Public Utilities
Commission of Ohio

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 3/6/17

Re: PUCO Case No. 17-645-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the CSX Railroad Crossing, DOT# 155-776S, Portage Road/TR 21 in Wood County, Ohio.

On August 12, 2016, the Ohio Rail Development Commission (ORDC) authorized funding for CSX Transportation to install lights and gates at the Portage Road/TR 21, DOT#155-776S, grade crossing in Wood County, Ohio. The crossing was surveyed on April 29, 2016 and was found to warrant the upgrade. The electric utility provider for this crossing is the 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 $296,622.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

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

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

Please serve the following parties of record:

CSX Transportation, Inc.
Amanda DeCesare
Project Manager
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
Matt Zachary
Road Supervisor
19441 Mermill Road
Rudolph, Ohio 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, Supervisor, Rail Division, PUCO**

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

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

SUBJECT: **Wood County, TR 21, Portage Rd. / CSX Transportation**
DOT# 155776S
PID# 103461

DATE: **February 7, 2017**

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 4/29/2016. The Ohio Rail Development Commission (ORDC) attended the Diagnostic Survey. The Diagnostic Review Team recommended the improvement of warning devices to automatic flashing lights and roadway gates. Copies of the Diagnostic Review Team Survey form and 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 4/29/2016
CSX Force Account Estimate dated 11/11/2016
Proposed Crossing Layout – PE Approved Signal Layout

cc: Jill Henry, Rail Specialist, Rail Division, 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

February 7, 2017

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, TR 21, Portage Rd.,
DOT# 155776S
PID# 103461
CSX ACCT. CODE: OH1135

Dear Ms. DeCesare:

The Force Account Estimate dated 11/11/2016 for the referenced project has been reviewed and is acceptable and the Proposed Crossing Layout 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 $296,622.00. 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.state.oh.us, or Fax 614-728-4520, (cell phone: 614-917-8466; desk phone: 614-466-2509), and to the Public Utilities Commission of Ohio at George.martin@puc.state.oh.us (phone 614-752-9107). 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. The Proposed Crossing Layout places the warning devices at 10' from the edge of the roadway; however, the warning devices may be set at a minimum 8'- 3" from the edge of the roadway if this helps avoid the necessary relocation of the overhead utilities.

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

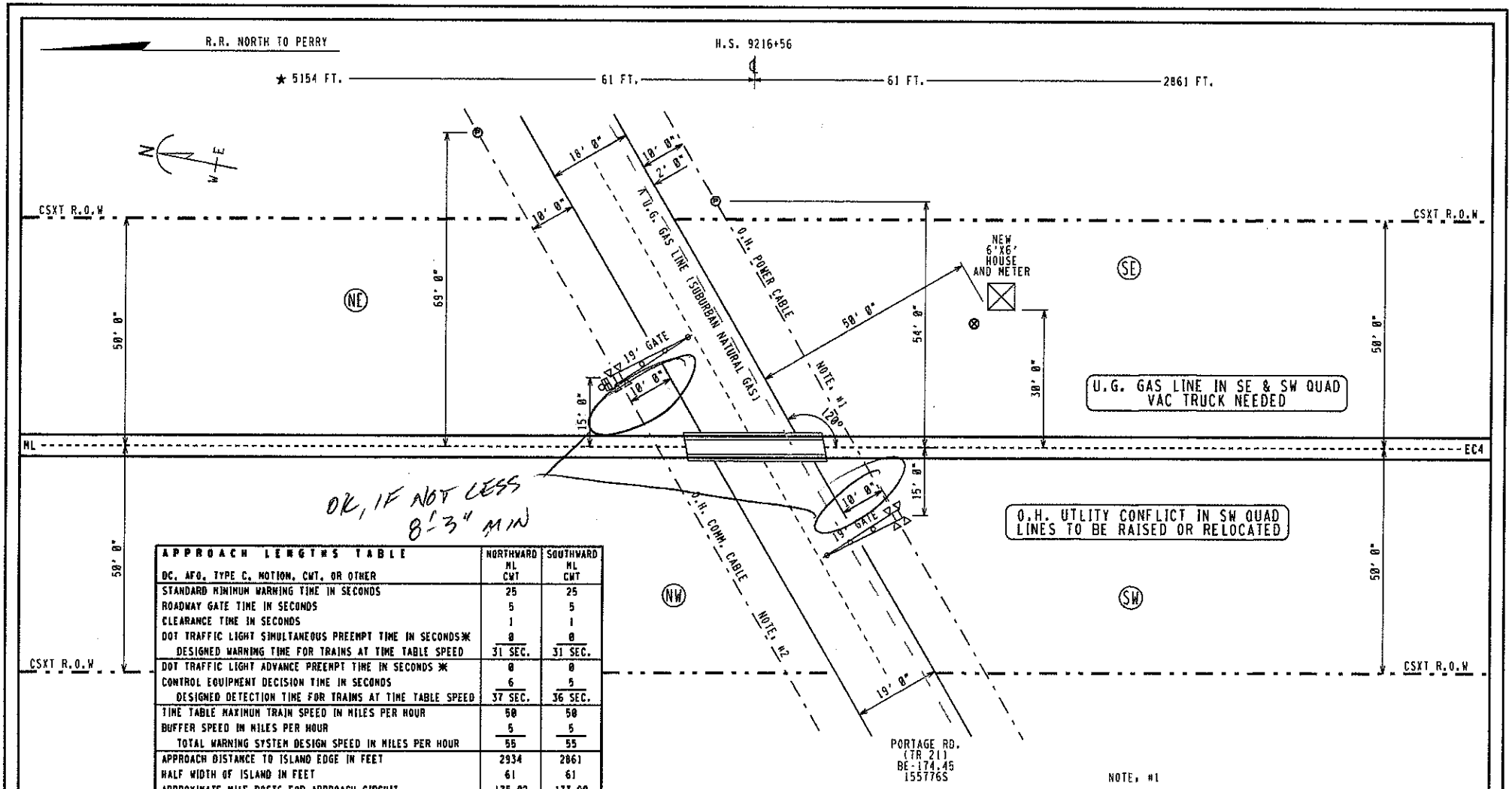
6. CSX will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.

Thank you for your assistance with these matters.

Sincerely,

Donald J. Damron
Project Manager

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



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	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 *	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	6	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	37 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	2934	2861
HALF WIDTH OF ISLAND IN FEET	61	61
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	175.82	173.98

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

★: ACTUAL APPROACH DISTANCE IS LONGER THAN THE CALCULATED APPROACH DISTANCE DUE TO DAXING

NOTE, #1
O.H. POWER CABLE (V.O.H.C. 27')
O.H. POWER CABLE (V.O.H.C. 32')

NOTE, #2
O.H. COMM. CABLE (VERIZON V.O.H.C. 34')

0 5 10 20

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

PRODUCED BY,
Xorail
A Wabtec Company

LEGEND					
CSX ROW	GUARD RAIL	METER SERVICE ⊗	GPS COORDINATES	REVISION DATES	FILE NAME: BE17445.H01
R/R POLELINE	O.H. POWER	POLE Ⓟ	41°19'42" N	11-07-2016	DATE DRAWN: 09-15-2016
GAS	FENCE	FIRE PLUG Ⓕ	83°48'31" W	. .	DRAWN BY: XRL
FIBER OPTIC	WATER	SEWER CAP Ⓢ	ELEV. 687'	. .	CHECKED BY: XRL
	SEWER	GAS VENT Ⓥ		. .	XRL #: CXS16-42586

STREET NAME: PORTAGE RD. (TR 21)
CITY & STATE: WESTON, OH / M.P. BE-174.45
DOT: 155776S
PROJECT #: OH2016040
OP #: OH1135

PROPOSED CROSSING LAYOUT
SCALE = 20:1

APPROVED AS TO SIGNAL DISPLAY LAYOUT ONLY
Thomas R. Zamp
11/23/16

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 - OH1135

ESTIMATE SUBJECT TO REVISION AFTER: **5/10/2017** **DOT NO.:** 155776S
CITY: Weston **COUNTY:** Wood **STATE:** OH
DESCRIPTION: Portage Rd. (TR 21) - Installation of Flashing Light Signals and Gates.

DIVISION: Louisville **SUB-DIV:** Toledo **MILE POST:** BE - 174.45
AGENCY PROJECT NUMBER: PID 103461

	PRELIMINARY ENGINEERING:				
212	Contracted & Administrative Engineering Services			$	4,000
	Subtotal			$	4,000
	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)		$	291,122
	TRACK WORK: (Details Attached)			$	-
	PROJECT SUBTOTAL			$	296,622
900	**CONTINGENCIES:**			$	-
	GRAND TOTAL	**********		$	296,622

DIVISION OF COST:

Agency	100.00%		$	296,622
Railroad			$	-
TOTAL	**********		$	296,622

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: 11/11/2016 **REVISED:** **DATE:** 11/15/2016

Estimate No. 128753

CSX Transportation

Portage Rd.- Installation of FLS&G (lights and gates) for Portage Road.
Weston, OH

DOT: 155776S OP: OH1135 CSX Project: OH2016040

Summary

Material	$ 69,641
Sales Tax	$ 0
Labor:	
Construction Labor (171 man-days)	$ 64,980
Shop Labor (7 man-days)	$ 2,660
Subsistence (171 man-days)	$ 25,650
Railroad Engineering, Preliminary	$ 2,444
Railroad Engineering, Construction	$ 9,747
Additives to Construction Labor	$ 77,235
Additives to Shop Labor	$ 3,162
Additives to Track Labor	$ 0
Additives to Engineering	$ 0
Equipment Expenses (0 work days)	$ 0
Waste Management (35 work days)	$ 420
Contract Engineering	$ 19,304
Freight	$ 5,379
Poleline Removal	$ 0
AC Power Service	$ 2,500
Salvage	$ 0
VAC-TRUCK	$ 8,000
TOTAL ESTIMATE COST	$ 291,122

Date: 11/07/2016
Estimated By: Bao Jin Chen

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

Shop Material List for CSX Project: OH2016040 (Effective: 11/07/2016)
Installation of FLS&Gs with 1 bells, new 6x6 house with remote monitoring and GCP 4000
WESTON, OH - BE 174.45

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0017120	1	11.52	6	69.12	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.26	6	19.56	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0018234	1	67.38	1	67.38	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	20.72	1	20.72	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	387.88	3	1163.64	CHARGER BATTERY ELC 12/20 D 20 AMP 10-19.9 VDC ROTARY SW
020-0055602	1	11.39	2	22.78	RELAY POTTER BRUMFIELD KHAU17D12-12V 160 OHMS
020-0056514	1	6.05	2	12.10	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	27	1039.77	ARRESTER HYBRID LOW VOLTAGE,2, 0-30V DC OR 0-24V
020-0660077	1	603.13	1	603.13	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	15.46	8	123.68	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.40	2	44.80	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1000354	1	5996.25	1	5996.25	HOUSE SIGNAL 6FT X 6FT WITH PTC UPGRADE PTMW P/N 91000354
020-1940055	1	20.24	1	20.24	CONTAINER TUBE HOLDER CIRCUIT PRINT PLAN 24" SCHD 20 4" PVC
020-2503073	1	1091.71	1	1091.71	MODULE SAFETRAN VHF COMMUNICATOR (A80276-3) USED
020-2503079	1	492.48	2	984.96	MODULE SAFETRAN GROUND FAULT DETECTOR (A80297-2) USED WITH
020-2503090	1	1081.54	1	1081.54	CONVERTER PROTOCOL/MEDIA WAYSIDE ACCESS GATEWAY (WAG)
020-2503200	1	909.80	1	909.80	KIT SAFETRAN GCP-4000 ILOD PKG. FOR USE WITH SEAR-III
020-2503210	1	10561.49	1	10561.49	PREDICTOR SAFETRAN GCP-4000 2-TRK DUAL CASE W/RECORDER
020-3430110	1	363.23	1	363.23	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
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

Shop Material List for CSX Project: OH2016040 (Effective: 11/07/2016)
Installation of FLS&Gs with 1 bells, new 6x6 house with remote monitoring and GCP 4000
WESTON, OH - BE 174.45

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-4200340	1	1.74	8	13.92	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200350	1	2.06	11	22.66	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	523.80	1	523.80	KIT CDMA AND VHF RADIO MATERIAL FOR USE WITH CSX
028-1120501	1	314.80	3	944.40	DEVICE, VOLTAGE MONITOR, BENDER P/N VME420-D1

Total Cost: $ 26,500.91

Field Material List for CSX Project: OH2016040 (Effective: 11/07/2016)
Installation of FLS&Gs with 1 bells, new 6x6 house with remote monitoring and GCP 4000
WESTON, OH - BE 174.45

Catalog Num	Cond	Unit Price	Qty	Cost	Description
014-8006169	1	10.35	2	20.70	SIGN PERMANENT EMERGENCY NOTIFICATION (VEHICLE
020-0010447	1	9.83	3	29.49	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0013686	1	75.94	4	303.76	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64
020-0013870	1	1.33	2500	3325.00	CABLE UG 5 COND NO 14 AWG SOLID C CSX SPEC SS796 SHOW
020-0013908	1	6.36	400	2544.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0022651	1	106.70	1	106.70	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0025145	1	371.02	2	742.04	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0052475	1	11.20	4	44.80	ARM EXTENSION 10-1/2" ALUM WITH 3/8" DIAMETER MOUNTING
020-0053220	1	2.29	150	343.50	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	963.20	2	1926.40	GATE SAVER COMPLETE WITH SHEAR PIN AND RETURN SPRING
020-0055421	1	23.96	4	95.84	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056678	1	6374.43	2	12748.86	SIGNAL 0221-L GCWD GATE ASSY DWG SS222 INCLS ADJ 19 TO 28
020-0057275	1	1.02	400	408.00	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	1	36.06	KIT 72-N2 SPLICING, USE FOR SIGNAL SPLICES F/CABLE DIA
020-1040322	1	127.92	29	3709.68	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	4	125.44	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	1	45.92	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	1.00	200	200.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.14	8	49.12	KIT BOND, CADWELD PLUS WEB OF RAIL BOND 3/16 DIA. 4" LARGE
020-1360014	1	933.66	1	933.66	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	24.06	1	24.06	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE
020-1360104	1	1312.25	1	1312.25	LAYOUT AC METER SERVICE WITH 30’ POLE CSX DWG SS351 SH 2
020-2500433	1	89.06	1	89.06	INDUCTOR 8V617-1000 DUMMY LOAD SAFETRAN
020-2500591	1	416.32	1	416.32	SHUNT SAFETRAN 62775-1543 MULTI-FREQUENCY NARROW BAND

Field Material List for CSX Project: OH2016040 (Effective: 11/07/2016)
Installation of FLS&Gs with 1 bells, new 6x6 house with remote monitoring and GCP 4000
WESTON, OH - BE 174.45

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-2500625	1	258.93	1	258.93	SHUNT SAFETRAN 62775-285 NARROW BAND 285HZ
020-3263640	1	0.28	5	1.40	SLEEVE NICOPRESS 14 AWG SOLID COPPER WIRE 1-1/8" LONG STD
020-3430110	1	363.23	1	363.23	RELAY SAFETRAN 400004 500 OHMS CONTACTS 4FB-2F-1B CSX
020-3901895	1	100.52	2	201.04	TIP FLEX HWY CROSSING GATE 24 IN LONG ENGINEERING GRADE RED
020-3920200	1	178.76	1	178.76	BELL GCWD ELECTRONIC 4" OR 5" MAST 8 TO 13 VOLTS DC GSI PN
020-3930010	1	3.70	2	7.40	KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3"
020-4200340	1	1.74	29	50.46	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.18	6	1.08	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
022-0054165	1	48.38	1	48.38	KIT 72-N3CH SPLICING, USE FOR COMMUNICATIONS F/CABLE DIA
250-0001836	1	15.21	1	15.21	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: $ 31,115.46

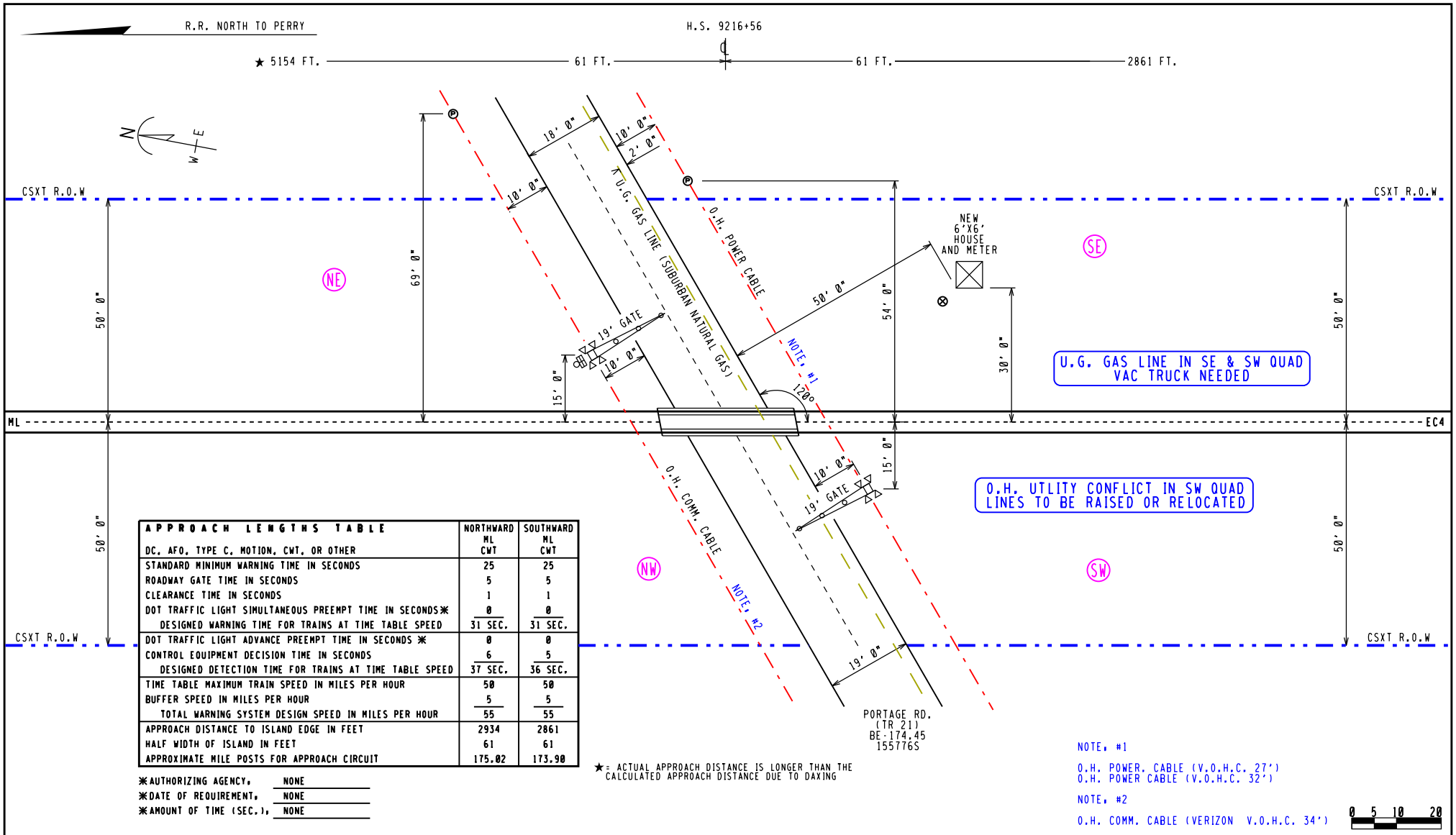
Estimate ID: 128753

Consumables List for CSX Project: OH2016040 (Effective: 11/07/2016)
Installation of FLS&Gs with 1 bells, new 6x6 house with remote monitoring and GCP 4000
WESTON, OH - BE 174.45

Catalog Num	Cond	Unit Price	Qty	Cost	Description
N/A		50.00	40	2000.00	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	0.27	350	94.50	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	0.44	150	66.00	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	0.82	130	106.60	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	2500	6050.00	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 SHEETMETAL PAN HD 10 X 1" TYPE A COARSE THREAD

Total Cost: $ 12,024.81

Estimate ID: 128753



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	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 ✱	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	6	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	37 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	2934	2861
HALF WIDTH OF ISLAND IN FEET	61	61
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	175.02	173.90

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

★= ACTUAL APPROACH DISTANCE IS LONGER THAN THE CALCULATED APPROACH DISTANCE DUE TO DAXING

NOTE, #1

O.H. POWER CABLE (V.O.H.C. 27')
O.H. POWER CABLE (V.O.H.C. 32')

NOTE, #2

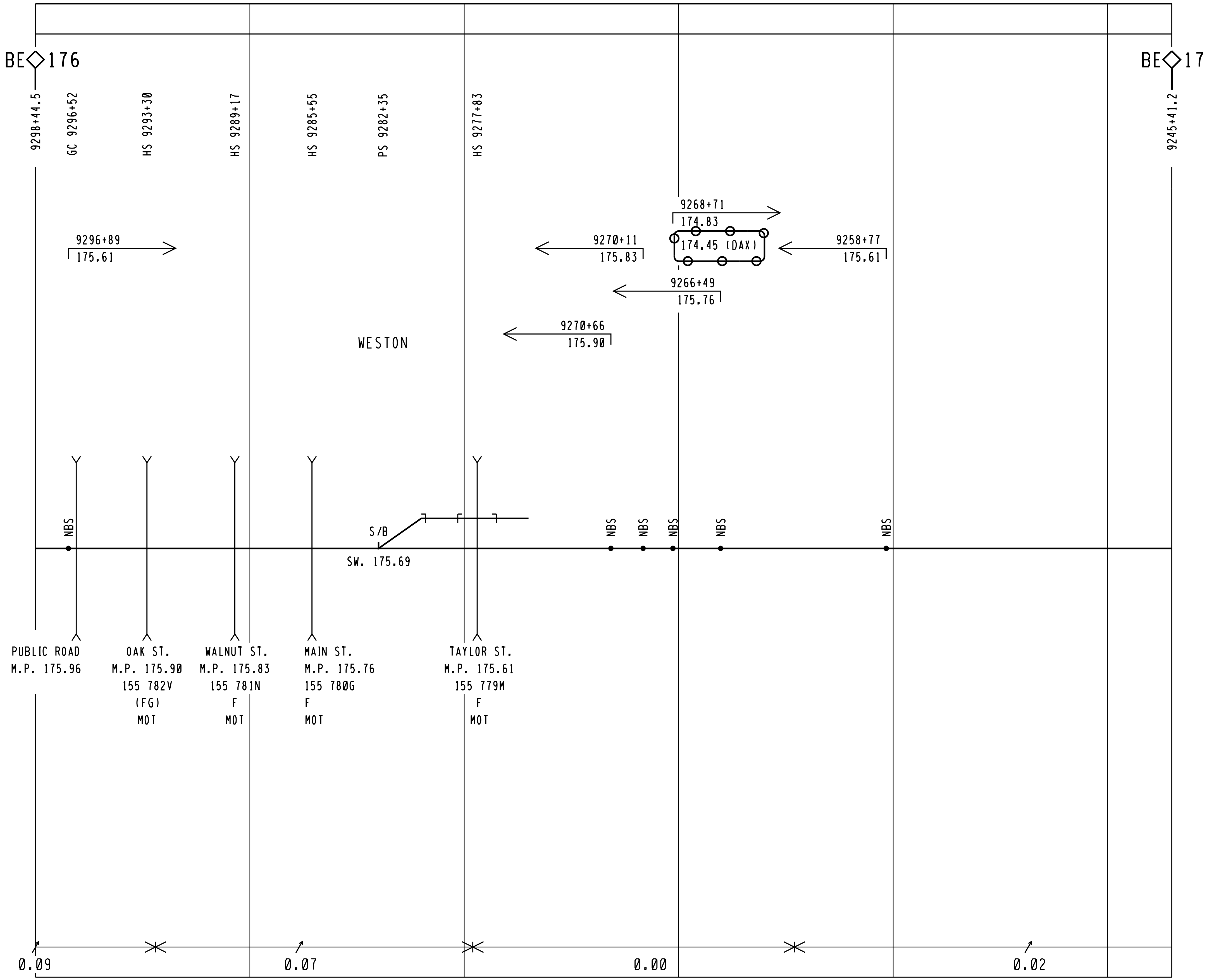
O.H. COMM. CABLE (VERIZON V.O.H.C. 34')

0 5 10 20

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

PRODUCED BY,
Xorail
A Wabtec Company

LEGEND							
CSX ROW	O.H. POWER	POLE Ⓟ	41°19'42" N	11-07-2016	FILE NAME: BE17445.H01	STREET NAME: PORTAGE RD. (TR 21)	
R/R POLELINE	FENCE	FIRE PLUG Ⓕ	83°48'31" W	· ·	DATE DRAWN: 09-15-2016	CITY & STATE: WESTON, OH / M.P. BE-174.45	
GAS	WATER	SEWER CAP Ⓢ	ELEV. 687'	· ·	DRAWN BY: XRL	DOT: 155776S	PROPOSED CROSSING LAYOUT
FIBER OPTIC	SEWER	GAS VENT Ⓥ		· ·	CHECKED BY: XRL	PROJECT #: OH2016040	
	GUARD RAIL	METER SERVICE ⊗			XRL #: CXS16-42586	OP #: OH1135	SCALE = 20:1



= IN

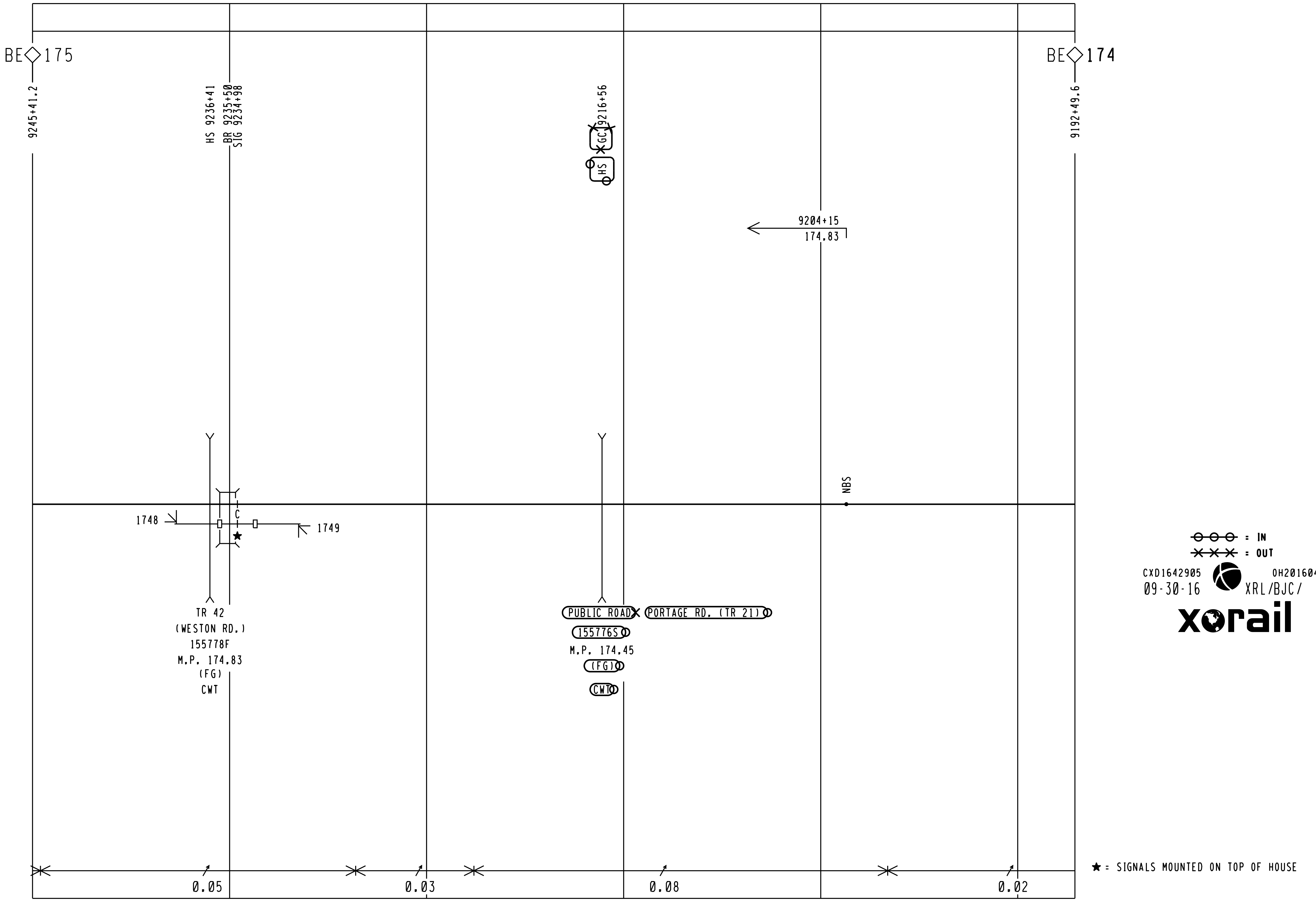
CXD1642905
09-30-16
0H2016040
XRL/BJC/
xorail

REVISIONS	03/23/95 (OH922011) ORS/KSP	07-13-98 URS OH98027	11-26-2001 SWE OH1999041	08-23-02 SAF OH1999088	06-17-13 XRL OH2013031	09-01-16 SSE OH2015034

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	BE17500	T01



REVISIONS
11-26-2001 SWE OH1999041
09-01-16 SSE OH2015034

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
QRS/JSH	QRS/JSH	QRS/JSH	08-06-90	BE17300	T01	BE17400	T01

BE◇174

9192+49.6

GC 9178+37

GC 9154+20

BE◇173

9139+59.5

9187+34
174.45

9183+40
173.28

NBS

NBS

FARM ROAD
M.P. 173.73

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

0.02 | 0.00 | 0.10 | 0.09 | 0.10 | 0.01

= IN

CXD1642905 OH2016040
09-30-16 XRL/BJC/

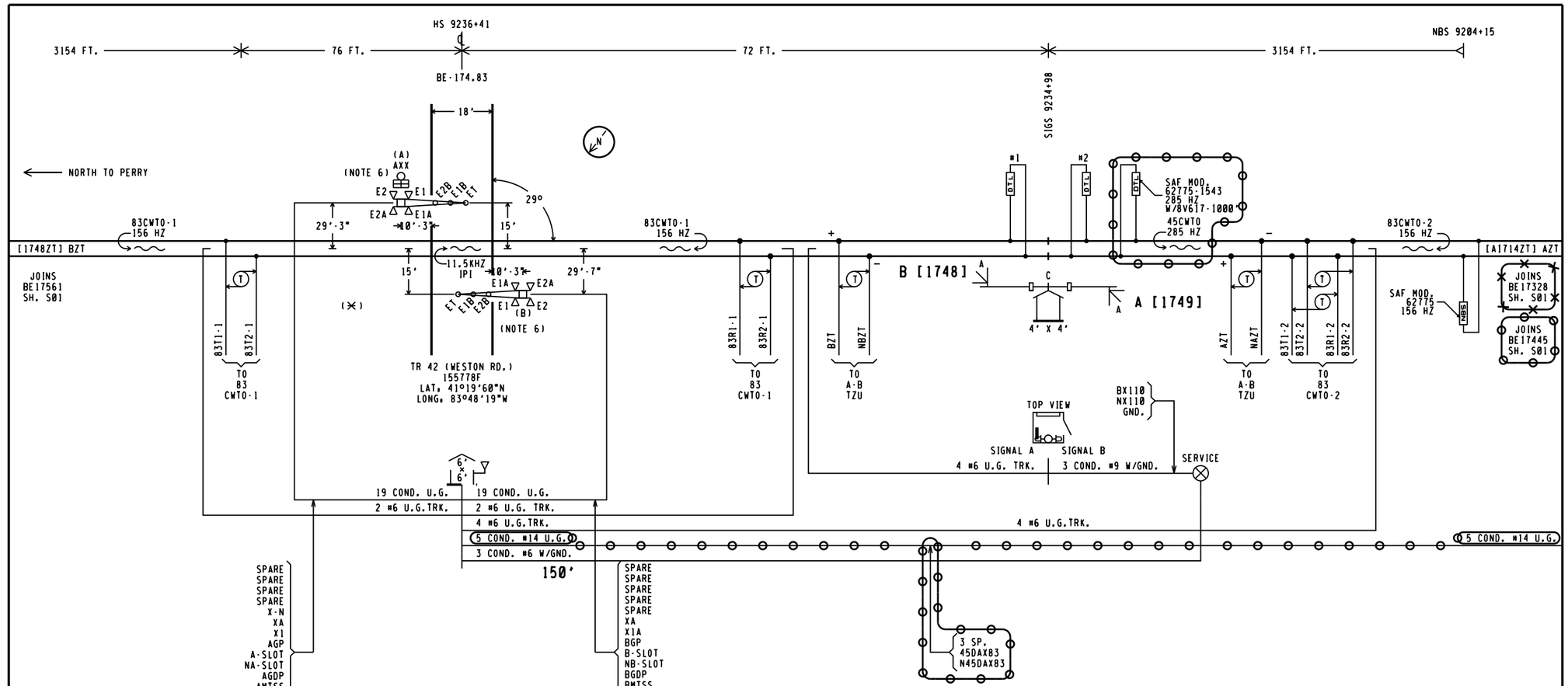
xorail

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



: IN
: OUT

CXD1642905 OH2016040
09-30-16 XRL/BJC/

xorail

SHUNT CASE
DTL
NBS
DTL #1
SAF. 62775-8621 156 HZ MULTI FREQ. NBS
SAF. #8V617-3200'

SHUNT CASE
DTL
NBS
DTL #2
SAF. 62775-8621 156 HZ MULTI FREQ. NBS
SAF. #8V617-3200'

NOTES.

1. 12" LED MAXIMUM CURRENT 1.7A AT 10 VOLTS LED GATE ARM LIGHTS .3A MAXIMUM
2. GATE LENGTH (A) 19' (B) 19'
3. (X) = 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. GATES A & B MOUNTED ON PLATFORM.
7. ISLAND TRACK LEADS SHOULD BE CONNECTED 50 FEET FROM ROAD EDGE BUT ON NARROW ROADS (20' OR LESS) ISLAND LENGTH SHALL BE 120 FEET.
8. WARNING SYSTEM APPROACH CIRCUIT DISTANCES ARE TO BE MEASURED FROM THE ISLAND TRACK CONNECTIONS.
9. HOUSE MOUNTED SIGNALS ARE LABELED "A" AND "B". "B" SIGNAL IS ON THE FRONT DOOR SIDE OF HOUSE MOUNTED MAST ASSEMBLY.
10. LOCATION SPECIFIC TRACK AND SIGNAL NOMENCLATURE IS SHOWN IN BRACKETS AND APPEARS ON SIGNAL NUMBER PLATES ONLY.

REVISIONS	
09-01-16 SSE	OH2015034

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 42 (WESTON RD.) 155778F &

SIGNALS 1748/1749
TRACK AND SIGNAL PLAN
WESTON, OH M.P. BE-174.83

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-27-15
NEXT FILE	NEXT SH	FILE	SHEET
BE17483	P01	BE17483	S01

Minimum Program Steps Report

Location and SIN

DOT Number, 155778F
Milepost Number, BE - 174.83
Site Name, TR 42 (Weston Rd)

SIN, 712549005916 *

* 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 = 1D,3 Uni pairs (OCCN) *

* Parameter is part of office check number calculation.

Minimum Program Steps

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

TEMPLATE, track 1-Uni, Island
Track 1 , GCP Frequency = 156 Hz (OCCN) *
Track 1 , Approach Distance = 3154 ft (OCCN) *
Track 1 , GCP Transmit Level = High (Set in Field,TCN)
Track 1 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *
Track 1 , Isl Frequency = 11.5 kHz (OCCN) *
Track 1 , Island Distance = 148 ft (Set in Field,TCN)

TEMPLATE, track 2-Uni,No Island
Track 2 , GCP Frequency = 156 Hz (OCCN) *
Track 2 , Approach Distance = 3154 ft (OCCN) *
Track 2 , GCP Transmit Level = High (Set in Field,TCN)
Track 2 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *

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

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

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

MS4000 configuration
Track 1 , GCP Frequency = 156 Hz (OCCN,TCN) (Hidden) *
Track 1 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN,TCN) (Hidden) *
Track 1 , Isl Frequency = 11.5 kHz (OCCN) (Hidden) *

GCP, track 2
Track 2 , Island Connection = No Islands (OCCN) *

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

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

SSCC, 2
SSCC-2 Gate Delay = 5 sec (OCCN) *
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) *

Express MS4000 configuration
Track 1 , GCP Frequency = 156 Hz (OCCN,TCN) (Hidden) *
Track 1 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN,TCN) (Hidden) *

* Parameter is part of office check number calculation.

Check Numbers

Office Check Number, 5D4BAA18
Config. Check Number, 4B9D76D6
(Based on MCF Revision 26)

Parameters not part of office check number calculation.

Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Island Distance = 148 ft (Set in Field)
Track 2 , GCP Transmit Level = High (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Daylight Savings = On (Set in Field)

Comments

(none)

1 TRACK OOS ENABLE PROGRAM LOGIC DIAGRAM

IN
OOS 8.2 (T1 OUT OF SERVICE)

ALL OUT
THIS SHEET IS VOID
WHEN AS IN SERVICED.

CXD1642905 09-30-16 XRL/BJC/ OH2016040

xorail

6'X 6' PTC RELAY HOUSE

REVISIONS	
09-01-16 SSE	OH2015034

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 42 (WESTON RD.) 155778F &
SIGNALS 1748/1749
MINIMUM PROGRAM STEPS REPORT CWE-83
WESTON, OH M.P. BE-174.83

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-27-15

NEXT FILE	NEXT SH	FILE	SHEET
BE17483	E01	BE17483	P01

Minimum Program Steps Report

Location and SIN

DOT Number: 155778F
Milepost Number: BE-174.83
Site Name: TR 42 (Weston Rd)

SIN: 712549005916 *

* 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 = 1D.3 Uni pairs (OCCN) *

* Parameter is part of office check number calculation.

Minimum Program Steps

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

TEMPLATE: track 1-Uni, Island
Track 1 , GCP Frequency = 156 Hz (OCCN) *
Track 1 , Approach Distance = 3154 ft (OCCN) *
Track 1 , GCP Transmit Level = High (Set in Field,TCN)
Track 1 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *
Track 1 , Isl Frequency = 11.5 kHz (OCCN) *
Track 1 , Island Distance = 148 ft (Set in Field,TCN)

TEMPLATE: track 1 Daxes
Track 1 , Dax A Used = Yes (OCCN) *
Track 1 , Dax A Warning Time = 31 sec (OCCN) *
Track 1 , Dax A Offset Distance = 2000 ft (OCCN) *

TEMPLATE: track 2-Uni,No Island
Track 2 , GCP Frequency = 156 Hz (OCCN) *
Track 2 , Approach Distance = 3154 ft (OCCN) *
Track 2 , GCP Transmit Level = High (Set in Field,TCN)
Track 2 , Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *

TEMPLATE: SSCC
SSCC-1 Number of GDs = 1 (OCCN) *
SSCC-2 Number of GPs = 1 (OCCN) *
SSCC-2 Number of GDs = 1 (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 = T1 Dax A (OCCN) *

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

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

SSCC: 1
SSCC-1 Gate Delay = 5 sec (OCCN) *
SSCC 1 , Flash Rate = 55 (OCCN) *

SSCC: 2
SSCC-2 Gate Delay = 5 sec (OCCN) *
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: 7BBEA277
Config. Check Number: 2D14B15C
(Based on MCF Revision 26)

Parameters not part of office check number calculation:

Track 1 , GCP Transmit Level = High (Set in Field)
Track 1 , Island Distance = 148 ft (Set in Field)
Track 2 , GCP Transmit Level = High (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Daylight Savings = On (Set in Field)

Comments

<none>

XXX = OUT

NEW WORK
CXD1642905 0H2016040
09-30-16 XRL/BJC/
xorail

6'X 6' PTC RELAY HOUSE

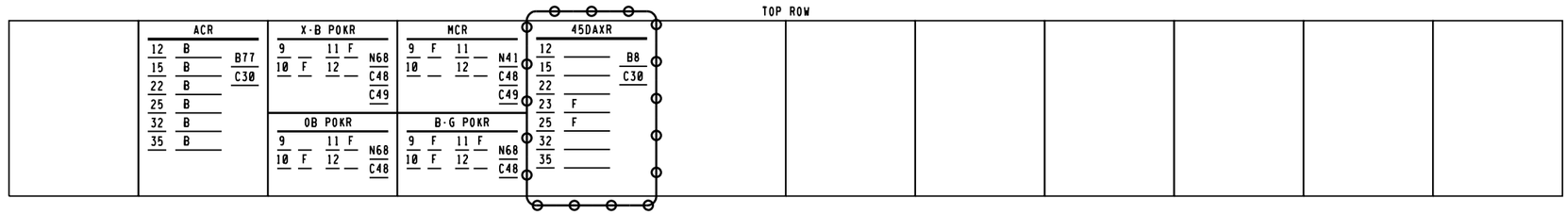
REVISIONS
0H2015034

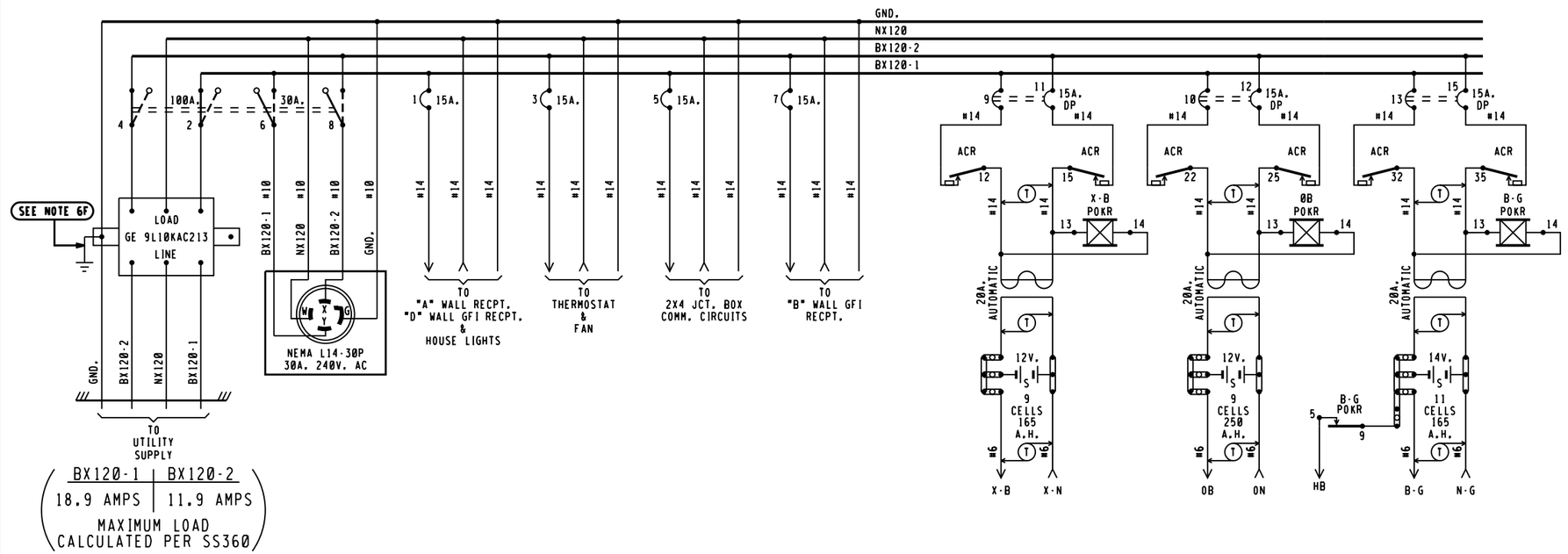
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 42 (WESTON RD.) 155778F &
SIGNALS 1748/1749
MINIMUM PROGRAM STEPS REPORT CWE-83
WESTON, OH M.P. BE-174.83

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-27-15

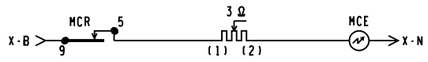
NEXT FILE	NEXT SH	FILE	SHEET
BE17483	E01	BE17483	P01 (A)





BX120-1	BX120-2
18.9 AMPS	11.9 AMPS

MAXIMUM LOAD
CALCULATED PER SS360



= IN

CXD1642905 OH2016040
09-30-16 XRL/BJC/

xorail

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 - CHARGERS WIRED FOR 240VAC
9 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)

6'X 6' PTC RELAY HOUSE

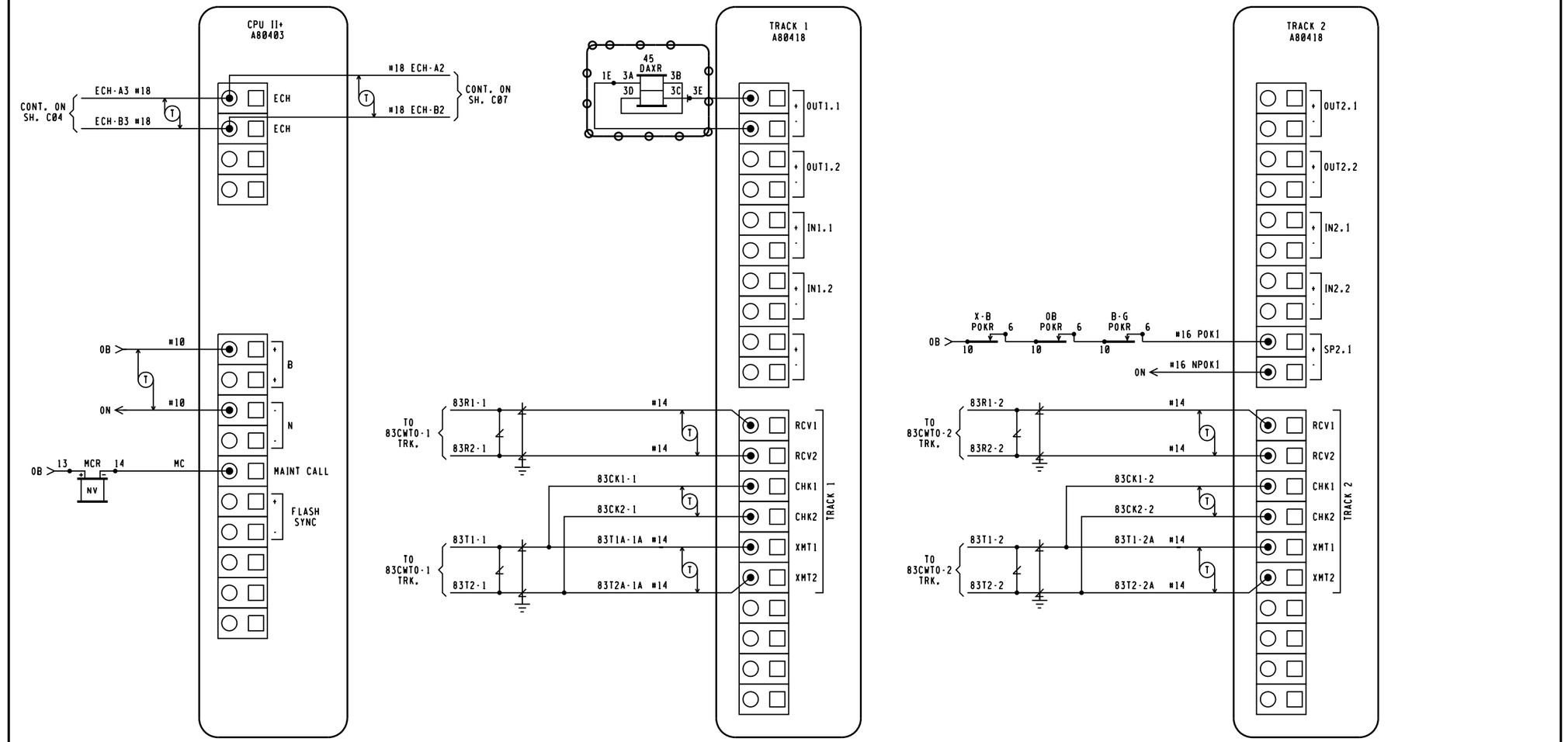
REVISIONS	
09-01-16 SSE	OH2015034

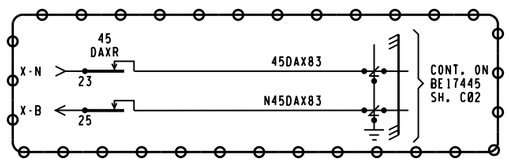
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 42 (WESTON RD.) 155778F &

SIGNALS 1748/1749
POWER DISTRIBUTION
WESTON, OH M.P. BE-174.83

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-27-15
NEXT FILE	NEXT SH	FILE	SHEET
BE17483	C01	BE17483	E02





= IN

CXD1642905 OH2016040
09-30-16 XRL/BJC/

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.

6'X 6' PTC RELAY HOUSE

REVISIONS	
09-01-16 SSE	OH2015034

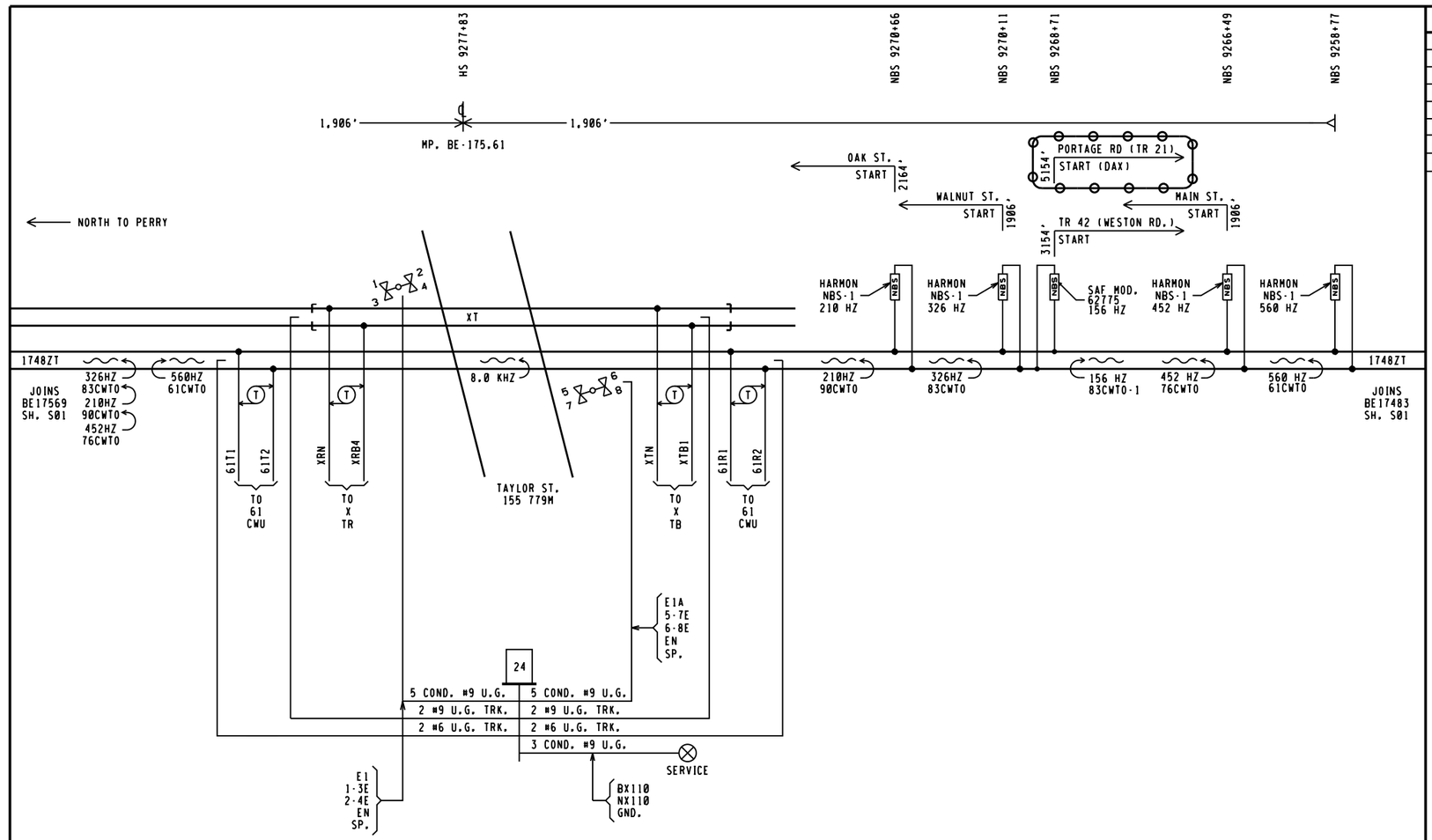
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TR 42 (WESTON RD.) 155778F &

SIGNALS 1748/1749
DETECTION CIRCUITRY CWE-83
WESTON, OH M.P. BE-174.83

DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	07-27-15

NEXT FILE	NEXT SH	FILE	SHEET
BE17483	C04	BE17483	C03



NOTES:

12" LED MAXIMUM CURRENT 1.7A AT 10 VOLTS

= IN

CXD1642905 OH2016040

09-30-16 XRL/BJC/

xorail

REVISIONS	
REDRAWN (OH92201) 03/23/95 O.R.S.	
11-11-99 SWE	OH1999058
11-26-2001 SWE	OH1999041
08-23-02 SAF OH1999088	
01-19-04 SAF OH20000520	
05-29-13 IRC OH2012055	
06-17-13 XRL	OH2013031
09-01-16 SSE	OH2015034

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

TAYLOR ST. 155779M

TRACK AND SIGNAL PLAN
WESTON, OH M.P. BE-175.61

DESIGNED	DIGITIZED	CHECKED	DATE
	ORS/KSP	ORS/RLB	03/23/95

NEXT FILE	NEXT SH	FILE	SHEET
BE17561	E01	BE17561	S01

INDEX

CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	⧄								
S01	TRACK AND SIGNAL PLAN	⧄								
P01	MINIMUM PROGRAM STEPS REPORT CWE-45	⧄								
E01	POWER DISTRIBUTION	⧄								
C01	DETECTION DEVICE CONSIST CWE-45	⧄								
C02	CROSSING DETECTION CIRCUITRY	⧄								
C03	CROSSING DETECTION CIRCUITRY	⧄								
C04	CROSSING WARNING DEVICE GATE CIRCUITRY	⧄								
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY	⧄								
C06	CROSSING WARNING DEVICE CIRCUITRY	⧄								
C07	SEAR II$_1$ CONFIGURATION & FUNCTIONS	⧄								

⧄ = PLANS SENT TO FIELD (DISTRIBUTED)

⧅ = PLANS AS-IN-SERVICED (UP TO DATE)

REVISIONS

REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2016040	09-30-16		

TO BE COMPLETED ON A.I.S.

= NOTE

NEW WORK

CXD1642905 0H2016040

09-30-16 XRL/BJC/

xorail

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

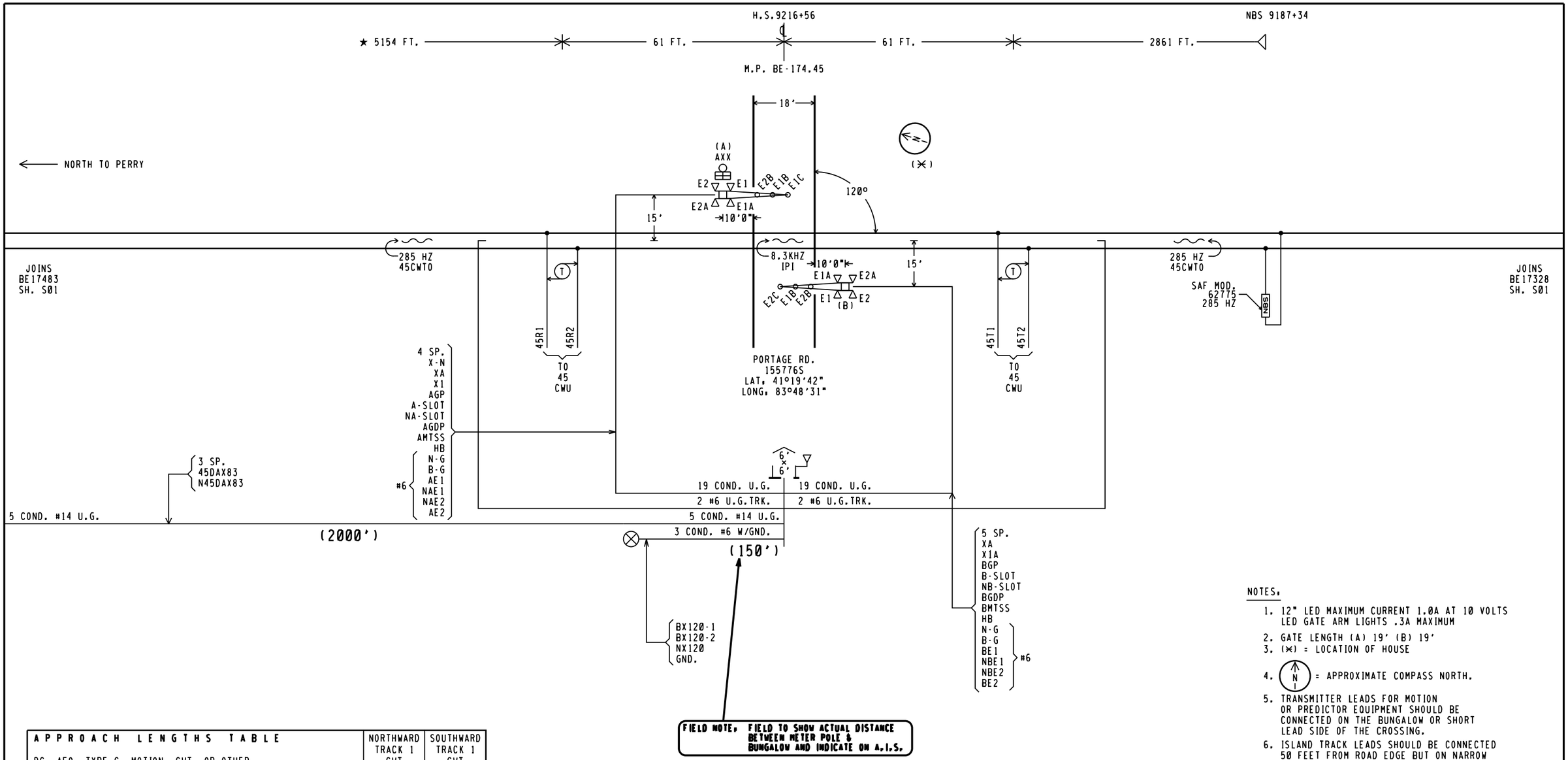
PORTAGE RD. (TR 21) 155776S

INDEX AND REVISIONS
WESTON, OH M.P. BE-174.45

4000GCP.101
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	I01



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	5	5
CLEARANCE TIME IN SECONDS	1	1
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS ✳	0	0
PRESCRIBED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	31 SEC.	31 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS ✳	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	6	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	37 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	2934	2861
HALF WIDTH OF ISLAND IN FEET	61	61
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	175.02	173.90

✳AUTHORIZING AGENCY, NONE

✳DATE OF REQUIREMENT, NONE

✳AMOUNT OF TIME (SEC.), NONE

★= ACTUAL APPROACH DISTANCE IS LONGER THAN THE CALCULATED APPROACH DISTANCE DUE TO DAXING

NOTES.

1. 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS LED GATE ARM LIGHTS .3A MAXIMUM
2. GATE LENGTH (A) 19' (B) 19'
3. (✳) = 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.

= NOTE

NEW WORK

CXD1642905 OH2016040

09-30-16 XRL/BJC/

xorail

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PORTAGE RD. (TR 21) 155776S

TRACK AND SIGNAL PLAN
WESTON, OH M.P. BE-174.45

4000GCP.S01
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	S01

Minimum Program Steps Report

Location and SIN

DOT Number: 155776S
Milepost Number: BE-174.45
Site Name: PORTAGE RD (TR21)

SIN: 712538400116 *

* Parameter is part of office check number calculation.

MCF and Template Selection

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

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

* Parameter is part of office check number calculation.

Minimum Program Steps

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

TEMPLATE: track 1-Bi, Island
Track 1 , GCP Frequency = 285 Hz (OCCN) *
Track 1 , Approach Distance = 2861 ft (OCCN) *
Track 1 , Prime Warning Time = 31 sec (OCCN) *
Track 1 , Prime UAX = IP (OCCN) *
Track 1 , GCP Transmit Level = Medium (Set in Field,TCN)
Track 1 , Isl Frequency = 8.3 kHz (OCCN) *

TEMPLATE: SSCC
SSCC-1 Number of GDs = 1 (OCCN) *
SSCC-2 Number of GPs = 1 (OCCN) *
SSCC-2 Number of GDs = 1 (OCCN) *

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

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

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

GCP: track 1
Track 1 , Island Distance = 122 ft (Set in Field,TCN)

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

SSCC: 1
SSCC-1 Gate Delay = 5 sec (OCCN) *
SSCC 1 , Flash Rate = 55 (OCCN) *

SSCC: 2
SSCC-2 Gate Delay = 5 sec (OCCN) *
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: 21DF2E64
Config. Check Number: 5DF0970F
(Based on MCF Revision 26)

Parameters not part of office check number calculation.

Track 1 , GCP Transmit Level = Medium (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Track 1 , Island Distance = 122 ft (Set in Field)
Daylight Savings = On (Set in Field)

Comments

<none>

NEW WORK
CXD1642905 OH2016040
09-30-16 XRL/BJC/
xorail

4000GCP.P01
REV. 09-04-15

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PORTAGE RD. (TR 21) 155776S

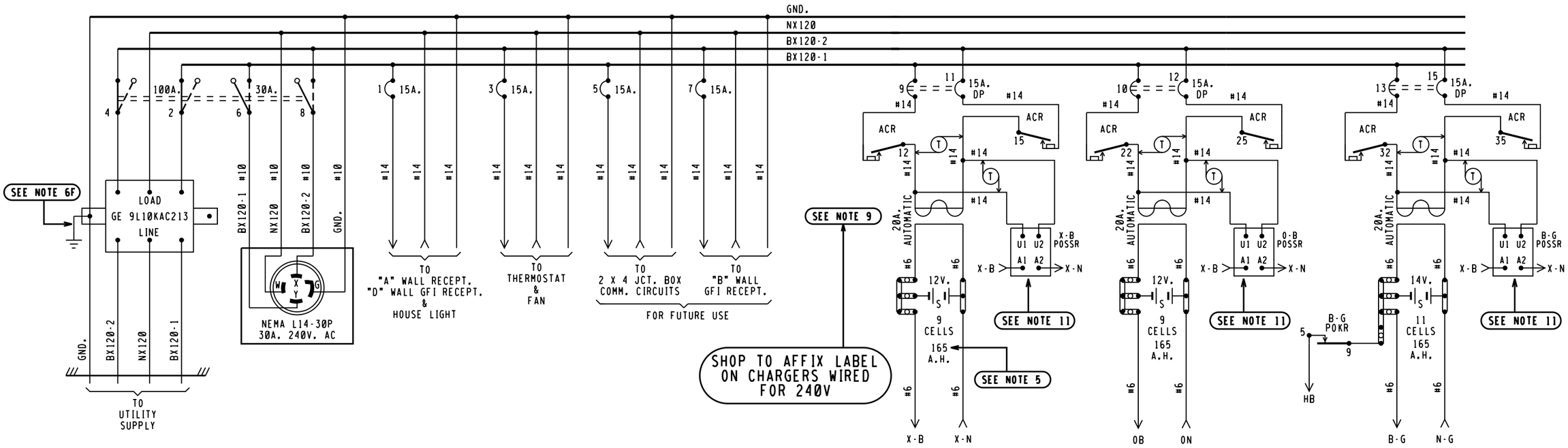
MINIMUM PROGRAM STEPS REPORT CWE-45
WESTON, OH M.P. BE-174.45

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	P01

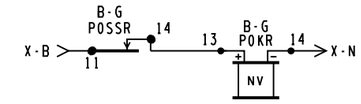
TOP ROW

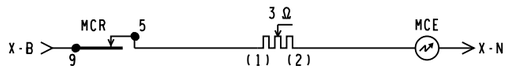
	ACR		MCR		83DAXR								
	12 B	B77	9 F 11	N41	12 F	B8							
	15 B	C30	10 12	C48	15 F	C30							
	22 B			C49	22								
	25 B		B-G POKR		23								
	32 B		9 F 11	N41	25								
	35 B		10 F 12	C48	32								
					35								



BX120-1	BX120-2
11.0 AMPS	11.0 AMPS

MAXIMUM LOAD
CALCULATED PER SS360





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

NEW WORK
CXD1642905 OH2016040
09-30-16 XRL/BJC/
xorail

6'X 6' PTC CROSSING HOUSE

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

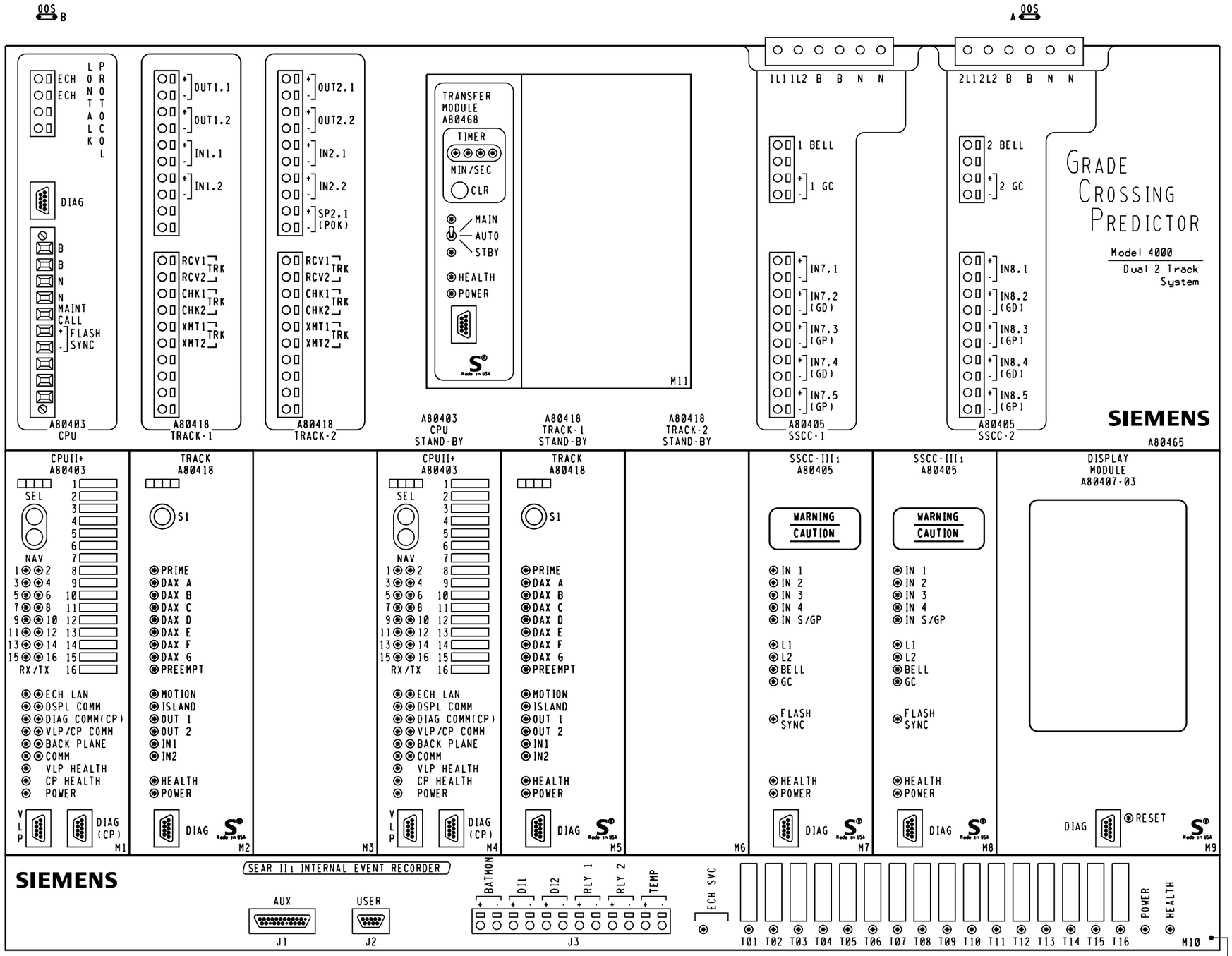
PORTAGE RD. (TR 21) 155776S

POWER DISTRIBUTION
WESTON, OH M.P. BE-174.45

4000GCP.E01
REV. 10-19-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	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	PANEL	NONE	D39325
M4	CPU-II+	STANDBY	A80403
M5	TRACK-1	STANDBY	A80418
M6	PANEL	NONE	D39325
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
CXD1642905 0H2016040
09-30-16 XRL/BJC/
xorail

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

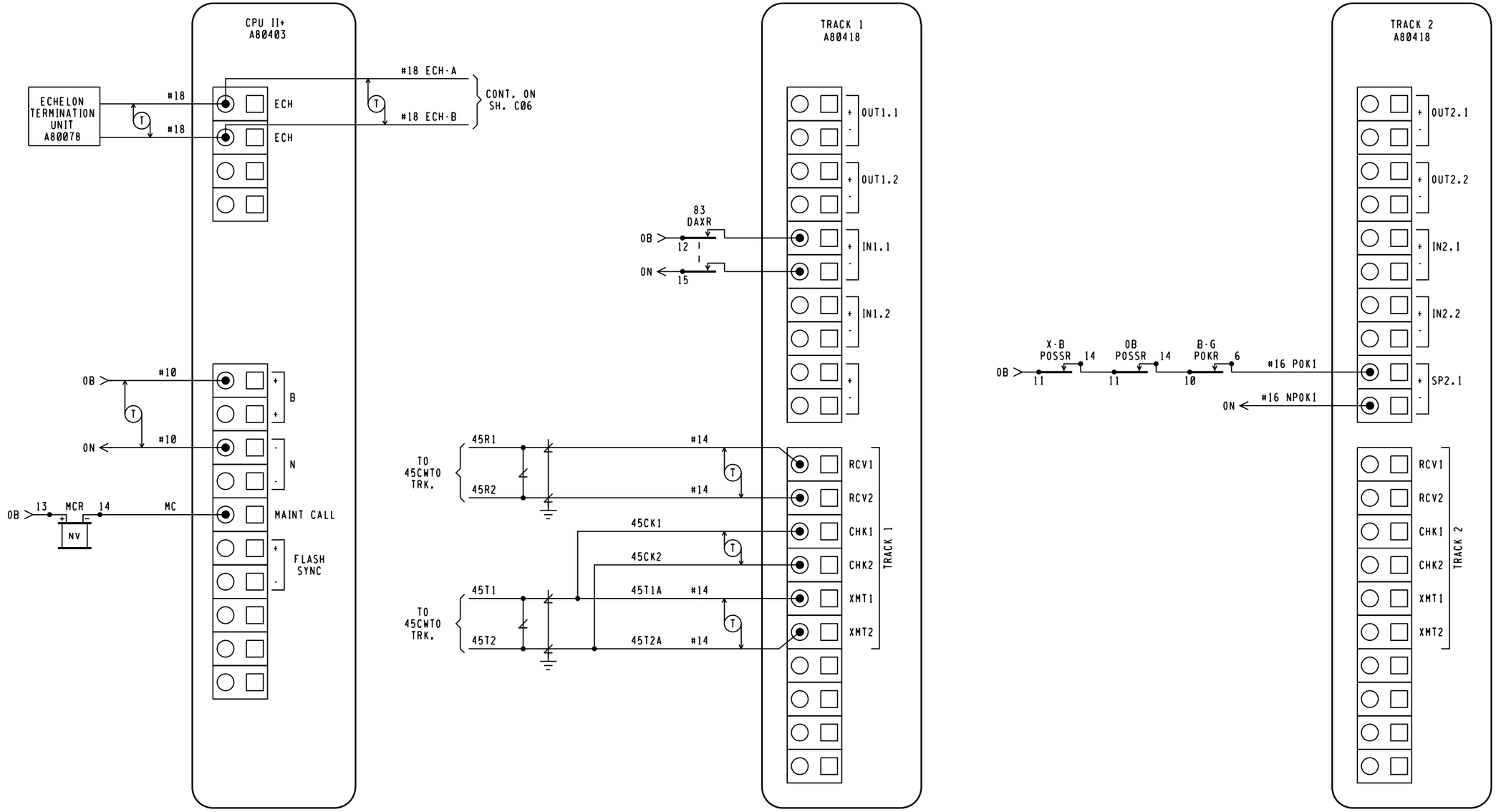
PORTAGE RD. (TR 21) 155776S

DETECTION DEVICE CONSIST CWE-45
WESTON, OH M.P. BE-174.45

4000GCP.C01
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	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

CXD1642905 OH2016040

09-30-16 XRL/BJC/

xorail

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

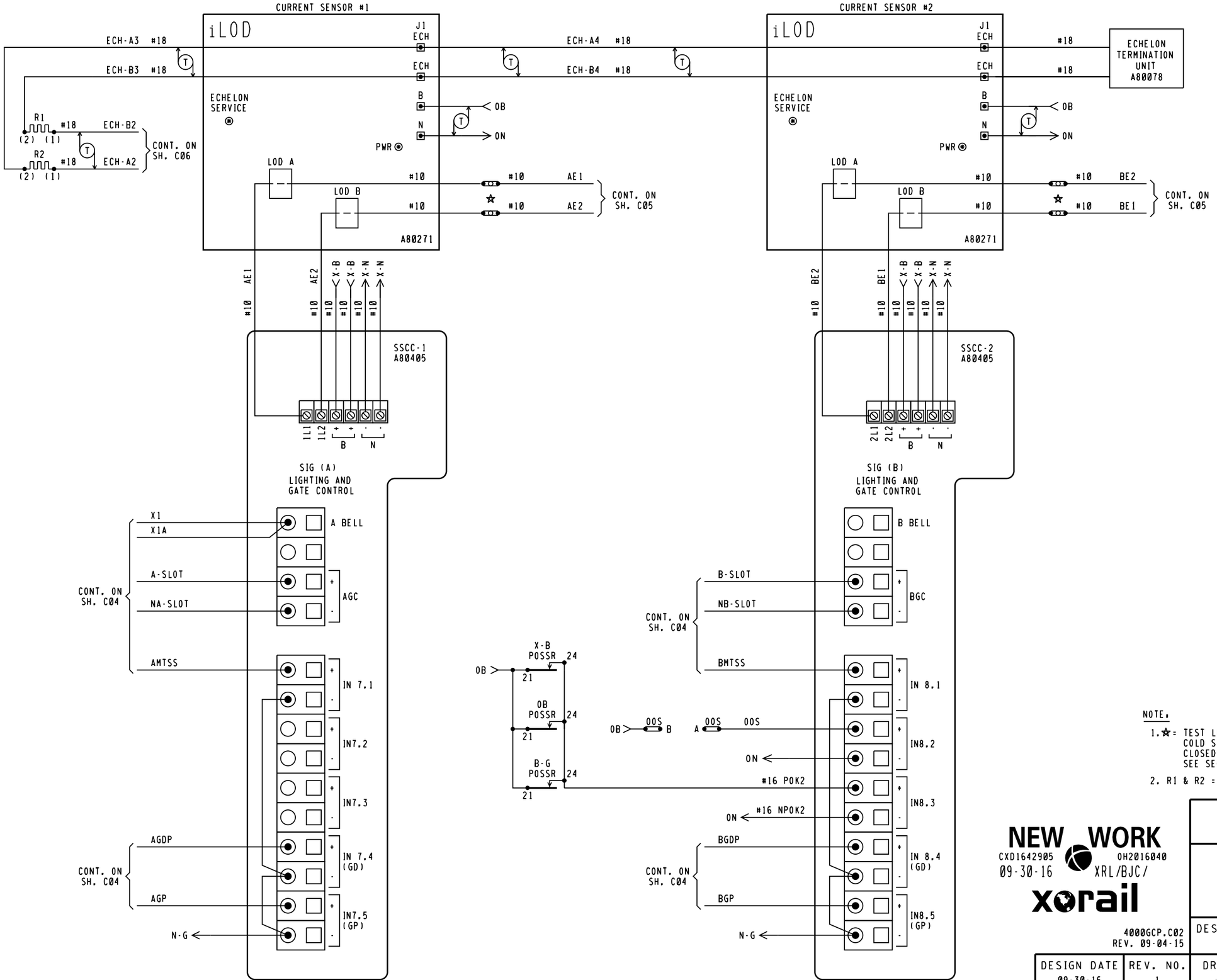
PORTAGE RD. (TR 21) 155776S

DETECTION CIRCUITRY CWE-45
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C02



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

NEW WORK
CXD1642905 0H2016040
09-30-16 XRL/BJC/
xorail

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

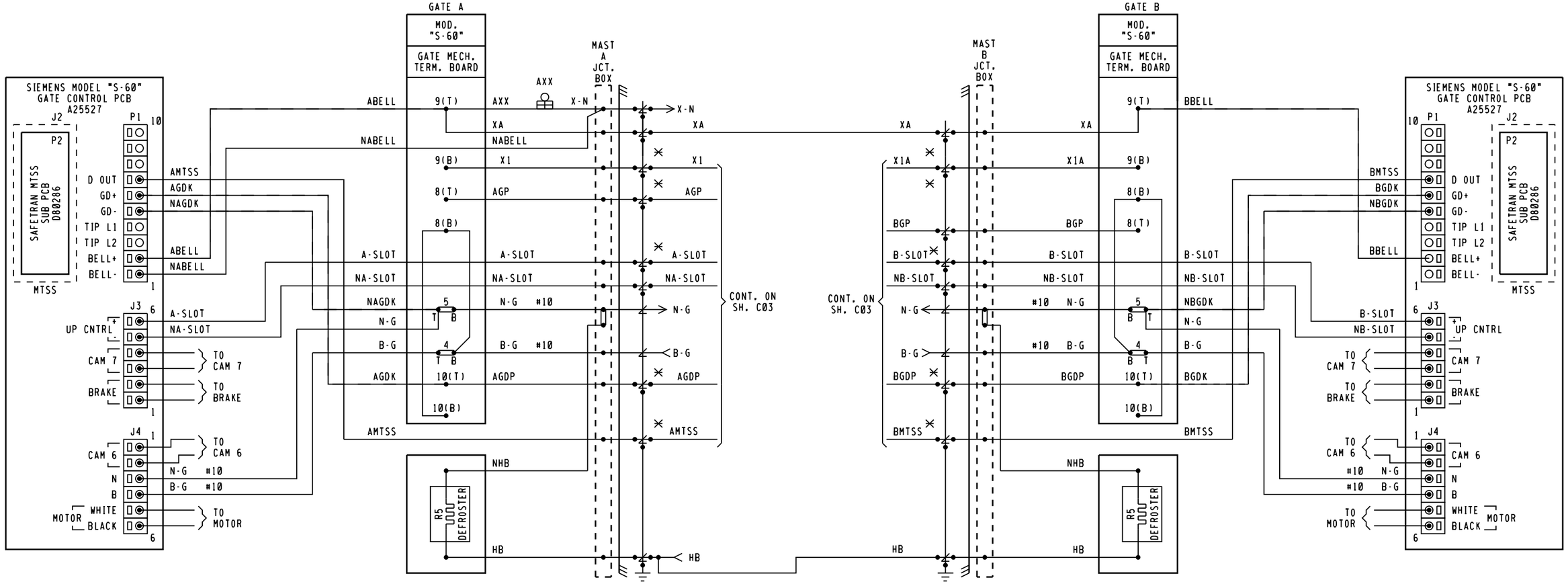
PORTAGE RD. (TR 21) 155776S

DETECTION CIRCUITRY CWE-45
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C03



NOTES,
1. ✕ = 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.
2. ⊣●⊢ = TERMINAL IN JCT. BOX BASE
3. ALL WIRING #16 UNLESS NOTED OTHERWISE.

NEW WORK
CXD1642905 09-30-16
OH2016040 XRL/BJC/
xorail

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

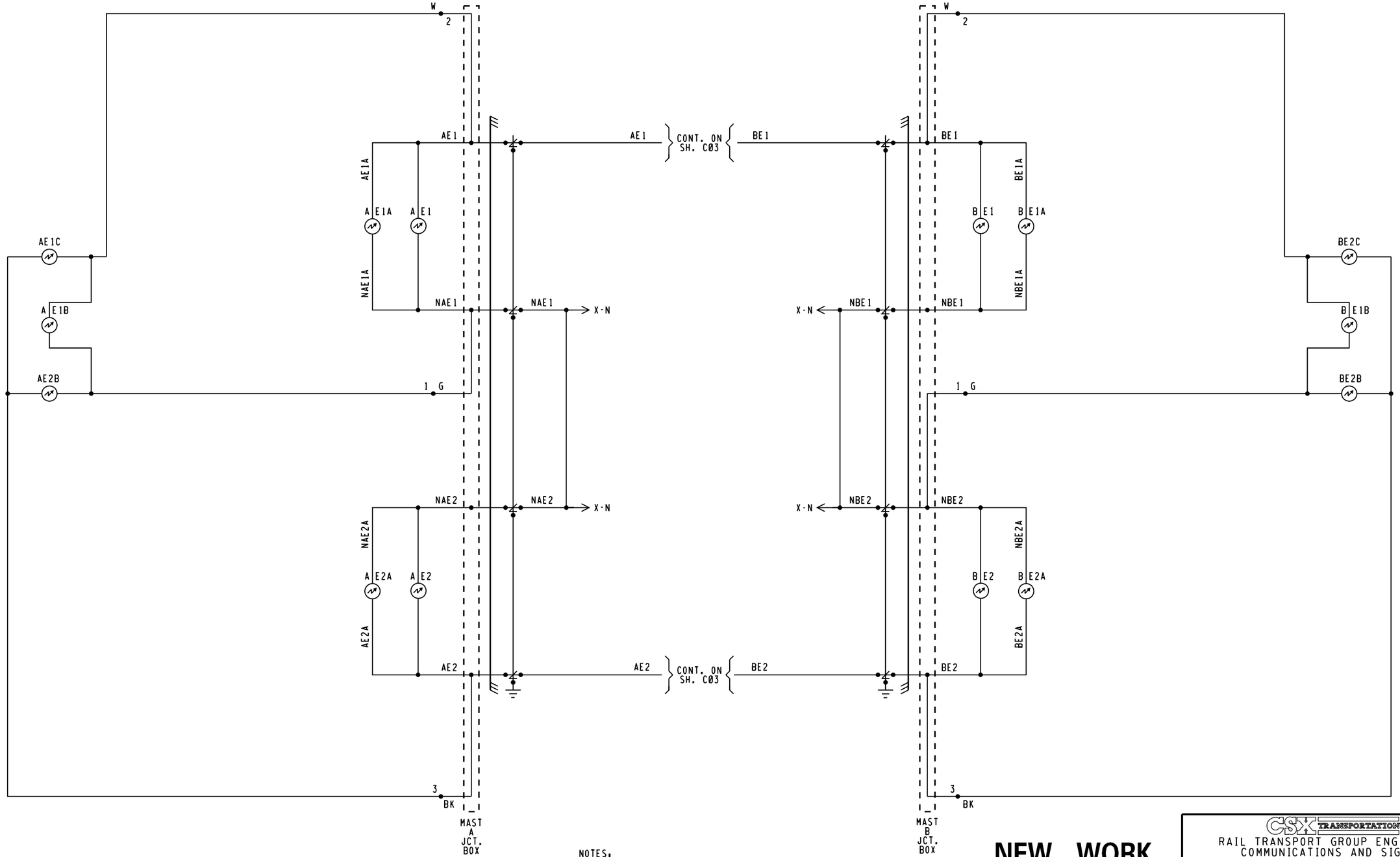
PORTAGE RD. (TR 21) 155776S

CROSSING WARNING DEVICE GATE CIRCUITRY
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C04



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
CXD1642905 0H2016040
09-30-16 XRL/BJC/
xorail

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PORTAGE RD. (TR 21) 155776S

CROSSING WARNING DEVICE LIGHT CIRCUITRY
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

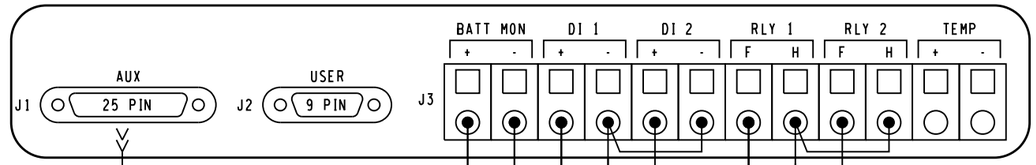
DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C05

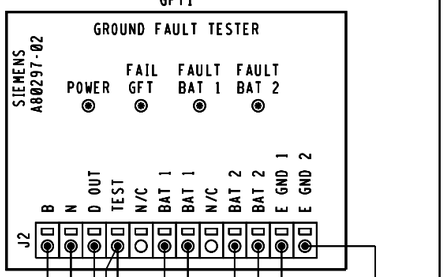
WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.384.001.07.01 7.125.LLL.GGG.SS.DD
SERIAL INTERFACE	38,400,NONE,8,1/NOFLOW
SERIAL FORMAT	RAW
WAG TEST MODE	DISABLED
ECHELON ADDRESS	01.07
UDP PORTS	5000, 5001, 5002, 5003
ROUTE TABLE EXPIRY	5400 SEC
BROADCAST MEDIUM	IP ETHERNET
TCP PORTS	23, 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



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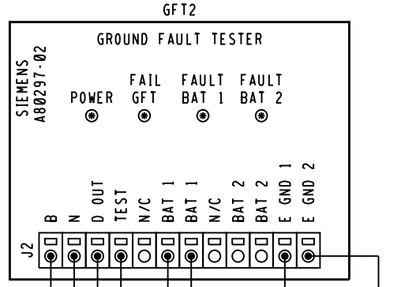

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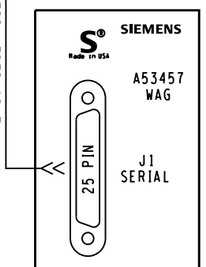
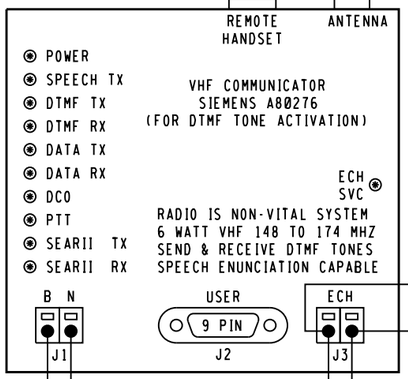
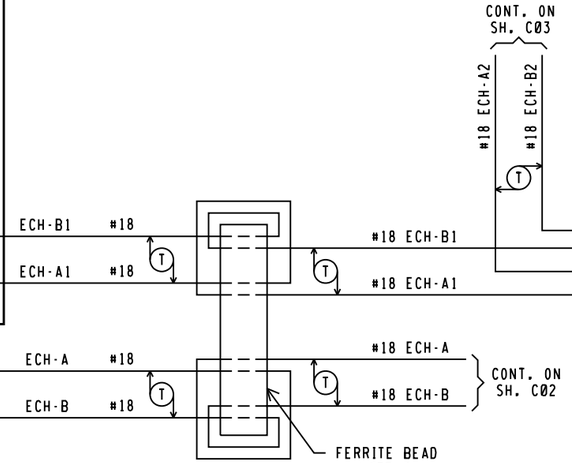
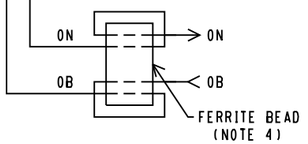


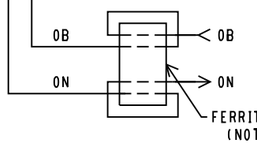
**
POLYPHASE SURGE PROTECTOR
100 TO 512 MHZ
MODEL# VHF 150HN

**
SHIELDED COAXIAL
CABLE TO ANTENNA









** 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.

( ) = NOTE

NEW WORK
CXD1642905 OH2016040
09-30-16 XRL/BJC/
xorail

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)	
TO ACTIVATE PRESS,	776#
TO DE-ACTIVATE PRESS,	776*
(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

PORTAGE RD. (TR 21) 155776S

CROSSING WARNING DEVICE CIRCUITRY
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C06

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II1 EXECUTIVE PROGRAM	VERSION, 9V725A01	VERSION, _____
APPLICATION PROGRAM (IF LOADED)	VERSION, 9V864A01	VERSION, _____

NOTE TO INSPECTOR,
AT IN SERVICE OF SEAR II1 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	PORTAGE RD. (TR 21)
MILEPOST	BE-174.45
DOT NUMBER	155776S
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS ADDRESS	7.125.384.001.99.01 (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	7.125.384.001.07.01 (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
CXD1642905 OH2016040
09-30-16 XRL/BJC/
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	4	□BULBS ■LED	X.X
CURRENT SENSOR (2) BE2, LAMP SET UP	4	□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

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

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

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	776
ACTIVATION TIMEOUT	(60 SEC)
1LOD 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 □
NOTE 3 - 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 □
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 1LODS.
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

PORTAGE RD. (TR 21) 155776S

SEAR II1 CONFIGURATION & FUNCTIONS
WESTON, OH M.P. BE-174.45

4000GCP.C02
REV. 09-04-15

DESIGNED	DIGITIZED	CHECKED	DATE
XRL	XRL	XRL	09-30-16

DESIGN DATE	REV. NO.	DRAWING	SHEET NO	FILE	SHEET
09-30-16	1	-----	-----	BE17445	C07

INDEX

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SH. NO.		REVISION NO. 1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS	⊠	⊘							
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

= NOTE

= IN

= OUT

CXD1642905 OH2016040

09-30-16 XRL/BJC/

xorail

REVISIONS

REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	OH2010094	02-28-11	10-25-11	11-07-11
2	OH2016040	09-30-16		

TO BE COMPLETED ON A.I.S.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

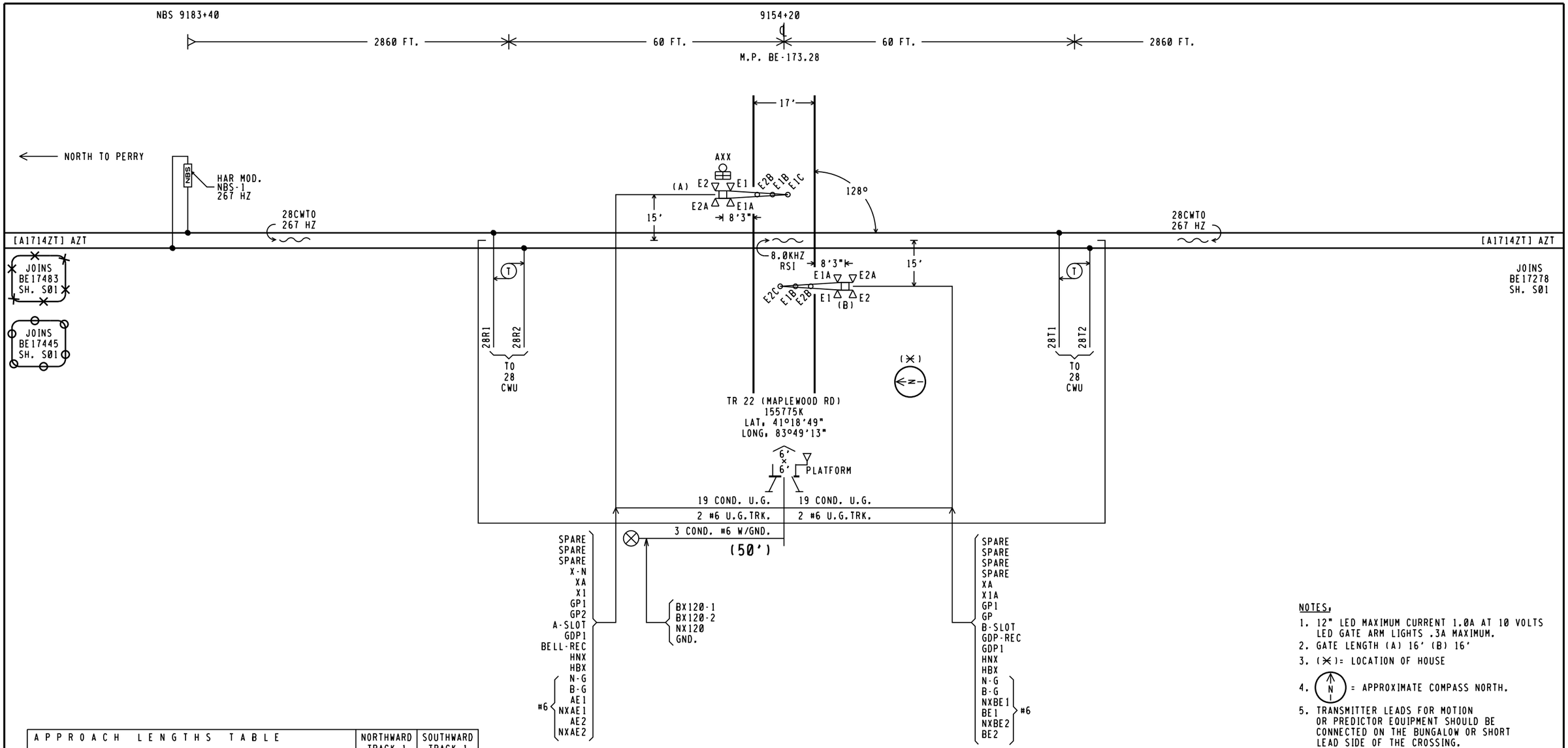
TR 22 (MAPLEWOOD RD.) 155775K

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
02-28-11	1	-----	-----	BE17328	I01

09-30-16 2



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.

⊖⊖⊖ = IN
✳✳✳ = OUT

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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
02-28-11	1	-----	-----	BE17328	S01

09-30-16 2

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

August 12, 2016

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

RE: Authorization for PE for Grade Crossing Warning Device Upgrade
Wood County, TR 21, Portage Rd.
DOT# 155776S
PID# 103461

Dear Ms. DeCesare:

A diagnostic review was held at the above grade crossing on 4/29/2016. The crossing has been recommended for the installation of lights and gates.

CSX Transportation, Inc. is authorized to proceed with the design, site plans and cost estimates (PE) 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 ORDC is not requesting that the PUCO issue an Order at this time. When the ORDC receives the PE it will be evaluated and a construction-only Order will be requested from PUCO. Please submit the PE to ORDC within 90 days of receipt of this letter.

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 ORDC Project Manager for this project is Don Damron. Don can be reached at 614-466-2509 (office), or 614-917-8466 (cell), or don.damron@dot.state.oh.us , if you have any questions.

Sincerely,

Donald J. Damron
Project Manager

C: Randall Schumacher, Supervisor, Rail Division, Transportation Department, PUCO
George Martin, Grade Crossing Planner, PUCO
ORDC (file)

Attachments: Diagnostic Review Team Survey form dated 4/29/2016
Public Utilities Commission of Ohio Letter Agreement dated 6/10/2016

Ohio | Public Utilities Commission
John R. Kasich, Governor
Asim Z. Haque, Chairman

June 10, 2016

Ms. Amanda DeCesare
CSX Transportation
500 Meijer Drive, Ste. 305
Florence, Ky 41042

RE: 1) Ashland County, TR 1101, DOT# 142101D, 2) Delaware County, Shoemaker Rd/TR 251, DOT# 518300Y, 3) Wood County, Portage Rd/TR 21, DOT# 155776S, hereinafter referred to as the "Projects"

Dear Ms.DeCesare:

The Public Utilities Commission of Ohio (PUCO) has identified and surveyed the above mentioned grade crossings for warning device upgrades. The locations have been approved for flashing lights and roadway gates.

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

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

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

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

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Mr. George Martin, Grade Crossing Planner, Rail Division, Public Utilities Commission of Ohio, at the address listed below.

Sincerely,

Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 6/16/10

CSX Transportation

By Tony C. Bellamy

Tony C. Bellamy
Director Project Management - Public Projects

Title

Date 6/30/10

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Mr. George Martin, Grade Crossing Planner, Rail Division, Public Utilities Commission of Ohio, at the address listed below.

Sincerely,

Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 6/16/16

CSX Transportation

By _____

Title _____

Date _____

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date _____

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Mr. George Martin, Grade Crossing Planner, Rail Division, Public Utilities Commission of Ohio, at the address listed below.

Sincerely,

Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 6/10/16

CSX Transportation

By _____

Title _____

Date _____

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date 6 - 13 - 16

180 East Broad Street
Columbus, Ohio 43215-3793

(614) 466-3016
www.PUCO.ohio.gov

CSXT Public Projects Agreement Cover Sheet

Prepared by: Nicole S. Henning **Date: June 13, 2016**

Subject: Grade Crossing Warning Device Improvements for TR 1101; Nova, Ashland Co., OH; DOT 142101D, MP BG-183.39; Great Lakes Division, New Castle Subdivision; OP# TBD

Grade Crossing Warning Device Improvements for TR 251 / Shoemaker Road; Ashley, Delaware Co., OH; DOT 518300Y, MP QE-106.19; Great Lakes Division, Columbus Line Subdivision; PID 103319; OP# OH1123

Grade Crossing Warning Device Improvements for TR 21/Portage Road; Weston, Wood Co., OH; DOT 155776S; MP BE-174.45; Louisville Division; Toledo Subdivision; OP# TBD

Other Agreement Party(s): Public Utilities Commission of Ohio

A. Type:
- ☒ Standard pre-approved format
- ☐ Other (Law approval required)

B. Purpose:
- ☒ PE Agreement
- ☐ Construction Agreement
- ☐ PE/Construction Agreement
- ☐ Overrun/Supplemental Agreement
- ☐ Master Agreement Supplement
- ☐ Other –

C. Copies: Number of Originals to be executed: 2

D. Contract Work: Does work require Labor Notification? ☐ Yes ☒ No
Notification completed by
Organization: Date:

E. Funding Sources:

☒ Outside Party Funded - ORDC
- $ TBD Force Account Estimate
- ☐ Actual cost (Payment in Arrears)
- ☐ Prepayment
- ☐ Actual cost not to exceed
- ☐ Lump sum

☐ CSXT contribution involved
- $Enter Amount Estimated contribution
- ☐ % of project cost
- ☐ Lump sum
- ☐ Not to exceed

Funding Source
- ☐ Public Improvements capital budget/AFE No:
- ☐ TSC AFE No:
- ☐ Other: AFE No.
- ☐ OE source: On PP OE Outlook

F. Total Agreement Funding: $ TBD

G. Public Projects Approval: Amanda J. DeCesare: Date: 6/14/16

Tony C. Bellamy: Date: 6/30/16

H. For Signature Of: _____ Date: _____

I. Additional Information:

☐ **Please forward to Corporate Secretary's Office, J160**
- ☐ For Attestation and Corporate Seal
- ☐ To be notarized
- ☐ Other

☒ **Upon completion, please return to** Amanda J. DeCesare, 500 Meijer Drive Suite 305 Florence, KY 41042, Project Manager - Public Projects

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.) PUCO Formula Spring Pick

Date: 4/29/2016

Location Data

Street or Road Name:	Portage Road				
Route/Road Number (i.e. Twp., Co., SR or US)	TR 21			US DOT No.:	155776S
County:	WOO	Township:	Milton	City: (In or Near)	Near Weston
Railroad Name:	CSX Transportation	Railroad Division:	Louisville	Branch/Line Name:	
Nearest RR Timetable Station:	Weston			RR Milepost:	174.45

On-Site Review Team

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

1. Don DAMRON, ORDC, 614 917 8461, don.damron@dot.ohio.gov.
2. George MARTIN PUCO 614-752-4107
3. Amanda Delesse CSX 859 ~~624~~ 426 6124
4. John Feehan Twp Trustee 419-669-3153
5. Rob Mahlman Twp Fiscal Officer 419-276-0475 miltontownship2016@gmail.com
6. Stanley Wilhelm Milton Twp Trustee 419-669-2570
7. Phil Weilnau Milton Twp Trustee 419-669-4368
8. Matt Zachary Milton twp Employee 419-494-3733
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	CHIP & SEAL
Crossbucks	☑ Yes	☐ No	2
Number of Tracks Signs	☐ Yes	☑ No	ONE TRACK
Inventory Tags	☑ Yes	☐ No	2
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	1624 Date Run: 3/30/2016	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	9	7 TOTAL
< 1 per day		
Day thru trains	2	
Night thru trains	5	
Daytime switching movements	1	
Nighttime switching movements	1	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	50	OK
Typical train speed	50	OK
Amtrak		

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

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	204 (2012)	OK (IT IS USED)
Highway paved	X Yes ☐ No	☐ Yes ☐ No MODERATELY

Roadway Surface: ☑ Blacktop ☐ Gravel ☐ Concrete ☐ Other CHIP & SEAL

Roadway width: _____ ft.

Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: 55 MPH		

School Bus Operation: ☐ No X Yes 2 Amount 2/DAY

Hazardous Materials Trucks: ☐ No X Yes 08 Amount SEASONAL

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:	Quadrant _____ 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 WAS REMOVED BY TOWNSHIP.

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:
B.W. SCHOOL DISTRICT OTSEGO SCHOOL DIST,
CUSTAR ELEMENTARY

Utility Information

Is commercial power available? ☐ No ☑ Yes

Utility Provider (Company Name) TRI COUNTY RURAL ELEC. COOP Phone Number _____

Nearest Available Power Source AT SITE.

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:

NEW UG GAS LINE ON SOUTH SIDE OF ROAD UNDER CONSTRUCTION ON EITHER SIDE OF TRACKS WEST & EAST. NO BORING UNDER TRACKS AT THIS TIME.

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:

NA

Real Estate or ROW:

NA

Culverts / Drainage / Ballast Conditions:

NA

Roadway and/or Sidewalks:

NA

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

~~NA~~ CROSSING AT WESTON WILL BE UPGRADED WITH LIGHTS AND GATE AND NEW CIRCUITS MAY OVERLAP. (NORTHEAST OF PORTAGE.)

Environmental:

NA

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS /Cants	
☑ AFLS / Gates	2
☐ AFLS / Gates / Cants	
☒ Bells / number	1 BELL
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	NO PREFERANCE
☐ Other (define)	

Comments:
CONSENSUS: "UPGRADE TO LIGHTS AND GATES"

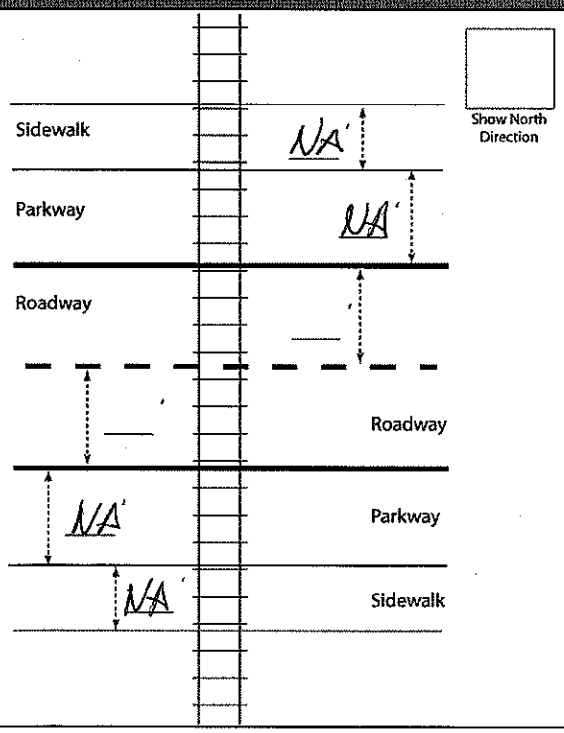
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	

☐ Other (define)

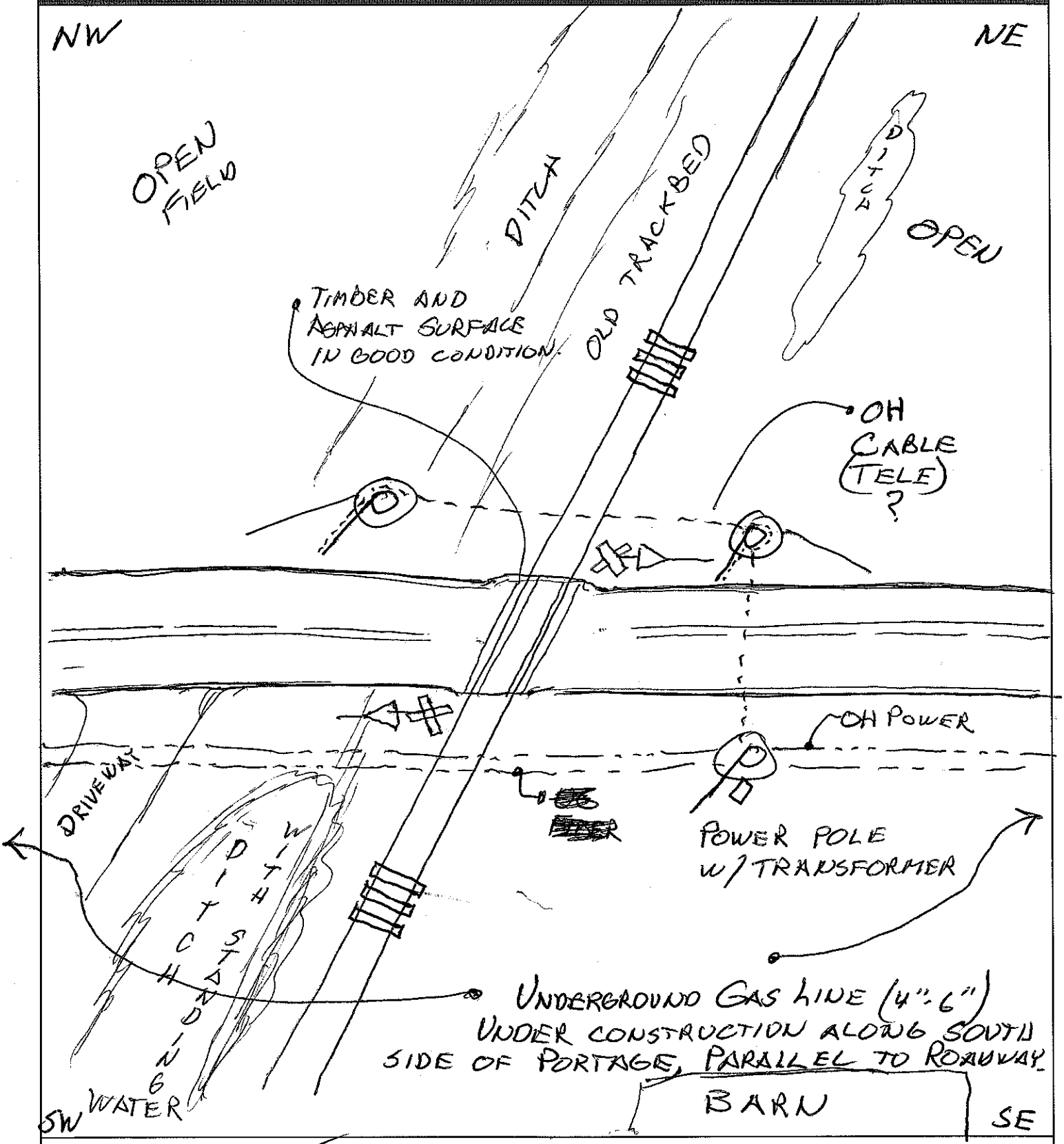
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):

P.C.

Field Dimensions



Field Sketch



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

Sketch by: DND (#1557765 BE 17445) PORTAGE ROAD, WOO

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)

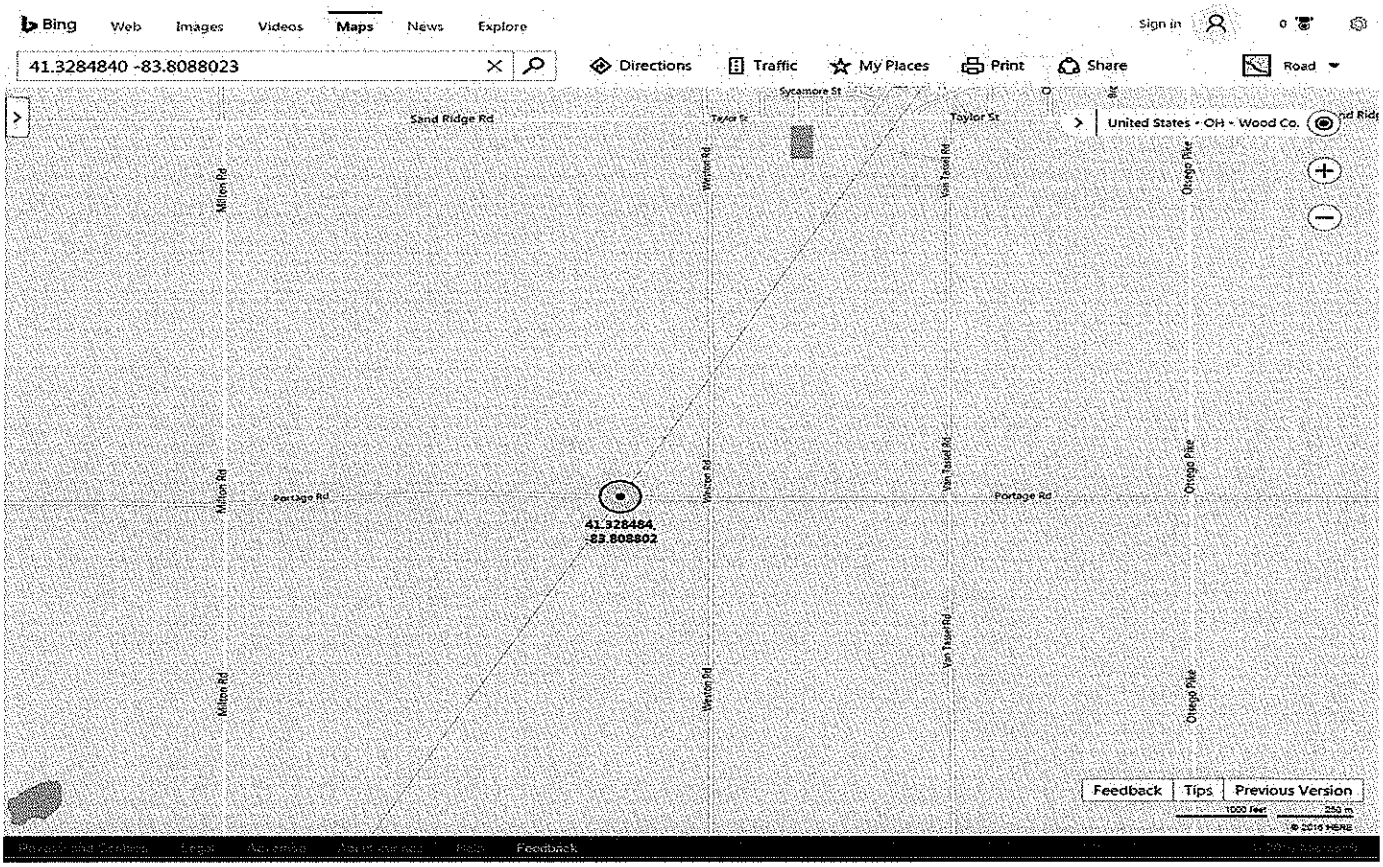
Notes:

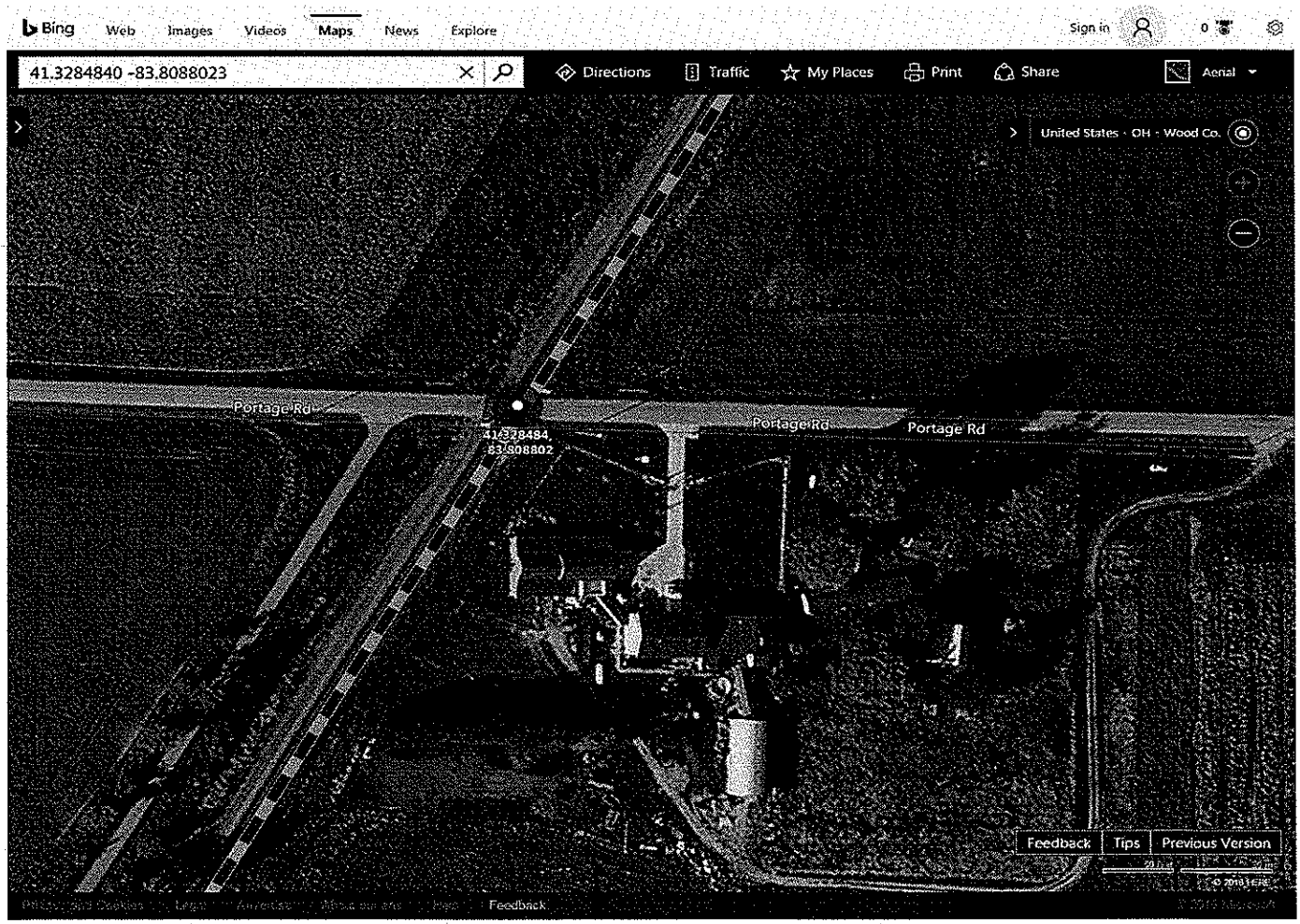
All calculated distances are rounded up to the next higher 5-foot increment.

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.

WOO – Portage Road/TR 21 – DOT # 155776S





Summary: Memorandum In the Matter of a Request for the Installation of Active Warning Devices at the CSX Railroad Crossing, DOT# 155-776S, Portage Road/TR 21 in Wood County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division