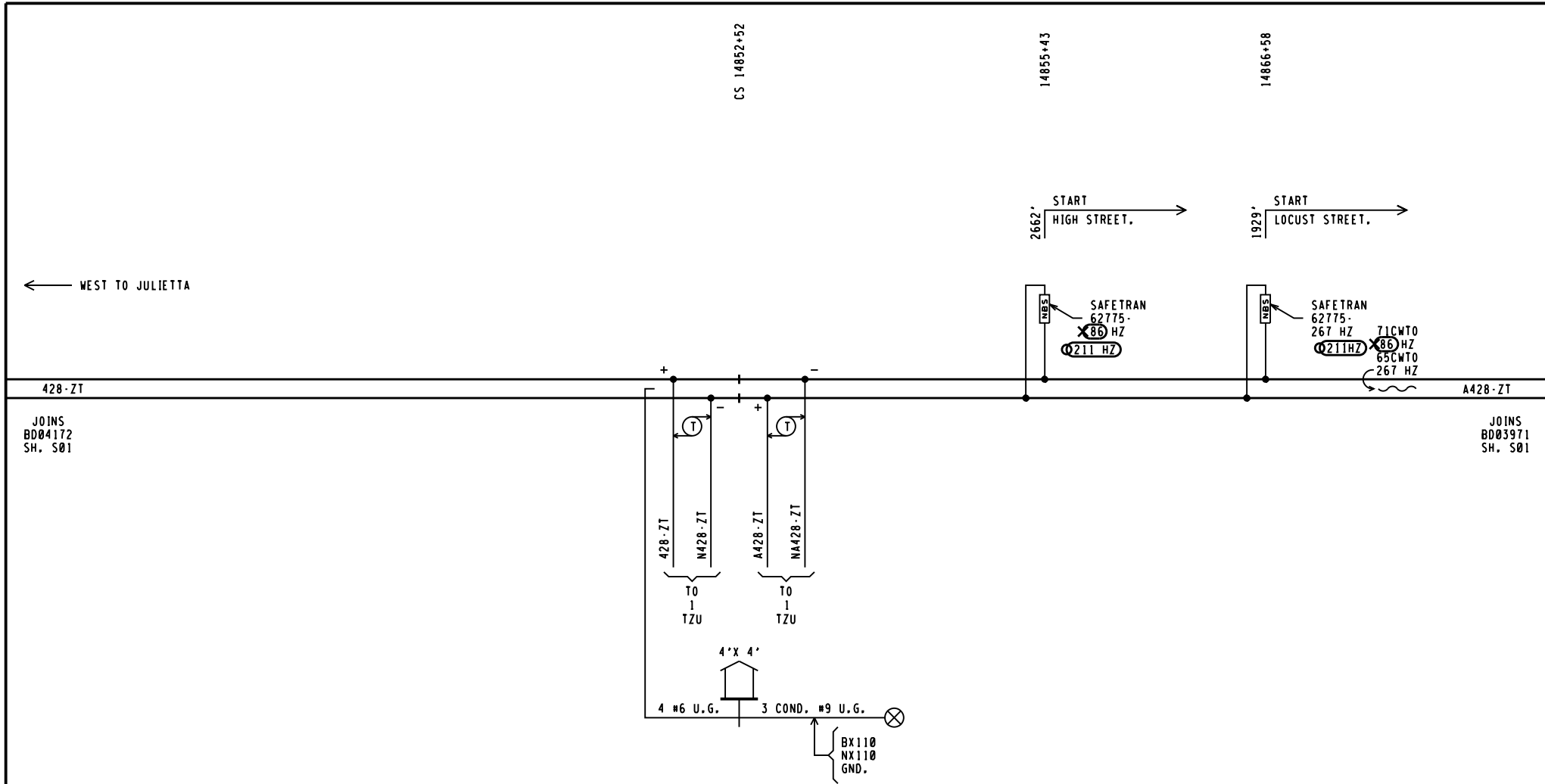
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06-07-17

OH2017026
XRL/JWG/

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REVISIONS	
10-30-91 DET	
04-17-97 MAR	
0435053	
10-05-98 SWE	
IN88056	
3/24/99 SAF	041998116
06-08-99 MAR	
041998153	
09-03-02 GET	
042001106A	
06-13-07 SAF	
042006039	
042006041	
042006041	
042006042	

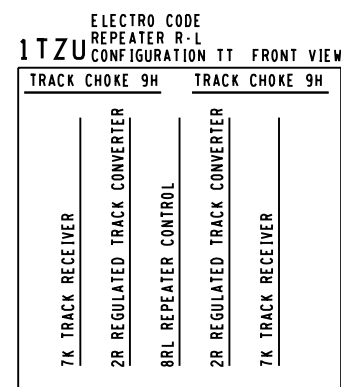
HORIZONTAL SCALE		M.P. BD-40 TO BD-39		TRACK PLAN		BELT JCT. TO WE LYONSVILLE		CSX TRANSPORTATION		RAIL TRANSPORT GROUP ENGINEERING		COMMUNICATIONS AND SIGNALS	
DESIGNED	DIGITIZED	CHECKED	DATE	NEXT FILE	NEXT SH	FILE	SHEET	DESIGNED	DIGITIZED	CHECKED	DATE	NEXT FILE	NEXT SH
MOD./KDS			08-31-98	BD03800	T01	BD03900	T01						



REVISIONS	
06-08-99	HAR 0H1998153
09-03-02	GET 0H2001106A
06-13-07	SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042
04-28-11	IRC 0H2010019

104575 06-05-17 0H2017026 XRL/JWG/
xorail

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
REPEATER LOCATION			
TRACK AND SIGNAL PLAN OXFORD, OH M.P. BD-40.28			
DESIGNED HAR/RSI	DIGITIZED HAR/RSI	CHECKED HAR/HVT	DATE 08-25-98
DRAWING 2190-6	SHEET NO 7	NEXT SH 7-1	NEXT FILE BD04028
NEXT SH 7-1	NEXT SH E01	FILE BD04028	SHEET S01



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REVISIONS 06-08-99 HAR 0H1998153 09-03-02 HAR 0H2001106A 06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042			 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
			BELT JCT. TO WEST SWITCH JULIETTA			
			CIRCUITS AT REPEATER LOCATION, MP. BD-40.28			
			DESIGNED HAR/RSL	DIGITIZED HAR/RSL	CHECKED HAR/HVT	DATE 08-25-98
DRAWING 2190-6	SHEET NO 7-2	NEXT SH 7A	NEXT FILE B003971	NEXT SH 101	FILE B004028	SHEET C01

SH. NO.	CONTENTS	REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	X	X	Ø						
S01	TRACK AND SIGNAL PLAN	X	X	Ø						
E01	POWER DISTRIBUTION	X	X							
C01	CROSSING DETECTION CIRCUITRY	X	X							
C02	DETECTION DEVICE PROGRAM	X	X	Ø						
C03	CROSSING WARNING DEVICE CIRCUITRY	X	X							
C04	RECORDER CIRCUITS	X	X							
C05	RECORDER PROGRAM	X	X							

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

REVISIONS			
1	09-03-02 GET 0H2001106A		
2	06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042		



RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JCT. TO WEST SWITCH JULIETTA
OXFORD, OH

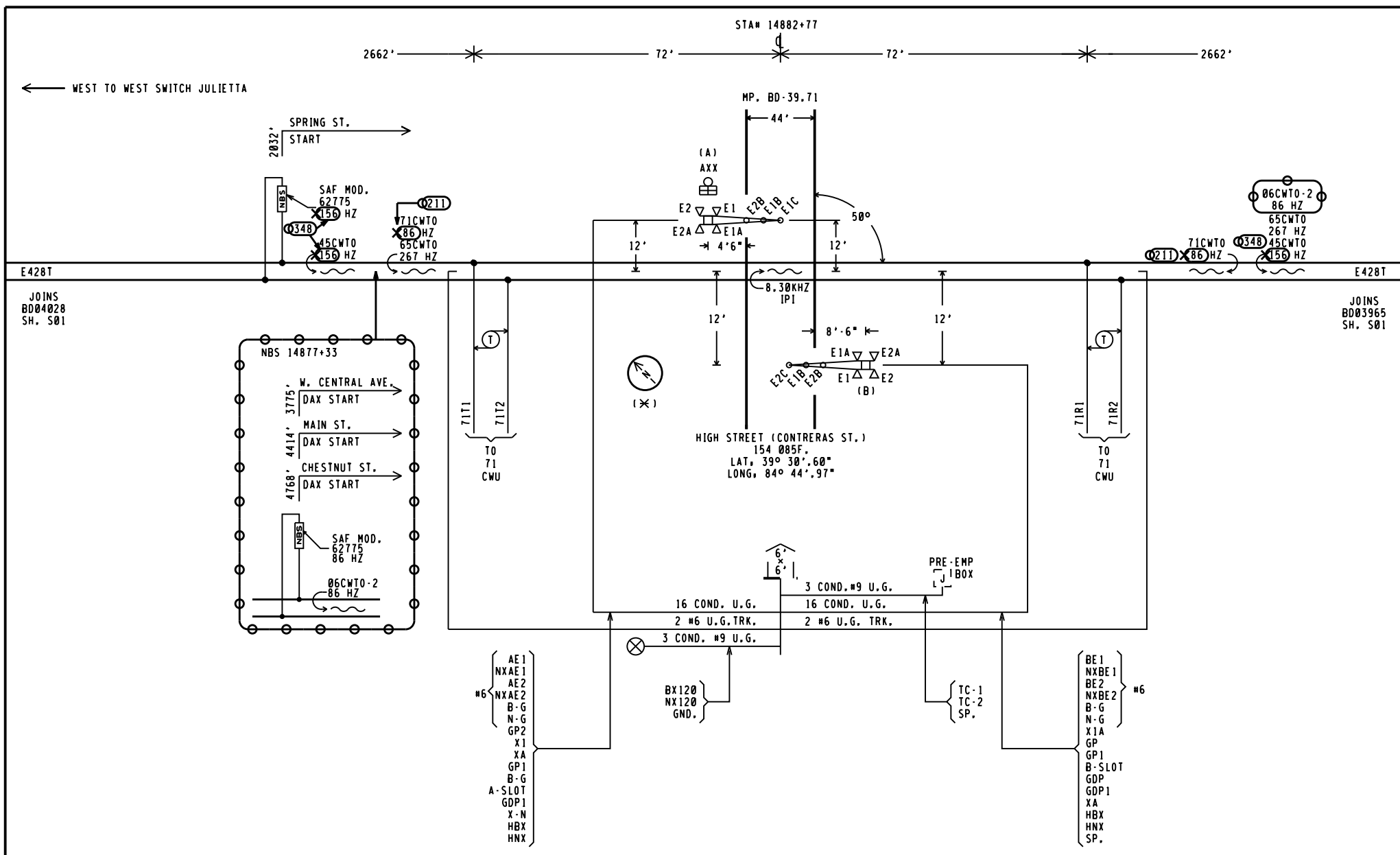
INDEX AND REVISIONS

HIGH STREET (CONTRERAS ST.)
154 085F
MP. BD-39.71

DESIGNED HAR/WPB	DIGITIZED HAR/CSM	CHECKED HAR/FAP	DATE 01-02-02
NEXT FILE BD03971	NEXT SH S01	FILE BD03971	SHEET 101



DRAWING 2190-6	SHEET NO 7A	NEXT SH 7A-1	NEXT FILE B003971	NEXT SH S01	FILE B003971	SHEET 101
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REVISIONS

09-03-02 GET 0H2001106A

06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042

APPROACH LENGTHS TABLE		
DC, AFO, TYPE C, MOTION, CWT, OR OTHER	WESTWARD TRACK 1 CWT	EASTWARD TRACK 1 CWT
STANDARD MINIMUM WARNING TIME	20	20
ROADWAY GATE TIME	5	5
CLEARANCE TIME	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME *	0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	27	27
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME *	10	10
CONTROL EQUIPMENT DECISION TIME	4	4
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	41	41
TIME TABLE MAXIMUM TRAIN SPEED IN MILES PER HOUR	40	40
BUFFER SPEED IN MILES PER HOUR	5	5
TOTAL WARNING SYSTEM DESIGN SPEED	45	45
APPROACH DISTANCE TO ISLAND EDGE IN FEET	2662'	2662'
HALF WIDTH OF ISLAND IN FEET	72	72
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	39.19	40.23

*AUTHORIZING AGENCY, CITY OF OXFORD
*DATE OF REQUIREMENT, 11-09-01
*AMOUNT OF TIME (SEC.), 10

- NOTE: 1. 20 WATT BULBS ON GATE ARMS.
ALL OTHERS TO BE 25 WATT BULBS.
2. GATE LENGTH (A) 31' GATE (B) 29'
3. (X) = LOCATION OF HOUSE
4. (N) = APPROXIMATE COMPASS NORTH.
5. THE TRANSMITTER LEADS FOR MOTION OR PREDICTOR EQUIPMENT SHOULD BE CONNECTED ON THE BUNGALOW OR SHORT LEAD SIDE OF THE CROSSING.
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.

104575 06-05-17

0H2017026 XRL/JWG/

IN

OUT

xorail

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS

BELT JCT. TO WEST SWITCH JULIETTA

OXFORD, OH

TRACK AND SIGNAL PLAN

HIGH STREET (CONTRERAS ST.) 154 085F MP. BD-39.71

DESIGNED HAR/WPB

DIGITIZED HAR/CSM

CHECKED HAR/FAP

DATE 01-02-02

DRAWING 2190-6

SHEET NO 7A-1

NEXT SH 7A-2

NEXT FILE BD03971

NEXT SH E01

FILE BD03971

SHEET S01

3000 GCP APPLICATION DESIGN CARD

EQUIPMENT: 3000 3000D2 3000ND 3000ND2

ISLAND FREQUENCY: T1: 8.3 KHZ T2: KHZ T1 CWU

SOFTWARE LEVEL (DISPLAYED DURING BOOT-UP) ☆☆

NUMBER OF TRACKS (NUMBER OF TRANSCEIVER MODULES, 1 OR 2) 1 0211 2

FREQUENCY (MS/GCP) T1: 86 HZ T2: N/A HZ

UNIDIRECTIONAL / BIDIRECTIONAL T1: UNI BI T2: UNI BI

XMIT LEVEL T1: HI MED T2: HI MED

PREDICTOR/MOTION SENSOR T1: PRED MS T2: PRED MS

WARNING TIME SELECTED T1: 27 SEC. T2: N/A SEC.

APPROACH DISTANCE SELECTED T1: 2662 FT. T2: N/A FT.

APPROACH DISTANCE COMPUTED T1: NOT REQUIRED * T2: NOT REQUIRED *

UAX PICKUP DELAY (UAX1) (0 = OFF) 0 SEC.

ENA/UAX2 DELAY (0 = ENA) 0 SEC.

ISLAND DISTANCE (BETWEEN FEED WIRES) T1: 50'+50'+**' OR ☆ FT. T2: FT.

NUMBER OF DAX'S 0 1 2 3 4

DAX A TRACK ASSIGNMENT T1 T2

DAX A DISTANCE (0 = PREEMPT) 0 FT.

DAX A WARNING TIME 37 SEC.

DAX B TRACK ASSIGNMENT T1 T2

DAX B DISTANCE (0 = PREEMPT) FT.

DAX B WARNING TIME SEC.

DAX C TRACK ASSIGNMENT T1 T2

DAX C DISTANCE (0 = PREEMPT) FT.

DAX C WARNING TIME SEC.

DAX D TRACK ASSIGNMENT T1 T2

DAX D DISTANCE (0 = PREEMPT) FT.

DAX D WARNING TIME SEC.

SLAVING MASTER/SLAVE MASTER SLAVE

PASSWORD ENABLED DISABLED ENABLED

RECORDER INSTALLED NOT INSTALLED INSTALLED

RS-232-C BAUD RATE BPS

RS-232-C DATA BITES 7 8

RS-232-C STOP BITS 1 2

RS-232-C PARITY NONE MARK ODD SPACE EVEN

DATE (E.G., MON 13 MAY 1991) .. NOT REQUIRED * TIME (E.G., 06:25:43 PM) NOT REQUIRED *

DAYLIGHT SAVINGS ON OFF

* PROGRAMMED AT INSTALLATION DURING CALIBRATION PROCEDURE
☆ = 120' MINIMUM ISLAND DISTANCE TO BE ENTERED BY FIELD PERSONNEL FOR NON-DAXING APPLICATIONS WHEN ROAD IS 20' OR LESS WIDE.
☆☆ = INDICATE ON AS-IN-SERVICE DRAWINGS

EXPANDED PROGRAMMING DESIGN

SWITCH TO MS (ENTER EZ VALUE) T1: 10 EZ T2: N/A EZ

TRANSFER DELAY MS TO GCP (0 = OFF) T1: 0 SEC. T2: N/A SEC.

PRIME PREDICTION OFFSET (0 = OFF) T1: 0 FT. T2: N/A FT.

PICKUP DELAY PRIME 15 SEC.

PICKUP DELAY DAX A 0 SEC.

PICKUP DELAY DAX B 0 SEC.

PICKUP DELAY DAX C 0 SEC.

PICKUP DELAY DAX D 0 SEC.

COMPENSATION VALUE T1: NOT REQUIRED ** T2: NOT REQUIRED **

ENHANCED DETECTION (ED) T1: ON OFF T2: ON OFF

BACK TO BACK T1 AND T2 (WHEN ED IS ON) NO YES

STATION STOP TIMER T1: 10 SEC. T2: 10 SEC.

OF TRACK WIRES - 4 OR 6 T1: 4 6 T2: 4 6

LOW EX ADJUSTMENT T1: 0 T2: 0

LOW EZ DETECTION T1: ON OFF T2: ON OFF

LOW EZ DETECTION TIMER T1: 10 MIN. T2: N/A MIN.

POSITIVE START (0 = OFF) T1: 0 EZ T2: N/A EZ

POSITIVE START TIMEOUT (0 = NONE) (WHEN POSITIVE START IS ON) T1: 0 MIN. T2: N/A MIN.

SET AT OPERATION NORMAL DIAGNOSTIC

DIAGNOSTIC MESSAGES ON OFF

DAX MESSAGES ON OFF

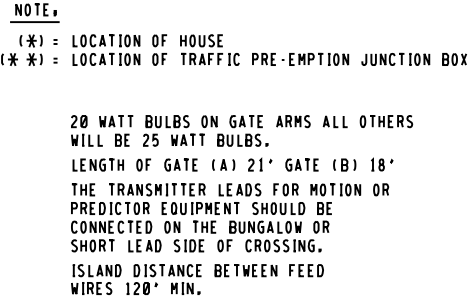
ADVANCE PREEMP TIMER (0 = OFF) 0 SEC.

** THE COMPENSATION VALUE IS PROVIDED BY THE 3000 GCP SYSTEM AND NO ADDITIONAL PROGRAMMING IS NORMALLY REQUIRED.

104575 06-05-17 0H2017026 XRL/JWG/

xorail

REVISIONS			CSX TRANSPORTATION			
09-03-02 GET 0H2001106A			RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
			BELT JCT. TO WEST SWITCH JULIETTA			
			OXFORD, OH			
			DETECTION DEVICE PROGRAM			
			HIGH STREET (CONTRERAS ST.) 154 085F MP. BD-39.71			
DESIGNED		DIGITIZED	CHECKED	DATE		
HAR/WPB		HAR/CSM	HAR/FAP	01-02-02		
DRAWING	SHEET NO	NEXT SH	NEXT FILE	NEXT SH	FILE	SHEET
2190-6	7A-4	7A-5	BD03971	C03	BD03971	C02



CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JCT. TO WEST SWITCH JULIETTA
OXFORD, OH

TRACK, SIGNAL AND POLELINE PLAN AT
LOCUST STREET 154 004Y MP. BD-39.65

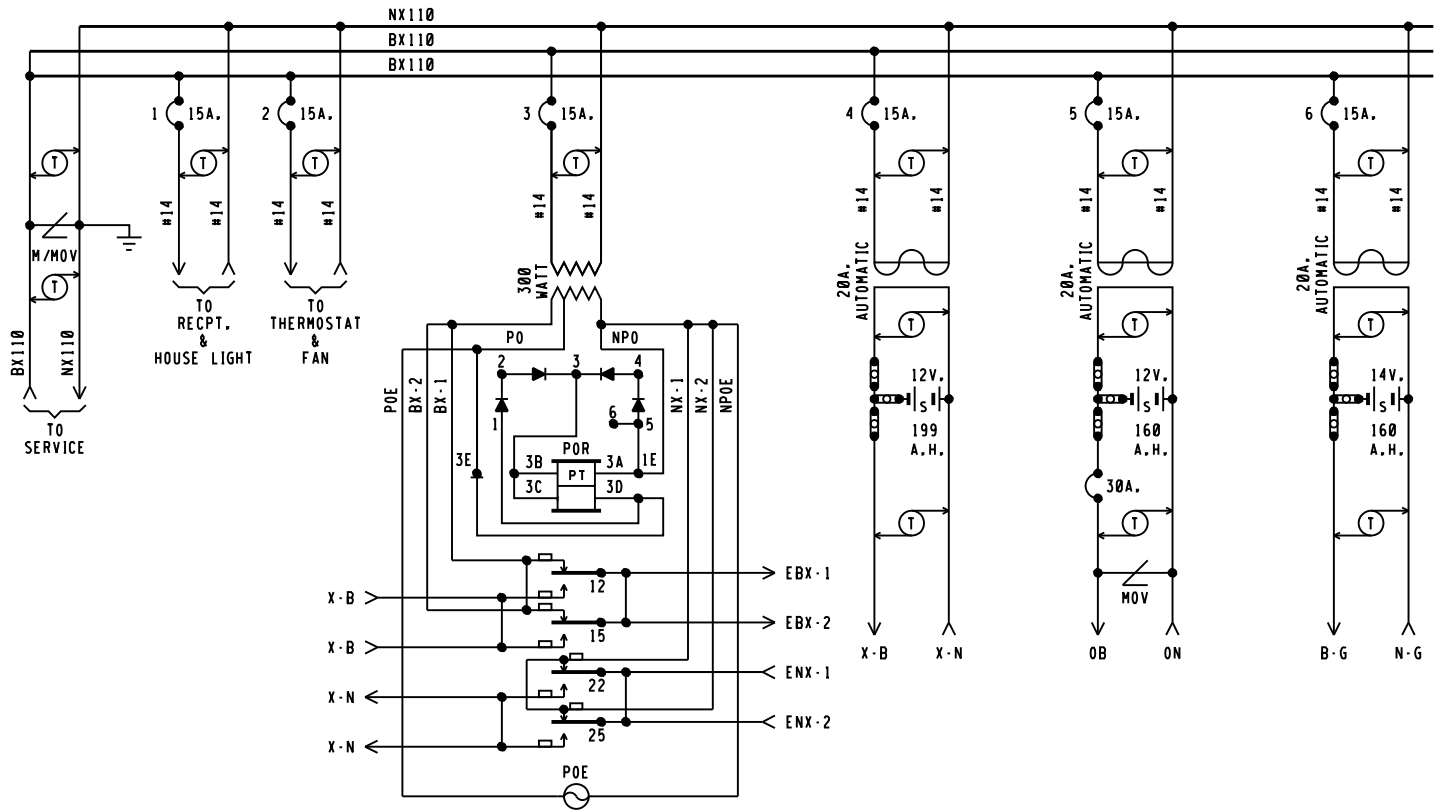
DESIGNED FCS/PEH	DIGITIZED FCS/CTW	CHECKED FCS/MJH	DATE 02-20-96
NEXT FILE BD03965	NEXT SH E01	FILE BD03965	SHEET S01

		PER	65CW	XR	XPR	GPR	EOR			POR		
12			12	12	22	12	12	12		12		
15		B8	15	15	25	15	15	15		15	B62	
22		C30	22	22		22	32	32		32	C30	
23	F		23	23		22	35	25	FB	25	FB	
25	F		25	25		25		32		32	F	
32			32	32		32		35		35		
35			35	35		35						

65CWU 3000ND2 MODULES REQUIRED	
2EA.	80011 20.2KHZ HIGH FREQ. ISL. MOD.
2EA.	80012 TRANSCEIVER MOD.
2EA.	80013 RELAY DRIVE
2EA.	80014 PROCESSOR MOD.
1EA.	80028 TRANSFER MOD.
1EA.	80029 CONTROL INTF.MOD.

EQUIPMENT		
REF.	NOMENCLATURE	TYPE
	65CWU	MOTION SENSOR GRADE CROSSING UNIT SAFETRAN MODEL 3000ND2, FREQ. 285HZ ISLAND FREQ. 20.2KHZ 267HZ
	RECORDER	RECORDER, EVENT ASSY., SMART D.E.I.

FIELD VERIFIED
DURING SURVEY



NOTES.

- 1 - REFERENCES ARE PER SCMS-13.
- 2 - ARRESTERS AND BATTERY LINE ARE PER SCMS-22.
- 3 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
- 4 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
- 5 - WIRING
 - A - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - B - 110-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.

104575 06-05-17 XRL/JWG/0H2017026
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6' X 6' RELAY HOUSE

REVISIONS				RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
5/24/99	SAF	0H1998166	0H1998132	INDIANAPOLIS DIV. MP.38 TO MP.40			
				OXFORD, OH			
				EQUIPMENT AT			
				LOCUST STREET 154 004Y BD-39.65			
DESIGNED		DIGITIZED		CHECKED		DATE	
FCS/PEH		FCS/CTW		FCS/MJH		02-20-96	
DRAWING	SHEET NO	NEXT SH	NEXT FILE	NEXT SH	FILE	SHEET	
2190-6	7B-1	7B-2	B003965	C01	B003965	E01	

3000 GCP APPLICATION DESIGN CARD

EQUIPMENT:

3000

3000D2

3000ND

3000ND2

ISLAND FREQUENCY:

T1:

20.2

KHZ

T2:

KHZ

65

CWU

NUMBER OF TRACKS (NUMBER OF TRANSCEIVER MODULES, 1 OR 2)

1

2

FREQUENCY (MS/GCP)

267

285

HZ

UNIDIRECTIONAL/BIDIRECTIONAL

T1:

UNI

BI

T2:

UNI

BI

XMIT LEVEL

T1:

HI

MED

T2:

HI

MED

PREDICTOR/MOTION SENSOR

T1:

PRED

MS

T2:

PRED

MS

WARNING TIME SELECTED

T1:

30

SEC.

T2:

SEC.

APPROACH DISTANCE SELECTED

T1:

1929

FT.

T2:

FT.

APPROACH DISTANCE COMPUTED

T1:

NOT REQUIRED *

T2:

NOT REQUIRED *

UAX1 PICKUP DELAY (0 = OFF)

SEC.

ENA/UAX2 PICKUP DELAY (0 = OFF)

SEC.

ISLAND DISTANCE (BETWEEN FEED WIRES)

T1:

☆

FT.

T2:

FT.

NUMBER OF DAXS

0

1

2

3

4

DAX A TRACK ASSIGNMENT

T1

T2

DAX A DISTANCE (0 = PREEMPT)

FT.

DAX A WARNING TIME

SEC.

DAX B TRACK ASSIGNMENT

T1

T2

DAX B DISTANCE (0 = PREEMPT)

FT.

DAX B WARNING TIME

SEC.

DAX C TRACK ASSIGNMENT

T1

T2

DAX C DISTANCE (0 = PREEMPT)

FT.

DAX C WARNING TIME

SEC.

DAX D TRACK ASSIGNMENT

T1

T2

DAX D DISTANCE (0 = PREEMPT)

FT.

DAX D WARNING TIME

SEC.

SLAVING MASTER/SLAVE

MASTER

SLAVE

PASSWORD ENABLED

DISABLED

ENABLED

RECORDER INSTALLED

NOT INSTALLED

INSTALLED

RS-232-C BAUD RATE

BPS

RS-232-C DATE BITES

7

8

RS-232-C STOP BITS

1

2

RS-232-C PARITY

NONE

MARK

ODD

SPACE

EVEN

DATE (E.G., MON 13 MAY 1991) .. NOT REQUIRED *

TIME (E.G., 06:25:43 PM)

DAYLIGHT SAVINGS

ON

OFF

FIELD VERIFIED
DURING SURVEY

EXPANDED PROGRAMMING DESIGN

SWITCH TO MS (ENTER EZ VALUE)

T1:

10

EZ

T2:

EZ

TRANSFER DELAY MS TO GCP (0 = OFF) ..

T1:

0

SEC.

T2:

SEC.

PRIME PREDICTION OFFSET (0 = OFF)

T1:

0

FT.

T2:

FT.

PICKUP DELAY PRIME

15

SEC.

PICKUP DELAY DAX A

SEC.

PICKUP DELAY DAX B

SEC.

PICKUP DELAY DAX C

SEC.

PICKUP DELAY DAX D

SEC.

COMPENSATION VALUE

T1:

NOT REQUIRED **

COMPENSATION VALUE

T2:

NOT REQUIRED **

** THE COMPENSATION VALUE IS PROVIDED BY THE 3000 GCP SYSTEM
AND NO ADDITIONAL PROGRAMMING IS NORMALLY REQUIRED.

= EXISTING

= NOTE

= IN

= OUT

104575

06-05-17

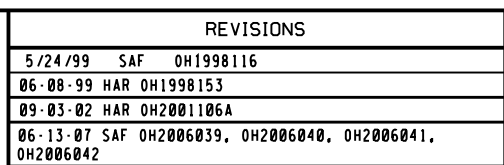
0H2017026

XRL/JWG/

xorail

* PROGRAMMED AT INSTALLATION DURING CALIBRATION PROCEDURE
☆ = 120' MINIMUM ISLAND DISTANCE TO BE ENTERED BY FIELD PERSONNEL
FOR NON-DAXING APPLICATIONS

REVISIONS				CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
5/24/99	SAF	0H1998116	0H1993133				
				INDIANAPOLIS DIV. MP.38 TO MP.40 OXFORD, OH CIRCUITS AT LOCUST STREET 154 004Y BD-39.65			
				DESIGNED FCS/PEH	DIGITIZED FCS/CTW	CHECKED FCS/MJH	DATE 02-20-96
				DRAWING 2190-6	SHEET NO 7B-3	NEXT SH 7B-4	NEXT FILE BD03965
		NEXT SH 7B-4	NEXT FILE BD03965	NEXT SH C03	FILE BD03965	SHEET C02	



 : IN
 : OUT
 104575 042017026
 06-05-17  XRL/JWG/
xorail

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JCT. TO WE LYONSVILLE
OXFORD, OH
TRACK AND SIGNAL PLAN AT
SPRING ST. 1540835 MP. BD-39.45

			DESIGNED SAF-KSW	DIGITIZED SAF-KSW	CHECKED SAF-EJH	DATE 6-24-98
DRAWING	SHEET NO	NEXT SH	NEXT FILE B003945	NEXT SH P01	FILE B003945	SHEET S01

Minimum Program Steps Report
.....
Location and SIN
.....
DOT Number: 154083S
Milepost Number: BD-39.45
Site Name: W SPRING STREET

SIN: 712548600416 *

* Parameter is part of office check number calculation.

MCF and Template Selection
.....
MCF Name: GCP-T6X-01-2.mcf
MCF Revision: 012
MCF CRC: 00FE7A0C

Template = 1A,6 Trk B1 *

* Parameter is part of office check number calculation.

Minimum Program Steps
.....
TEMPLATE: track 1-B1, Island
Track 1: GCP Frequency = 156 Hz
Track 1: Approach Distance = 2008 ft See Plans
Track 1: Prime Warning Time = 30 sec *
Track 1: Prime UAX = IP *
Track 1: Prime UAX Pickup = 25 sec *
Track 1: GCP Transmit Level = High Set in Field
Track 1: Isl Frequency = 11.5 kHz

TEMPLATE: SSCC
SSCC-1 Number of GDS = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDS = 1 *

TEMPLATE: IP assignment 1
IN 1.1 = T1 Prime UAX *

TEMPLATE: IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

TEMPLATE: SEAR
SP 3.1 = Not Used *

GCP: track 1
Track 1: Island Distance = 148 ft *

ADVANCED: out of service
OOS Control = Display#OOS IPs *

ADVANCED: site options
Daylight Savings = On *

SSCC: 1
SSCC-1 Gate Delay = 5 sec *
SSCC-1: Flash Rate = 55 *
SSCC-1: Lamp Neutral Test = Off *

SSCC: 2
SSCC-2 Gate Delay = 5 sec *
SSCC-2: Flash Rate = 55 *
SSCC-2: Lamp Neutral Test = Off *

SEAR
DI 1 = Gnd Filt Tester 1 *
DI 2 = Gnd Filt Tester 2 *
RIU 1 = Ground Fault Test *
RIU 2 = AC Control *

SEAR: slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 7.2 = TSS 3 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Office Configuration Check Number
.....
Check Number: 002B06CB
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

Track 1: GCP Frequency = 156 Hz
Track 1: Approach Distance = 1980 ft See Plans
Track 1: GCP Transmit Level = High Set in Field
Track 1: Isl Frequency = 11.5 kHz

ALL OUT
THIS SHEET IS VOID
WHEN AS IN SERVICED.
104575 0H2017026
06-05-17 XRL/JWG/
xorail

REVISIONS			CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042			BELT JCT. TO WE LYONSVILLE OXFORD, OH MINIMUM PROGRAM STEPS REPORT CWE-45 SPRING ST. 154083S M.P. BD-39.45			
			DESIGNED SAF-JMA	DIGITIZED SAF-JMA	CHECKED SAF-RJD	DATE 07-17-06
DRAWING	SHEET NO	NEXT SH	NEXT FILE BD03945	NEXT SH E01	FILE BD03945	SHEET P01

Minimum Program Steps Report

Location and SIN

DOT Number, 154083S
Milepost Number, BD-39.45
Site Name, SPRING STREET

SIN, 712548600416 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name, GCP-T6X-01-2.mcf
MCF Revision, 012
MCFCRC, 0DFE7A0C

Template = 1A,6 Trk B1 *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, track 1-B1, Island
Track 1 , GCP Frequency = 348 Hz (See Plans)
Track 1 , Approach Distance = 2008 ft (See Plans)
Track 1 , Prime Warning Time = 30 sec *
Track 1 , Prime UAX = IP *
Track 1 , Prime UAX Pickup = 25 sec *
Track 1 , GCP Transmit Level = Medium (Set in Field)
Track 1 , Isl Frequency = 11.5 kHz (See Plans)

TEMPLATE, SSCC
SSCC-1 Number of GDs = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDs = 1 *

TEMPLATE, IP assignment 1
IN 1.1 = T1 Prime UAX *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

TEMPLATE, SEAR
SP 3.1 = Not Used *

GCP, track 1
Track 1 , Island Distance = 148 ft *

ADVANCED, out of service
OOS Control = Display+OOS IPs *

ADVANCED, site options
Daylight Savings = 0n *

SSCC, 1
SSCC-1 Gate Delay = 5 sec *
SSCC 1 , Flash Rate = 55 *
SSCC 1 , Lamp Neutral Test = Off *

SSCC, 2
SSCC-2 Gate Delay = 5 sec *
SSCC 2 , Flash Rate = 55 *
SSCC 2 , Lamp Neutral Test = Off *

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

SEAR, slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 7.2 = TSS 3 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Check Numbers

Office Check No. (DT 4.6.0), 0D2B06CB
Office Check Number, 0D2B06CB
Config. Check Number, 758AD2A2
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

Track 1 , GCP Frequency = 348 Hz
Track 1 , Approach Distance = 2008 ft (See Plans)
Track 1 , GCP Transmit Level = Medium (Set in Field)
Track 1 , Isl Frequency = 11.5 kHz

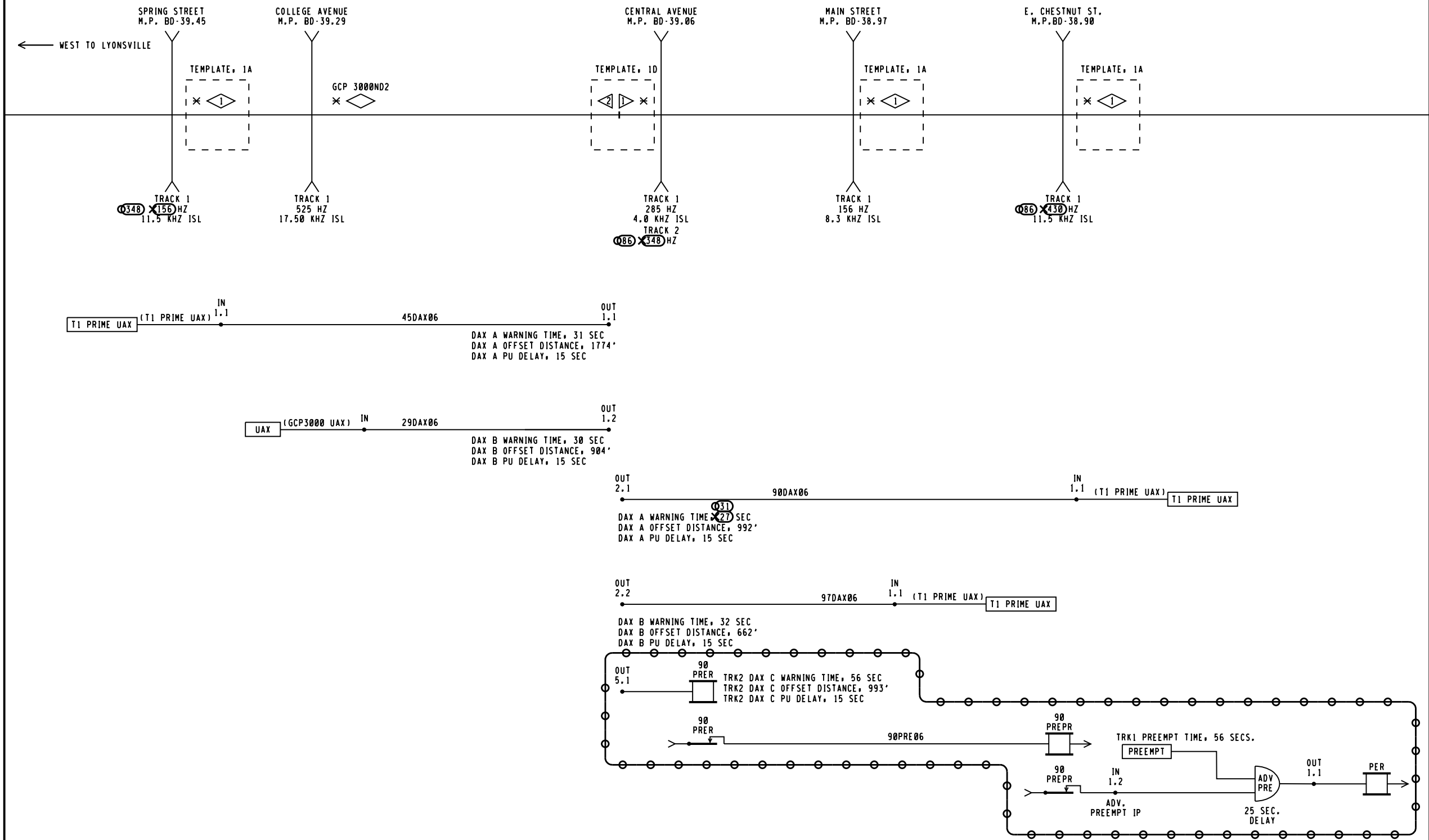
Comments

<none>



CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JCT. TO WE LYONSVILLE SPRING ST. (154083S) MINIMUM PROGRAM STEPS REPORT CWE-45 OXFORD, OH M.P. BD-39.45			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-05-17
DESIGN DATE 06-05-17	REV. NO. 1	DRAWING -----	SHEET P01(A)

4000GCP.P01 REV. 09-04-15
DESIGN DATE 06-05-17
REV. NO. 1

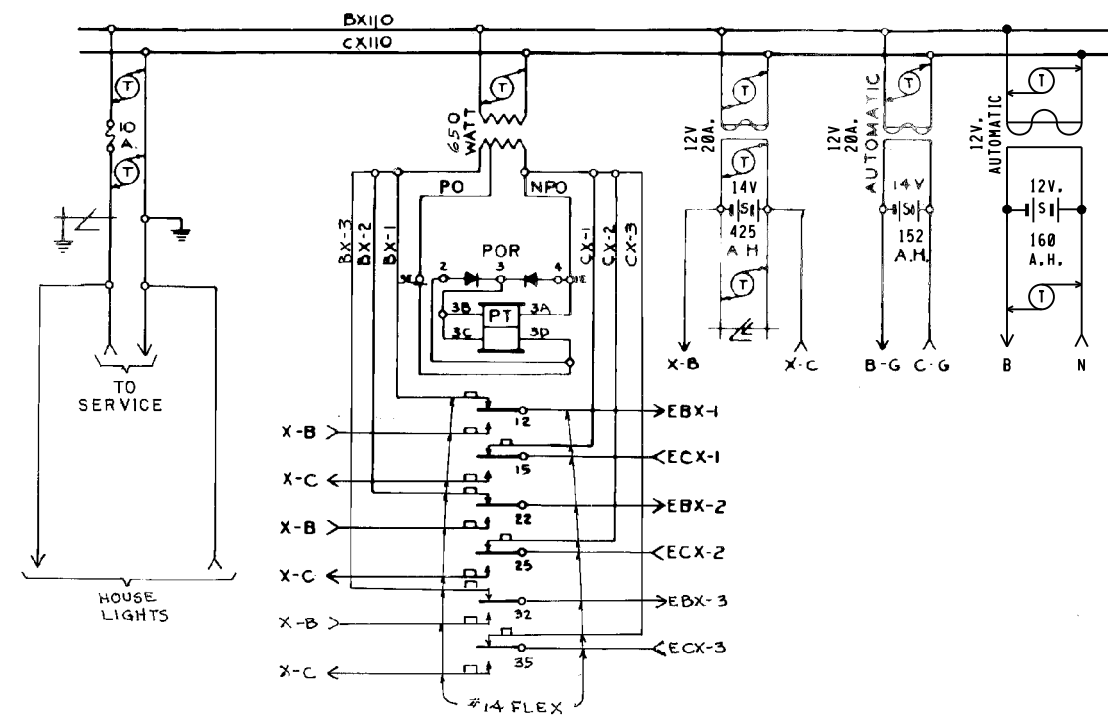


SYMBOL	DEFINE	SYMBOL	DEFINE
	EXTERNAL VITAL AND GATE		INTERNAL SOFTWARE GATE

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



REVISIONS			RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042			BELT JCT. TO WE LYONSVILLE OXFORD, OH INTERNAL SOFTWARE AND GATE LOGIC DIAGRAMS SPRING ST. 1540835 M.P. BD-39.45			
DESIGNED	DIGITIZED	CHECKED	DATE			
SAF-JMA	SAF-JMA	SAF-RJD	07-17-06			
DRAWING	SHEET NO	NEXT SH	NEXT FILE	NEXT SH	FILE	SHEET
.....					B003945	001

[illegible]

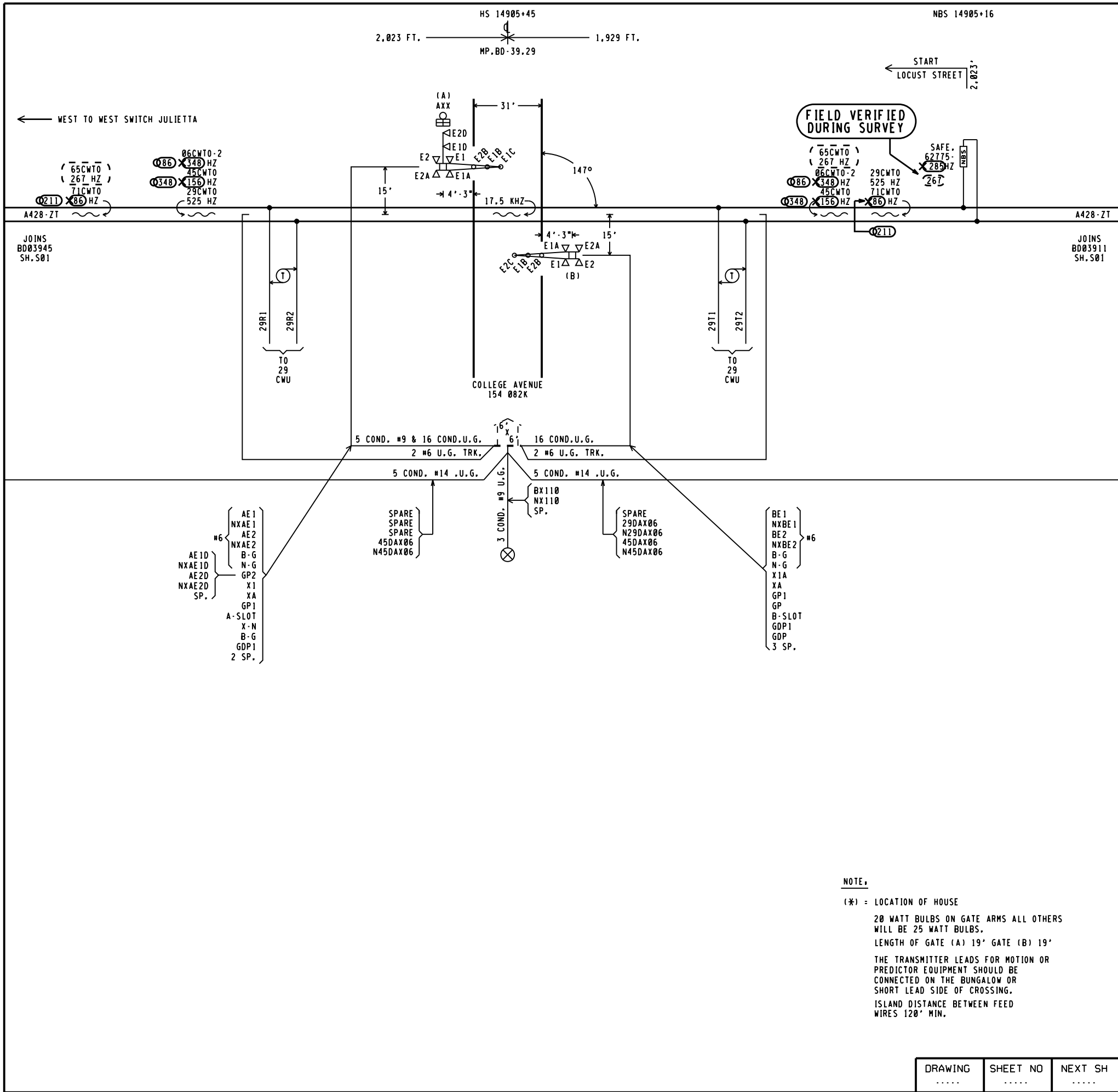
REF	NOMEN	TYPE
	45CWU	GCP 4000 156 HZ, 11.5KHZ 0348

 : IN
 : OUT
 104575 0H2017026
 06-05-17 XRL/JWG/



6'X6' HOUSE

REVISIONS 04-17-97 HAR OH1995059 06-07-99 SAF OH1998116 VECTOR CREATED 06-13-07 SAF OH2006039, OH2006040, OH2006041, OH2006042			 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
			BELT JCT. TO WE LYONSVILLE OXFORD, OH EQUIPMENT AT SPRING ST. 1540835 M.P. BD-39.45			
			DESIGNED SAF-JMA	DIGITIZED SAF-SMV	CHECKED SAF-RJD	DATE 07-23-76
DRAWING *****	SHEET NO *****	NEXT SH *****	NEXT FILE BD03945	NEXT SH C01	FILE BD03945	SHEET E01



REVISIONS

04-17-97	HAR	OH95059
5/24/99	SAF	OH1998116
06-08-99	HAR	OH1998153
09-03-02	GET	OH2001106A
06-13-07	SAF	OH2006039, OH2006040, OH2006041, OH2006042

104575

06-05-17

XORAIL

06-05-17

0H2017026

XRL/JWG/

CSX TRANSPORTATION

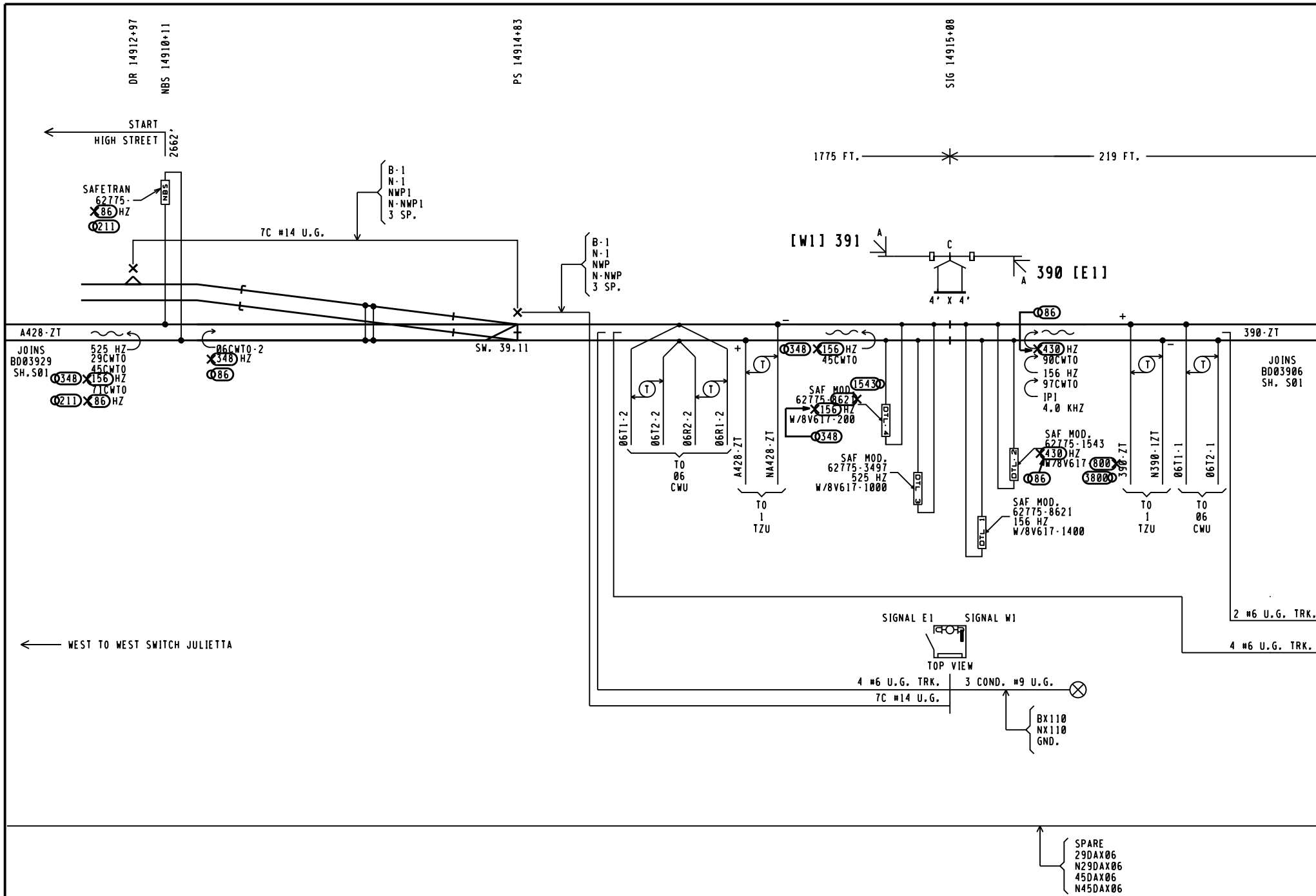
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE

OXFORD, OH

TRACK, SIGNAL AND POLELINE PLAN AT
COLLEGE AVENUE 154 082K MP. BD-39.29

DESIGNED FCS/DKB	DIGITIZED FCS/DBS	CHECKED FCS/MJH	DATE 11-28-95
NEXT FILE BD03929	NEXT SH E01	FILE BD03929	SHEET S01



REVISIONS

06-08-99 HAR 0H1998153

09-03-02 GET 0H2001106A

06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042

CSX

TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JCT. TO WEST SWITCH JULIETTA

TRACK AND SIGNAL PLAN AT
SIGNALS 390 & 391, MP. BD-39.11

DESIGNED
HAR/RDT

DIGITIZED
HAR/RSL

CHECKED
HAR/HVT

DATE
8-25-98

DRAWING
2190-6

SHEET NO
7EA

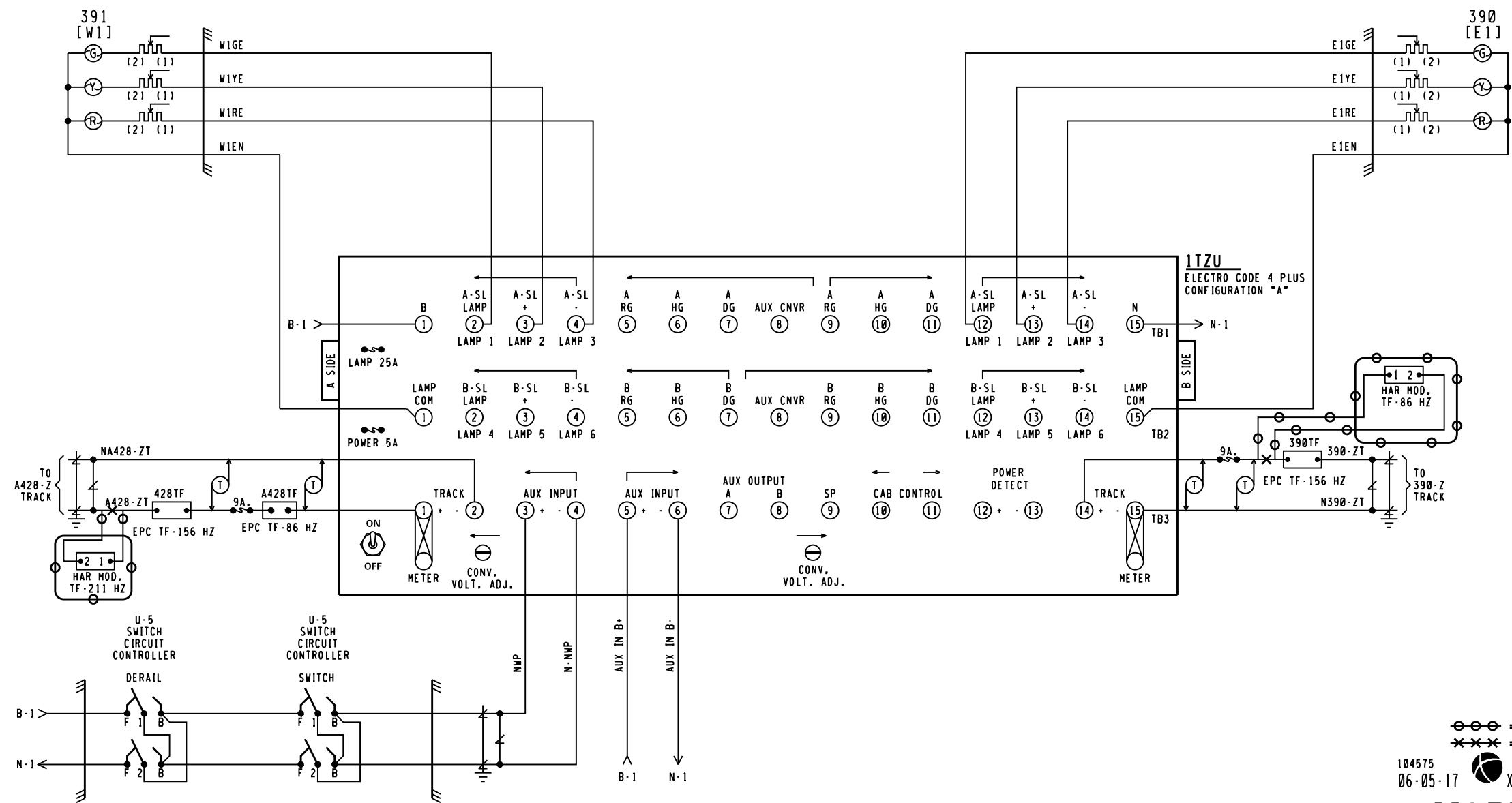
NEXT SH
7EA-1

NEXT FILE
BD03911

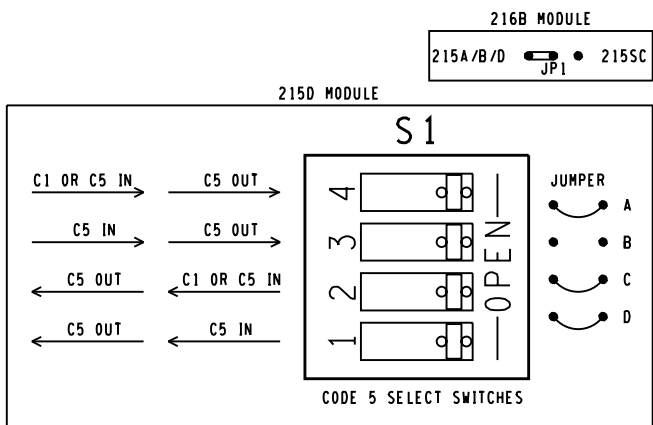
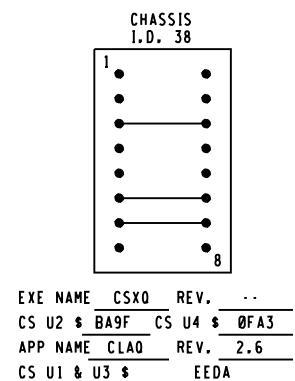
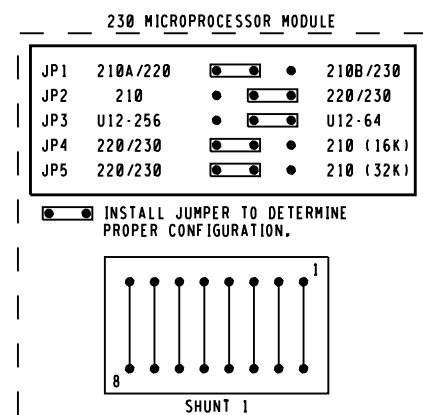
NEXT SH
E01

FILE
BD03911

SHEET
S01



104575 06-05-17 XRL/JWG/0H2017026
xorail

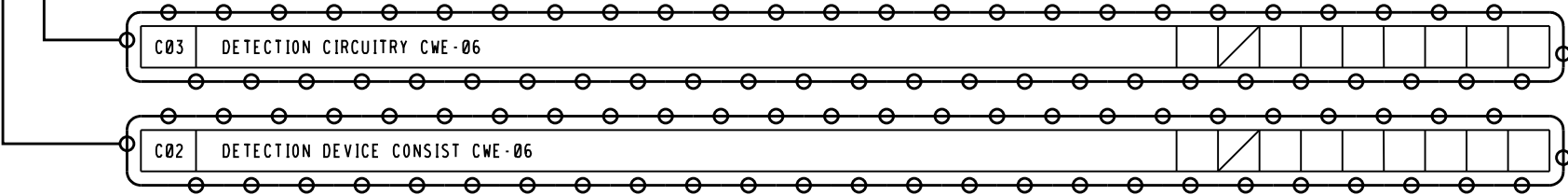


NOTE:
 SIGNAL LIGHT RESISTORS ARE 3 OHM VARIABLE, 15 WATT, AND MOUNTED IN SIGNAL HEADS.
 AC POWER ADAPTER - HARMON PART # 262677-000.

REVISIONS			CSX TRANSPORTATION			
06-08-99 HAR 0H1998153			RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
09-03-02 GET 0H2001106A			BELT JCT. TO WEST SWITCH JULIETTA			
06-13-07 SAF 0H2006039, 0H2006040, 0H2006041, 0H2006042			CIRCUITS AT SIGNALS 390 & 391, MP. BD-39.11			
DESIGNED HAR/RDT	DIGITIZED HAR/RSL	CHECKED HAR/HVT	DATE 8-25-98			
DRAWING 2190-6	SHEET NO 7EA-2	NEXT SH	NEXT FILE BD03906	NEXT SH 101	FILE BD03911	SHEET C01

SH. NO.	INDEX CONTENTS	REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	X	X							
S01	TRACK AND SIGNAL PLAN	X	X							
P01	MINIMUM PROGRAM STEPS REPORT CWE-06	X	X							
E01	POWER DISTRIBUTION	X	X							
C01	DETECTION DEVICE CONSIST CWE-06	X	X							
OC04	DETECTION CIRCUITRY CWE-06	X	X							
OC05	DETECTION CIRCUITRY CWE-06	X	X							
OC06	CROSSING WARNING DEVICE GATE CIRCUITRY	X	X							
OC07	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X	X							
OC08	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X	X							
OC09	CROSSING WARNING DEVICE CIRCUITRY	X	X							
OC10	SEAR II ₁ CONFIGURATION & FUNCTIONS	X	X							
G01	INTERNAL SOFTARE AND GATES LOGIC DIAGRAMS	X	X							

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



104575

06-05-17

0H2017026

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REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2006039 0H2006040 0H2006041 0H2006042	07-17-06	05-01-07	06-13-07
2	0H2017026	06-05-17		

TO BE COMPLETED
ON A.I.S.

CSX

TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE

W.CENTRAL AVENUE (154001D)

INDEX AND REVISIONS

OXFORD, OH M.P. BD-39.06

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET 101

20

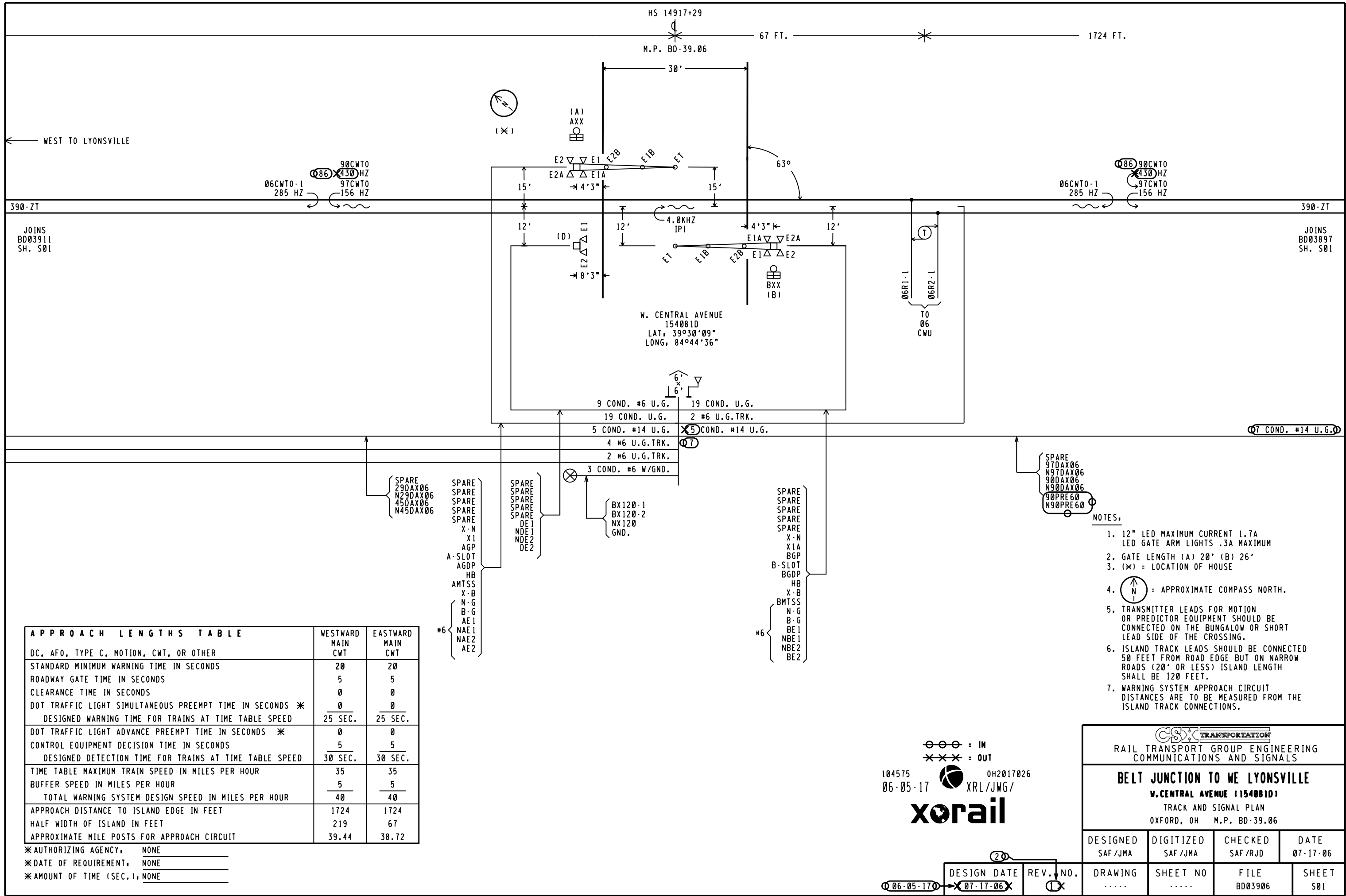
DESIGN DATE

REV. NO.

06-05-17

07-17-06

1



Minimum Program Steps Report

Location and SIN

DOT Number, 154081D
Milepost Number, BD-39.06
Site Name, W CENTRAL AVE

SIN, 712548600316 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name, GCP-T6X-01-2.mcf
MCF Revision, 012
MCFCRC, 0DFE7A0C

Template = 1D,3 Uni pairs *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, track 1-Uni, Island
Track 1, GCP Frequency = 285 Hz
Track 1, Approach Distance = 1724 ft See Plans
Track 1, Prime Warning Time = 25 sec *
Track 1, GCP Transmit Level = High Set in Field
Track 1, Isl Frequency = 4.0 kHz
Track 1, Island Distance = 286 ft Verify in Field

TEMPLATE, track 1 Daxes
Track 1, Dax A Used = Yes *
Track 1, Dax A Warning Time = 31 sec *
Track 1, Dax A Offset Distance = 1774 ft Verify in Field
Track 1, Dax B Used = Yes *
Track 1, Dax B Warning Time = 30 sec *
Track 1, Dax B Offset Distance = 904 ft Verify in Field

TEMPLATE, track 2-Uni, No Island
Track 2, GCP Frequency = 348 Hz
Track 2, Approach Distance = 1724 ft Verify in Field
Track 2, Prime Warning Time = 25 sec *
Track 2, GCP Transmit Level = High Set in Field

TEMPLATE, track 2 Daxes
Track 2, Dax A Used = Yes *
Track 2, Dax A Warning Time = 27 sec *
Track 2, Dax A Offset Distance = 992 ft Verify in Field
Track 2, Dax B Used = Yes *
Track 2, Dax B Warning Time = 32 sec *
Track 2, Dax B Offset Distance = 662 ft Verify in Field

TEMPLATE, SSCC
SSCC-1 Number of GDs = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDs = 1 *

TEMPLATE, OP assignment 1
OUT 1.1 = T1 Dax A *
OUT 1.2 = T1 Dax B *
OUT 2.1 = T2 Dax A *
OUT 2.2 = T2 Dax B *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

TEMPLATE, SEAR
SP 3.1 = Not Used *

ADVANCED, out of service
00S Control = Display+00S IPs *

ADVANCED, out of service 2
T2 00S Control = 00S Input 1 *

ADVANCED, site options
Daylight Savings = On *

SSCC, 1
SSCC-1 Gate Delay = 5 sec *
SSCC 1, Flash Rate = 55 *
SSCC 1, Lamp Neutral Test = Off *

SSCC, 2
SSCC-2 Gate Delay = 5 sec *
SSCC 2, Flash Rate = 55 *
SSCC 2, Lamp Neutral Test = Off *

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

SEAR, slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Office Configuration Check Number

Check Number, 69DF0622
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

Track 1, GCP Frequency = 285 Hz
Track 1, Approach Distance = 1724 ft See Plans
Track 1, GCP Transmit Level = High Set in Field
Track 1, Isl Frequency = 4.0 kHz
Track 1, Island Distance = 286 ft Verify in Field
Track 1, Dax A Offset Distance = 1774 ft Verify in Field
Track 1, Dax B Offset Distance = 904 ft Verify in Field
Track 2, GCP Frequency = 348 Hz
Track 2, Approach Distance = 1724 ft Verify in Field
Track 2, GCP Transmit Level = High Set in Field
Track 2, Dax A Offset Distance = 992 ft Verify in Field
Track 2, Dax B Offset Distance = 662 ft Verify in Field

ALL OUT
THIS SHEET IS VOID
WHEN AS IN SERVICED.
104575 0H2017026
06-05-17 XRL/JWG/

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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE

W.CENTRAL AVENUE (154081D)

MINIMUM PROGRAM STEPS REPORT CWE-06

OXFORD, OH M.P. BD-39.06

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DESIGN DATE 07-17-06	REV. NO. 1	DRAWING	SHEET P01

Minimum Program Steps Report

Location and SIN

DOT Number, 154081D
Milepost Number, BD-39.06
Site Name, W CENTRAL AVE

SIN, 712548600316 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name, GCP-T6X-01-2.mcf
MCF Revision, 012
MCFCRC, 0DFE7A0C

Template = 1D,3 Uni pairs *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, module configuration
Track 5/R10 2 Slot = R10 *

TEMPLATE, track 1-Uni, Island
Track 1 , GCP Frequency = 285 Hz (See Plans)
Track 1 , Approach Distance = 1724 ft (See Plans)
Track 1 , Prime Warning Time = 25 sec *
Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Isl Frequency = 4.0 kHz (See Plans)
Track 1 , Island Distance = 286 ft (Verify in Field)

TEMPLATE, track 1 Daxes
Track 1 , Dax A Used = Yes *
Track 1 , Dax A Warning Time = 31 sec *
Track 1 , Dax A Offset Distance = 1774 ft (Verify in Field)
Track 1 , Dax B Used = Yes *
Track 1 , Dax B Warning Time = 30 sec *
Track 1 , Dax B Offset Distance = 904 ft (Verify in Field)

TEMPLATE, track 2-Uni,No Island
Track 2 , GCP Frequency = 86 Hz (See Plans)
Track 2 , Approach Distance = 3775 ft (Verify in Field)
Track 2 , Prime Warning Time = 25 sec *
Track 2 , GCP Transmit Level = High (Set in Field)

TEMPLATE, track 2 Daxes
Track 2 , Dax A Used = Yes *
Track 2 , Dax A Warning Time = 27 sec *
Track 2 , Dax A Offset Distance = 993 ft (Verify in Field)
Track 2 , Dax B Used = Yes *
Track 2 , Dax B Warning Time = 32 sec *
Track 2 , Dax B Offset Distance = 662 ft (Verify in Field)
Track 2 , Dax C Used = Yes *
Track 2 , Dax C Warning Time = 56 sec *
Track 2 , Dax C Offset Distance = 993 ft (Verify in Field)

TEMPLATE, SSCC
SSCC-1 Number of GDs = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDs = 1 *

TEMPLATE, OP assignment 1
OUT 1.1 = T1 Dax A *
OUT 1.2 = T1 Dax B *
OUT 2.1 = T2 Dax A *
OUT 2.2 = T2 Dax B *

TEMPLATE, OP assignment 2
OUT 5.1 = T2 Dax C *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

ADVANCED, out of service
00S Control = Display+00S IPs *

ADVANCED, out of service 2
T2 00S Control = 00S Input 1 *

ADVANCED, site options
Daylight Savings = 0n *

SSCC, 1
SSCC-1 Gate Delay = 5 sec *
SSCC 1 , Flash Rate = 55 *

SSCC, 2
SSCC-2 Gate Delay = 5 sec *
SSCC 2 , Flash Rate = 55 *

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

SEAR, slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Check Numbers

Office Check No. (DT 4.6.0), 58C8B4F1
Office Check Number, 58C8B4F1
Config. Check Number, 5B62D354
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

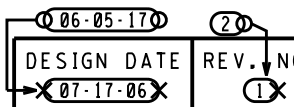
Track 1 , GCP Frequency = 285 Hz
Track 1 , Approach Distance = 1724 ft (See Plans)
Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Isl Frequency = 4.0 kHz
Track 1 , Island Distance = 286 ft (Verify in Field)
Track 1 , Dax A Offset Distance = 1774 ft (Verify in Field)
Track 1 , Dax B Offset Distance = 904 ft (Verify in Field)
Track 1 , Dax C Offset Distance = 99 ft (Verify in Field)
Track 2 , GCP Frequency = 86 Hz
Track 2 , Approach Distance = 3775 ft (Verify in Field)
Track 2 , GCP Transmit Level = High (Set in Field)
Track 2 , Dax A Offset Distance = 993 ft (Verify in Field)
Track 2 , Dax B Offset Distance = 662 ft (Verify in Field)
Track 2 , Dax C Offset Distance = 993 ft (Verify in Field)
Track 1 , Island Distance = 286 ft (Set in Field)
Track 2 , Island Distance = 0 ft (Set in Field)
Track 3 , Island Distance = 199 ft (Set in Field)
Track 4 , Island Distance = 0 ft (Set in Field)
Track 5 , Island Distance = 199 ft (Set in Field)
Track 6 , Island Distance = 0 ft (Set in Field)

Comments

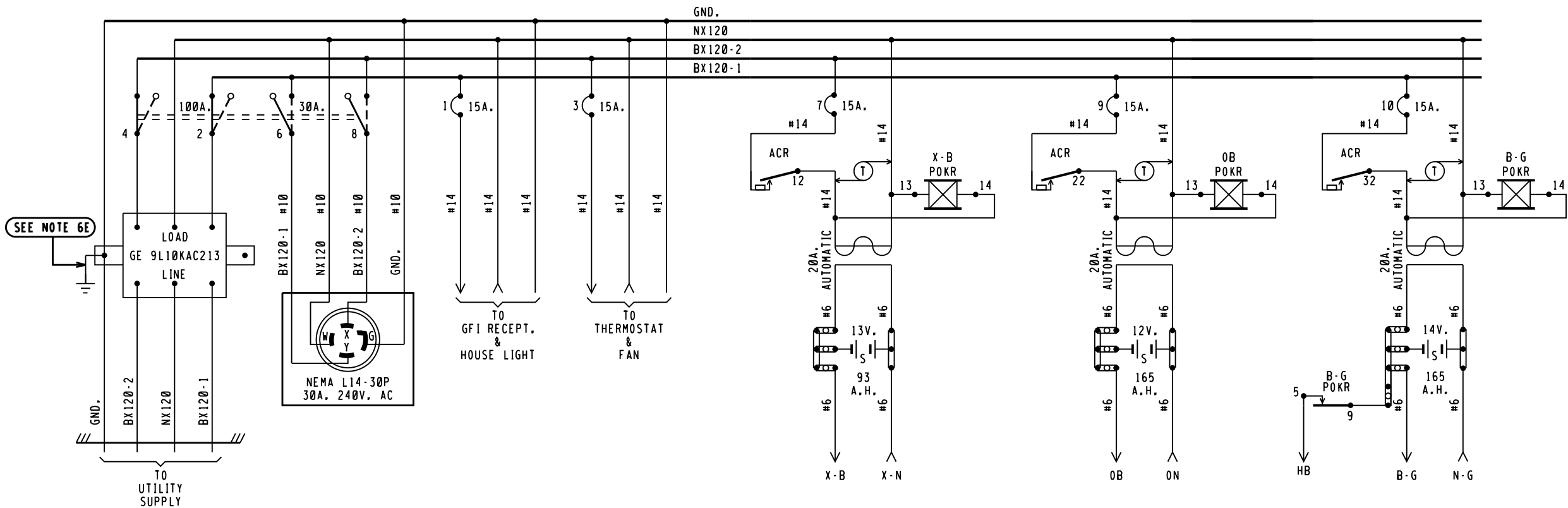
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CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE W. CENTRAL AVENUE (154081D) MINIMUM PROGRAM STEPS REPORT CWE-06 OXFORD, OH M.P. BD-39.06			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-05-17
DESIGN DATE 06-05-17	REV. NO. 2	DRAWING	SHEET NO
4000GCP.P01 REV. 09-04-15		FILE BD03906	SHEET P01(A)

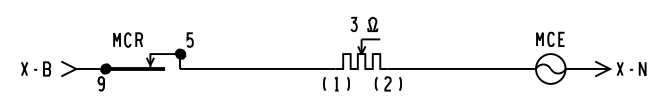


ACR				X-B POKR				MCR				90PRER			
12	B	B77		9	F	11	F	9	F	11	F	12		B8	
15		C30		10	F	12		10		12		15		C30	
22	B											22			
25												23	F		
32	B											25	F		
35												32			
												35			



BX120-1 | BX120-2
12.7 AMPS | 8.0 AMPS
MAXIMUM LOAD
CALCULATED PER SS360

- NOTES:
- 1 - REFERENCES ARE PER SCMS-13.
 - 2 - ARRESTERS ARE PER SS382.
 - 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 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 - 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.

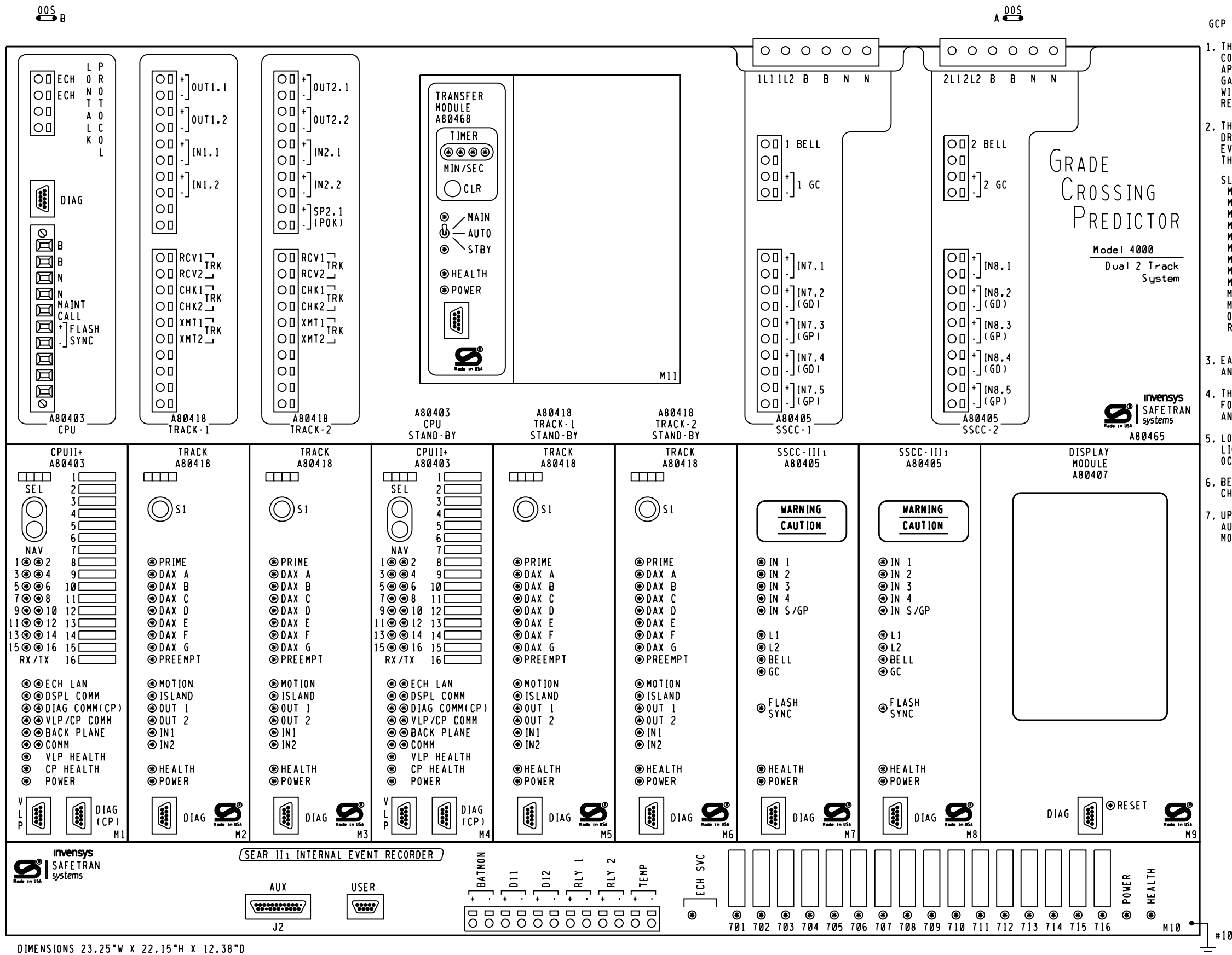


104575 06-05-17
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6' X 6' RELAY HOUSE W/FARADAY SHIELD

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONVILLE W. CENTRAL AVENUE (154001D) POWER DISTRIBUTION OXFORD, OH M.P. BD-39.06			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET E01

DESIGN DATE 06-05-17	REV. NO. 1
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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 II₁ 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. THE STANDARD A80465 INCLUDES THE FOLLOWING MODULES,

SLOT	MODULE	FUNCTION	PART NO.
M1	CPU-II+	MAIN	A80403
M2	TRACK-1	MAIN	A80418
M3	TRACK-2	MAIN	A80418
M4	CPU-II+	STANDBY	A80403
M5	TRACK-1	STANDBY	A80418
M6	TRACK-2	STANDBY	A80418
M7	SSCC-III ₁	SIG 1-2	A80405
M8	SSCC-III ₁	SIG 3-4	A80405
M9	DISPLAY MODULE		A80407
M11	TRANSFER UNIT		A80468
M10 (LOWER BAY)	SEAR II ₁	RECORDER	A80410
OPTIONAL MODULES,			
R10 MODULE			A80413

3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.

4. THE SEAR II₁ INTERNAL EVENT RECORDER HAS INPUTS FOR ONE BATTERY MONITOR, TWO NON-VITAL INPUTS AND TWO PROGRAMMABLE RELAY DRIVES (HEEL/Front).

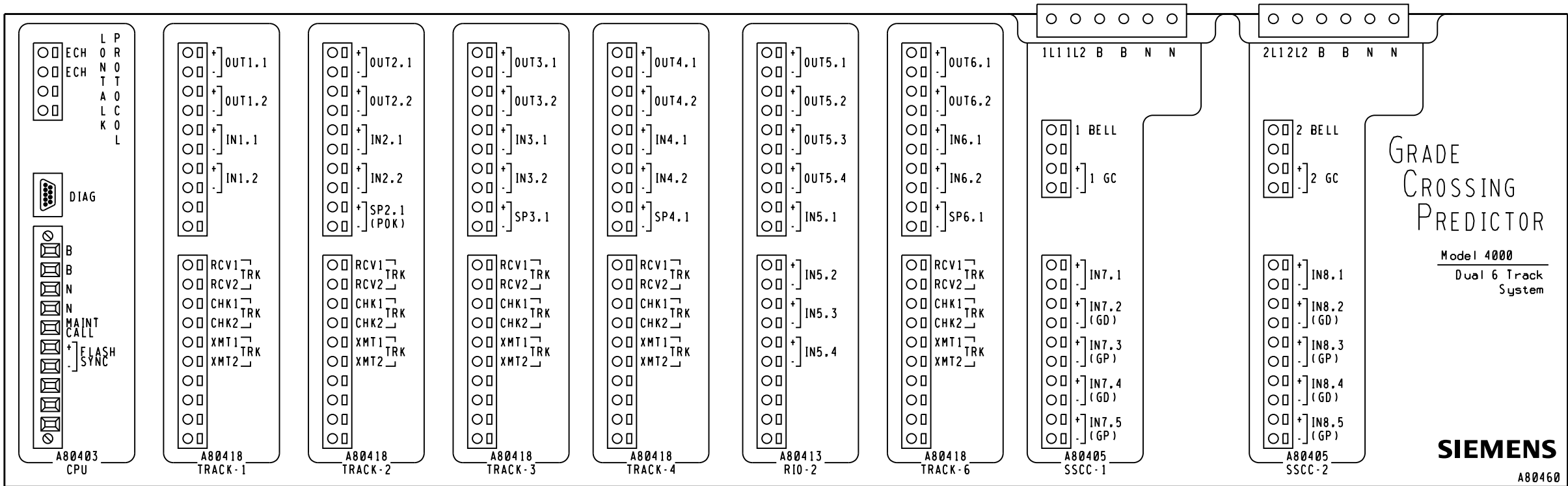
5. LOCATED ON THE FRONT OF EACH MODULE THERE ARE LED LIGHTS TO INDICATE THE ACTIVITY OF CERTAIN FUNCTIONS OCCURRING INSIDE THE GCP.

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.

ALL OUT
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WHEN AS IN SERVICED.
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06-05-17 XRL/JWG/
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DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DESIGN DATE 07-17-06	REV. NO. 1	DRAWING	SHEET C01

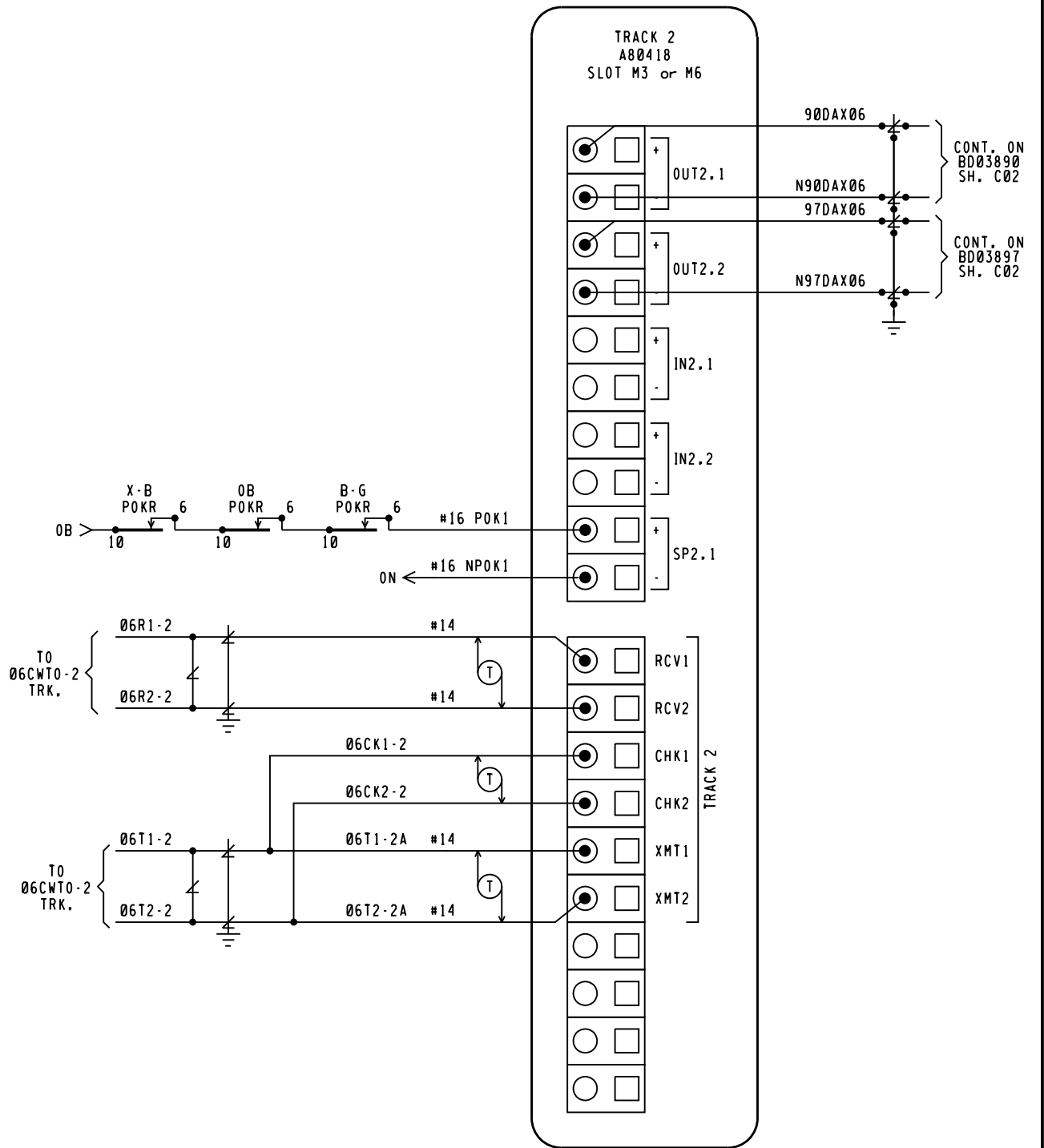
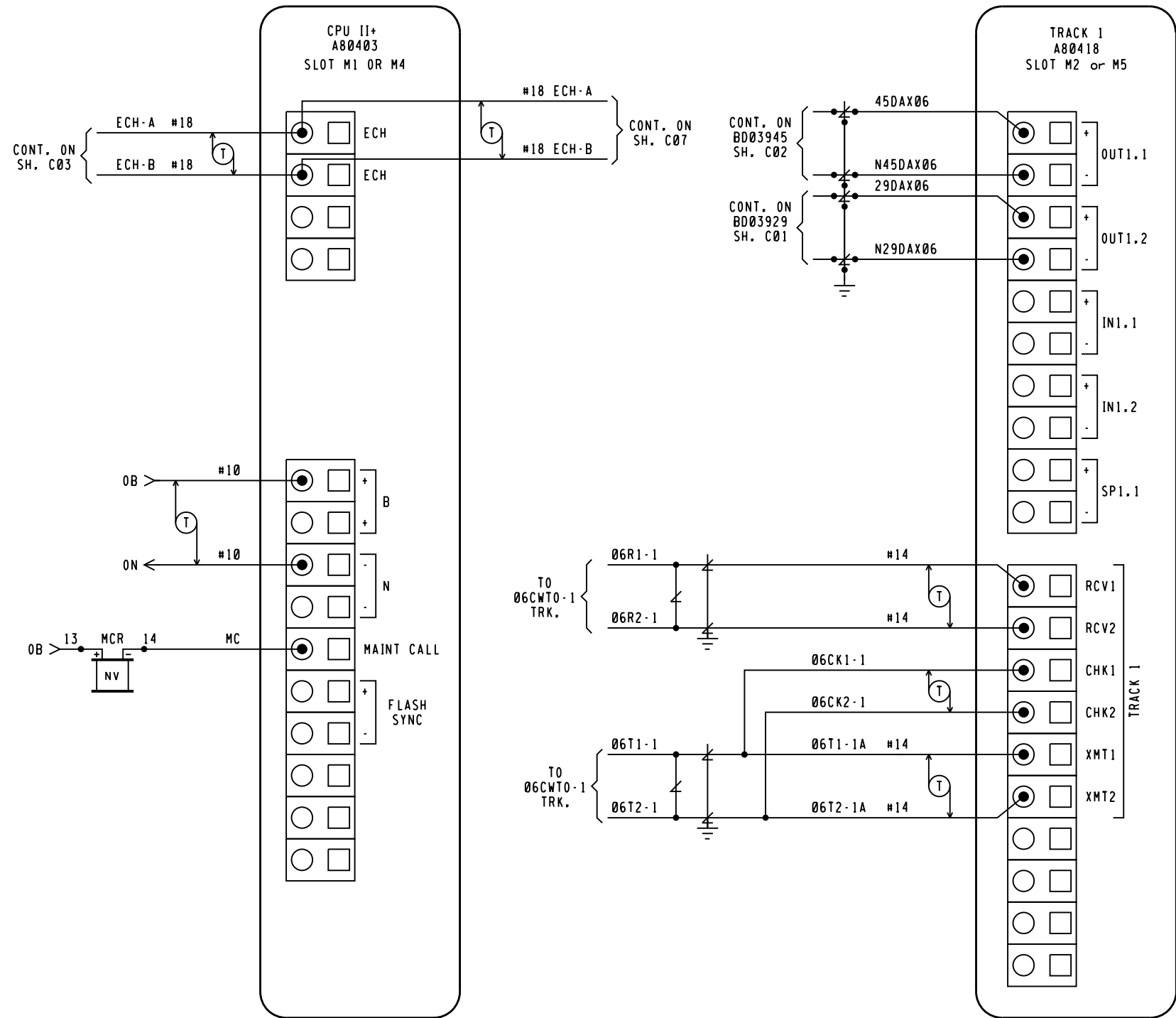


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NEW WORK
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06-05-17 XRL/JWG/
xorail

DESIGNED XRL		DIGITIZED XRL		CHECKED XRL		DATE 06-05-17	
DESIGN DATE 06-05-17		REV. NO. 2		DRAWING		SHEET C01(A)	

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS
BELT JUNCTION TO WE LYONSVILLE
W. CENTRAL AVENUE (154081D)
DETECTION DEVICE CONSIST CWE-06
OXFORD, OH M.P. BD-39.06

4000GCP.C01
REV. 09-04-15



MATERIALS NOTE, REPLACING 2TRK
GCP4000 WITH A 6TRK GCP4000,
ALL CIRCUITS TO REMAIN AS SHOWN

104575 0H2017026
06-05-17 XRL/JWG/
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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.

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE			
W.CENTRAL AVENUE (154001D)			
DETECTION CIRCUITRY CWE-06			
OXFORD, OH M.P. BD-39.06			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C02

DESIGN DATE 07-17-06
REV. NO. 1
06-05-17 07-17-06

005
B005
A

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 II₁ MODULE THE GCP 4000 WILL RECORD EVENTS AND REPORT ALARMS WHEN CONNECTED TO AN OFFICE SYSTEM.

2. THE GCP 4000 GCP (A80460) IS A SIX TRACK REDUNDANT UNIT CAPABLE OF DRIVING 4 INDEPENDENT FLASHER AND GATE SIGNALS AND RECORDING EVENTS AND REPORTING ALARMS. THIS A80460 INCLUDES THE FOLLOWING MODULES:

SLOT	MODULE	FUNCTION	PART NO.
1M1	CPU-II+	MAIN	A80403
1M2	TRACK-1	MAIN	A80418
1M3	TRACK-2	MAIN	A80418
1M4	PANEL	NONE	D39325
1M5	PANEL	NONE	D39325
1M6	RIO-2	MAIN	A80413
1M7	PANEL	NONE	D39325
1M8	SSCC-III ₁	A SIGNAL	A80405
1M9	DISPLAY MODULE		A80407-03
2M1	CPU-II+	STANDBY	A80403
2M2	TRACK-1	STANDBY	A80418
2M3	TRACK-2	STANDBY	A80418
2M4	PANEL	NONE	D39325
2M5	PANEL	NONE	D39325
2M6	RIO-2	STANDBY	A80413
2M7	PANEL	NONE	D39325
2M8	SSCC-III ₁	B SIGNAL	A80405
2M9	TRANSFER UNIT		A80408
LOWER BAY	SEAR II ₁	RECORDER	A80410

3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.

4. THE SEAR II₁ 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 1M1-1M7 THE AUTOMATIC TRANSFER UNIT SWITCHES TO THE STANDBY MODULES IN SLOTS 2M1-2M7.

8. THE GCP 4000 GCP (A80460) MAY USE RIO MODULES IN SLOTS 1M3, 1M6, 1M7, 2M3, 2M6 AND 2M7.

*** = OUT
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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE

W. CENTRAL AVENUE (154081D)
DETECTION DEVICE CONSIST CWE-06
OXFORD, OH M.P. BD-39.06

4000GCP.C01
REV. 09-04-15

DESIGN DATE
06-05-17

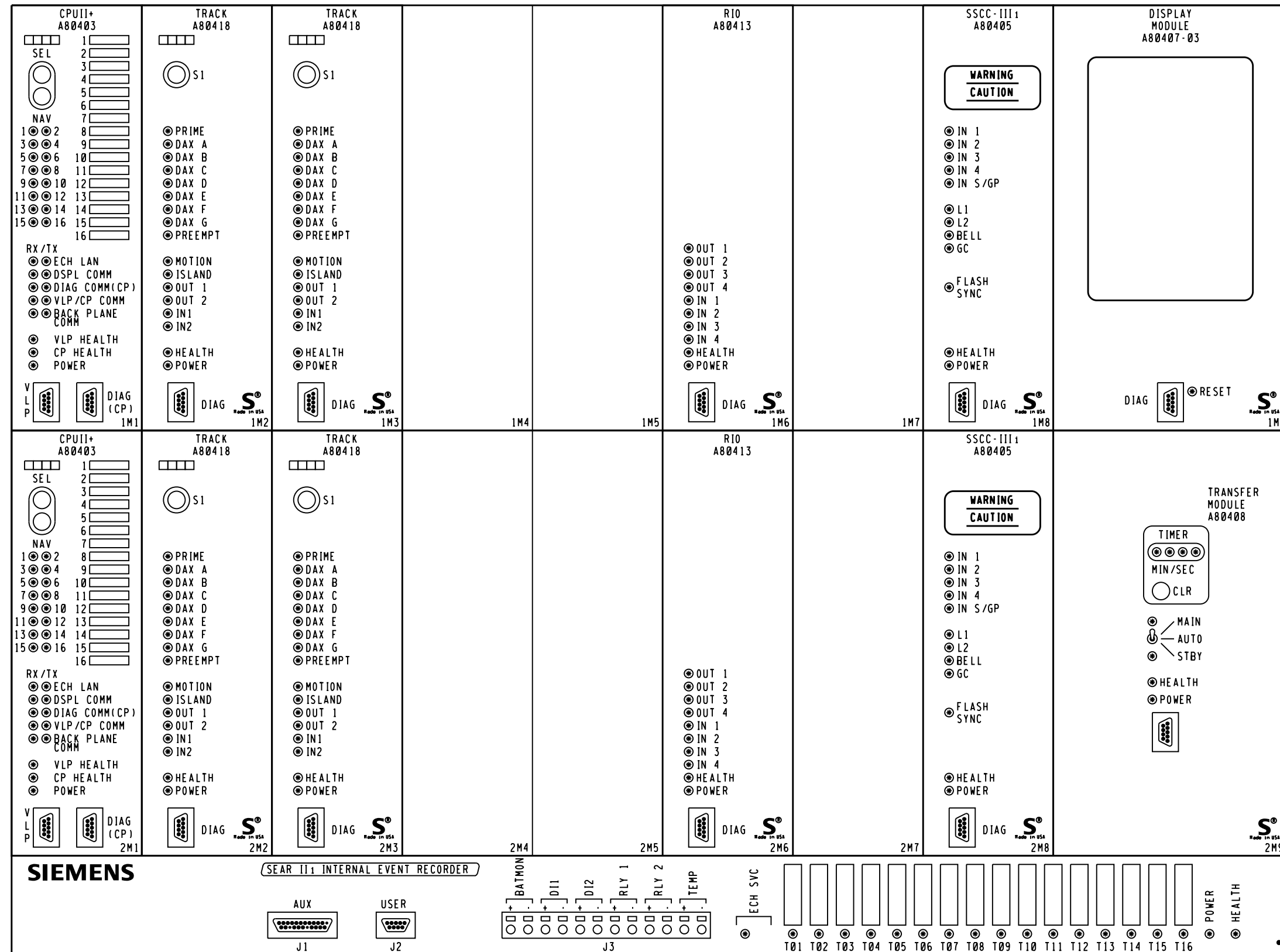
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2

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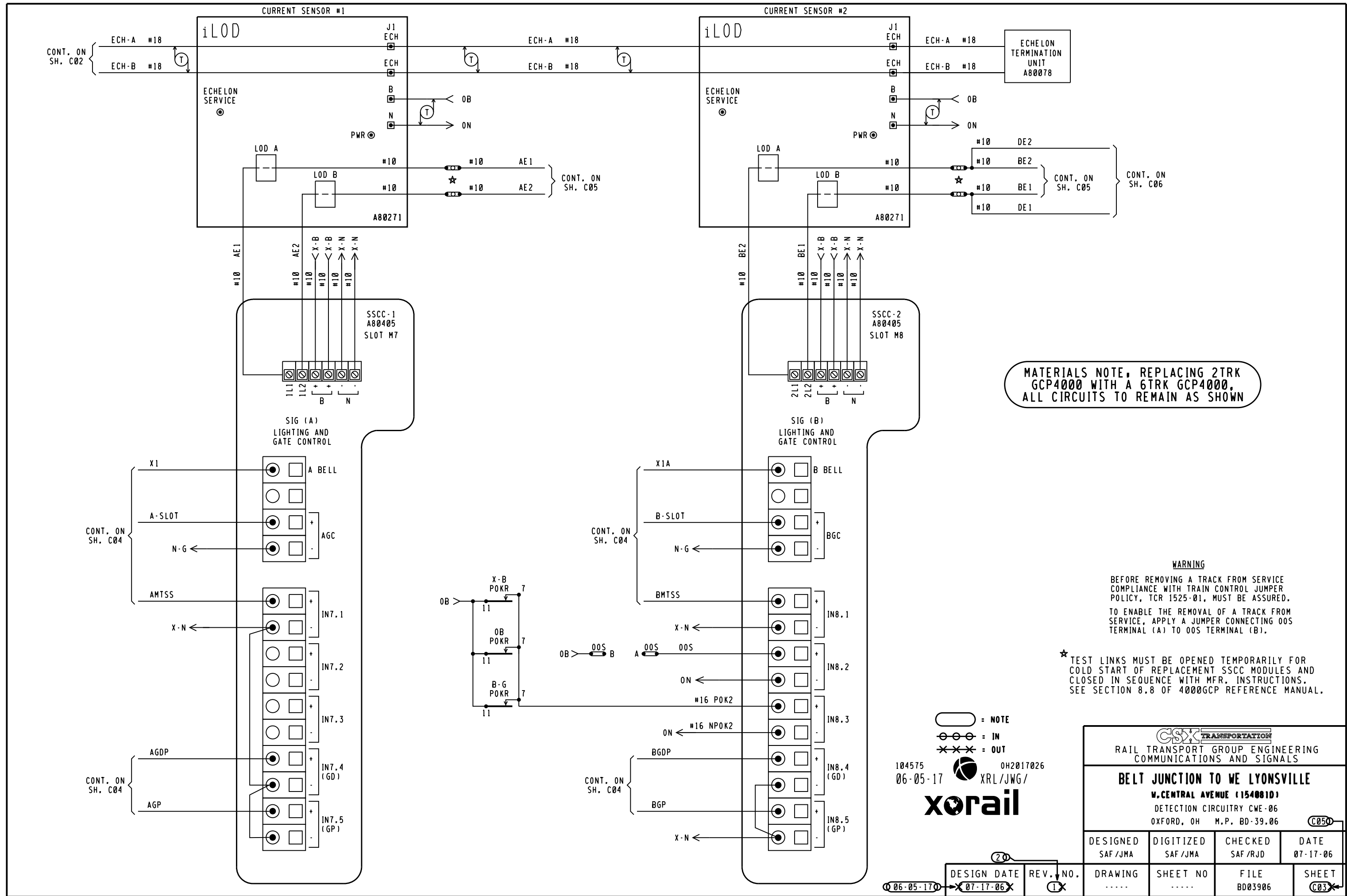
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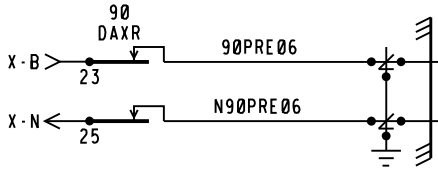
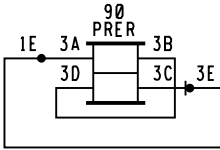
FILE
BD03906

SHEET
C02(A)



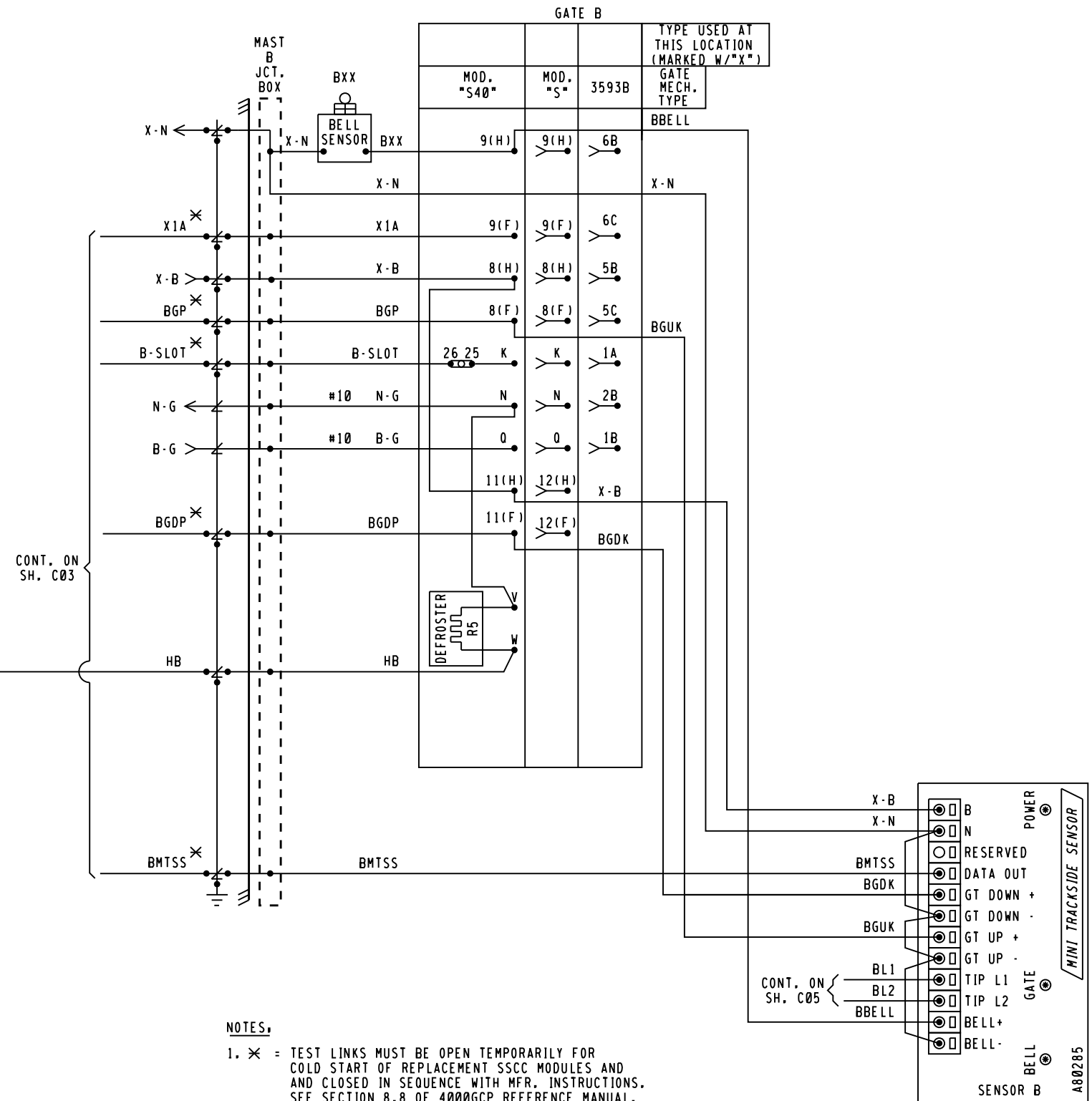
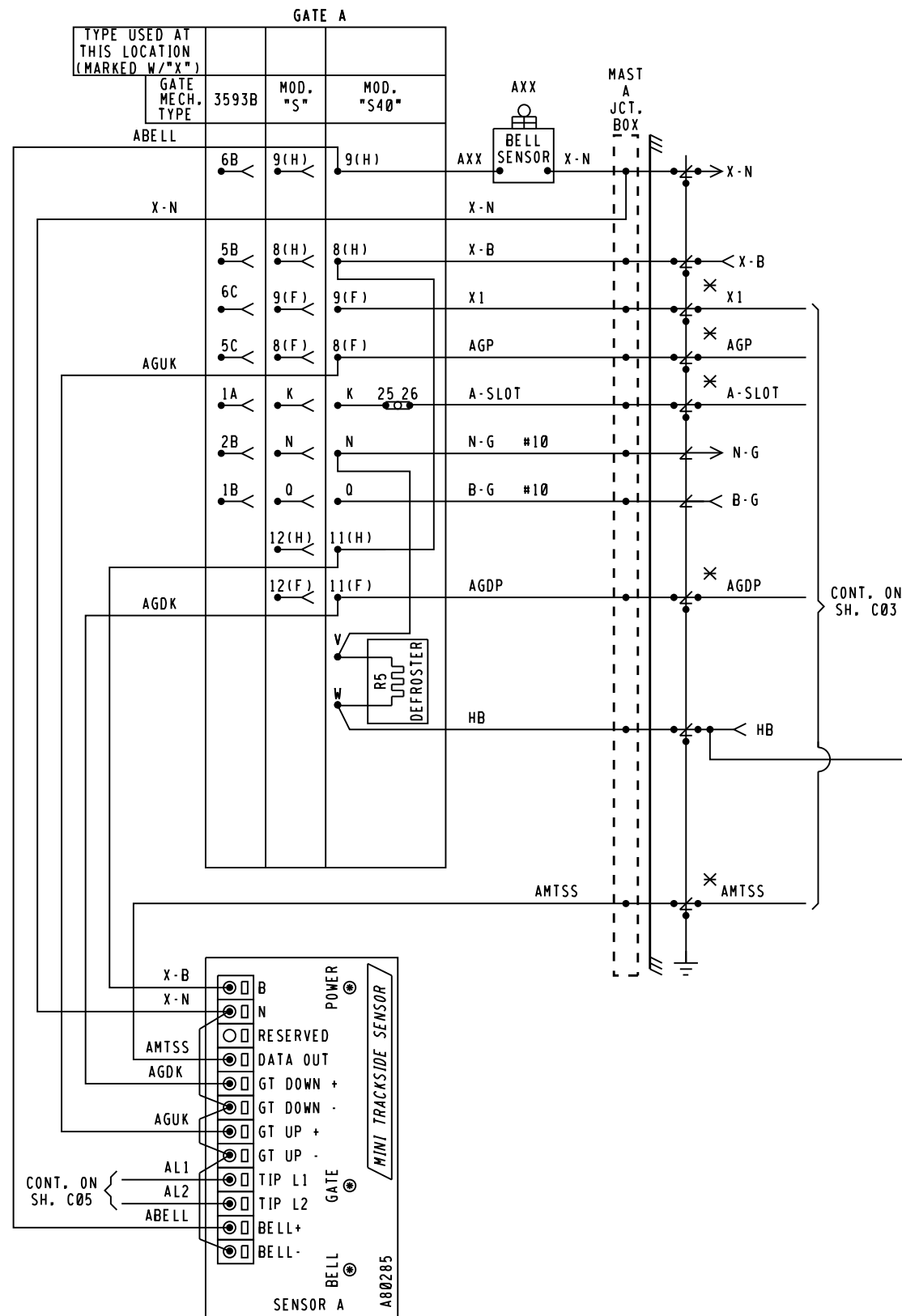
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*** = OUT
NEW WORK
 104575 OH2017026
 06-05-17 XRL/JWG/
xorail

 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE W. CENTRAL AVENUE (154081D) DETECTION CIRCUITRY CWE-06 OXFORD, OH M.P. BD-39.06			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-05-17
DRAWING	SHEET NO	FILE BD03906	SHEET C03 A



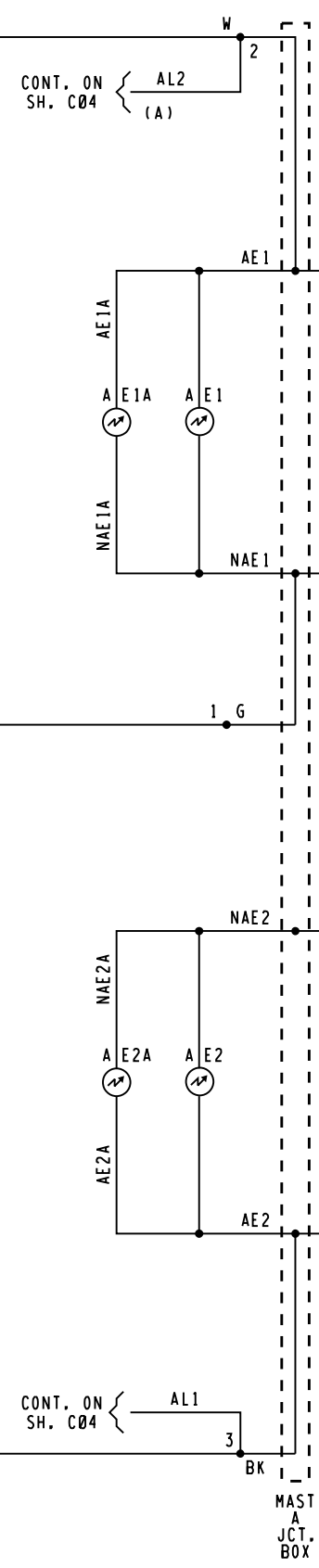
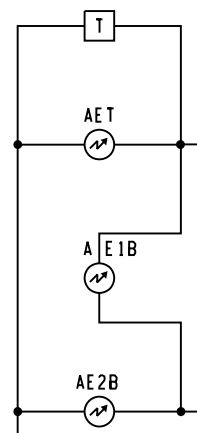
NOTES:

- ✕ = TEST LINKS MUST BE OPEN TEMPORARILY FOR COLD START OF REPLACEMENT SSCC MODULES AND CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS. SEE SECTION 8.8 OF 4000GCP REFERENCE MANUAL.
- = TERMINAL IN JCT. BOX BASE
- ALL WIRING #16 UNLESS NOTED OTHERWISE.

104575 042017026
06-05-17 XRL/JWG/
xorail

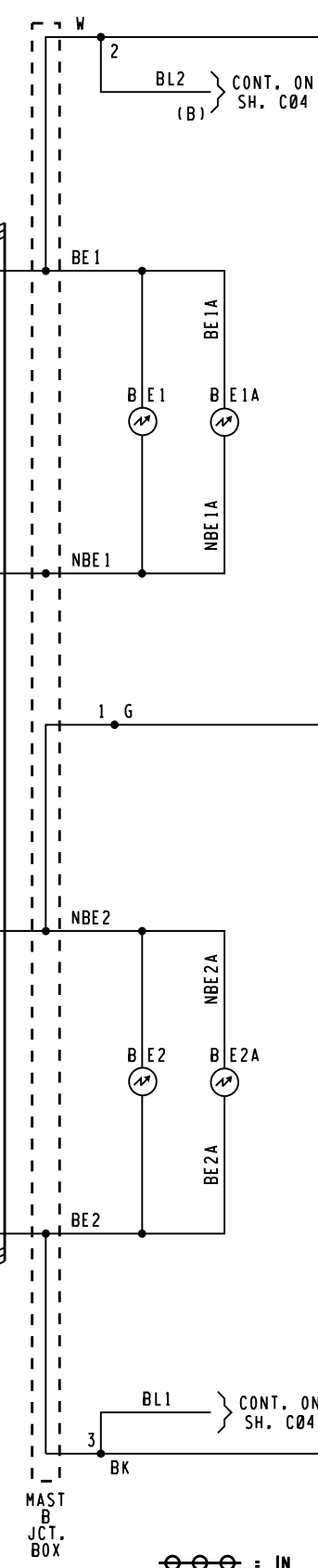
CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE			
W.CENTRAL AVENUE (154001D)			
CROSSING WARNING DEVICE GATE CIRCUITRY			
OXFORD, OH M.P. BD-39.06 C060			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C04

DESIGN DATE 06-05-17
REV. NO. 1
X07-17-06



NOTES:

1. [Symbol] = TERMINAL IN JCT. BOX
2. WHEN 7 OR MORE LIGHTS ARE LIT ON A SINGLE STRUCTURE REFER TO SS382 FOR REQUIRED ARRESTER RATING.
3. [T] = TIP SENSOR

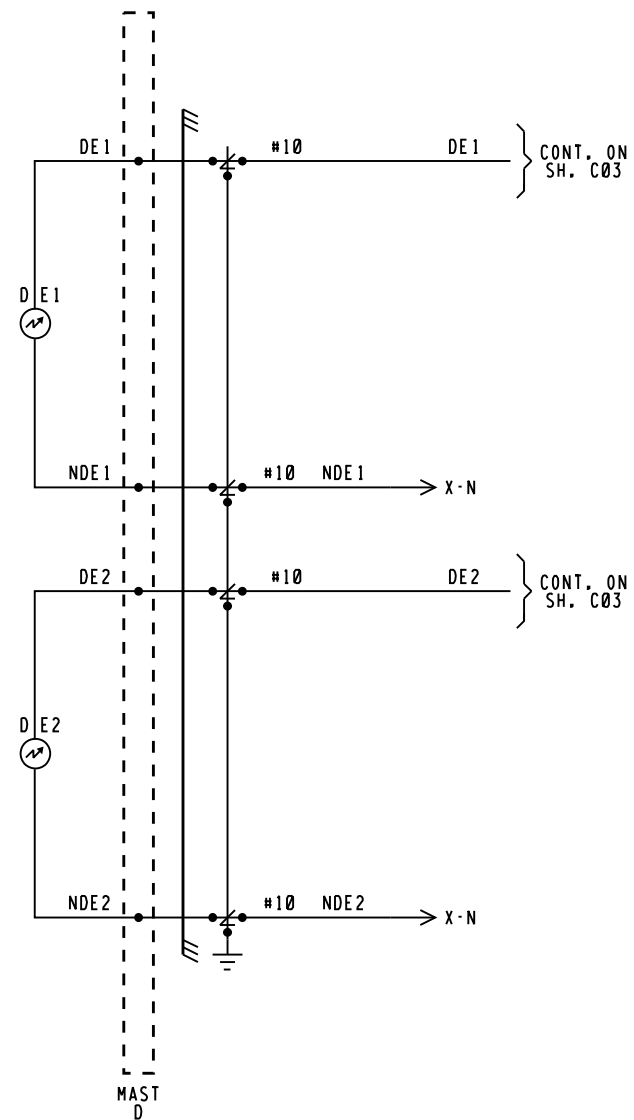


104575 06-05-17 XRL/JWG/ 0H2017026

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DESIGN DATE	REV. NO.
06-05-17	1

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE W. CENTRAL AVENUE (154001D) CROSSING WARNING DEVICE LIGHT CIRCUITRY OXFORD, OH M.P. BD-39.06			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C05



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.

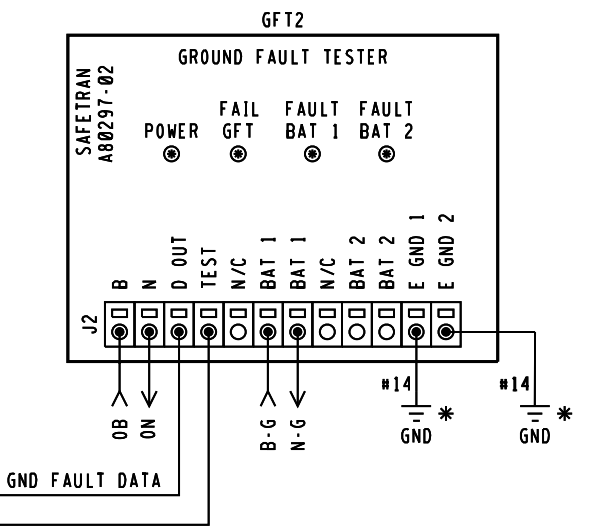
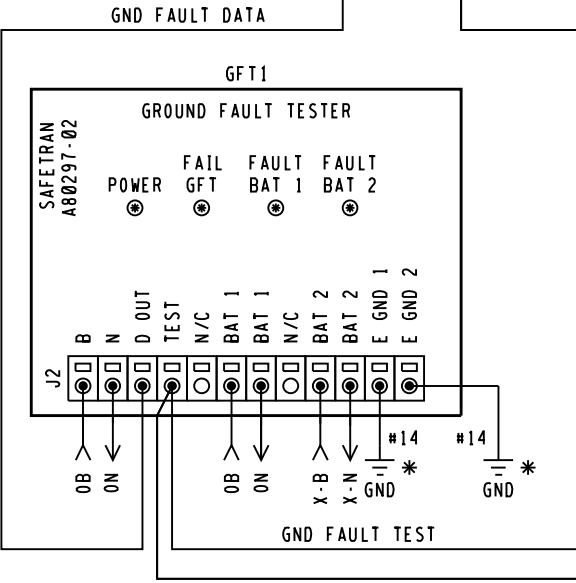
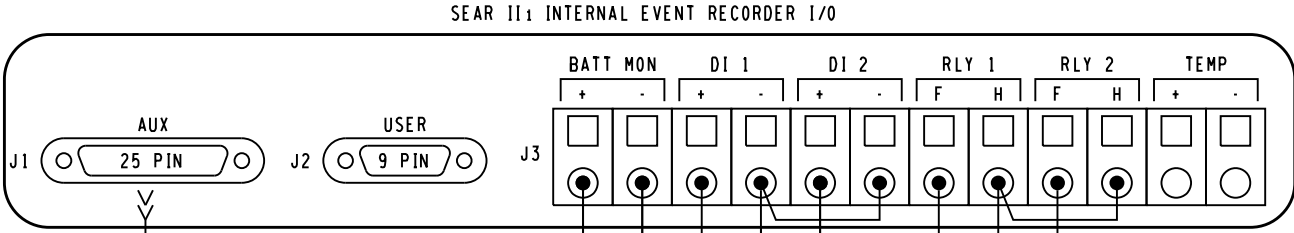
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CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE W.CENTRAL AVENUE (154001D) CROSSING WARNING DEVICE LIGHT CIRCUITRY OXFORD, OH M.P. BD-39.06			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C06

DESIGN DATE 06-05-17	REV. NO. 1
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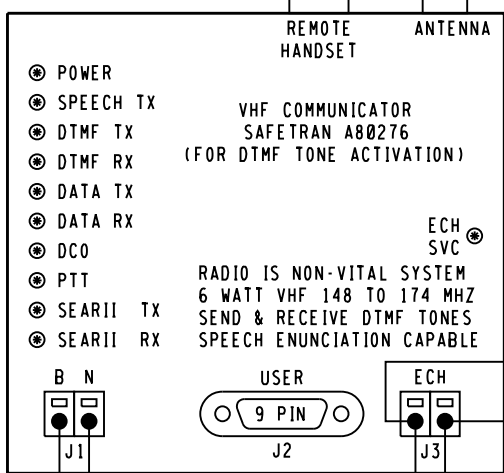
WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.486.003.01.01 7.125.LLL.GGG.SS.DD
SERIAL INTERFACE	9600,NONE,8,1/NOFLOW
SERIAL FORMAT	RAW
WAG TEST MODE	DISABLED
ECHOLON ADDRESS	
UDP PORTS	5000, 5001, 5002, 5003
ROUTE TABLE EXPIRY	5400 SEC
BROADCAST MEDIUM	IP ETHERNET
TCP PORTS	6001
DHCP SERVER	DISABLED
IP ADDRESS	
TYPE 7 ROUTE LENGTH	12--7RRLLGGGSS
IP NETWORK MASK	

NOTE TO INSPECTOR,
AT INSTALLATION OF WAG,
OR UPDATE OF THE CONFIGURATION,
OR UPDATE OF THE EXECUTIVE PROGRAM,
MARK-UP CONFIGURATION TABLE FOR
AS IN SERVICE PLANS

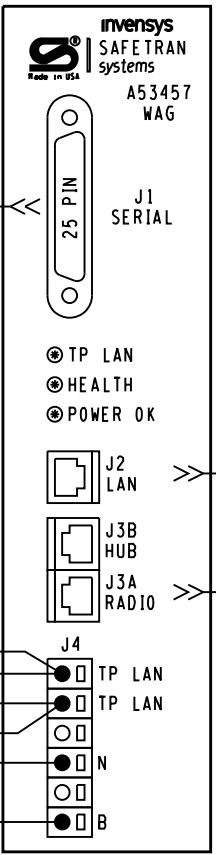


** POLYPHASE SURGE PROTECTOR
100 TO 512 MHZ
MODEL# VHF 150HN

** SHIELDED COAXIAL
CABLE TO ANTENNA



P/N Z706-02027-0020



** ETHERNET 10/100 TO COMA CELL MODEM

** ISOLATED DC PWR TO ETHERNET RADIO

COMM NOTES,
1. WAG J3A PINOUTS,
4 & 5 = +12VDC RADIO OUT
7 & 8 = GND RADIO RETURN
2. WAG AND SEARII: ECHOLON COMM
THROUGH GCP4000 LONTALK
PROTOCOL CONNECTION



GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)
TO ACTIVATE PRESS, 081#
TO DE-ACTIVATE PRESS, 081*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REMOTE DTMF LIGHTING ACTIVATION
(ACTIVATES FLASHING LIGHTS ONLY)
TO ACTIVATE PRESS, 0811#
TO DE-ACTIVATE PRESS, 0811*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

NOTES,
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. ** = TO BE PROVIDED BY COMMUNICATIONS
4. LOOP WIRE THROUGH FERRITE BEAD TWICE.

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE
W.CENTRAL AVENUE (154001D)
CROSSING WARNING DEVICE CIRCUITRY
OXFORD, OH M.P. BD-39.06

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C07

DESIGN DATE REV. NO.

06-05-17 07-17-06

1

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II: EXECUTIVE PROGRAM	VERSION, 9V725A01	VERSION, T
APPLICATION PROGRAM (IF LOADED)	VERSION, 9V864A01	VERSION, C

NOTE TO INSPECTOR, AT IN SERVICE OF SEAR II: OR UPDATE OF ITS INTERNAL EXECUTIVE PROGRAM OR ITS CSXT APPLICATION PROGRAM, THE VERSION NUMBER OF EACH PROGRAM MUST BE INSERTED IN THE BLANK FIELDS.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	XX-XX-XXXX XX:XX:XX
AUTOMACTIC DST ADJUSTMENT	YES
TIME ZONE	EASTERN
SITE NAME	W. CENTRAL AVENUE
MILEPOST	BD-39.06
DOT NUMBER	1540010
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
SITE TYPE	COLLECTOR
SITE ATCS ADDRESS	7.125.486.003.99.01 (7.RRR.LLL.GGG.99.01)
POLL ID	1
OFFICE ADDRESS	2.125.00.0000 (2.RRR.NN.DDDD)
FIELD COMM. DEVICE	VHF COMM. (ECHELON)
MODE	GEN/ATCS
WAMS XID	ENABLED
OFFICE COMM. DEVICE	WAG (ECHELON)
USER PORT BAUD	9600
USER PORT DATA BITS	8
USER PORT PARITY	NONE
USER PORT STOP BITS	1
USER PORT FLOW CONTROL	NONE
AUX PORT BAUD	9600
AUX PORT DATA BITS	8
AUX PORT PARITY	NONE
AUX PORT STOP BITS	1
AUX PORT FLOW CONTROL	NONE
COMM PORT BAUD	9600
COMM PORT DATA BITS	8
COMM PORT PARITY	NONE
COMM PORT STOP BITS	1
COMM PORT FLOW CONTROL	NONE

LIT BULB COUNT ON EACH CIRCUIT	NO.	TYPE OF BULB	CURRENT READING IN AMP. AT APPROX. 10.0 V ARRAY VOLTAGE
CURRENT SENSOR (1) AE1, LAMP SET UP	4	☐ BULBS ☒ LED	4.0
CURRENT SENSOR (1) AE2, LAMP SET UP	4	☐ BULBS ☒ LED	4.0
CURRENT SENSOR (2) BE1, LAMP SET UP	5	☐ BULBS ☒ LED	5.7
CURRENT SENSOR (2) BE2, LAMP SET UP	5	☐ BULBS ☒ LED	5.7

MEASURE BATTERY VOLTAGE AT INPUT		
BATTERY VOLTAGE	OB	_____ VOLTS
BATTERY VOLTAGE	X-B	_____ VOLTS
BATTERY VOLTAGE	B-G	_____ VOLTS

VHF RADIO CHANNELS			
1	161.130	5	161.550
2	160.710	6	160.785
3	160.560	7	160.785
4	160.860	8	160.785

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS		
OPTION	SELECTION	
NOTE 1 - RESET NAMES AND MODULES*	YES ☐	NO ☐
RAILROAD NUMBER	125	
ENTRANCE GATES*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐	
NOTE 2 - EXIT GATES*	0 ☒ 1 ☐ 2 ☐ 3 ☐ 4 ☐	
GATE POSITION FAIL*	20 SECS.	
BATTERY BANKS*	1 ☐ 2 ☒ 3 ☐	
BATT MON USED*	NO ☐ YES ☒	
INTERNAL CROSSING CONTROLLERS*	0 ☐ 1 ☐ 2 ☒	
EXTERNAL CROSSING CONTROLLERS	0 ☒ 1 ☐ 2 ☐	
VHF COMMUNICATOR*	YES ☒ NO ☐	
NOTE 3 - ACTIVATION CODE	001	
ACTIVATION TIMEOUT	(60 SEC)	
ILOD MODULES*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐	
NOTE 4 - MIXED LED/INCANDESCENT BULBS	NO ☐ YES ☒	
AUTO INSPECTIONS	YES ☒ NO ☐	
BELL SENSOR*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐	
BELL SENSOR TSS 1	NO ☐ YES ☒	
BELL SENSOR TSS 2	NO ☐ YES ☒	
BELL SENSOR TSS 3	NO ☒ YES ☐	
NOTE 5 - BELL SENSOR TSS 4	NO ☒ YES ☐	
BELL SENSOR TSS 5	NO ☒ YES ☐	
BELL SENSOR TSS 6	NO ☒ YES ☐	
BELL SENSOR TSS 7	NO ☒ YES ☐	
BELL SENSOR TSS 8	NO ☒ YES ☐	
BELL ON*	GATES LOWERING ☒ GATES MOVING ☐ ALWAYS ☐	
GFT'S	YES ☒ NO ☐	
BATTERIES ON GFT1	1 ☐ 2 ☒	
NOTE 6 - GATE TIP SENSORS*	YES ☒ NO ☐	
RTU	NO ☒ YES ☐	
NOTE 7 - ROAD CHANNEL	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐	
MAINT. CHANNEL	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐	
FULL APPROACH MOVE ALARMS*	ACTIVATED ☒ DO NOT ACTIVATE ☐	

NOTE 8 - EDIT DIGITAL INPUTS	☒ NO ☐ YES
EDIT BATTERIES	☒ NO ☐ YES
EDIT RELAYS	☒ NO ☐ YES
EDIT INDICATOR LEDS	☒ NO ☐ YES
EDIT TEST LED'S	☒ NO ☐ YES
EDIT IL0D SENSOR	☒ NO ☐ YES
EDIT VHF SETTINGS	☒ NO ☐ YES

NOTES:

1. SELECT YES ON INITIAL SET-UP.
2. OPTION AVAILABLE IF GATES = YES
3. OPTION AVAILABLE IF VHF COMMUNICATOR = YES
LAST 3 DIGITS OF DOT NUMBER.
4. OPTION AVAILABLE IF IL0DS.
5. OPTION AVAILABLE IF BELL SENSORS.
6. OPTION AVAILABLE IF GATES.
7. OPTION AVAILABLE IF VHF RADIO.
8. ONLY YES IN SPECIAL CIRCUMSTANCES.



CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE W.CENTRAL AVENUE (1540010) SEAR II: CONFIGURATION & FUNCTIONS OXFORD, OH M.P. BD-39.06			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03906	SHEET C08

DESIGN DATE 07-17-06 REV. NO. 1X

INDEX CONTENTS		REVISION NO.								
SH. NO.		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	X	Ø							
S01	TRACK AND SIGNAL PLAN	X	Ø							
P01	MINIMUM PROGRAM STEPS REPORT CWE-90	X	Ø							
E01	POWER DISTRIBUTION	X								
C01	DETECTION DEVICE CONSIST CWE-90	X								
C02	DETECTION CIRCUITRY CWE-90	X								
C03	DETECTION CIRCUITRY CWE-90	X								
C04	CROSSING WARNING DEVICE GATE CIRCUITRY	X								
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X								
C06	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X								
C07	CROSSING WARNING DEVICE CIRCUITRY	X								
C08	SEAR II: CONFIGURATION & FUNCTIONS	X								
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS	X	Ø							

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

Ø = NOTE
- - - = IN
* * * = OUT

104575
06-05-17

0H2017026
XRL/JWG/


xorail

20

DESIGN DATE
06-05-17

REV. NO.
1

REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2006039 0H2006040 0H2006041 0H2006042	07-17-06	05-01-07	06-13-07
2	0H2017026	06-05-17		

TO BE COMPLETED ON A.I.S.


RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE
E.CHESTNUT STREET (154079C)
INDEX AND REVISIONS
OXFORD, OH M.P. BD-38.90

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03890	SHEET 101

INDEX CONTENTS		REVISION NO.								
SH. NO.		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	X	Ø							
S01	TRACK AND SIGNAL PLAN	X	Ø							
P01	MINIMUM PROGRAM STEPS REPORT CWE-97	X								
E01	POWER DISTRIBUTION	X								
C01	DETECTION DEVICE CONSIST CWE-97	X								
C02	DETECTION CIRCUITRY CWE-97	X								
C03	DETECTION CIRCUITRY CWE-97	X								
C04	CROSSING WARNING DEVICE GATE CIRCUITRY	X								
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X								
C06	CROSSING WARNING DEVICE CIRCUITRY	X								
C07	SEAR II: CONFIGURATION & FUNCTIONS	X								
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS	X								

X

= PLANS SENT TO FIELD (DISTRIBUTED)

X

= PLANS AS-IN-SERVICED (UP TO DATE)

Ø

= NOTE

Ø-Ø-Ø

= IN

= OUT

104575

06-05-17

0H2017026

XRL/JWG/

xorail

Ø 06-05-17 Ø

DESIGN DATE

Ø 07-17-06 X

20

REV. NO.

Ø 1 X

REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2006039 0H2006040 0H2006041 0H2006042	07-17-06	05-01-07	06-13-07
2	0H2017026	06-05-17		

TO BE COMPLETED
ON A.I.S.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

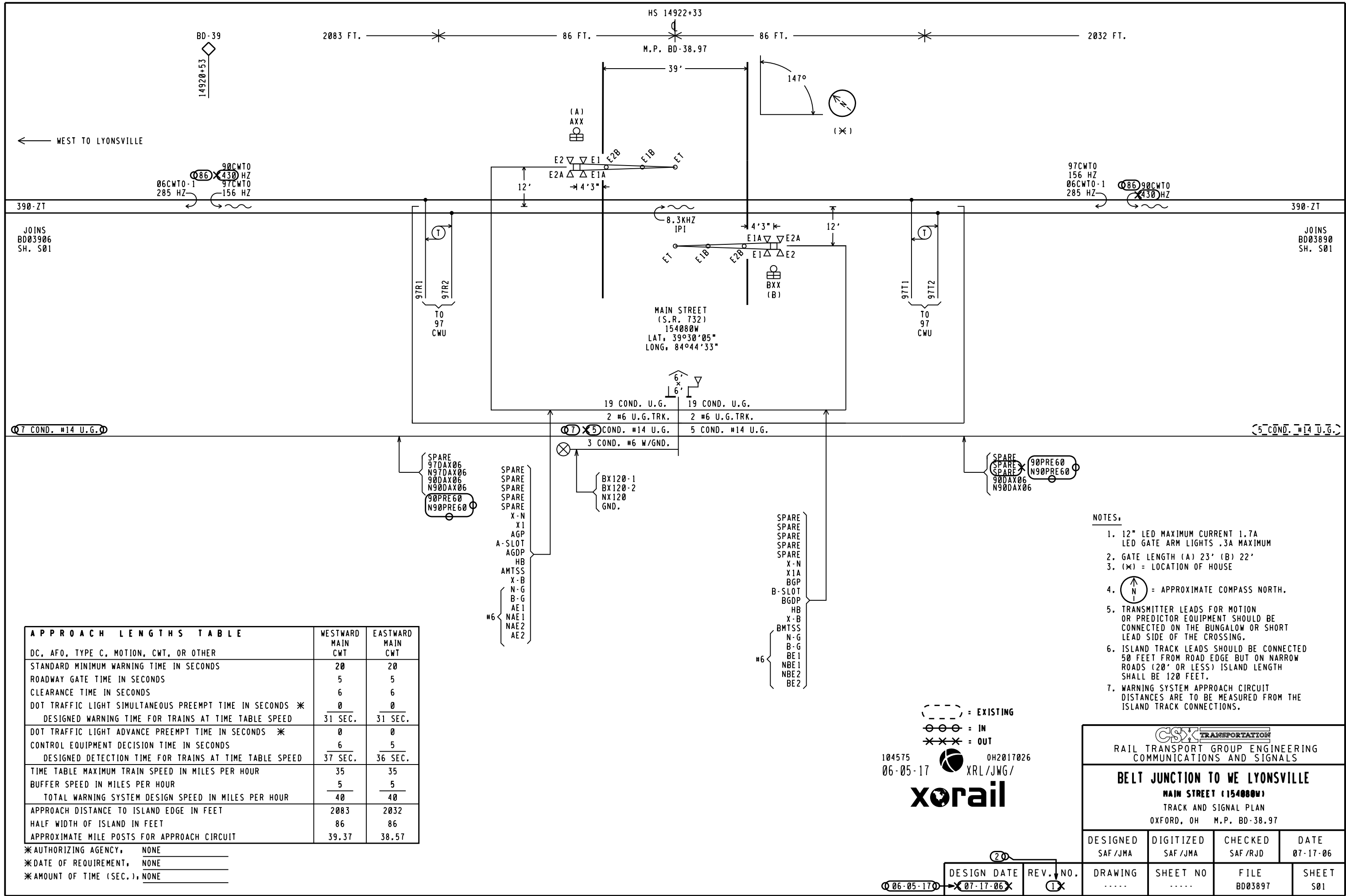
BELT JUNCTION TO WE LYONSVILLE

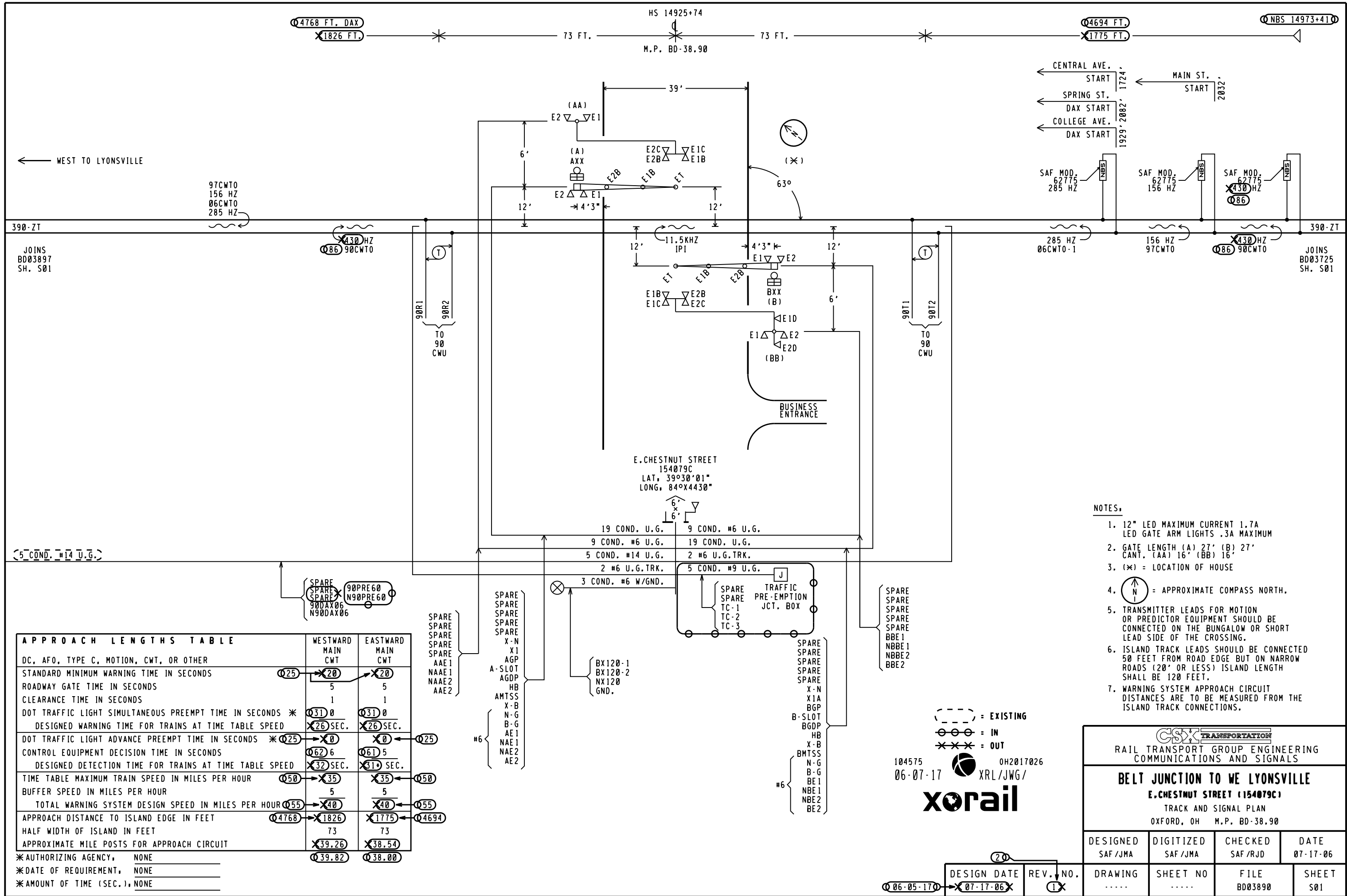
MAIN STREET (154080V)

INDEX AND REVISIONS

OXFORD, OH M.P. BD-38.97

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03897	SHEET 101





Minimum Program Steps Report

Location and SIN

DOT Number, 154079C
Milepost Number, BD-38.90
Site Name, E CHESTNUT STREET

SIN, 712548600116 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name, GCP-T6X-01-2.mcf
MCF Revision, 012
MCFCRC, 0DFE7A0C

Template = 1A,6 Trk B1 *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, track 1-B1, Island
Track 1 , GCP Frequency = 430 Hz
Track 1 , Approach Distance = 1784 ft See Plans
Track 1 , Prime Warning Time = 26 sec *
Track 1 , Prime UAX = IP *
Track 1 , GCP Transmit Level = High Set in Field
Track 1 , Isl Frequency = 11.5 kHz

TEMPLATE, SSCC
SSCC-1 Number of GDs = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDs = 1 *

TEMPLATE, IP assignment 1
IN 1.1 = T1 Prime UAX *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

TEMPLATE, SEAR
SP 3.1 = Not Used *

GCP, track 1
Track 1 , Island Distance = 146 ft *

ADVANCED, out of service
OOS Control = Display+OOS IPs *

ADVANCED, site options
Daylight Savings = 0n *

SSCC, 1
SSCC-1 Gate Delay = 5 sec *
SSCC 1 , Flash Rate = 55 *
SSCC 1 , Lamp Neutral Test = Off *

SSCC, 2
SSCC-2 Gate Delay = 5 sec *
SSCC 2 , Flash Rate = 55 *
SSCC 2 , Lamp Neutral Test = Off *

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

SEAR, slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Office Configuration Check Number

Check Number, 2E0AC37C
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

Track 1 , GCP Frequency = 430 Hz
Track 1 , Approach Distance = 1784 ft See Plans
Track 1 , GCP Transmit Level = High Set in Field
Track 1 , Isl Frequency = 11.5 kHz

ALL OUT
THIS SHEET IS VOID
WHEN AS IN SERVICED.

104575 0H2017026
06-05-17 XRL/JWG/

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CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE E.CHESTNUT STREET (154079C) MINIMUM PROGRAM STEPS REPORT CWE-90 OXFORD, OH M.P. BD-38.90			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DESIGN DATE 07-17-06	REV. NO. 1	DRAWING	SHEET NO
FILE BD03890		SHEET P01	

Minimum Program Steps Report

Location and SIN

DOT Number, 154079C
Milepost Number, BD-38.90
Site Name, E CHESTNUT ST

SIN, 712548600116 *

* Parameter is part of office check number calculation.

MCF and Template Selection

MCF Name, GCP-T6X-01-2.mcf
MCF Revision, 012
MCFCRC, 0DFE7A0C

Template = 1A,6 Trk Bi *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, preemption
Preempt Logic = Advnce *
Adv Preempt Delay = 25 sec *
Adv Preempt IP Used = Yes *

TEMPLATE, track 1-Bi, Island
Track 1 , GCP Frequency = 86 Hz (See Plans)
Track 1 , Approach Distance = 4694 ft (See Plans)
Track 1 , Prime Warning Time = 31 sec *
Track 1 , Prmpt Warning Time = 56 sec *
Track 1 , Prime UAX = IP *
Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Isl Frequency = 11.5 kHz (See Plans)

TEMPLATE, SSCC

SSCC-1 Number of GDs = 1 *
SSCC-2 Number of GPs = 1 *
SSCC-2 Number of GDs = 1 *

TEMPLATE, IP assignment 1
IN 1.1 = T1 Prime UAX *
IN 1.2 = Adv Preempt IP *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used *
IN 8.2 = Out Of Service IP 1 *
IN 8.4 = GD 2.1 *
IN 8.5 = GP 2.1 *

TEMPLATE, SEAR
SP 3.1 = Not Used *

GCP, track 1
Track 1 , Island Distance = 146 ft *

ADVANCED, out of service
OOS Control = Display+OOS IPs *

ADVANCED, site options
Daylight Savings = On *

SSCC, 1
SSCC-1 Gate Delay = 5 sec *
SSCC 1 , Flash Rate = 55 *
SSCC 1 , Lamp Neutral Test = Off *

SSCC, 2
SSCC-2 Gate Delay = 5 sec *
SSCC 2 , Flash Rate = 55 *
SSCC 2 , Lamp Neutral Test = Off *

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

SEAR, slot 7-8 inputs
IN 7.1 = TSS 1 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Check Numbers

Office Check No. (DT 4.6.0), 3A160A32
Office Check Number, 3A160A32
Config. Check Number, 69BB5525
(Based on MCF Revision 012)

Parameters not part of office check number calculation:

Track 1 , GCP Frequency = 86 Hz
Track 1 , Approach Distance = 4694 ft (See Plans)
Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Isl Frequency = 11.5 kHz
Track 1 , Island Distance = 146 ft (Set in Field)
Track 2 , Island Distance = 199 ft (Set in Field)
Track 3 , Island Distance = 199 ft (Set in Field)
Track 4 , Island Distance = 199 ft (Set in Field)
Track 5 , Island Distance = 199 ft (Set in Field)
Track 6 , Island Distance = 199 ft (Set in Field)

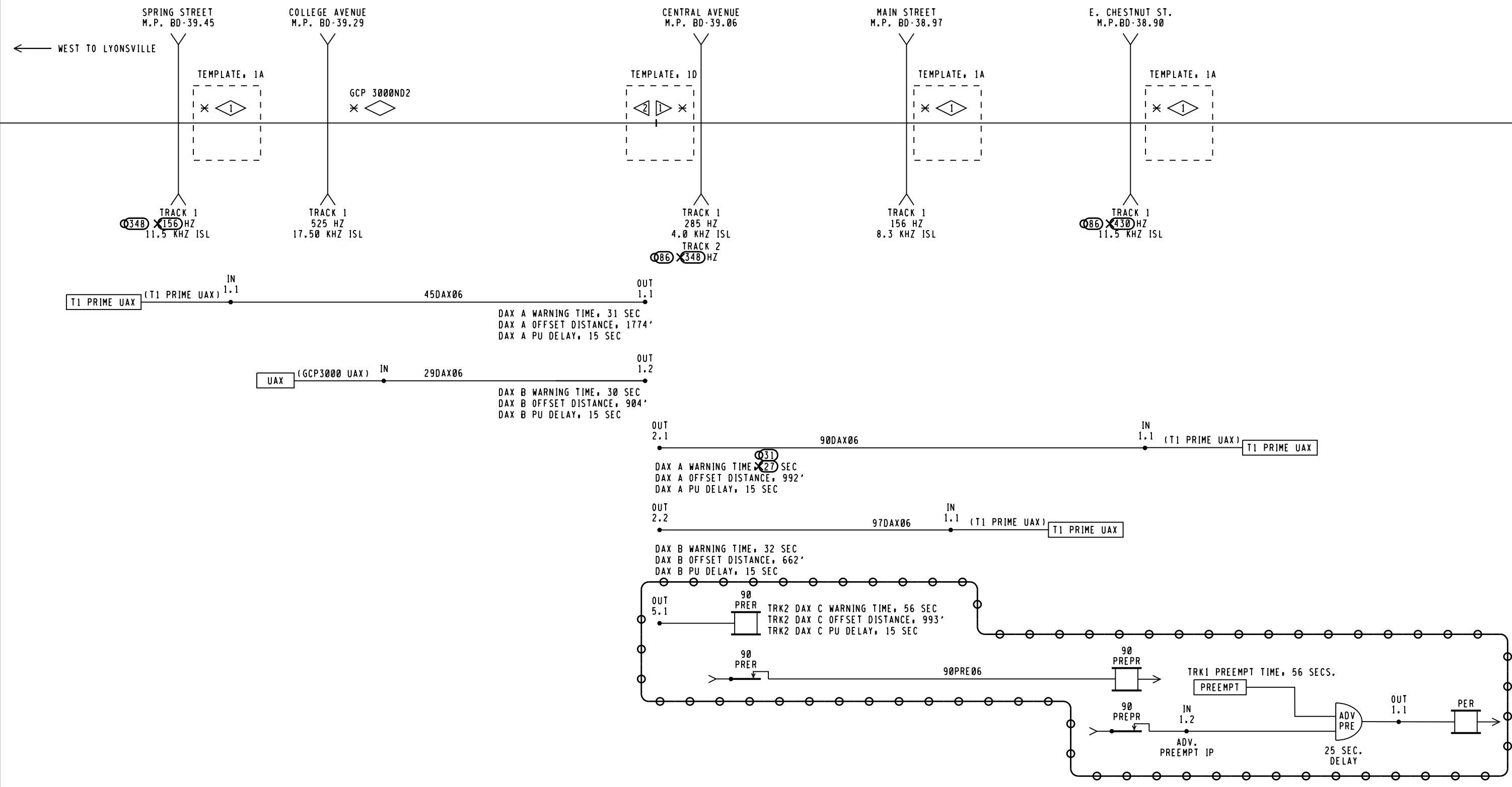
Comments

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CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE E. CHESTNUT STREET (154079C) MINIMUM PROGRAM STEPS REPORT CWE-90 OXFORD, OH M.P. BD-38.90			
DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 06-05-17
DESIGN DATE 06-05-17	REV. NO. 1	DRAWING -----	SHEET P01 (A)

4000GCP.P01
REV. 09-04-15



SYMBOL	DEFINE	SYMBOL	DEFINE
	EXTERNAL VITAL AND GATE		INTERNAL SOFTWARE GATE

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

104575

06-05-17

0H2017026

XRL/JWG/

06-05-170

07-17-06

20

1

DESIGN DATE

REV. NO.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE

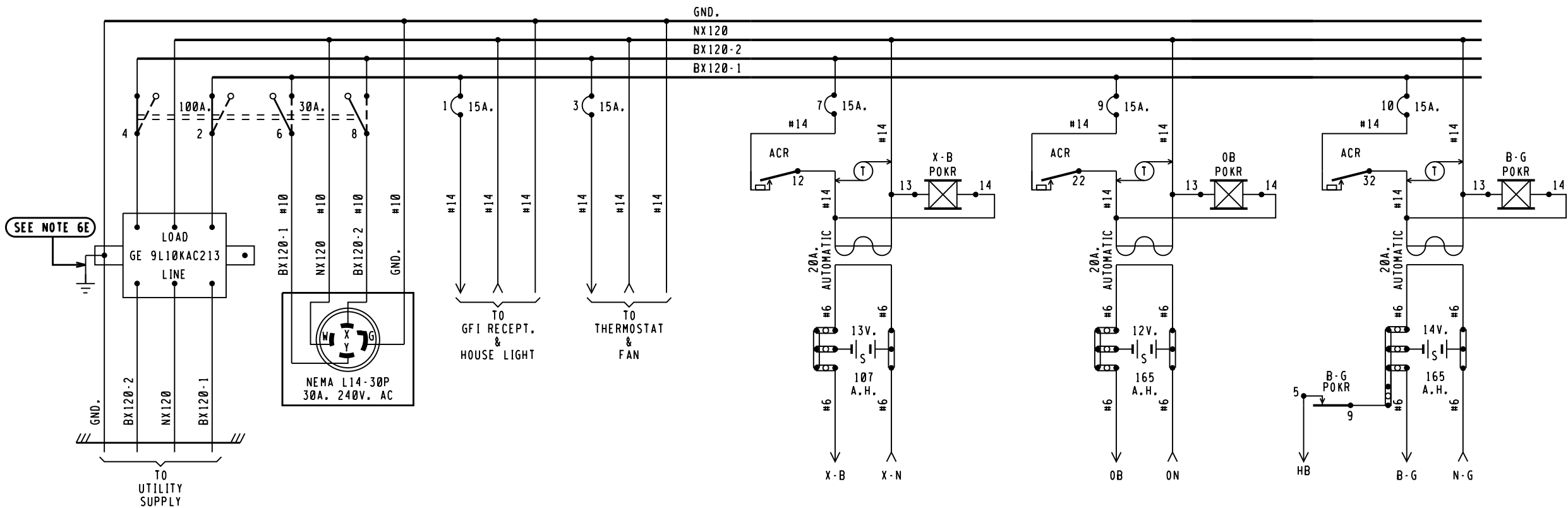
E.CHESTNUT STREET (154079C1)

INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS

OXFORD, OH M.P. BD-38.90

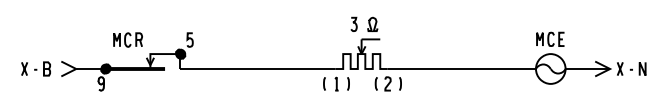
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03890	SHEET 001

ACR			X-B POKR			MCR			PER			90PREPR			TOP ROW							
12	B	B77 C30	9		11 F	N66	9	F	11		N41	12		B8	C30							
15			10	F	12		C48	10		12		C48	15									
22	B						C49					C49	22									
25													23	FB								
32	B		OB POKR			B-G POKR			25	FB		25	F									
35			9		11 F	N66	9	F	11 F		N66	32										
			10	F	12		C48	10	F	12		C48	35									



BX120-1 | BX120-2
12.7 AMPS | 8.0 AMPS
MAXIMUM LOAD
CALCULATED PER SS360

- NOTES:
- 1 - REFERENCES ARE PER SCMS-13.
 - 2 - ARRESTERS ARE PER SS382.
 - 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 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 - 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.



104575 06-05-17 0H2017026 XRL/JWG/

xorail

DESIGN DATE	REV. NO.
06-05-17	1

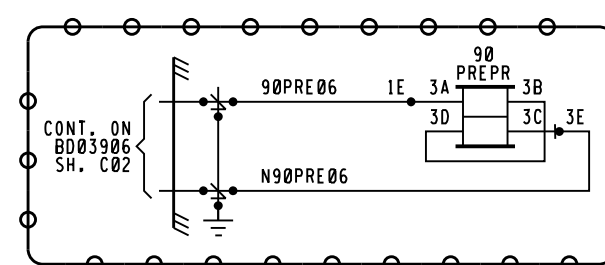
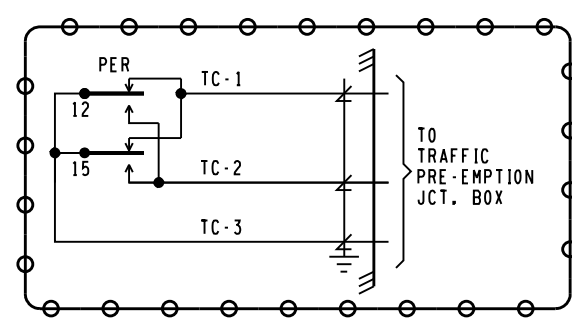
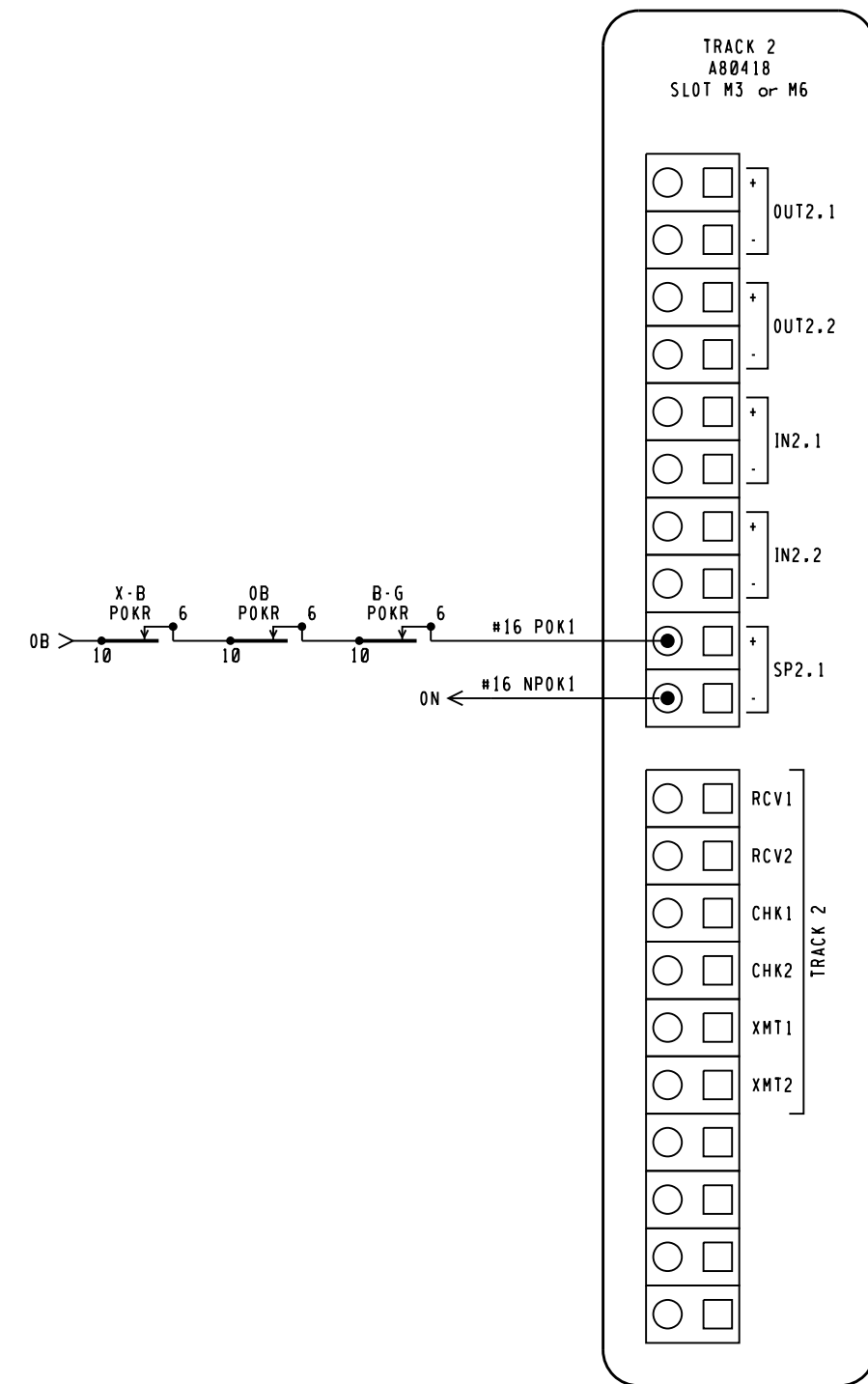
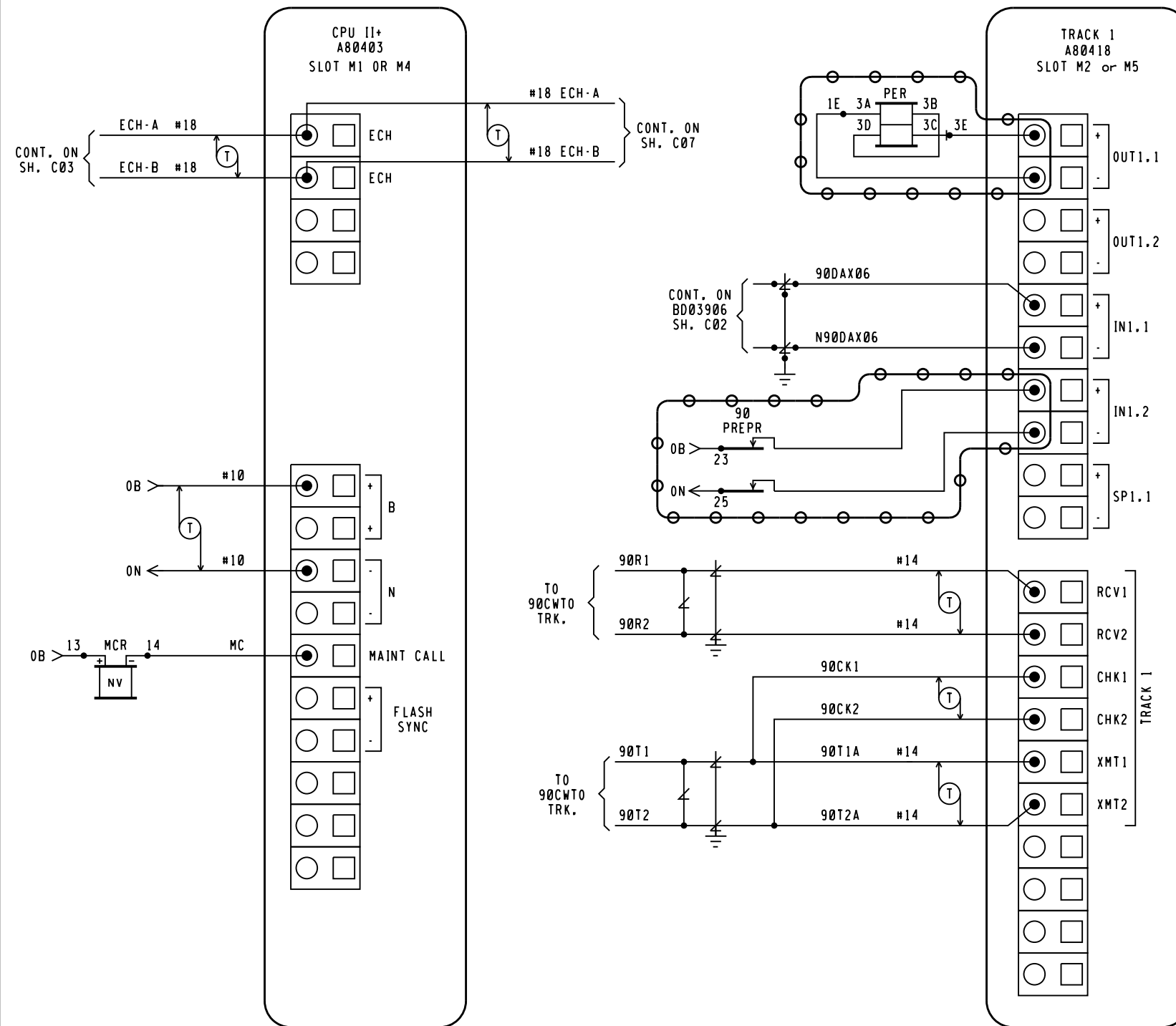
6' X 6' RELAY HOUSE W/FARADAY SHIELD

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

BELT JUNCTION TO WE LYONSVILLE
E.CHESTNUT STREET (154079C)
POWER DISTRIBUTION
OXFORD, OH M.P. BD-38.90

DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03890	SHEET E01



104575 06-05-17
 06-05-17
 XRL/JWG/
xorail

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.

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
BELT JUNCTION TO WE LYONSVILLE E.CHESTNUT STREET (154079C) DETECTION CIRCUITRY CWE-90 OXFORD, OH M.P. BD-38.90			
DESIGNED SAF/JMA	DIGITIZED SAF/JMA	CHECKED SAF/RJD	DATE 07-17-06
DRAWING	SHEET NO	FILE BD03890	SHEET C02

DESIGN DATE 07-17-06
 REV. NO. 1

March 31, 2017

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

RE: PE Authorization
Butler County, SR732/Main Street, DOT # 154080W, PID 105117
Butler County, Chestnut Street, DOT # 154079W, PID 105117

Dear Ms. DeCesare:

A diagnostic review was held at the above grade crossing on 9/20/2016. 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 (PE) 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.

The diagnostic review form is attached. Please note any recommendations (page 5), if any, made by the team with regard to 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. Mr. Gronbach can be reached at (614) 395-1824, or Greg.Gronbach@dot.ohio.gov, if you have any questions.

Sincerely,



Greg Gronbach
Project Manager

C: Randall Schumacher, Supervisor, Rail Division, PUCO
Jill Henry, Rail Specialist, PUCO
Cathy Stout, ORDC
Susan Arduini, ORDC
ORDC (file)

Attachment: 1 (diagnostic review form)



Diagnostic Review Team Survey

Reason for Survey:

(e.g. formula, accident, constituent, etc.)

Preemption

Date: 9/20/2016

Location Data

Street or Road Name: E. Chestnut Street			
Route/Road Number (i.e. Twp., Co., SR or US)		US DOT No.: 154079C	
County: BUT	Township:	City: (In or Near)	City of Oxford
Railroad Name: CSX Transportation	Railroad Division: Indianapolis	Branch/Line Name:	
Nearest RR Timetable Station: Oxford		RR Milepost: 38.9	

On-Site Review Team

(Include: Name – Organization – Phone Number – Email)

1. ~~SEE~~ SEE ATTENDEES FOR MAIN ST DIG. REVIEW. 154080W
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☒ Yes	☐ No	GOOD
Crossbucks	☒ Yes	☐ No	
Number of Tracks Signs	☐ Yes	☒ No	
Inventory Tags	☒ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☒ Yes	☐ No	
Cantilever Flashing Lights	☒ Yes	☐ No	Number: Length:
Side Lights	☒ Yes	☒ No	
Automatic Gates	☒ Yes	☐ No	Number: Length:
Bells	☒ Yes	☐ No	Number:
Sidewalk Gate Arms	☐ Yes	☒ No	
'No Turn' Signs	☐ Yes	☒ No	
Illumination	☒ Yes	☐ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
Other	☐ Yes	☐ No	



Diagnostic Review Team Survey

Reason for Survey:

(e.g. formula, accident, constituent, etc.)

Preemption

Date: 9/20/2016

Location Data

Street or Road Name: Main Street

Route/Road Number
(i.e. Twp., Co., SR or US) SR 732-8.74

US DOT No.: 154080W

County: BUT

Township:

City:
(In or Near)

City of Oxford

Railroad
Name: CSX Transportation

Railroad
Division: Indianapolis

Branch/Line
Name:

Nearest RR
Timetable Station: Oxford

RR Milepost: 38.97

On-Site Review Team

(Include: Name - Organization - Phone Number - Email)

1. GREG GRONBACH ORDC 614-395-1824 GREG.GRONBACH@DOT.OHIO.GOV
2. Lucas Braun Bayer Becker 513-492-9843 lucasbraun@bayerbecker.com
3. Etti Reed Bayer Becker 513-336-6600 ettireed@bayerbecker.com
4. Brian Bendel PUCO 513-260-6105 brian.bendel@PUC.State.OH.US
5. Scott Otto City of Oxford 513-524-5208 sotto@cityofoxford.org
6. Amanda Delesare CSX 159 372 6124 amanda_delesare@CSX.COM
7. _____
8. _____
9. _____

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☒ Yes	☐ No	GOOD
Crossbucks	☒ Yes	☐ No	
Number of Tracks Signs	☐ Yes	☒ No	
Inventory Tags	☒ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☒ Yes	☐ No	
Cantilever Flashing Lights	☐ Yes	☒ No	Number: Length:
Side Lights	☐ Yes	☒ No	
Automatic Gates	☒ Yes	☐ No	Number: Length:
Bells	☒ Yes	☐ No	Number:
Sidewalk Gate Arms	☐ Yes	☒ No	
'No Turn' Signs	☐ Yes	☒ No	
Illumination	☒ Yes	☐ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
Other	☐ Yes	☐ No	

Safety Data (Obtain crash reports, if possible, prior to review)

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0 (3/10/05) & (7/16/86)	
Hazard Ranking	1438 Date Run: 8/29/16	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	5	
< 1 per day		
Day thru trains	3	
Night thru trains	1	
Daytime switching movements	1	
Nighttime switching movements		
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	35	
Typical train speed	35	
Amtrak	1 DAY	

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table I) ☐ Yes ☐ NoIf multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☐ NoCan one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☐ NoCan one or more tracks be eliminated through the crossing? ☐ Yes ☐ NoAre there other track(s) crossing this same roadway within 100 ft of this crossing? ☐ Yes ☒ No

If yes, Crossing DOT #(if different) _____

If yes, distance _____ (take measurement between track centerlines at closest point along roadway)

Roadway Data

Local Highway Authority: City of Oxford

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	10040 (2008) 7760 (2015)	
Highway paved	☒ Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 38 ft.		
Number of highway lanes	2	
Urban or Rural	Urban	
Vehicle Speed: 25 MPH		
School Bus Operation: ☐ No ☒ Yes High Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes .04 Amount		
Shoulders: ☒ No ☐ Yes		
Is the shoulder surfaced? ☒ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes		
Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No If no, deficient approach(es) _____		

Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☐ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☐ None
--	--

Pedestrians: ☐ No ☒ Yes

Is sidewalk present? ☐ No ☒ Yes

Is there a nearby intersection that could cause queuing over the crossing? ☒ No ☒ Yes

If yes,
Distance 175'

Is this intersection signalized? ☒ No ☐ Yes

Are the signals currently interconnected with the existing crossing warning devices? ☒ No ☐ Yes

Is there a 'Do not Stop on Track' sign? ☒ No ☐ Yes

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? ☐ No ☒ Yes

If yes,
Improvement type INTERSECTION WITH NEW TRAFFIC SIGNAL Lead Agency CITY OF OXFORD Timeline/completion -

Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes
Explain reasons:

Type of Development

☐ Open Space ☐ Institutional
☐ Industrial ☐ Commercial
☒ Residential

Location of nearby schools:

MIAMI UNIVERSITY

Utility Information

Is commercial power available? ☐ No ☒ Yes

Utility Provider (Company Name) Duke Phone Number _____

Nearest Available Power Source AT CROSSING

What other utilities are present? ☒ Gas ☐ Cable ☐ Telephone ☐ Fiber Optic Cable
 (add locations to sketch) ☐ Petroleum ☒ Water ☒ Sanitary Sewer
☐ Other _____

Is(are) there potential utility conflict(s) ☐ Yes ☒ No ☐ Unknown

Comments:

Potential Red Flags / Project Challenges

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

NEW SIGNAL GOING IN AT INTERSECTION OF
CHESTNUT AND MAIN ST.

Crossing Consolidation or Closure:

POSSIBLE CLOSURE AT CENTRAL AVE TO THE WEST.

Real Estate or ROW:

NO

Culverts / Drainage / Ballast Conditions:

DRAINAGE DITCH RUNS ALONG WESTSIDE OF RR TRACKS.

Roadway and/or Sidewalks:

YES

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

YES - EXTEND APPROACH FOR PRE-EMPTION REQUIREMENTS.

Environmental:

NO

Other:

N/A

Diagnostic Team Recommendations

	Quadrants Needed
☐ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☐ AFLS / Gates	
☐ AFLS / Gates / Cants	
☐ Bells / number	
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	
☒ Other (define)	

Comments: 1) POSSIBLE CLOSURE OF CENTRAL AVE TO WEST.
 2) EXTEND RR APPROACHES OUT FOR PREEMPTION.
 3) LED UPGRADE TO LIGHTS/GATES.
 4) LOOK AT BUS STOP TO WEST OF MAIN ST, COULD CAUSE QUEING.

☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	
☐ Other (define)	

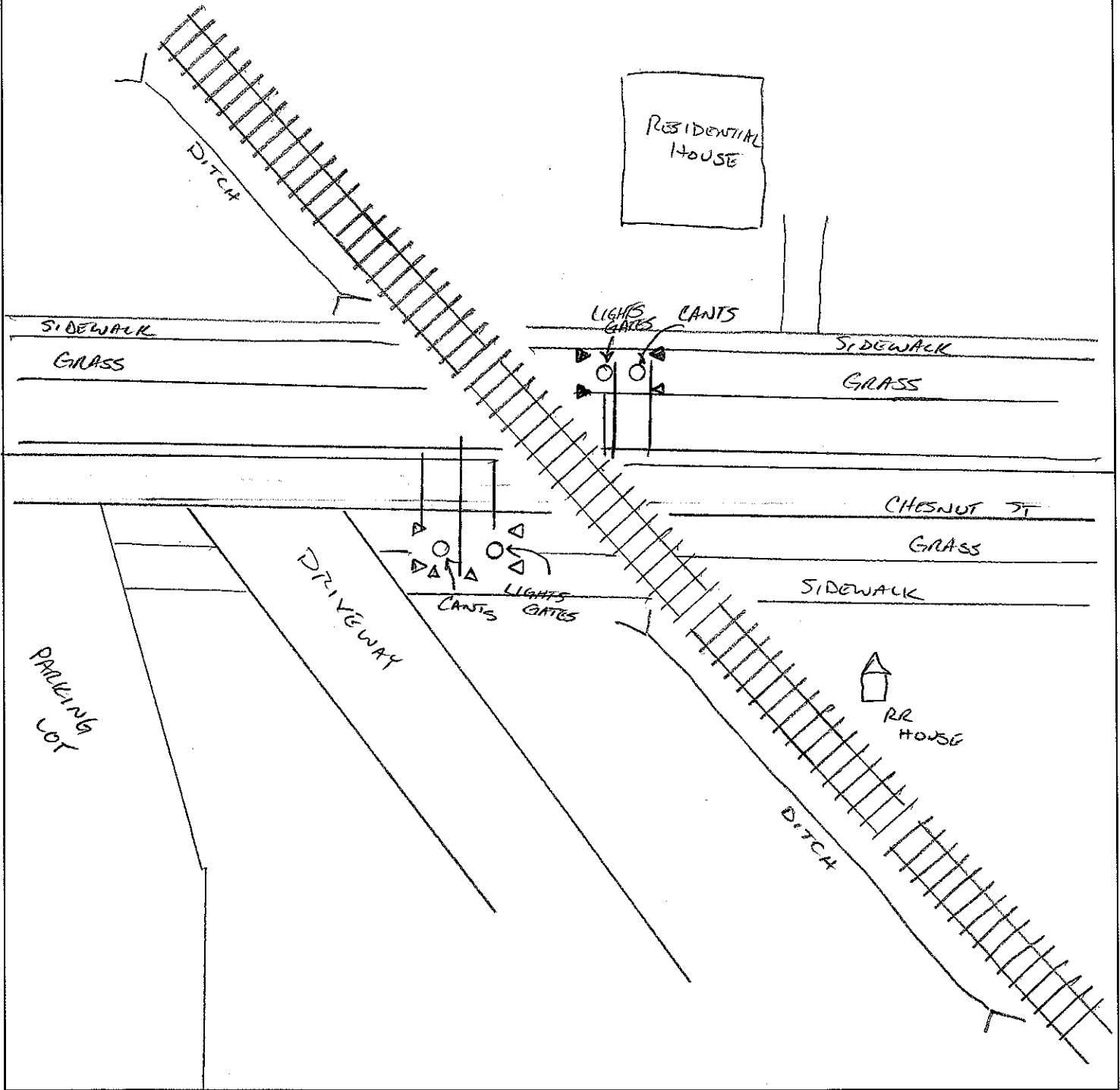
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):

G.W.G. fmg dnr
 AJO SDO LWB

Field Dimensions

Diagram illustrating field dimensions for a road cross-section. The diagram shows a central roadway flanked by parkways and sidewalks. Dimensions are indicated by arrows and handwritten numbers: 5' for the top sidewalk, 19' for the roadway, and 5' for the bottom sidewalk. A north arrow points towards the top right.	
---	--

Field Sketch



Crossing Angle ☐ 0-29° ☐ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Sketch by: Gunk

TABLE 1

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.

Table 2

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.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/13/2017 4:25:38 PM

in

Case No(s). 17-1983-RR-FED

Summary: Application In the Matter of a Request for Upgrades to the Active Warning Devices at CSX Transportation Inc. Grade Crossing, DOT# 154-079C, on Chestnut Street in Butler County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division