Public Utilities
Commission of Ohio

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 4/10/18

Re: PUCO Case No. 18-595-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the CSX Transportation Inc. Grade Crossing, DOT# 155-774D, on Milton Road/TR 40 in Wood County, Ohio.

On October 25, 2017, the Ohio Rail Development Commission (ORDC) authorized funding for CSX Transportation, Inc. (CSX) to install flashing lights at the Milton Road/TR 40, DOT#155-774D, grade crossing in Wood County, Ohio. The crossing was surveyed, on September 23, 2015, and found to warrant the upgrades. The electric utility provider for this crossing is Tricounty Rural Electric Cooperative.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of $357,175.00 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
Columbus, Ohio 43223

Milton Township, Wood County
Stanley Wilhelm
Trustee
19441 Mermill Road
Rudolph, OH 43462

Tricounty Rural Electric Cooperative
8945 CR K2
P.O. Box 100
Malinta, Ohio 43535

OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION

TO: **Randall Schumacher, Rail Division Chief, PUCO**

FROM: **Cathy Stout, Manager, Safety Section, ORDC**

BY: **Don Damron, Project Manager, ORDC**

SUBJECT: **Wood County, Milton Rd. / CSX Transportation**
DOT# 155774D
PID# 101925

DATE: **April 2, 2018**

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 9/23/2015. The Rail Development Commission (ORDC) attended the Diagnostic Survey. The Diagnostic Review Team initially recommended the improvement of warning devices to automatic flashing lights and roadway gates; however, the addition of gates to the existing roadway geometry became problematic and the Team now recommends that the upgrade involve flashing lights only and no roadway gates. Copies of the Diagnostic Review Team Survey form along with the subsequent changes to the recommendation along with the railroad plan and estimate are attached.

The PE has already been provided by the railroad. ORDC approved 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.

Attachments:
Diagnostic Review Team Survey dated 9/23/2018
CSX Force Account Estimate dated 2/5/2018

cc: Jill Henry, Rail Specialist, PUCO
ORDC Project Manager (file)

OHIO RAIL DEVELOPMENT COMMISSION
Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • James G. Bradley, Chairman

April 2, 2018

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

RE: Grade Crossing Warning Device Improvement – Construction Authorization
Wood County, Milton Rd.
DOT# 155774D
PID# 101925
CSX ACCT. CODE: OH1136

Dear Ms. DeCesare:

The Force Account Estimate (FAE) dated 2/5/2018 for the referenced project has been reviewed and is acceptable and the Proposed Crossing Layout for flashers only (no gates) has been approved as to signal layout only. 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 $357,175.00. 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's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Don Damron, ORDC, Mail Stop #3140, 1980 West Broad Street, 2nd Floor, Columbus Ohio 43223, or email don.damron@dot.ohio.gov, or Fax 614-728-4520, (cell phone: 614-917-8466; desk phone: 614-466-2509), and to the Public Utilities Commission of Ohio at Jill.Henry@puc.ohio.gov (phone 614-466-0435). The CSX 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.

3. The CSX project foremen will notify Don Damron at 614-917-8466 (cell phone) or don.damron@dot.state.oh.us (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. CSX will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.

5. 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.

Thank you for your assistance with these matters.

Sincerely,

Donald J. Damron
Project Manager

C: Randall Schumacher, Rail Division Chief, PUCO
Jill Henry, Rail Specialist, PUCO
ORDC (file)

R.R. NORTH TO PERRY

H.S. 9128+85 ← FIELD VERIFY

2531 FT. — 67 FT. — ℄ — 67 FT. — 2531 FT.

OHIO Utilities Protection SERVICE
Call 811 or 800-362-2764
Call Before You Dig

TR 40
(MILTON RD.)
155774D
M.P. BE-178.20

CSX ROW — CSX ROW

NEW 6'X6' HOUSE AND METER

50' EOR

SAFETY PLATFORM REQUIRED FOR SE FLASHER & NEW 6'X6' HOUSE

50' 0" — 30' 0" — 15' 0"

4' 0" — 16' 0" — 13' 0" — 9' 0" DITCH

10' 3"

290

9' 0"

CONCRETE BULKHEAD

ML — ELECTROCODE

U.G. FIBER
O.H. POWER NOTE, #1

8' 3"

24' 0" — 11' 0" — 6' 0"

32' EOR

CONCRETE CULVERT

DITCH

CONCRETE BULKHEAD

40' 0" — 50' 0"

16' 1" 0"

21' 0"

DITCH

16' 0"

CONCRETE CULVERT

17' 0"

NORTH STREET

CSX ROW

PER ISSUING AGENCY
U.G. WATER AND SEWER
ON NE SIDE OF ROAD
UTILITIES NOT MARKED

NE — NW — SE — SW

U.G. UTLITY CONFLICT IN NW & SE QUAD HAND DIGGING & VAC TRUCK NEEDED

NOTE, #1
1 - O.H. POWER (V.O.H.C 29')
2 - O.H. POWER (V.O.H.C. 35')

0 5 10 20

APPROACH LENGTHS TABLE DC, AFO, TYPE C, MOTION, CWT, OR OTHER	NORTHWARD ML CWT	SOUTHWARD ML CWT
STANDARD MINIMUM WARNING TIME IN SECONDS	25	25
ROADWAY GATE TIME IN SECONDS	0	0
CLEARANCE TIME IN SECONDS	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS ✳	0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	27 SEC.	27 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS ✳	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	5	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	32 SEC.	32 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	2531	2531
HALF WIDTH OF ISLAND IN FEET	67	67
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	173.30	172.31

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

PRODUCED FOR,
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PRODUCED BY,
Xorail
A Wabtec Company

LEGEND				GPS COORDINATES	REVISION DATES		
CSX ROW	O.H. POWER	METER SERVICE Ⓜ		41°18'27" N	03-28-2017	FILE NAME: BE17280.H01	STREET NAME: TR 40 (MILTON RD.)
R/R POLELINE	FENCE	POLE Ⓟ		83°49'27" W	04-24-2017	DATE DRAWN: 03-13-2017	CITY & STATE: MILTON CENTER, OH / M.P. BE-172.80
GAS	WATER	FIRE PLUG Ⓕ		ELEV. 684 '	01-23-2018	DRAWN BY: XRL	DOT: 155774D
FIBER OPTIC	SEWER	SEWER CAP Ⓢ			- -	CHECKED BY: XRL	PROJECT #: 0H2017442
	GUARD RAIL	GAS VENT Ⓥ				XRL #: 106485	OP #: 0H1136

PROPOSED CROSSING LAYOUT
SCALE = 20.1

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 - OH1136

ESTIMATE SUBJECT TO REVISION AFTER: **8/4/2018** **DOT NO.:** 155774D
CITY: Milton Center **COUNTY:** Wood **STATE:** OH
DESCRIPTION: TR 40 (Milton Rd.) - Installation of Flashing Light Signals with CWT.

DIVISION: Louisville **SUB-DIV:** Toledo **MILE POST:** BE - 172.80
AGENCY PROJECT NUMBER: PID 101925

	PRELIMINARY ENGINEERING:				
212	Contracted & Administrative Engineering Services			$	5,500
	Subtotal			$	5,500
	CONSTRUCTION ENGINEERING/INSPECTION:				
212	Contracted & Administrative Engineering Services			$	1,500
	Subtotal			$	1,500
	FLAGGING SERVICE: (Contract Labor)				
070	Labor (Conductor-Flagman)			$	-
050	Labor (Foreman/Inspector)			$	-
070	Additive	117.39%	(Transportation Department)	$	-
050	Additive	118.86%	(Engineering Department)	$	-
230	Per Diem	(Engineering Department)		$	-
230	Expenses			$	-
	Subtotal			$	-
	SIGNAL & COMMUNICATIONS WORK:		(Details Attached)	$	350,175
	TRACK WORK: (Details Attached)			$	-
	PROJECT SUBTOTAL			$	357,175
900	**CONTINGENCIES:**			$	-
	GRAND TOTAL		**********	$	357,175

DIVISION OF COST:

Agency	100.00%		$	357,175
Railroad			$	-
TOTAL		**********	$	357,175

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: 2/5/2018 **REVISED:** **DATE:** 2/5/2018

Estimate No. 130131

CSX Transportation

TR 40(Milton Rd.)- Install FLS&G. Warning devices upgraded to automatic flashing lights and roadway gates for TR40 / Milton Road

Milton, OH

DOT: 155774D OP: OH1136 CSX Project: OH2017018

Summary

Material	$ 80,925
Sales Tax	$ 0
Labor:	
Construction Labor (197 man-days)	$ 74,860
Shop Labor (7 man-days)	$ 2,660
Subsistence (197 man-days)	$ 29,550
Railroad Engineering, Preliminary	$ 2,820
Railroad Engineering, Construction	$ 11,229
Additives to Construction Labor	$ 88,979
Additives to Shop Labor	$ 3,162
Additives to Track Labor	$ 0
Additives to Engineering	$ 0
Equipment Expenses (0 work days)	$ 0
Waste Management (41 work days)	$ 492
Contract Engineering	$ 26,442
Freight	$ 6,056
Poleline Removal	$ 0
AC Power Service	$ 15,000
Salvage	$ 0
VAC-TRUCK	$ 8,000
TOTAL ESTIMATE COST	$ 350,174

Date: 02/02/2018
Estimated By: Olonda McIver

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

Shop Material List for CSX Project: OH2017018 (Effective: 02/02/2018)
INSTALL FLS&G W/ GCP 4000 (MILTON RD.)
MILTON CENTER, OH - BE 172.80

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0017120	1	11.31	6	67.86	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.20	6	19.20	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0018234	1	77.88	1	77.88	CABLE CONVERTER PROTOCOL/MEDIA WAYSIDE ACCESS
020-0021965	1	8.96	1	8.96	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF
020-0022651	1	106.70	2	213.40	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0025595	1	20.41	1	20.41	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	387.88	2	775.76	CHARGER BATTERY ELC 12/20 D 20 AMP 10-19.9 VDC ROTARY SW
020-0055602	1	11.39	1	11.39	RELAY POTTER BRUMFIELD KHAU17D12-12V 160 OHMS
020-0056514	1	6.27	1	6.27	SOCKET RELAY POTTER & BRUMFIELD 27E894 NEWARK
020-0064060	1	16.12	1	16.12	PLATE RELAY MOUNTING FOR 2 EACH TYPE KHAU OR OCTAL RELAY
020-0167501	1	38.51	11	423.61	ARRESTER HYBRID LOW VOLTAGE,2, 0-30V DC OR 0-24V
020-0660077	1	594.52	1	594.52	ARRESTER GE 9L10KAC213 FOR 240 VOLT SINGLE PHASE 3 WIRE
020-0750090	1	0.11	3	0.33	NUT INSULATED USE ON AAR BINDING POST TERMINAL FOR
020-0770060	1	15.17	8	121.36	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.06	4	88.24	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1000354	1	6170.25	1	6170.25	HOUSE SIGNAL 6FT X 6FT WITH PTC UPGRADE PTMW P/N 91000354
020-1940055	1	19.85	1	19.85	CONTAINER TUBE HOLDER CIRCUIT PRINT PLAN 24" SCHD 20 4" PVC
020-2503004	1	89.36	1	89.36	FILTER LINE A25529 USE WITH SAFETRAN GCP-4000 REMOTE
020-2503073	1	1091.71	1	1091.71	MODULE SAFETRAN VHF COMMUNICATOR (A80276-3) USED
020-2503075	1	345.24	1	345.24	MODULE SAFETRAN MINI TRACKSIDE SENSOR UNIT
020-2503079	1	492.48	1	492.48	MODULE SAFETRAN GROUND FAULT DETECTOR (A80297-2) USED WITH
020-2503090	1	1087.41	1	1087.41	CONVERTER PROTOCOL/MEDIA WAYSIDE ACCESS GATEWAY (WAG)
020-2503200	1	1089.40	1	1089.40	KIT SAFETRAN GCP-4000 ILOD PKG. FOR USE WITH SEAR-III
020-2503220	1	14738.67	1	14738.67	PREDICTOR SAFETRAN GCP-4000 2-TRACK DUAL CASE W/RECORDER
020-3430110	1	363.23	1	363.23	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX

Shop Material List for CSX Project: OH2017018 (Effective: 02/02/2018)
INSTALL FLS&G W/ GCP 4000 (MILTON RD.)
MILTON CENTER, OH - BE 172.80

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3430130	1	409.74	1	409.74	RELAY SAFETRAN 400023 500 OHMS CONTACTS 6FB HEAVY DUTY
020-3652615	1	61.32	1	61.32	RESISTOR ADJUSTABLE 0.340 TO 3.00 OHMS 2.24A 15W SAFETRAN
020-4200340	1	1.73	8	13.84	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200350	1	2.06	6	12.36	LINK TEST ASSEMBLY 2-3/8" CENTERS YELLOW INSULATOR ON
020-4201045	1	0.15	400	60.00	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-8000067	1	15.18	2	30.36	LOCK AMERICAN H10SIGRA CSX SIGNAL PADLOCK WITH BLACK
022-8005160	1	465.18	1	465.18	KIT CDMA AND VHF RADIO MATERIAL FOR USE WITH CSX
028-1120501	1	314.80	2	629.60	DEVICE, VOLTAGE MONITOR, EXTENDED TEMPERATURE RANGE OF

Total Cost: $ 29,615.31

Field Material List for CSX Project: OH2017018 (Effective: 02/02/2018)
INSTALL FLS&G W/ GCP 4000 (MILTON RD.)
MILTON CENTER, OH - BE 172.80

Catalog Num	Cond	Unit Price	Qty	Cost	Description
014-8006169	1	10.62	2	21.24	SIGN PERMANENT EMERGENCY NOTIFICATION (VEHICLE
020-0002105	1	1843.28	1	1843.28	SIGNAL 0210-L5 GCWD FLASHER ASSY DWG SS221 INCLS 2-WAY
020-0002125	1	2391.74	1	2391.74	SIGNAL 0212-L5 GCWD FLASHER ASSY DWG SS221 INCLS 2-WAY
020-0010447	1	9.83	3	29.49	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0013686	1	74.50	8	596.00	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64
020-0013870	1	1.33	2800	3724.00	CABLE UG 5 COND NO 14 AWG SOLID C CSX SPEC SS796 SHOW
020-0022651	1	106.70	1	106.70	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0025145	1	363.99	4	1455.96	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0053220	1	2.23	150	334.50	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0053240	1	3.84	200	768.00	CABLE UG 5 COND NO 6 AWG SOLID C CSX SPEC SS796 SHOW
020-0053242	1	4.67	200	934.00	CABLE UG 7 COND NO 6 AWG SOLID C CSX SPEC SS796 SHOW
020-0057275	1	1.11	1500	1665.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-0167501	1	38.51	2	77.02	ARRESTER HYBRID LOW VOLTAGE,2, 0-30V DC OR 0-24V
020-0782330	1	36.06	5	180.30	KIT 72-N2 SPLICING, USE FOR SIGNAL SPLICES F/CABLE DIA
020-1020095	1	1678.83	1	1678.83	PLATFORM HIGHWAY CROSSING ACCESS FOUNDATION COMPLETE
020-1040322	1	127.08	9	1143.72	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040324	1	183.65	9	1652.85	BATTERY SAFT SPL250, 250 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	3	94.08	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1150750	1	1.00	400	400.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.04	16	96.64	KIT BOND, CADWELD PLUS WEB OF RAIL BOND 3/16 DIA. 4" LARGE
020-1360014	1	827.14	1	827.14	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	23.61	1	23.61	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE
020-1360104	1	1556.06	1	1556.06	LAYOUT AC METER SERVICE WITH 30’ POLE CSX DWG SS351 SH 2
020-2060078	1	53.00	4	212.00	BOLT 1" - 8 X 8" INCLUDES NUT AND 3 FLAT WASHERS, USE ON
020-2500440	1	57.29	1	57.29	INDUCTOR 8V617-2400 DUMMY LOAD SAFETRAN

Field Material List for CSX Project: OH2017018 (Effective: 02/02/2018)
INSTALL FLS&G W/ GCP 4000 (MILTON RD.)
MILTON CENTER, OH - BE 172.80

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-2500590	1	470.76	1	470.76	SHUNT SAFETRAN P/N 6000-62775-8621 NARROW BAND
020-2500615	1	315.28	2	630.56	SHUNT SAFETRAN 62775-156 NARROW BAND 156HZ
020-2530287	1	247.52	1	247.52	FILTER EPC 800-080055-103 TF-156
020-2531280	1	265.93	1	265.93	SHUNT HARMON 250250-267 NBS-1-10 267HZ 10 FT LEADS
020-3430110	1	363.23	1	363.23	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-3920200	1	175.38	1	175.38	BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN
020-4101642	1	12687.00	1	12687.00	PLATFORM ASSY 2 POST TRACKSIDE FOR 8’ X 8’ AND
020-4200340	1	1.73	29	50.17	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.26	6	1.56	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-7300030	1	189.28	1	189.28	BRACKET BELL FITS SAFETRAN JUNCTION BOX MOUNT, 5" BENT
020-9999991	1	100.00	1	100.00	BLOCKING AND BRACING FOR PROJECTS BURCO DIST
250-0001836	1	15.44	1	15.44	BREAKER CIRCUIT SQ D QO260
360-0006100	1	35.07	1	35.07	STOOL STEP WOOD 14"X 20" SIGNAL MAINTAINERS CSXT
360-0800145	1	7.54	1	7.54	BROOM WAREHOUSE CORN HVY DUTY 1-1/8" DIA HANDLE

Total Cost: $ 37,108.89

Consumables List for CSX Project: OH2017018 (Effective: 02/02/2018)
INSTALL FLS&G W/ GCP 4000 (MILTON RD.)
MILTON CENTER, OH - BE 172.80

Catalog Num	Cond	Unit Price	Qty	Cost	Description
N/A		50.00	50	2500.00	FILL MATERIAL, 1 CUBIC YARD
N/A		500.00	1	500.00	RAVEN AIR-LINK
N/A		800.00	1	800.00	WALKWAY ROCK, 10 CUBIC YARDS
020-0017605	1	0.26	350	91.00	WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0017607	1	0.65	500	325.00	WIRE CASE TW PR NO 10 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017625	1	0.42	150	63.00	WIRE CASE TWISTED PAIR AWG #14 FLEX TWIST 2 TURNS PER FT
020-0017630	1	0.13	200	26.00	WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017636	1	0.73	130	94.90	WIRE SIGNAL AWG 6 STRANDED COPPER, T&C BLUE, FOR BATTERY
020-0028610	1	0.23	100	23.00	TERMINAL RING PANDUIT PN12-14HDR-D YELLOW NYLON HVY
020-0053510	1	208.13	1	208.13	KIT 240V AC EMERGENCY GENERATOR CABLE AND
020-1360540	1	71.65	1	71.65	BREAKER MAIN/GENERATOR BACKFEED RETAINING GENERATOR
020-1710045	1	2.42	3200	7744.00	CONDUIT SDR 13.5 4" ORANGE POLYETHYLENE TRENCHLESS
020-2060072	1	442.00	2	884.00	FOUNDATION HELICAL SCREW-IN ASSEMBLY 7’ X 10", USED FOR
020-2060074	1	366.00	2	732.00	EXTENSION 10" X 3’ USE WITH XING GATE AND SIGNAL MAST
020-4168917	1	0.50	2	1.00	RESISTOR, FIXED .5W, 20W OHM (REPLACEMENT FOR INVENSYS PN
020-4200880	1	0.53	2	1.06	CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.37	27	9.99	CONNECTOR TERMINAL 1" CENTERS AAR 14.1.15-3 NICKEL PLATED
020-4251190	1	0.14	120	16.80	TERMINAL RING PANDUIT PV10-14RD YELLOW VINYL SIZE
020-4251290	1	0.53	30	15.90	TERMINAL RING PANDUIT PV6-14R-T BLUE VINYL SIZE 6
020-4251295	1	0.53	6	3.18	TERMINAL RING PANDUIT PV6-38R-T BLUE VINYL SIZE 6
020-9999992	1	50.00	1	50.00	HOUSE SIGNAL HANDLING CHARGE BURCO DISTRIBUTION
450-0019212	1	0.40	100	40.00	SCREW 10 X 1" SHT METAL PAN HD TYPE A COARSE THREAD

Total Cost: $ 14,200.61

BE◇174

9192+49.6

GC 9178+37

9183+40
173.28

NBS

FARM ROAD
M.P. 173.73

GC 9154+20

9154+83
172.80

NBS

TR 22
(MAPLEWOOD RD.)
155775K
M.P. 173.28
(FG)
MOT

BE◇173

9139+59.5

0.02 | 0.00 | 0.10 | 0.09 | 0.10 | 0.01

= IN

106485 OH2017442

01-23-18 XRL/JWG/

xorail

REVISIONS	
11-07-11 IRC	OH2010094

TRACK PLAN
HORIZONTAL SCALE, 1 INCH = 500 FEET

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

DESIGNED	DIGITIZED	CHECKED	DATE	NEXT FILE	NEXT SH	FILE	SHEET
ORS/JSH	ORS/JSH	ORS/BGS	08/06/90	BE17400	T01	BE17300	T01

BE◇173

BE◇172

9139+59.5

GC 9128+85

CS 9126+40

GC 9120+28

GC 9107+84.5

GC 9100+84.5

HS 9093+05

9086+55.7

HS

GC

9125+00

173.28

9111+39

172.12

9102+87

172.80

173.28

MILTON

NBS

NBS

NBS

PUBLIC ROAD

TR 40 (MILTON RD.)

155 774 D

M.P. 172.80

F

MOT

NORTH STREET

M.P. 172.64

SOUTH STREET

M.P. 172.40

RAILROAD STREET

M.P. 172.27

DEFIANCE PIKE

155 770 B

M.P. 172.12

F

MOT

0.05

0.03

0.13

0.04

✕✕✕ = OUT

○○○ = IN

106485

01-23-18

0H2017442

XRL/JWG/

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REVISIONS					
12-14-94 FCS 0H93189	01-28-02 SWE 0H19990402 0H19990408A	07-19-10 XRL 0H2010048	11-07-11 IRC 0H2010094		

TRACK PLAN
HORIZONTAL SCALE, 1 INCH = 500 FEET

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS

DESIGNED	DIGITIZED	CHECKED	DATE	NEXT FILE	NEXT SH	FILE	SHEET
ORS/JSH	ORS/JSH	ORS/BGS	08/06/90	BE17100	T01	BE17200	T01

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S01	TRACK AND SIGNAL PLAN	⊠	⊠	⊘						
E01	POWER DISTRIBUTION	⊠	⊠	⊘						
C01	CROSSING DETECTION CIRCUITRY	⊠	⊠	⊘						
C02	DETECTION DEVICE PROGRAM	⊠	⊠							
C03	CROSSING WARNING DEVICE GATE CIRCUITRY	⊠	⊠							
C04	CROSSING WARNING DEVICE LIGHT CIRCUITRY	⊠	⊠							
C05	RECORDER AND DTMF CONTROLLER CIRCUITS	⊠	⊠	⊘						
C06	RECORDER PROGRAM	⊠	⊠	⊘						

⊠ = DESIGN COMPLETED

⊠ = REVISION COMPLETED

REVISIONS

REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2010094	02-28-11	10-25-11	11-07-11
2	0H2016035	07-18-16	01-10-17	02-28-17
3	0H2017442	01-23-18		

TO BE COMPLETED ON A.I.S.

= NOTE

= IN

= OUT

106485 0H2017442

01-23-18 XRL/JWG/

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CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

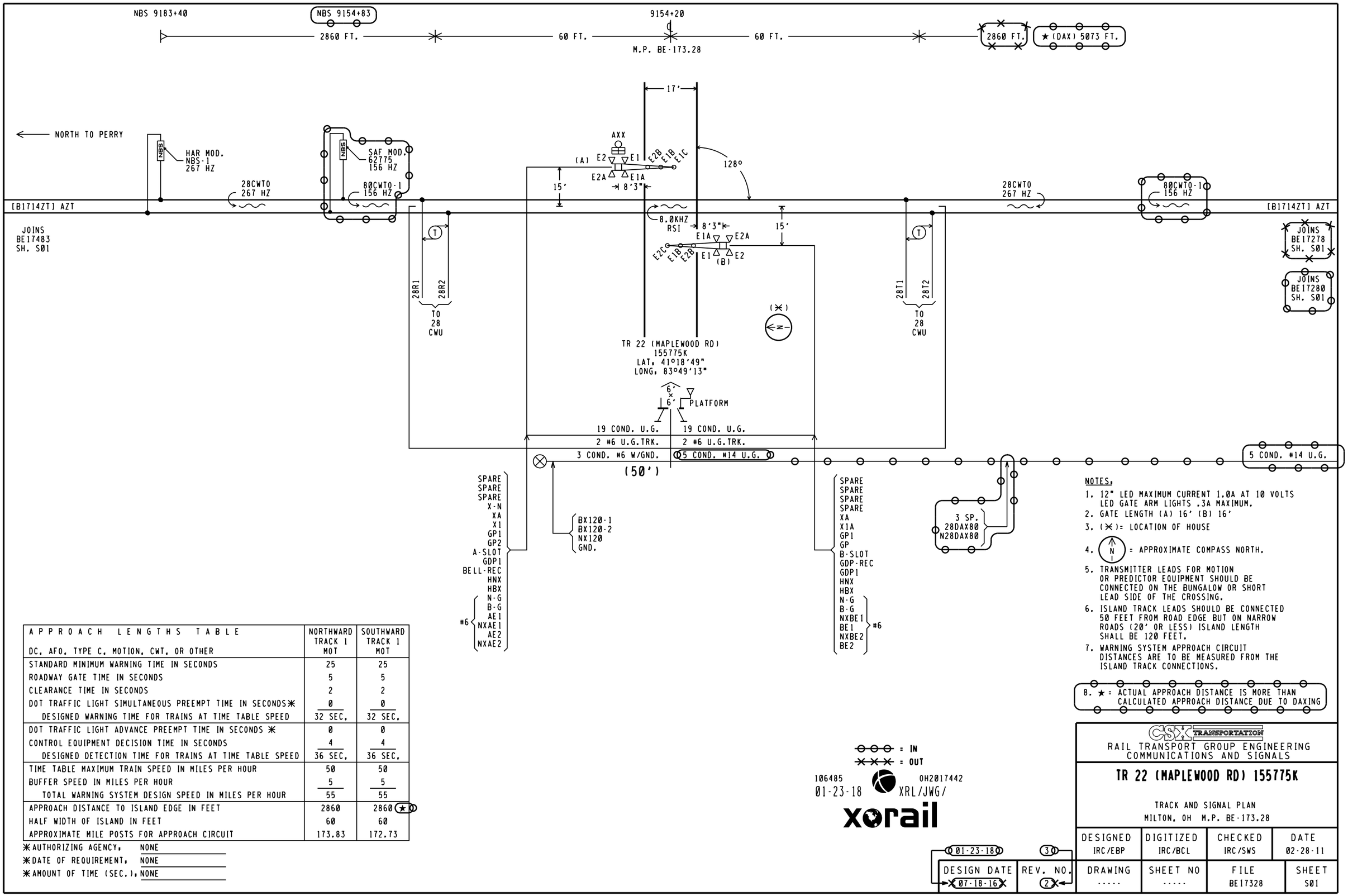
TR 22 (MAPLEWOOD RD) 155775K

INDEX AND REVISIONS
MILTON, OH M.P. BE-173.28

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/EBP	IRC/BCL	IRC/SWS	02-28-11

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
07-18-16	2	-----	-----	BE17328	I01

01-23-18 3



APPROACH LENGTHS TABLE DC, AFO, TYPE C, MOTION, CWT, OR OTHER	NORTHWARD TRACK 1 MOT	SOUTHWARD TRACK 1 MOT
STANDARD MINIMUM WARNING TIME IN SECONDS	25	25
ROADWAY GATE TIME IN SECONDS	5	5
CLEARANCE TIME IN SECONDS	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS ✳	0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	32 SEC.	32 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS ✳	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	4	4
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	36 SEC.	36 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	2860	2860 (★)
HALF WIDTH OF ISLAND IN FEET	60	60
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	173.83	172.73

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

NOTES,

1. 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS LED GATE ARM LIGHTS .3A MAXIMUM.
2. GATE LENGTH (A) 16' (B) 16'
3. (✳)= LOCATION OF HOUSE
4. (N) = APPROXIMATE COMPASS NORTH.
5. 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.
8. ★ = ACTUAL APPROACH DISTANCE IS MORE THAN CALCULATED APPROACH DISTANCE DUE TO DAXING

⊖⊖⊖ = IN
✳✳✳ = OUT

106485 01-23-18 OH2017442 XRL/JWG/

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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 22 (MAPLEWOOD RD) 155775K

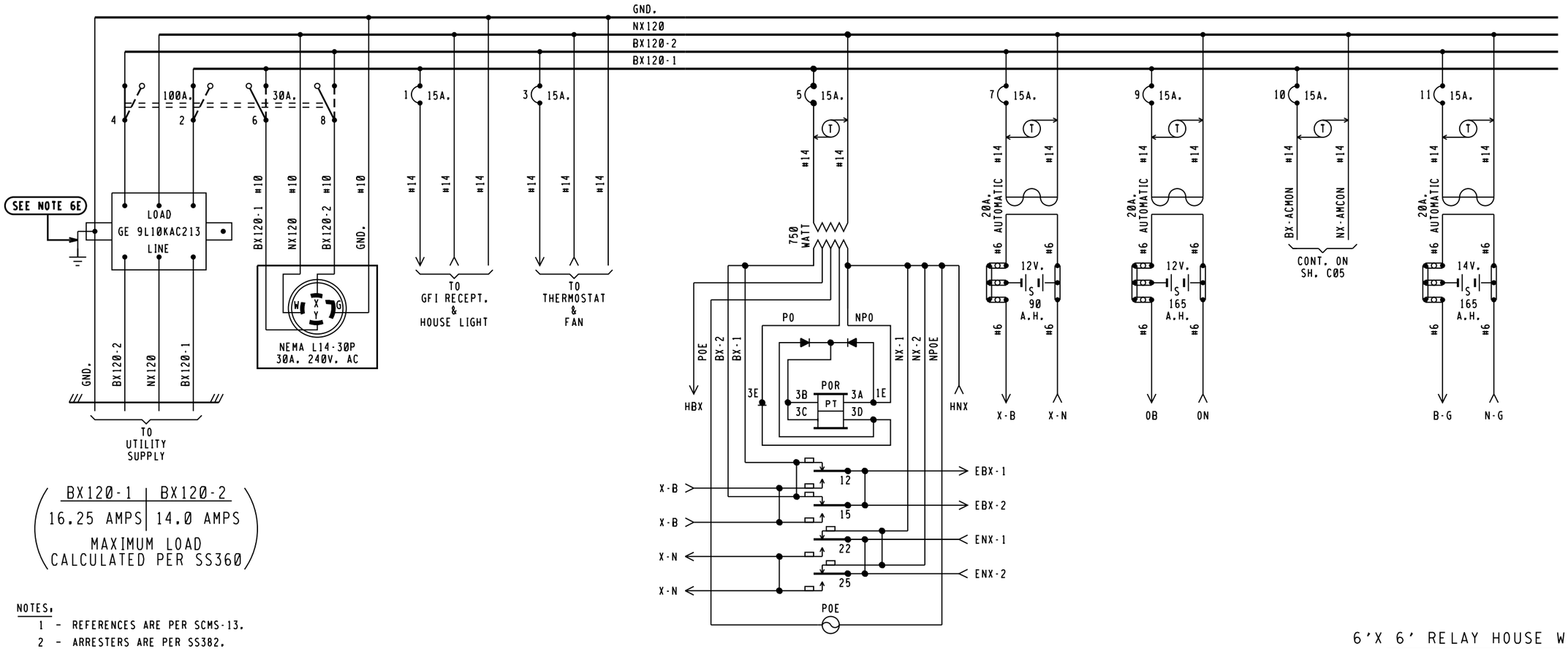
TRACK AND SIGNAL PLAN
MILTON, OH M.P. BE-173.28

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/EBP	IRC/BCL	IRC/SWS	02-28-11

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
07-18-16 (01-23-18)	2 (3)	-----	-----	BE17328	S01

TOP ROW

XR			XPR			GPR			80DAXR			EOR			POR		
12	FB	B8	22	F	B36	12	B	B8	12	F	B8	12	FB	B81	12	FB	B62
15	FB	C30	25	F	C30	15	B	C30	15	F	C30	15	FB	C30	15	FB	C30
22						22			22			32	FB		22	FB	
23						23			23			35	FB		25	FB	
25	F					32	F		25						32	F	
32						35	B		32	F					35		
35									35								

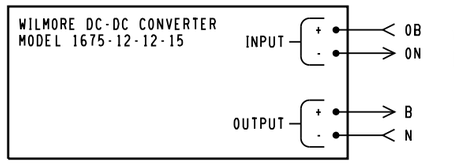


BX120-1	BX120-2
16.25 AMPS	14.0 AMPS

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.



= IN
= OUT

106485 01-23-18 OH2017442 XRL/JWG/

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6'X 6' RELAY HOUSE W/FARADAY SHIELD

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

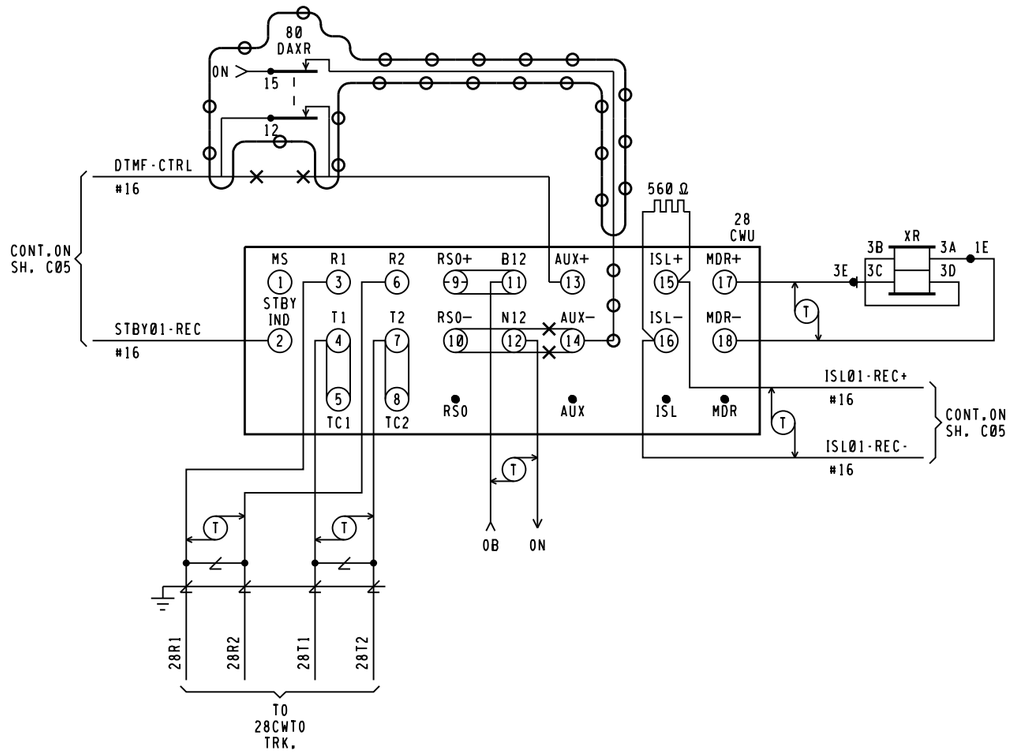
TR 22 (MAPLEWOOD RD) 155775K

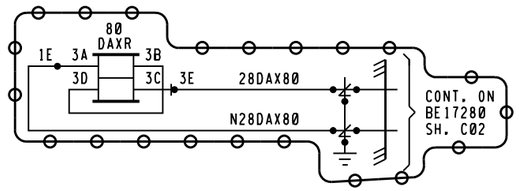
POWER DISTRIBUTION
MILTON, OH M.P. BE-173.28

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/EBP	IRC/BCL	IRC/SWS	02-28-11
DRAWING	SHEET NO	FILE	SHEET
-----	-----	BE17328	E01

DESIGN DATE	REV. NO.
07-18-16	2

01-23-18 3





28 CWU PMD-3R MODULES REQUIRED

FRONT VIEW

RMM (RECORDER MEMORY) (NOT USED)	TRM (TRANSCEIVER)	TRM (TRANSCEIVER)	RSI (ISLAND)	RSI (ISLAND)	RYD (RELAY DRIVE)	RYD (RELAY DRIVE)	CPU (CENTRAL PROCESSOR UNIT)	CPU (CENTRAL PROCESSOR UNIT)	TLM (TRANSFER LOGIC)

RSI MODULE
226736-000 8.0KHZ

ISLAND FREQ.
8.0KHZ

NORMAL RSI JUMPERS

STANDBY RSI JUMPERS

LOS 0
LOS 1
LOS 2
FAULT 0
FAULT 1

28
CWU

CABINET SWITCHES
THESE SWITCHES ARE LOCATED ON MOTHERBOARD
MASTER/SLAVE MASTER SLAVE S1

SYSTEM CONFIGURATION				
S6 & S7 DIP SWITCH POSITIONS				
SWITCH	1	2	3	4
SWITCH POSITION	ON	OFF	OFF	OFF
APPROACH,	NORMAL		(NOT USED)	

FREQUENCY SELECT						
NORMAL	S2 & S3 DIP SWITCH POSITIONS 267 HZ					
	SWITCH	1	2	3	4	5
	SWITCH POSITION	OFF	OFF	OFF	ON	OFF
STANDBY	S4 & S5 DIP SWITCH POSITIONS 267 HZ					
	SWITCH	1	2	3	4	5
	SWITCH POSITION	OFF	OFF	OFF	ON	OFF

TLM MODULE
JUMPERS AND SWITCHES

STANDBY ONLY — (TOGGLE MODE) — W1
ISL 1 DISABLE — (ENABLE MODE) — W2
ISL 2 DISABLE — (DISABLE MODE) — W3
3 2 1 (*)

MINUTE TIMEOUT SWITCH

SETTING	(☆) 9 MINUTES

S2: STANDBY / AUTO / NORMAL

NOTE,
PIN 1 IS IDENTIFIED BY ASTERICK BELOW IT.
(☆) = MAY BE SET PER FIELD CONDITIONS.

= IN
= OUT

106485
01-23-18
0H2017442
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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

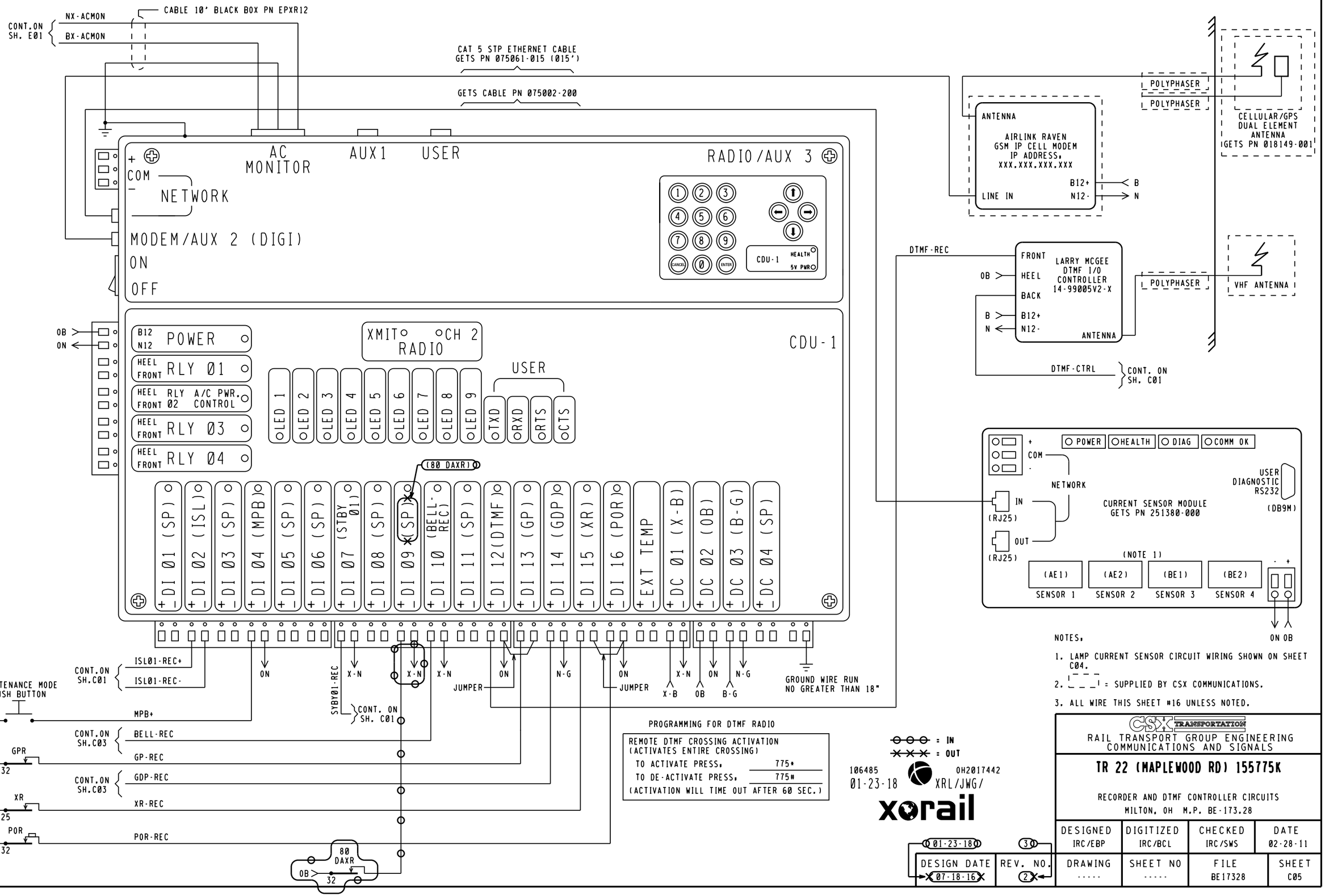
TR 22 (MAPLEWOOD RD) 155775K

CROSSING DETECTION CIRCUITRY
MILTON, OH M.P. BE-173.28

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/EBP	IRC/BCL	IRC/SWS	02-28-11
DRAWING	SHEET NO	FILE	SHEET
-----	-----	BE17328	C01

DESIGN DATE	REV. NO.
07-18-16	2

01-23-18 (3)


CABLE 10' BLACK BOX PN EPXR12
CONT.ON SH. E01
NX-ACMON
BX-ACMON
CAT 5 STP ETHERNET CABLE GETS PN 075061-015 (015')
GETS CABLE PN 075002-200
AC MONITOR
AUX1
USER
RADIO/AUX 3
COM
NETWORK
MODEM/AUX 2 (DIGI)
ON
OFF
CDU-1
HEALTH
5V PWR
CANCEL
ENTER
POWER
RLY 01
RLY A/C PWR. CONTROL
02
RLY 03
RLY 04
XMIT
CH 2
RADIO
OLED 1
OLED 2
OLED 3
OLED 4
OLED 5
OLED 6
OLED 7
OLED 8
OLED 9
USER
TXD
RXD
RTS
CTS
(80 DAXR)
DI 01 (SP)
DI 02 (ISL)
DI 03 (SP)
DI 04 (MPB)
DI 05 (SP)
DI 06 (SP)
DI 07 (STBY 01)
DI 08 (SP)
DI 09 (SP)
DI 10 (BELL-REC)
DI 11 (SP)
DI 12 (DTMF)
DI 13 (GP)
DI 14 (GDP)
DI 15 (XR)
DI 16 (POR)
EXT TEMP
DC 01 (X-B)
DC 02 (OB)
DC 03 (B-G)
DC 04 (SP)
ANTENNA
AIRLINK RAVEN GSM IP CELL MODEM IP ADDRESS, XXX.XXX.XXX.XXX
LINE IN
B12+
N12-
B
N
POLYPHASER
POLYPHASER
CELLULAR/GPS DUAL ELEMENT ANTENNA GETS PN 018149-001
DTMF-REC
FRONT
HEEL
BACK
LARRY MCGEE DTMF I/O CONTROLLER 14-99005V2-X
ANTENNA
POLYPHASER
VHF ANTENNA
DTMF-CTRL
CONT. ON SH. C01
POWER
HEALTH
DIAG
COMM OK
USER DIAGNOSTIC RS232
(DB9M)
NETWORK
IN
(RJ25)
OUT
(RJ25)
CURRENT SENSOR MODULE GETS PN 251380-000
(NOTE 1)
(AE1)
(AE2)
(BE1)
(BE2)
SENSOR 1
SENSOR 2
SENSOR 3
SENSOR 4
ON OB
CONT.ON SH.C01
ISL01-REC+
ISL01-REC-
MAINTENANCE MODE PUSH BUTTON
MPB+
CONT.ON SH.C03
BELL-REC
GP-REC
GDP-REC
XR-REC
POR-REC
GPR
XR
POR
32
25
SYBY01-REC
CONT. ON SH. C01
JUMPER
GROUND WIRE RUN NO GREATER THAN 18"
80 DAXR
PROGRAMMING FOR DTMF RADIO
REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)
TO ACTIVATE PRESS, 775*
TO DE-ACTIVATE PRESS, 775#
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)
= IN
= OUT
106485
01-23-18
XRL/JWG/
0H2017442
xorail
NOTES,
1. LAMP CURRENT SENSOR CIRCUIT WIRING SHOWN ON SHEET C04.
2. _ _ _ = SUPPLIED BY CSX COMMUNICATIONS.
3. ALL WIRE THIS SHEET #16 UNLESS NOTED.
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS
TR 22 (MAPLEWOOD RD) 155775K
RECORDER AND DTMF CONTROLLER CIRCUITS
MILTON, OH M.P. BE-173.28
DESIGNED IRC/EBP
DIGITIZED IRC/BCL
CHECKED IRC/SWS
DATE 02-28-11
DESIGN DATE 07-18-16
01-23-18
REV. NO. 2
3
DRAWING
SHEET NO
FILE BE17328
SHEET C05

	DEFAULTS AND/OR STYLE	FIELD RECORD
EVENT ANALYZER EXECUTIVE PROGRAM	VERSION 2.7, COMPILED ON NOV. 11, 2003	VERSION ____, COMPILED ON _____ (FIELD TO ENTER)
CSXT USER PROGRAM (IF LOADED)	VERSION 1.01, COMPILED ON 12-01-03 (MM-DD-YY)	VERSION ____, COMPILED ON _____ (FIELD TO ENTER)
SYSTEM SETTINGS		
DATE & TIME (ENABLE DAYLIGHT SAVINGS TIME = Y (YES)	MM-DD-YY 23:01:59	n/a
MILE POST	XYZ-789.01	BE-173.28
SITE NAME	MAIN ST (SR-17,US-1)	TR 22 (MAPLEWOOD RD)
DOT NUMBER	123456A	155775K

BATTERY INPUTS	DC 01	DC 02	DC 03	DC 04
CHANNEL	1	2	3	4
BATTERY CHANNEL NAMES	X-B BULB BATTERY	OB ELECTRONIC BATTERY	B-G GATE BATTERY	SPARE
BATTERY CHANNEL I.D.	X-B	OB	B-G	SP
SAMPLE PERIOD	500 ms	500 ms	500 ms	10,000 ms
RESOLUTION	00.2 V	00.2 V	01.0 V	02.0 V

DIGITAL INPUTS	DI 01	DI 02	DI 03	DI 04	DI 05
CHANNEL	1	2	3	4	5
NAME		ISLAND TRACK 1		MAINTENANCE PB	
ID	SP	ISL	SP	MPB	SP
ON NAME		ISL 1 UP		MAINTENANCE PB HI	
OFF NAME		ISL 1 DN		MAINTENANCE PB LOW	
ON DEBOUNCE TIME	1000 ms	100 ms	1000 ms	100 ms	1000 ms
OFF DEBOUNCE TIME	1000 ms	100 ms	1000 ms	100 ms	1000 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms

DIGITAL INPUTS	DI 06	DI 07	DI 08	DI 09	DI 10
CHANNEL	6	7	8	9	10
NAME		STANDBY 1		80 DAXR	BELL - REC
ID	SP	STANDBY 1	SP	80 DAXR (SP)	BELL - REC
ON NAME		STANDBY UNIT		80 DAXR UP	BELL RINGING
OFF NAME		PRIMARY UNIT		80 DAXR DN	BELL NOT RINGING
ON DEBOUNCE TIME	1000 ms	100 ms	1000 ms	1000 ms	100 ms
OFF DEBOUNCE TIME	1000 ms	100 ms	1000 ms	1000 ms	100 ms
TOGGLE PERIOD	5000 ms	500 ms	500 ms	500 ms	500 ms
				100 ms	
				100 ms	

DIGITAL INPUTS	DI 11	DI 12	DI 13	DI 14	DI 15	DI 16
CHANNEL	11	12	13	14	15	16
NAME		DTMF/TEST	GATE VERTICAL	GATE HORIZONTAL	XR	AC POWER OFF
ID	SP	DTMF	GP	GDP	XR	POR
ON NAME		DTMF TEST ON	GATE VERTICAL	GATE HORIZONTAL	XR UP	AC POWER ON
OFF NAME		DTMF TEST OFF	GATE NOT VERTICAL	GATE NOT HORIZONTAL	XR DN	AC POWER OFF
ON DEBOUNCE TIME	1000 ms	100 ms	100 ms	100 ms	100 ms	100 ms
OFF DEBOUNCE TIME	1000 ms	100 ms	100 ms	100 ms	100 ms	100 ms
TOGGLE PERIOD	500 ms	500 ms	500 ms	500 ms	500 ms	500 ms

EVENT ANALYZER ETHERNET PORT SETUP	
	IP ADDRESS
ETHERNET DIAGNOSTIC PORT (TOP)	192.168.13.2
ETHERNET REMOTE PORT (BOTTOM)	192.168.13.1

MODULE-DIGITAL 4 QUAD CURRENT SENSOR SERIAL NUMBER: [_____] (BLANK UNTIL AIS RECEIVED)				
RESOLUTION (AMPS RMS) : [00.2] ARMS				
AUTOMATICALLY ALLOCATED DIGITAL INPUT	DI 17	DI 18	DI 19	DI 20
DIGITAL 4 QUAD CURRENT SENSOR	1	2	3	4
NAME	E1C	E2A	E1A	E2C
ID	E1C	E2A	E1A	E2C
LIT BULB COUNT ON EACH CIRCUIT	4	4	4	4
CURRENT READING IN AMPS AT APPROXIMATE 10.0 VOLTS BULB VOLTAGE	2.6	2.6	2.6	2.6

CHANNEL	1	2	3	4
NAME	RELAY OUTPUT 01	RELAY OUTPUT 02	RELAY OUTPUT 03	RELAY OUTPUT 04
I.D.	RLY01	RLY02	RLY03	RLY04
ON NAME	ON	ON	ON	ON
OFF NAME	OFF	OFF	OFF	OFF
PULSE DURATION	1000 ms	1000 ms	1000 ms	1000 ms

PORT	USER	AUX 1	MODEM/AUX 2
BAUD RATE	38400	9600	38400
PARITY	N	N	N
DATA BITS	8	8	8
STOP BITS	1	1	1
FLOW CONTROL	NONE	NONE	NONE

o-o-o = IN
x-x-x = OUT

106485 0H2017442
01-23-18 XRL/JWG/

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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 22 (MAPLEWOOD RD) 155775K

RECORDER PROGRAM
MILTON, OH M.P. BE-173.28

DESIGNED	DIGITIZED	CHECKED	DATE
IRC/EBP	IRC/BCL	IRC/SWS	02-28-11
DESIGN DATE 07-18-16 (01-23-18)	REV. NO. 2 (3)	DRAWING -----	SHEET NO -----
		FILE BE17328	SHEET C06

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S01	TRACK AND SIGNAL PLAN	⧸								
P01	MINIMUM PROGRAM STEPS REPORT CWE-80	⧸								
E01	POWER DISTRIBUTION	⧸								
C01	DETECTION DEVICE CONSIST CWE-80	⧸								
C02	DETECTION DEVICE CONSIST CWE-80	⧸								
C03	DETECTION CIRCUITRY CWE-80	⧸								
C04	CROSSING WARNING DEVICE LIGHT CIRCUITRY	⧸								
C05	CROSSING WARNING DEVICE CIRCUITRY	⧸								
C06	SEAR II₁ CONFIGURATION & FUNCTIONS	⧸								

⧸ = PLANS SENT TO FIELD (DISTRIBUTED)

☒ = PLANS AS-IN-SERVICED (UP TO DATE)

( ) = NOTE

NEW WORK

106485 0H2017442

01-23-18 XRL/JWG/

xorail

REVISIONS

REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2017442	01-23-17		

TO BE COMPLETED ON A.I.S.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 40 (MILTON RD.) 155774D

INDEX AND REVISIONS
MILTON CENTER, OH M.P. BE-172.80

4000GCP.101
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	I01

H.S.9128+85

2531 FT. — 67 FT. — 67 FT. — 2531 FT.

M.P. BE-172.80

16'

NORTH TO PERRY

(A) AXX

(✕)

E2 E1 E2A E1A

12'

10'3"

29°

28CWTO 267 HZ

[B1714ZT] AZT

156 HZ 80CWTO-1

8.3KHZ [P]

8'3"

E1B E1A E2A E1 E2 E2B (B)

12'

JOINS BE72328 SH. S01

80T1-1 80T2-1 TO 80 CWU

80R2-1 80R1-1 TO 80 CWU

NORTH STREET 17'

MATERIALS NOTE, ORDER SAFETY PLATFORM FOR HOUSE AND FLASHER IN SE QUAD

TR 40 (MILTON RD.)
155774D
LAT, 41°18'27"
LONG, 83°49'27"

6' x 6'

7 COND. #6 U.G.	5 COND. #6 U.G.
2 #6 U.G.TRK.	2 #6 U.G.TRK.
5 COND. #14 U.G.	4 #6 U.G.TRK.
3 COND. #6 W/GND. (150')	

5 COND. #14 U.G.

4 #6 U.G.TRK.

3 SP. 28DAX80 N28DAX80

2 SP. AXX AE1 NAE1 NXAE2 AE2

BX120-1 BX120-2 NX120 GND.

1 SP. BE1 NBE1 NBE2 BE2

80T1-2 80T2-2 80R1-2 80R2-2

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

NOTES,

1. 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS LED GATE ARM LIGHTS .3A MAXIMUM
2. (✕) = LOCATION OF HOUSE
3. (N) = APPROXIMATE COMPASS NORTH.
4. TRANSMITTER LEADS FOR MOTION OR PREDICTOR EQUIPMENT SHOULD BE CONNECTED ON THE BUNGALOW OR SHORT LEAD SIDE OF THE CROSSING.
5. ISLAND TRACK LEADS SHOULD BE CONNECTED 50 FEET FROM ROAD EDGE BUT ON NARROW ROADS (20' OR LESS) ISLAND LENGTH SHALL BE 120 FEET.
6. WARNING SYSTEM APPROACH CIRCUIT DISTANCES ARE TO BE MEASURED FROM THE ISLAND TRACK CONNECTIONS.

APPROACH LENGTHS TABLE DC, AFO, TYPE C, MOTION, CWT, OR OTHER	NORTHWARD TRACK 1 CWT	SOUTHWARD TRACK 1 CWT
STANDARD MINIMUM WARNING TIME IN SECONDS	25	25
ROADWAY GATE TIME IN SECONDS	0	0
CLEARANCE TIME IN SECONDS	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS ✳	0	0
PRESCRIBED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	27 SEC.	27 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS ✳	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	5	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	32 SEC.	32 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	2531	2531
HALF WIDTH OF ISLAND IN FEET	67	67
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	173.30	172.31

✳AUTHORIZING AGENCY, NONE

✳DATE OF REQUIREMENT, NONE

✳AMOUNT OF TIME (SEC.), NONE

= EXISTING

= NOTE

NEW WORK

106485 0H2017442

01-23-18 XRL/JWG/

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CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 40 (MILTON RD.) 155774D

TRACK AND SIGNAL PLAN
MILTON CENTER, OH M.P. BE-172.80

4000GCP.S01
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	S01

Minimum Program Steps Report

Location and SIN

DOT Number, 155774D
Milepost Number, BE-172.80
Site Name, TR 40 (MILTON RD)

SIN, 712538400916 *

* Parameter is part of office check number calculation.

MCF and Template Selection

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

Template = 2A,4 B1, 2 Rem (OCCN) *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE, module configuration
Chassis Type = Dual Two Track (OCCN) *

TEMPLATE, track 1-B1, Island
Track 1 , GCP Frequency = 156 Hz (OCCN) *
Track 1 , Approach Distance = 2531 ft (OCCN) *
Track 1 , Prime Warning Time = 30 sec (OCCN) *
Track 1 , GCP Transmit Level = High (Set in Field,TCN)
Track 1 , Isl Frequency = 8.3 kHz (OCCN) *

TEMPLATE, track 2-Remote Prime
Track 2 , GCP Frequency = 156 Hz (OCCN) *
Track 2 , Approach Distance = 2353 ft (OCCN) *
Track 2 , Prime Warning Time = 30 sec (OCCN) *
Track 2 , GCP Transmit Level = High (Set in Field,TCN)
Track 2 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *

TEMPLATE, track 2 Daxes
Track 2 , Dax A Used = Yes (OCCN) *
Track 2 , Dax A Warning Time = 32 sec (OCCN) *
Track 2 , Dax A Offset Distance = 2720 ft (OCCN) *

TEMPLATE, OOS
OOS Control = Display+OOS IPs (OCCN) *
OOS Timeout = 1 hrs (Set in Field)
T2 OOS Control = OOS Input 1 (OCCN) *

TEMPLATE, OP assignment 1
OUT 1.1 = T2 Dax A (OCCN) *

TEMPLATE, IP assignment SSCC
IN 7.2 = Not Used (OCCN) *
IN 7.4 = Not Used (OCCN) *
IN 7.5 = Not Used (OCCN) *
IN 8.2 = Out Of Service IP 1 (OCCN) *

GCP, track 1
Track 1 , Island Distance = 130 ft (Set in Field,TCN)

ADVANCED, site options
Daylight Savings = On (Set in Field)

SSCC, 1
SSCC 1 , Flash Rate = 55 (OCCN) *

SSCC, 2
SSCC 2 , Flash Rate = 55 (OCCN) *

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

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

* Parameter is part of office check number calculation.

Check Numbers

Office Check Number, 35693ED8
Config. Check Number, 29DA1774
(Based on MCF Revision 26)

Parameters not part of office check number calculation,

Track 1 , GCP Transmit Level = High (Set in Field)
Track 2 , GCP Transmit Level = High (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Track 1 , Island Distance = 130 ft (Set in Field)
Daylight Savings = On (Set in Field)

Comments

<none>

NEW WORK
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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 40 (MILTON RD.) 155774D

MINIMUM PROGRAM STEPS REPORT CWE-80
MILTON CENTER, OH M.P. BE-172.80

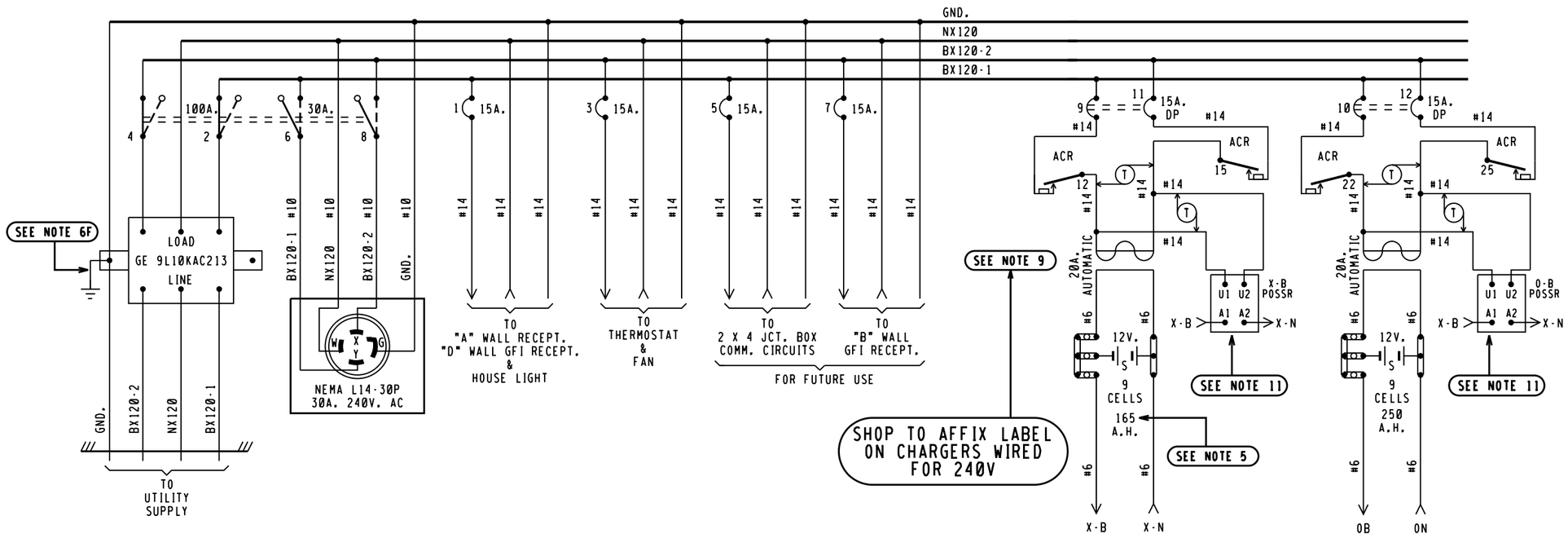
4000GCP.P01
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	P01

TOP ROW

	ACR			MCR			28DAXR									
	12	B	B77	9 F	11 F	N41	12	F	B8							
	15	B	C30	10	12	C48	15	F	C30							
	22	B				C49	22									
	25	B					23									
	32						25									
	35						32									
							35									



BX120-1	BX120-2
8.0 AMPS	8.0 AMPS

MAXIMUM LOAD CALCULATED PER SS360

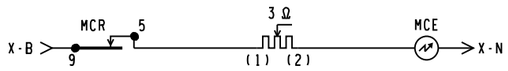
X-B POSSR					OB POSSR				
11	F	21	F	N70	11	F	21	F	N70

WALL/DIN RAIL MOUNTED

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 - 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 - LABEL ALL PRIMARY POWER WIRES WITH RED TAGS.
9 - CHARGERS WIRED FOR 240VAC
10 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)
11 - SOLID STATE VOLTAGE MONITOR BENDER MOD. VME 420-DW-1 DIN RAIL MOUNTED. OUTPUTS CONFIGURED NORMALLY CLOSED(NC). UNDERVOLTAGE SENSING MINIMUM OF 216 VOLTS AC.



( ) = NOTE

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106485 0H2017442
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6'X 6' PTC CROSSING HOUSE

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COMMUNICATIONS AND SIGNALS

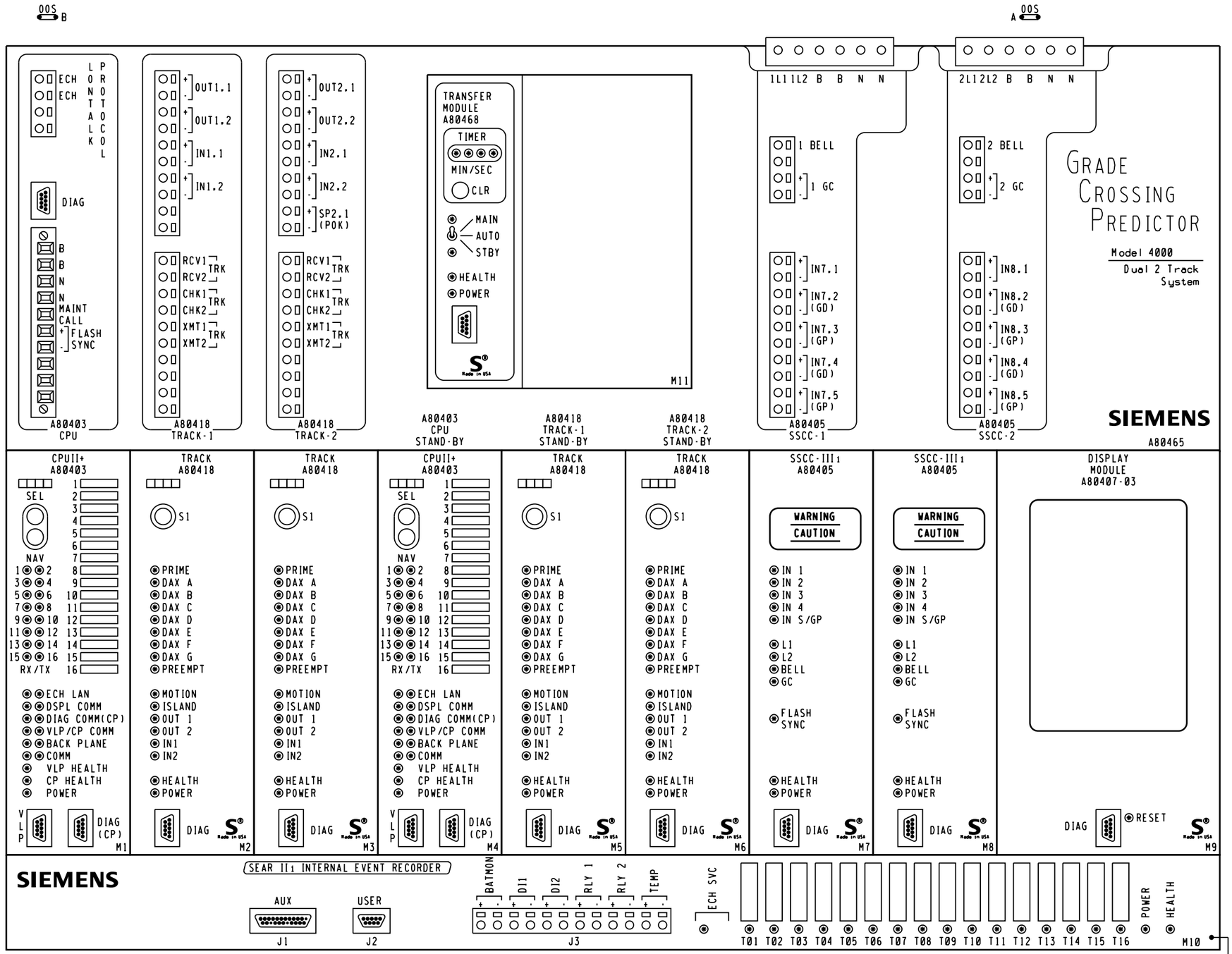
TR 40 (MILTON RD.) 155774D

POWER DISTRIBUTION
MILTON CENTER, OH M.P. BE-172.80

4000GCP.E01
REV, 01-24-17

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	E01



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 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. THIS 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-III1	A SIGNAL	A80405
M8	SSCC-III1	B SIGNAL	A80405
M9	DISPLAY MODULE		A80407-03
TOP CENTER	TRANSFER UNIT		A80468
LOWER BAY	SEAR II1	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 INDENTIFICATION 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.

NEW WORK
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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

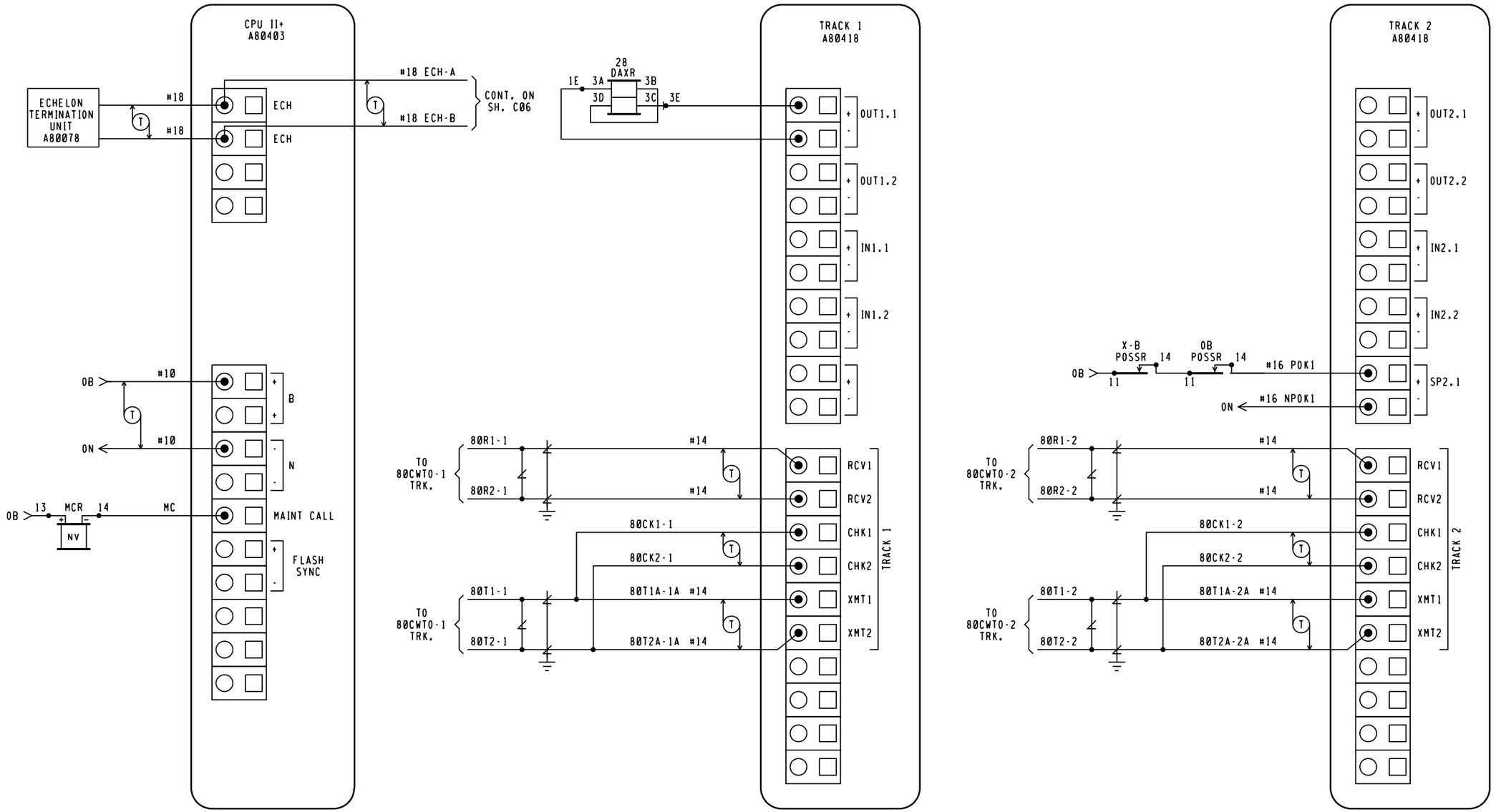
TR 40 (MILTON RD.) 155774D

DETECTION DEVICE CONSIST CWE-80
MILTON CENTER, OH M.P. BE-172.80

4000GCP.C01
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C01



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.

NEW WORK
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RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

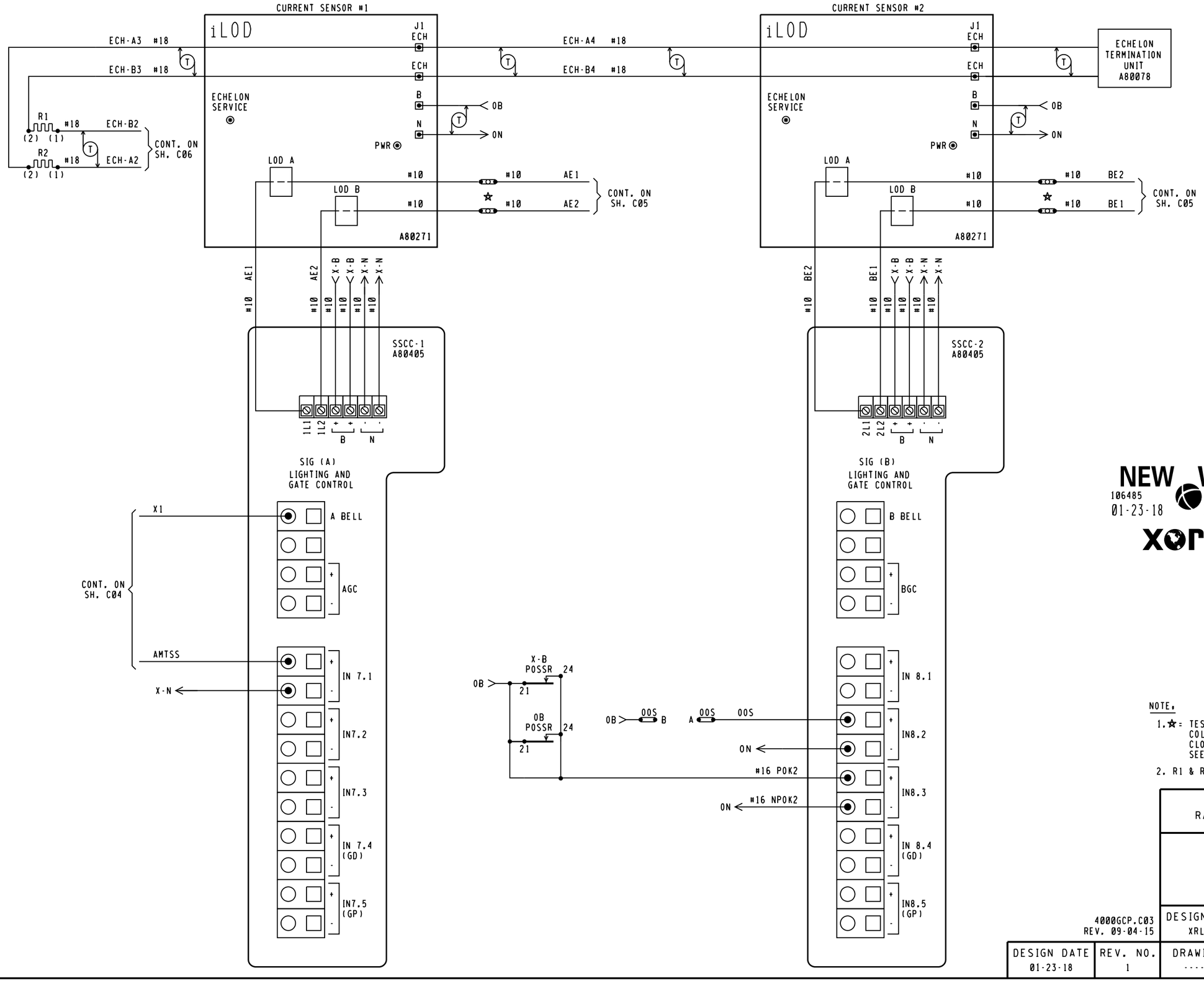
TR 40 (MILTON RD.) 155774D

DETECTION CIRCUITRY CWE-80
MILTON CENTER, OH M.P. BE-172.80

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C02



NEW WORK

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01-23-18 XRL/JWG/

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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).

NOTE:

1. ☆ = TEST LINKS MUST BE OPENED TEMPORARILY FOR COLD START OF REPLACEMENT SSCC MODULES AND CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS. SEE SECTION 8.8 OF 4000GCP REFERENCE MANUAL.
2. R1 & R2 = .5 WATT, 20Ω RESISTOR

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RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 40 (MILTON RD.) 155774D

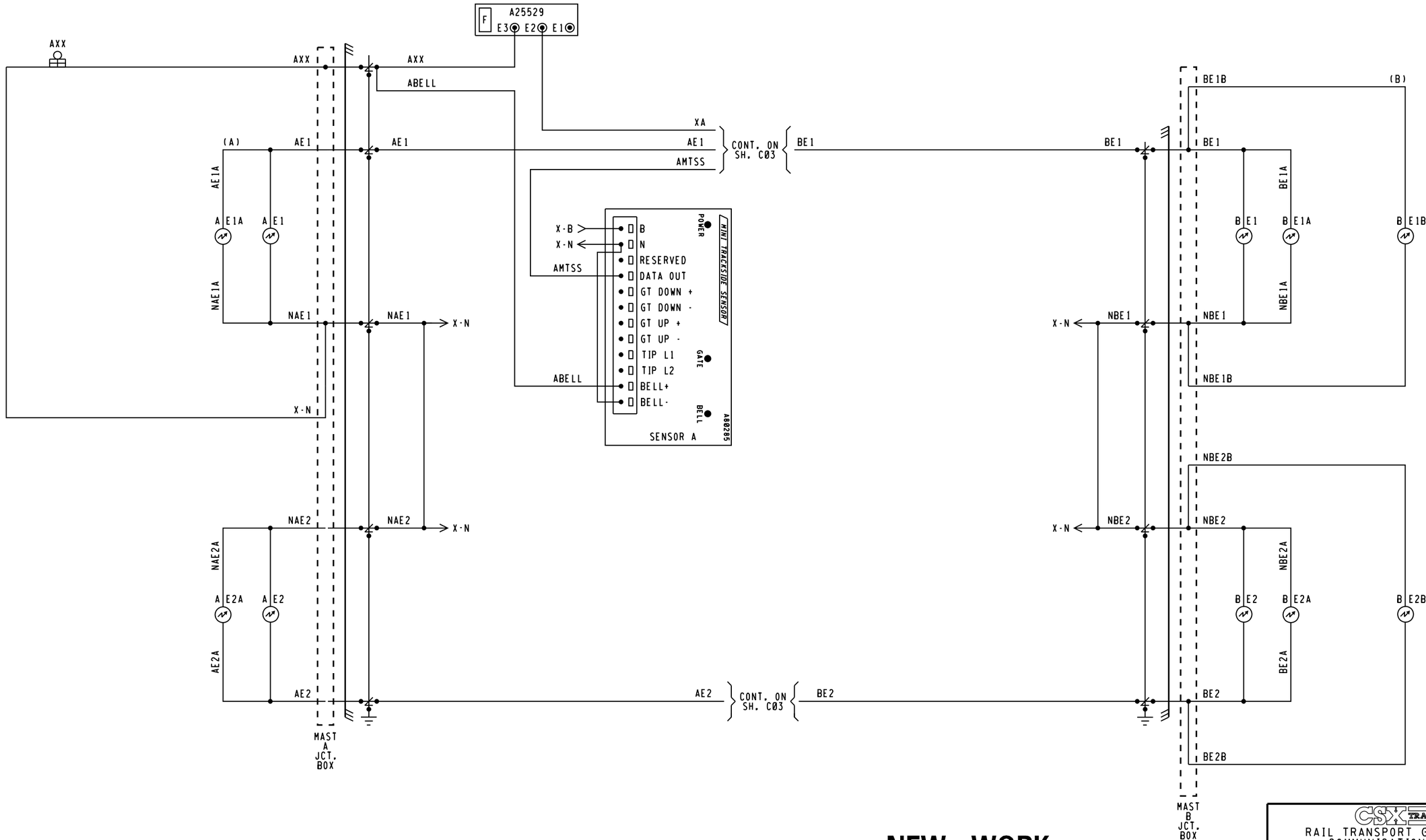
DETECTION CIRCUITRY CWE-80

MILTON CENTER, OH M.P. BE-172.80

4000GCP.C03
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C03



NOTES.

1. = TERMINAL IN JUNCTION BOX
2. WHEN 7 OR MORE LIGHTS ON A SINGLE STRUCTURE REFER TO SS382 FOR REQUIRED ARRESTERING
3. FEEDS TO ALL BUSSES AND LIGHT CIRCUITS ARE #10 FLEX
4. UNLESS NOTED ALL OTHER WIRING #16
5. CABLING SPECIFICATIONS SHOWN ON SH. S01

NEW WORK
106485 0H2017442
01-23-18 XRL/JWG/
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CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 40 (MILTON RD.) 155774D

CROSSING WARNING DEVICE LIGHT CIRCUITRY
MILTON CENTER, OH M.P. BE172.80

4000GCP.C05
REV. 09-04-15

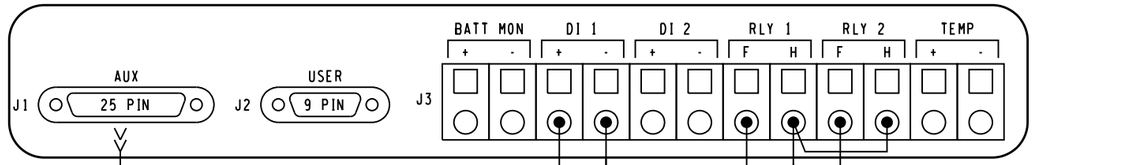
DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

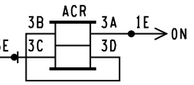
DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C04

WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.384.009.07.01 7.125.LLL.GGG.SS.DD
SERIAL INTERFACE	38,400,NONE,8,1/NOFLOW
SERIAL FORMAT	RAW
WAG TEST MODE	DISABLED
ECHELON ADDRESS	01.07
UDP PORTS	5000, 5001, 5002, 5003
ROUTE TABLE EXPIRY	5400 SEC
BROADCAST MEDIUM	IP ETHERNET
TCP PORTS	23, 10023, 6001, 6002
DHCP SERVER	DISABLED
IP ADDRESS	192.168.13.1
TYPE 7 ROUTE LENGTH	12--7RRLLLGGGSS
IP NETWORK MASK	255.255.255.0
WAG CIRCUIT ID	DISABLE
ROUTING REGION DOMAIN 1	OCGSERVER1.JAX.COM
ATCS SERVER UDP PORT NUMBER	6001
TELNET NUMBERS	WAG 6002, SERIAL 10023
DEFAULT GATEWAY IP	192.168.013.031

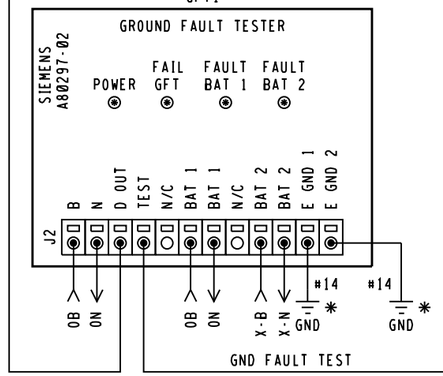
NOTE TO INSPECTOR,
AT INSTALLATION OF WAG,
OR UPDATE OF THE
CONFIGURATION, OR UPDATE
OF THE EXECUTIVE PROGRAM,
MARK-UP CONFIGURATION
TABLE FOR AS IN SERVICE
PLANS

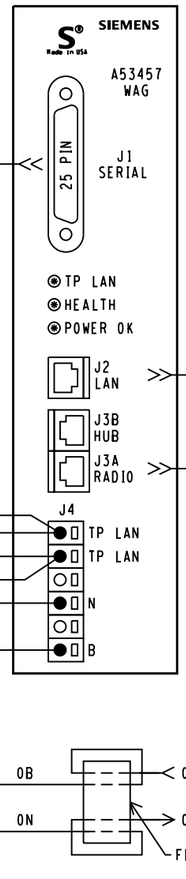
SEAR II: INTERNAL EVENT RECORDER I/O





GND FAULT DATA

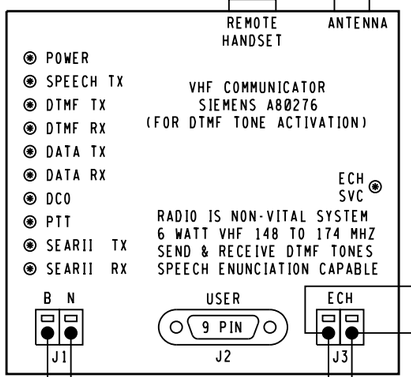




P/N Z706-02027-0020

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

**
SHIELDED COAXIAL
CABLE TO ANTENNA



CONT. ON SH. C03

#18 ECH-A2

#18 ECH-B2

ECH-B1 #18 — #18 ECH-B1

ECH-A1 #18 — #18 ECH-A1

ECH-A #18 — #18 ECH-A

ECH-B #18 — #18 ECH-B

CONT. ON SH. C02

FERRITE BEAD (NOTE 4)

ON — ON

OB — OB

FERRITE BEAD (NOTE 4)

OB — OB

ON — ON

FERRITE BEAD (NOTE 4)

** RJ45 10/100-BASE-T ETHERNET CONNECTION TO CSX NETWORK

** ISOLATED DC POWER FROM RADIO PORT TO POWER PACKET DATA MODEM

COMM NOTES,

1. WAG J3A PINOUTS,
   4 & 5 = +12VDC RADIO OUT
   7 & 8 = GND RADIO RETURN
2. WAG AND SEARII: ECHELON COMM THROUGH GCP4000 LONTALK PROTOCOL CONNECTION
3. REFER TO WAG INSTALLATION AND SETUP IN APPENDIX "A" GCP4000 SYSTEM CUT OVER TEST PROCEDURE AND CHECK OFF SHEET.

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)	
TO ACTIVATE PRESS,	774#
TO DE-ACTIVATE PRESS,	774*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)	

= NOTE

NEW WORK
106485 0H2017442
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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

TR 40 (MILTON RD.) 155774D

CROSSING WARNING DEVICE CIRCUITRY
MILTON CENTER, OH M.P. BE-172.80

4000GCP.C06
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C05

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II$_1$ EXECUTIVE PROGRAM	VERSION, 9V725A01	VERSION, _____
APPLICATION PROGRAM (IF LOADED)	VERSION, 9V864A01	VERSION, _____

NOTE TO INSPECTOR,
AT IN SERVICE OF SEAR II$_1$ OR UPDATE OF ITS INTERNAL EXECUTIVE PROGRAM OR ITS CSXT APPLICATION PROGRAM, NOTE THE VERSION NUMBER OF EACH PROGRAM MUST IN THE BLANK FIELDS.

SITE SET UP MENU	
FUNCTION	LED DISPLAY
DATE/TIME	XX-XX-XXXX XX:XX:XX
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EASTERN
SITE NAME	TR 40 (MILTON RD.)
MILEPOST	BE-172.80
DOT NUMBER	155774D
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS ADDRESS	7.125.384.009.99.01 (7.RRR.LLL.GGG.99.01)
SITE TYPE	COLLECTOR
OFFICE ADDRESS	2.125.00.0000 (2.RRR.NN.DDDD)
POLL ID	1
MODE	GEN/ATCS
WAMS XID	DISABLED
OFFICE COMM. DEVICE	■WAG (ECHELON) □DIRECT (RS232) □MCM (ECHELON) □MCM (RS232) □DIAL MODEM □S200 RADIO (RS422)
RADIO ATCS ADDR	7.125.384.009.07.01 (7.RRR.LLL.GGG.NN.01)
FIELD COMM. DEVICE	□WAG (ECHELON) ■NONE □VHF COMM. (ECHELON) □VHF COMM. (RS232) □SPREAD-SPECTRUM (RS232)
USER PORT BAUD	57,600
USER PORT DATA BITS	8
USER PORT PARITY	NONE
USER PORT STOP BITS	1
USER PORT FLOW CONTROL	NONE
AUX PORT BAUD	38,400
AUX PORT DATA BITS	8
AUX PORT PARITY	NONE
AUX PORT STOP BITS	1
AUX PORT FLOW CONTROL	NONE

( ) = NOTE

NEW WORK
106485 0H2017442
01-23-18 XRL/JWG/
xorail

INSPECTOR NOTE,
CURRENT VALUES MAY VARY DEPENDANT ON FIELD CONDITIONS, MARK UP PER ACTUAL READINGS FOR IN-SERVICE REVISION.

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	X.X
CURRENT SENSOR (1) AE2, LAMP SET UP	4	□BULBS ■LED	X.X
CURRENT SENSOR (2) BE1, LAMP SET UP	5	□BULBS ■LED	X.X
CURRENT SENSOR (2) BE2, LAMP SET UP	5	□BULBS ■LED	X.X

INSPECTOR NOTE,
VHF RADIO CHANNEL AND DATA CHANNEL = ENGINEERING CHANNEL. CHOOSE PROPER FREQUENCY FROM VHF RADIO CHANNELS.

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

NOTE 7

MENU → CONFIGURATION → MODULES → ADD MODULE	
MODULE TYPE	WAG
MODULE NAME	DEFAULT
WAG ECHELON NODE	7

NOTE,
REFER TO WAG INSTALLATION AND SETUP IN APPENDIX "A" GCP4000 SYTEM CUT OVER, TEST PROCEDURE AND CHECK OFF SHEET.

MEASURE BATTERY VOLTAGE AT INPUT			
BATTERY VOLTAGE	0B	XXXX	VOLTS
BATTERY VOLTAGE	X-B	XXXX	VOLTS
BATTERY VOLTAGE	B-G	XXXX	VOLTS

INSPECTOR NOTE,
VOLTAGE VALUES MAY VARY DEPENDANT ON FIELD CONDITIONS, MARK UP PER ACTUAL READINGS FOR IN-SERVICE REVISION.

NOTE 6

PROGRAM MENU SELECT		
EDIT DIGITAL INPUTS	■ NO	□ YES
EDIT BATTERIES	■ NO	□ YES
EDIT RELAYS	■ NO	□ YES
EDIT TEST LED'S	■ NO	□ YES
EDIT ILOD1 SENSOR ☆	■ NO	□ YES
EDIT ILOD2 SENSOR ☆	■ NO	□ YES
EDIT ILOD3 SENSOR ☆	■ NO	□ YES
EDIT ILOD4 SENSOR ☆	■ NO	□ YES
EDIT VHF SETTINGS	■ NO	□ YES
GCP4K ATCS SUBNODE	16	

☆STAR = OPTIONS SHOWN DEPENDANT ON NUMBER OF ILODS SELECTED

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
OPTION	SELECTION
NOTE 9 - RESET NAMES / MODULES	NO ■ YES □
RAILROAD NUMBER	125
CROSSING CONFIGURATION	NORMAL ■ SPLIT GATE □ EXTERNAL ENTRANCE GATE CONTROLLER(S) □
AND1 USED AS XR	NO □ YES ■
AND2 USED AS XR	NO ■ YES □
AND3 USED AS XR	NO ■ YES □
AND4 USED AS XR	NO ■ YES □
AND5 USED AS XR	NO ■ YES □
AND6 USED AS XR	NO ■ YES □
AND7 USED AS XR	NO ■ YES □
AND8 USED AS XR	NO ■ YES □
ENTRANCE GATES*	0 ■ 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □
GATE POSITION FAIL*	20 SECS.
NOTE 8 - BATTERY BANKS*	1 ■ 2 □ 3 □
BATT MON USED*	NO ■ YES □
OB RESOLUTION*	0.2 □ 0.5 □ 1.0 ■
X-B RESOLUTION*	0.2 □ 0.5 □ 1.0 ■ NOT PRESENT □
X-B2 RESOLUTION*	0.2 □ 0.5 □ 1.0 □ NOT PRESENT ■
BATT MON RESOLUTION*	0.2 □ 0.5 □ 1.0 □ NOT PRESENT ■
INTERNAL CROSSING CONTROLLERS*	0 □ 1 □ 2 ■
EXTERNAL CROSSING CONTROLLERS*	0 ■ 1 □ 2 □
VHF COMMUNICATOR*	YES ■ NO □
NOTE 1 - DTMF ACTVATION*	YES ■ NO □
ACTIVATION CODE	774
ACTIVATION TIMEOUT	(60 SEC)
ıLOD MODULES*	0 □ 1 □ 2 ■ 3 □ 4 □
NOTE 2 - ANY LED BULBS USED*	NO □ YES ■
AUTO INSPECTIONS*	YES □ NO ■
BELL SENSORS*	0 □ 1 ■ 2 □ 3 □ 4 □
BELL SENSOR TSS 1*	NO □ YES ■
BELL SENSOR TSS 2*	NO ■ YES □
BELL SENSOR TSS 3*	NO ■ YES □
BELL SENSOR TSS 4*	NO ■ YES □
BELL SENSOR TSS 5*	NO ■ YES □
BELL SENSOR TSS 6*	NO ■ YES □
BELL SENSOR TSS 7*	NO ■ YES □
NOTE 3 - BELL SENSOR TSS 8*	NO ■ YES □
BELL ON*	GATES LOWERING □ GATES MOVING □ ALWAYS ■
GFT'S	YES ■ NO □
BATTERIES ON GFT1	1 □ 2 ■
NOTE 4 - GATE TIP SENSORS*	YES □ NO ■
RTU	NO ■ YES □
NOTE 5 - VHF VOICE CHANNEL	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □
VHF DATA CHANNEL	1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □
USE NON-CRITICAL FEATURE*	NO ■ YES □
FULL APPROACH MOVE ALARMS*	ACTIVATE ■ DO NOT ACTIVATE □
ENABLE PASSWORD	NO ■ YES □

NOTES,

1. OPTION AVAILABLE IF VHF COMMUNICATOR = YES LAST 3 DIGITS OF DOT NUMBER.
2. OPTION AVAILABLE IF ıLODS.
3. OPTION AVAILABLE IF BELL SENSORS.
4. OPTION AVAILABLE IF GATES.
5. OPTION AVAILABLE IF VHF RADIO.
6. ONLY YES IN SPECIAL CIRCUMSTANCES.
7. SELECT "MENU" THEN "CONFIGURATION" FROM SEAR II INTERFACE KEYPAD TO ACCESS MODULE CONFIGURATION MENU.
8. BATTERY BANKS* = NUMBER OF BANKS EXCLUDING THE BANK APPLIED TO THE BAT MON SEAR INPUT
9. YES ON INITIAL SETUP

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

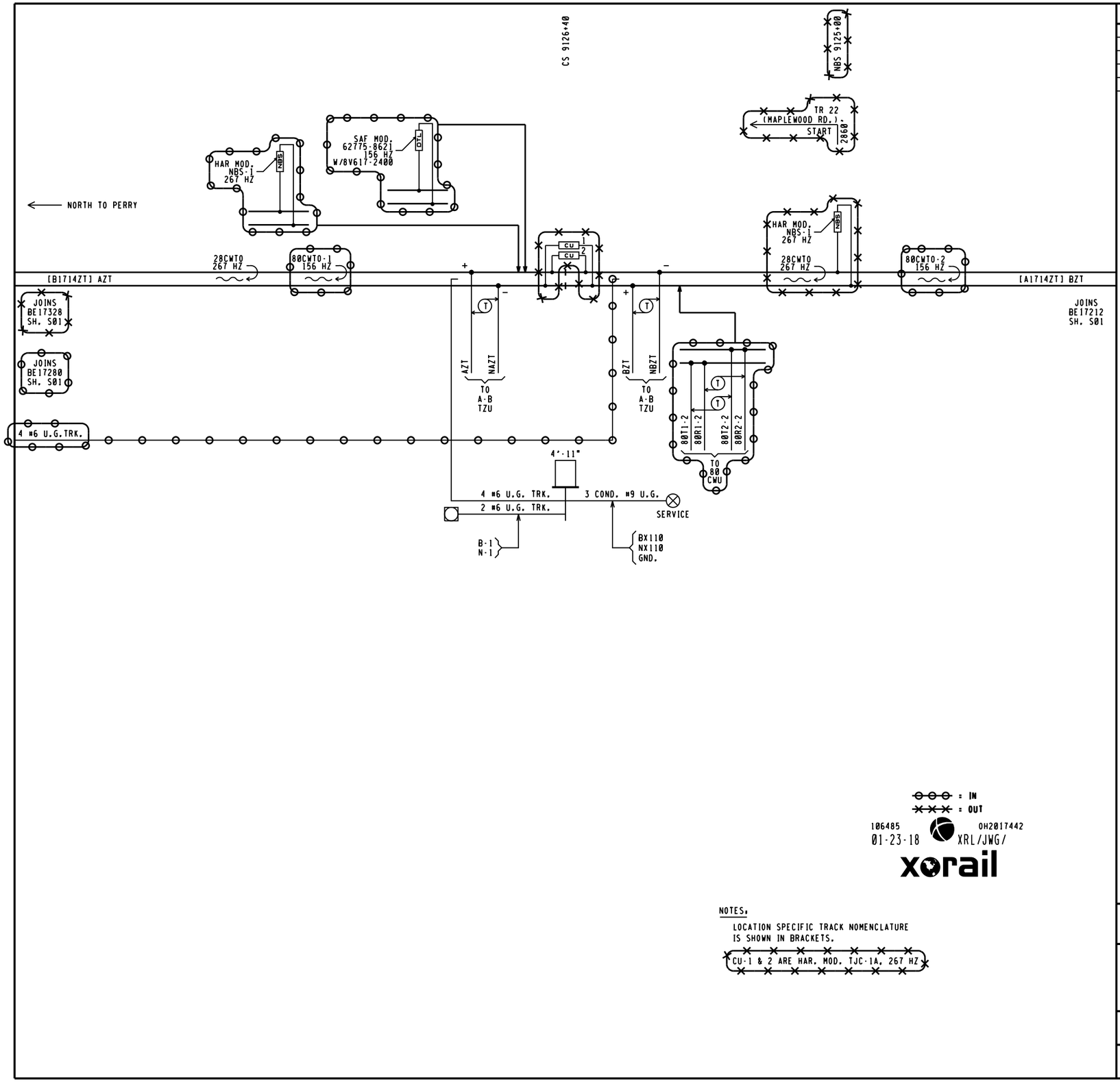
TR 40 (MILTON RD.) 155774D

SEAR II$_1$ CONFIGURATION & FUNCTIONS
MILTON CENTER, OH M.P. BE-172.80

4000GCP.C07
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	01-23-18

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
01-23-18	1	-----	-----	BE17280	C06



: IN

: OUT

106485 OH2017442

01-23-18 XRL/JWG/

xorail

NOTES:

LOCATION SPECIFIC TRACK NOMENCLATURE IS SHOWN IN BRACKETS.

CU-1 & 2 ARE HAR. MOD. TJC-1A, 267 HZ

REVISIONS	
11-10-03 SWE	OH1999040
01-19-04 SAF	OH20000520
11-07-11 IRC	OH2010094
09-01-16 SSE	OH2015034
02-28-17 XRL	OH2016035

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

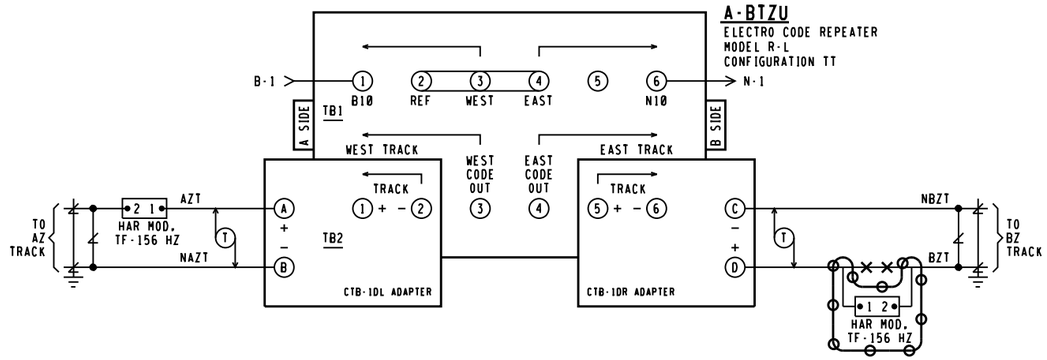
REPEATING CUT

TRACK PLAN

MILTON CENTER, OH M.P. BE-172.78

DESIGNED	DIGITIZED	CHECKED	DATE
SWE	SWE	SWE	11-01-99

NEXT FILE	NEXT SH	FILE	SHEET
BE17278	E01	BE17278	S01



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= OUT

106485
01-23-17
XRL/JWG/
OH2017442

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REVISIONS	
11-10-03 SWE	OH1999040
01-19-04 SAF OH2000052D	
09-01-16 SSE	OH2015034

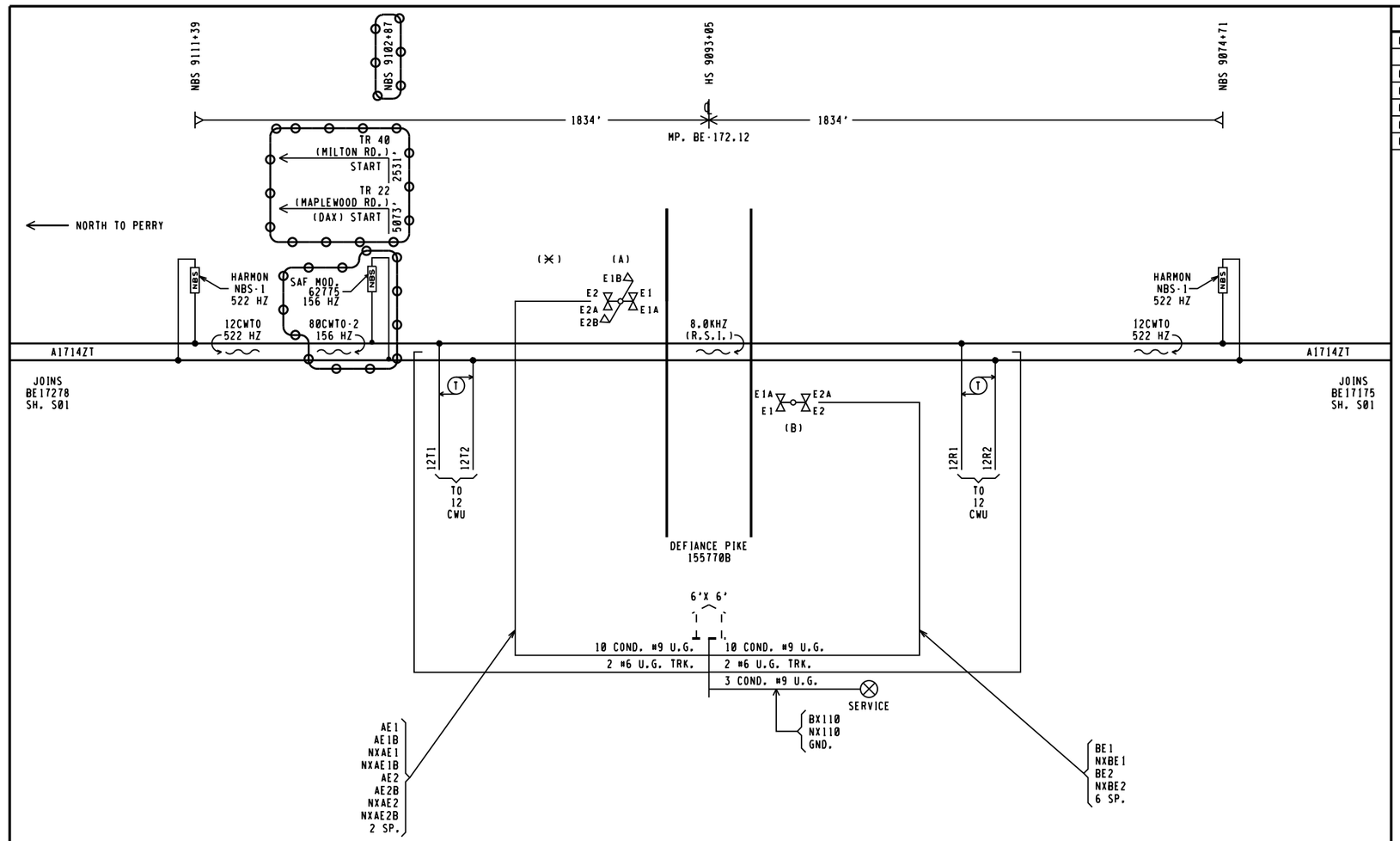
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

REPEATING CUT

CIRCUITS
MILTON CENTER, OH M.P. BE-172.78

DESIGNED	DIGITIZED	CHECKED	DATE
SWE	SWE	SWE	11-01-99

NEXT FILE	NEXT SH	FILE	SHEET
.....	.....	BE17278	C01



= IN

106485 01-23-17 OH2017442 XRL/JWG/

xorail

NOTES.

1. 12" LED MAXIMUM CURRENT 1.7A AT 10 VOLTS
2. ISLAND DISTANCE BETWEEN FEED WIRES 120' MIN.
3. THE TRANSMITTER LEADS FOR MOTION OR PREDICTOR EQUIPMENT SHOULD BE CONNECTED ON THE BUNGALOW OR SHORT LEAD SIDE OF CROSSING.

REVISIONS

01-28-02 SWE	OH1999040, OH1999040A
11-10-03 SWE	OH1999040
01-19-04 SAF OH20000520	
07-19-10 XRL	OH2010048
01-24-12 XRL	OH2011099
05-29-13 IRC OH2012055	
02-28-17 XRL	OH2016035

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

DEFIANCE PIKE 155770B

TRACK AND SIGNAL PLAN

MILTON CENTER, OH M.P. BE-172.12

DESIGNED	DIGITIZED	CHECKED	DATE
SWE	SWE	SWE	11-01-99

NEXT FILE	NEXT SH	FILE	SHEET
BE17212	E01	BE17212	S01

FILE.

OHIO RAIL DEVELOPMENT COMMISSION

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

May 25, 2016

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

RECEIVED
ORDC
2016 JUN -6 PM 3:04

Subject: Grade Crossing Warning Device Improvements
Wood County, Milton Road, DOT # 155774D, PID 101925

Dear Ms. DeCesare:

A diagnostic review was conducted at the subject grade crossing on 9/23/2015. As a result of the review, the devices will be upgraded to automatic flashing lights and roadway gates.

This project shall be completed in compliance with Agreement No. 17427, dated May 3, 2013, entered into by the State of Ohio and CSX Transportation (CSX) and incorporated as if fully rewritten herein. This construction shall also meet the general terms and conditions under the Moving Ahead for Progress in the 21st Century Act (MAP-21) and subsequent amendments and the State of Ohio's Federally Funded Warning Device Program.

Preliminary engineering (PE) and construction costs shall be borne one hundred percent (100%) by ORDC. Reimbursable costs will be limited by the ORDC based on approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to CSX and may be amended by the ORDC based on revised estimates and bid tabulations.

This Letter Agreement and the approved plans constitute the scope of the project. CSX shall notify ORDC in writing of any changes in the scope of work which are not in the approved plans and estimates and secure approval in writing of same before the work is performed.

PE will not be commenced by CSX prior to ORDC issuing a PE authorization. PE will be submitted by CSX to ORDC within ninety (90) days or other time specified by ORDC in the PE authorization. Construction will not be commenced by CSX prior to ORDC issuing a construction authorization. Construction will be completed by CSX within nine (9) months or other time specified in the time specified by ORDC in the construction authorization.

Please indicate your acceptance of the terms and conditions of this Letter Agreement by signing and returning one (1) copy to me at the address listed above and retain a copy for your files. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be a duplicate original, but all of which taken together shall be deemed to constitute a single Agreement.

Sincerely,

Matthew R. Dietrich
Executive Director

CSX Transportation:

By: Tony C. Bellamy

Title: Director Project Management - Public Projects

Date: 5/31/16

WOO Milton Rd PID 101925 CSX

OHIO RAIL DEVELOPMENT COMMISSION

Ohio Rail Development Commission
Mail Stop 3140, 1980 W. Broad Street,
Columbus, OH 43223

Diagnostic Review Team Survey

Reason for Survey: (e.g. formula, accident, constituent, etc.) Formula RANK = 1261

Date: WED. SEPT 23, 2015

Location Data

Street or Road Name:	Milton Road		
Route/Road Number (i.e. Twp., Co., SR or US)	TR 40	US DOT No.:	155774D
County: WOO	Township:	City: (In or Near)	Vil. Of Milton Center
Railroad Name: CSX Transportation	Railroad Division: Louisville	Branch/Line Name:	
Nearest RR Timetable Station: Custar		RR Milepost:	172.8

On-Site Review Team

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

1. DON DAMRON OHIORAILDEVCOMM, 614-917-8466, don.damron@dot.ohio.gov
2. JOHN FEEHAN TRUSTEE MILTON 419-669-3153
3. Cathy Stout ORDC 614 644 0313
4. GREG GRONBACH ORDC 614-275-1346
5. Stanley Wilhelm Milton Twp Trustee 419-669-2570
6. Chuck Hoilo - Milton Twp Trustee 419-525-1512
7. Amanda DeCesare CSX 859 372 6124
8. STEVE CRAWFORD Twp Fiscal officer - MILTON TWP 419-669-2282
9. GEORGE MARTIN PUCO 614-752-9107

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☑ Yes	☐ No	" "
'Stop' Signs	☐ Yes	☑ No	STOP SIGN ON POPLAR RD.
'Stop Ahead' Signs	☐ Yes	☑ No	"STOP AHEAD" ON POPLAR RD.
Pavement Markings (condition?)	☐ Yes	☑ No	CHIP + SEAL ROAD SURFACE
Crossbucks	☑ Yes	☐ No	W/ YIELD SIGNS
Number of Tracks Signs	☐ Yes	☑ No	ONE TRACK
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	
Hazard Ranking	1261 Date Run: 8/18/15	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	10	OK
< 1 per day		
Day thru trains	4	
Night thru trains	6	
Daytime switching movements		
Nighttime switching movements		
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	50	OK
Typical train speed	50	
Amtrak		

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☑ Yes ☐ No (1200' REQUIRED)

If multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☑ No

Can one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☑ No

Can one or more tracks be eliminated through the crossing? ☐ Yes ☑ No

Are 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: Milton Twp

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	232 (2007)	
Highway paved	☒ Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☑ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 18 ft.		
Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: 55 MPH		
School Bus Operation: ☐ No ☒ Yes 8 Amount	MILTON RD.	
Hazardous Materials Trucks: ☐ No ☐ Yes 10% 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) _____		

570' REQUIRED

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

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 HUMP IN CROSSING PREVIOUSLY REMOVED BY TWP.

If yes,

Improvement type_____ Lead Agency _____ 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:

BOWLING GREEN/CUSTAR

Utility Information

Is commercial power available? ☐ No ☑ Yes TOLEDO EDISON IN VILLAGE

Utility Provider (Company Name) TRI-COUNTY/TIME WARNER Phone Number _____

Nearest Available Power Source _____

What other utilities are present? (add locations to sketch)

☑ Gas ☐ Cable ☑ Telephone ☑ Fiber Optic Cable

☐ Petroleum ☑ Water ☑ Sanitary Sewer

☐ Other _____

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

Comments:

- VG FIBER ON BOTH SIDES OF ROADWAY
- WATER AND SEWER ON EAST SIDE OF ROADWAY.

Potential Red Flags / Project Challenges

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

NA

Crossing Consolidation or Closure:

CROSSING MAY BECOME PART OF A CORRIDOR CONSOLIDATION INVOLVING MULTIPLE CROSSINGS IN MILTON CENTER.

Real Estate or ROW:

CORRIDOR CONSOLIDATION MAY INVOLVE CONST. OF NEW ROAD EXTENSION FROM SUGAR ST TO MILTON RD., CREATING A NEW INTERSECTION IN THE VICINITY OF THIS CROSSING.

Culverts / Drainage / Ballast Conditions:

CROSSING UPGRADE WOULD BE NEAR A SIGNIFICANT CULVERT IN THE SW + NW QUADES NEAR CROSSING.

Roadway and/or Sidewalks:

ROADWAY = 60'
RAILROAD = 100'

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

CIRCUITRY UPGRADE/CHANGES SHOULD BE PLANNED AS PART OF OTHER CROSSING UPGRADES IN MILTON CENTER.

Environmental:

NO

Other:

NO

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS /Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	ONE BELL
☐ Upgrade circuitry / type	
☒ Sidelights SIDELIGHTS NEEDED	IN NW QUAD
☒ Guardrail Needed	POSSIBLE/OPTIONAL IN NW QUAD
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	NE/SE QUAD POSSIBLE
☐ Other (define)	

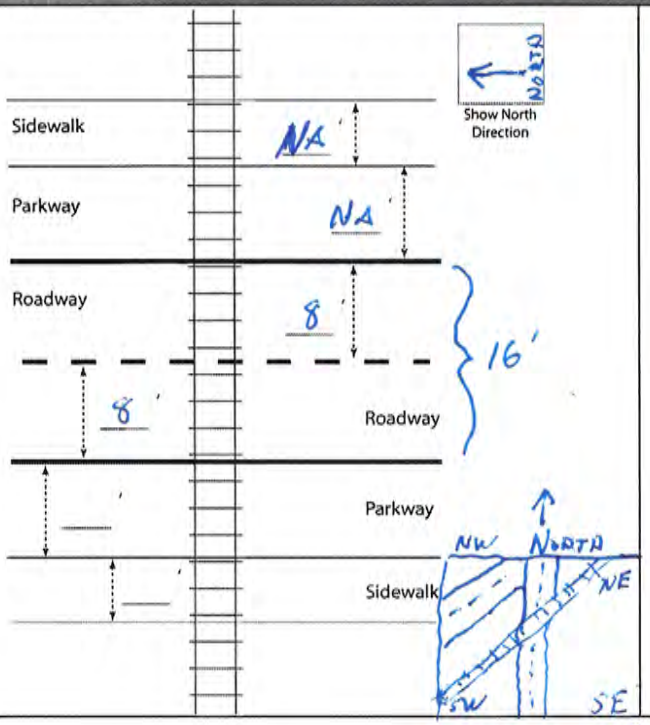
Comments:
TWP: "YES" L+G / ORDC: "YES" TO L+G
CSX: "YES" L+G / PUCO - YES

☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	

☐ Other (define) 10/24/17 RECOMMENDATION REVISED DUE TO PROBLEMATIC ROADWAY GEOMETRY. UPGRADE TO FLASHERS ONLY. *

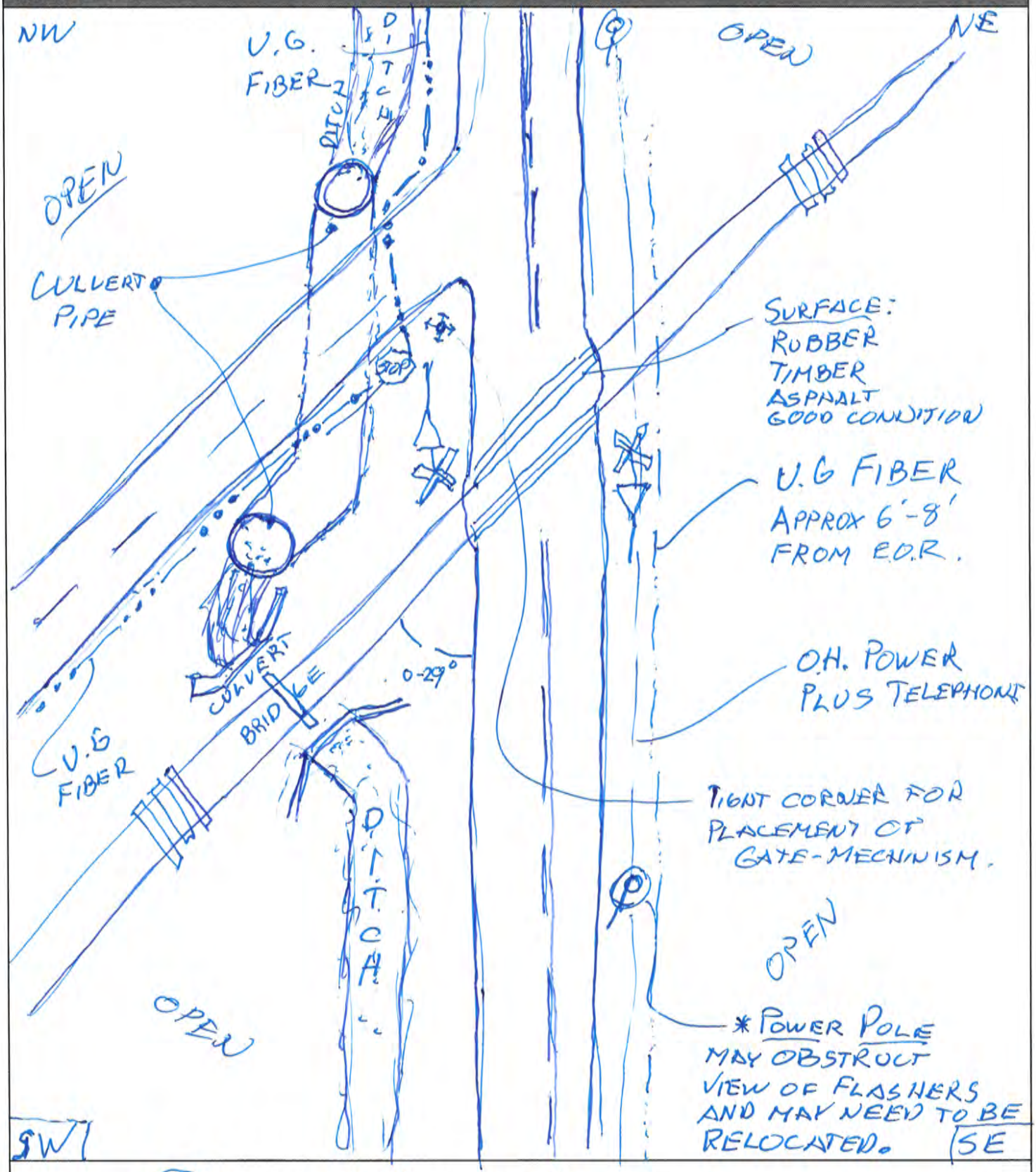
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):

Field Dimensions



*SEE ATTACHED MTG. NOTES.
TOWNSHIP TRUSTEES CONCURANCE WITH REVISED RECOMMENDATION TO FLASHERS ONLY (NO GATES).

Field Sketch



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

Sketch by: DAD 6-22-15

TABLE I

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.

OHIO RAIL DEVELOPMENT COMMISSION

Sheet ____ of ____

Subject MILTON RD. CSX RR CROSSING

Project ORDC PID#101925 DOT#155774D

Prepared by D. DAMRON Date 10/24/17 RR CSX

DUE TO THE REASONS EXPLAINED AND DISCUSSED WITH THE MILTON TOWNSHIP TRUSTEES, IN WOOD COUNTY, THE RECOMMENDATION FOR THE RAILROAD CROSSING WARNING DEVICES IS TO UPGRADE THE MILTON RD. CROSSING WITH MAST-MOUNTED FLASHING LIGHTS (NO-GATES).

ORDC WILL AUTHORIZE CSX TO DESIGN THE INSTALLATION AND FOLLOWING APPROVAL, CSX WILL BE AUTHORIZED TO CONSTRUCT THE WARNING DEVICE UPGRADE.

AGREED TO BY: Stanley Wilhelm
Robert Wilhelm
Sharon Feehan

AT THE MEETING OF THE TOWNSHIP TRUSTEES ON TUESDAY EVENING, ON OCTOBER 24, 2017.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

4/10/2018 1:34:36 PM

in

Case No(s). 18-0595-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# 155-774D, on Milton Road/TR 40 in Wood County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division