

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 3/2/17

Re: PUCO Case No. 17-628-RR-FED- In the Matter of a Consolidation Project for Crossings in the Village of Belmore in Putnam County, Ohio.

On October 31, 2016, the Ohio Rail Development Commission (ORDC) authorized funding for CSX Transportation to install lights and gates at three crossings and the closure of one crossing in the Village of Bellmore. The crossings were surveyed on September 24, 2015 and were found to warrant the upgrades. The electric utility provider for this crossing is American Electric Power (AEP).

The following crossings have the following changes:

Name	DOT#	Improvement
Oak Street	155-744L	Upgrade to Lights and Gates
Main Street	155-745T	Upgrade to Lights and Gates
Elm Street	155-746A	Closure to Vehicles and Pedestrians
Ridge Street	155-747G	Upgrade to Lights and Gates

The projects will be paid for with federal funds and is actual cost. The plans and estimates for all the projects in the amount of \$802,140.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in 12 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

Village of Belmore
Walter Harper
Mayor
P.O. Box 11
Belmore, Ohio 45815

AEP Ohio

**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: Consolidation project including two warning device modifications and one grade crossing closure (PID#102593) in Putnam County, Belmore, Ohio:

<u>Highway ID</u>	<u>DOT#</u>	<u>Improvement</u>
Oak Street	DOT# 155744L	Upgrade to Flashing Lights and Gates
Main Street	DOT# 155745T	Upgrade to Flashing Lights and Gates
Elm Street	DOT# 155746A	Close Crossing to Vehicles and Pedestrians

DATE: February 7, 2017

The Ohio Rail Development Commission (ORDC) established Diagnostic Review Team Survey at the subject highway/railroad crossing locations on 9/24/2015. The Public Utilities Commission of Ohio (PUCO) attended the Diagnostic Surveys. The Diagnostic Review Team recommended the upgrade to flashing lights and gates at the two above referenced crossing and the closure of the third. 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 12-month construction-only order for the consolidation 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 9/24/2015
CSX Force Account Estimate dated 1/5/2017
Proposed Crossing Layouts – PE Approved Signal Displays

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

**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: Putnam County, SR 65 – 22.84, Ridge St. / CSX Transportation
DOT# 155747G
PID# 101888

DATE: February 7, 2017

The Ohio Rail Development Commission (ORDC) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 9/24/2015. The Public Utilities Commission of Ohio (PUCO) attended the Diagnostic Survey. The Diagnostic Review Team recommended the improvement of warning devices from flashers only 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.

The SR 65, Ridge St. upgrade project is adjacent to the Belmore consolidation which includes two additional crossing upgrades and one closure, and all of these projects will be constructed simultaneously. Therefore, to be consistent with the Belmore consolidation, please issue a 12-month construction-only order for the SR 65, Ridge St. project. 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 9/24/2015
CSX Force Account Estimate dated 1/5/2016
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: Construction Authorization for Grade Crossing Warning Device Upgrades
A consolidation project including two warning device upgrades and one crossing closure
in Putnam County, Belmore, Ohio (PID#102593):

<u>Highway ID</u>	<u>DOT#</u>	<u>Improvement</u>
Oak Street	DOT# 155744L	Upgrade to Flashing Lights and Roadway Gates
Main Street	DOT# 155745T	Upgrade to Flashing Lights and Roadway Gates
Elm Street	DOT# 155746A	Close Crossing to Vehicles and Pedestrians

Dear Ms. DeCesare:

The Force Account Estimate dated 1/5/2017 for the referenced project has been reviewed and is acceptable, and the Proposed Crossing Layouts have been approved as to signal layout only. CSX Transportation may proceed with the construction of the proposed grade crossing warning systems 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 \$519,776.00. 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 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 jill.henry@puc.state.oh.us (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), 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.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

4. Curb work is identified on the CSX Proposed Crossing Layout for Main St. (DOT# 155745T). CSX is the responsible party for the hiring and managing of the contractor to install curbs and gutters within railroad rights-of-way. Crossing warning device installations must comply with MUTCD requirements.
5. Open cut of roadways and sidewalks is not permitted except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC. Damaged roadway or sidewalk surfaces must be repaired.
6. CSX will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
7. 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.

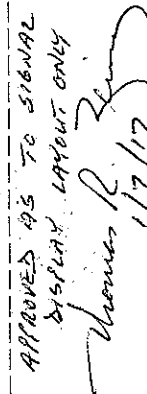
Thank you for your assistance with these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald J. Damron". The signature is fluid and cursive, with the first name "Donald" and last name "Damron" clearly distinguishable.

Donald J. Damron
Project Manager

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



R.R. NORTH TO PERRY

2787 FT.

100 FT.

STA. 8483+98

85 FT.

2787 FT.



ENCLOSURE

(NE)

(SE)

CSXT R.O.W.

CSXT R.O.W.

GRAVEL ROAD

8'x8' METER HOUSE SERVICE

INT. SIGS.

NOTE 2

NOTE 2

DOT #1557451

MAINLINE

136# RE (CHR)

(NW)

(SW)

CSXT R.O.W.

CSXT R.O.W.

APPROACH LENGTHS TABLE		NORTHWARD		SOUTHWARD	
DC, AFO, TYPE C, MOTION, CRT, OR OTHER		M/L	CRT	M/L	CRT
STANDARD WARNING TIME IN SECONDS		25	5	25	5
ROADWAY GATE TIME IN SECONDS		5	5	5	5
CLEARANCE TIME IN SECONDS		0	0	0	0
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS *		0	0	0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED		30 SEC.	30 SEC.	30 SEC.	30 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS *		0	0	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS		5	5	5	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED		35 SEC.	35 SEC.	35 SEC.	35 SEC.
TIME TABLE MAXIMUM TRAIN SPEED IN MILES PER HOUR		50	50	50	50
BUFFER SPEED IN MILES PER HOUR		5	5	5	5
TOTAL WARNING SYSTEM DESIGN SPEED IN MILES PER HOUR		55	55	55	55
APPROACH DISTANCE TO ISLAND EDGE IN FEET		2787	2787	2787	2787
HALF WIDTH OF ISLAND IN FEET		85	85	85	85
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT		161.16	161.16	168.88	168.88

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

- NOTES:
- SEWER LINES PRESENT ALONG ROAD BUT UNMARKED.
 - CURB AND GUTTER TO BE INSTALLED TO MEET MUTCD STANDARDS BY ROADWAY AUTHORITY.

PRODUCED FOR:		PRODUCED BY:		LEGEND		GUARD RAIL		METER SERVICE		GPS COORDINATES		STREET NAME, MAIN STREET	
CSX TRANSPORTATION		Signal South		CSX ROW		O. R. POWER		POLE		41°09'15" N		CITY & STATE, BELMORE, (PUTNAM), OH	
RAIL TRANSPORT GROUP ENGINEERING		12276 SW 11TH BLVD.		R/R POLE LINE		FENCE		FIRE PLUG		83°56'30" W		DOT # 1557451	
COMMUNICATIONS AND SIGNALS		JACKSONVILLE, FL 32223		WATER		SEWER		SEWER CAP		ELEV. 753'		PROJECT # 042016035	
SSR# 16-561				FIBER OPTIC		SEWER		GAS VENT		M.P. BE-168.62		OP # 041151	

PROPOSED CROSSING LAYOUT
 SCALE = 20:1

APPROVED AS TO SIGNAL
 DESIGN, LAYOUT ONLY
 Thomas R. [Signature]
 1/19/17



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
Putnam County, SR 65 – 22.84, Ridge St.
DOT# 155747G
PID# 101888
CSX ACCT. CODE: OH1125

Dear Ms. DeCesare:

The Force Account Estimate dated 1/5/2017 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 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 \$282,364.00. 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.



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phone: 614.644.0306

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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.
5. The Proposed Crossing Layout places the warning devices at 8'-3" from the edge of the roadway; however, the warning devices should be "bumped" out to 10'-3" from the edge of roadway to accommodate any future roadway widening.
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.

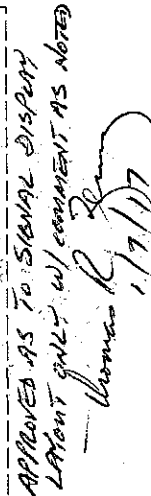
Thank you for your assistance with these matters.

Sincerely,



Donald J. Damron
Project Manager

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



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

Page 1

ACCT. CODE : 709 - OH1151

ESTIMATE SUBJECT TO REVISION AFTER:	7/4/2017	DOT NO.: 155744L/ 155745
CITY: Belmore	COUNTY: Putnam	STATE: OH
DESCRIPTION: Main St., Elm St. and Oak St. - Installation of Flashing Light Signals and Gates at Main and Oak Streets and closure of Elm St.		
DIVISION: Louisville	SUB-DIV: Toledo	MILE POST: BE - 160.94
AGENCY PROJECT NUMBER: PID 102593		

PRELIMINARY ENGINEERING:

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

CONSTRUCTION ENGINEERING/INSPECTION:

212 Contracted & Administrative Engineering Services	\$ 3,000
Subtotal	\$ 3,000

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	\$ -

<u>SIGNAL & COMMUNICATIONS WORK:</u>	(Details Attached)	\$ 508,776
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<u>TRACK WORK:</u>	(Details Attached)	\$ -
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<u>PROJECT SUBTOTAL</u>		\$ 519,776
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900 <u>CONTINGENCIES:</u>		\$ -
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GRAND TOTAL *****		\$ 519,776
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DIVISION OF COST:

Agency	<u>100.00%</u>	\$ 519,776
Railroad		\$ -
TOTAL *****		\$ 519,776

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: 1/5/2017	REVISED:	DATE: 1/5/2017

Estimate No. 128916
CSX Transportation

Oak, Main and Elm St. - Install FLS&G at Oak and Main
Belmore, OH

DOT: 155745T

OP: OH1151

CSX Project: OH2016055

Summary

Material	\$ 135,520
Sales Tax	\$ 0
Labor:	
Construction Labor (270 man-days).....	\$ 102,600
Shop Labor (16 man-days).....	\$ 6,080
Subsistence (270 man-days).....	\$ 40,500
Railroad Engineering, Preliminary	\$ 7,020
Railroad Engineering, Construction	\$ 15,390
Additives to Construction Labor	\$ 121,950
Additives to Shop Labor	\$ 7,227
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 0
Equipment Expenses (0 work days).....	\$ 0
Waste Management (54 work days).....	\$ 648
Contract Engineering	\$ 41,511
Freight	\$ 9,331
Poleline Removal	\$ 0
AC Power Service	\$ 5,000
Salvage	\$ -1
VAC TRUCK	\$ 16,000
TOTAL ESTIMATE COST	\$ 508,777

Date: 12/21/2016
Estimated By: Michael Vorwaller

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

Shop Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
OAK ST MP BE-160.54 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.54

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	78.12	1	78.12	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	345.00	3	1035.00	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	26	1001.26	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	14.31	8	114.48	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	5954.25	1	5954.25	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
020-2503081	1	69.04	1	69.04	MODULE SAFETRAN ECHELON TERMINATION UNIT (A80078) USE
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

Shop Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
OAK ST MP BE-160.54 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.54

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3652615	1	61.32	1	61.32	RESISTOR ADJUSTABLE 0.340 TO 3.00 OHMS 2.24A 15W SAFETRAN
020-4168917	1	0.50	2	1.00	RESISTOR, FIXED .5W, 20W OHM (REPLACEMENT FOR INVENSYS PN
020-4200340	1	1.74	8	13.92	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200350	1	2.06	10	20.60	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	14.88	2	29.76	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, EXTENDED TEMPERATURE RANGE OF
Total Cost: \$				26,360.68	

Field Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
OAK ST MP BE-160.54 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.54

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	2	19.66	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0013475	1	2.21	16	35.36	CONNECTOR TRACK "CHICKEN HEAD" WITH 3/16" BOND STRAND
020-0013686	1	75.94	2	151.88	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64
020-0013870	1	1.33	700	931.00	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
020-0025145	1	395.51	2	791.02	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0053220	1	2.48	150	372.00	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	1001.28	2	2002.56	GATE SAVER COMPLETE WITH SHEAR PIN AND RETURN SPRING
020-0055421	1	23.96	6	143.76	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056674	1	6017.69	2	12035.38	SIGNAL 0220-L GCWD GATE ASSY DWG SS222 INCLS 18 FBRGL ARM
020-0056823	1	17.77	1	17.77	TAPE UG RED CABLE MARKER IMPRINT TO READ "CAUTION
020-0057275	1	1.07	600	642.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	127.92	20	2558.40	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040324	1	186.48	9	1678.32	BATTERY SAFT SPL250, 250 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	1	31.36	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	3	137.76	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	1.00	300	300.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.14	20	122.80	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	22.57	1	22.57	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE
020-1360104	1	1394.70	1	1394.70	LAYOUT AC METER SERVICE WITH 30' POLE CSX DWG SS351 SH 2
020-2500440	1	57.29	1	57.29	INDUCTOR 8V617-2400 DUMMY LOAD SAFETRAN
020-2500591	1	416.32	1	416.32	SHUNT SAFETRAN 62775-1543 MULTI-FREQUENCY NARROW BAND
020-2500625	1	258.93	1	258.93	SHUNT SAFETRAN 62775-285 NARROW BAND 285HZ

Field Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
OAK ST MP BE-160.54 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.54

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3901895	1	100.52	2	201.04	TIP FLEX HWY CROSSING GATE 24 IN LONG ENGINEERING GRADE RED
020-3920200	1	178.76	2	357.52	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	25	43.50	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.17	8	1.36	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.13	20	2.60	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.09	150	13.50	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.08	100	8.00	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-7300030	1	189.28	2	378.56	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	15.21	1	15.21	BREAKER CIRCUIT SQ D QO260
250-0012228	1	3.70	3	11.10	TAPE BLACK ELECTRIC 3/4" X 66' 3M "SUPER 33 PLUS"
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
470-0060313	1	29.97	1	29.97	FOAM SEALANT CF812 FOR HILTI CP120-P2 DISPENSER SINGLE 23
Total Cost: \$				28,831.57	

Consumables List for CSX Project: OH2016055 (Effective: 12/21/2016)
OAK ST MP BE-160.54 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.54

Catalog Num	Cond	Unit Price	Qty	Cost Description
N/A		50.00	15	750.00 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	0.28	350	98.00 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0017607	1	0.70	500	350.00 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	0.77	130	100.10 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	1200	2904.00 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
020-3261970	1	9.41	2	18.82 DECAL (DO NOT ORDER, CALL SIGNAL SHOP) ASSY 2" BLACK
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 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: \$				7,670.52

Shop Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
MAIN ST MP BE-160.62 INSTALL GCP-4000 8X8 AND FLGS
BELMORE, OH - BE 160.62

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	78.12	1	78.12	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	3	320.10	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	345.00	3	1035.00	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	28	1078.28	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	14.31	12	171.72	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	22.40	4	89.60	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1000355	1	8092.00	1	8092.00	HOUSE SIGNAL 8FT X 8FT WITH PTC UPGRADE PTMW P/N 91000355
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
020-2503081	1	69.04	1	69.04	MODULE SAFETRAN ECHELON TERMINATION UNIT (A80078) USE
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
020-2503220	1	14073.70	1	14073.70	PREDICTOR SAFETRAN GCP-4000 2-TRACK DUAL CASE W/RECORDER
020-3430110	1	363.23	2	726.46	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

Shop Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
MAIN ST MP BE-160.62 INSTALL GCP-4000 8X8 AND FLGS
BELMORE, OH - BE 160.62

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3652615	1	61.32	1	61.32	RESISTOR ADJUSTABLE 0.340 TO 3.00 OHMS 2.24A 15W SAFETRAN
020-4168917	1	0.50	2	1.00	RESISTOR, FIXED .5W, 20W OHM (REPLACEMENT FOR INVENSYS PN
020-4200340	1	1.74	12	20.88	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200350	1	2.06	10	20.60	LINK TEST ASSEMBLY 2-3/8" CENTERS YELLOW INSULATOR ON
020-4201046	1	0.15	1000	150.00	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-8000067	1	14.88	2	29.76	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, EXTENDED TEMPERATURE RANGE OF
Total Cost: \$				32,756.59	

Field Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
MAIN ST MP BE-160.62 INSTALL GCP-4000 8X8 AND FLSG
BELMORE, OH - BE 160.62

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	2	19.66	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0010449	1	15.78	2	31.56	BOX, 9 INCH DIA. "FLOWER POT" ENCLOSURE WITH HD
020-0013475	1	2.21	20	44.20	CONNECTOR TRACK "CHICKEN HEAD" WITH 3/16" BOND STRAND
020-0013686	1	75.94	4	303.76	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64
020-0013687	1	39.99	2	79.98	SPLICE TRACK WIRE TO BONDSTRAND (FLOWER POT KIT)
020-0013908	1	6.36	400	2544.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0014000	1	4.17	400	1668.00	CABLE UG 10 COND NO 9 AWG SOLID C CSX SPEC SS796 SHOW
020-0025145	1	395.51	2	791.02	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0053220	1	2.48	150	372.00	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	1001.28	2	2002.56	GATE SAVER COMPLETE WITH SHEAR PIN AND RETURN SPRING
020-0055421	1	23.96	6	143.76	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
020-0056823	1	17.77	1	17.77	TAPE UG RED CABLE MARKER IMPRINT TO READ "CAUTION
020-0056999	1	285.00	1	285.00	CROSSARM 36" OFFSET SIDELT CANTLR BRKT ASSY DOES NOT
020-0057005	1	0.24	20	4.80	TAG TEXIT HEATEX WIRE MARK 2:1 WHITE 12.7MM X 38MM (1/2"
020-0057078	1	699.73	1	699.73	SIGNAL CROSSARM FLX-4000 LED & 1-WAY JB CROSSARM NO
020-0057275	1	1.07	1200	1284.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	127.92	20	2558.40	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040324	1	186.48	9	1678.32	BATTERY SAFT SPL250, 250 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	1	31.36	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	3	137.76	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	1.00	700	700.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.14	30	184.20	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

Field Material List for CSX Project: OH2016055 (Effective: 12/21/2016)
MAIN ST MP BE-160.62 INSTALL GCP-4000 8X8 AND FLGS
BELMORE, OH - BE 160.62

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-1360016	1	22.57	1	22.57	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE
020-1360104	1	1394.70	1	1394.70	LAYOUT AC METER SERVICE WITH 30' POLE CSX DWG SS351 SH 2
020-2500615	1	301.96	2	603.92	SHUNT SAFETRAN 62775-156 NARROW BAND 156HZ
020-2530287	1	247.52	2	495.04	FILTER EPC 800-080055-103 TF-156
020-3263640	1	0.28	10	2.80	SLEEVE NICOPRESS 14 AWG SOLID COPPER WIRE 1-1/8" LONG STD
020-3901895	1	100.52	2	201.04	TIP FLEX HWY CROSSING GATE 24 IN LONG ENGINEERING GRADE RED
020-3920200	1	178.76	2	357.52	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	25	43.50	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.17	14	2.38	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.13	20	2.60	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.09	150	13.50	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.08	100	8.00	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-7300030	1	189.28	2	378.56	BRACKET BELL FITS SAFETRAN JUNCTION BOX MOUNT, 5" BENT
020-9999991	1	100.00	1	100.00	BLOCKING AND BRACING FOR PROJECTS BURCO DIST
022-0054167	1	27.64	1	27.64	KIT 72-N2CH SPLICING, USE FOR COMMUNICATIONS F/CABLE DIA
250-0001836	1	15.21	1	15.21	BREAKER CIRCUIT SQ D QO260
250-0012228	1	3.70	3	11.10	TAPE BLACK ELECTRIC 3/4" X 66' 3M "SUPER 33 PLUS"
250-0870390	1	9.02	1	9.02	BREAKER CIRCUIT SQ D QOU115 1 POLE 15 AMP 125V
250-0870400	1	20.69	1	20.69	BREAKER CIRCUIT SQ D QOU215 2 POLE 15 AMP G-SS-1A-102
250-1680406	1	0.50	20	10.00	CONDUIT LIQUID TIGHT 3/4" FLEXIBLE GREY PVC CARLON P/N
250-1680408	1	0.86	20	17.20	CONDUIT LIQUID TIGHT 3/4" NON-METALLIC ORANGE PVC
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
470-0060313	1	29.97	1	29.97	FOAM SEALANT CF812 FOR HILTI CP120-P2 DISPENSER SINGLE 23

Total Cost: \$ 33,102.03

Consumables List for CSX Project: OH2016055 (Effective: 12/21/2016)
MAIN ST MP BE-160.62 INSTALL GCP-4000 8X8 AND FLGS
BELMORE, OH - BE 160.62

Catalog Num	Cond	Unit Price	Qty	Cost Description
N/A		145.00	4	580.00 BARRICADE, TYPE 1 96"L X 40"H GRAINGER PN 13P869
N/A		50.00	15	750.00 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	0.28	350	98.00 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0017607	1	0.70	500	350.00 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	0.77	130	100.10 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	600	1452.00 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
020-3261970	1	9.41	2	18.82 DECAL (DO NOT ORDER, CALL SIGNAL SHOP) ASSY 2" BLACK
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 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: \$				6,798.52

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

Page 1

ACCT. CODE : 709 - OH1125

ESTIMATE SUBJECT TO REVISION AFTER:	7/4/2017	DOT NO.: 155747G
CITY: Belmore	COUNTY: Putnam	STATE: OH
DESCRIPTION: Ridge St. (SR 65-22) - Installation of Flashing Light Signals and Gates.		

DIVISION: Louisville	SUB-DIV: Toledo	MILE POST: BE - 160.94
AGENCY PROJECT NUMBER: PID 101888		

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	\$ -

<u>SIGNAL & COMMUNICATIONS WORK:</u> (Details Attached)	\$ 276,864
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<u>TRACK WORK:</u> (Details Attached)	\$ -
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<u>PROJECT SUBTOTAL</u>	\$ 282,364
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900 <u>CONTINGENCIES:</u>	\$ -
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GRAND TOTAL *****	\$ 282,364
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DIVISION OF COST:

Agency	<u>100.00%</u>	\$ 282,364
Railroad		\$ -
TOTAL *****		\$ 282,364

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: 1/5/2017	REvised: DATE: 1/5/2017	

Estimate No. 128915
CSX Transportation
Ridge St. - Install FLS&G
Belmore, OH

DOT: 155747G

OP: OH1125

CSX Project: OH2016053

Summary

Material	\$ 69,942
Sales Tax	\$ 0
Labor:	
Construction Labor (156 man-days).....	\$ 59,280
Shop Labor (7 man-days).....	\$ 2,660
Subsistence (156 man-days).....	\$ 23,400
Railroad Engineering, Preliminary	\$ 5,079
Railroad Engineering, Construction	\$ 8,892
Additives to Construction Labor	\$ 70,460
Additives to Shop Labor	\$ 3,162
Additives to Track Labor	\$ 0
Additives to Engineering	\$ 0
Equipment Expenses (0 work days).....	\$ 0
Waste Management (33 work days).....	\$ 396
Contract Engineering	\$ 17,697
Freight	\$ 5,397
Poleline Removal	\$ 0
AC Power Service	\$ 2,500
Salvage	\$ -1
VAC TRUCK	\$ 8,000
TOTAL ESTIMATE COST	\$ 276,864

Date: 12/21/2016
Estimated By: Michael Vorwaller

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

Shop Material List for CSX Project: OH2016053 (Effective: 12/21/2016)
RIDGE ST MP BE-160.94 INSTALL GCP-4000 6X6 AND FLGS
BELMORE, OH - BE 160.94

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	78.12	1	78.12	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	345.00	3	1035.00	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	26	1001.26	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	14.31	8	114.48	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	5954.25	1	5954.25	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
020-2503081	1	69.04	1	69.04	MODULE SAFETRAN ECHELON TERMINATION UNIT (A80078) USE
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

Shop Material List for CSX Project: OH2016053 (Effective: 12/21/2016)
RIDGE ST MP BE-160.94 INSTALL GCP-4000 6X6 AND FLSG
BELMORE, OH - BE 160.94

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-3652615	1	61.32	1	61.32	RESISTOR ADJUSTABLE 0.340 TO 3.00 OHMS 2.24A 15W SAFETRAN
020-4168917	1	0.50	2	1.00	RESISTOR, FIXED .5W, 20W OHM (REPLACEMENT FOR INVENSYS PN
020-4200340	1	1.74	8	13.92	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200350	1	2.06	10	20.60	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	14.88	2	29.76	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, EXTENDED TEMPERATURE RANGE OF
Total Cost: \$				26,360.68	

Field Material List for CSX Project: OH2016053 (Effective: 12/21/2016)
RIDGE ST MP BE-160.94 INSTALL GCP-4000 6X6 AND FLGS
BELMORE, OH - BE 160.94

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	2	19.66	BOX GROUND ROD CONNECTION ENCLOSURE COMPLETE WITH 7"
020-0013475	1	2.21	16	35.36	CONNECTOR TRACK "CHICKEN HEAD" WITH 3/16" BOND STRAND
020-0013686	1	75.94	2	151.88	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
020-0025145	1	395.51	2	791.02	SHUNT ENCLOSURE WAYSIDE MOUNT ASSEMBLY COMPLETE WITH LOCK
020-0053220	1	2.48	150	372.00	CABLE POWER UG 3 COND NO 6 AWG - SHOW LENGTH ON EACH
020-0054075	1	1001.28	2	2002.56	GATE SAVER COMPLETE WITH SHEAR PIN AND RETURN SPRING
020-0055421	1	23.96	6	143.76	BRACKET SIGN 4" OR 5" MAST W/1/2" U-BOLT FOR ALL SIGNS
020-0056674	1	6017.69	2	12035.38	SIGNAL 0220-L GCWD GATE ASSY DWG SS222 INCLS 18 FBRGL ARM
020-0056823	1	17.77	1	17.77	TAPE UG RED CABLE MARKER IMPRINT TO READ "CAUTION
020-0057275	1	1.07	600	642.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	127.92	20	2558.40	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040324	1	186.48	9	1678.32	BATTERY SAFT SPL250, 250 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	31.36	1	31.36	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	45.92	3	137.76	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1150750	1	1.00	300	300.00	BOND STRAND 3/16" DIA 7 STRANDS OF 19 STR EACH 6 WITH
020-1304014	1	6.14	20	122.80	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	22.57	1	22.57	PACKAGE SAFETY FOR BURCO CONTAINERS COMPLETE WITH ONE
020-1360104	1	1394.70	1	1394.70	LAYOUT AC METER SERVICE WITH 30' POLE CSX DWG SS351 SH 2
020-2500436	1	92.01	1	92.01	INDUCTOR 8V617-1600 DUMMY LOAD SAFETRAN
020-2500590	1	470.76	1	470.76	SHUNT SAFETRAN P/N 6000-62775-8621 NARROW BAND
020-2500605	1	390.73	1	390.73	SHUNT SAFETRAN 62775-86 NARROW BAND 86HZ

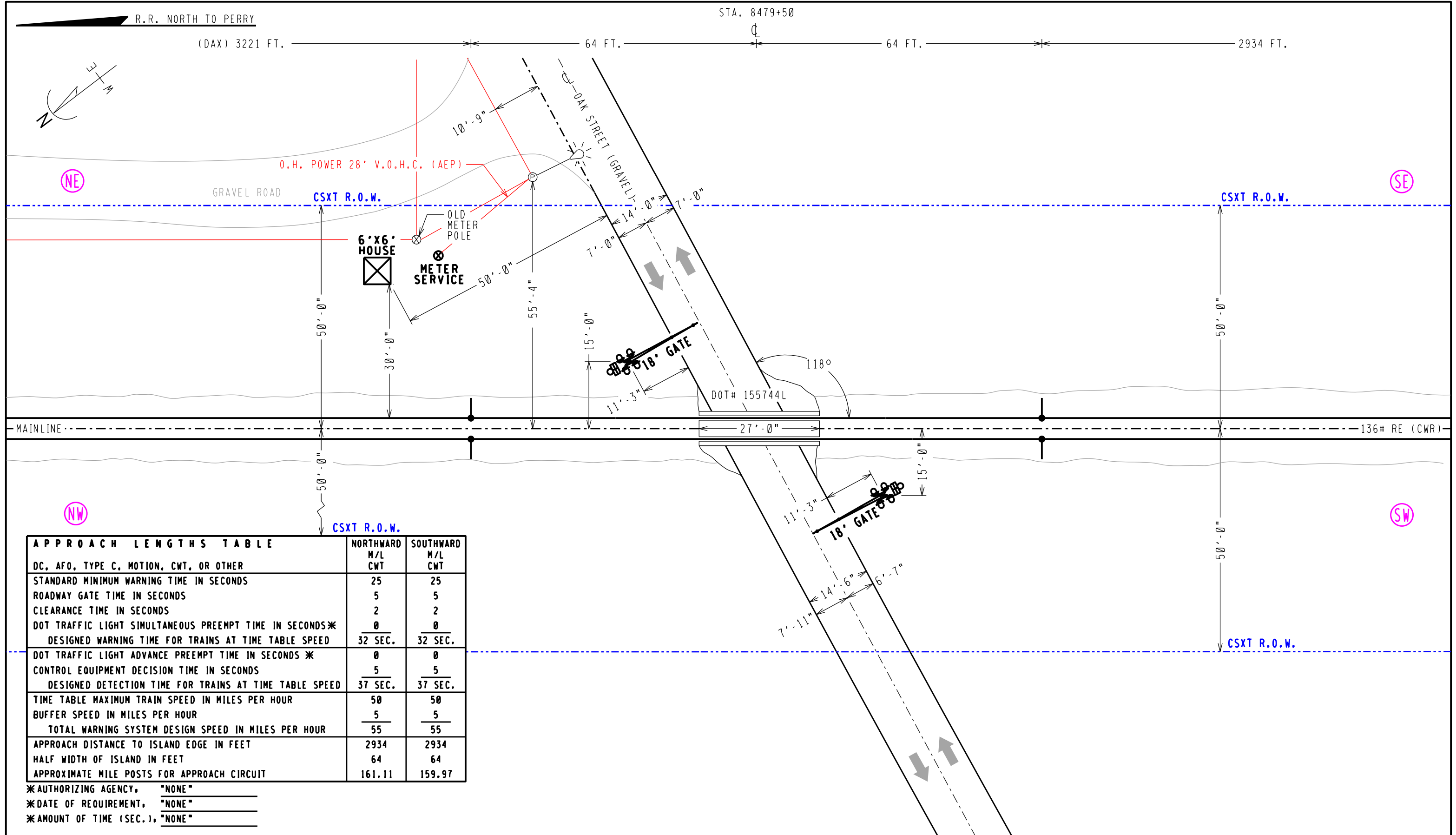
Field Material List for CSX Project: OH2016053 (Effective: 12/21/2016)
RIDGE ST MP BE-160.94 INSTALL GCP-4000 6X6 AND FLGS
BELMORE, OH - BE 160.94

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-2530280	1	312.12	1	312.12	FILTER EPC 800-080055-107 TF-86
020-3263640	1	0.28	10	2.80	SLEEVE NICOPRESS 14 AWG SOLID COPPER WIRE 1-1/8" LONG STD
020-3901895	1	100.52	2	201.04	TIP FLEX HWY CROSSING GATE 24 IN LONG ENGINEERING GRADE RED
020-3920200	1	178.76	2	357.52	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	25	43.50	LINK TEST ASSEMBLY 1" CENTERS YELLOW INSULATOR ON OFFSET
020-4200900	1	0.17	8	1.36	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.13	20	2.60	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.09	150	13.50	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.08	100	8.00	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-7300030	1	189.28	2	378.56	BRACKET BELL FITS SAFETRAN JUNCTION BOX MOUNT, 5" BENT
020-9999991	1	100.00	1	100.00	BLOCKING AND BRACING FOR PROJECTS BURCO DIST
022-0054167	1	27.64	1	27.64	KIT 72-N2CH SPLICING, USE FOR COMMUNICATIONS F/CABLE DIA
250-0001836	1	15.21	1	15.21	BREAKER CIRCUIT SQ D QO260
250-0012228	1	3.70	3	11.10	TAPE BLACK ELECTRIC 3/4" X 66' 3M "SUPER 33 PLUS"
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
470-0060313	1	29.97	1	29.97	FOAM SEALANT CF812 FOR HILTI CP120-P2 DISPENSER SINGLE 23
Total Cost: \$				31,789.09	

Consumables List for CSX Project: OH2016053 (Effective: 12/21/2016)
RIDGE ST MP BE-160.94 INSTALL GCP-4000 6X6 AND FLGS
BELMORE, OH - BE 160.94

Catalog Num	Cond	Unit Price	Qty	Cost Description
N/A		50.00	20	1000.00 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	0.28	350	98.00 WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE P/N
020-0017607	1	0.70	500	350.00 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	0.77	130	100.10 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	2800	6776.00 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
020-3261970	1	9.41	2	18.82 DECAL (DO NOT ORDER, CALL SIGNAL SHOP) ASSY 2" BLACK
020-4200880	1	0.53	2	1.06 CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88 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

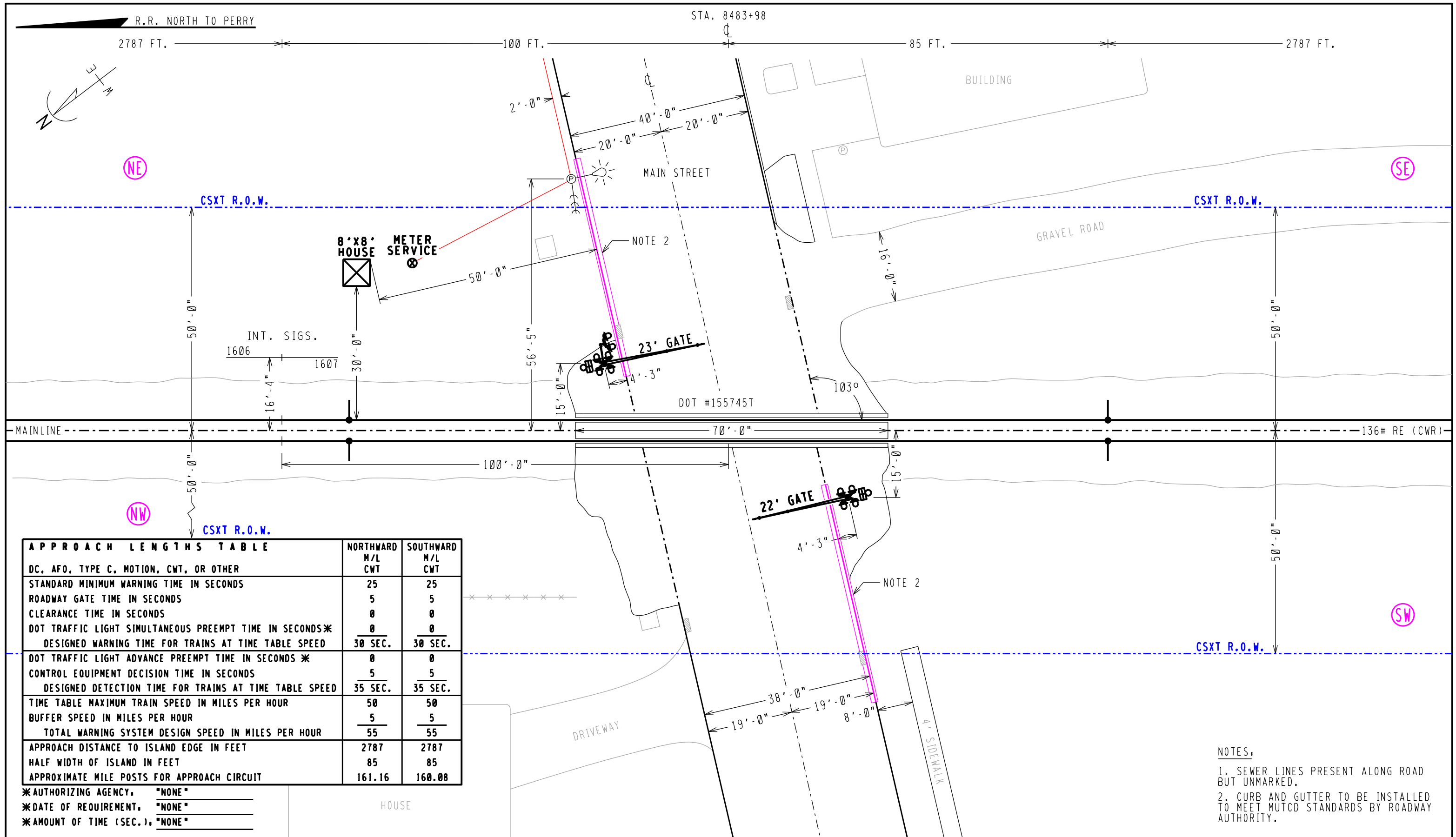
Total Cost: \$ 11,792.52



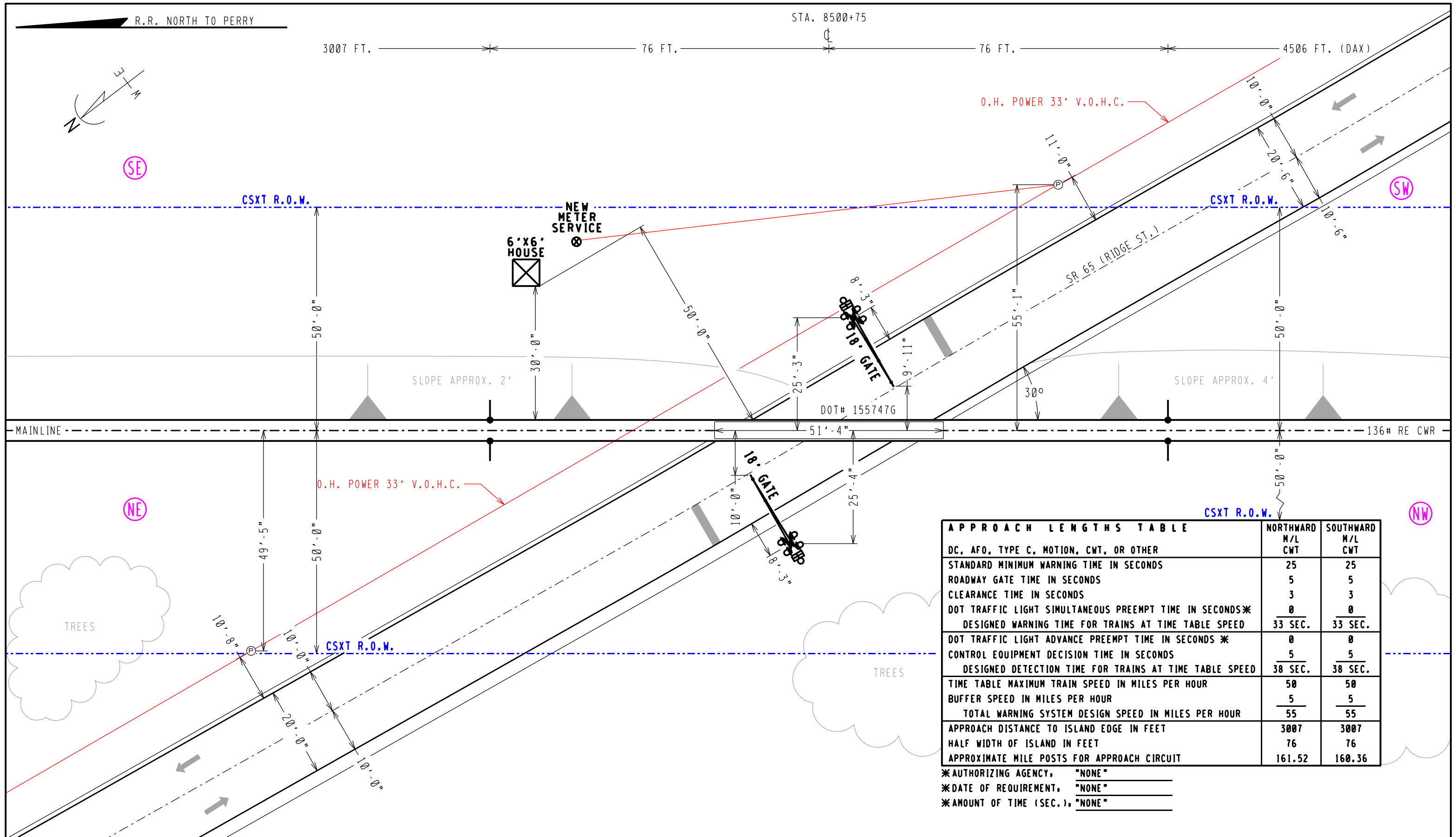
APPROACH LENGTHS TABLE		
DC, AFO, TYPE C, MOTION, CWT, OR OTHER	NORTHWARD M/L CWT	SOUTHWARD M/L CWT
STANDARD MINIMUM WARNING TIME IN SECONDS	25	25
ROADWAY GATE TIME IN SECONDS	5	5
CLEARANCE TIME IN SECONDS	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS*	0	0
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED	32 SEC.	32 SEC.
DOT TRAFFIC LIGHT ADVANCE PREEMPT TIME IN SECONDS *	0	0
CONTROL EQUIPMENT DECISION TIME IN SECONDS	5	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	37 SEC.	37 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	2934
HALF WIDTH OF ISLAND IN FEET	64	64
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	161.11	159.97

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

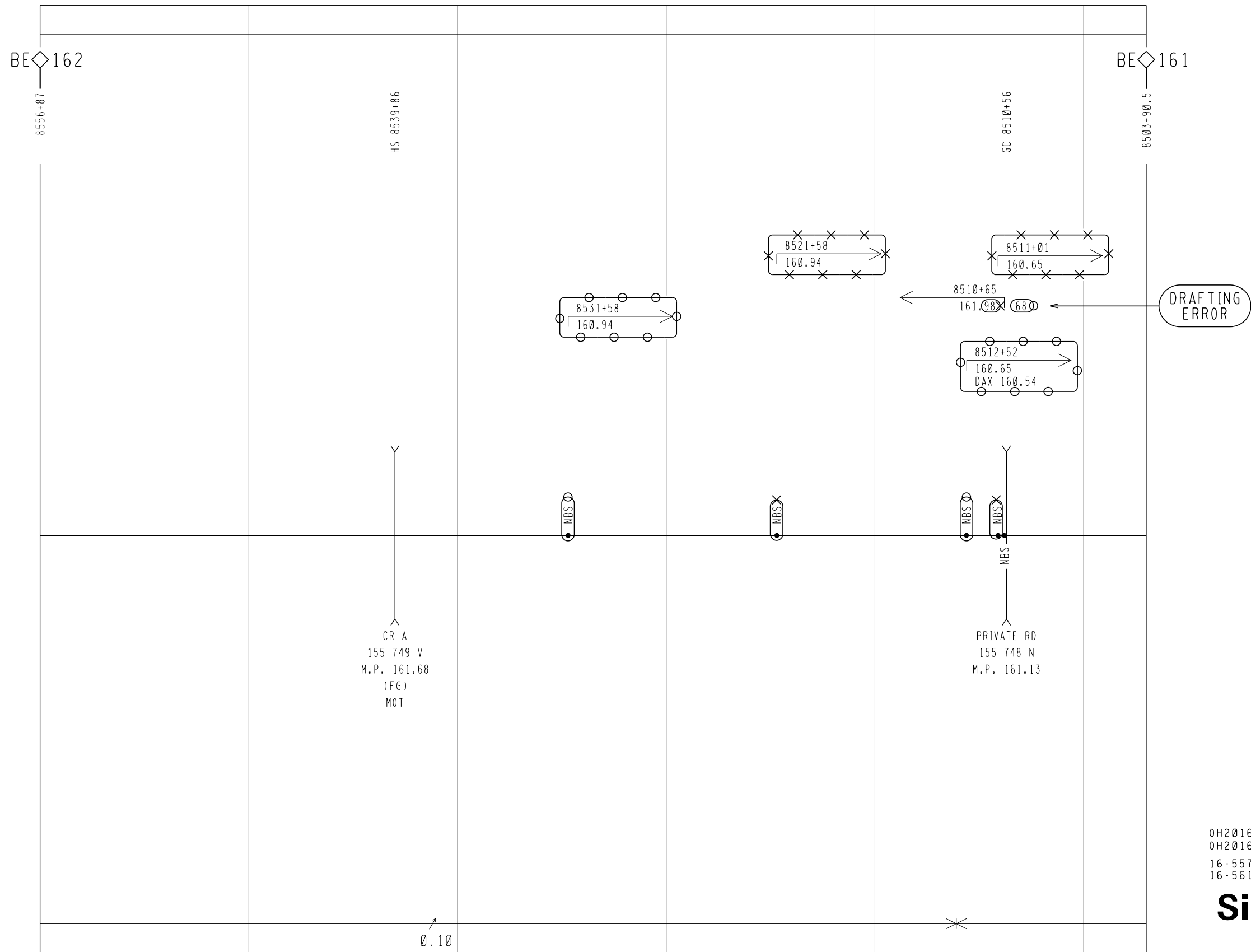
FILE NAME, BE16054.H01	REVISION DATES	PRODUCED FOR,	PRODUCED BY,	LEGEND	GUARD RAIL	METER SERVICE	GPS COORDINATES	STREET NAME, OAK STREET
DATE DRAWN, 11-16-16	12-15-16	 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	 Signal South 12276 SAN JOSE BLVD. JACKSONVILLE, FL 32223	CSX ROW	O.H. POWER	POLE	41°09'11" N	CITY & STATE, BELMORE, (PUTNAM), OH
DRAWN BY, JNA	-			R/R POLELINE	FENCE	FIRE PLUG	83°56'32"W	DOT, 155744L
CHECKED BY, SSE	-			GAS	WATER	SEWER CAP	ELEV. 737'	PROJECT #, OH2016055
SSE#, 16-561	-			FIBER OPTIC	SEWER	GAS VENT	M.P. BE-160.54	OP #, OH1151
								PROPOSED CROSSING LAYOUT SCALE = 20:1



FILE NAME, BE16062.H01	REVISION DATES	PRODUCED FOR,	PRODUCED BY,	LEGEND	GUARD RAIL	METER SERVICE	GPS COORDINATES	STREET NAME, MAIN STREET
DATE DRAWN, 11-16-16	12-15-16	 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	 Signal South 12276 SAN JOSE BLVD. JACKSONVILLE, FL 32223	CSX ROW	O.H. POWER	POLE	41°09'15" N	CITY & STATE, BELMORE, (PUTNAM), OH
DRAWN BY, JNA				R/R POLELINE	FENCE	FIRE PLUG	83°56'30" W	DOT, 155745T
CHECKED BY, SSE				GAS	WATER	SEWER CAP	ELEV. 753'	PROJECT #, 0H2016055
SSE#, 16-561				FIBER OPTIC	SEWER	GAS VENT	M.P. BE-160.62	OP #, 0H1151
								PROPOSED CROSSING LAYOUT
								SCALE = 20:1



FILE NAME, BE16094.H01	REVISION DATES	PRODUCED FOR,	PRODUCED BY,	LEGEND	GUARD RAIL	METER SERVICE	GPS COORDINATES	STREET NAME, SR 65 (RIDGE ST.)	
DATE DRAWN, 11-16-16	12-14-16	 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	 Signal South 12276 SAN JOSE BLVD. JACKSONVILLE, FL 32223	CSX ROW	O.H. POWER	POLE	41°09'29" N	CITY & STATE, BELMORE, (PUTNAM), OH	
DRAWN BY, CP	-			R/R POLELINE	FENCE	FIRE PLUG	83°56'18"W	DOT, 155747G	PROPOSED CROSSING LAYOUT SCALE = 20:1
CHECKED BY, SSE	-			GAS	WATER	SEWER CAP	ELEV. 733'	PROJECT #, OH2016053	
SSE#, 16-557	-			FIBER OPTIC	SEWER	GAS VENT	M.P. BE-160.94	OP #, OH1125	

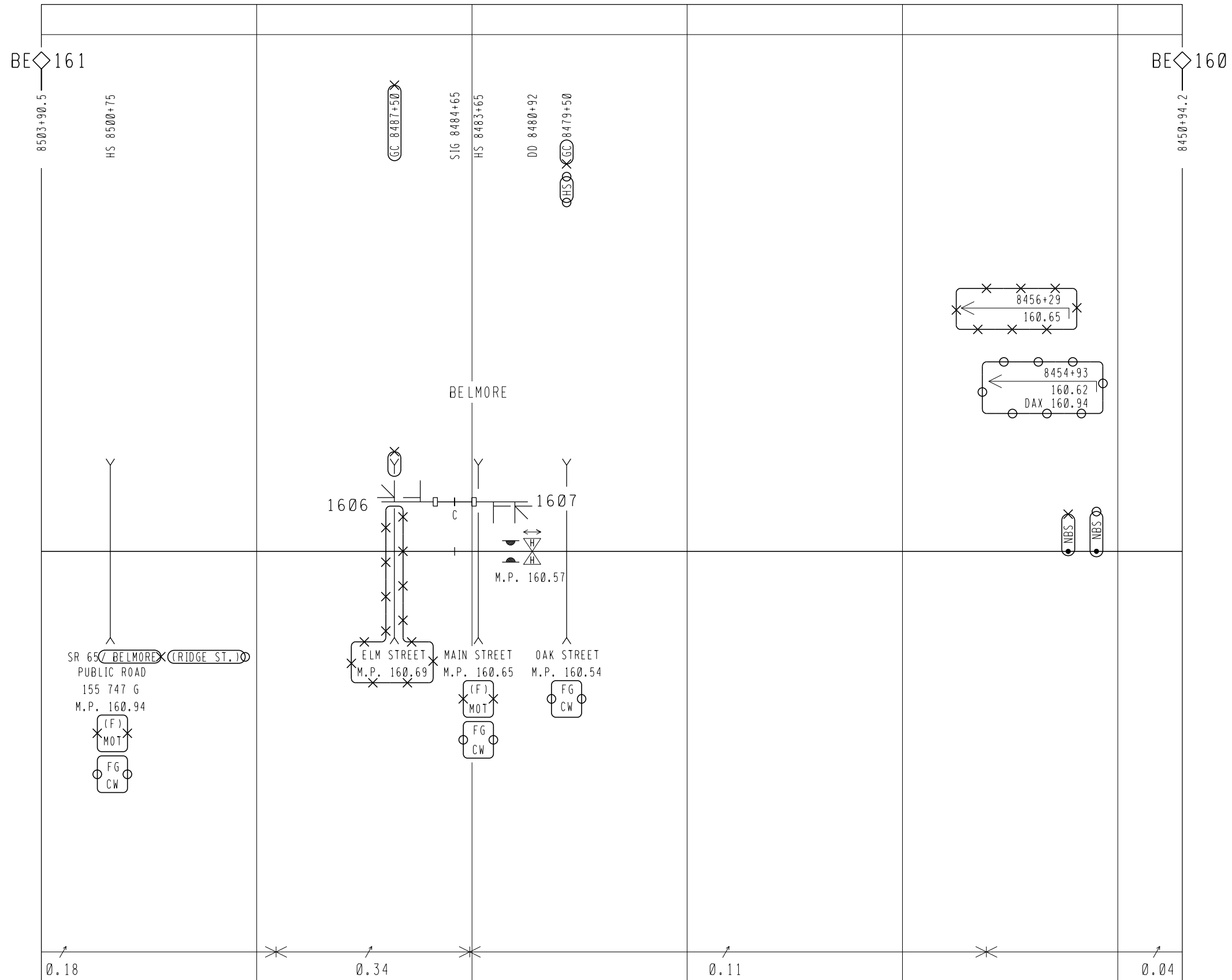


○ = NOTE
○-○-○ = IN
×××× = OUT

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM /JLM
12-06-16

REVISIONS											TRACK PLAN HORIZONTAL SCALE, 1 INCH = 500 FEET		 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS					
											DESIGNED ORS/TJF	DIGITIZED ORS/TJF	CHECKED ORS/BGS	DATE 08/06/90	NEXT FILE BE16000	NEXT SH T01	FILE BE16100	SHEET T01
	01-28-02 SWE 0H199039 08-12-16 XRL 0H2015029																	

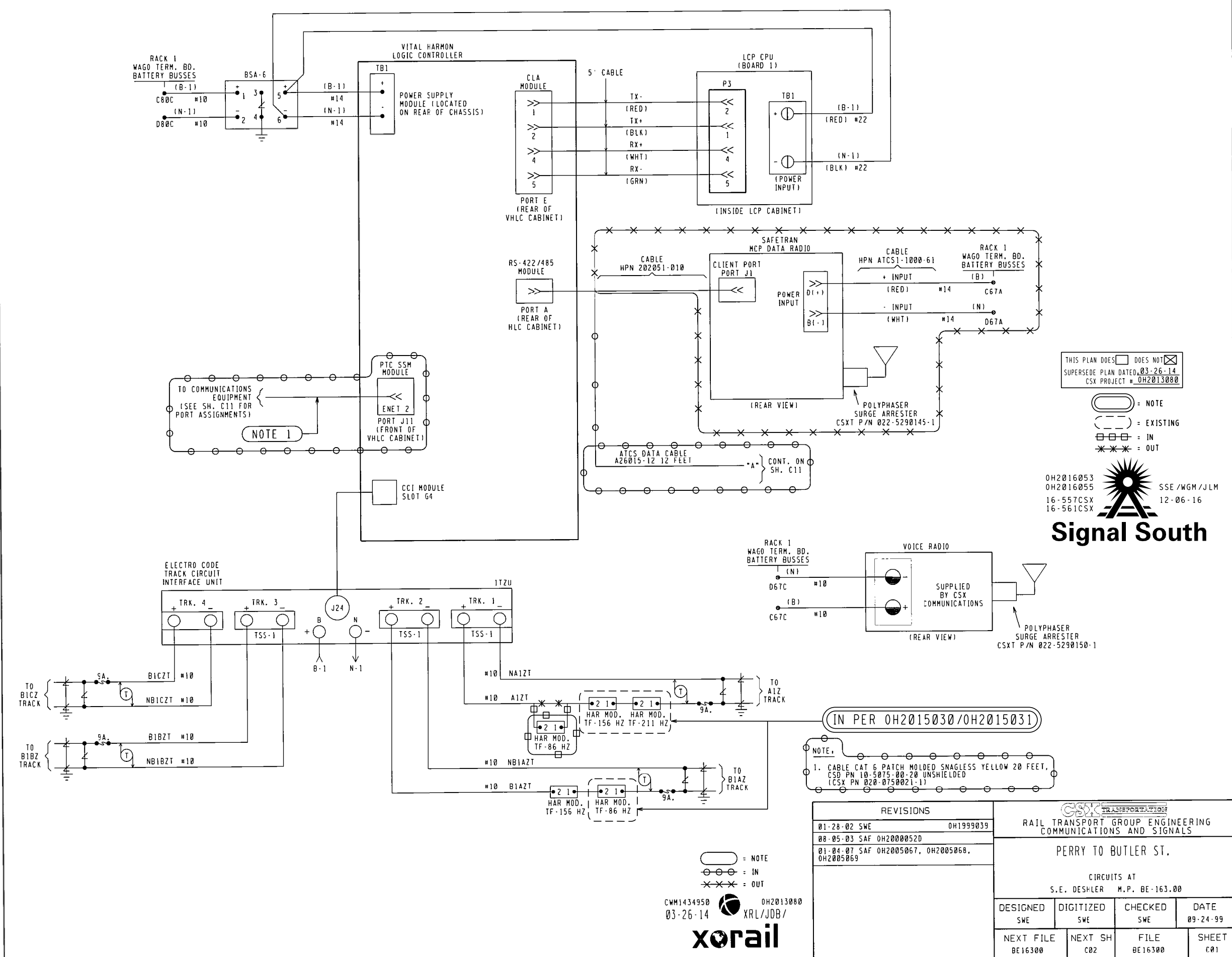


○○○ = IN
 ××× = OUT

0H2016053
 0H2016055
 16-557CSX
 16-561CSX

SSE /WGM/JLM
 12-06-16

REVISIONS 05-23-98 HAR 04-07-82 01-28-02 SWE 04-19-90 J9 08-05-03 SAF 08-06-02 J2D											HORIZONTAL SCALE ,		M.P. BE-161 TO BE-160 TRACK PLAN PERRY TO SEDT ERIE JCT.		 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS							
											1 INCH = 500 FEET				DESIGNED ORS/TJF	DIGITIZED ORS/TJF	CHECKED ORS/BGS	DATE 08/06/90	NEXT FILE BE15900	NEXT SH T01	FILE BE16000	SHEET T01



THIS PLAN DOES ☐ DOES NOT ☒
SUPERSEDE PLAN DATED 03-26-14
CSX PROJECT # 0H2013080

= NOTE
 = EXISTING
 = IN
 = OUT

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

IN PER 0H2015030/0H2015031

NOTE:
1. CABLE CAT 6 PATCH MOLDED SNAGLESS YELLOW 20 FEET,
CSX PN 10-5075-00-20 UNSHIELDED
(CSX PN 020-0750021-1)

REVISIONS				RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
01-28-02 SWE		0H1999039		PERRY TO BUTLER ST.			
08-05-03 SAF	0H20000520						
01-04-07 SAF	0H2005067, 0H2005068, 0H2005069			CIRCUITS AT S.E. DESHLER M.P. BE-163.00			
DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99	NEXT FILE BE16300	NEXT SH C02	FILE BE16300	SHEET C01

= NOTE
 = IN
 = OUT
CWM1434950 0H2013080
03-26-14 XRL/JDB/
xorail

REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2015029	02-26-16	07-07-16	08-12-16
2	0H2016053 0H2016055	12-06-16	-----	-----

TO BE COMPLETED
ON A.I.S.

SH. NO.		INDEX CONTENTS									
		REVISION NO.									
I01	INDEX AND REVISIONS	X	Ø								
S01	TRACK AND SIGNAL PLAN	X	Ø								
P01	MINIMUM PROGRAM STEPS REPORT CWE-68	X									
E01	POWER DISTRIBUTION	X									
C01	DETECTION DEVICE CONSIST CWE-68	X									
C02	DETECTION CIRCUITRY CWE-68	X									
C03	DETECTION CIRCUITRY CWE-68	X									
C04	CROSSING WARNING DEVICE GATE CIRCUITRY	X									
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY	X									
C06	CROSSING WARNING DEVICE CIRCUITRY	X									
C07	SEAR II: CONFIGURATION & FUNCTIONS	X									

X = PLANS SENT TO FIELD (DISTRIBUTED)

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

Ø = NOTE

Ø-Ø-Ø = IN

X-X-X = OUT

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

CR A 155749V

INDEX AND REVISIONS
BELMORE, OH M.P. BE-161.68

DESIGNED XRL	DIGITIZED XRL	CHECKED XRL	DATE 02-26-16		
DESIGNED DATE X02-26-16X	REV. NO. 1X	DRAWING -----	SHEET NO -----	FILE BE16168	SHEET 101

INDEX
CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS									
S01A	TRACK AND SIGNAL PLAN									
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS (OPTIONAL)									
P01	MINIMUM PROGRAM STEPS REPORT CWE-94									
E01A	POWER DISTRIBUTION									
C01A	DETECTION DEVICE CONSIST CWE-94									
C02A	DETECTION CIRCUITRY CWE-94									
C03	DETECTION CIRCUITRY CWE-94									
C04	CROSSING WARNING DEVICE GATE CIRCUITRY									
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
C06	CROSSING WARNING DEVICE CIRCUITRY									
C07	SEAR II: CONFIGURATION & FUNCTIONS									

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

= NOTE

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

CSX

TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

SR 65 (RIDGE ST.)

155747G

INDEX AND REVISIONS
BELMORE, OH M.P. BE-160.94

DESIGNED
SSE

DIGITIZED
SSE

CHECKED
SSE

DATE
12-06-16

DESIGN DATE
12-06-16

REV. NO.
1

DRAWING
.....

SHEET NO
.....

FILE
BE16094

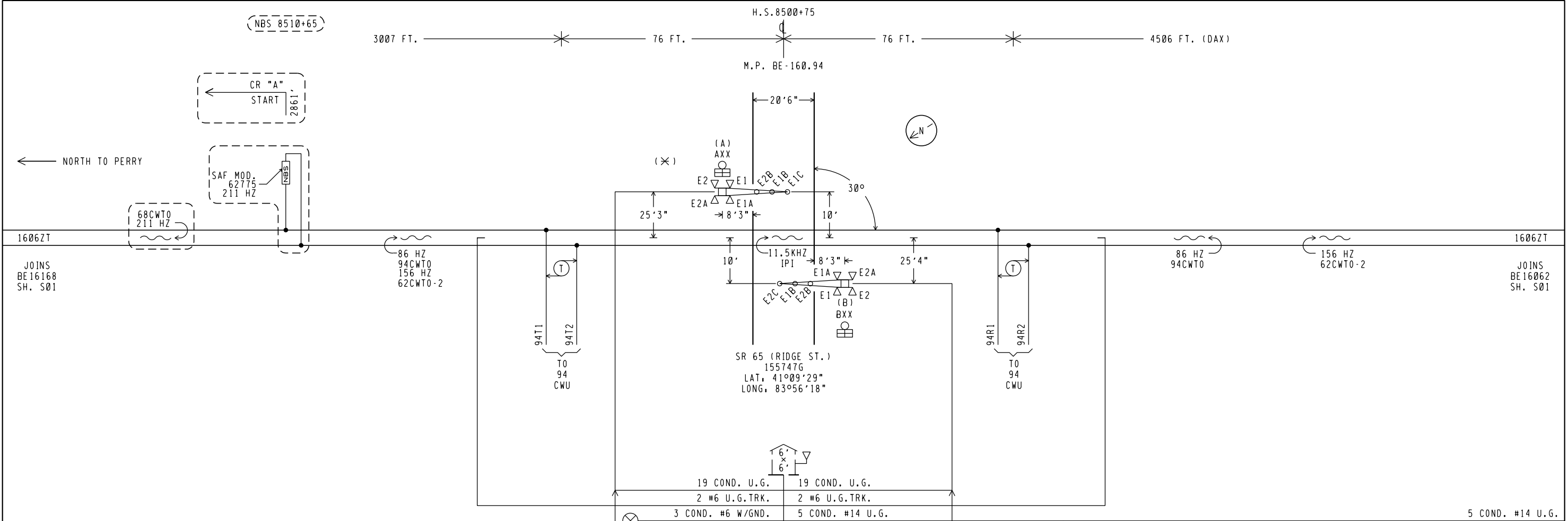
SHEET
I01

40006CP.I01
REV. 09-04-15

REVISIONS

REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2016053 0H2016055	12-06-16		

TO BE COMPLETED
ON A.I.S.



- NOTES:
- 1. 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS
LED GATE ARM LIGHTS .3A MAXIMUM
 - 2. GATE LENGTH (A) 18' (B) 18'
 - 3. (X) = LOCATION OF HOUSE
 - 4. = 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.

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	3	3
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS *	0	0
PREScribed WARNING TIME FOR TRAINS AT TIME TABLE SPEED	33 SEC.	33 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	38 SEC.	38 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	3007	3007
HALF WIDTH OF ISLAND IN FEET	76	76
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	161.52	160.36

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

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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

DESIGN DATE 12-06-16		REV. NO. 1		DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING -----		SHEET NO -----		FILE BE16094		SHEET S01A	

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

Minimum Program Steps Report

Location and SIN

DOT Number: 155747G
Milepost Number: BE-160.94
Site Name: SR 65 RIDGE ST

SIN: 712538400216 *

* 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 B1 (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 = 86 Hz (OCCN) *
Track 1 : Approach Distance = 3007 ft (OCCN) *
Track 1 : Prime Warning Time = 33 sec (OCCN) *
Track 1 : Prime UAX = IP (OCCN) *
Track 1 : GCP Transmit Level = High (Set in Field,TCN)
Track 1 : Isl Frequency = 11.5 kHz (OCCN) *

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

MS4000 configuration
Track 1 : GCP Frequency = 86 Hz (OCCN,TCN) (Hidden) *
Track 1 : Prime UAX = IP (OCCN) (Hidden) *
Track 1 : Isl Frequency = 11.5 kHz (OCCN) (Hidden) *
IN 1.1 = T1 Prime UAX (OCCN) (Hidden) *

MS4000 Predictor

Track 1 : Prime Warning Time = 33 sec (OCCN) (Hidden) *

GCP: track 1

Track 1 : Island Distance = 152 ft (Set in Field,TCN)

ADVANCED: site options
Daylight Savings = 0n (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) *
RIy 1 = Ground Fault Test (OCCN) *
RIy 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 = 86 Hz (OCCN,TCN) (Hidden) *
Track 1 : Prime UAX = IP (OCCN) (Hidden) *
IN 1.1 = T1 Prime UAX (OCCN) (Hidden) *

Express: MS4000 Predictor
Track 1 : Prime Warning Time = 33 sec (OCCN) (Hidden) *

* Parameter is part of office check number calculation.

Check Numbers

Office Check Number: 6643F9C2
Config. Check Number: 234B6845
(Based on MCF Revision 26)

Parameters not part of office check number calculation:

Track 1 : GCP Transmit Level = High (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Track 1 : Island Distance = 152 ft (Set in Field)
Daylight Savings = 0n (Set in Field)

Comments

<none>

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

4000GCP.P01
REV. 09-04-15

DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET NO	FILE BE16094	SHEET P01
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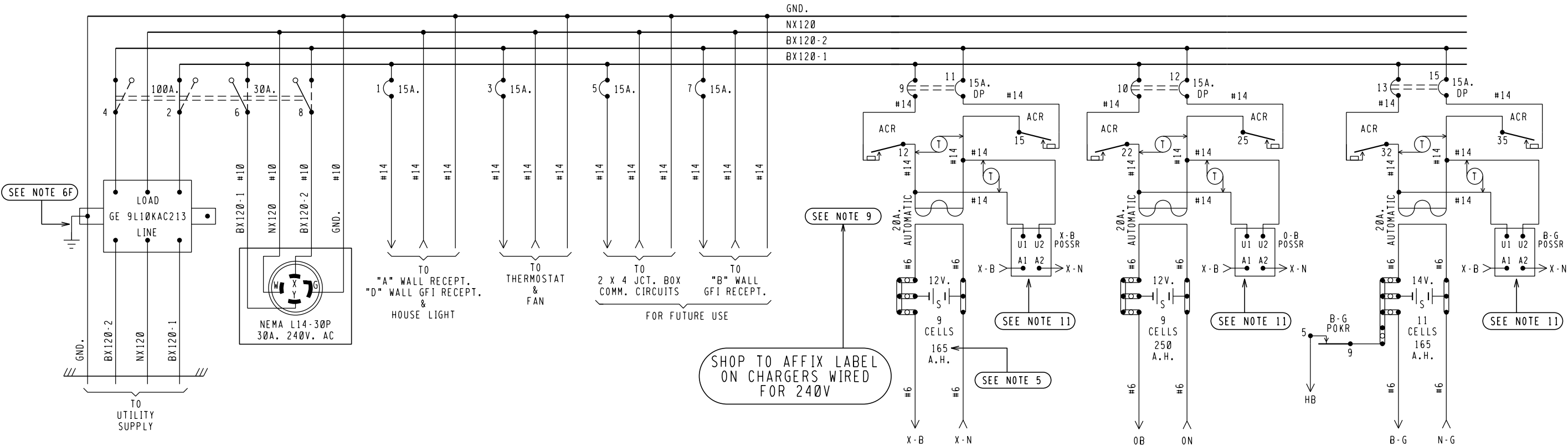
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

SR 65 (RIDGE ST.) 155747G

MINIMUM PROGRAM STEPS REPORT CWE-94
BELMORE, OH M.P. BE-160.94

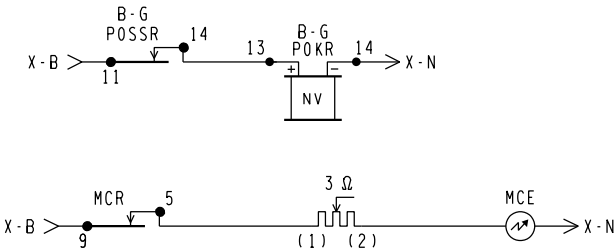
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
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TOP ROW																	
	ACR			MCR			94DAXPR										
	12	B	B77 C30	9	F	11	N41 C48 C49	12		B8 C30							
	15	B		10		12			15								
	22	B						22									
	25	B						23	F								
	32	B	B-G POKR			25	F										
	35	B	9	F	11	N41 C48	32										
			10	F	12		35										



BX120-1	BX120-2
18.9 AMPS	11.9 AMPS
MAXIMUM LOAD CALCULATED PER SS360	

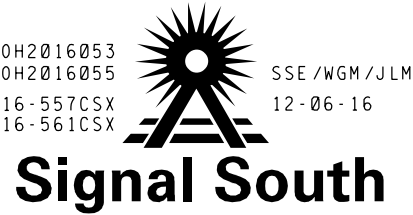
- NOTES:
- REFERENCES ARE PER SCMS-13.
 - ARRESTERS ARE PER SS302.
 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
 - WIRING
 - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - 120-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - ALL TRACK WIRES TO BE #10 FLEX.
 - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.
 - ALL BATTERY OUTPUTS TO BE #6 PER SS360.
 - GROUND WIRE NOT NECESSARY WHEN GE ARRESTER IS MOUNTED ON GROUND PLANE OR METAL ENCLOSURE AFFIXED DIRECTLY TO BUNGALOW METALLIC STRUCTURAL MEMBER.
 - CIRCUIT INTERRUPTERS 2 & 4 ARE MECHANICALLY INTERLOCKED WITH CIRCUIT INTERRUPTERS 6 & 8.
 - LABEL ALL PRIMARY POWER WIRES WITH RED TAGS.
 - CHARGERS WIRED FOR 240VAC
 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)
 - 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.



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

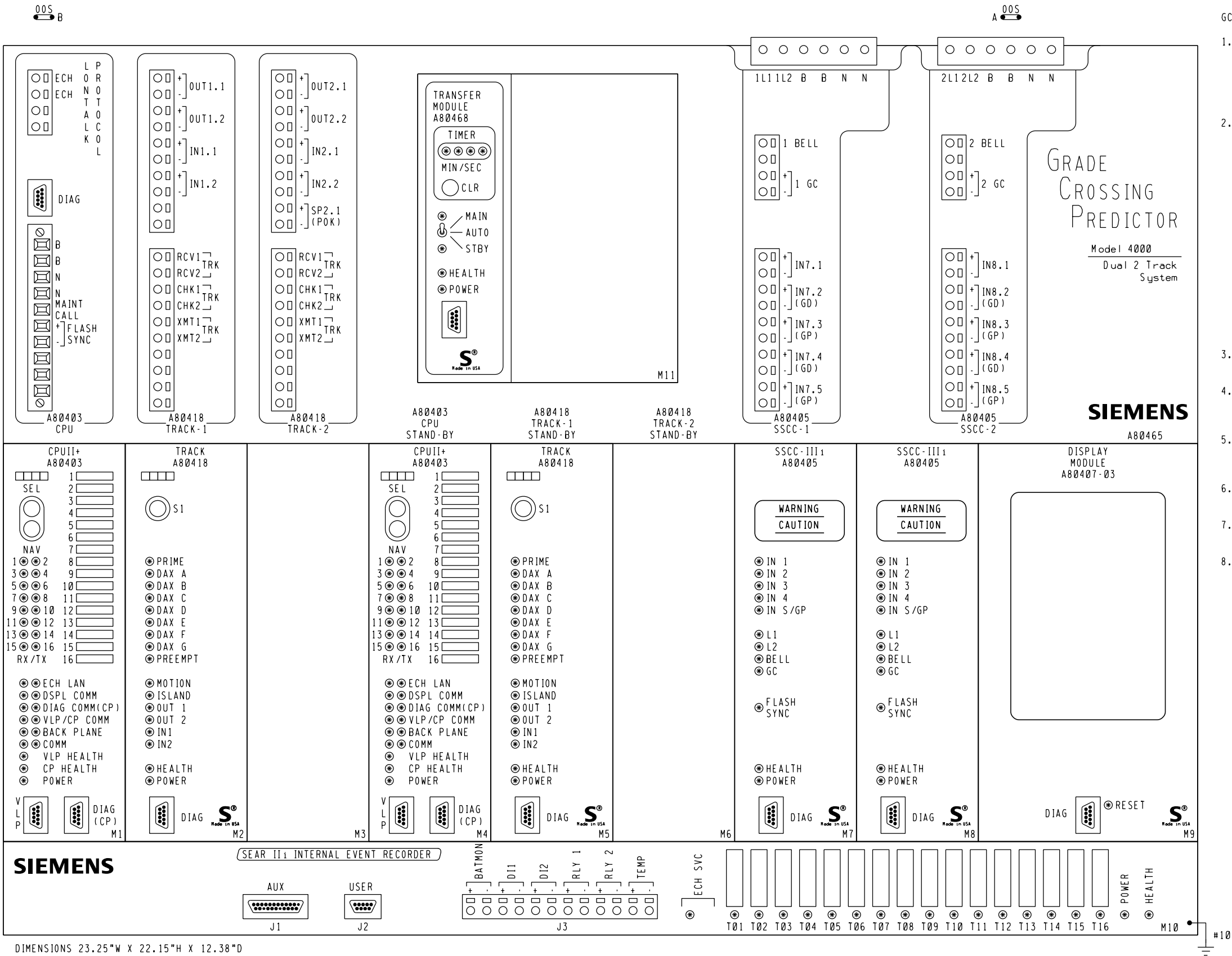
WALL/DIN RAIL MOUNTED

NEW WORK



DESIGN DATE 12-06-16	REV. NO. 1
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6'X 6' PTC CROSSING HOUSE			
CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 (RIDGE ST.) 155747G			
POWER DISTRIBUTION BELMORE, OH M.P. BE-160.94			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16094	SHEET E01A



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-III ₁	A SIGNAL	A80405
M8	SSCC-III ₁	B SIGNAL	A80405
M9	DISPLAY MODULE		A80407-03
TOP CENTER	TRANSFER UNIT		A80468
LOWER BAY	SEAR II ₁	RECORDER	A80410
3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.
4. THE SEAR II₁ INTERNAL EVENT RECORDER HAS INPUTS FOR ONE BATTERY MONITOR, TWO NON-VITAL INPUTS AND TWO PROGRAMMABLE RELAY DRIVES (HEEL/Front).
5. LOCATED ON THE FRONT OF EACH MODULE THERE ARE LED LIGHTS TO INDICATE THE ACTIVITY OF CERTAIN FUNCTIONS OCCURRING INSIDE THE GCP.
6. BETWEEN SLOT 1 & 2 THERE IS A CHASSIS IDENTIFICATION CHIP (CIC) SOCKET AND AN ECD CONNECTOR (DB-25 FEMALE).
7. UPON THE FAILURE OF A MODULE IN SLOTS 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.

*** = OUT
NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16

Signal South

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

SR 65 (RIDGE ST.) 155747G

DETECTION DEVICE CONSIST CWE-94
BELMORE, OH M.P. BE-160.94

4000GCP.C01
REV. 09-04-15

DESIGN DATE
12-06-16

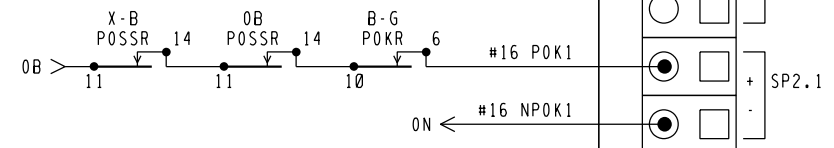
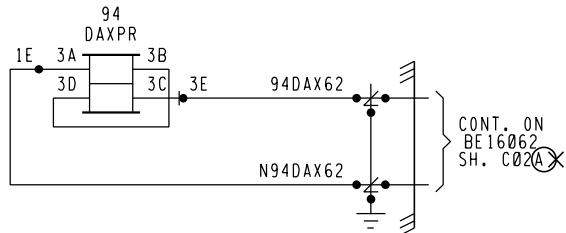
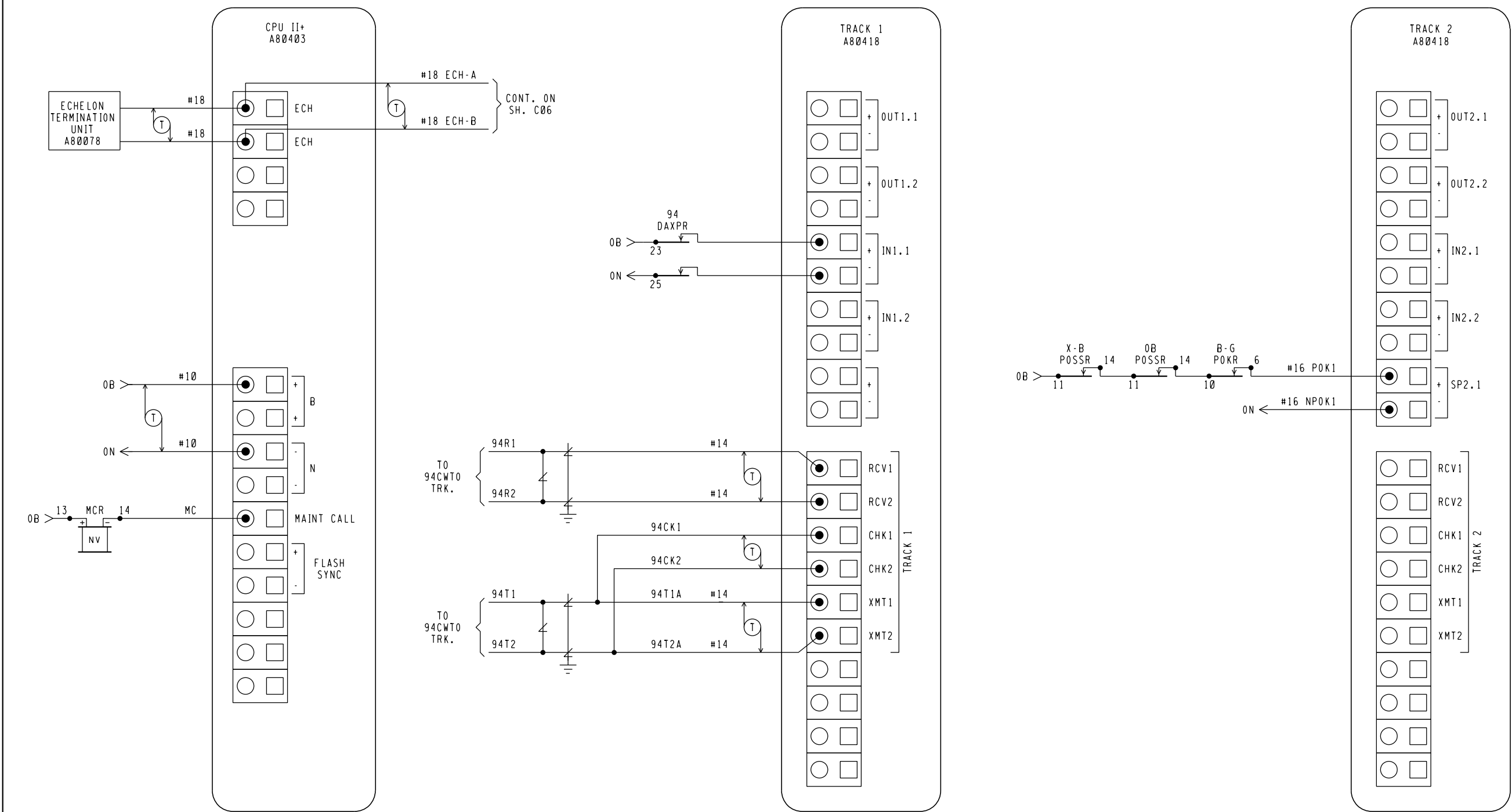
REV. NO.
1

DRAWING

SHEET NO

FILE
BE16094

SHEET
C01 A



*** = OUT

NEW WORK

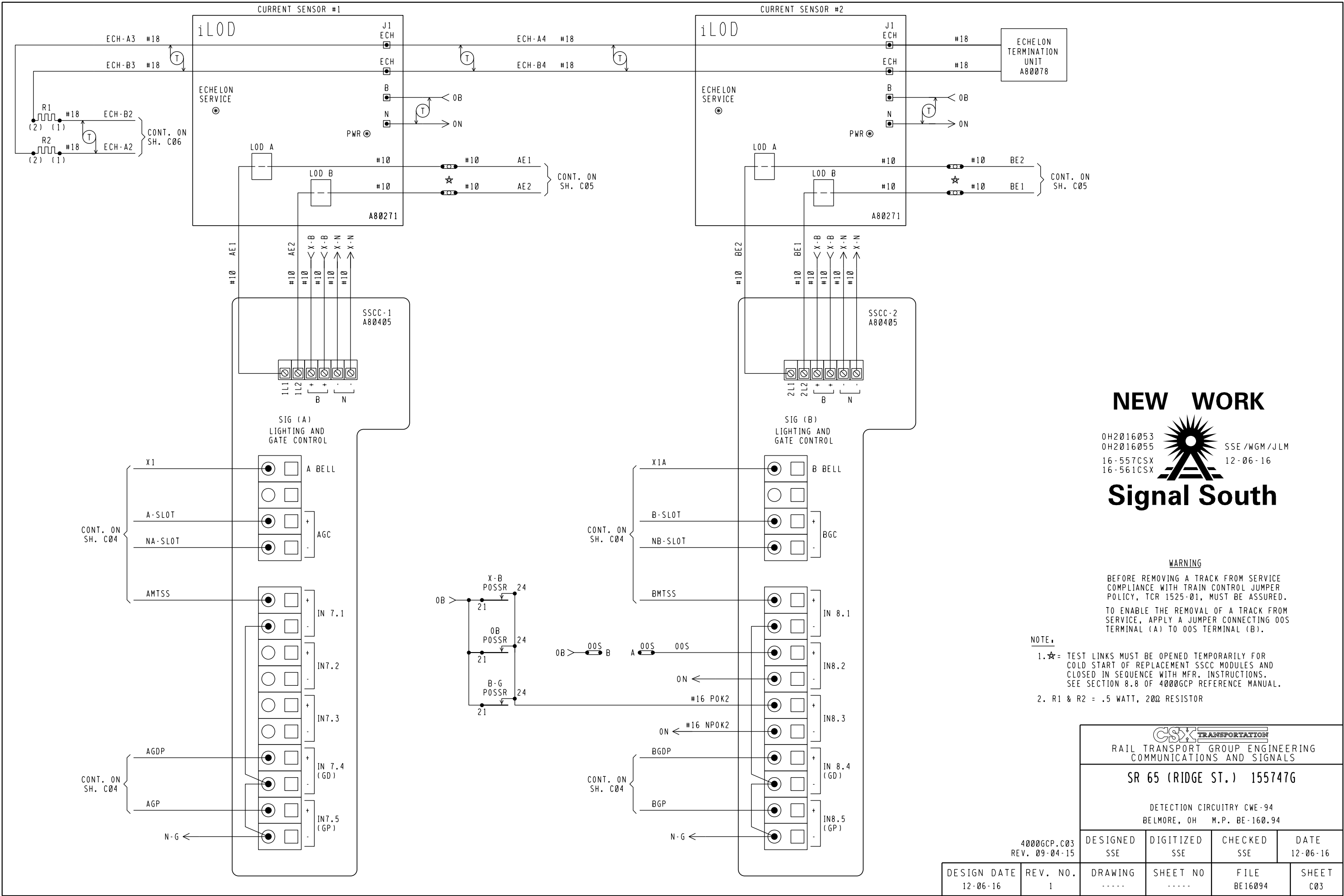
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0H2016055
16-557CSX
16-561CSX

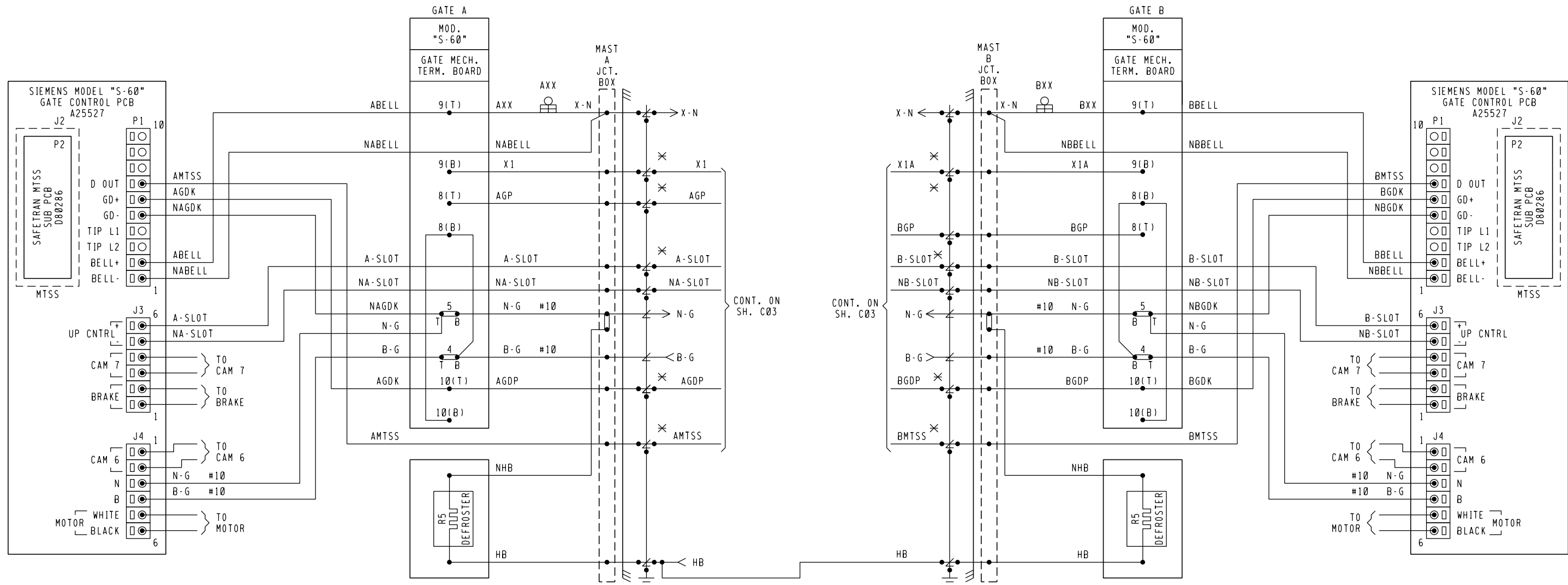
SSE /WGM/JLM
12-06-16

Signal South

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

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 (RIDGE ST.) 155747G			
DETECTION CIRCUITRY CWE-94 BELMORE, OH M.P. BE-160.94			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C02A





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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

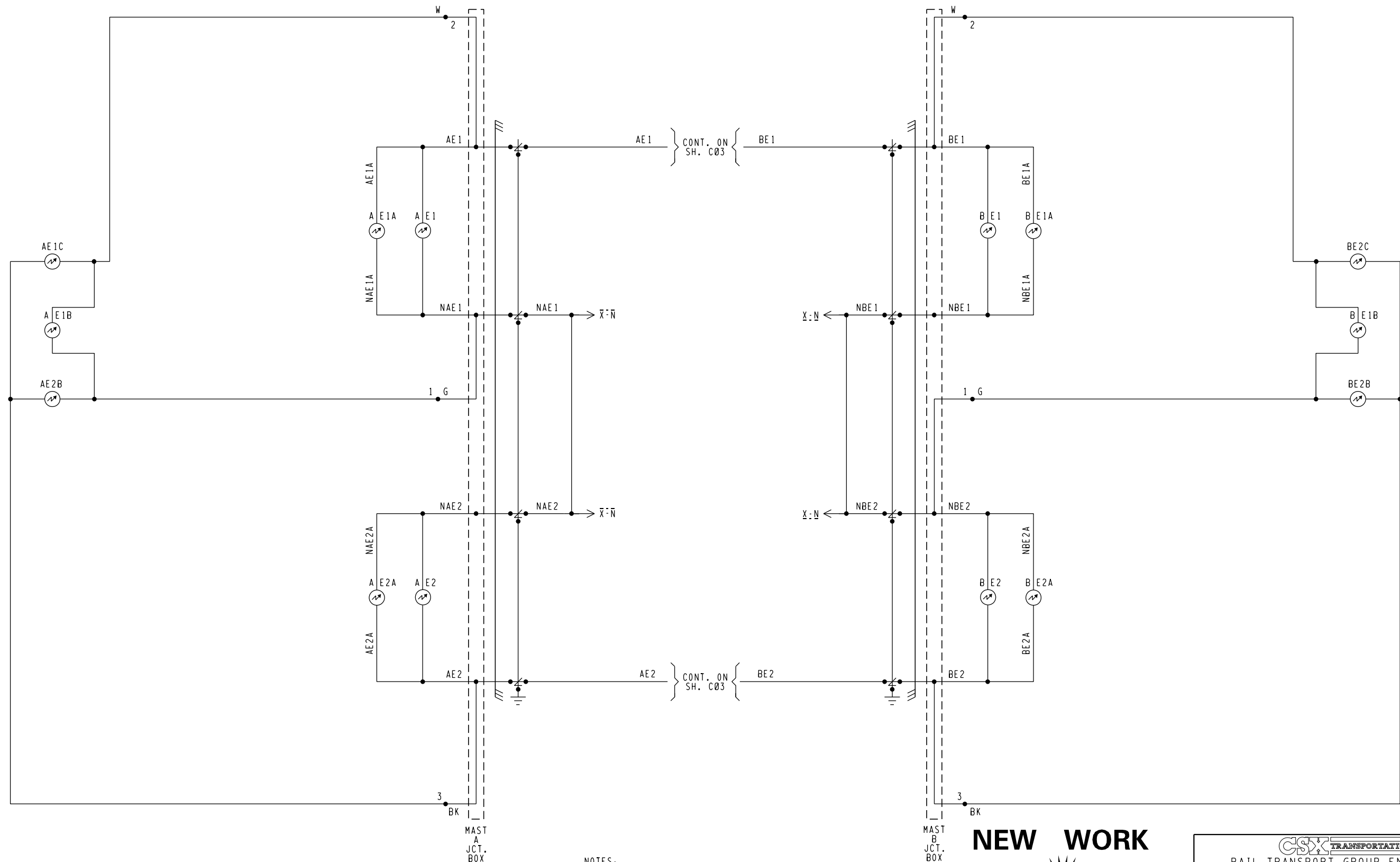
Signal South



SSE /WGM/JLM
12-06-16

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 (RIDGE ST.) 155747G			
CROSSING WARNING DEVICE GATE CIRCUITRY BELMORE, OH M.P. BE-160.94			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C04

4000GCP.C04
REV. 09-04-15

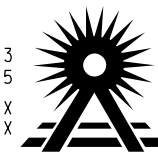


NOTES.

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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



Signal South

4000GCP.C05
REV. 09-04-15

SSE/WGM/JLM
12-06-16

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

SR 65 (RIDGE ST.) 155747G

CROSSING WARNING DEVICE LIGHT CIRCUITRY
BELMORE, OH M.P. BE-160.94

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16094	SHEET C05

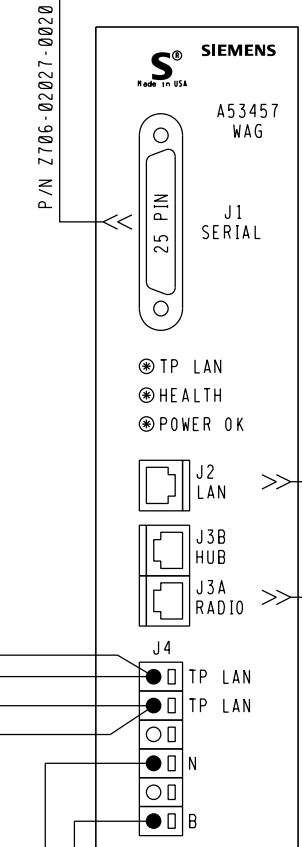
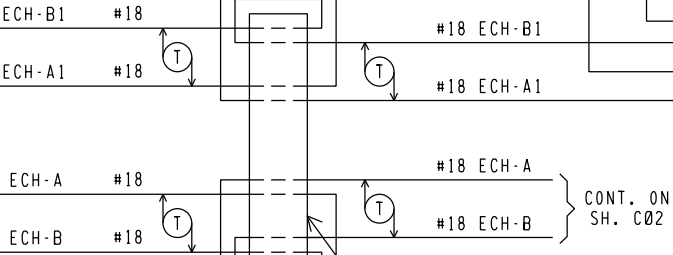
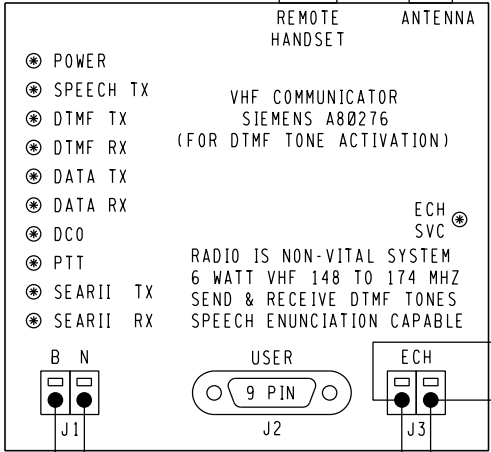
DESIGN DATE 12-06-16	REV. NO. 1
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WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.384.002.07.01 7.125.LLL.GGG.SS.DD
SERIAL INTERFACE	38,400,NONE,8,1/NOFLOW
SERIAL FORMAT	RAW
WAG TEST MODE	DISABLED
ECHELON ADDRESS	01.07
UDP PORTS	5000, 5001, 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--7RRLLGGSS
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

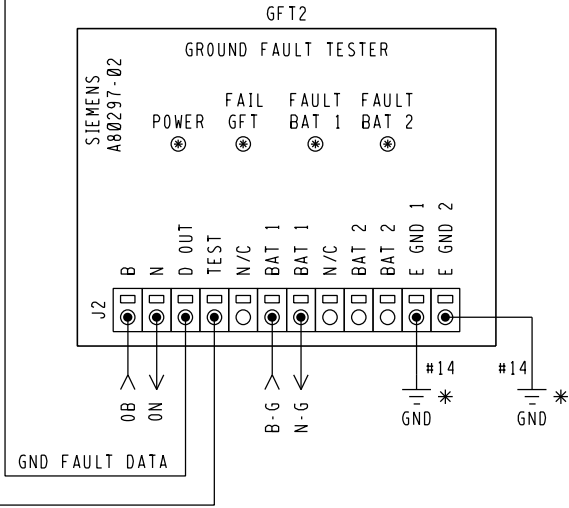
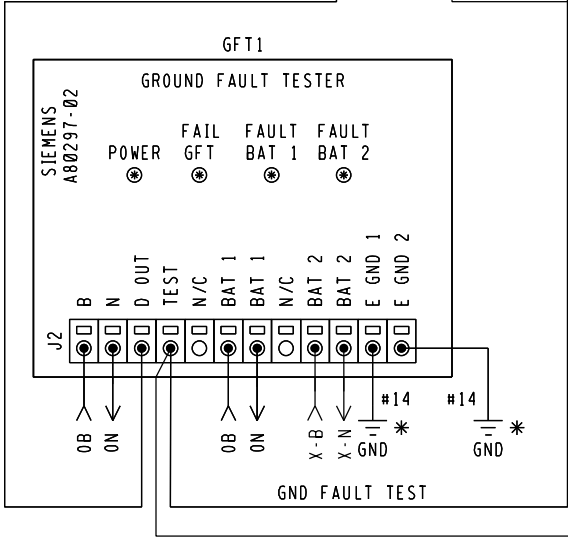
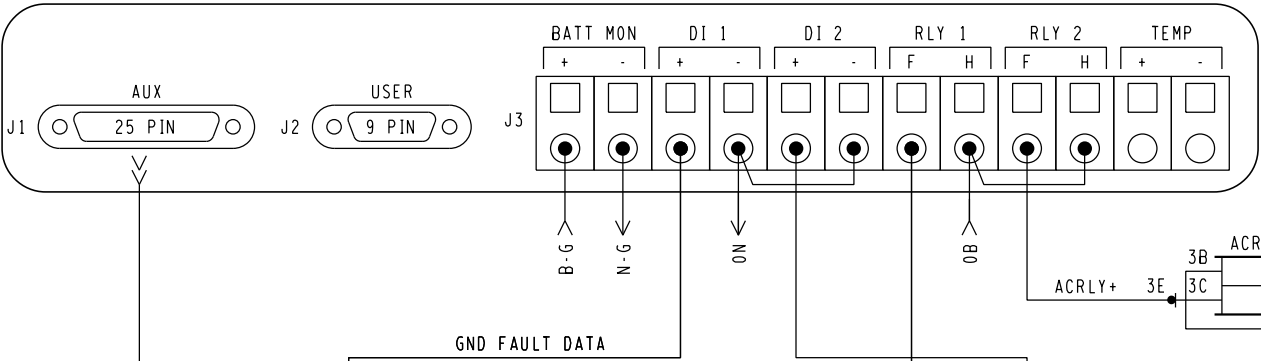
**
POLYPHASE SURGE PROTECTOR
100 TO 512 MHZ
MODEL# VHF 150HN

**
SHIELDED COAXIAL
CABLE TO ANTENNA



- COMM NOTES:
- WAG J3A PINOUTS,
4 & 5 = +12VDC RADIO OUT
7 & 8 = GND RADIO RETURN
 - WAG AND SEARII₁ ECHELON COMM
THROUGH GCP4000 LONTALK
PROTOCOL CONNECTION
 - REFER TO WAG INSTALLATION AND
SETUP IN APPENDIX "A" GCP4000 SYSTEM
CUT OVER TEST PROCEDURE AND CHECK
OFF SHEET.

SEAR II₁ INTERNAL EVENT RECORDER I/O



NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16

Signal South

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)

TO ACTIVATE PRESS, 747#

TO DE-ACTIVATE PRESS, 747*

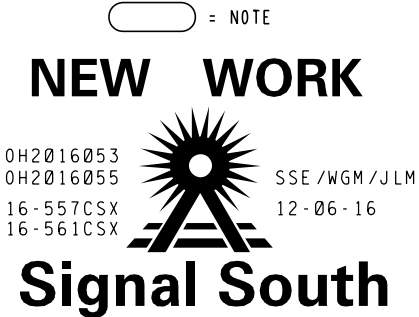
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

- NOTES:
- ALL WIRING #16 UNLESS NOTED OTHERWISE.
 - * = EARTH GROUND REF. TERMINALS REQUIRED FOR
DETECTION. DO NOT JUMPER TERMINALS. MUST BE
CONNECTED TO DIFFERENT POINTS OF BUNGALOW.
 - ** = TO BE PROVIDED BY COMMUNICATIONS
 - LOOP WIRE THROUGH FERRITE BEAD TWICE.

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 (RIDGE ST.) 155747G			
CROSSING WARNING DEVICE CIRCUITRY BELMORE, OH M.P. BE-160.94			
DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	12-06-16
DESIGN DATE	REV. NO.	DRAWING	SHEET
12-06-16	1	BE16094	C06

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II: EXECUTIVE PROGRAM	VERSION: 9V725A01	VERSION: _____
APPLICATION PROGRAM (IF LOADED)	VERSION: 9V864A01	VERSION: _____
SITE SET UP MENU		
FUNCTION	LED DISPLAY	
DATE /TIME	XX-XX-XXXX XX:XX:XX	
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EASTERN	
SITE NAME	SR 65 (RIDGE ST.)	
MILEPOST	BE-160.94	
DOT NUMBER	1557476	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS ADDRESS	7.125.384.002.99.01 (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	7.125.384.002.07.01 (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 TO INSPECTOR,
AT IN SERVICE OF SEAR II: OR UPDATE
OF ITS INTERNAL EXECUTIVE PROGRAM
OR ITS CSXT APPLICATION PROGRAM,
NOTE THE VERSION NUMBER OF EACH
PROGRAM MUST IN THE BLANK FIELDS.



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

PROGRAM MENU SELECT

EDIT DIGITAL INPUTS	☒ NO ☐ YES
EDIT BATTERIES	☒ NO ☐ YES
EDIT RELAYS	☒ NO ☐ YES
EDIT TEST LED'S	☒ NO ☐ YES
EDIT IL0D1 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D2 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D3 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D4 SENSOR ☆	☒ NO ☐ YES
EDIT VHF SETTINGS	☒ NO ☐ YES
GCP4K ATCS SUBNODE	16

☆ STAR = OPTIONS SHOWN DEPENDANT ON
NUMBER OF IL0DS SELECTED

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
OPTION	SELECTION
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.
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 ☐
DTMF ACTVATION*	YES ☒ NO ☐
ACTIVATION CODE	747
ACTIVATION TIMEOUT	(60 SEC)
IL0D MODULES*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐
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 ☐
BELL SENSOR TSS 8*	NO ☒ YES ☐
BELL ON*	GATES LOWERING ☒ GATES MOVING ☐ ALWAYS ☐
GFT'S	YES ☒ NO ☐
BATTERIES ON GFT1	1 ☐ 2 ☒
GATE TIP SENSORS*	YES ☐ NO ☒
RTU	NO ☒ YES ☐
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,

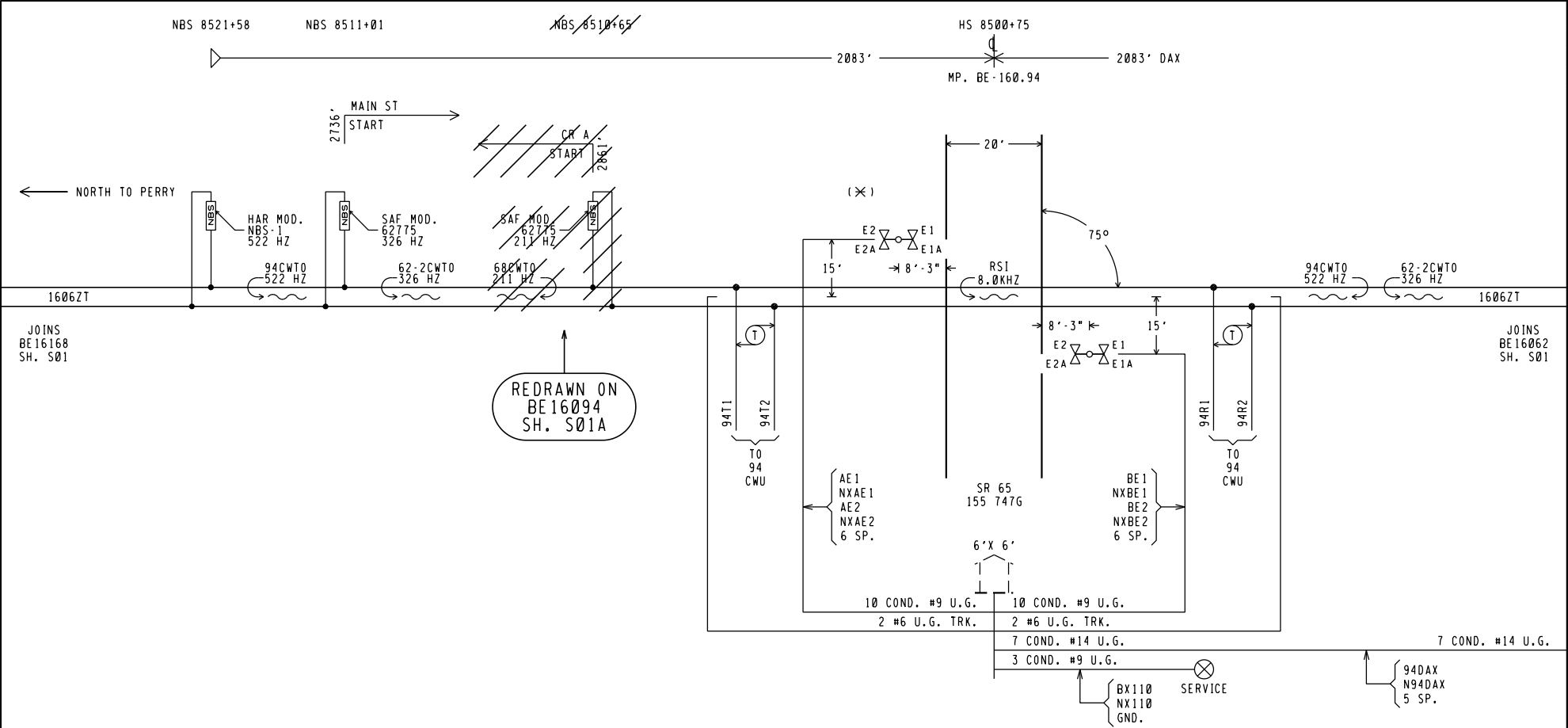
- OPTION AVAILABLE IF VHF COMMUNICATOR = YES
LAST 3 DIGITS OF DOT NUMBER.
- OPTION AVAILABLE IF IL0DS.
- OPTION AVAILABLE IF BELL SENSORS.
- OPTION AVAILABLE IF GATES.
- OPTION AVAILABLE IF VHF RADIO.
- ONLY YES IN SPECIAL CIRCUMSTANCES.
- SELECT "MENU" THEN "CONFIGURATION" FROM SEAR II
INTERFACE KEYPAD TO ACCESS MODULE CONFIGURATION
MENU.
- BATTERY BANKS* = NUMBER OF BANKS EXCLUDING
THE BANK APPLIED TO THE BAT MON SEAR INPUT
- YES ON INITIAL SETUP

4000GCP.C07
REV. 09-04-15

DESIGN DATE
12-06-16

REV. NO.
1

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 (RIDGE ST.) 1557476			
SEAR II: CONFIGURATION & FUNCTIONS BELMORE, OH M.P. BE-160.94			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C07



REVISIONS	
01-28-02 SWE	0H1999039
08-05-03 SAF 0H20000520	
05-29-13 IRC 0H2012055	
08-12-16 XRL	0H2015029

○ = NOTE
//// = SHOWN ELSEWHERE

**ALL ELSE OUT
VOID ON A.I.S.**

OH2016053
OH2016055
16-557CSX
16-561CSX

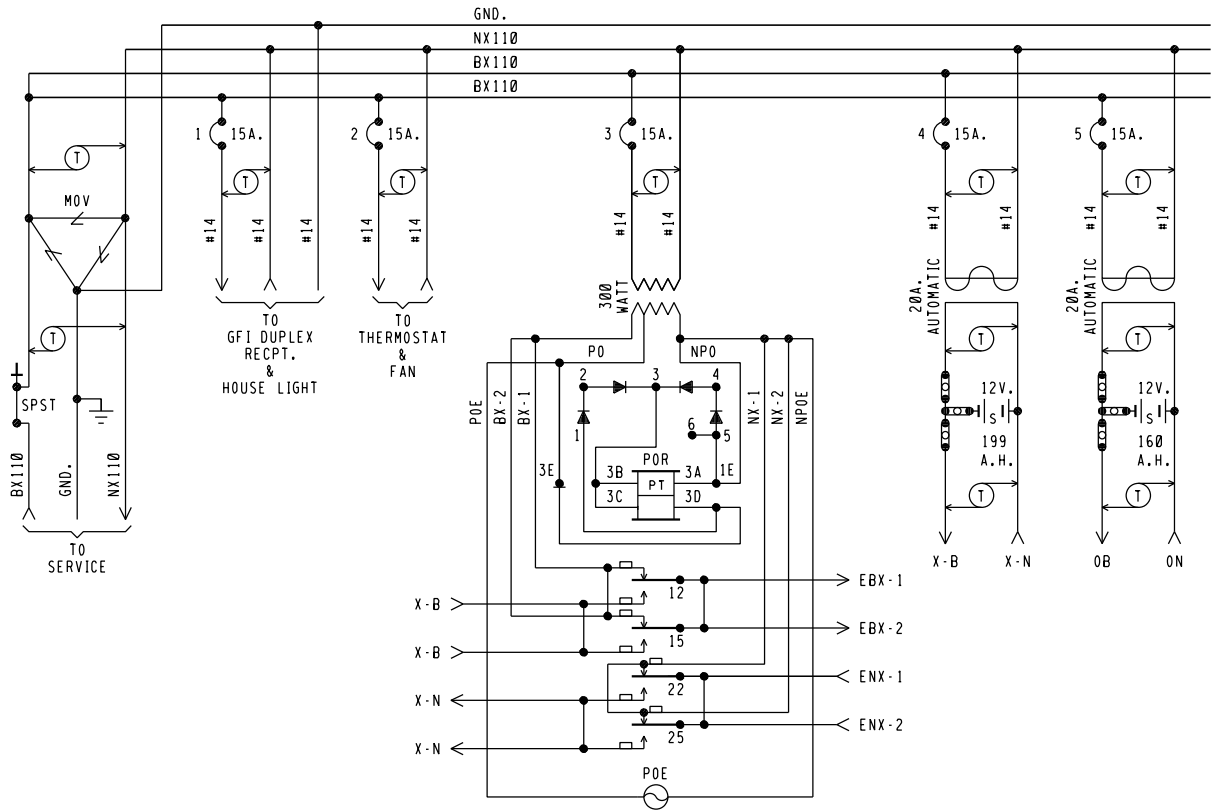
SSE/WGM/JLM
12-06-16

Signal South

- NOTES:
1. (X) = LOCATION OF HOUSE
 2. 12" LED MAXIMUM CURRENT 1.7A AT 10 VOLTS
LED GATE ARM LIGHTS .3A MAXIMUM
 3. LENGTH OF GATE (A) XX' GATE (B) XX'
 4. THE TRANSMITTER LEADS FOR MOTION OR
PREDICTOR EQUIPMENT SHOULD BE
CONNECTED ON THE BUNGALOW OR
SHORT LEAD SIDE OF CROSSING.
 5. ISLAND DISTANCE BETWEEN FEED
WIRES 120' MIN.

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
SR 65 155747G			
TRACK AND SIGNAL PLAN BELMORE, OH M.P. BE-160.94			
DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99
NEXT FILE BE16094	NEXT SH E01	FILE BE16094	SHEET S01

				XR 12 B B82 15 B C30 22 23 25 32 35 B		EOR 12 FB B81 15 FB C30 32 FB 35 FB		POR 12 FB B62 15 FB C30 22 FB 25 FB 32 35		
--	--	--	--	--	--	--	--	--	--	--



EQUIPMENT		
REF.	NOMENCLATURE	TYPE
	94CWU	HARMON PHASE MOTION DETECTOR PMD-3 FREQ. 522 HZ., W/ 8.0KHZ RANDOM SIGNATURE ISLAND (R.S.I.)
	94CWSA	MOTION DETECTOR SURGE ARRESTOR, HARMON MODEL MDSA-1
	DDTU	SAFETRAN SOLID-STATE VITAL TIMER P/N 91065-20

- NOTES:
- 1 - REFERENCES ARE PER SCMS-13.
 - 2 - ARRESTERS AND BATTERY LINE ARE PER SCMS-22.
 - 3 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
 - 4 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
 - 5 - X-B BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIRED.
 - 6 - WIRING
 - A - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - B - 110-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - C - ALL TRACK WIRES TO BE #10 FLEX.
 - D - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.

6'X 6' RELAY HOUSE

ALL OUT
VOID ON A.I.S.

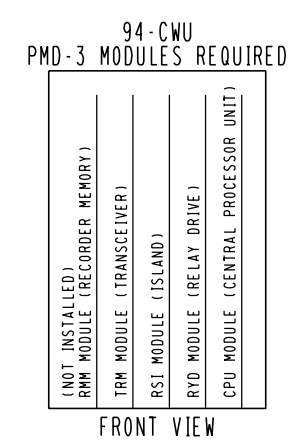
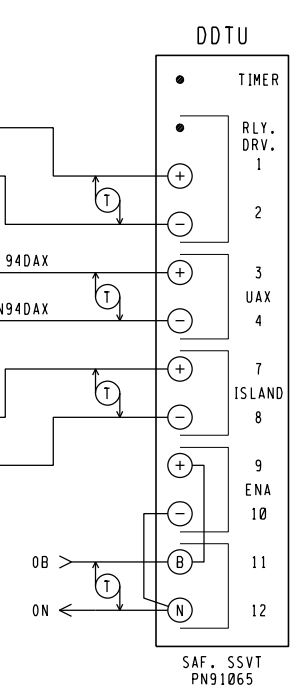
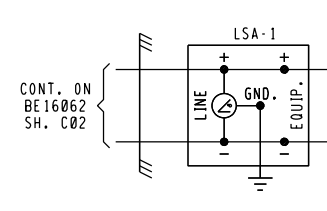
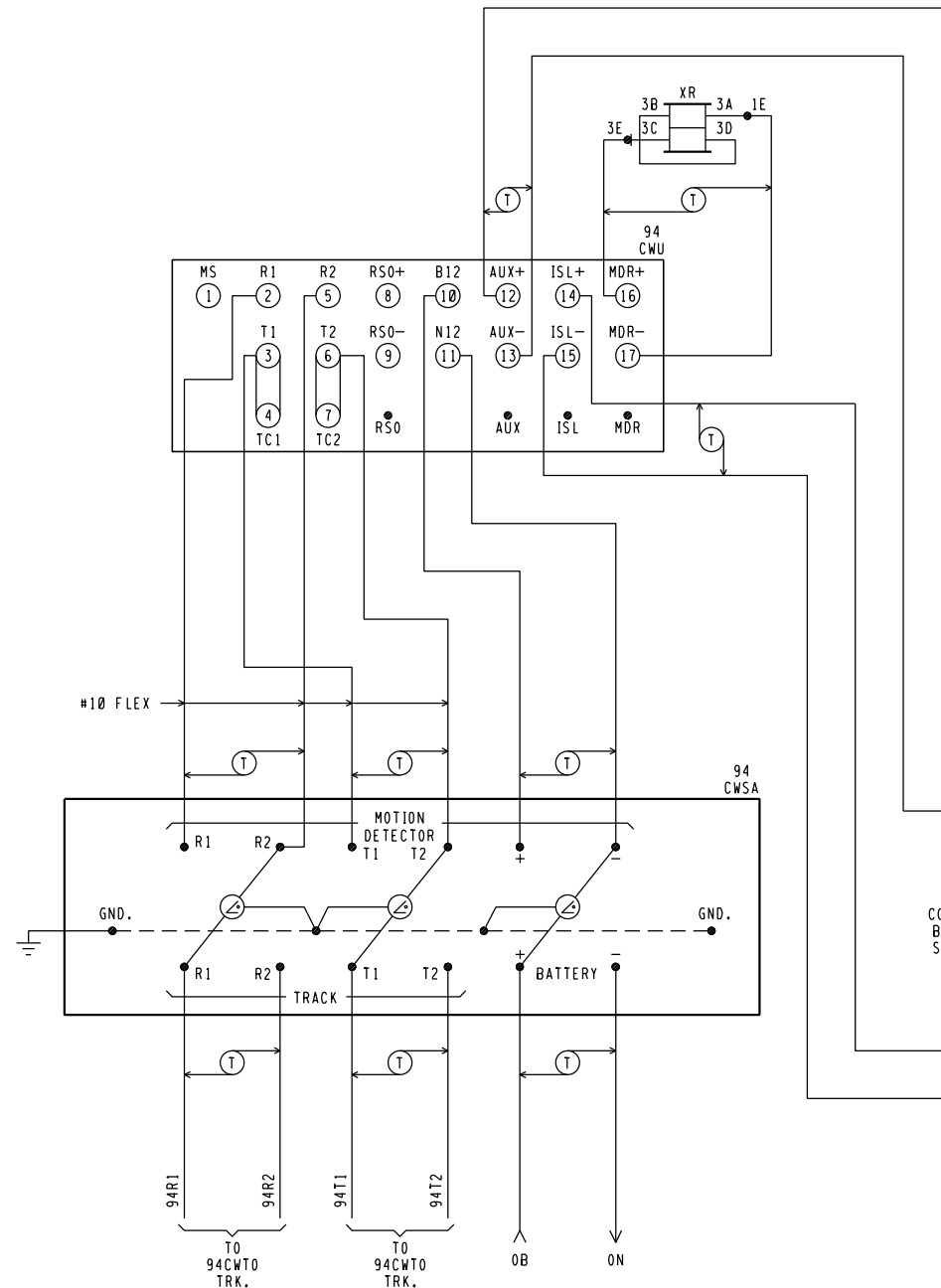
0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

REVISIONS		CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS					
01-28-02 SWE		0H1999039		SR 65 1557476			
08-05-03 SAF		0H2000052D					
08-12-16 XRL		0H2015029					
POWER DISTRIBUTION BELMORE, OH M.P. BE-160.94							
DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99				
NEXT FILE BE16094	NEXT SH C01	FILE BE16094	SHEET E01				

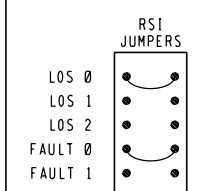


CABINET SWITCHES
THESE SWITCHES ARE LOCATED ON MOTHERBOARD

MASTER/SLAVE
MASTER SLAVE
S1

SWITCH	1	2	3	4
SWITCH POSITION	ON	OFF	OFF	OFF
APPROACH	NORMAL	(NOT USED)		

SWITCH	1	2	3	4	5
SWITCH POSITION	ON	ON	ON	ON	OFF



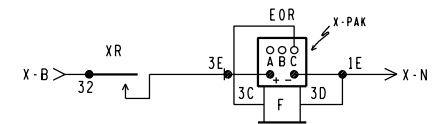
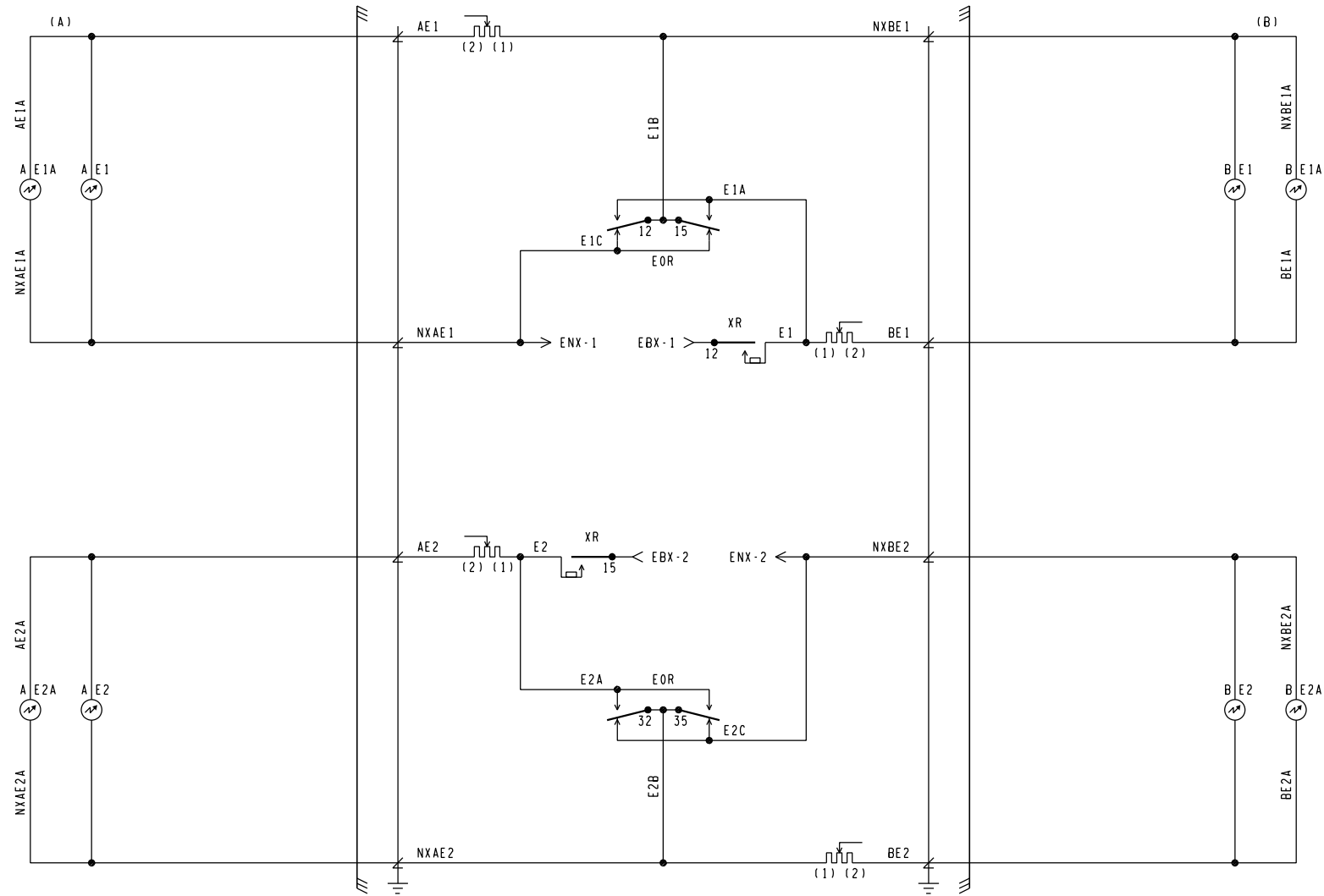
ALL OUT
VOID ON A.I.S.

0H2016053
0H2016055
16-557CSX
16-561CSX

Signal South

SSE /WGM/JLM
12-06-16

REVISIONS		CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
01-28-02 SWE	0H1999039	SR 65 1557476			
08-05-03 SAF	0H2000052D	CROSSING DETECTION CIRCUITRY BELMORE, OH M.P. BE-160.94			
08-12-16 XRL	0H2015029	DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99
		NEXT FILE BE16094	NEXT SH C02	FILE BE16094	SHEET C01



NOTE.

LIGHT RESISTOR IS A PARALLEL
COMBINATION OF THREE (3) 1.5 OHM,
15 WATT, ADJUSTABLE RESISTORS.

ALL OUT
VOID ON A.I.S.

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

REVISIONS		CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
01-28-02 SWE	0H1999039	SR 65 1557476			
08-05-03 SAF	0H2000052D	CROSSING WARNING LIGHTING CIRCUITRY BELMORE, OH M.P. BE-160.94			
05-29-13 IRC	0H2012055	DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99
08-12-16 XRL	0H2015029	NEXT FILE	NEXT SH	FILE BE16094	SHEET C02

REV. NO.

PROJECT NO.

DESIGN DATE

IN SERVICE DATE

REVISION DATE

1

0H2016053
0H2016055

12-06-16

TO BE COMPLETED
ON A.I.S.

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

MAIN ST. 155745T

SIGNALS 1606/1607

INDEX AND REVISIONS

BELMORE, OH M.P. BE-160.62

DESIGNED SSE

DIGITIZED SSE

CHECKED SSE

DATE 12-06-16

DESIGN DATE 12-06-16

REV. NO. 1

DRAWING -----

SHEET NO -----

FILE BE16062

SHEET 101

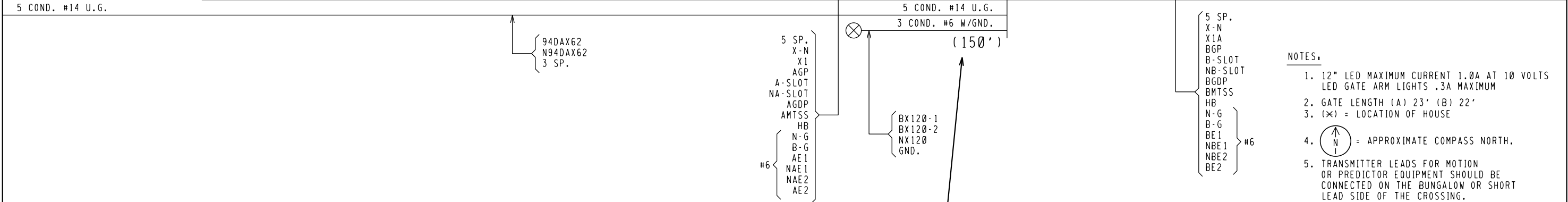
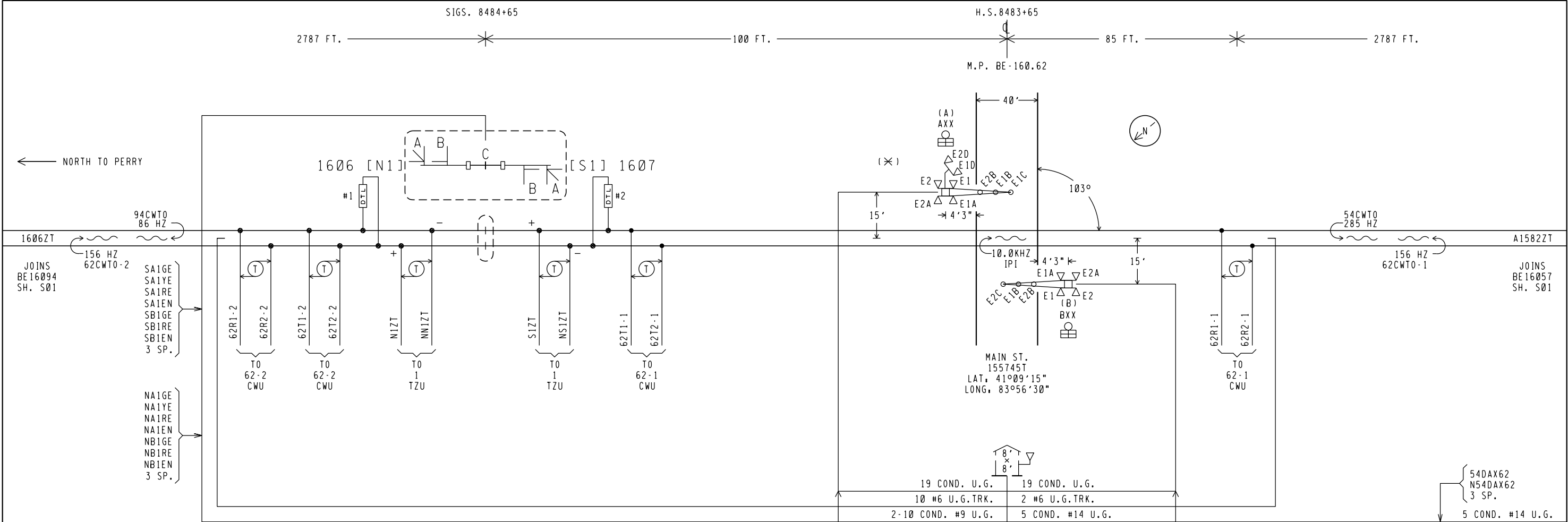
40006CP.101
REV. 09-04-15

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									
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS (OPTIONAL)									
P01	MINIMUM PROGRAM STEPS REPORT CWE-62									
E01	POWER DISTRIBUTION									
C01	DETECTION DEVICE CONSIST CWE-62									
C02	DETECTION CIRCUITRY CWE-62									
C03	DETECTION CIRCUITRY CWE-62									
C04	CROSSING WARNING DEVICE GATE CIRCUITRY									
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
C06	CROSSING WARNING DEVICE CIRCUITRY									
C07	SEAR II: CONFIGURATION & FUNCTIONS									
C08	ELECTRO CODE 4 PLUS CIRCUITS									

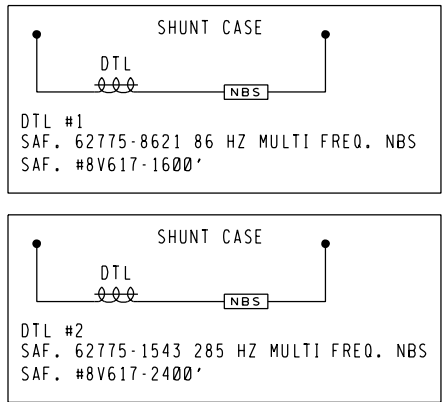
= PLANS SENT TO FIELD (DISTRIBUTED)

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



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	0	0
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS *	0	0
PREScribed WARNING TIME FOR TRAINS AT TIME TABLE SPEED	30 SEC.	30 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	35 SEC.	35 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	2787	2787
HALF WIDTH OF ISLAND IN FEET	85	85
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	161.16	160.08

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



- 5 SP. X-N X1 AGP A-SLOT NA-SLOT AGDP AMTSS HB N-G B-G AE1 NAE1 NAE2 AE2

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

(---) = EXISTING
() = NOTE
*** = OUT

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16

Signal South

- 5 SP. X-N X1A BGP B-SLOT NB-SLOT BGOP BMTSS HB N-G B-G BE1 NBE1 NBE2 BE2

- NOTES:
- 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS
LED GATE ARM LIGHTS .3A MAXIMUM
 - GATE LENGTH (A) 23' (B) 22'
 - (X) = LOCATION OF HOUSE
 - (N) = APPROXIMATE COMPASS NORTH.
 - TRANSMITTER LEADS FOR MOTION OR PREDICTOR EQUIPMENT SHOULD BE CONNECTED ON THE BUNGALOW OR SHORT LEAD SIDE OF THE CROSSING.
 - ISLAND TRACK LEADS SHOULD BE CONNECTED 50 FEET FROM ROAD EDGE BUT ON NARROW ROADS (20' OR LESS) ISLAND LENGTH SHALL BE 120 FEET.
 - WARNING SYSTEM APPROACH CIRCUIT DISTANCES ARE TO BE MEASURED FROM THE ISLAND TRACK CONNECTIONS.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

MAIN ST. 155745T
SIGNALS 1606/1607
TRACK AND SIGNAL PLAN
BELMORE, OH M.P. BE-160.62

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16062	SHEET S01 (A)

DESIGN DATE 12-06-16	REV. NO. 1
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DESIGN DATE 12-06-16	REV. NO. 1
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Minimum Program Steps Report

Location and SIN

DOT Number: 155745T
Milepost Number: BE-160.62
Site Name: MAIN ST

SIN: 712538400316 *

* 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 = 2787 ft (OCCN) *
Track 1, Prime Warning Time = 30 sec (OCCN) *
Track 1, GCP Transmit Level = High (Set in Field,TCN)
Track 1, Uni/Bi/Sim-Bidirnl = Sim. Bidirnl (OCCN) *
Track 1, Isl Frequency = 10.0 kHz (OCCN) *
Track 1, Island Distance = 170 ft (Set in Field,TCN)

TEMPLATE: track 1 Daxes
Track 1, Dax A Used = Yes (OCCN) *
Track 1, Dax A Warning Time = 33 sec (OCCN) *
Track 1, Dax A Offset Distance = 1718 ft (OCCN) *

TEMPLATE: track 2-Uni,No Island
Track 2, GCP Frequency = 156 Hz (OCCN) *
Track 2, Approach Distance = 2787 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 = 451 ft (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) *
OUT 2.1 = T2 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) *

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 = 10.0 kHz (OCCN) (Hidden) *

MS4000 Predictor
Track 1, Prime Warning Time = 30 sec (OCCN) (Hidden) *

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

ADVANCED: site options
Daylight Savings = 0n (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) *

Express: MS4000 Predictor
Track 1, Prime Warning Time = 30 sec (OCCN) (Hidden) *

* Parameter is part of office check number calculation.

Check Numbers

Office Check Number: 266BCD21
Config. Check Number: 2A76352E
(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 = 170 ft (Set in Field)
Track 2, GCP Transmit Level = High (Set in Field)
OOS Timeout = 1 hrs (Set in Field)
Daylight Savings = 0n (Set in Field)

Comments

<none>

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE /WGM/JLM
12-06-16

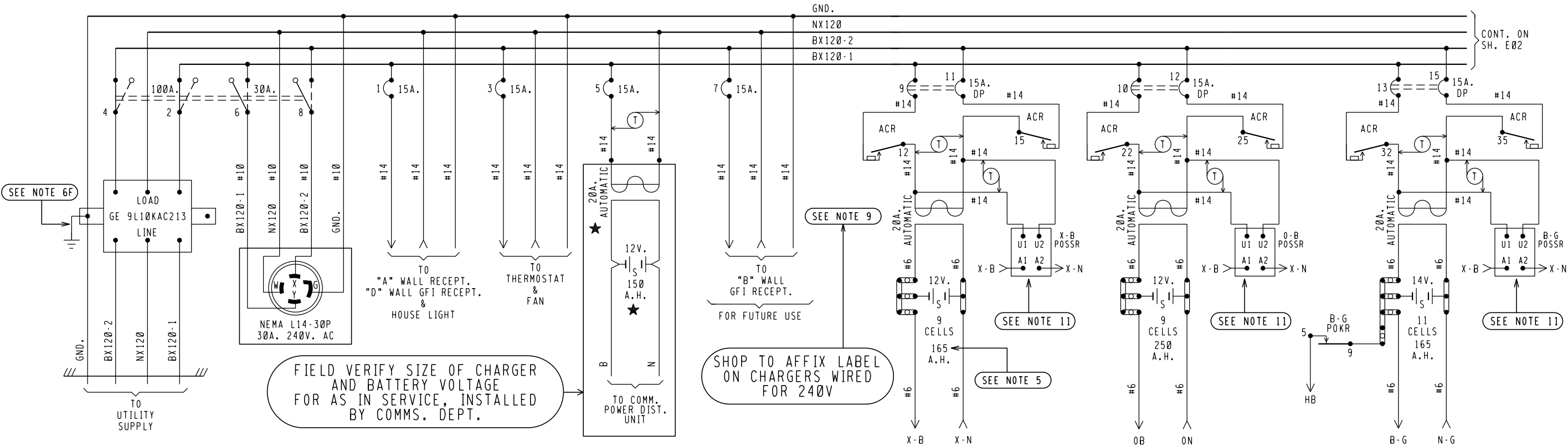
Signal South

4000GCP.P01
REV. 09-04-15

DESIGN DATE 12-06-16	REV. NO. 1	DRAWING -----	SHEET NO -----	FILE BE16062	SHEET P01
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CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 MINIMUM PROGRAM STEPS REPORT CWE-62 BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16

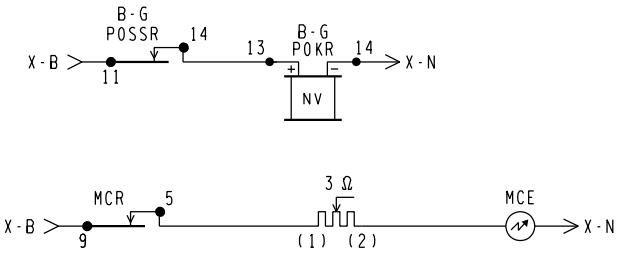
TOP ROW											
ACR			MCR			94DAXR			54DAXR		
12	B	B77	9	F	11	12	N41	12		B8	
15	B	C30	10		12		C48	15			C30
22	B						C49	22			
25	B		B-G POKR			23	F	23	F		
32	B		9	F	11		N41	25	F		
35	B		10	F	12		C48	32			
						35		35			



BX120-1	BX120-2
24.2 AMPS	15.2 AMPS
MAXIMUM LOAD CALCULATED PER SS360	

- NOTES.
- REFERENCES ARE PER SCMS-13.
 - ARRESTERS ARE PER SS302.
 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
 - WIRING
 - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - 120-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - ALL TRACK WIRES TO BE #10 FLEX.
 - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.
 - ALL BATTERY OUTPUTS TO BE #6 PER SS360.
 - GROUND WIRE NOT NECESSARY WHEN GE ARRESTER IS MOUNTED ON GROUND PLANE OR METAL ENCLOSURE AFFIXED DIRECTLY TO BUNGALOW METALLIC STRUCTURAL MEMBER.
 - CIRCUIT INTERRUPTERS 2 & 4 ARE MECHANICALLY INTERLOCKED WITH CIRCUIT INTERRUPTERS 6 & 8.
 - LABEL ALL PRIMARY POWER WIRES WITH RED TAGS.
 - CHARGERS WIRED FOR 240VAC
 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)
 - 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.

★ = EQUIPMENT IS PROVIDED BY FIELD FORCES.



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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

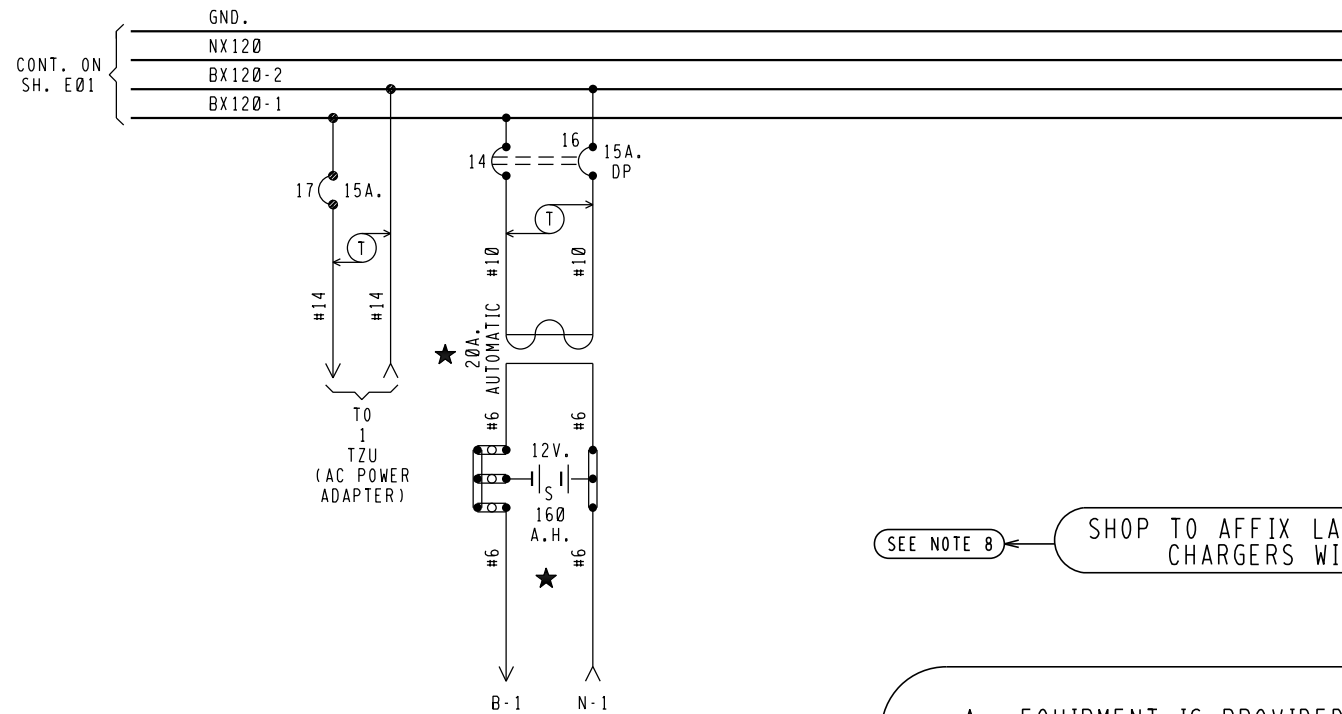
SSE/WGM/JLM
12-06-16


Signal South

4000GCP.E01
REV. 10-19-15

DESIGN DATE	REV. NO.
12-06-16	1

8'X 8' PTC CROSSING HOUSE			
 RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 POWER DISTRIBUTION BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16062	SHEET E01 (A)



SEE NOTE 8

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

★ = EQUIPMENT IS PROVIDED
BY FIELD FORCES.

NOTES.

- 1 - REFERENCES ARE PER SCMS-13.
- 2 - ARRESTERS ARE PER SS302.
- 3 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
- 4 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
- 5 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
- 6 - WIRING
 - A - FEED TO ALL 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.

1TZU		★ ELECTRO CODE 4 PLUS CONFIGURATION "A"		FRONT VIEW
TRACK CHOKE 9HP 211SRP LAMP CONVERTER		TRACK CHOKE 9HP 211SRP LAMP CONVERTER		
7K RECEIVER	2R TRACK CONVERTER	214 FILTER	215D AUXILIARY I/O (B)	216B TEST/DISPLAY
240A PTC PROCESSOR	240B JUMPER	212 MAIN CHOPPER CONTROL	213AX COLOR LIGHT LAMP DRIVER	213AX COLOR LIGHT LAMP DRIVER
2R TRACK CONVERTER	7K RECEIVER			

○ = NOTE

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

4000GCP.E01
REV. 10-19-15

8'X 8' PTC CROSSING HOUSE

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

MAIN ST. 155745T

SIGNALS 1606/1607

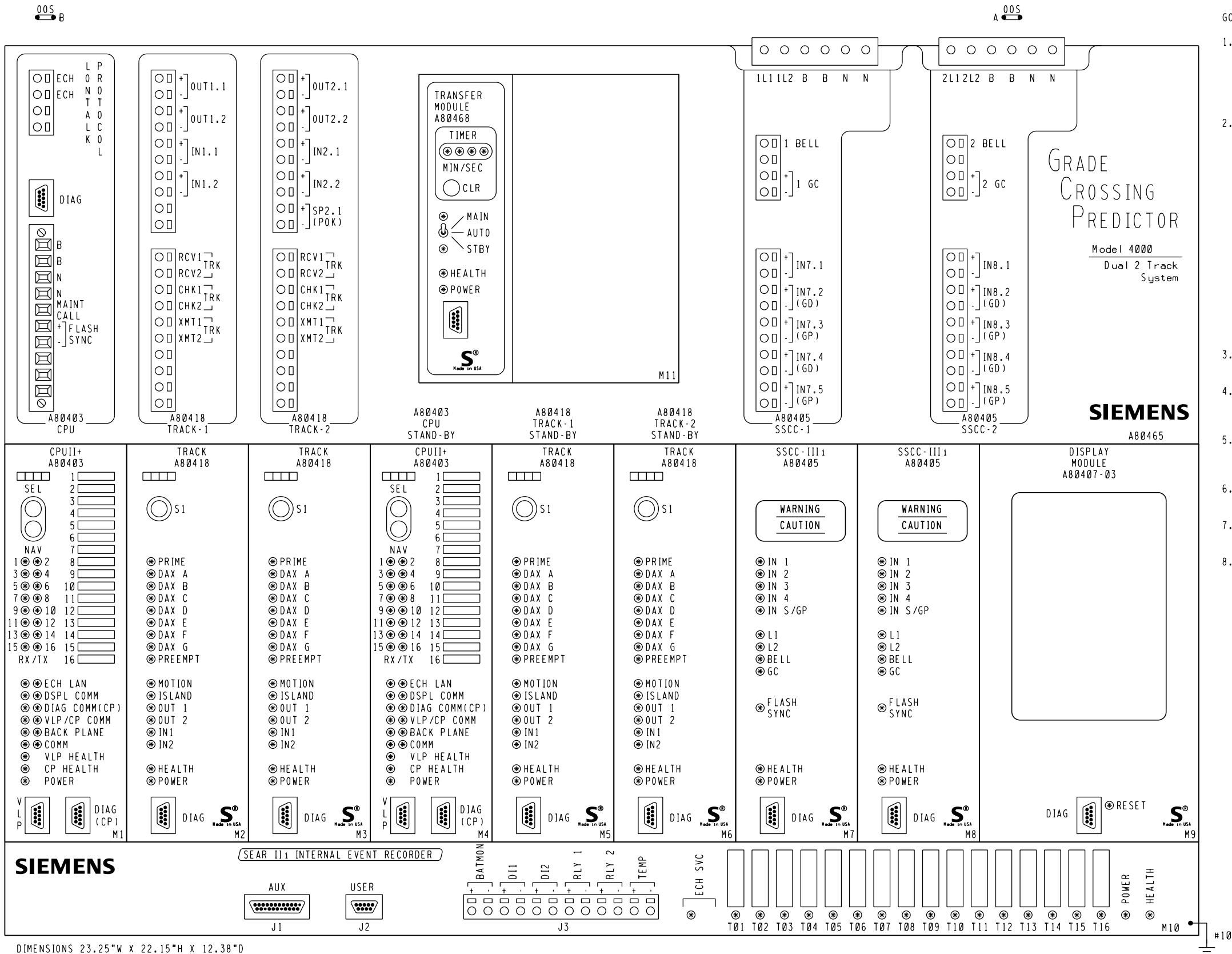
POWER DISTRIBUTION

BELMORE, OH M.P. BE-160.62

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16062	SHEET E02

DESIGN DATE
12-06-16

REV. NO.
1



GCP 4000 APPLICATION NOTES.

1. THE GRADE CROSSING PREDICTOR (GCP) IS A MODULAR MICROPROCESSOR CONTROLLED SYSTEM THAT IS DEPLOYED TO CONTINUALLY MONITOR THE APPROACHES TO RAILROAD GRADE CROSSINGS AND TO CONTROL THE LAMPS, GATES AND BELLS ASSOCIATED WITH THOSE CROSSINGS. WHEN EQUIPPED WITH THE SEAR II_i 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-III _i	A SIGNAL	A80405
M8	SSCC-III _i	B SIGNAL	A80405
M9	DISPLAY MODULE		A80407-03
TOP CENTER	TRANSFER UNIT		A80468
LOWER BAY	SEAR II _i	RECORDER	A80410
3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.
4. THE SEAR II_i INTERNAL EVENT RECORDER HAS INPUTS FOR ONE BATTERY MONITOR, TWO NON-VITAL INPUTS AND TWO PROGRAMMABLE RELAY DRIVES (HEEL/FRONT).
5. LOCATED ON THE FRONT OF EACH MODULE THERE ARE LED LIGHTS TO INDICATE THE ACTIVITY OF CERTAIN FUNCTIONS OCCURRING INSIDE THE GCP.
6. BETWEEN SLOT 1 & 2 THERE IS A CHASSIS IDENTIFICATION CHIP (CIC) SOCKET AND AN ECD CONNECTOR (DB-25 FEMALE).
7. UPON THE FAILURE OF A MODULE IN SLOTS M1-M3 THE AUTOMATIC TRANSFER UNIT SWITCHES TO THE STANDBY MODULES IN SLOTS M4-M6.
8. THE GCP 4000 GCP (A80465) MAY USE RIO MODULES IN SLOTS M3 AND M6.

*** = OUT

NEW WORK

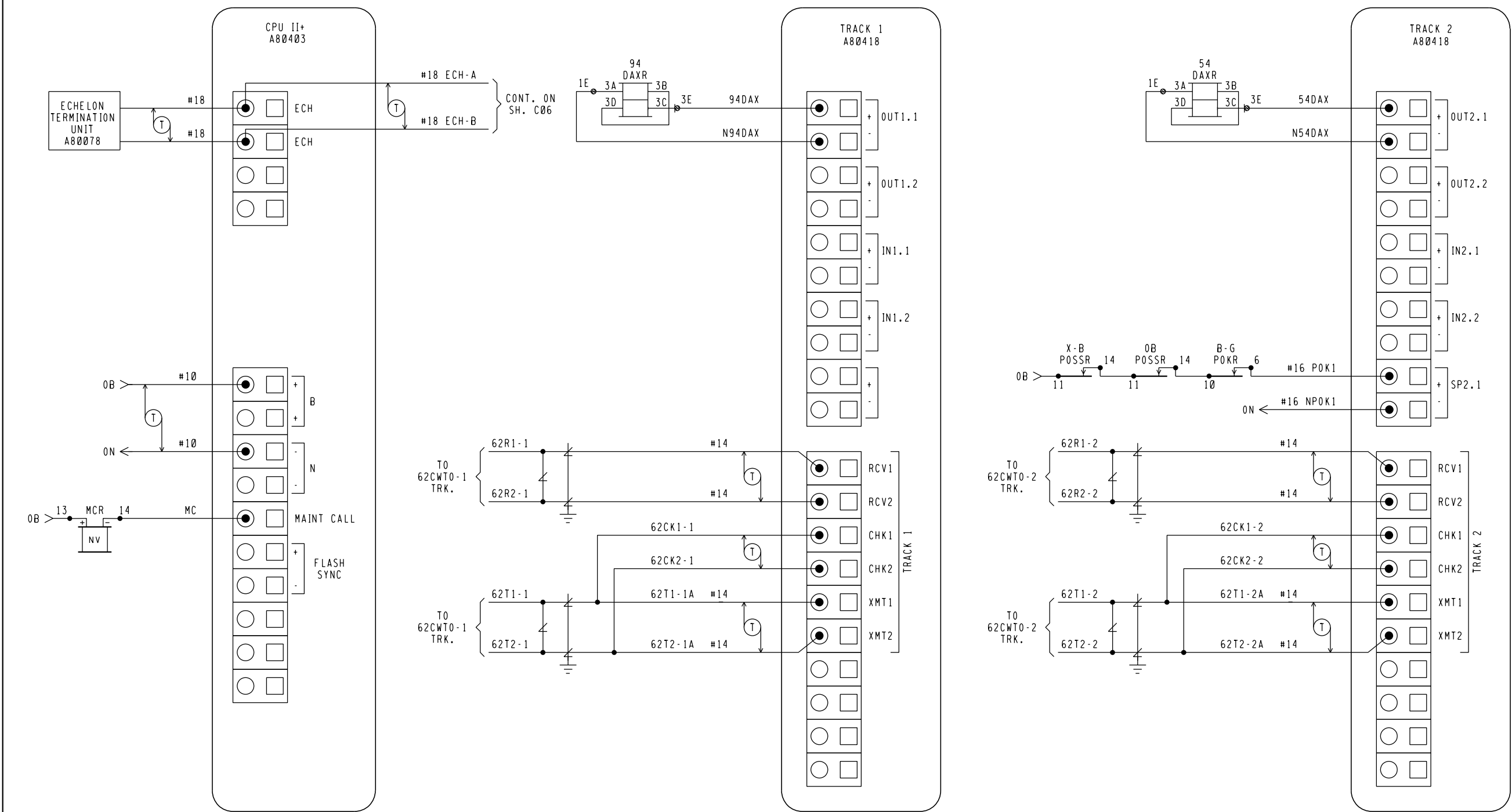
0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 DETECTION DEVICE CONSIST CWE-62 BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING -----	SHEET NO -----	FILE BE16062	SHEET C01A

4000GCP.C01 REV. 09-04-15	DESIGN DATE 12-06-16	REV. NO. 1
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NOTE,
ECHOLON 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.

*** = OUT

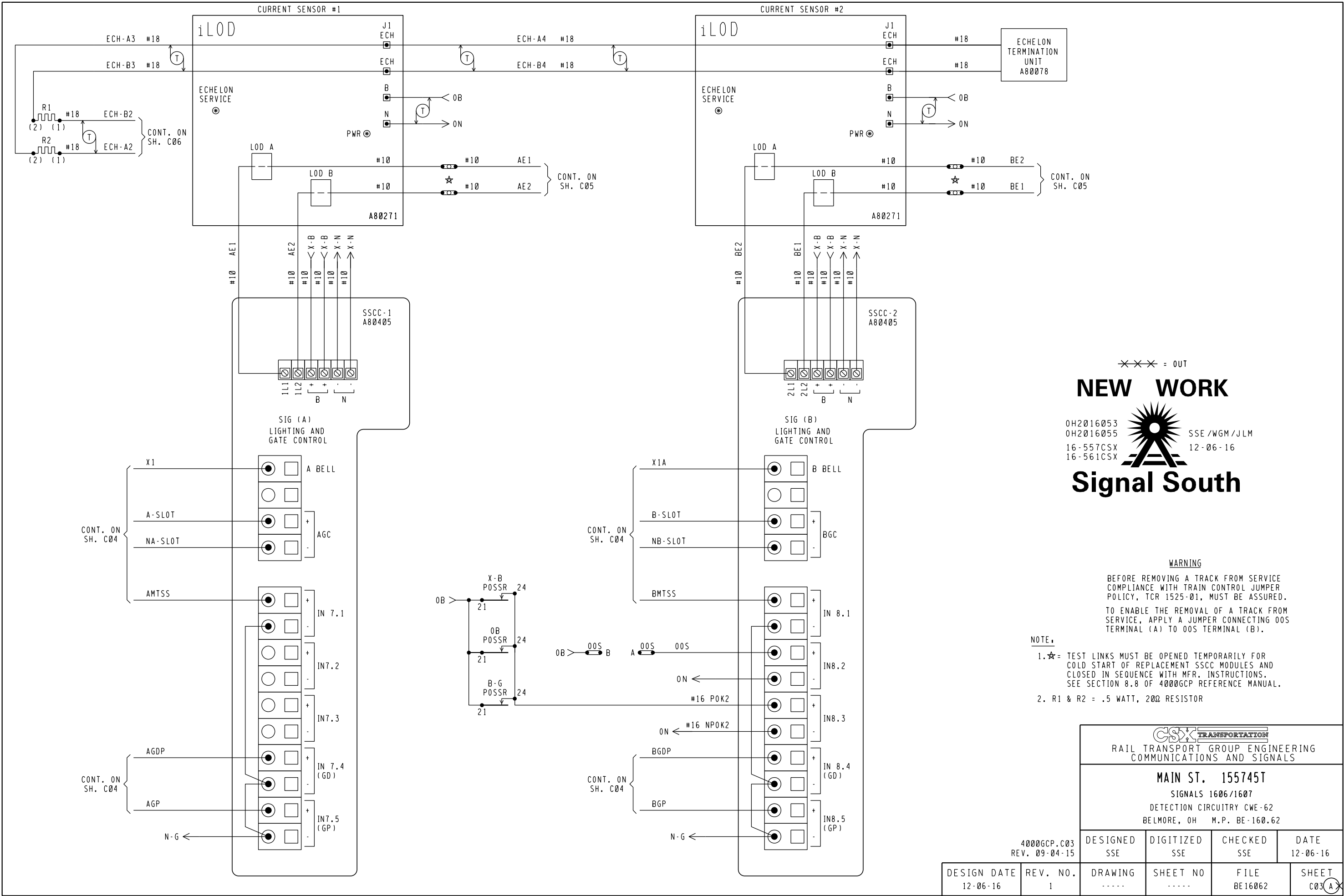
NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16

Signal South

DESIGN DATE 12-06-16		REV. NO. 1	DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING		SHEET NO	FILE BE16062	SHEET C02 (A)		



*** = OUT

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

WARNING

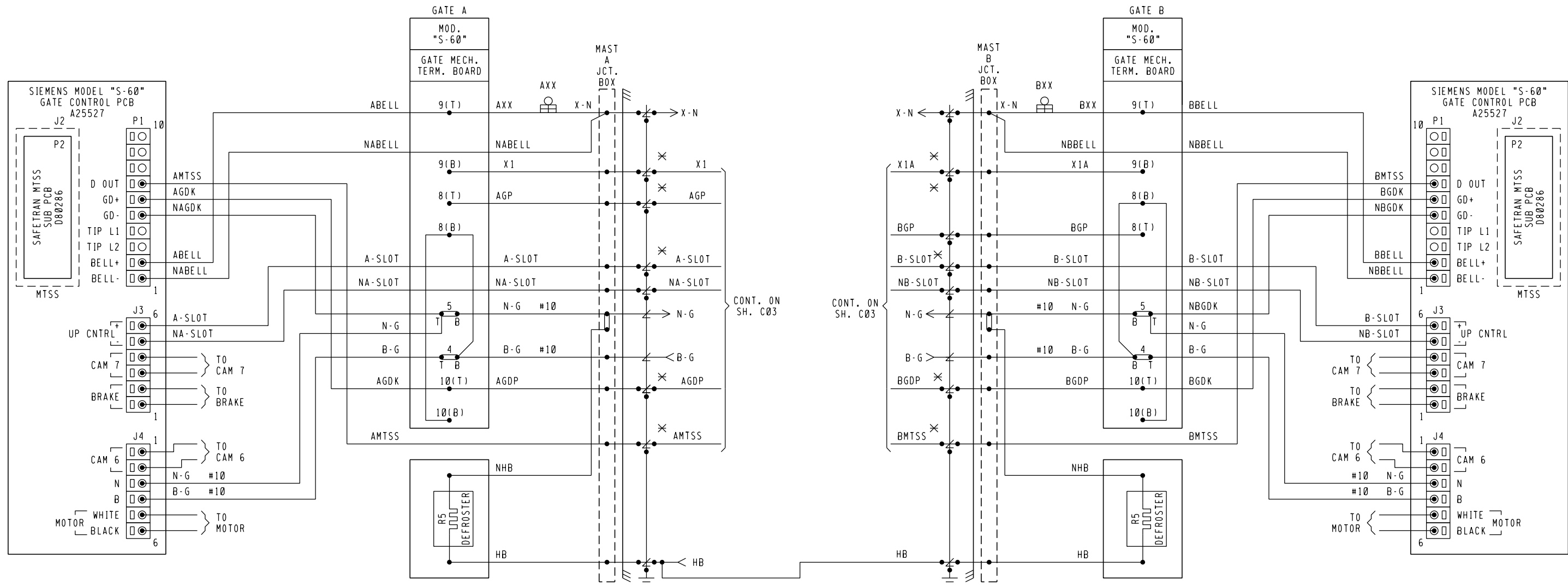
BEFORE REMOVING A TRACK FROM SERVICE COMPLIANCE WITH TRAIN CONTROL JUMPER POLICY, TCR 1525-01, MUST BE ASSURED. TO ENABLE THE REMOVAL OF A TRACK FROM SERVICE, APPLY A JUMPER CONNECTING OOS TERMINAL (A) TO OOS TERMINAL (B).

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, 200Ω RESISTOR

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T			
SIGNALS 1606/1607			
DETECTION CIRCUITRY CWE-62			
BELMORE, OH M.P. BE-160.62			
DESIGNED	DIGITIZED	CHECKED	DATE
SSE	SSE	SSE	12-06-16
DESIGN DATE	REV. NO.	DRAWING	SHEET
12-06-16	1	-----	C03 A



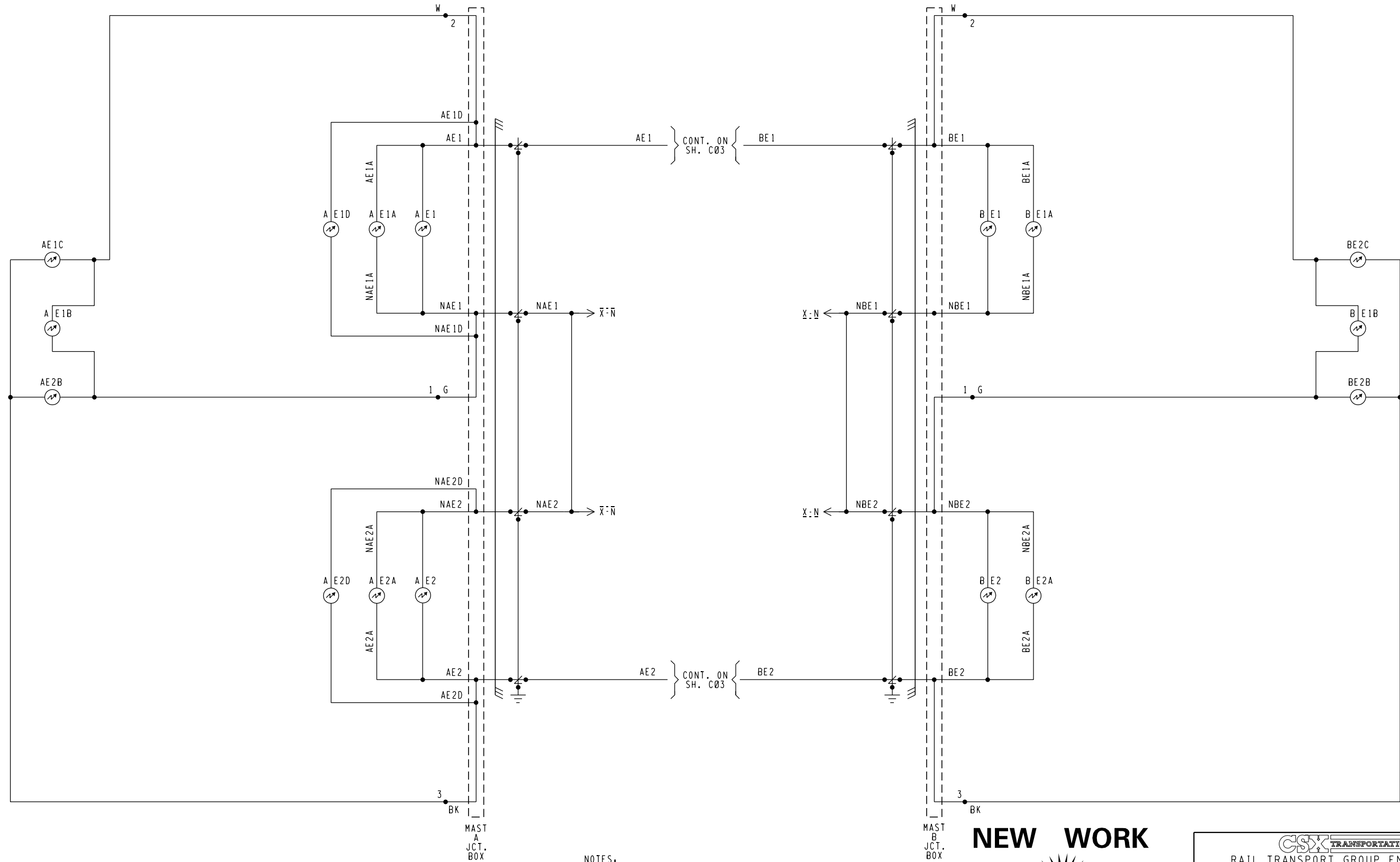
*** = OUT
NEW WORK



- 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.

DESIGNED SSE		DIGITIZED SSE		CHECKED SSE		DATE 12-06-16	
DESIGN DATE 12-06-16		REV. NO. 1		DRAWING		SHEET C04 A	

CSX TRANSPORTATION	
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	
MAIN ST. 155745T	
SIGNALS 1606/1607	
CROSSING WARNING DEVICE GATE CIRCUITRY	
BELMORE, OH M.P. BE-160.62	



NOTES.

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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

4000GCP.C05
REV. 09-04-15

DESIGN DATE
12-06-16

REV. NO.
1

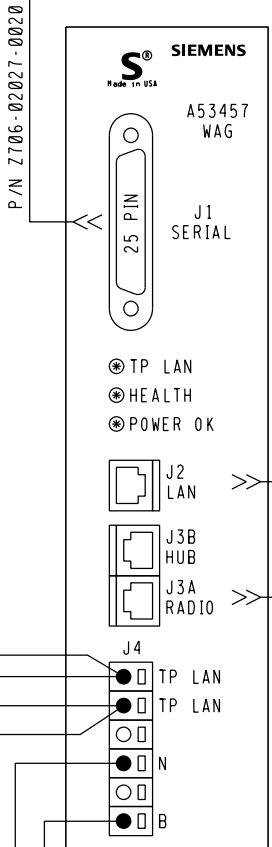
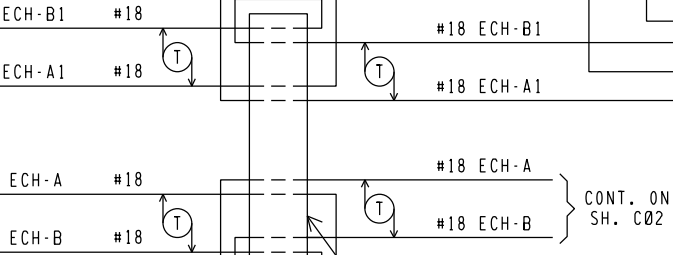
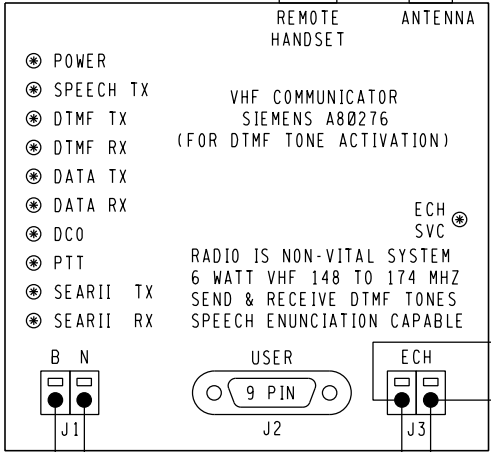
CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 CROSSING WARNING DEVICE LIGHT CIRCUITRY BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16062	SHEET C05

WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.384.003.07.01 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--7RRLLGGGSS
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

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

**
SHIELDED COAXIAL
CABLE TO ANTENNA

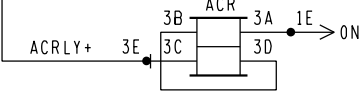
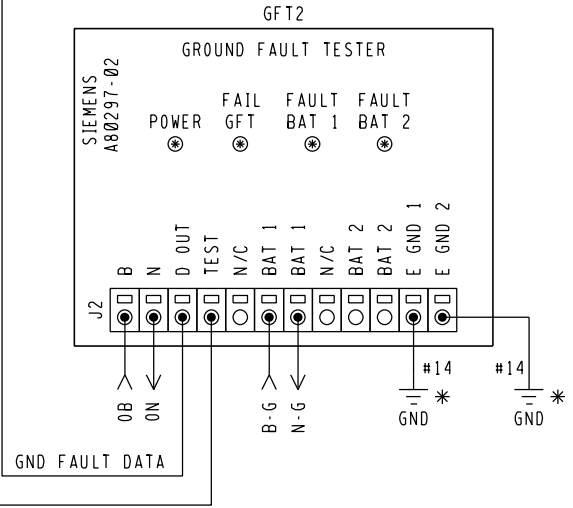
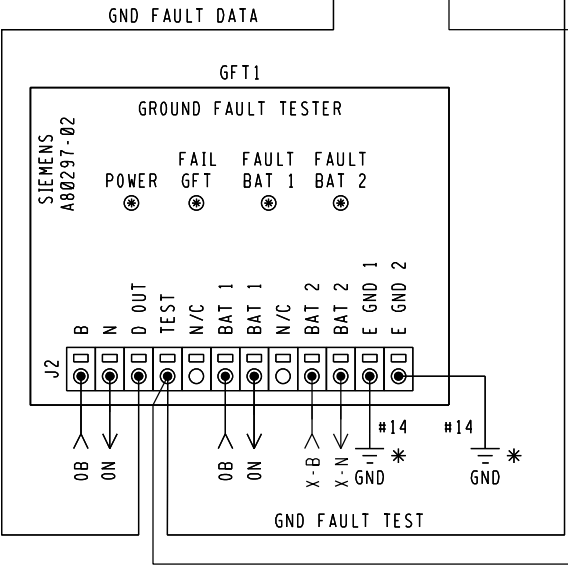
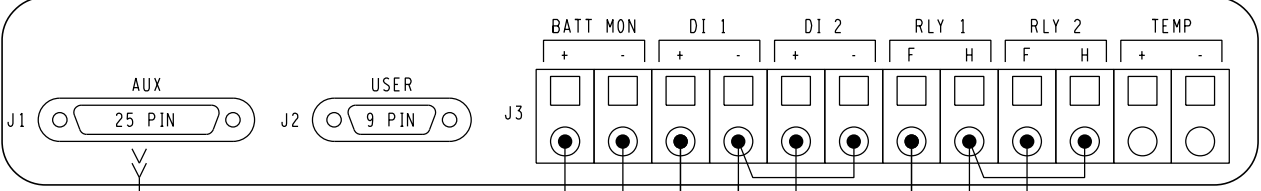


** RJ45 10/100-BASE-T ETHERNET CONNECTION TO CSX NETWORK

** 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 SEARII1 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.

SEAR II1 INTERNAL EVENT RECORDER I/O



= NOTE

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16



Signal South

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)
TO ACTIVATE PRESS, 745#
TO DE-ACTIVATE PRESS, 745*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

- NOTES:
- ALL WIRING #16 UNLESS NOTED OTHERWISE.
 - * = EARTH GROUND REF. TERMINALS REQUIRED FOR DETECTION. DO NOT JUMPER TERMINALS. MUST BE CONNECTED TO DIFFERENT POINTS OF BUNGALOW.
 - ** = TO BE PROVIDED BY COMMUNICATIONS
 - LOOP WIRE THROUGH FERRITE BEAD TWICE.

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

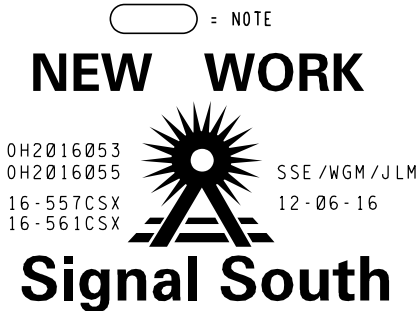
MAIN ST. 155745T

SIGNALS 1606/1607
CROSSING WARNING DEVICE CIRCUITRY
BELMORE, OH M.P. BE-160.62

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C06

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II: EXECUTIVE PROGRAM	VERSION: 9V725A01	VERSION: _____
APPLICATION PROGRAM (IF LOADED)	VERSION: 9V864A01	VERSION: _____
SITE SET UP MENU		
FUNCTION	LED DISPLAY	
DATE /TIME	XX-XX-XXXX XX:XX:XX	
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EASTERN	
SITE NAME	MAIN ST.	
MILEPOST	BE-160.62	
DOT NUMBER	155745T	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS ADDRESS	7.125.384.003.99.01 (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	7.125.384.003.07.01 (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 TO INSPECTOR,
AT IN SERVICE OF SEAR II: OR UPDATE
OF ITS INTERNAL EXECUTIVE PROGRAM
OR ITS CSXT APPLICATION PROGRAM,
NOTE THE VERSION NUMBER OF EACH
PROGRAM MUST IN THE BLANK FIELDS.



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

PROGRAM MENU SELECT

EDIT DIGITAL INPUTS	☒ NO ☐ YES
EDIT BATTERIES	☒ NO ☐ YES
EDIT RELAYS	☒ NO ☐ YES
EDIT TEST LED'S	☒ NO ☐ YES
EDIT IL0D1 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D2 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D3 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D4 SENSOR ☆	☒ NO ☐ YES
EDIT VHF SETTINGS	☒ NO ☐ YES
GCP4K ATCS SUBNODE	16

☆ STAR = OPTIONS SHOWN DEPENDANT ON
NUMBER OF IL0DS SELECTED

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
OPTION	SELECTION
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.
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 ☐
DTMF ACTVATION*	YES ☒ NO ☐
ACTIVATION CODE	745
ACTIVATION TIMEOUT	(60 SEC)
IL0D MODULES*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐
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 ☐
BELL SENSOR TSS 8*	NO ☒ YES ☐
BELL ON*	GATES LOWERING ☒ GATES MOVING ☐ ALWAYS ☐
GFT'S	YES ☒ NO ☐
BATTERIES ON GFT1	1 ☐ 2 ☒
GATE TIP SENSORS*	YES ☐ NO ☒
RTU	NO ☒ YES ☐
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,

- OPTION AVAILABLE IF VHF COMMUNICATOR = YES
LAST 3 DIGITS OF DOT NUMBER.
- OPTION AVAILABLE IF IL0DS.
- OPTION AVAILABLE IF BELL SENSORS.
- OPTION AVAILABLE IF GATES.
- OPTION AVAILABLE IF VHF RADIO.
- ONLY YES IN SPECIAL CIRCUMSTANCES.
- SELECT "MENU" THEN "CONFIGURATION" FROM SEAR II
INTERFACE KEYPAD TO ACCESS MODULE CONFIGURATION
MENU.
- BATTERY BANKS* = NUMBER OF BANKS EXCLUDING
THE BANK APPLIED TO THE BAT MON SEAR INPUT
- YES ON INITIAL SETUP

4000GCP.C07
REV. 09-04-15

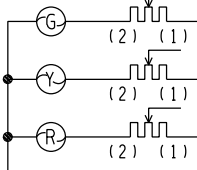
DESIGN DATE
12-06-16

REV. NO.
1

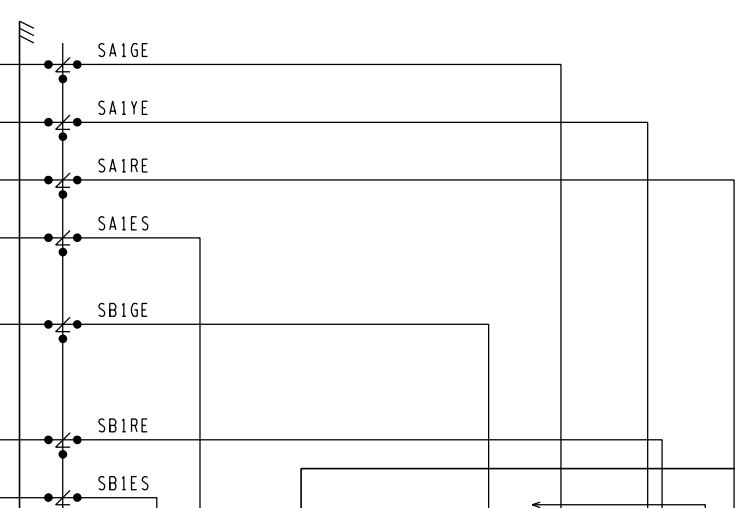
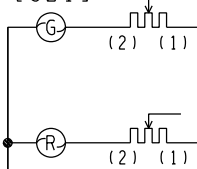
CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 SEAR II: CONFIGURATION & FUNCTIONS BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C07

1607

[SA1]



[SB1]



NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

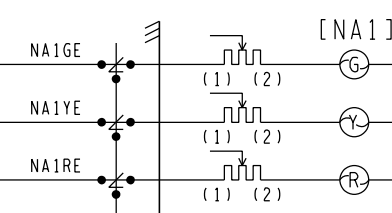


Signal South

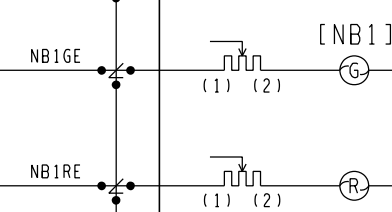
ALL EQUIPMENT ON THIS SHEET
IS PROVIDED BY FIELD FORCES.

1606

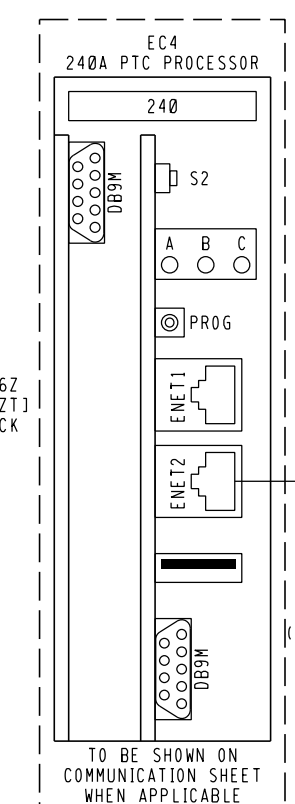
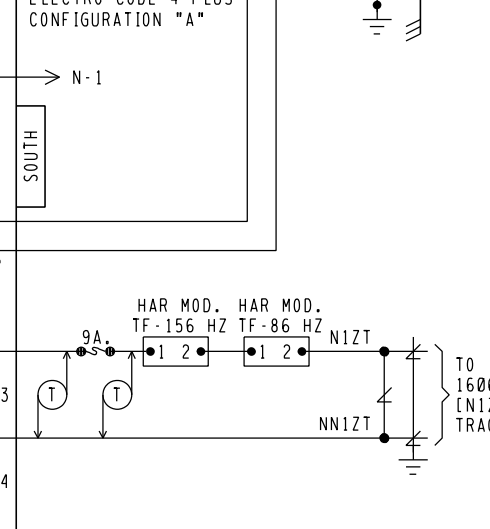
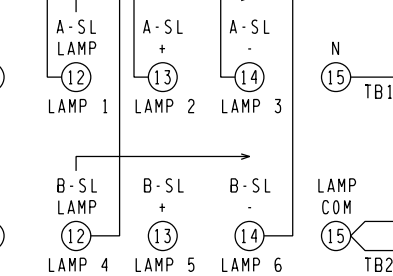
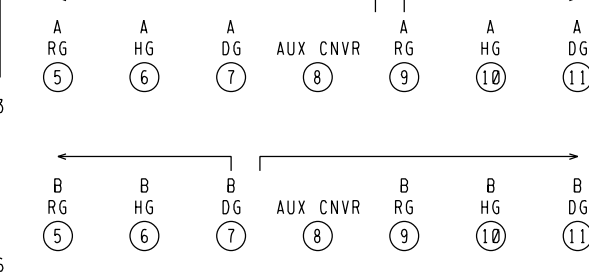
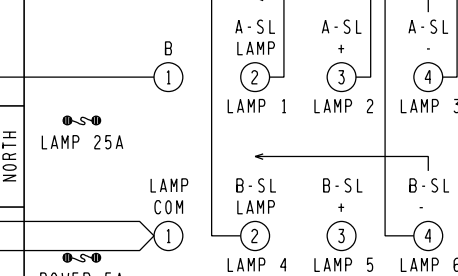
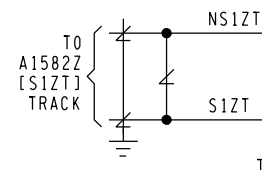
[NA1]



[NB1]



1TZU
ELECTRO CODE 4 PLUS
CONFIGURATION "A"



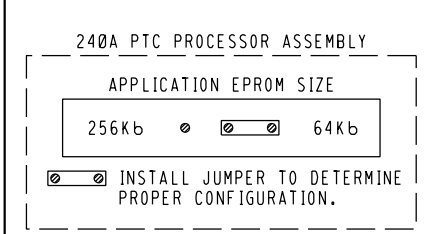
ETHERNET SWITCH PORT ASSIGNMENTS

PORT #1	COMM. ROUTER
PORT #2	COMM. EQUIPMENT
PORT #3	220 MHZ RADIO / SATELLITE
PORT #4	COMMUNICATIONS NETWORK ADAPTER
PORT #5	WAYSIDE INTERFACE UNIT #3 / COMM. ETHERNET EXTENDER
PORT #6	WAYSIDE INTERFACE UNIT #2 / SIGNAL ETHERNET EXTENDER
PORT #7	WAYSIDE INTERFACE UNIT #1 / VPM
PORT #8	WAYSIDE MESSAGE SERVER

FIELD VERIFY
DIP SHUNTS

PROGRAM INFORMATION
TO BE SUPPLIED BY
FIELD FOR A.I.S.

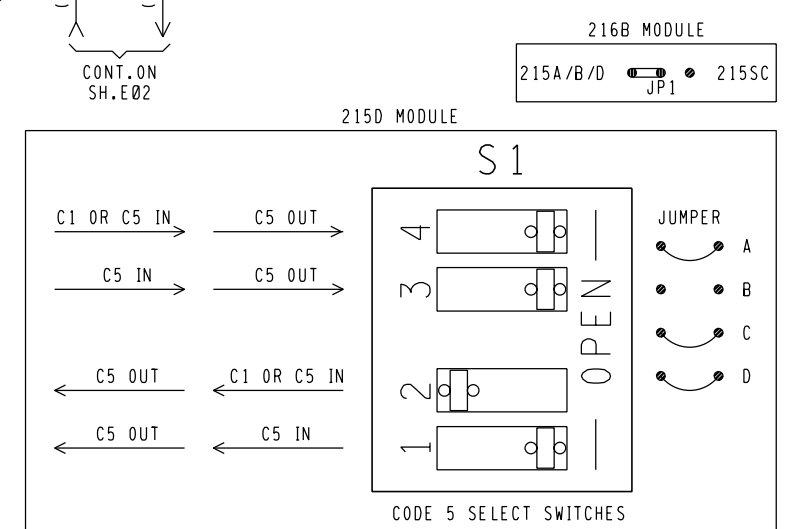
EC4 240 MODULE DIP SHUNT / SWITCH SETTINGS			
PTC PROCESSOR CHASSIS ID	APPLICATION DIP SHUNTS	EXECUTIVE CONFIGURATION DIP SWITCHES	EXECUTIVE CONFIGURATION DIP SWITCHES
0 1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15	1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15
0 = TAB INTACT (MADE) 1 = TAB PUNCHED OUT (BROKEN) [] = ON			



FIELD VERIFY APP. PROGRAM
INFORMATION FOR A.I.S.

A-PROCESSOR
EXE NAME EC4Q-PTCA REV. _____
CS A _____ CRC A _____

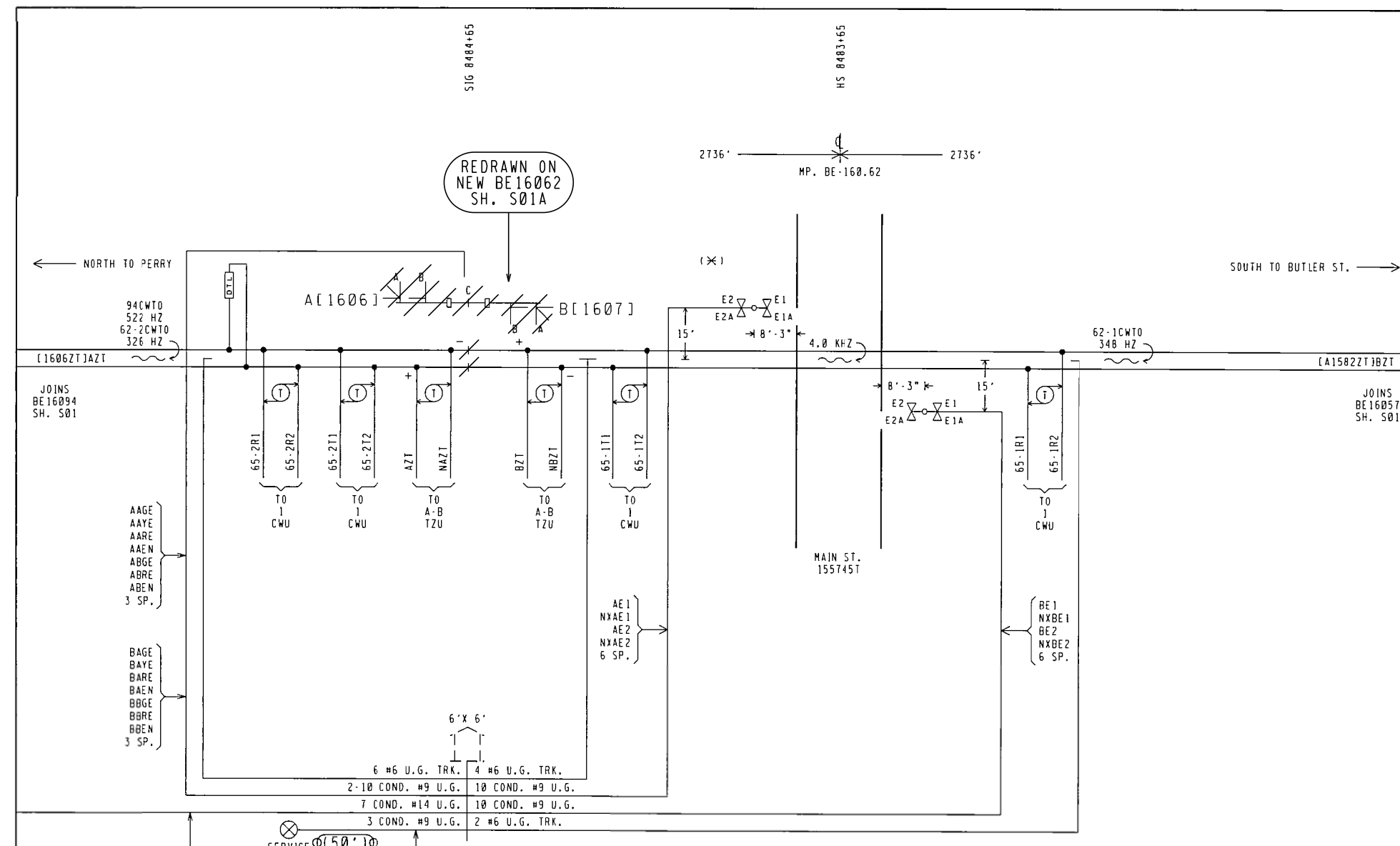
B-PROCESSOR
EXE NAME EC4Q-PTCB REV. _____
CS B _____ CRC B _____
APP NAME CLAO REV. 3.4
CS U1 & U3 \$ BA20



NOTES

- SIGNAL LIGHT RESISTORS ARE 3 OHM VARIABLE, 15 WATT, AND MOUNTED IN SIGNAL HEADS.
- [] = TAGGING PURPOSES ONLY.
- AC POWER ADAPTER - HARMON PART #810-083004-018
- CABLE CAT 6 PATCH MOLDED SNAGLESS YELLOW 20 FEET CSD PN 10-5075-00-20 UNSHIELDED (CSX PN 020-0750021-1)

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
MAIN ST. 155745T SIGNALS 1606/1607 SEAR II: CONFIGURATION & FUNCTIONS BELMORE, OH M.P. BE-160.62			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C08



PER PTC PICTURE

REMOVE ON AS IN SERVICE

FOR AMPERAGES OF 38.5 AMPS OR LESS PER LEG USE THE FOLLOWING POWER CABLE DESIGN GUIDELINES

3 COND. #9 W/GND. (10% VD) $X \leq 157'$
3 COND. #6 W/GND. (5% VD) $157' < X \leq 314'$
3 COND. #4 W/GND. (5% VD) $314' < X \leq 362'$
* 3 COND. #2 W/GND. (10% VD) $362' < X \leq 724'$

* GREATER THAN 724' CABLE RUN CALCULATE ACTUAL CABLE SIZE REQUIREMENTS PER SS360.

DTL = NOTE
= IN

CWM1434950 03-26-14 XRL/JDB/ 0H2013080

xorail

NOTE.

1. (X) = LOCATION OF HOUSE

2. THE TRANSMITTER LEADS FOR MOTION OR PREDICTOR EQUIPMENT SHOULD BE CONNECTED ON THE BUNGALOW OR SHORT LEAD SIDE OF THE CROSSING. ISLAND DISTANCE BETWEEN FEED WIRES 120" MIN.

REVISIONS

01-28-02 SWE	0H1999039
08-05-03 SAF	0H20000520

THIS PLAN DOES ☐ DOES NOT ☒
SUPERSEDE PLAN DATED 03-26-14
CSX PROJECT # 0H2013080

DTL = NOTE
//// = SHOWN ELSEWHERE

ALL ELSE OUT
VOID ON A.I.S.

0H2016053
0H2016055
16-557CSX
16-561CSX

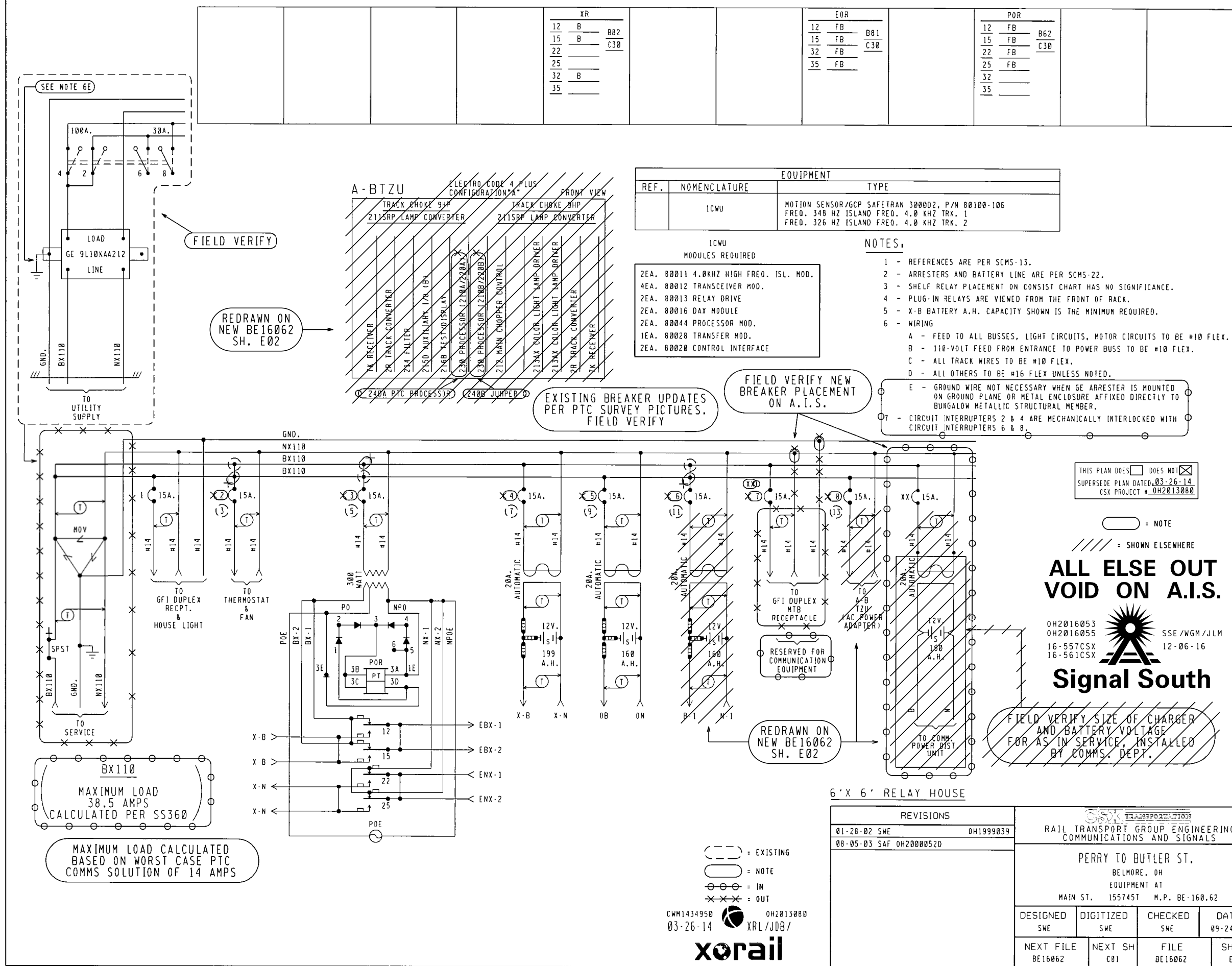
Signal South

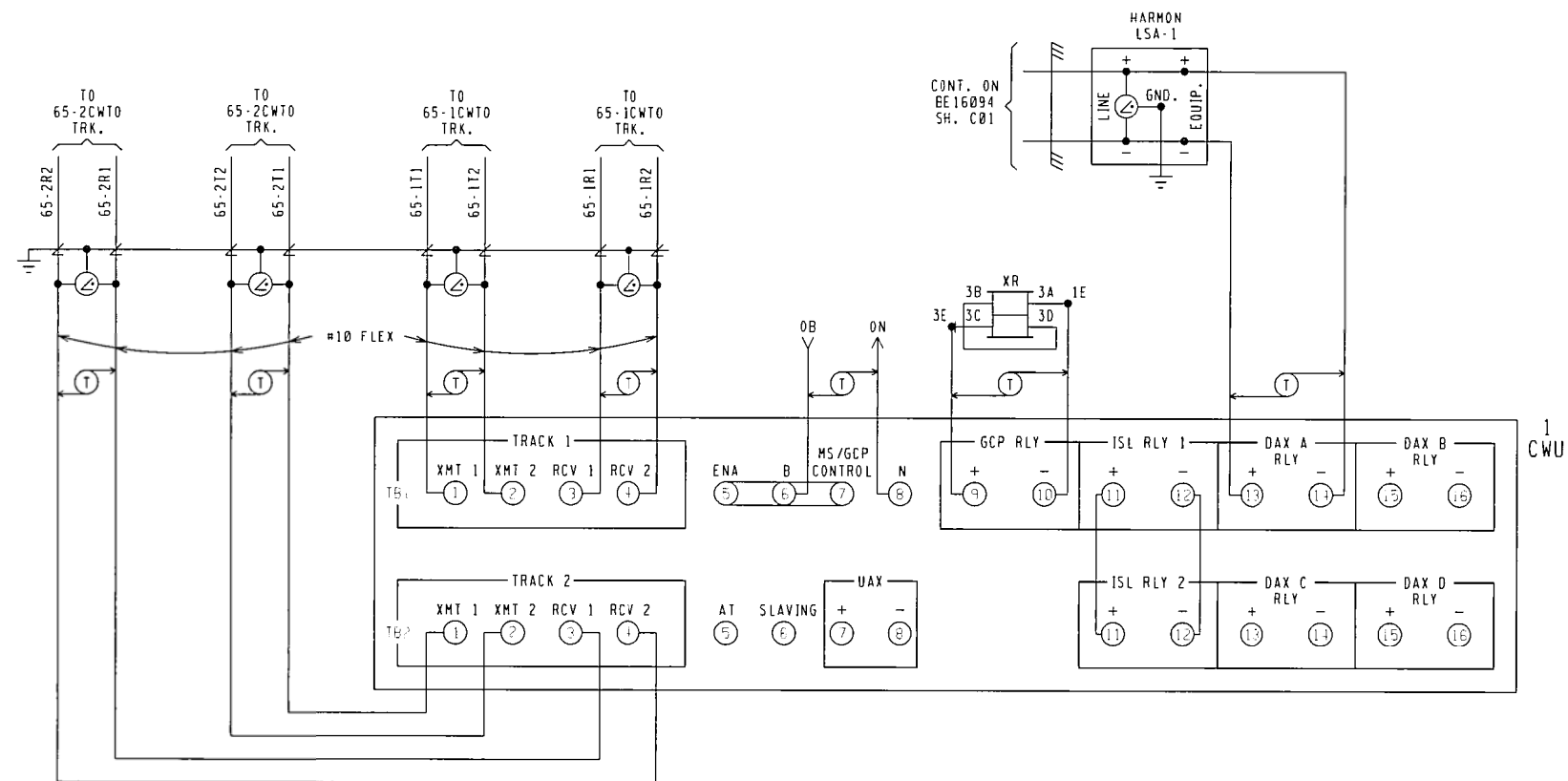
0H2016053 SSE/WGM/JLM
12-06-16

CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PERRY TO BUTLER ST.
BELMORE, OH
TRACK AND SIGNAL PLAN AT
MAIN ST. 155745T M.P. BE-160.62

DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-29-99
NEXT FILE BE16062	NEXT SH E01	FILE BE16062	SHEET S01





THIS PLAN DOES ☐ DOES NOT ☒
 SUPERSEDE PLAN DATED 03-26-14
 CSX PROJECT # 0H2013080

**ALL OUT
VOID ON A.I.S.**

0H2016053
 0H2016055
 16-557CSX
 16-561CSX



SSE/WGM/JLM
 12-06-16

Signal South

NO CHANGES
 CWM1434950 0H2013080
 03-26-14 XRL/JDB/
xorail

NOTES:

1. FOR SIX WIRE OPERATION, THE JUMPER LINKS CONNECTING TB3-1 AND 2 AND TB3-3 AND 4 SHOULD BE REMOVED FOR TRACK NUMBER 1 AND A SHORT LENGTH OF STRANDED TWISTED PAIR WIRE CONNECTED TO TERMINALS TB3-1 (1C1) AND TB3-3 (1C2). THE TWISTED PAIR WIRE IS THEN ROUTED THROUGH THE EXIT HOLE IN THE SIDE OF THE CASE AND TERMINATED AT AAR TERMINALS. A NUMBER 10 AWG TWISTED PAIR CAN THEN BE USED FOR INTERCONNECTING THE TRACK ARRESTERS.
2. FOR SIX WIRE OPERATION, THE JUMPER LINKS CONNECTING TB4-1 AND 2 AND TB4-3 AND 4 SHOULD BE REMOVED FOR TRACK NUMBER 2 AND A SHORT LENGTH OF STRANDED TWISTED PAIR WIRE CONNECTED TO TERMINALS TB4-1 AND TB4-3. THE TWISTED PAIR WIRE IS THEN ROUTED THROUGH THE EXIT HOLE IN THE SIDE OF THE CASE AND TERMINATED AT AAR TERMINALS. A NUMBER 10 AWG TWISTED PAIR CAN THEN BE USED FOR INTERCONNECTING THE TRACK ARRESTERS.

MODULE 80028
 S4 DIP SWITCH POSITIONS *

SWITCH #	16	8	4	2	1
SWITCH POSITION	UP	DOWN	UP	DOWN	UP

* MAY BE SET PER FIELD CONDITIONS

MODULE 80028
 S1 DIP SWITCH POSITIONS

SWITCH #	A	B	C	D
DAX USED	LEFT	RIGHT	RIGHT	RIGHT

LEFT INDICATES DAX USED

REVISIONS		CSX TRANSPORTATION	
01-28-02 SWE	0H1999039	RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS	
08-05-03 SAF 0H20000520		PERRY TO BUTLER ST. BELMORE, OH CIRCUITS AT MAIN ST. 155745T M.P. BE-160.62	
DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99
NEXT FILE BE16062	NEXT SH C03	FILE BE16062	SHEET C02

3000 GCP APPLICATION DESIGN CARD

EQUIPMENT:

3000 ☐ 3000D2 ☒

3000ND ☐ 3000ND2 ☐

ISLAND FREQUENCY:

T1: 4.0 KHZ T2: N/A KHZ

1 CWU

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

1 ☐ 2 ☒

FREQUENCY (MS/GCP)

348/326 HZ

UNIDIRECTIONAL/BIDIRECTIONAL

T1: UNI ☒ BI ☐

T2: UNI ☒ BI ☐

XMIT LEVEL

T1: HI ☒ MED ☐

T2: HI ☒ MED ☐

PREDICTOR/MOTION SENSOR

T1: PRED ☒ MS ☐

T2: PRED ☒ MS ☐

WARNING TIME SELECTED

T1: 25 SEC.

T2: 25 SEC.

APPROACH DISTANCE SELECTED

T1: 2736 FT.

T2: 2736 FT.

APPROACH DISTANCE COMPUTED

T1: NOT REQUIRED *

T2: NOT REQUIRED *

UAX PICKUP DELAY (0 = OFF)

0 SEC.

ENA/UAX2 PICKUP DELAY (0 = ENABLE) ..

0 SEC.

ISLAND DISTANCE (BETWEEN FEED WIRES) T1:

☆ FT.

T2: ☆ FT.

NUMBER OF DAXS

0 ☐ 1 ☒ 2 ☐ 3 ☐ 4 ☐

DAX A TRACK ASSIGNMENT

T1 ☐ T2 ☒

DAX A DISTANCE (0 = PREEMPT)

1610 FT.

DAX A WARNING TIME

20 SEC.

DAX B TRACK ASSIGNMENT

T1 ☐ T2 ☐

DAX B DISTANCE (0 = PREEMPT)

FT.

DAX B WARNING TIME

SEC.

DAX C TRACK ASSIGNMENT

T1 ☐ T2 ☐

DAX C DISTANCE (0 = PREEMPT)

FT.

DAX C WARNING TIME

SEC.

DAX D TRACK ASSIGNMENT

T1 ☐ T2 ☐

DAX D DISTANCE (0 = PREEMPT)

FT.

DAX D WARNING TIME

SEC.

SLAVING MASTER/SLAVE

MASTER ☒ SLAVE ☐

PASSWORD ENABLED

DISABLED ☒ ENABLED ☐

RECORDER INSTALLED

NOT INSTALLED ☒ INSTALLED ☐

RS-232-C BAUD RATE

BPS

RS-232-C DATE BITES

7 ☐ 8 ☐

RS-232-C STOP BITS

1 ☐ 2 ☐

RS-232-C PARITY

NONE ☐ MARK ☐

ODD ☐ SPACE ☐

EVEN ☐

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

TIME (E.G., 06.25.43 PM)

NOT REQUIRED *

DAYLIGHT SAVINGS

ON ☐ OFF ☒

EXPANDED PROGRAMMING DESIGN

SWITCH TO MS (ENTER EZ VALUE)

T1: 10 EZ

T2: 10 EZ

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

T1: 0 SEC.

T2: 0 SEC.

PRIME PREDICTION OFFSET (0 = OFF)

T1: 0 FT.

T2: 0 FT.

PICKUP DELAY PRIME

15 SEC.

PICKUP DELAY DAX A

15 SEC.

PICKUP DELAY DAX B

0 SEC.

PICKUP DELAY DAX C

0 SEC.

PICKUP DELAY DAX D

0 SEC.

COMPENSATION VALUE

T1: NOT REQUIRED **

COMPENSATION VALUE

T2: NOT REQUIRED **

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

THIS PLAN DOES ☐ DOES NOT ☒

SUPERSEDE PLAN DATED 03-26-14

CSX PROJECT # 0H2013080

ALL OUT
VOID ON A.I.S.

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE /WGM/JLM
12-06-16

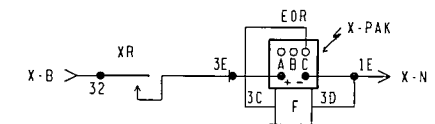
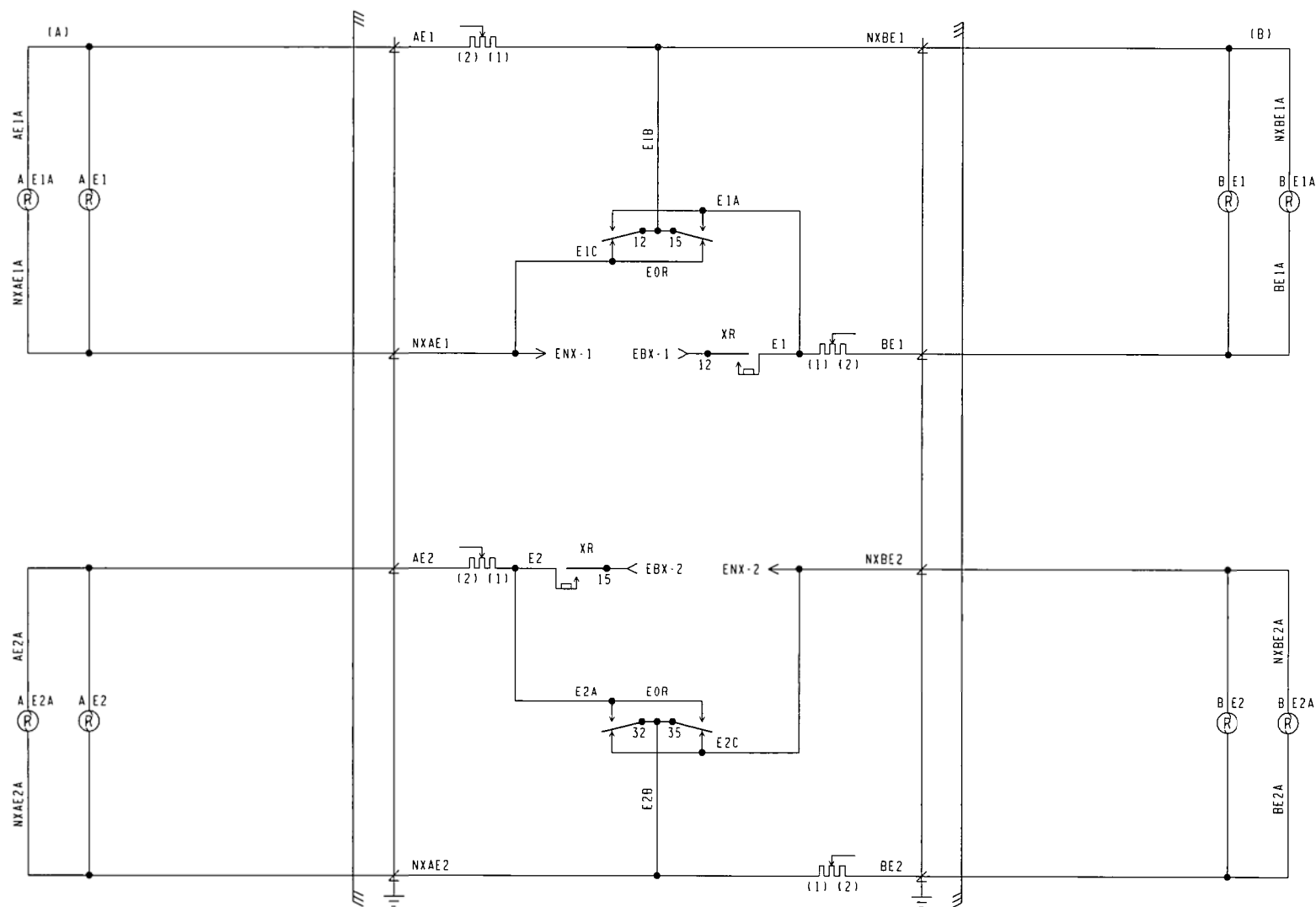
Signal South

NO CHANGES

CWM1434950 0H2013080
03-26-14 XRL/JDB/

xorail

REVISIONS		CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
01-28-02 SWE	0H1999039	PERRY TO BUTLER ST. BELMORE, OH APPLICATION DESIGN CARD AT MAIN ST. 155745T M.P. BE-160.62			
08-05-03 SAF	0H2000052D				
DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99		
NEXT FILE BE16062	NEXT SH C04	FILE BE16062	SHEET C03		



THIS PLAN DOES ☐ DOES NOT ☒
 SUPERSEDE PLAN DATED 03-26-14
 CSX PROJECT # 0H2013080

**ALL OUT
VOID ON A.I.S.**

0H2016053
 0H2016055
 16-557CSX
 16-561CSX



SSE/WGM/JLM
 12-06-16

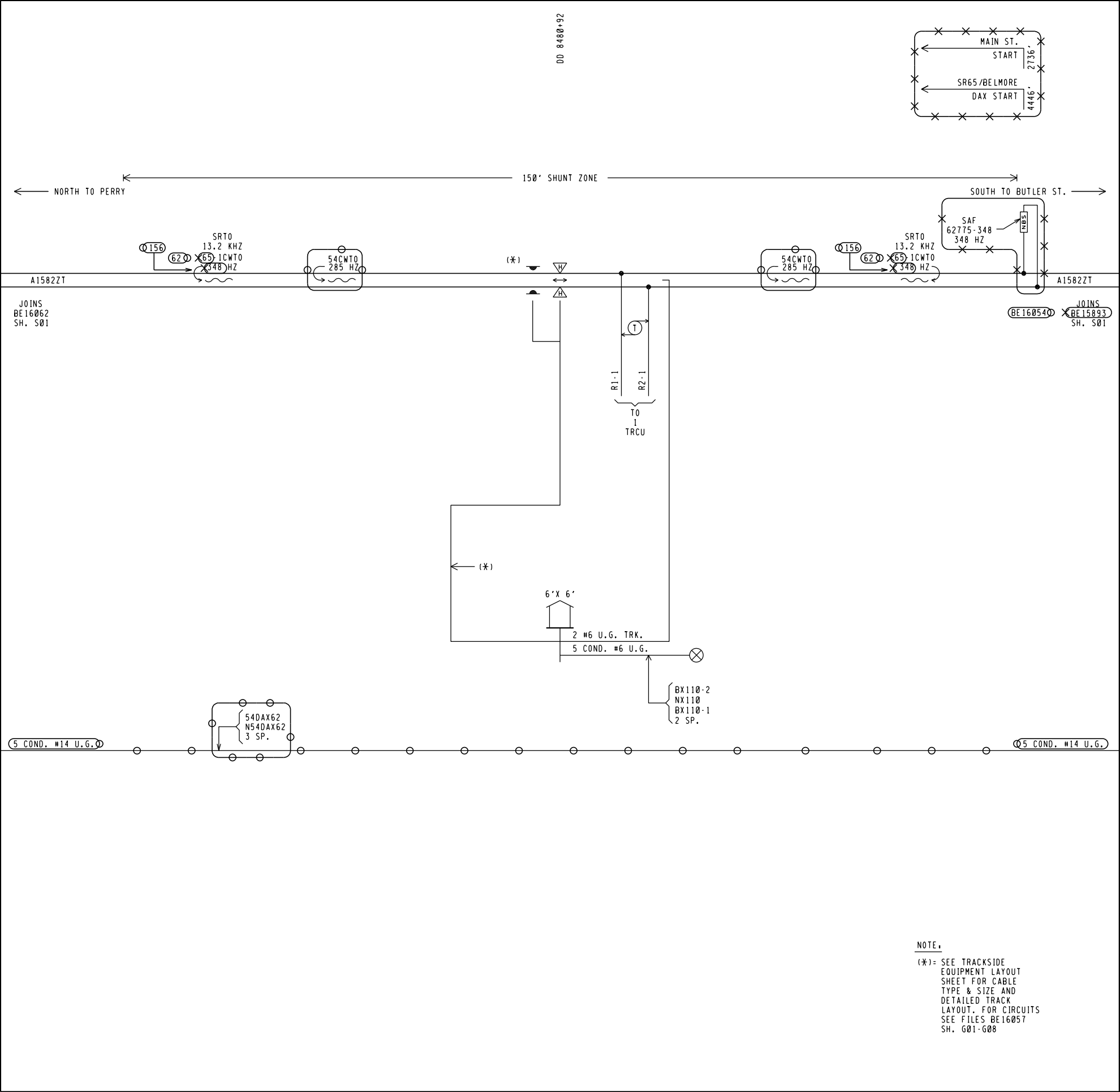
Signal South

NO CHANGES
 CWM1434950 0H2013080
 03-26-14 XRL/JDB/

xorail

NOTE:
 LIGHT RESISTOR IS A PARALLEL
 COMBINATION OF THREE (3) 1.5 OHM,
 15 WATT, ADJUSTABLE RESISTORS.

REVISIONS				RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
01-28-02 SWE	0H1999039			PERRY TO BUTLER ST. BELMORE, OH CIRCUITS AT MAIN ST. 155745T M.P. BE-160.62			
08-05-03 SAF	0H2000052D			DESIGNED SWE	DIGITIZED SWE	CHECKED SWE	DATE 09-24-99
		NEXT FILE BE16057	NEXT SH S01	FILE BE16062	SHEET 004		



REVISIONS	
05-28-98	HAR 0H97062
01-28-02	SWE 0H1999039
08-05-03	SAF 0H2000052D
06-13-05	SAF 0H2004046

OH2016053

OH2016055

16-557CSX

16-561CSX

SSE /WGM/JLM

12-06-16

Signal South

CSX

TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PERRY TO BUTLER ST.

TRACK AND SIGNAL PLAN AT
DEFECT DETECTOR M.P. BE-160.57

NOTE:
(*)= SEE TRACKSIDE
EQUIPMENT LAYOUT
SHEET FOR CABLE
TYPE & SIZE AND
DETAILED TRACK
LAYOUT. FOR CIRCUITS
SEE FILES BE16057
SH. G01-G08

INDEX
CONTENTS

SH. NO.		REVISION NO.								
		1	2	3	4	5	6	7	8	9
I01	INDEX AND REVISIONS									
S01	TRACK AND SIGNAL PLAN									
G01	INTERNAL SOFTWARE AND GATES LOGIC DIAGRAMS (OPTIONAL)									
P01	MINIMUM PROGRAM STEPS REPORT CWE-54									
E01	POWER DISTRIBUTION									
C01	DETECTION DEVICE CONSIST CWE-54									
C02	DETECTION CIRCUITRY CWE-54									
C03	DETECTION CIRCUITRY CWE-54									
C04	CROSSING WARNING DEVICE GATE CIRCUITRY									
C05	CROSSING WARNING DEVICE LIGHT CIRCUITRY									
C06	CROSSING WARNING DEVICE CIRCUITRY									
C07	SEAR II: CONFIGURATION & FUNCTIONS									

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

= NOTE

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

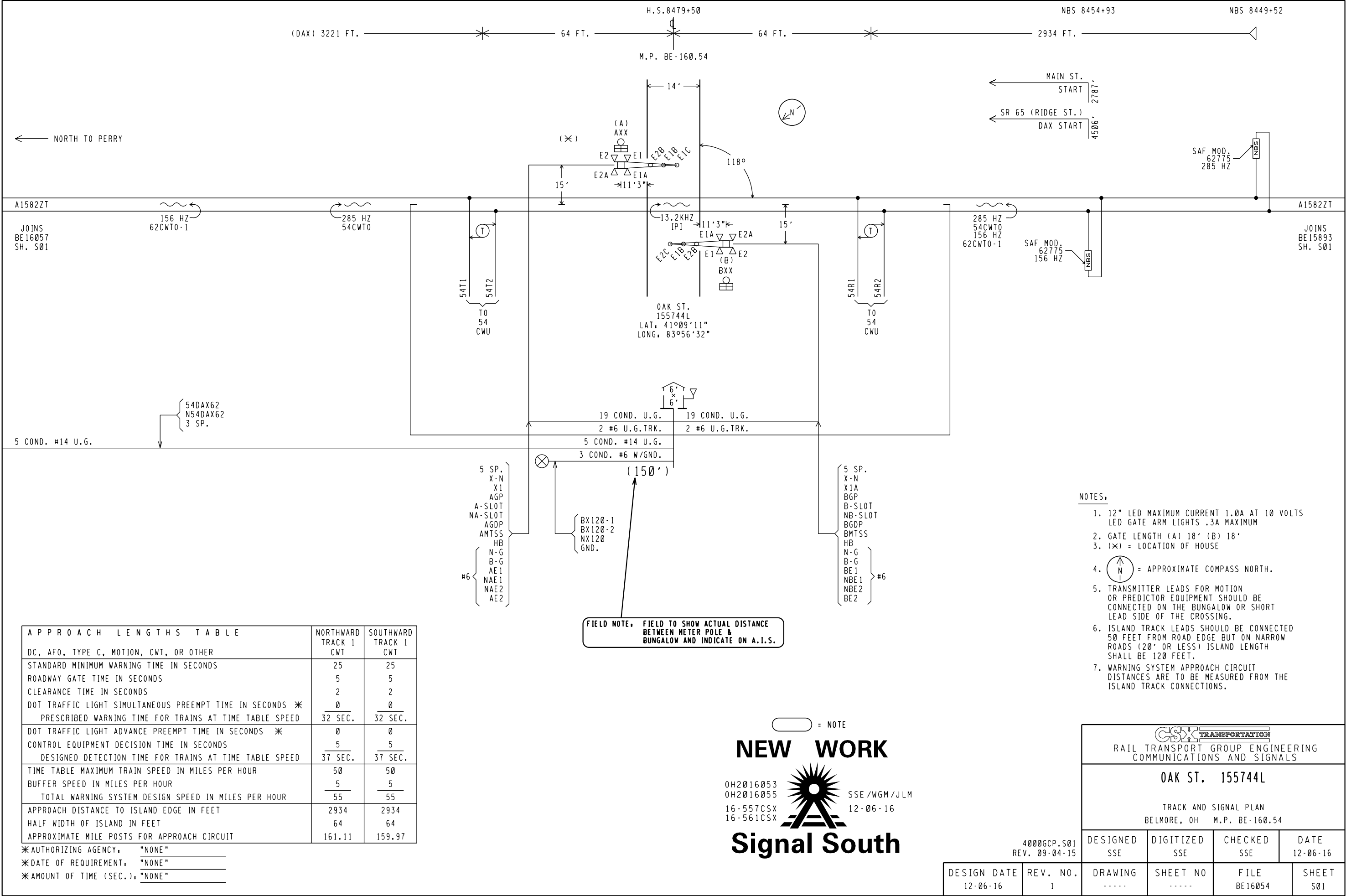
CSXTRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

OAK ST. 155744L

INDEX AND REVISIONS
BELMORE, OH M.P. BE-160.54

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING -----	SHEET NO -----
FILE BE16054		SHEET 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	2	2
DOT TRAFFIC LIGHT SIMULTANEOUS PREEMPT TIME IN SECONDS *	0	0
PRESCRIBED 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	5	5
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED	37 SEC.	37 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	2934
HALF WIDTH OF ISLAND IN FEET	64	64
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT	161.11	159.97

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

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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

- NOTES,
- 12" LED MAXIMUM CURRENT 1.0A AT 10 VOLTS
LED GATE ARM LIGHTS .3A MAXIMUM
 - GATE LENGTH (A) 18' (B) 18'
 - (X) = LOCATION OF HOUSE
 -  = APPROXIMATE COMPASS NORTH.
 - TRANSMITTER LEADS FOR MOTION
OR PREDICTOR EQUIPMENT SHOULD BE
CONNECTED ON THE BUNGALOW OR SHORT
LEAD SIDE OF THE CROSSING.
 - ISLAND TRACK LEADS SHOULD BE CONNECTED
50 FEET FROM ROAD EDGE BUT ON NARROW
ROADS (20' OR LESS) ISLAND LENGTH
SHALL BE 120 FEET.
 - WARNING SYSTEM APPROACH CIRCUIT
DISTANCES ARE TO BE MEASURED FROM THE
ISLAND TRACK CONNECTIONS.

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

OAK ST. 155744L

TRACK AND SIGNAL PLAN
BELMORE, OH M.P. BE-160.54

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING -----	SHEET S01

DESIGN DATE	REV. NO
12-06-16	1

Minimum Program Steps Report
.....
Location and SIN
.....
DOT Number: 155744L
Milepost Number: BE-160.54
Site Name: OAK ST

SIN: 712538400416 *

* 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 = 2934 ft (OCCN) *
Track 1 : Prime Warning Time = 32 sec (OCCN) *
Track 1 : Prime UAX = IP (OCCN) *
Track 1 : GCP Transmit Level = Medium (Set in Field,TCN)
Track 1 : Isl Frequency = 13.2 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) *

MS4000 configuration
Track 1 : GCP Frequency = 285 Hz (OCCN,TCN) (Hidden) *
Track 1 : Prime UAX = IP (OCCN) (Hidden) *
Track 1 : Isl Frequency = 13.2 kHz (OCCN) (Hidden) *
IN 1.1 = T1 Prime UAX (OCCN) (Hidden) *

MS4000 Predictor
Track 1 : Prime Warning Time = 32 sec (OCCN) (Hidden) *

GCP: track 1
Track 1 : Island Distance = 128 ft (Set in Field,TCN)

ADVANCED: site options
Daylight Savings = 0n (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 = 285 Hz (OCCN,TCN) (Hidden) *
Track 1 : Prime UAX = IP (OCCN) (Hidden) *
IN 1.1 = T1 Prime UAX (OCCN) (Hidden) *

Express: MS4000 Predictor
Track 1 : Prime Warning Time = 32 sec (OCCN) (Hidden) *

* Parameter is part of office check number calculation.

Check Numbers
.....
Office Check Number: 3DAB5714
Config. Check Number: 63E4B31E
(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 = 128 ft (Set in Field)
Daylight Savings = 0n (Set in Field)

Comments
.....
<none>

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



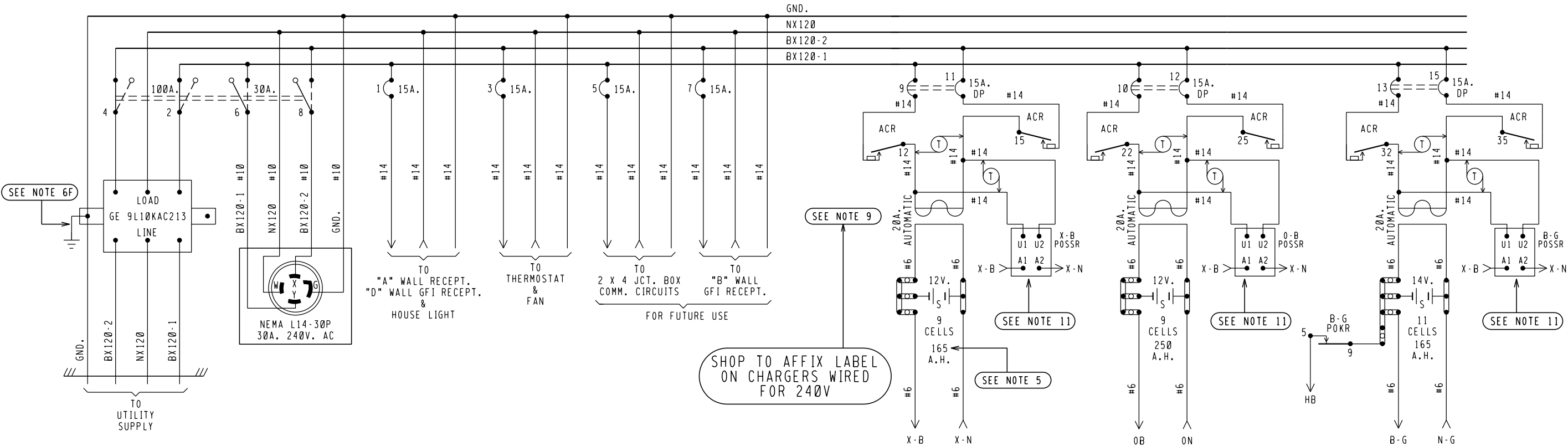
SSE/WGM/JLM
12-06-16

Signal South

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS					
OAK ST. 155744L					
MINIMUM PROGRAM STEPS REPORT CWE-54 BELMORE, OH M.P. BE-160.54					
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16		
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET NO	FILE BE16054	SHEET P01

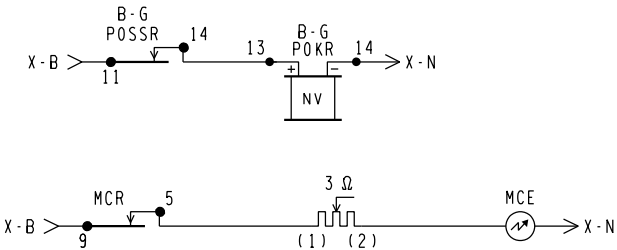
4000GCP.P01
REV. 09-04-15

TOP ROW											
ACR			MCR			54DAXPR					
12	B	B77	9	F	11	12	N41	12		B8	
15	B	C30	10		12		C48	15		C30	
22	B						C49	22			
25	B		B-G POKR			23	F	23	F		
32	B		9	F	11		N41	25	F		
35	B		10	F	12		C48	32			
						35					



BX120-1	BX120-2
18.9 AMPS	11.9 AMPS
MAXIMUM LOAD CALCULATED PER SS360	

- NOTES.
- REFERENCES ARE PER SCMS-13.
 - ARRESTERS ARE PER SS302.
 - SHELF RELAY PLACEMENT ON CONSIST CHART HAS NO SIGNIFICANCE.
 - PLUG-IN RELAYS ARE VIEWED FROM THE FRONT OF RACK.
 - BATTERY A.H. CAPACITY SHOWN IS THE MINIMUM REQUIREMENT.
 - WIRING
 - FEED TO ALL BUSSES, LIGHT CIRCUITS, MOTOR CIRCUITS TO BE #10 FLEX.
 - 120-VOLT FEED FROM ENTRANCE TO POWER BUSS TO BE #10 FLEX.
 - ALL TRACK WIRES TO BE #10 FLEX.
 - ALL OTHERS TO BE #16 FLEX UNLESS NOTED.
 - ALL BATTERY OUTPUTS TO BE #6 PER SS360.
 - GROUND WIRE NOT NECESSARY WHEN GE ARRESTER IS MOUNTED ON GROUND PLANE OR METAL ENCLOSURE AFFIXED DIRECTLY TO BUNGALOW METALLIC STRUCTURAL MEMBER.
 - CIRCUIT INTERRUPTERS 2 & 4 ARE MECHANICALLY INTERLOCKED WITH CIRCUIT INTERRUPTERS 6 & 8.
 - LABEL ALL PRIMARY POWER WIRES WITH RED TAGS.
 - CHARGERS WIRED FOR 240VAC
 - CIRCUIT BREAKERS PANEL- 00124L125G (24 SPACES)
 - 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.



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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE/WGM/JLM
12-06-16

Signal South

4000GCP.E01
REV. 10-19-15

DESIGN DATE	REV. NO.
12-06-16	1

6'X 6' PTC CROSSING HOUSE

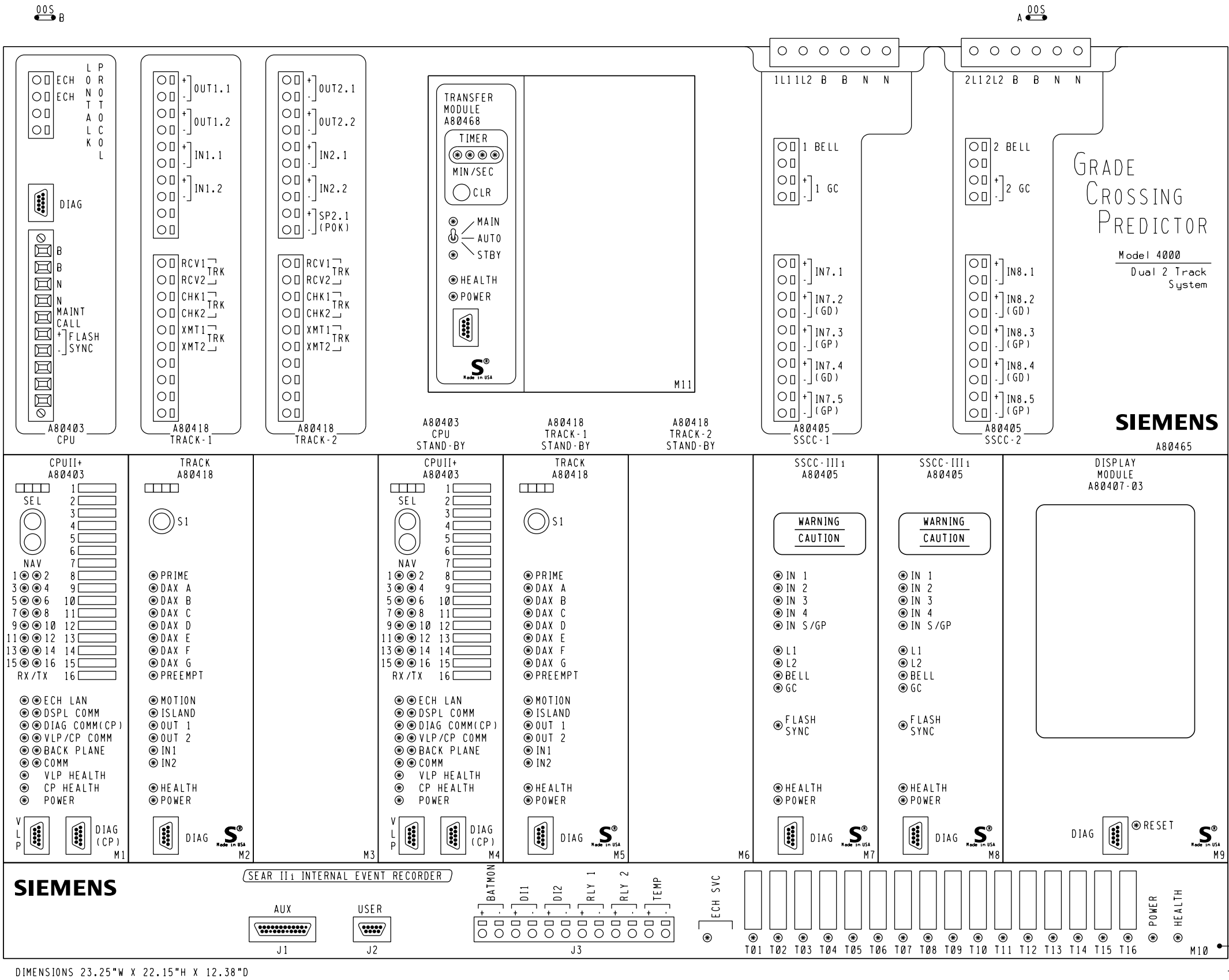
CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

OAK ST. 155744L

POWER DISTRIBUTION
BELMORE, OH M.P. BE-160.54

DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16054	SHEET E01



- 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-III ₁ | A SIGNAL | A80405 |
| M8 | SSCC-III ₁ | B SIGNAL | A80405 |
| M9 | DISPLAY MODULE | | A80407-03 |
| TOP CENTER | TRANSFER UNIT | | A80468 |
| LOWER BAY | SEAR II ₁ | RECORDER | A80410 |
3. EACH TRACK MODULE HAS TWO PROGRAMMABLE INPUTS AND TWO PROGRAMMABLE OUTPUTS.
 4. THE SEAR II₁ INTERNAL EVENT RECORDER HAS INPUTS FOR ONE BATTERY MONITOR, TWO NON-VITAL INPUTS AND TWO PROGRAMMABLE RELAY DRIVES (HEEL/Front).
 5. LOCATED ON THE FRONT OF EACH MODULE THERE ARE LED LIGHTS TO INDICATE THE ACTIVITY OF CERTAIN FUNCTIONS OCCURRING INSIDE THE GCP.
 6. BETWEEN SLOT 1 & 2 THERE IS A CHASSIS IDENTIFICATION CHIP (CIC) SOCKET AND AN ECD CONNECTOR (DB-25 FEMALE).
 7. UPON THE FAILURE OF A MODULE IN SLOTS 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

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South



RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

OAK ST. 155744L

DETECTION DEVICE CONSIST CWE-54
BELMORE, OH M.P. BE-160.54

4000GCP.C01
REV. 09-04-15

DESIGN DATE
12-06-16

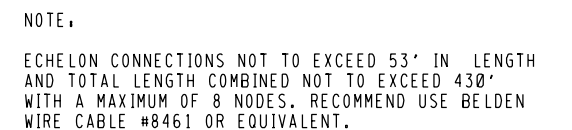
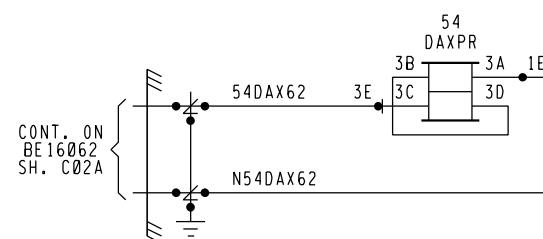
REV. NO.
1

DRAWING

SHEET NO

FILE
BE16054

SHEET
C01

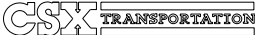


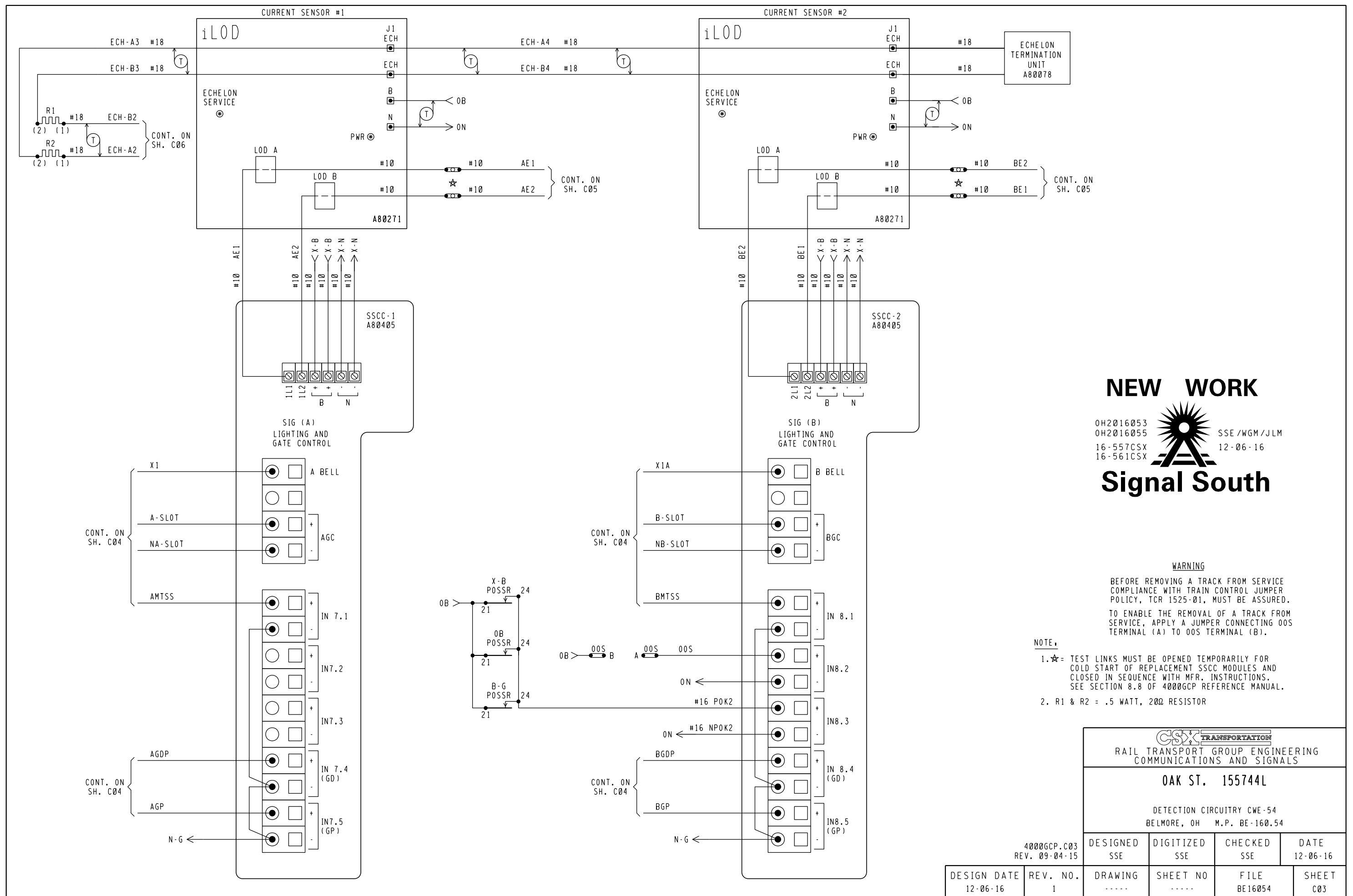
0H2016053
0H2016055
16-557CSX
16-561CSX

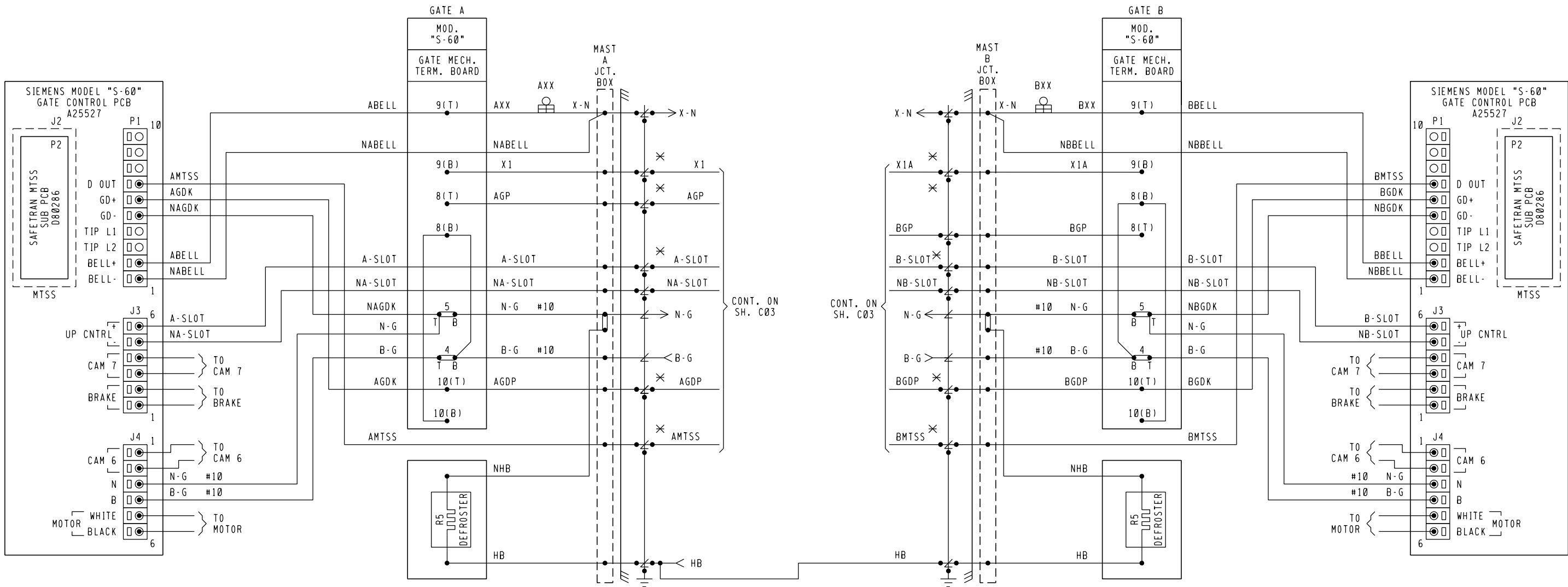


SSE /WGM/JLM
12-06-16

4000GCP.C02
REV. 09-04-15

			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
OAK ST. 155744L			
DETECTION CIRCUITRY CWE-54 BELMORE, OH M.P. BE-160.54			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING -----	SHEET NO -----	FILE BE16054	SHEET C02





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

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



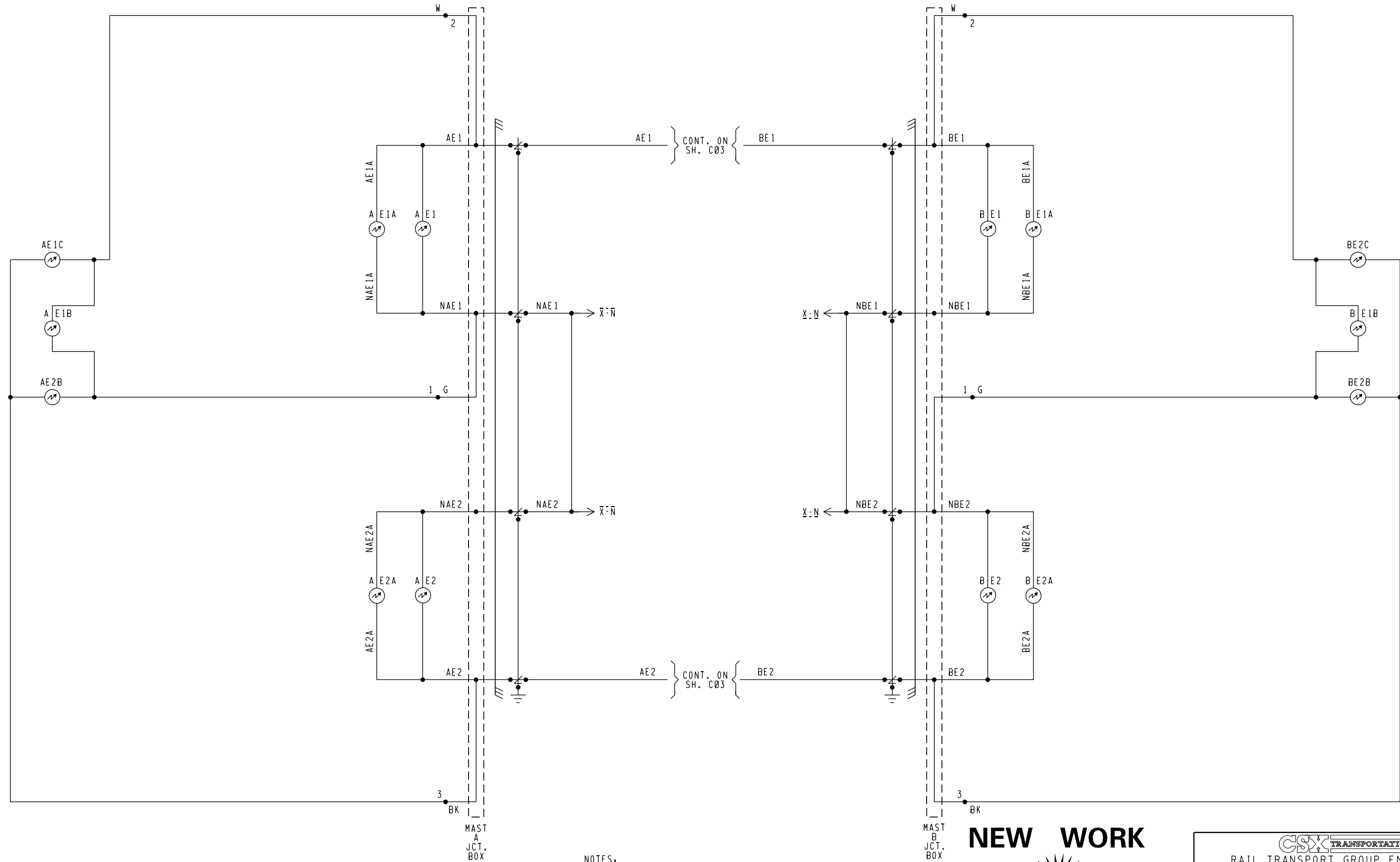
Signal South

4000GCP.C04
REV. 09-04-15

DESIGN DATE
12-06-16

REV. NO.
1

CSX TRANSPORTATION			
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
OAK ST. 155744L			
CROSSING WARNING DEVICE GATE CIRCUITRY BELMORE, OH M.P. BE-160.54			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16054	SHEET C04



NOTES.

1. [Symbol] = 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

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

40006CP.C05
REV. 09-04-15

DESIGN DATE
12-06-16

REV. NO.
1

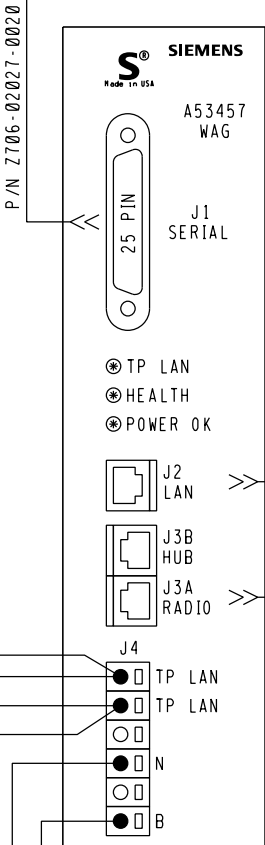
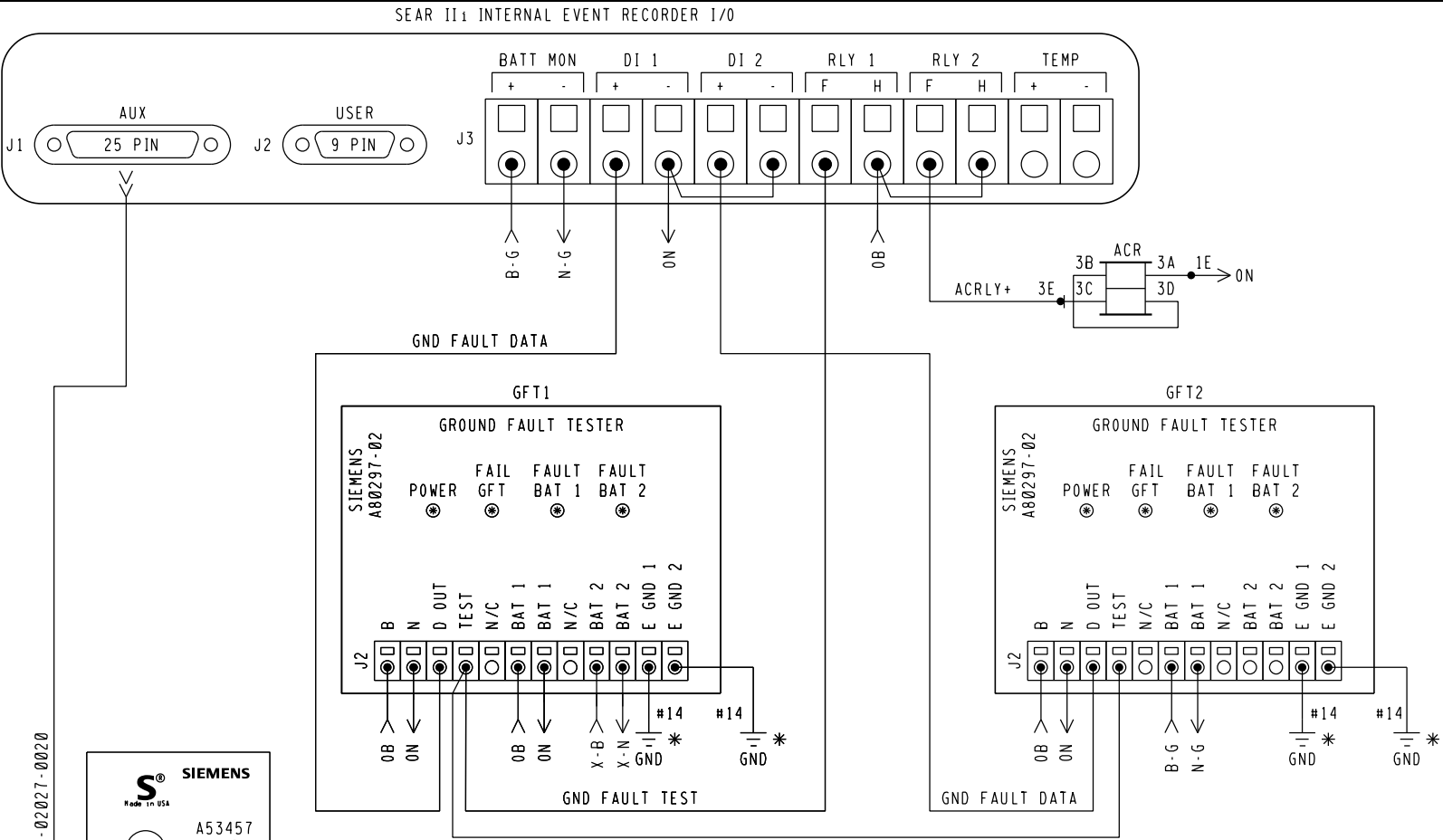
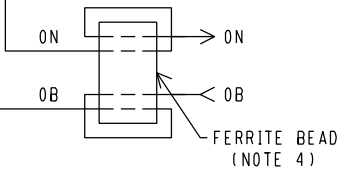
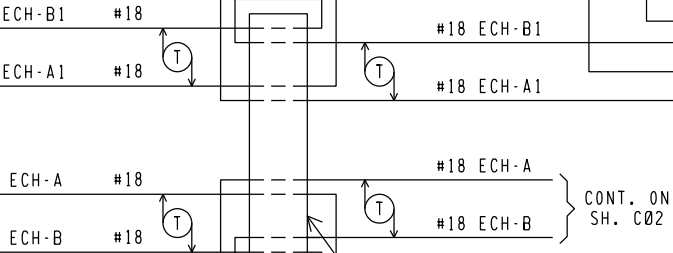
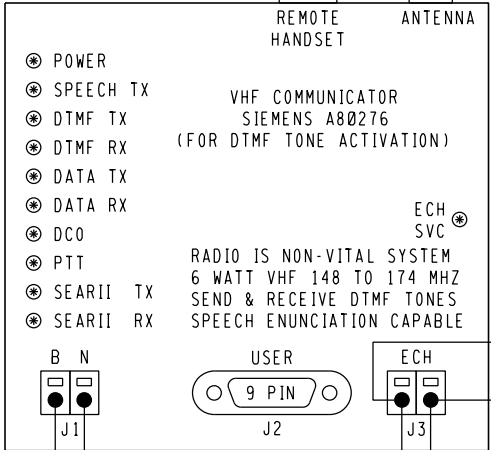
CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
OAK ST. 155744L			
CROSSING WARNING DEVICE LIGHT CIRCUITRY BELMORE, OH M.P. BE-160.54			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DRAWING	SHEET NO	FILE BE16054	SHEET C05

WAYSIDE ACCESS GATEWAY CONFIGURATION	
SITE ATCS ADDRESS	7.125.384.004.07.01 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--7RRLLGGSS
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

**
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 SEARII₁ 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.

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX

SSE /WGM/JLM
12-06-16

Signal South

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)

TO ACTIVATE PRESS, 744#

TO DE-ACTIVATE PRESS, 744*

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

- NOTES:
- ALL WIRING #16 UNLESS NOTED OTHERWISE.
 - * = EARTH GROUND REF. TERMINALS REQUIRED FOR DETECTION. DO NOT JUMPER TERMINALS. MUST BE CONNECTED TO DIFFERENT POINTS OF BUNGALOW.
 - ** = TO BE PROVIDED BY COMMUNICATIONS
 - LOOP WIRE THROUGH FERRITE BEAD TWICE.

4000GCP.C06 REV. 09-04-15		DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING -----	SHEET NO -----	FILE BE16054	SHEET C06

CSX TRANSPORTATION

RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

OAK ST. 155744L

CROSSING WARNING DEVICE CIRCUITRY
BELMORE, OH M.P. BE-160.54

DEFAULTS AND/OR STYLE		FIELD RECORD
SEAR II: EXECUTIVE PROGRAM	VERSION: 9V725A01	VERSION: _____
APPLICATION PROGRAM (IF LOADED)	VERSION: 9V864A01	VERSION: _____
SITE SET UP MENU		
FUNCTION	LED DISPLAY	
DATE /TIME	XX-XX-XXXX XX:XX:XX	
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EASTERN	
SITE NAME	OAK ST.	
MILEPOST	BE-160.54	
DOT NUMBER	155744L	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS ADDRESS	7.125.384.004.99.01 (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	7.125.384.004.07.01 (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 TO INSPECTOR,
AT IN SERVICE OF SEAR II: OR UPDATE
OF ITS INTERNAL EXECUTIVE PROGRAM
OR ITS CSXT APPLICATION PROGRAM,
NOTE THE VERSION NUMBER OF EACH
PROGRAM MUST IN THE BLANK FIELDS.

= NOTE

NEW WORK

0H2016053
0H2016055
16-557CSX
16-561CSX



SSE/WGM/JLM
12-06-16

Signal South

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

PROGRAM MENU SELECT

EDIT DIGITAL INPUTS	☒ NO ☐ YES
EDIT BATTERIES	☒ NO ☐ YES
EDIT RELAYS	☒ NO ☐ YES
EDIT TEST LED'S	☒ NO ☐ YES
EDIT IL0D1 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D2 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D3 SENSOR ☆	☒ NO ☐ YES
EDIT IL0D4 SENSOR ☆	☒ NO ☐ YES
EDIT VHF SETTINGS	☒ NO ☐ YES
GCP4K ATCS SUBNODE	16

☆ STAR = OPTIONS SHOWN DEPENDANT ON
NUMBER OF IL0DS SELECTED

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
OPTION	SELECTION
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.
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 ☐
DTMF ACTVATION*	YES ☒ NO ☐
ACTIVATION CODE	744
ACTIVATION TIMEOUT	(60 SEC)
IL0D MODULES*	0 ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐
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 ☐
BELL SENSOR TSS 8*	NO ☒ YES ☐
BELL ON*	GATES LOWERING ☒ GATES MOVING ☐ ALWAYS ☐
GFT'S	YES ☒ NO ☐
BATTERIES ON GFT1	1 ☐ 2 ☒
GATE TIP SENSORS*	YES ☐ NO ☒
RTU	NO ☒ YES ☐
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,

- OPTION AVAILABLE IF VHF COMMUNICATOR = YES
LAST 3 DIGITS OF DOT NUMBER.
- OPTION AVAILABLE IF IL0DS.
- OPTION AVAILABLE IF BELL SENSORS.
- OPTION AVAILABLE IF GATES.
- OPTION AVAILABLE IF VHF RADIO.
- ONLY YES IN SPECIAL CIRCUMSTANCES.
- SELECT "MENU" THEN "CONFIGURATION" FROM SEAR II
INTERFACE KEYPAD TO ACCESS MODULE CONFIGURATION
MENU.
- BATTERY BANKS* = NUMBER OF BANKS EXCLUDING
THE BANK APPLIED TO THE BAT MON SEAR INPUT
- YES ON INITIAL SETUP

4000GCP.C07
REV. 09-04-15

DESIGN DATE
12-06-16

REV. NO.
1

CSX TRANSPORTATION RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS			
OAK ST. 155744L			
SEAR II: CONFIGURATION & FUNCTIONS BELMORE, OH M.P. BE-160.54			
DESIGNED SSE	DIGITIZED SSE	CHECKED SSE	DATE 12-06-16
DESIGN DATE 12-06-16	REV. NO. 1	DRAWING	SHEET C07

REVISIONS				
REV. NO.	PROJECT NO.	DESIGN DATE	IN SERVICE DATE	REVISION DATE
1	0H2004046	09-08-04	04-11-05	06-13-05
2	0H2016053 0H2016055	12-06-16	-----	-----

TO BE COMPLETED
ON A.I.S.

SH. NO.		INDEX CONTENTS									
		REVISION NO.									
I01	INDEX AND REVISIONS	X	Ø								
S01	TRACK AND SIGNAL PLAN	X	Ø								
E01	POWER DISTRIBUTION	X									
C01	CROSSING DETECTION CIRCUITRY	X									
C02	DETECTION DEVICE PROGRAM	X									
C03	CROSSING WARNING DEVICE CIRCUITRY	X									
C04	CROSSING WARNING DEVICE CIRCUITRY	X									
C05	RECORDER CIRCUITS	X									
C06	RECORDER PROGRAM	X									

 = DESIGN COMPLETED
 = REVISION COMPLETED

 = NOTE
 = IN
 = OUT

0H2016053
0H2016055
16-557CSX
16-561CSX



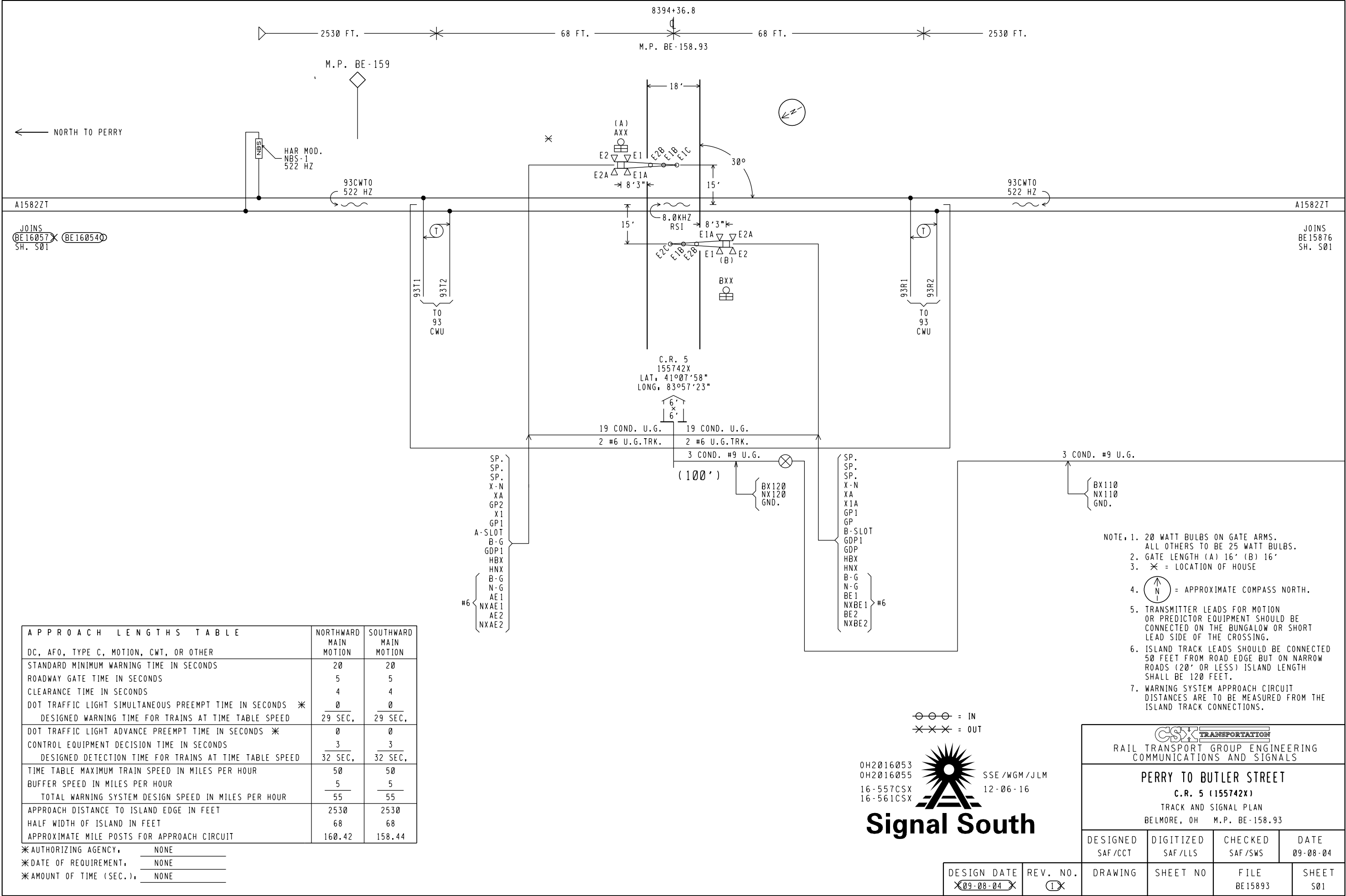
SSE /WGM /JLM
12-06-16

Signal South

 **TRANSPORTATION**
RAIL TRANSPORT GROUP ENGINEERING
COMMUNICATIONS AND SIGNALS

PERRY TO BUTLER STREET
C.R. 5 (155742X)
INDEX AND REVISIONS
BELMORE, OH M.P. BE-158.93

DESIGNED SAF/CCT	DIGITIZED SAF/LLS	CHECKED SAF/SWS	DATE 09-08-04
DESIGN DATE 09-08-04	REV. NO. 1	DRAWING	SHEET NO
		FILE BE15893	SHEET 101



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3/2/2017 2:20:43 PM

in

Case No(s). 17-0628-RR-FED

Summary: Memorandum In the Matter of a Consolidation Project for Crossings in the Village of Belmore in Putnam County, Ohio. (Part 1 of 2) electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division