

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 1/12/2022

Re: PUCO Case No. 22-33-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Ohio Central Railroad Crossing, DOT#474-233F, CR 236 in Coshocton County, Ohio.

On January 22, 2021, the Ohio Rail Development Commission (ORDC) authorized funding for the Ohio Central Railroad (CUOH) to install flashing lights and gates at the CR 236 (DOT#474-233F) grade crossing in Coshocton County, Ohio. The crossing was surveyed, on August 18, 2020, and was found to warrant the upgrade. The electric utility provider for this crossing is the Frontier Power Company.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$230,260.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

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

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

Please serve the following parties of record:

Ohio Central Railroad
Len Wagner
Senior Vice-President
Northern Region/Genesee & Wyoming Inc.
201 N. Penn Street
Punxsutawney, PA 15767

Ohio Central Railroad
Jared Rishel
AVP Engineering Northern Region
Genesee & Wyoming Inc.
4349 Easton Way
Suite 110
Columbus, OH 43219

Benesch
Ben Biesterveld
Project Manager/Associate
225 Water Street Suite 1510
Jacksonville, FL 32202

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

Coshocton County Engineer
Frederick T. Wachtel
County Engineer
23194 CR 621
Coshocton, OH 43812

The Frontier Power Company
770 South 2nd Street
P.O. Box 280
Coshocton, Ohio 43812

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

TO: John Williams, Director, Transportation Department, PUCO

FROM: Allen Bell, Manager, Safety Section, ORDC

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

SUBJECT: Construction Authorization Grade Crossing Warning Device Improvements
COS OHCR CR236 DOT# 474233F PID# 114116

DATE: November 30, 2021

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on August 18, 2020. The Public Utilities Commission of Ohio (PUCO) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

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

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

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

Thank you for your assistance with these matters.


Greg Gronbach
Project Manager

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

c: Jill Henry, Rail Specialist, PUCO

ORDC Project Manager (file)



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

November 30, 2021

Mr. Len Wagner
President & Legal Official (SVP)
Genesee & Wyoming/OHCR
201 N. Penn Street
Punxsutawney, PA 15767

RE: Construction Authorization Grade Crossing Warning Device Improvements
COS OHCR CR236 DOT# 474233F PID# 114116

Dear Mr. Wagner:

The plan dated 9/9/2021 and estimate dated 10/15/2021, for the referenced project is acceptable. Genesee & Wyoming/OHCR may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. Construction may include but is not limited to circuitry design, installation of service poles, procurement of materials and signal construction.

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 \$230,260.00. 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 Genesee & Wyoming/OHCR accepting the following instructions:

1. Genesee & Wyoming/ OHCR's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Greg Gronbach, ORDC, email Gregory.Gronbach@dot.ohio.gov , and to the Public Utilities Commission of Ohio at Jill.henry@puco.ohio.gov. Genesee & Wyoming/ OHCR's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. Genesee & Wyoming/ OHCR 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 Genesee & Wyoming/ OHCR.
3. Genesee & Wyoming/ OHCR's project foremen will notify Greg Gronbach at 614-745-6760 (telephone) or Gregory.Gronbach@dot.ohio.gov (email) of any changes in the scope of work,



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

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

Thank you for your assistance with these matters.

Sincerely,


Greg Gronbach
Project Manager

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



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

May 6, 2021

Len Wagner NE Region
Genesee & Wyoming/CUOH
201 N. Penn St
Punxsutawney, PA 15767

RE: PE Submitted RR Solicit Bids COS OHCR CR236 DOT# 474233F PID# 114116

Dear Mr. Wagner:

The plan and estimate transmitted May 4 & 5, 2021, for the referenced project has been reviewed and is acceptable. Genesee & Wyoming/CUOH may proceed with soliciting bids for the proposed grade crossing warning system in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

A construction authorization will be sent once the bid documents have been received and approved. No field work may be started without a construction authorization from this office.

Sincerely,


Greg Gronbach
Project Manager

Ohio Railroad Development Commission

C: John Williams, Director, Transportation Department, PUCO
Jill Henry, Rail Specialist, PUCO
ORDC (file)



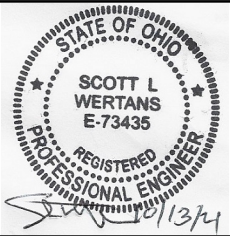

OHIO CENTRAL RAILROAD

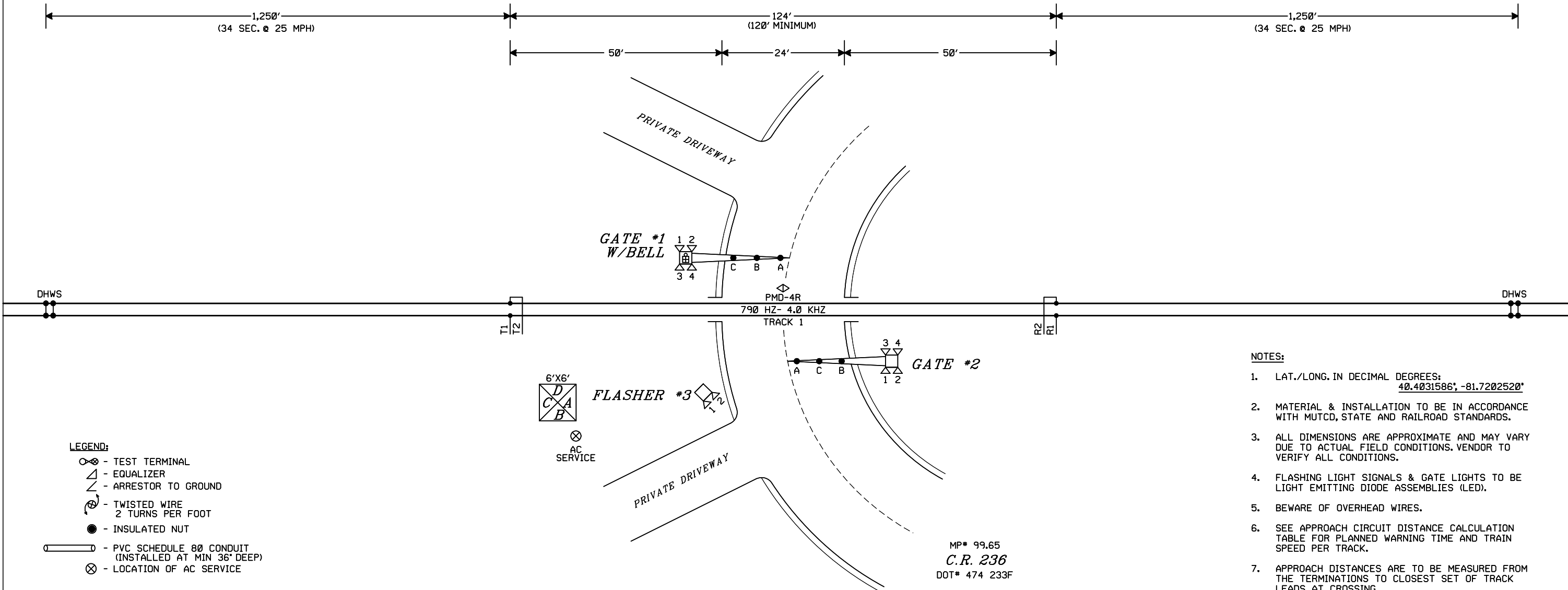
C.R. 236

BALTIC, (COSHOCTON), OHIO

DOT# 474 233F MILEPOST# 99.65

INDEX	
SHEET	DESCRIPTION
00	TITLE AND INDEX
01	CROSSING TRACK LAYOUT
02	PMD-4R CIRCUITRY & PROGRAM
03	CROSSING CONTROLLER CIRCUITRY
04	GATES & FLASHER LIGHTING CIRCUITRY
05	GATE MECH CIRCUITRY
06	DATA RECORDER CIRCUITRY
07	DC POWER DISTRIBUTION
08	SIDE D DETAIL - AC POWER DISTRIBUTION
09	SIDE B DETAIL - TERMINAL BOARD
10	SIDE A DETAIL
11	SIDE C DETAIL
12	TRACK AND CABLE LAYOUT
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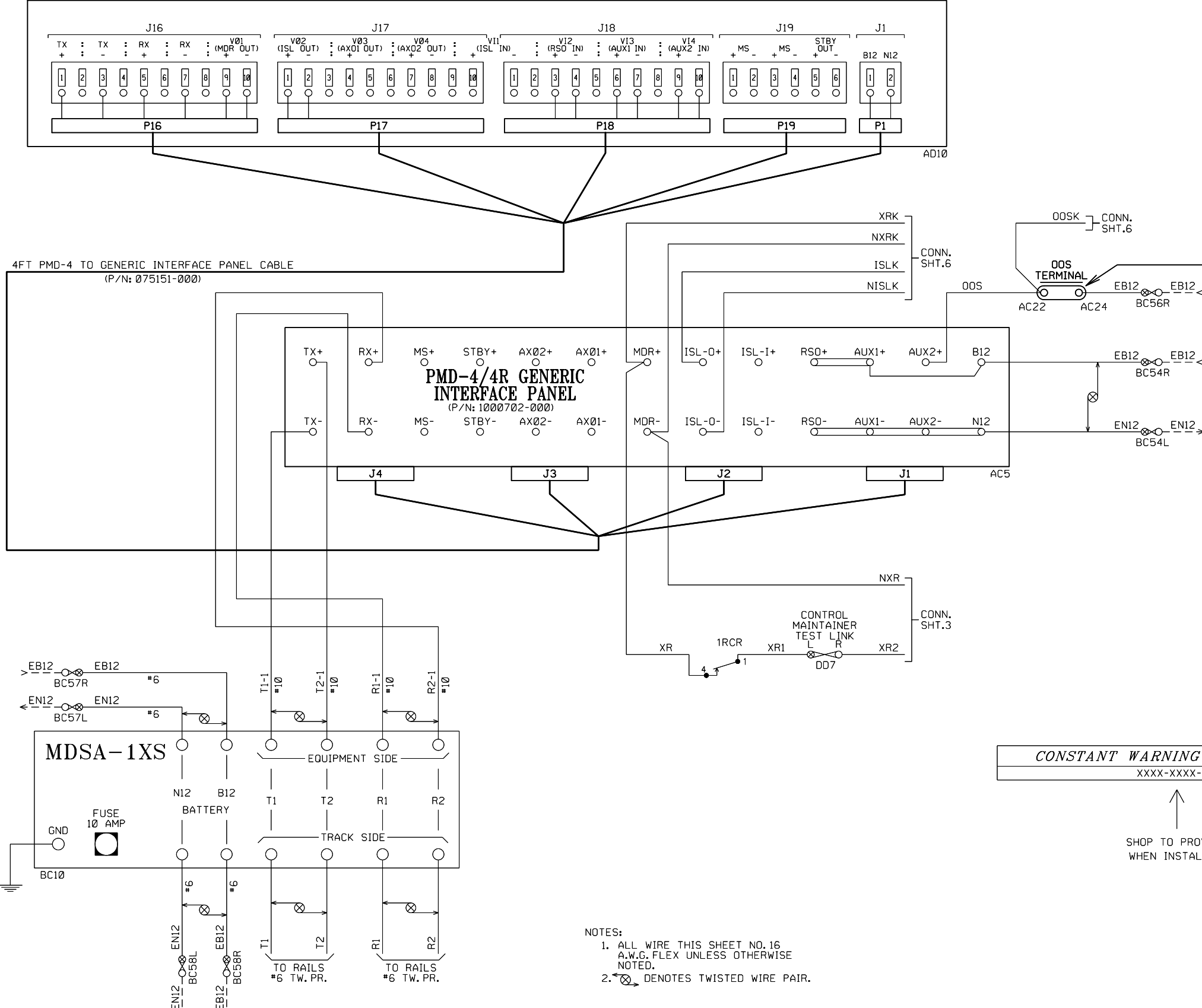
REVISIONS						THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.			TITLE AND INDEX		
									OHIO CENTRAL RAILROAD		
									DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21	C.R. 236 BALTIC, (COSHOCTON), OHIO DOT# 474 233F MILEPOST# 99.65	SHEET 00 OF 12



- NOTES:
- LAT./LONG. IN DECIMAL DEGREES:
40.4031586°, -81.7202520°
 - MATERIAL & INSTALLATION TO BE IN ACCORDANCE WITH MUTCD, STATE AND RAILROAD STANDARDS.
 - ALL DIMENSIONS ARE APPROXIMATE AND MAY VARY DUE TO ACTUAL FIELD CONDITIONS. VENDOR TO VERIFY ALL CONDITIONS.
 - FLASHING LIGHT SIGNALS & GATE LIGHTS TO BE LIGHT EMITTING DIODE ASSEMBLIES (LED).
 - BEWARE OF OVERHEAD WIRES.
 - SEE APPROACH CIRCUIT DISTANCE CALCULATION TABLE FOR PLANNED WARNING TIME AND TRAIN SPEED PER TRACK.
 - APPROACH DISTANCES ARE TO BE MEASURED FROM THE TERMINATIONS TO CLOSEST SET OF TRACK LEADS AT CROSSING.
 - CONDUIT UNDER ROAD MUST BE BORED NOT TRENCHED.
 - VENDOR IS RESPONSIBLE TO LOCATE AND PROTECT ALL UTILITIES WITHIN LIMITS OF CONSTRUCTION.
 - CAMERA SYSTEM TO BE PROVIDED AND INSTALLED BY VENDOR.
 - 2' SHOULDER WIDTH.
 - 4 GAUGE RODS IN CURVE NORTH OF CROSSING TO BE REMOVED AND 16 TIES TO BE INSTALLED.
 - OVERHEAD COMMUNICATION CABLES IS 28'1" ABOVE GRADE IN SW QUADRANT. CABLE DOES NOT INTERFERE WITH WARNING DEVICE OPERATION.
 - MAIN ELECTRICAL PANEL TO ACCOUNT FOR 240VAC/100A AC SERVICE.
 - GATE LENGTHS:
GATE #1: 19'
GATE #2: 19'

APPROACH DISTANCE CALCULATION		
	MAIN	
	SOUTH	NORTH
ACTUAL PRIME CROSSING WARNING TIME	30 SEC	30 SEC
TIME FOR CROSSING CLEARANCE DISTANCE > 35'	+ 0 SEC	+ 0 SEC
TRAFFIC PRE-EMPTION TIME	+ 0 SEC	+ 0 SEC
TOTAL CALCULATED DESIGN WARNING TIME	30 SEC	30 SEC
EQUIPMENT RESPONSE TIME	+ 4 SEC	+ 4 SEC
BUFFER TIME	+ 0 SEC	+ 0 SEC
TOTAL WARNING TIME FOR APPROACH DISTANCE CALCULATION	34 SEC	34 SEC
CALCULATED AT MAXIMUM TRAIN SPEED	× 25 MPH	× 25 MPH
RATIO OF FEET PER SECOND TO MILES PER HOUR	× 1.47	× 1.47
APPROACH LENGTH (ROUNDED UP TO THE NEXT FOOT)	1250 FEET	1250 FEET

PMD-4R

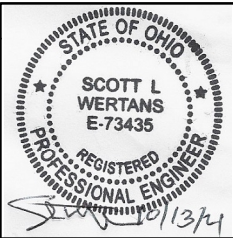


WARNING
USE OF THIS JUMPER TERMINAL WILL COMPLETELY DISABLE THIS CROSSING WARNING SYSTEM. PROPER PROTECTION MUST BE IN PLACE FROM THE TRAIN DISPATCHER BEFORE USING ANY CUT-OUT DEVICE.

NOTE:
DL = DEFAULT LEVEL
NA = NON APPLICABLE

PMD-4R SETUP PARAMETERS	
APPLICATION INFO	
APPLICATION	PMD-4R_MD[CW]OOS
APPLICATION CHECKSUM	7591
APPLICATION CRC	323D
CHASSIS ID	7
MDR1 SETTINGS	
MDR1 WARNING TIME (SEC)	30
MDR1 CW OR MD	CW
MDR1 AP TIME	NA
MDR1 AUX RECOVERY DELAY	5 (DL)
FREQUENCY	
APPROACH TRACK FREQUENCY (HZ)	790 HZ
BASIC APPROACH SETTINGS	
MASTER/SLAVE	MASTER
TRANSMITTER GAIN	200
TCA	FIELD ADJUST
DIRECTION MODE UNI/BI	BI
LIA	FIELD ADJUST
APPROACH LENGTH	1250 FT
AUTO RX ENABLE/DISABLE	ENABLED
ADVANCE APPROACH SETTINGS	
FALSE SHUNT	DISABLED
FALSE SHUNT RX	80
FALSE SHUNT DELAY	10
APPROACH RELEASE	DISABLED
APPROACH RELEASE RX	80
APPROACH RELEASE DELAY	10
LOSS OF SHUNT TIME (LOS)	16
APPROACH SETTING	NORMAL
ISLAND SETTINGS	
ISLAND TYPE INTERNAL/EXTERNAL	INTERNAL
ISLAND ENABLED	ENABLED
ISLAND DISABLE TIMEOUT	2 HR
ISLAND FREQUENCY (HZ)	4.0 KHZ
ISLAND LOSS OF SHUNT (LOS)	4
ISLAND FAULT DELAY	2
TRANSMITTER GAIN	0

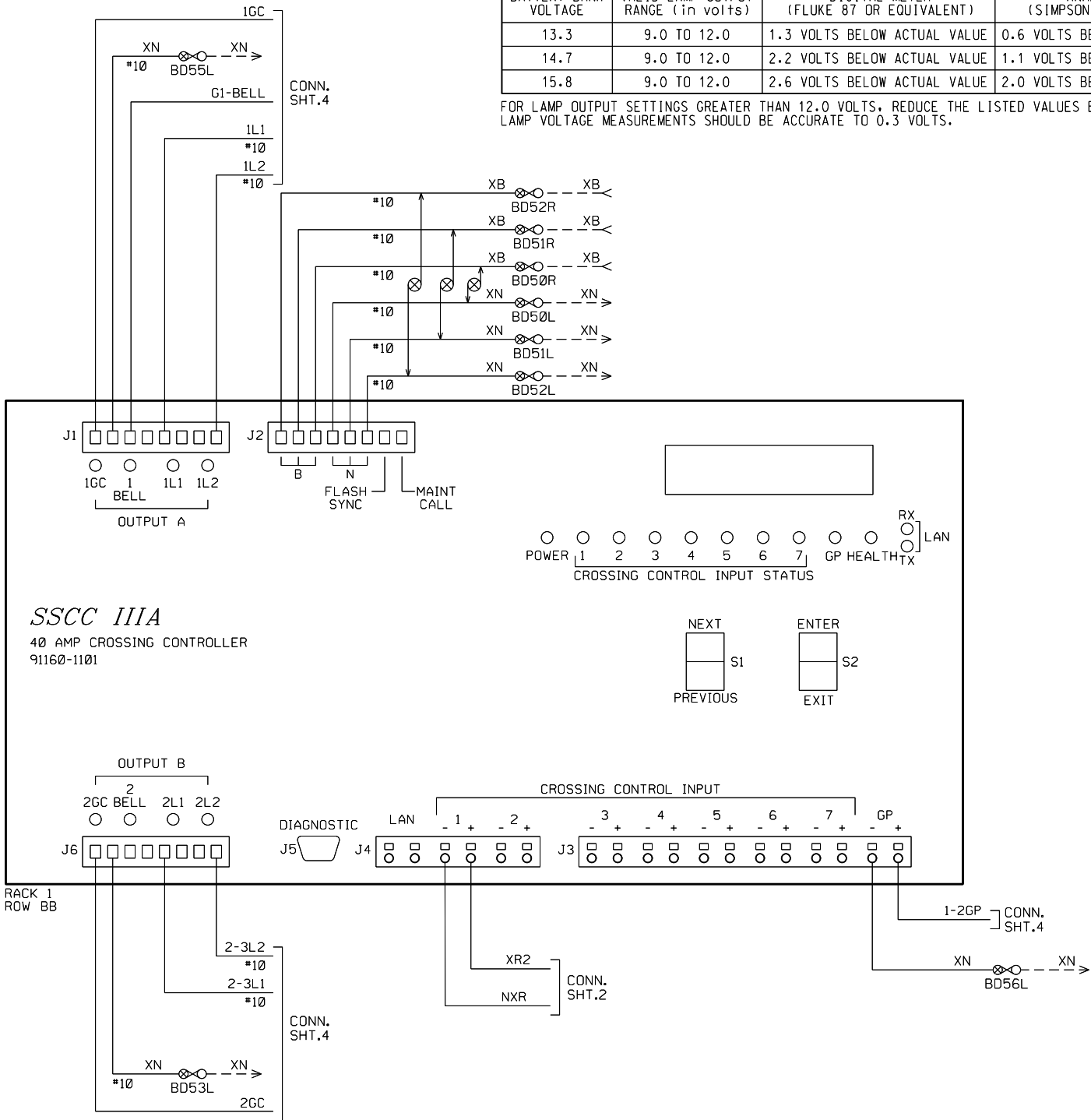
- NOTES:
1. ALL WIRE THIS SHEET NO.16 A.W.G. FLEX UNLESS OTHERWISE NOTED.
 2. DENOTES TWISTED WIRE PAIR.



PMD-4R CIRCUITRY & PROGRAM		
OHIO CENTRAL RAILROAD		
DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21	C.R. 236 BAL TIC, (COSHOCTON), OHIO DOT# 474 233F MILEPOST# 99.65	SHEET 02 OF 12

MULTIMETER READING VARIANCE FROM ACTUAL LAMP VOLTAGE			
BATTERY BANK VOLTAGE	VALID LAMP OUTPUT RANGE (in volts)	DIGITAL METER (FLUKE 87 OR EQUIVALENT)	ANALOG METER (SIMPSON 260 OR TS111)
13.3	9.0 TO 12.0	1.3 VOLTS BELOW ACTUAL VALUE	0.6 VOLTS BELOW ACTUAL VALUE
14.7	9.0 TO 12.0	2.2 VOLTS BELOW ACTUAL VALUE	1.1 VOLTS BELOW ACTUAL VALUE
15.8	9.0 TO 12.0	2.6 VOLTS BELOW ACTUAL VALUE	2.0 VOLTS BELOW ACTUAL VALUE

FOR LAMP OUTPUT SETTINGS GREATER THAN 12.0 VOLTS, REDUCE THE LISTED VALUES BY 30%
LAMP VOLTAGE MEASUREMENTS SHOULD BE ACCURATE TO 0.3 VOLTS.



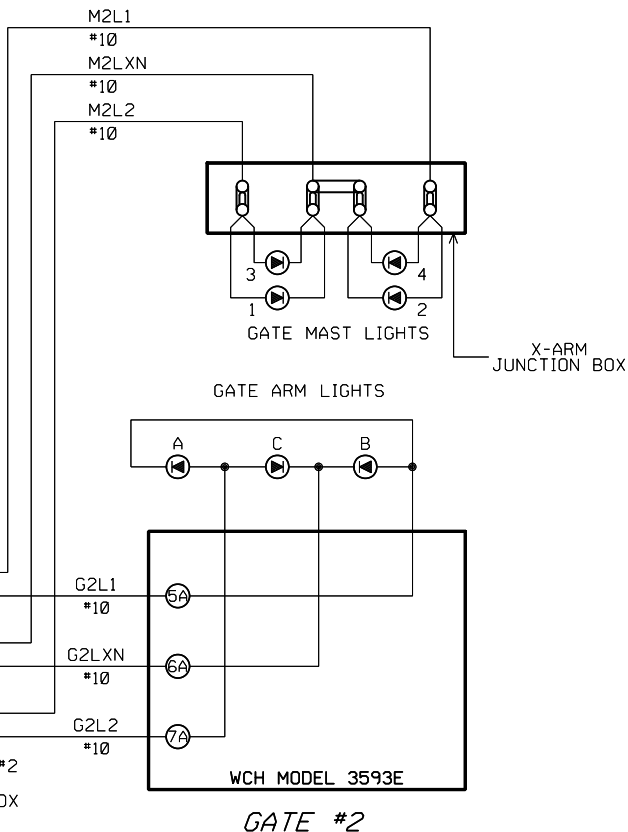
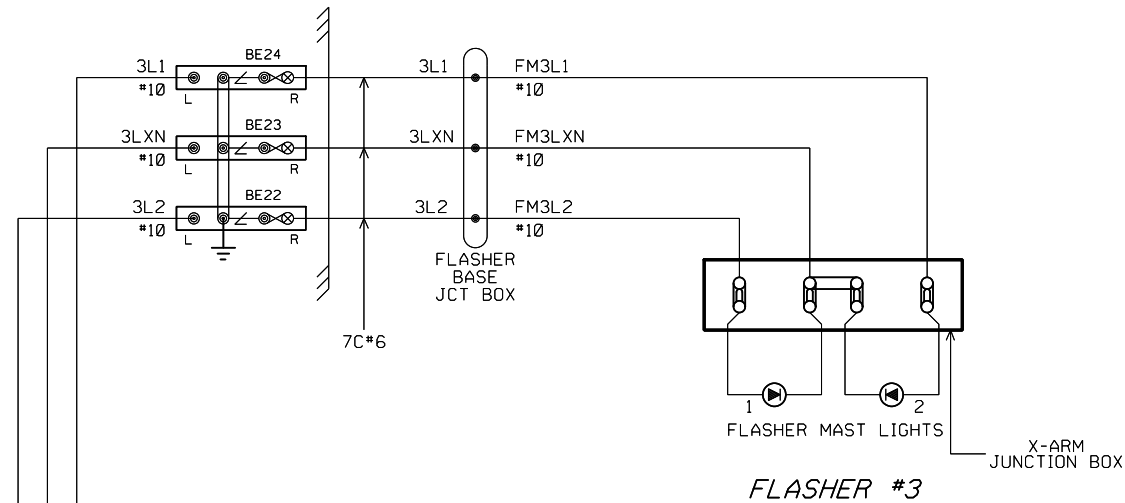
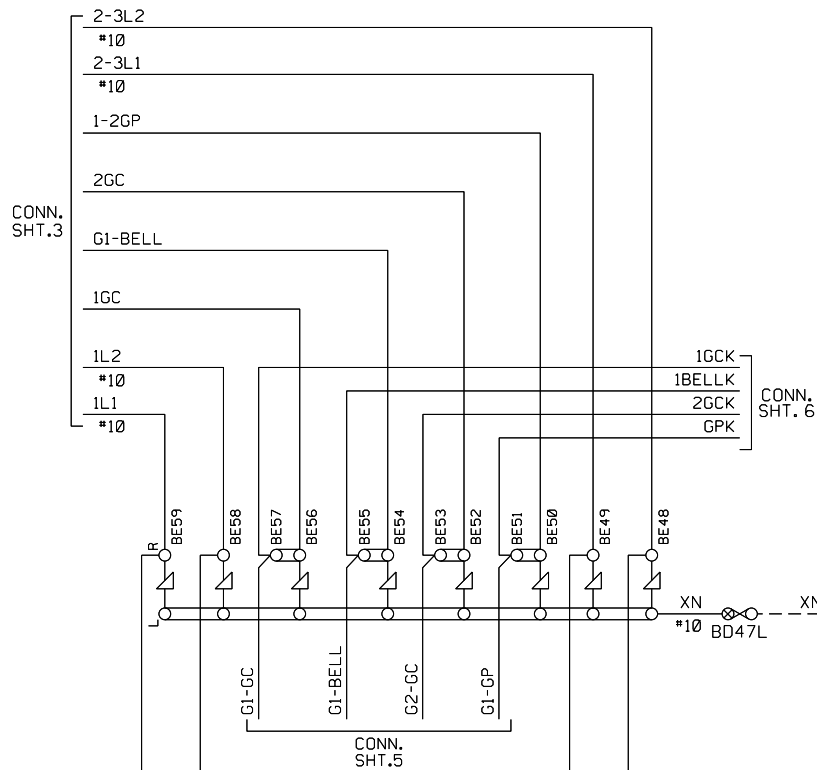
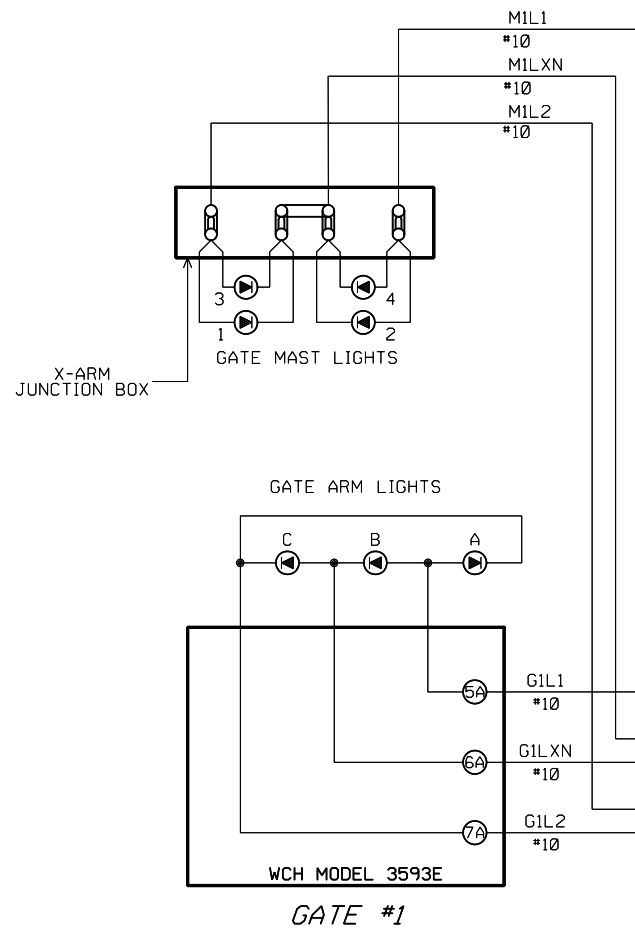
CROSSING CONTROLLER SSCCIIIA 40 - AMP UNIT, 91160-1101		
PROGRAM	NOTES	INITIAL SETTING BY: _____ DATE: _____
FLASH RATE:	30-70 FLASHES/MINUTE DEFAULT = 50	<u>50</u> FLASHES/MINUTE
GATES USED:	YES/NO DEFAULT = YES	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
1GC DELAY:	3-20 SEC., DEFAULT = 4	<u>4</u> SECONDS
2GC DELAY (40A UNIT):	3-20 SEC., DEFAULT = 4	<u>4</u> SECONDS
GATE RISING BELL:	ON/OFF, DEFAULT = ON	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF
ENABLED INPUTS:	1 THRU 1 ONLY	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7
MIN ACTIVATION TIME:	0-30 SEC., DEFAULT = 0	<u>0</u> SECONDS
ENABLED OUTPUTS: (40A ONLY)	DEFAULT = A + B	<input checked="" type="checkbox"/> A + B <input type="checkbox"/> A <input type="checkbox"/> B
DAYLIGHT SAVINGS:	DEFAULT = DISABLED	<input checked="" type="checkbox"/> ENABLED <input type="checkbox"/> DISABLED
DATE:	N/A	<input type="checkbox"/> DATE SET
TIME:	24-FORMAT	<input type="checkbox"/> TIME SET
PASSWORD:	DEFAULT = DISABLED	<input type="checkbox"/> ENABLED <input checked="" type="checkbox"/> DISABLED
CONFIGURE		
LOS TIMERS:	0-20 SECONDS, INPUTS 1-7 ONLY DEFAULT = 0	1: <u>0</u> SEC. 5: N/A SEC. 2: N/A SEC. 6: N/A SEC. 3: N/A SEC. 7: N/A SEC. 4: N/A SEC.
ATCS ADDRESS:	DEFAULT = 700000000000	
LOW BATTERY:	9.0-15.0 VOLTS, OR DISABLED DEFAULT = DISABLED	<input checked="" type="checkbox"/> DISABLED <input type="checkbox"/> ENABLED _____ VOLTS
AUX I/O:	DEFAULT = NONVITAL OUTPUT	<input checked="" type="checkbox"/> NV OUTPUT <input type="checkbox"/> FLASH SYNC IN <input type="checkbox"/> FLASH SYNC OUT
DETECT LAMP NEUTRAL WIRE	YES/NO DEFAULT = NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
TEST CONFIGURE		
LAMP TEST CANCEL TIMER:	1 - 15 MINUTES, DEFAULT = 5	<u>5</u> MINUTES
LAMP TEST DELAY TIMER:	30 - 120 SEC., DEFAULT = 30	<u>30</u> SECONDS
LAMP TEST ON TIMER:	15 - 60 SEC., DEFAULT = 15	<u>15</u> SECONDS
QUERY		
QUERY CONFIG VERSIONS:		MCF NAME: <u>BASIC.MCF.F</u> MCF CRC: _____ CAPABILITY NAME: _____

SETUP LAMP VOLTAGES	INITIAL SETTINGS BY: _____ DATE: ____/____/____ METER: _____
FAR GATE	1L1= _____ VOLTS 1L2= _____ VOLTS 2L1= _____ VOLTS 2L2= _____ VOLTS
SSCCIIIA	1L1= _____ VOLTS 1L2= _____ VOLTS 2L1= _____ VOLTS 2L2= _____ VOLTS
NEAR GATE	1L1= _____ VOLTS 1L2= _____ VOLTS 2L1= _____ VOLTS 2L2= _____ VOLTS

STANDARD SETUP LAMP VOLTAGES PROCEDURE
USING TRUE RMS AC+DC METER, OR CONVERSION TABLE BELOW

- NOTES:
- ALL WIRE THIS SHEET NO.16
A.W.G. FLEX UNLESS OTHERWISE
NOTED.
 - DENOTES TWISTED WIRE PAIR.

REVISIONS				THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.			CROSSING CONTROLLER CIRCUITRY		
							OHIO CENTRAL RAILROAD		
DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21		C.R. 236 BAL TIC, (COSHOCTON), OHIO DOT# 474 233F MILEPOST# 99.65		SHEET 03 OF 12					



NOTE:
1. ALL WIRING IN THE BUNGLOW IS #16 AWG FLEX UNLESS OTHERWISE NOTED.

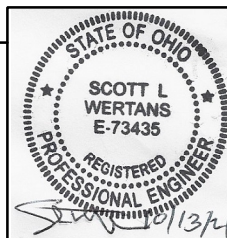
LEGEND:
 -TEST TERMINAL
 -EQUALIZER
 -ARRESTOR TO GROUND
 -TWISTED WIRE 2 TURNS PER FOOT
 -INSULATED NUT

BATTERY WIRES ON SHT.5 ALSO IN THESE CABLES.

BATTERY WIRES ON SHT.5 ALSO IN THESE CABLES.

REVISIONS

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.



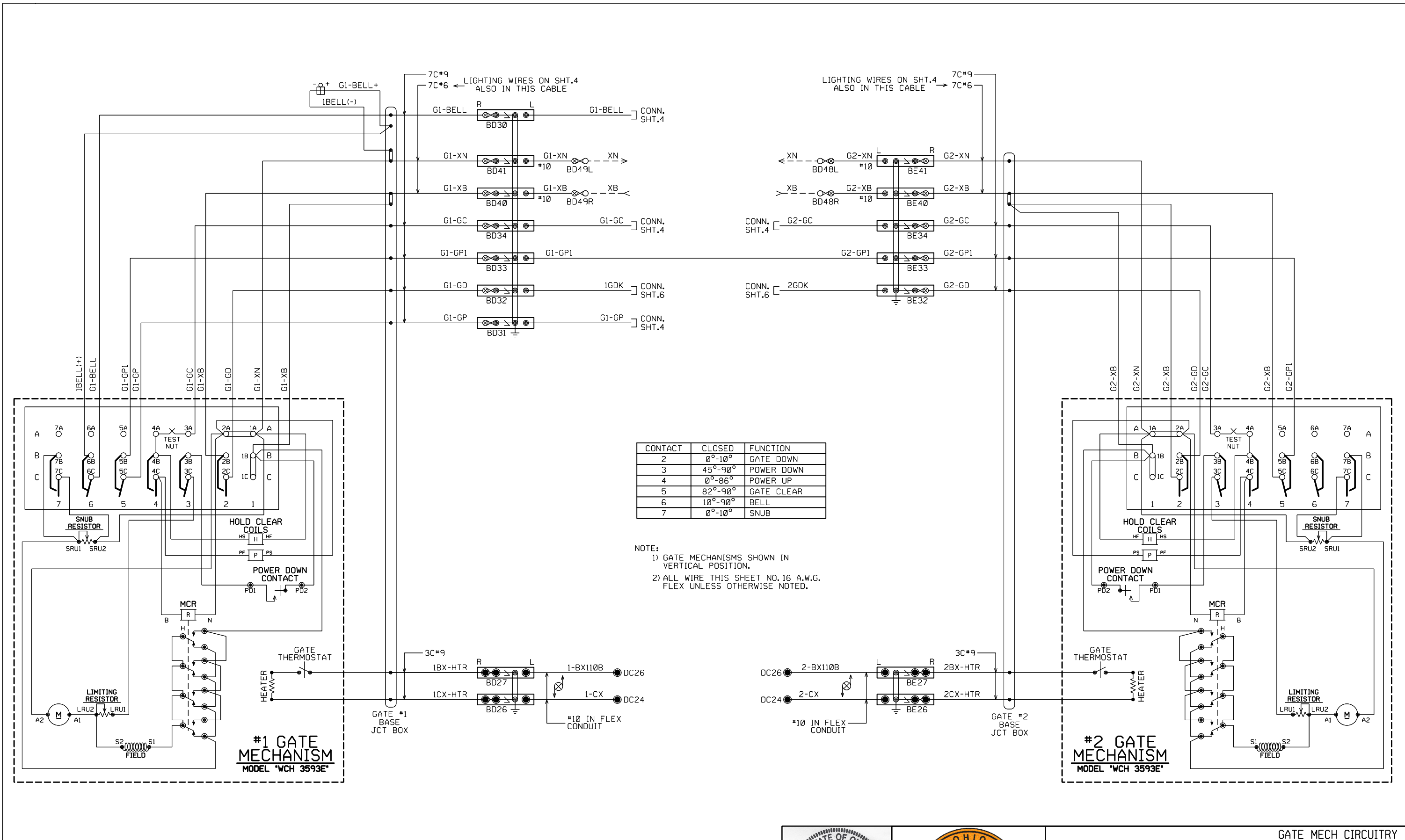
GATES & FLASHER LIGHTING CIRCUITRY

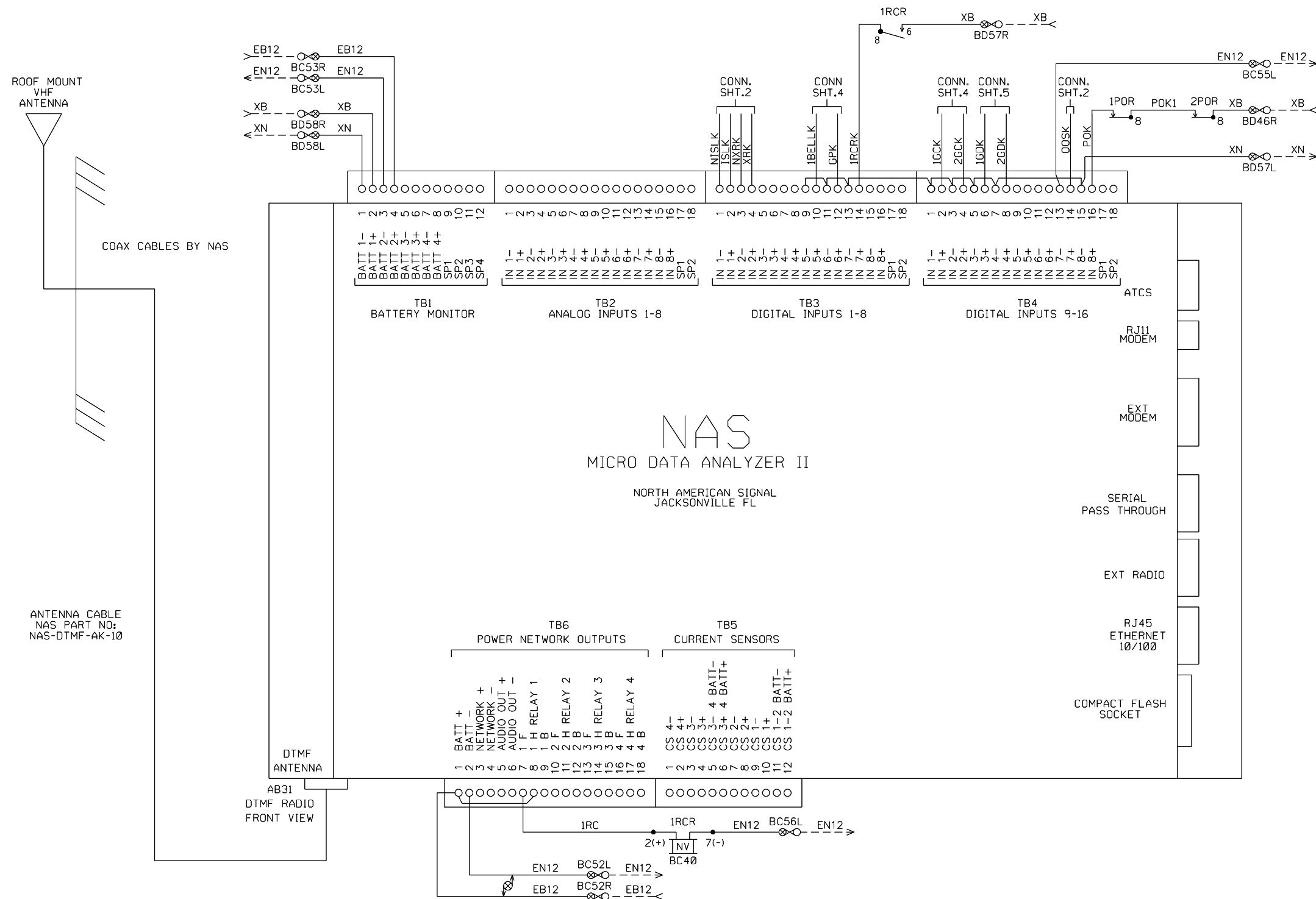
OHIO CENTRAL RAILROAD

DRAWN: PRS
DESIGNED: MST
CHECKED: JMW
DATE: 09-09-21

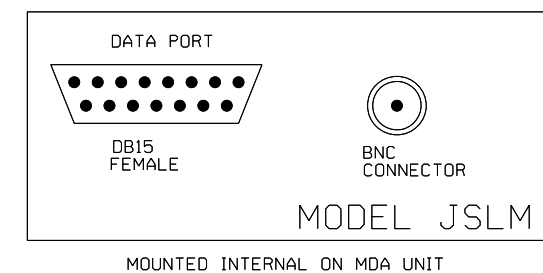
C.R. 236
BAL TIC, (COSHOC TON), OHIO
DOT# 474 233F MILEPOST# 99.65

SHEET
04 OF 12



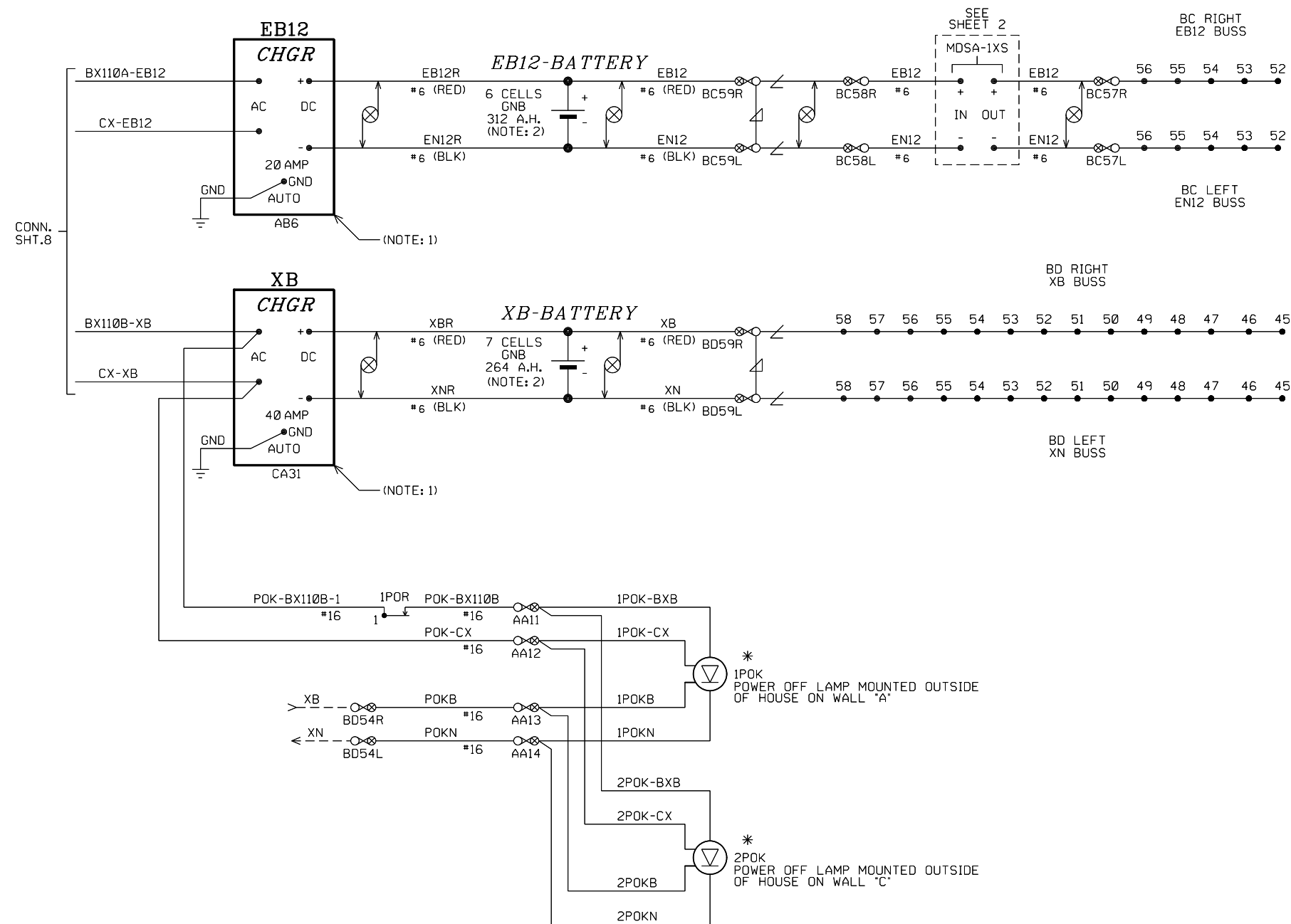


NOTES:
1) TO ACTIVATE CROSSING ENTER: 233#
2) TO DEACTIVATE CROSSING ENTER: 233*
3) RAILROAD FREQUENCIES: XXX.XXX ←
 CH.07-07
 TONE 44
FIELD PROVIDE
FREQUENCY



- NOTES:
1. ALL WIRE THIS SHEET NO.16
A.W.G. FLEX UNLESS OTHERWISE
NOTED.
2. ⓧ DENOTES TWISTED WIRE PAIR.
3. ⓧ DENOTES TEST TERMINAL.

REVISIONS					DATA RECORDER CIRCUITRY		
					OHIO CENTRAL RAILROAD		
					DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21		
					C.R. 236 BAL TIC, (COSHOCTON), OHIO DOT# 474 233F MILEPOST# 99.65		
					SHEET 06 OF 12		



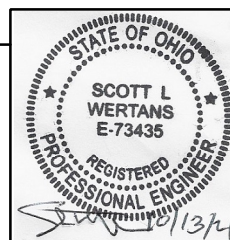
- LEGEND:
- TEST TERMINAL
 - EQUALIZER
 - ARRESTOR TO GROUND
 - TWISTED WIRE 2 TURNS PER FOOT
 - INSULATED NUT
 - * - LIGHTS ARE 12VDC, 4-WIRE LED. (P/N: LC2-001WB-WG4) VELCORP GEMS

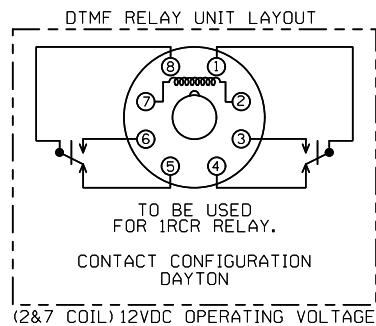
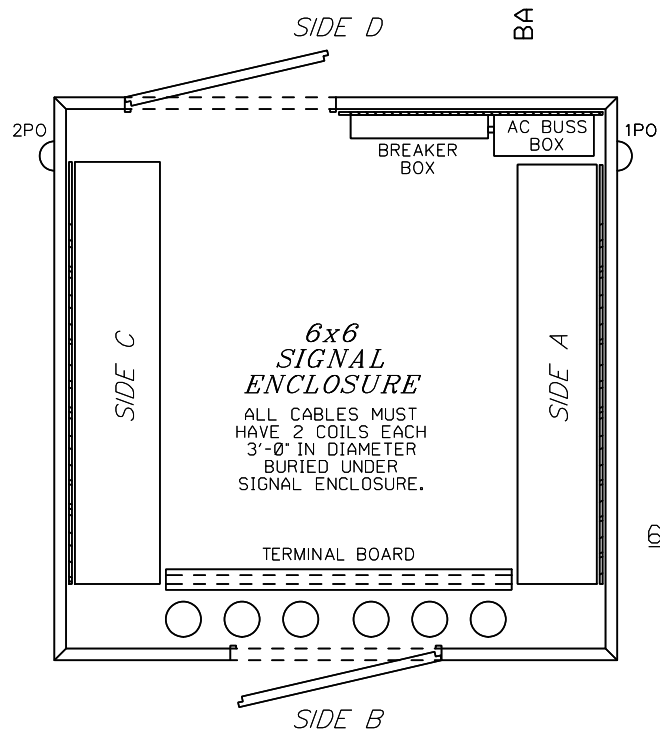
NOTES:

1. USE 110VAC INPUT FOR CHARGERS.
2. USE 1/4" TERMINALS AT BATTERY CONNECTIONS.
3. ALL WIRING IN THE BUNGALOW IS #16 AWG FLEX UNLESS OTHERWISE NOTED.

REVISIONS						DC POWER DISTRIBUTION		
						OHIO CENTRAL RAILROAD		
						DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21	C.R. 236 BALTIMORE, OHIO DOT# 474 233F MILEPOST# 99.65	SHEET 07 OF 12

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.





BATTERY BUSS DETAILS

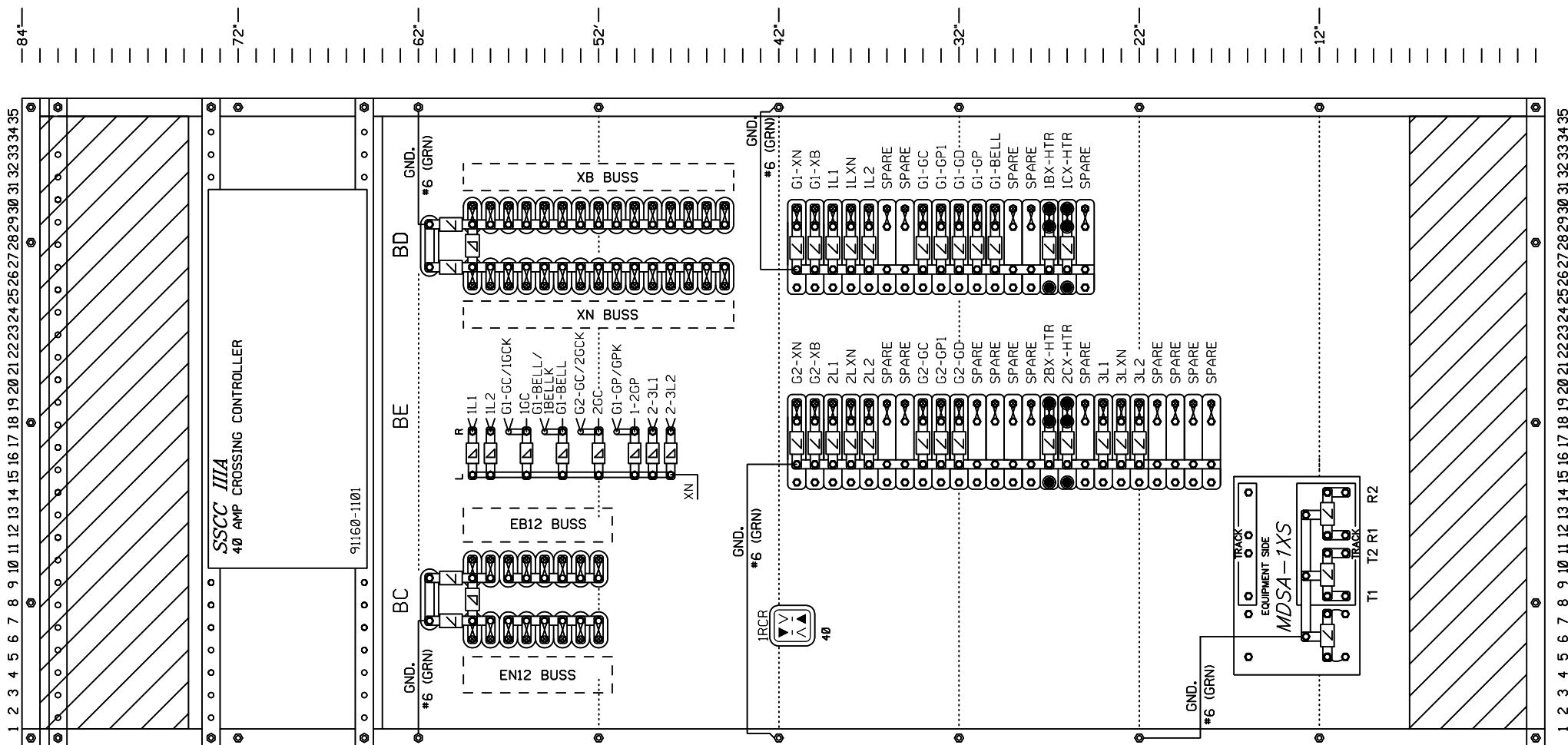
ROW BC

EB12 BATT(-)	59	EB12 BATT(+)	59
MDSA-1XS IN-	58	MDSA-1XS IN+	58
MDSA-1XS OUT-	57	MDSA-1XS OUT+	57
1RCR_7(-)	56	AC24	56
MDA II TB4 IN 7(-)	55	GIP-B12	54
GIP-N12	54	MDA II TB1 BATT 2(+)	53
MDA II TB1 BATT 2(-)	53	MDA II TB6 BATT+	52
MDA II TB6 BATT-	52		
EN12 BUSS (LEFT)		EB12 BUSS (RIGHT)	

ROW BD

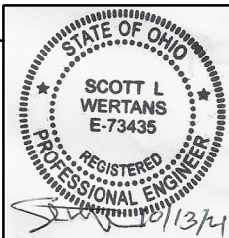
XB BATT(-)	59	XB BATT(+)	59
MDA II TB1 BATT 1(-)	58	MDA II TB1 BATT 1(+)	58
MDA II TB4 IN 8(-)	57	1RCR_6	57
SSCCIII J3_GP-	56		
SSCCIII J1_1GC-	55	AA14	54
SSCCIII J6_2GC-	53	SSCCIII J2_N	52
SSCCIII J2_N	51	SSCCIII J2_B	50
SSCCIII J2_N	50	SSCCIII J2_B	49
BD41L	49	BD40L	48
BE41L	48	BE40L	47
BE48L	47	2POR_8	46
BE38L	46		45
BD38L	45		
XN BUSS (LEFT)		XB BUSS (RIGHT)	

NOTE: NO EQUIPMENT ALLOWED IN SHADED AREAS.

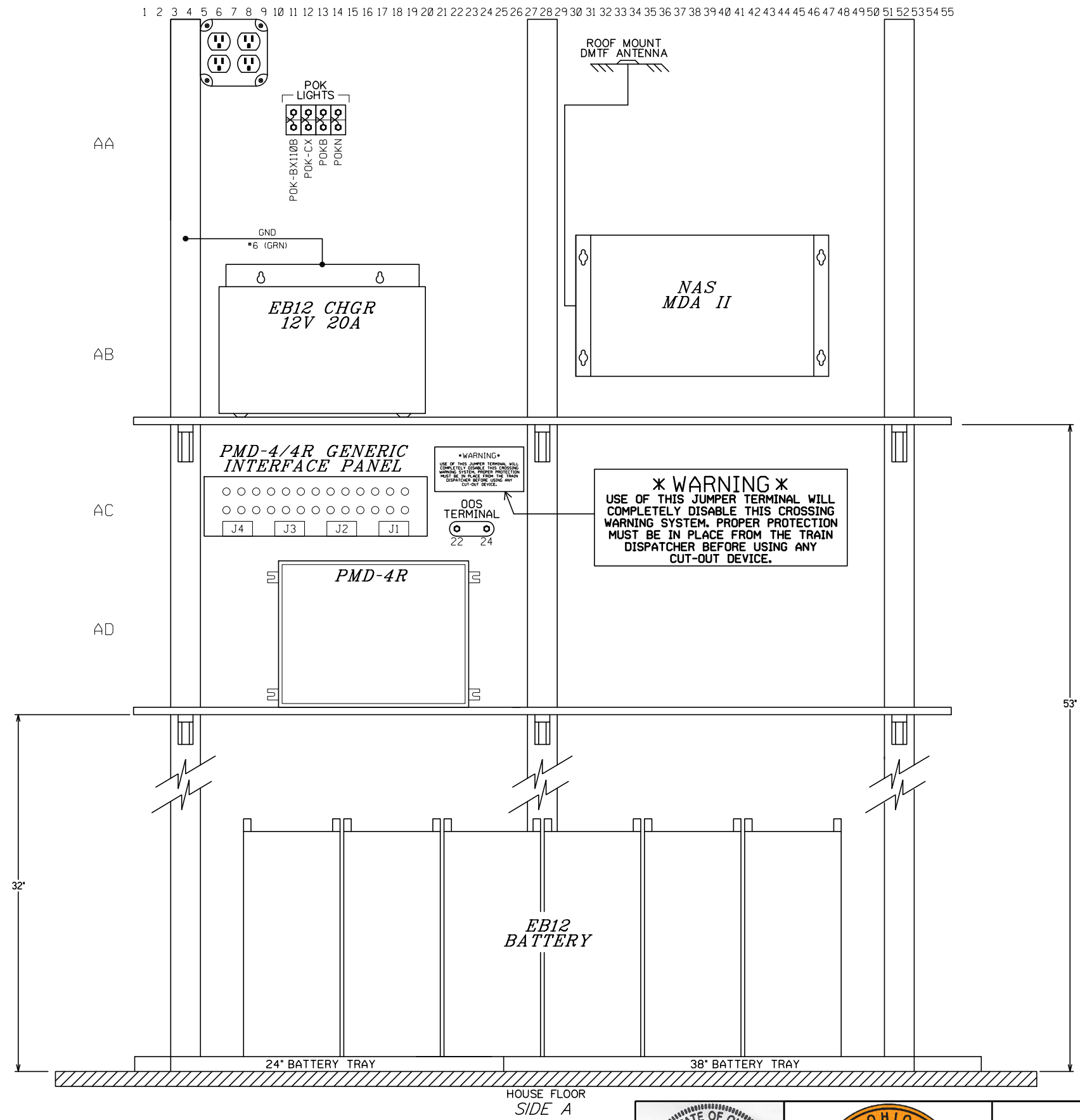




REVISIONS				

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.



SIDE B DETAIL - TERMINAL BOARD		
OHIO CENTRAL RAILROAD		
DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21	C.R. 236 BAL TIC, (COSHOCTON), OHIO DOT# 474 233F MILEPOST# 99.65	SHEET 09 OF 12



REVISIONS					THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.			OHIO CENTRAL RAILROAD		
NO.	DATE	DESCRIPTION	BY	DATE				DESCRIPTION	BY	

DRAWN: PRS
DESIGNED: MST
CHECKED: JMW
DATE: 09-09-21

C.R. 236
BAL TIC, (COSH OCTON), OHIO
DOT# 474 233F MILEPOST# 99.65

SHEET
10 OF 12

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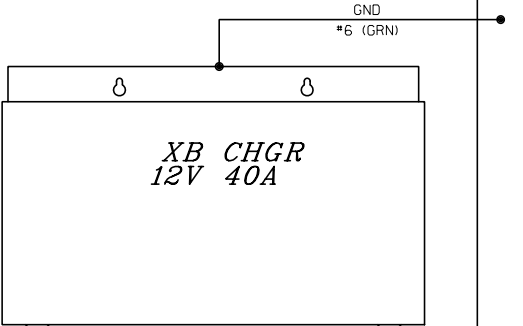
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

CA

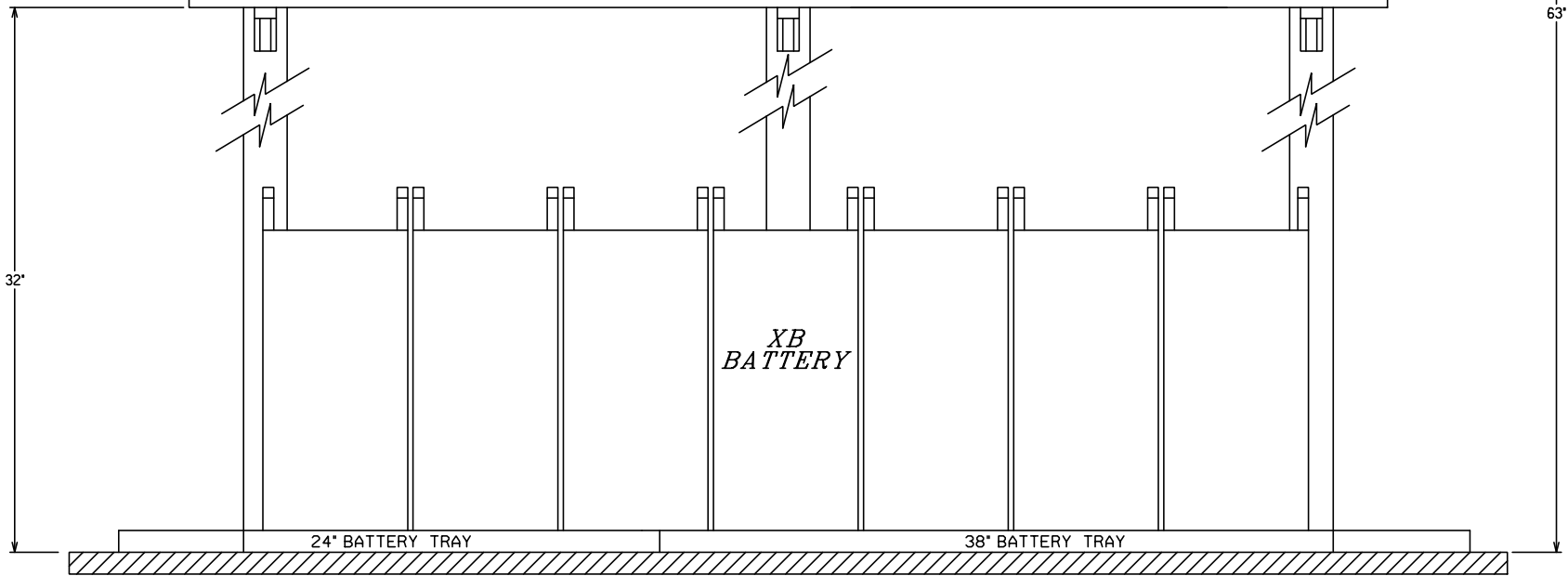
CAMERA EQUIPMENT
PLACED ON UPPER
SHELF SIDE C

- EXTERNAL CAMERA(S) TO RECORD
SIGNAL & TRAIN MOVEMENTS
- INTERNAL CAMERA(S) TO FACE
SIDE A TO RECORD EQUIPMENT
& OOS JUMPER POSTS.



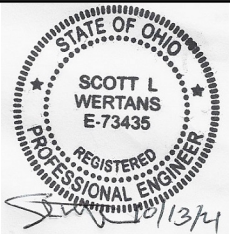
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REVISIONS

THE OPERATION OF THE CIRCUITS AND
EQUIPMENT REPRESENTED HEREIN
CANNOT BE FULLY CHECKED UNTIL
ALL CIRCUITS AND DEVICES ARE
CONNECTED TO FORM A COMPLETE
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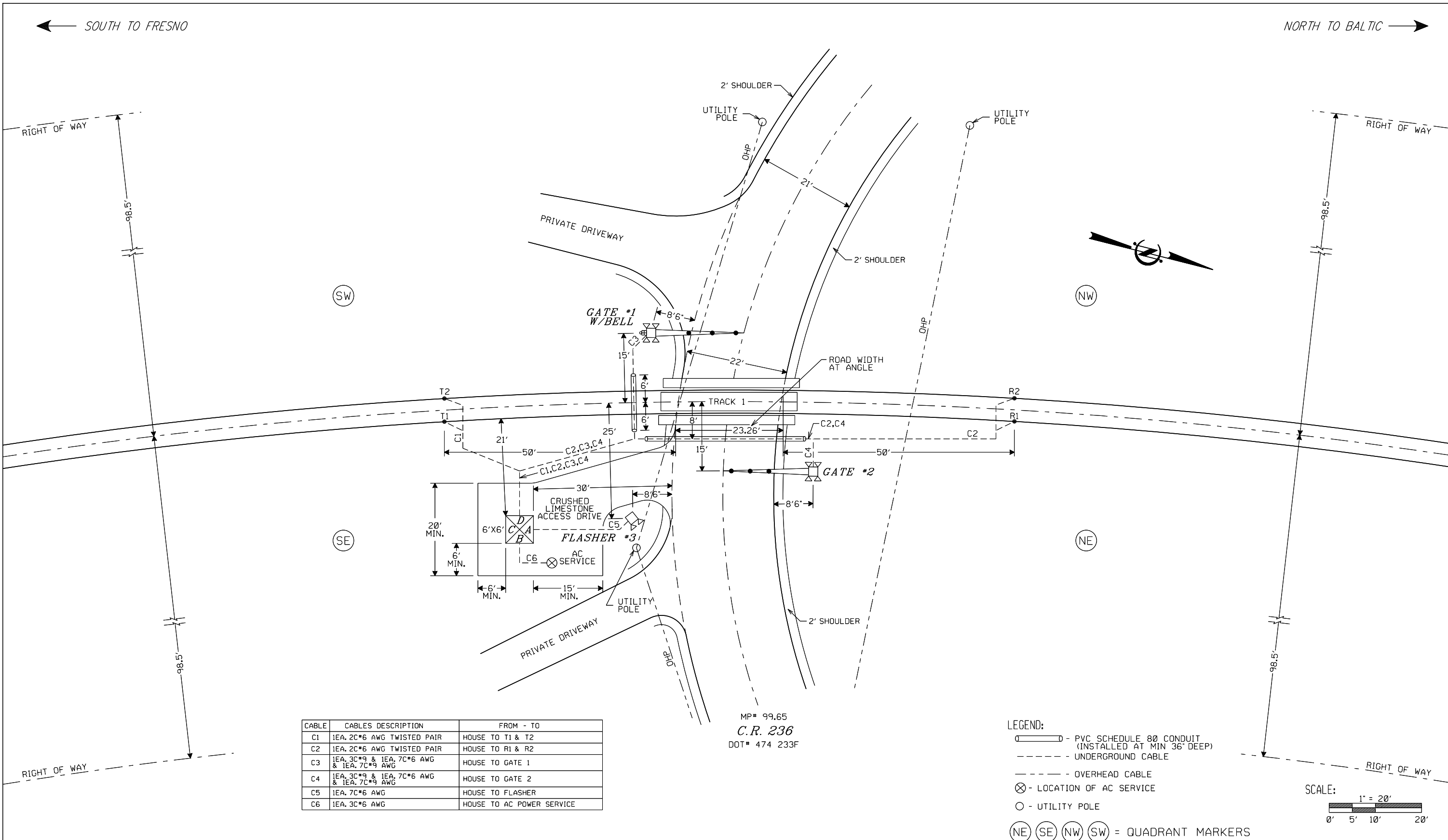
SIDE C DETAIL

OHIO CENTRAL RAILROAD

DRAWN: PRS
DESIGNED: MST
CHECKED: JMW
DATE: 09-09-21

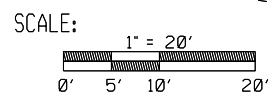
C.R. 236
BAL TIC, (COSH OCTON), OHIO
DOT# 474 233F MILEPOST# 99.65

SHEET
11 OF 12



CABLE	CABLES DESCRIPTION	FROM - TO
C1	1EA. 2C*6 AWG TWISTED PAIR	HOUSE TO T1 & T2
C2	1EA. 2C*6 AWG TWISTED PAIR	HOUSE TO R1 & R2
C3	1EA. 3C*9 & 1EA. 7C*6 AWG & 1EA. 7C*9 AWG	HOUSE TO GATE 1
C4	1EA. 3C*9 & 1EA. 7C*6 AWG & 1EA. 7C*9 AWG	HOUSE TO GATE 2
C5	1EA. 7C*6 AWG	HOUSE TO FLASHER
C6	1EA. 3C*6 AWG	HOUSE TO AC POWER SERVICE

- LEGEND:
- PVC SCHEDULE 80 CONDUIT (INSTALLED AT MIN 36" DEEP)
 - UNDERGROUND CABLE
 - OVERHEAD CABLE
 - LOCATION OF AC SERVICE
 - UTILITY POLE
 - (NE) (SE) (NW) (SW) = QUADRANT MARKERS



REVISIONS				

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TRACK AND CABLE LAYOUT		
OHIO CENTRAL RAILROAD		
DRAWN: PRS DESIGNED: MST CHECKED: JMW DATE: 09-09-21	C.R. 236 BAL TIC, (COSHOC TON), OHIO DOT# 474 233F MILEPOST# 99.65	SHEET 12 OF 12

Factory Wired Instrument Shelter

ITEM DESCRIPTION	O.E.M.	LN Item #	QTY	U/M
Alum. 6' x 6', Shelter G&W Crossing W/O NEMA PLUGS	PTMW	9485000216	1	EA
Hex. Railroad Lock	SIEMENS	9463001200	2	EA
Camera Material 5 Cam, 19" Mon, 4 TB HD Package	Porter Security	9409011494	1	EA
Power Off Light, LED, 4 Wire	GRAYBAR	9430500215	2	EA
PMD-4R, Redundant Motion, Generic Upgrade Panel, & Generic Interface Panel Cable 4ft	ALSTOM	9409011753	1	EA
SSCC-IIIA Crossing Controller, 40 Amp, 19" Mounting Plate SSCC-IIIA 40A, 19" Rack	SIEMENS	9429000113	1	EA
Surge Arrestor. MDSA-1XS	ALSTOM	9409012002	1	EA
Lightning Arrester, Clearview	SIEMENS	9409020353	29	EA
Heavy Duty Equalizer	SIEMENS	9409020300	10	EA
AC Line Surge Protector, Model SP20-2A	SIEMENS	9409010617	2	EA
Panduit Duct, 2' X 3', 2 inch	GRAYBAR	9422040105	30	FT
Panduit Cover, 2' X 3', 2 inch	GRAYBAR	9422040106	30	FT
Panduit Duct, 2' X 3', 3 inch	GRAYBAR	9422040103	18	FT
Panduit Cover, 2' X 3', 3 inch	GRAYBAR	9422040108	18	FT
#10 TC Blue Flex Wire	GRAYBAR	9450030600	600	FT
#14 TC Blue Flex Wire	OKONITE	9422010213	700	FT
#10/12 AMP Eyelets	GRAYBAR	9422020300	150	EA
#14/16 AMP Eyelets	GRAYBAR	9422020342	150	EA
#6 AWG THHN Strand Red	GRAYBAR	9422001183	100	FT
#6 AWG THHN Strand Black	GRAYBAR	9422001184	100	FT
#6 AWG THHN Strand Green	GRAYBAR	9422001180	12	FT
#10 AWG THHN Solid Red	GRAYBAR	9422001177	10	FT
#10 AWG THHN Solid White	GRAYBAR	9422001179	10	FT
Recorder, Micro Data Analyzer II w/ DTMF	N A Signal	9409010705	1	EA
Insulated Nut	TWINCO	9409050504	16	EA
Relay, NV, 12VAC, 2FB (8 PINS)	GRAINGER	9409020273	1	EA
Relay, NV, 120VAC, 2FB (8 PINS)	Allied Electronics	9409020328	2	EA
Socket, Relay (8 PINS) OCT Screw	Allied Electronics	9409020329	3	EA
Battery Charger, 12V / 20A	NRS	9409080111	1	EA
Battery Charger, 12V / 40A	NRS	9409080113	1	EA
4 Post Terminal Block w/ Hardware	ERICO	9409020380	41	EA
Buss Strap Grd Assy.	ERICO	9465000106	4	FT
Tags, Slip On	GRAYBAR	9422990050	0.25	Roll
Stick-On Stencil	Cadillac Sign Co.	9400000078	2	EA
Test Link, 1" Offset w/Gold Nut	REBEL RAILWAY	9409021104	81	EA
Terminal Block, 2 x 6 w/flat nut only	ALSTOM	9473000102	8	EA
Terminal Block, 2 post 2-3/8" w/flat nut only	TWINCO	9473000104	5	EA
1/4" Bevel Washer	WURTH SNIDER	9473000700	300	EA
1/4-24 Clamp Nut Nickel	WURTH SNIDER	9473000705	150	EA
Binding (Barrel) Nuts	WURTH SNIDER	9401037900	300	EA
#6 Non-Insulated Terminal Eye 1/4 stud	GRAYBAR	9422020200	30	EA
#6 Non-Insulated Terminal Eye 5/16 stud	GRAYBAR	9422020210	8	EA
Binding (Barrel) Nuts	WURTH SNIDER	9401037900	150	EA
Maintainer Test Switch, 3 post test terminal	L&W	9410002070	1	EA
Strap, Solid, 1" Centers	TWINCO	9473000110	5	EA
Strap, Solid, 2-3/8" Centers	L&W	9473000120	5	EA
Buss Strap, 1" Centers 36 Hole	TWINCO	9473005100	2	EA
Circuit Plan Holder	Village Supplies	9401001050	1	EA

Gate/Flasher Material				
ITEM DESCRIPTION	O.E.M.	LN Item #	QTY	U/M
Signal 1				
12" Head w/24" Background & Hood (Painted AL)				
Terminal For LED Hook-up (For larger RDG & GE LED)	WCH	9451000610	4	EA
12" LED Highway Crossing Light (HD)	GE Lighting	9451000523	4	EA
Alum. Mast, 5" x 16', Base Hole 0 & 180 Degrees & Main Hole 90 Degrees	Progress	9413022512	1	EA
Signal Mast Grounding w/ 72" pigtail #6 solid	Erico	9413040011	1	EA
JCT. Box Base, 5" W/2"NPT Cap	Progress	9420001102	1	EA
2-Way Cross Arm Assembly Less Heads (Gate Flasher)	Progress	9451050304	1	EA
5" Crossarms Assembly Mounting Kit	Progress	9451080005	1	EA
Railroad Crossing Sign, HI	Progress	9460001104	1	EA
5" Mounting Kit for Railroad Crossing Signs w/Extension Bracket	Progress	9460005050	1	EA
Gate 3593E Mechanism Assembly, including the 5" Mast Mounting Hardware, Flex				
Conduit, with fittings, Long Arm Supports & Counterweight kit for 25' - 28' Arms W/Gate Heaters	W-C-H	9450010189	1	EA
Gate Heater Thermostat (To Be mounted inside gate mech IORY Projects)	SENASYS	9450020612	1	EA
Insulated Nut	TWINCO	9409050504	4	EA
Test Link, 1" Offset w/Gold Nut	L&W	9409021104	18	EA
Wiring Harness 18'6" Bell	Progress	9454100133	1	EA
Wiring Harness 12' Light	Progress	9454100135	1	EA
Wiring Harness 8' Mech (STD)	Progress	9454100136	1	EA
Gate Arm Wind Bracket, 36"	NEG	9450030203	1	EA
Conversion Bracket Plain w/hardware	NEG	9459001132	1	EA
Hex. Railroad Lock	SIEMENS	9463001200	1	EA
Gate/Flasher Pallet	J&J Pallet	9441001350	1	EA
Signal 2				
12" Head w/24" Background & Hood (Painted AL)				
Terminal For LED Hook-up (For larger RDG & GE LED)	WCH	9451000610	4	EA
12" LED Highway Crossing Light (HD)	GE Lighting	9451000523	4	EA
Alum. Mast, 5" x 16', Base Hole 0 & 180 Degrees & Main Hole 90 Degrees	Progress	9413022512	1	EA
Signal Mast Grounding w/ 72" pigtail #6 solid	Erico	9413040011	1	EA
JCT. Box Base, 5" W/2"NPT Cap	Progress	9420001102	1	EA
2-Way Cross Arm Assembly Less Heads (Gate Flasher)	Progress	9451050304	1	EA
5" Crossarms Assembly Mounting Kit	Progress	9451080005	1	EA
Railroad Crossing Sign, HI	Progress	9460001104	1	EA
5" Mounting Kit for Railroad Crossing Signs w/Extension Bracket	Progress	9460005050	1	EA
Gate 3593E Mechanism Assembly, including the 5" Mast Mounting Hardware, Flex				
Conduit, with fittings, Long Arm Supports & Counterweight kit for 25' - 28' Arms W/Gate Heaters	W-C-H	9450010189	1	EA
Gate Heater Thermostat (To Be mounted inside gate mech IORY Projects)	SENASYS	9450020612	1	EA
Insulated Nut	TWINCO	9409050504	4	EA
Test Link, 1" Offset w/Gold Nut	L&W	9409021104	18	EA
Wiring Harness 12' Light	Progress	9454100135	1	EA
Wiring Harness 8' Mech (STD)	Progress	9454100136	1	EA
Gate Arm Wind Bracket, 36"	NEG	9450030203	1	EA
Conversion Bracket Plain w/hardware	NEG	9459001132	1	EA
Hex. Railroad Lock	SIEMENS	9463001200	1	EA
Gate/Flasher Pallet	J&J Pallet	9441001350	1	EA
Signal 3				
12" Head w/24" Background & Hood (Painted AL)				
Terminal For LED Hook-up (For larger RDG & GE LED)	WCH	9451000610	2	EA
12" LED Highway Crossing Light (HD)	GE Lighting	9451000523	2	EA
Pinnacle 4" End Cap	Progress	9463100104	1	EA
Alum. Mast, 4" x 14' w/o Pinnacle (Base Hole 0 Degrees)	Progress	9413020099	1	EA
Signal Mast Grounding w/ 72" pigtail #6 solid	Erico	9413040011	1	EA
JCT. Box Base, 4"	Progress	9420001100	1	EA
1-Way Cross Arm Assembly Less Heads Side Light	Progress	9451050414	1	EA
4" Crossarms Assembly Mounting Kit	Progress	9451080004	1	EA
Railroad Crossing Sign, HI	Progress	9460001104	1	EA
4" Mounting Kit for Railroad Crossing Signs	Progress	9460005040	1	EA
Test Link, 1" Offset w/Gold Nut	REBEL RAILWAY	9409021104	18	EA
Wiring Harness 12' Light	Progress	9454100135	1	EA
Hex. Railroad Lock	SIEMENS	9463001200	1	EA
Gate/Flasher Pallet	J&J Pallet	9441001350	1	EA

Ground Material				
ITEM DESCRIPTION	O.E.M.	LN Item #	QTY	U/M
Insulated Terminal Wrench, 1/2" / Triangle	GRAYBAR	9473000518	1	EA
Plugboard Terminal Wrench	SIEMENS	9473000508	1	EA
Battery Tray (12" x 38")	FIBER CO	9409060108	2	EA
Battery Tray (12" x 24")	FIBER CO	9409060102	2	EA
Battery, 264 Amp Hour	GNB	9429005100	7	EA
Battery, 312 Amp Hour	GNB	9429005145	6	EA
Electronic Bell, 5" MTG.	GSI	9465000154	1	EA
Gate Arm Light Kit w/LED Bulbs and wire, 3 per set	NEG	9450030494	2	EA
G&W, Lamp Cord Mounting Clamps	RECO	9450030560	2	EA
G&W, Lamp Cord Mounting Clamps	RECO	9450030561	2	EA
G&W Gate Arm 30' or Less, NON-HWP, 16' Al Base sec (HI Intensity), 3' Sleeve	NEG	9450030266	2	EA
G&W Gate Arm 30' or Less, NON-HWP, 16' Fg 2nd sec (HI Intensity)	NEG	9450030267	2	EA
Cast Adapter	NEG	9450020520	2	EA
48" Tall Steel Flasher Foundation w/4" Entrance Pipe welded on bottom of top plate (Galv.)	Progress	9417001010	1	EA
4" Jct. Box Base Shroud	Progress	9454030095	1	EA
48" Tall Galv. Steel Gate Foundation w/32" Square Base w/4" Entrance Pipe welded on bottom of top	Progress	9417002040	2	EA
5" Jct. Box Base Shroud	Progress	9454030094	2	EA
Track Cable, #6 Tw. Pr. (150-12-3933)	GRAYBAR	9422001106	250	FT
Signal Cable, 7/C # 6 AWG (206-11-6247)	GRAYBAR	9422001580	300	FT
Signal Cable, 7/C # 9 AWG (206-11-6927)	GRAYBAR	9422001579	250	FT
AC Meter, 3/C # 9 AWG.(206-11-6923)	GRAYBAR	9422001539	250	FT
AC Cable, 3/C # 6 AWG w/GRD (206-11-6070)	GRAYBAR	9422001218	150	FT
Railroad Emergency Contact Sign - Reference Spec Prior to Ordering (SEE ENS TAB)	Saf-Ti-Co	9400000079	2	EA
5" Mounting Kit for Railroad Crossing Signs w/Extension Bracket	Progress	9460005050	2	EA
Hex. Railroad Lock	SIEMENS	9463001200	1	EA
Copperweld Ground Rod, 5/8" X 8'	Erico	9409050512	7	EA
Cadweld One Shot, 5/8" (HALO) Triple	Erico	9410001231	4	EA
Cadweld One Shot, 5/8" (SIGNAL) Single	Erico	9410000274	3	EA
Track Connector, Web, 4"	Erico	9410003011	8	EA
Track Connection Kits	Progress	9410002051	2	EA
Track Wire Retainer Clip, Erico #SBA248B	Erico	9410006111	8	EA
4" PVC Sch. 80 Conduit	B&S	TBD	65	FT
Hose, Red Ruber 3/4 Inch Hose (15' Per Track Connection Pair)	Grainger	9469023011	30	FT
AC Meter Base, Breaker Box, W.H. & Pole	Commercial	TBD	1	EA
Dress Stone	Local	N/A	1	EA
Sleeve, 3/16 - 3/16 & 3/16 - #6 Tinned	Erico	9410001010	8	EA
Duct Seal	Local	9410000502	10	LB
Bond Strand, Erico# SBS8TLINS664	ERICO	9422030010	75	FT
No Oxide Grease	SIEMENS	9410006010	1	EA
Anti-Seize - Silver Grade 4 OZ	Bearing Head	9410006020	1	EA
#6 Bare Copper	Grainger	9422000010	50	FT

Force Account Estimate

OOM

Railroad:	Ohio Central Railroad, Inc. (OHCR)	Region:	NORTHERN
Agency:	ORDC	State:	OH
DOT #:	474233F	COUNTY:	Coshocton
ROADWAY:	CR 236	CITY:	Baltic
DESCRIPTION:	OOM for the installation of flashing lights and gates, 6'x6' bungalow with PMD-4R w/CWT. Single track through crossing. 4 gauge rods to be removed and 16 ties to be installed. Existing crossbuck location.		
AGENCY PROJECT NUMBER:	PID# 114116	ESTIMATE SUBJECT TO REVISION AFTER:	11/01/21

PRELIMINARY ENGINEERING:

Contracted & Administrative Engineering Services	\$	13,400
Subtotal	\$	13,400

CONSTRUCTION & CLOSEOUT:

Contracted & Administrative Engineering Services	\$	11,600
Subtotal	\$	11,600

FLAGGING SERVICE:

Contracted or Railroad Flagmen Services	10	Days	\$	14,000
Subtotal			\$	14,000

UTILITY WORK:

Power Service	\$	10,000
Other	\$	-
Subtotal	\$	10,000

CONTRACT WORK:

Outside Services	\$	-
Design & Labor & Material	\$	181,260
Subtotal	\$	181,260

RAILROAD TRACK:

Labor & Material	\$	-
Subtotal	\$	-

RAILROAD SIGNAL & COMMUNICATION:

Labor & Material	\$	-
Subtotal	\$	-

PROJECT SUBTOTAL:

		\$	230,260
Public Project Admin:	0.00%	\$	-
Contingencies:	0.00%	\$	-

PROJECT TOTAL:

	*****	\$	230,260
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CURRENT AUTHORIZED BUDGET:

	*****	\$	-
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TOTAL SUPPLEMENT REQUESTED:

	*****	\$	230,260
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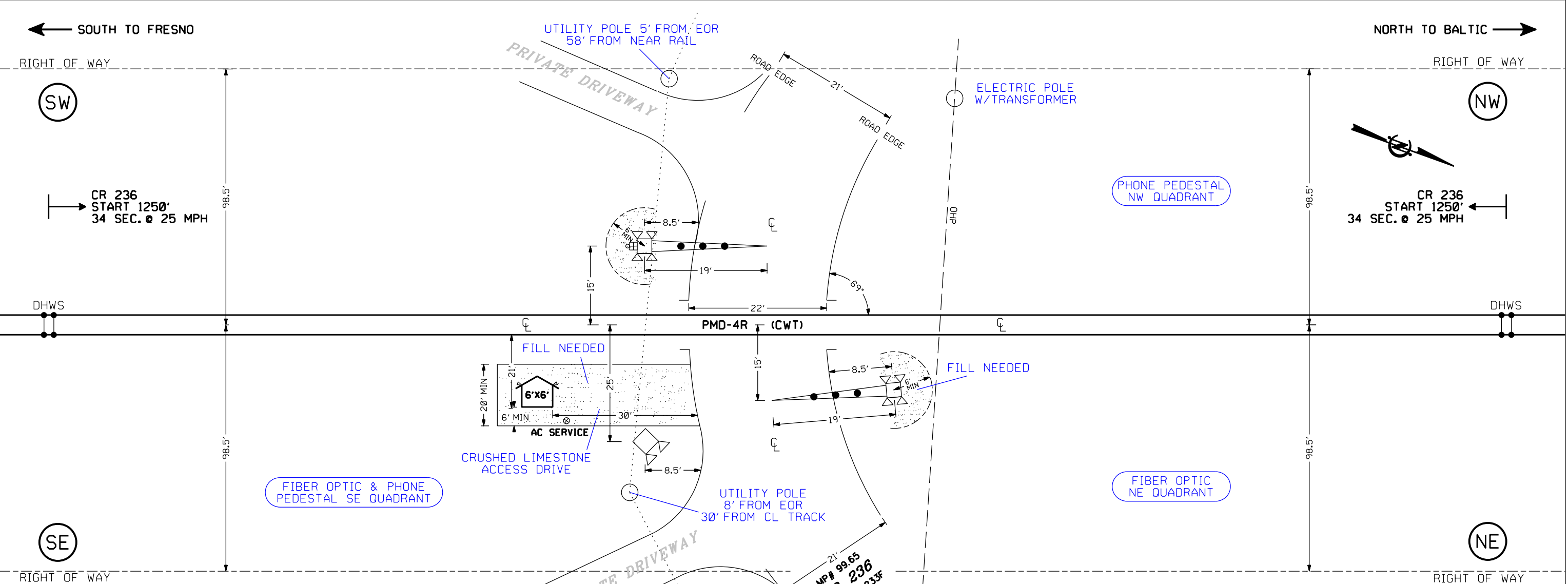
DIVISION OF COST:

Agency	100.00%	\$	230,260
Railroad	0.00%	\$	-

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

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 the railroad 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.

Estimated prepared by: BPB Approved by: Public Project Department
DATE: 01/25/21 REVISED: 05/05/21 DATE: 05/05/21




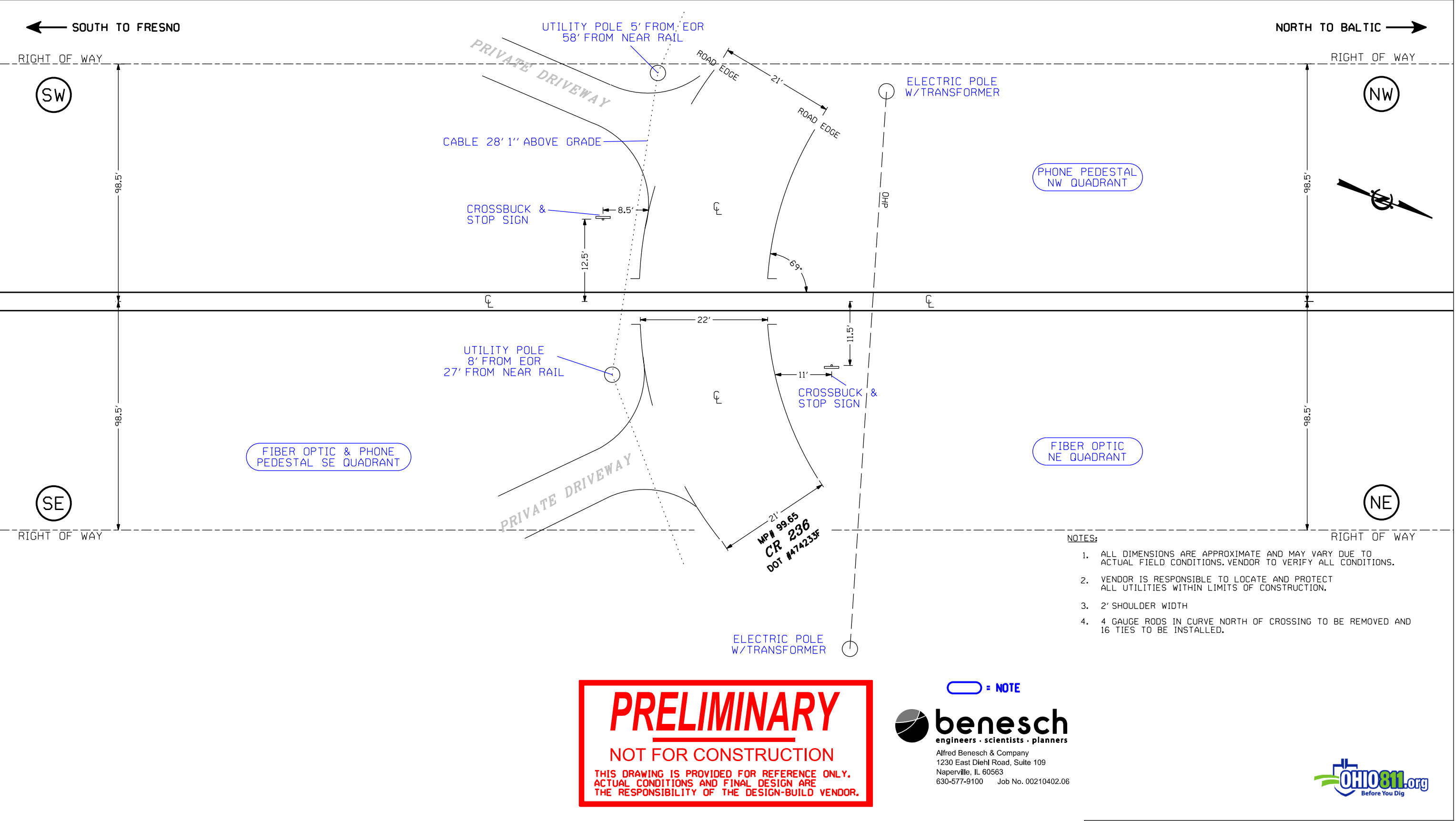
APPROACH DISTANCE CALCULATION		
	SOUTH	NORTH
ACTUAL PRIME CROSSING WARNING TIME	30 SEC	30 SEC
TIME FOR CROSSING CLEARANCE DISTANCE > 35'	+ 0 SEC	+ 0 SEC
TRAFFIC PRE-EMPTION TIME	+ 0 SEC	+ 0 SEC
TOTAL CALCULATED DESIGN WARNING TIME	30 SEC	30 SEC
EQUIPMENT RESPONSE TIME	+ 4 SEC	+ 4 SEC
BUFFER TIME	+ 0 SEC	+ 0 SEC
TOTAL WARNING TIME FOR APPROACH DISTANCE CALCULATION	34 SEC	34 SEC
CALCULATED AT MAXIMUM TRAIN SPEED	x 25 MPH	x 25 MPH
RATIO OF FEET PER SECOND TO MILES PER HOUR	x 1.470	x 1.470
APPROACH LENGTH (ROUNDED UP TO THE NEXT FOOT)	1250 FEET	1250 FEET

- NOTES:
1. MATERIAL & INSTALLATION TO BE IN ACCORDANCE WITH MUTCD, STATE AND RAILROAD STANDARDS.
 2. ALL DIMENSIONS ARE APPROXIMATE AND MAY VARY DUE TO ACTUAL FIELD CONDITIONS. VENDOR TO VERIFY ALL CONDITIONS.
 3. FLASHING LIGHT SIGNALS & GATE LIGHTS TO BE LIGHT EMITTING DIODE ASSEMBLIES (LED).
 4. BEWARE OF OVERHEAD WIRES.
 5. SEE APPROACH CIRCUIT DISTANCE CALCULATION TABLE FOR PLANNED WARNING TIME AND TRAIN SPEED PER TRACK.
 6. APPROACH DISTANCES ARE TO BE MEASURED FROM THE TERMINATIONS TO CLOSEST SET OF TRACK LEADS AT CROSSING.
 7. CONDUIT UNDER ROAD MUST BE BORED NOT TRENCHED.
 8. VENDOR IS RESPONSIBLE TO LOCATE AND PROTECT ALL UTILITIES WITHIN LIMITS OF CONSTRUCTION.
 9. CAMERA SYSTEM TO BE PROVIDED AND INSTALLED BY VENDOR.
 10. 2' SHOULDER WIDTH
 11. 4 GAUGE RODS IN CURVE NORTH OF CROSSING TO BE REMOVED AND 16 TIES TO BE INSTALLED.
 12. OVERHEAD COMMUNICATION CABLE IS 28'1" ABOVE GRADE IN SW QUADRANT. CABLE DOES NOT INTERFERE WITH WARNING DEVICE OPERATION.

PRELIMINARY
NOT FOR CONSTRUCTION
THIS DRAWING IS PROVIDED FOR REFERENCE ONLY.
ACTUAL CONDITIONS AND FINAL DESIGN ARE
THE RESPONSIBILITY OF THE DESIGN-BUILD VENDOR.



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Alfred Benesch & Company
1230 East Diehl Road, Suite 109
Naperville, IL 60563
630-577-9100 Job No. 00210402.06

REVISIONS				THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.				"DRAWING NOT TO SCALE"				PROPOSED CROSSING LAYOUT							
													OHIO CENTRAL RAILROAD						
												DRAWN: TCS DESIGNED: TCS CHECKED: BPB DATE: 4/28/21				CR 236 BAL TIC, (COSHOCTON), OHIO DOT#474233F MILEPOST#99.65		DRAWING NO. OHCR09965.H01 SHEET 01 OF 01	




- NOTES:
- 1. ALL DIMENSIONS ARE APPROXIMATE AND MAY VARY DUE TO ACTUAL FIELD CONDITIONS. VENDOR TO VERIFY ALL CONDITIONS.
 - 2. VENDOR IS RESPONSIBLE TO LOCATE AND PROTECT ALL UTILITIES WITHIN LIMITS OF CONSTRUCTION.
 - 3. 2' SHOULDER WIDTH
 - 4. 4 GAUGE RODS IN CURVE NORTH OF CROSSING TO BE REMOVED AND 16 TIES TO BE INSTALLED.

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630-577-9100 Job No. 00210402.06



REVISIONS								THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.		"DRAWING NOT TO SCALE"		EXISTING CROSSING LAYOUT		
										OHIO CENTRAL RAILROAD		DRAWN: TCS		
												DESIGNED: TCS		
												CHECKED: BPB		
												DATE: 4/28/21		
												CR 236		
												BALTIC, (COSHOCOTON), OHIO		
												DOT#474233F MILEPOST#99.65		
												DRAWING NO. OHCR09965.H02		
												SHEET 01 OF 01		



RAILROAD/HIGHWAY GRADE CROSSING SITE SURVEY

RAILROAD NAME: OHIO CENTRAL RAILROAD CO.

LOCATION: Baltic, Ohio

PROJECT#:	RR#	PID#
	21OHCR01R	114116

SURVEYED BY: Mike Forte' DATE: 2/25/21

ROADWAY: CR 236 DOT#: 474 233F

SUBDIVISION: OHCR MILEPOST: 99.65

REGION: Northern SPEED: 25 mph

LATITUDE: 40.4031586 LONGITUDE: -81.7202520

NEAREST ADDRESS: 31412 C.R. 236, Fresno, OH 43824

REVISED: _____

PROJECT SCOPE (PER AGENCY ORDER/DRTS FINDINGS):

Install flashing lights and gates with a 3rd flasher mast in the SE quadrant.

RAILROAD CONCERNS/SCOPE ADJUSTMENTS:

SURVEY ATTENDEES:

Name	Title	Company	Email/Phone
Mike Forte	Sr. Construction Rep.	Benesch	740-817-1521
Todd Hensly	Signal Supervisor	OHCR	740-502-7214



SECTION 1 - EXISTING WARNING DEVICES

1.1 - EXISTING WARNING DEVICES/CONTROL EQUIPMENT

Signage	Quantity	Description	Reuse/ Replace
Crossbucks	2		Replace
Stop Signs	2		Remove
Yield Signs			
Track Signs			
Stop On Red Signs			
ENS/DOT	2		Replace
NLT/NRT			
Equipment	Quantity	Description (Mast size, lens size, orientation etc.)	Reuse/ Replace
Flashing Lights			
Flashing Lights and Gates			
Cantilevers*			
Cant/Gate Combo			
Bells			
Bridge Signals			
Signal Enclosure			
Highway/Rail grade crossing warning equipment type			
DAXing for Adjacent Xings			

*Include sketch of bolt hole pattern and spacing with measurements if existing cantilever is to be reused.

NOTES (LIST MANUFACTURER/MODEL/QUADRANT IF APPLICABLE):

1.2 - ARE FOUNDATIONS POURED IN PLACE: NA

1.3 - EXISTING MASTS OF CAST OR ALUMINUM: NA

1.4 - ROOM AT CROSSING TO STORE EQUIPMENT: A qualified yes, no room for a container

If no, specify where equipment can be stored: In Baltic

1.5 - ARE EXISTING CIRCUITRY PLANS AVAILABLE: NA

1.6 – CROSSING EQUIPMENT AND TYPE, passive, relay, solid state: Passive

1.7 – IS THE ROADWAY BEING RELOCATED: No

1.8 – IS THERE A FRA INVENTORY REPORT: Yes

1.9 – EXISTING TRAIN SPEED, Timetable, General Order: 25 mph



SECTION 2 - PROPOSED WARNING DEVICES

2.1 - PROPOSED WARNING DEVICES/CONTROL EQUIPMENT

Signage	Quantity	Description
Crossbucks	3	
Stop Signs		
Yield Signs		
Track Signs		
Stop On Red Signs		
ENS/DOT	2	
NLT/NRT		
Equipment	Quantity	Description (Mast size, lens size, orientation, etc.)
Flashing Lights	1	One-way in SE quadrant facing approaching traffic
Flashing Lights and Gates	2	
Cantilevers		
Cant/Gate Combo		
Bells	1	
Bridge Signals		
Signal Enclosure		6'x6' in SE quadrant
Highway/Rail grade crossing warning equipment type		PMD-4R CWT

NOTES:

2.2 - TYPE OF FOUNDATIONS TO BE USED: Galvanized pyramid

2.3 - ARE FOUR QUADRANT GATES TO BE INCLUDED: No

If yes, specify exit gate delay/dwell time: _____

2.4 - ARE SIDELIGHTS REQUIRED: No

If yes, specify street/distance from track/quadrant: _____

2.5 - CROSSING CONTROL EQUIPMENT TERMINATION: DHWS

2.6 - ADDITIONAL EQUIPMENT RECOMMENDED: Recorder, DTMF, OOS Jumpers

2.7 - IS ADDITIONAL FILL MATERIAL REQUIRED: Yes

If yes, specify quadrant/estimate quantity: 70 tons

2.8 – BERM/CRIB WALL/PLATFORM REQUIRED: No

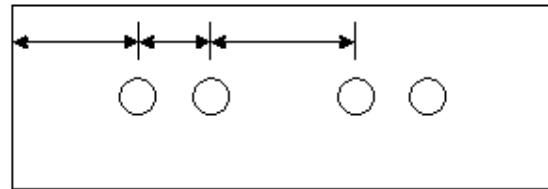
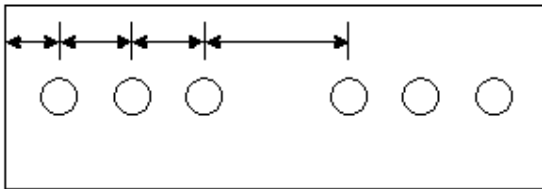


SECTION 3 – TRACK AND RAIL

3.1 - PROPOSED WARNING DEVICES/CONTROL EQUIPMENT

Track	Rail Weight	CWR	JT	Bond Type	Track Speed	Track Control	Rusty Rail	Ballast Condition
Mainline	132RE	X		NA	25 mph	TWC	No	Good
Siding								
Industry								
Storage								

SPECIFY INSULATED JOINT DIMENSIONS AND TYPE:



3.2 - ARE COMP JOINTS PRESENT:

No

If yes, show location and sizes on FIELD SKETCH.

3.3 - DO SWITCHES REQUIRE INSULATION:

No

If yes, show switches on FIELD SKETCH.

3.4 - ANY SHUNT-TYPE SWITCHES:

No

If yes, describe type and show on FIELD SKETCH:

3.5 - SHUNT ENHANCEMENT REQUIRED:

No

If yes, specify type:

3.6 – DO BALLAST CONDITIONS AFFECT INSTALLATION?

No

3.7 – HAS A BALLAST STUDY/READING BEEN PERFORMED TO DETERMINE THE BALLAST RESISTANCE?

No

If yes, attach a copy of the results.

3.8 – HAS A SPECTRUM FREQUENCY ANALYSIS BEEN PERFORMED?

No

If yes, attach a copy of the results.



3.9 – IS THE PROPOSED CROSSING LOCATED IN SIGNAL TERRITORY?

No _____

If yes, describe/attach a copy of the plans, CP, Approach signal(s), HWD, DED, and Rock Slide Detection Fences.

3.10 – ARE THERE ANY EXISTING TRACK CIRCUITS?

No _____

If yes, describe type/attach a copy of the plans.

3.11 – ARE THERE ANY TIE-INS OR MODIFICATIONS TO EXISTING CROSSINGS OR SIGNAL SYSTEMS?

No _____

If yes, describe/attach a copy of the plans.

3.12 – ARE THERE ANY OVERLAPS IN APPROACHES WITH EXISTING CROSSINGS?

No _____

If yes, describe/attach a copy of the plans.

3.13 – ARE THERE ANY SPECIAL TRAIN MOVES OR REGULAR STOPPING OR SWITCHING IN THE PROPOSED APPROACHES?

No _____

If yes, describe:

3.14 – ARE THERE ANY QUIET ZONE REQUIREMENTS IN PROPOSED AREA OF CROSSING?

No _____

If yes, describe:

3.15 – ARE THERE ANY ELECTRONIC (e.g. *NO TURN, DO NOT STOP ON TRACK*) SIGNS REQUIRED?

No _____

If yes, describe and show on FIELD SKETCH:

3.16 – ARE THERE ANY SPECIAL DPU/STATE SPEED RESTRICTIONS FOR CROSSING?

No _____

If yes, describe:

3.17 – ARE THERE DAXing REQUIREMENTS FOR THIS OR ADJACENT CROSSINGS?

No _____

If yes, describe:



SECTION 4 – POLELINE

4.1 - ARE RAILROAD POLELINES PRESENT: No

If no, skip to section 5.

4.2 - REMOVE ABANDONED POLELINE: _____

If yes, specify number of spans to be removed: _____

Will Underground conduit/cable be required as a suitable replacement: _____

Will an interim scheme be needed until the suitable replacement is in place? _____

SECTION 5 – PRE-EMPTION

5.1 - PRE-EMPTION CIRCUITRY REQUIRED: No

If no, skip to section 6.

If yes, specify name, distance and direction to intersection: _____

If yes, specify type of, distance and direction to traffic signal controller cabinet: _____

If yes, specify type of interface, relay, electronic, communication protocol, etc.: _____

If yes, specify cable (6 twisted pair), routing and distance to traffic signal controller cabinet: _____

If yes, specify interface names applicable to traffic signal controller cabinet, AP, SP, Isl Occ, GD, GU, and/or Health: _____

5.4 - AUTHORIZING AGENCY: _____

5.5 - ROADWAY TRAFFIC ENGINEER: _____

5.6 - DATE OF REQUIREMENT: _____



SECTION 6 – JOINT RAILROAD

6.1 - IS TRACK LEASED FROM ANOTHER RAILROAD: No

If yes, specify railroad and division of maintenance: _____

6.2 - DOES ANOTHER RAILROAD OPERATE AT CROSSING: No

6.3 - ANY JOINT FACILITIES WITHIN ONE MILE: No

If yes, specify railroad and division of maintenance: _____

SECTION 7 – UTILITIES

7.1 - IS COMMERCIAL POWER AVAILABLE: Yes

Specify location of nearest pole: Pole w/transformer in SE quadrant

7.2 - POWER COMPANY NAME/CONTACT INFORMATION: Frontier Power Company

800-624-8050

7.3 - NEW METER SERVICE REQUIRED: Yes, for 240V single phase, 100-amp panel

If no, specify existing meter number: _____

7.4 - EXISTING UTILITY INFORMATION

Company Name	Type of Utility	Phone Number	Conflicts
Frontier Power Company	Electric	800-624-8050	Unknown
General Telephone Company	Telephone		Unknown
Worldcom	Fiber Optic Cable	800-362-2764	Unknown

7.5 - DESCRIBE ANY OVERHEAD UTILITY CONFLICTS:

Communication cable is 28' 1" above grade at south edge of highway in SW quadrant near proposed gate.
RR stated that cable should not pose an issue to warning device in SW quadrant.

7.6 - DESCRIBE ANY UNDERGROUND UTILITY CONFLICTS:

Unknown

7.7 - UTILITIES PARALLEL TO TRACKS: Fiber optic cable (marker signs east of track)

7.8 - NEAR COMMERCIAL HIGH-TENSION LINES: NA

7.9 - NEAR COMMERCIAL SUBSTATIONS: NA



SECTION 8 – OBSTRUCTIONS

8.1 - OBSTRUCTIONS TO VISIBILITY OF DEVICES: Highway curve and uphill approach with trees

If no, skip to section 9.

8.2 - SOLUTION FOR OBSTRUCTION (PROVIDE CONTACT INFORMATION FOR OWNER):
Install a flasher mast with one-way lights 5' from railroad right-of-way edge in SE quadrant. Flashers to face west bound vehicles.

SECTION 9 – ROADWAY DATA

9.1 - TYPE OF ROADWAY SURFACE: Chip & seal

If different, specify crossing surface type: Timber & asphalt

9.2 - EXISTING ROADWAY WIDTH: 21'

If present, specify shoulder width: 2'

9.3 - PROPOSED ROADWAY WIDTH: NA

If present, specify shoulder width: _____

9.4 - CROSSING ANGLE: 69°

9.5 - VEHICLE SPEED: 55 mph

9.6 - IS CURBING PRESENT/REQUIRED: No/No

9.7 - ARE SIDEWALKS PRESENT: No

If yes, will they interfere with warning devices: _____

9.8 - ARE PEDESTRIAN GATES REQUIRED: No



SECTION 10 – SITE INFORMATION

10.1 - ENCROACHMENTS WITHIN RR PROPERTY:

No

If yes, describe, photograph, and include on FIELD SKETCH:

10.2 - WILL TOPOGRAPHY AFFECT INSTALLATION:

No

If yes, describe, photograph, and include on FIELD SKETCH:

10.3 - WILL DRAINAGE BE AFFECTED:

No

If yes, describe, photograph, and include on FIELD SKETCH:

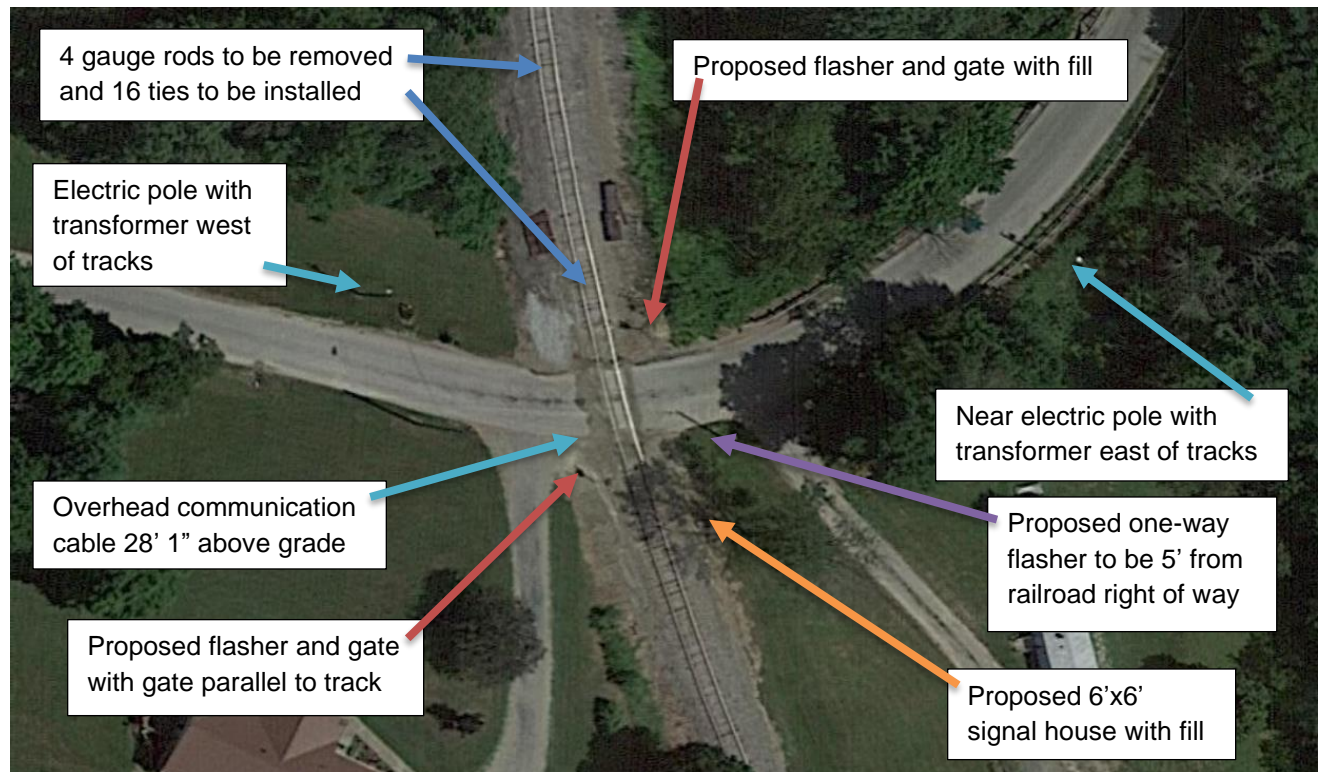
10.4 - CULVERTS BE EXTENDED/RELOCATED/REQUIRED:

No

10.5 - CONDUIT LENGTH REQUIRED:

30' and across track

10.6 - SITE SKETCH:





10.7 - ADDITIONAL COMMENTS/DETAILS/CONFLICTS:

Four gauge rods north of crossing are to be removed and 16 ties shall be installed.

County GIS map appears to show railroad centered on 60' of right-of-way south of highway.

10.8 - NE QUADRANT:

Existing crossbuck w/stop sign.

Proposed flasher and gate with fill needed.

Fiber optic marker sign.

10.9 - NW QUADRANT:

Phone pedestal.

10.10 - SE QUADRANT:

Place one-way flasher mast 25' from center of tracks.

Utility pole 8' from road edge and 27' from near rail.

Aggregate fill needed to build driveway.

Proposed signal house.

Proposed meter pole quadrant.

Fiber optic marker sign and phone pedestal.

10.11 - SW QUADRANT:

Utility pole 5' from road edge and 58' from near rail.

Existing crossbuck with stop sign.

Proposed flasher & gate with gate parallel to track to provide some separation to residence driveway.

Because of road layout, overhead communication cable should not interfere with proposed warning device operation.



SECTION 11 – PHOTO LOG

NW Quad viewing east



NW Quad viewing south



NE Quad viewing north (fiber optic marker sign in view)



NE Quad viewing south (proposed one-way flasher and signal house driveway location)



NE Quad viewing west (proposed flasher and gate location)



SE Quad viewing south (proposed signal house location, fiber optic marker sign in view)



SE Quad viewing west



SE Quad viewing northwest



SW Quad viewing south (proposed flasher and gate location, gate parallel to track to avoid driveway)



SW Quad viewing northwest (proposed flasher and gate location)



SW Quad viewing north (4 gauge rods in curve to be removed and 16 ties installed)



SW Quad viewing east (proposed flasher & gate, and across tracks: driveway and house location)



SW Quad viewing utility pole with overhead communication cable along south edge of crossing



SE Quad viewing phone pedestal and utility pole with overhead communication cable along south edge of crossing



NW Quad viewing phone pedestal



BASIS OF DESIGN



Region:	NORTHERN
Railroad:	OHIO CENTRAL RAILROAD
Subdivision:	OHC
Supervisor:	TODD HENSLEY
Railroad No.:	21OHC01R

Location Name:	CR 236
City, (County), ST:	BALTIC, (COSHOCOTON), OH
MP:	99.65
DOT #:	474233F
Prepared By:	TODD SOVANN
Date Prepared:	4/29/2021

Warning Time Calculation

Notes to User:

- 1) If any standard values are changed, please provide justification
- 2) Clearance maximum measured distance along highway from crossing stop line, warning device or 12 feet perpendicular (which ever is furthest) to 6 feet beyond far rail. (*Railroad-Highway Grade Crossing Handbook - Revised Second Edition 2007*)

Clearance Time Calculation

Clearance Distance	23	ft
Clearance time	0	s

Approach Length Calculation

Base Warning Time	30	sec	
Plus Clearance Time	0	sec	(Linked to calc above)
Equals Planned Warning Time	30	sec	
Plus Time for Traffic Preemption	0	sec	
Equals Total Design Warning Time	30	sec	
Plus Equipment Response Time	4	sec	
Plus Buffer Time	0	sec	
Plus Additional Time	0	sec	(Provide explanation)
Equals Total Warning Time	34	sec	
Times Maximum Design Train Speed	25	mph	
Times Ratio of fps to mph	1.470	fps/mph	
Equals Approach Circuit Length	1250	ft	(Rounded up to nearest foot)



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

January 22, 2021

Mr. Len Wagner
President & Legal Official (SVP)
Genesee & Wyoming/OHCR
201 N. Penn Street
Punxsutawney, PA 15767

RE: PE Authorization for COS OHCR CR236 DOT# 474233F PID# 114116

Dear Mr. Wagner:

A diagnostic review was held at the above grade crossing on August 18, 2020. The crossing has been recommended for the installation of lights and gates at the Ohio Central Railroad grade crossing DOT# 474233F.

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

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

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

Sincerely,


Greg Gronbach
Project Manager

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



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



Public Utilities Commission

Mike DeWine, Governor
Sam Randazzo, Chairman

Commissioners

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

November 13, 2020

Ohio Central Railroad
Mr. Jared Rishel
AVP Engineering Northern Region
Genesee & Wyoming Inc.
4349 Easton Way
Suite 110
Columbus, OH 43219

Re: Coshocton County, CR 236,
DOT#474-233F, hereinafter referred
to as the "Project"

Dear Mr. Rishel:

The Public Utilities Commission of Ohio (PUCO) has identified and the Ohio Rail Development Commission (ORDC) surveyed, on August 18, 2020, the above mentioned grade crossing for warning device upgrades. The location has been approved for flashing lights and gates.

The Project shall comply with Master Warning Device Agreement No. 003-A, dated November 20, 1990, and entered into by the State of Ohio and Ohio Central Railroad (RAILROAD). Furthermore, the RAILROAD shall comply with all applicable state and federal laws governing grade crossing safety programs.

Preliminary engineering and construction costs shall be borne one hundred percent (100%) by ORDC. Reimbursable costs will be limited by ORDC based upon approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to the RAILROAD and may be amended by the ORDC based upon revised estimates and bid tabulations. Additional costs must be approved in writing by the ORDC prior to being incurred. Emergency verbal authorizations by ORDC may be permitted but must be confirmed in writing within ten (10) business days of the verbal approval.

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

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

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

Sincerely,



John Williams
Director of Transportation
Public Utilities Commission of Ohio

Ohio Central Railroad

By _____

Title _____

Date _____



Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date November 20, 2020

LA CR 236
Coshocton County
Ohio Central Railroad

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

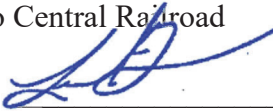
Sincerely,



John Williams
Director of Transportation
Public Utilities Commission of Ohio

Ohio Central Railroad

By



Title Leonard Wagner

Date 12/09/2020

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date _____

8/18/2020

Crossing at a glance:

ORDC Notes:

Please Sign In

James Tucker

ORDC

Name

Title

Organization

Phone Number

Email

Signature

Shawn Zurflay

PUCO

Name

Title

Organization

330-417-2590

Present

Phone Number

Email

Signature

Todd Coss

Coshocton County

Name

Title

Organization

740-622-2135

Present

Phone Number

Email

Signature

Todd Hensley

Ohio Central

Name

Title

Organization

740-502-7214

Present

Phone Number

Email

Signature

Name

Title

Organization

Phone Number

Email

Signature

Name

Title

Organization

Phone Number

Email

Signature

Name

Title

Organization

Phone Number

Email

Signature

Name

Title

Organization

Phone Number

Email

Signature

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

Date: 8/18/2020

Location Data			
Street or Road Name:		CR 236	
County:	Coshocton	Township:	
		US DOT No.:	474233F
City (in or near):	near Baltic	Railroad Name:	OHCR
		RR Milepost:	99.65
Safety Data (Obtain crash reports, if possible)			
	Initial Information (from database)		Revised
Number & dates of vehicle crashes in previous 5 years:	n/a		
Number & dates of pedestrian/bicycle crashes in previous 5 years:	n/a		
Hazard Ranking:	1806	Date Run:	04/08/2020

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

Railroad Data

Type of Train: ☒ Freight ☐ Intercity Passenger ☐ Transit ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	8	6 week
<1 per day? Trains per week	-	
Day thru trains	4	1
Night thru trains	2	Occasional
Switching	0	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks	0	
Maximum train speed	25	
Typical train speed	0-25	
Amtrak	-	

Are there other track(s) crossing this same roadway within 100ft of this crossing? ☐ Yes ☒ No

If yes, Crossing DOT# (if different) _____

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

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

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

Can one or more tracks be eliminated through the crossings? ☐ Yes ☒ No

Comments:

Circuitry: ☐ Constant Warning Time ☐ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other _____

Roadway Data		
Local Highway Authority: Coshocton County		
Roadway Characteristics	Initial Information (from database)	Revised
Average Daily Traffic	31 (2018)	161 2015 per LHA
Highway Paved	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Surface: <input checked="" type="checkbox"/> Blacktop <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete Other _____		
Roadway width (paved/travelled way): 20 ft		
Number of Highway Lanes	2	
Urban or Rural	Rural - Local	
Vehicle Speed: 55 MPH		
School Bus Operation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount 8 (PUCO)		
Location of nearby schools: 2 Amish schools 1 mile either side / Baltic village 1 mile		
Hazardous Materials Trucks: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount (from FRA) 5% LHA verified/changed?		
Shoulders: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is the Shoulder Surfaced? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, shoulder width: _____ ft.		
Is there existing guardrail along the roadway in crossing vicinity? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		NE Quad
Crossing Angle <input type="checkbox"/> 0-29° <input type="checkbox"/> 30-59° <input type="checkbox"/> 60-90° Measured in _____ Quadrant?		
Quadrant NE Curb & Gutter:	Quadrant SW Curb & Gutter:	
<input type="checkbox"/> Functional (Curb height = 4" or more)	<input type="checkbox"/> Functional (Curb height = 4" or more)	
<input type="checkbox"/> Non-functional (Curb height = less than 4")	<input type="checkbox"/> Non-functional (Curb height = less than 4")	
<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> None	
Is there a nearby intersection that could cause queuing over the crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, distance _____		
Is this intersection signalized? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are there signals currently interconnected with the existing crossing warning devices? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is there a 'Do Not Stop on Track' sign? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes:		
Improvement type _____ Lead Agency _____ Timeline/completion _____		

Pedestrian & Bicycle Data

Regular pedestrian usage: ☒ Yes ☐ No Volumes: ☒ Occasional ☐ <20 ☐ 20-60 ☐ >60

Is sidewalk present in the approach? ☐ Yes ☒ No Quadrants:

Does crossing surface accommodate pedestrians? ☐ Yes ☒ No

Both sides of roadway? ☐ Yes ☒ No If no, which side is paved?

Pedestrian generators in close proximity (e.g. schools, sports/entertainment venues)? ☐ Yes ☒ No

Comments:

Regular bicycle usage: ☒ Yes ☐ No

☒ Roadway ☐ Dedicated Lane (on street) ☐ Dedicated Path (off street) ☐ Shared Use (pedestrian/bicycle) Path
☐ Bikes must use sidewalk

Future plans for pedestrian or bicycle routes? ☐ Yes ☒ No

Comments:

Utility Information

Is commercial power available? ☒ Yes ☐ No

Utility Provider (Company Name) ?

Nearest Available Power Source — @ crossing

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

Comments:

Surface

Surface review form completed? ☐ Yes ☒ No

Sight Preview (REFER TO TABLES)

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table I) ☐ Yes ☒ No 600'

Is stopping sight distance adequate? (See Table 2) ☐ Yes ☒ No If no, which quadrant? NE 570'

When considering recommendations for bicycle treatments:

Bicycle sight distance adequate? ☒ Yes ☐ No If no, which quadrant? 250'

When considering recommendations for pedestrian treatments:

Pedestrian sight distance adequate? ☒ Yes ☐ No If no, which quadrant? 300'

Potential Red Flags / Project Challenges

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

N/A

Crossing Consolidation or Closure:

N/A

Real Estate or ROW:

N/A

Culvert / Drainage / Ballast Conditions:

N/A

Roadway and/or Sidewalks:

N/A

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

N/A

Environmental:

N/A

Utilities:

N/A

Other:

Potential Closure

Is it the consensus of the Diagnostic Review Team that this is a potential closure project?

NO

Explain reasons: LHA stated that if closed, the detour around would be too long.

Diagnostic Team Recommendations

<input type="checkbox"/> No improvements needed	Quadrants Needed
<input checked="" type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input type="checkbox"/> AFLS / Cants	
<input checked="" type="checkbox"/> AFLS / Gates	NE + SW w/ additional flasher MAST SE quad
<input type="checkbox"/> AFLS / Gates / Cants	
<input checked="" type="checkbox"/> Bells / number	
<input type="checkbox"/> Upgrade circuitry / type	
<input type="checkbox"/> Sidelights	
<input checked="" type="checkbox"/> LED Upgrades	12" LED
<input type="checkbox"/> Guardrail Needed	
<input type="checkbox"/> Install/Replace curb	
<input type="checkbox"/> Bungalow placement & offset from rail & highway	
<input type="checkbox"/> Other (define)	
Comments: * The team felt that even if the rerank causes it to fall off the list. The sight distance issue in the NE quad should qualify it for an upgrade	
<input type="checkbox"/> Install/upgrade traffic signal preemption	
Other (define):	



Diagnostic Team Recommendations (cont.)


PEDESTRIAN/BICYCLE Treatments (additional, not included above)

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

Comments:

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



Clearing Sight Distances

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

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

Notes:

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

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

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

Stopping Sight Distances

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

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

Notes:

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

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

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

Bicycle & Pedestrian Clearing Sight Distances

Clearing Sight Distance from Stop Position*											
Crossing of one track								Crossing 2 Tracks		Crossing 3 Tracks	
Train Speed	Car	Single-unit Truck	Bus	WB-50 Semitruck	65-foot Double Truck	Pedestrian ¹	Bicyclist ²	Pedestrian ¹	Bicyclist ²	Pedestrian ¹	Bicyclist ²
10	105	185	200	225	240	120	100	180	120	240	140
20	205	365	400	450	485	240	200	360	240	480	270
25	255	455	500	560	605	300	250	450	290	590	340
30	310	550	600	675	725	360	290	530	350	710	410
40	410	730	795	895	965	480	390	710	470	950	540
50	515	910	995	1,120	1,205	590	490	890	580	1180	670
60	615	1,095	1,195	1,345	1,445	710	580	1060	700	1420	810
70	715	1,275	1,395	1,570	1,680	830	680	1240	810	1650	940
80	820	1,460	1,590	1,790	1,925	950	780	1420	930	1890	1080
90	920	1,640	1,790	2,015	2,165	1060	870	1590	1040	2120	1210

*A single track, 90-degree, level crossing

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

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

**This foregoing document was electronically filed with the Public Utilities
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in

Case No(s). 22-0033-RR-FED

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Ohio Central Railroad Crossing, DOT#474-233F, CR 236 in Coshocton County, Ohio. electronically filed by Mrs. Jill A. Henry on behalf of PUCO/Rail Division