

Memo

To: Docketing Division
From: Jill Henry, Chief, Rail Division
Cc: PUCO Legal Department
Date: 5/10/2022

Re: PUCO Case No. 22-493-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at Michigan Southern Railway Grade Crossing, DOT# 477-820S, on Harrmann Street/CR 43 in Paulding County, Ohio.

On February 12, 2021, the Ohio Rail Development Commission (ORDC) authorized funding for Michigan Southern Railway (MSO) to flashing lights at Harrmann Street/CR 43, DOT#477-820E, grade crossing in Paulding County, Ohio. The crossing was surveyed, on August 6, 2020, and was found to warrant the upgrades. The electric utility provider for this crossing is AEP-Ohio.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$266,063.41 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in twelve 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:

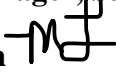
Michigan Southern Railway
DBA Napoleon, Defiance & Western Railway
Brice Travis
Regional General Manager
817 Fifth Street
Defiance, OH 43512

Paulding County Engineer
Travis McGarvey
County Engineer
801 West Wayne Street
Paulding, OH 45879

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

AEP-Ohio

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

TO: John Williams, Director, Transportation, PUCO
FROM: Allen Bell, Manager, Safety Section, ORDC
BY: Michael Lynch 
SUBJECT: PAU Harrmann Rd DOT 477820S PID 114017
DATE: 5/10/2022

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on 8/06/2020. The Public Utilities Commission of Ohio (PUCO) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights, gates and two active warning devices on SR 424. 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 twelve (12) 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.

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

c: Jill Henry, Rail Division Chief, PUCO
ORDC Project Manager (file)



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Mark Policinski, Chair

April 11, 2022

Michigan Southern Railway
Mr. Brice Travis
Regional General Manager
Napoleon, Defiance & Western Railway
817 Fifth Street
Defiance, Ohio 43512

RE: Construction Authorization, CR 43 Harrmann St in Paulding County
DOT# 477820S
PID# 114017

Dear Mr. Brice:

The plan and estimate dated 03/23/2022 for the referenced project has been reviewed and is acceptable. The Napoleon, Defiance & Western Railway (NDW) 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.

The estimated total project cost of \$266,063.41 is acceptable. 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. 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 the NDW accepting the following instructions:

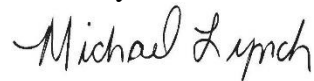
1. NDW's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Michael Lynch, ORDC, email Michael.lynch@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.henry@puco.state.oh.us. NDW's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. NDW 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 NDW.



3. NDW's project foremen will notify Michael Lynch 614-395-1824 (mobile) or Michael.lynch@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. NDW will furnish two (2) copies of each partial bill to ORDC. Lump Sum billing will not be accepted. Please find the enclosed ODOT Purchase Order to reference when billing.
6. NDW 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,

A handwritten signature in black ink that reads "Michael Lynch". The signature is written in a cursive, flowing style.

Michael Lynch
Project Manager

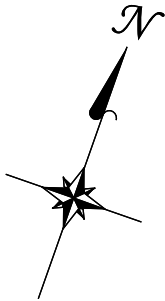
C:

John Williams, Director of Transportation, PUCO
Jill Henry, Rail Chief, PUCO
Heather Hamilton, ORDC
ORDC (file)

PRINTS ARE PRELIMINARY
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NO LEFT TURN
SIGNAL



NO RIGHT TURN
SIGNAL

NBS
686 HZ

NBS
686 HZ

T1

T2

R1

R2

GCP 3000+
686 HZ / 4 KHZ
TRACK 1

GATE #1

GATE #2

6x6

A.C.
SERVICE

PRIVATE DR.

HARRMANN ST.

TRAVEL LANE

TRAVEL LANE

NOTES:

1. TRACK WIRE LEADS FROM THE CONTROL SHELTER TO TERMINATION AT RAIL SHOULD FOLLOW THE MANUFACTURER'S RECOMMENDATION AND STANDARD PRACTICES FOR THE TYPE OF EQUIPMENT BEING INSTALLED.
2. TRANSMITTER WIRES T1 AND T2 MUST BE RUN TO THE TRACK ON THE CONTROL SHELTER SIDE OF CROSSING
3. APPROACH DISTANCES ARE TO BE MEASURED FROM THE CIRCUIT FEED POINTS (TRACK WIRE CONNECTIONS).
4. ALL CONTROL SHELTER WIRING TO BE #16 AWG FLEX UNLESS OTHERWISE SPECIFIED.
5. SIGNAL FOUNDATION PLACEMENT AND SIGNAL STANDARDS ARE TO BE PER THE MOST CURRENT M.U.T.C.D., STATE AND LOCAL REQUIREMENTS WHEN APPLICABLE. THE TOP OF THE SIGNAL FOUNDATION SHOULD BE NO MORE THAN 4 INCHES ABOVE THE GROUND AND SHOULD BE AT THE SAME ELEVATION AS THE CROWN OF THE ROADWAY. IN THE EVENT THESE MEASUREMENTS ARE NOT OBTAINABLE CONSULT THE CURRENT M.U.T.C.D. MANUAL, STATE AND LOCAL REQUIREMENTS.
6. ALL LIGHT UNITS TO BE LED TYPE.

LEGEND:

- SLIDE TEST TERMINAL
- GOLD NUT TEST TERMINAL
- INSULATED NUT
- 4 POST TERMINAL
SEE DETAIL A SHEET 11
- HD EQUALIZER
- HD ARRESTER TO GROUND
- TWISTED WIRE (2 TURNS PER FOOT)
- RIGID CONDUIT
- GUARD RAIL

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.



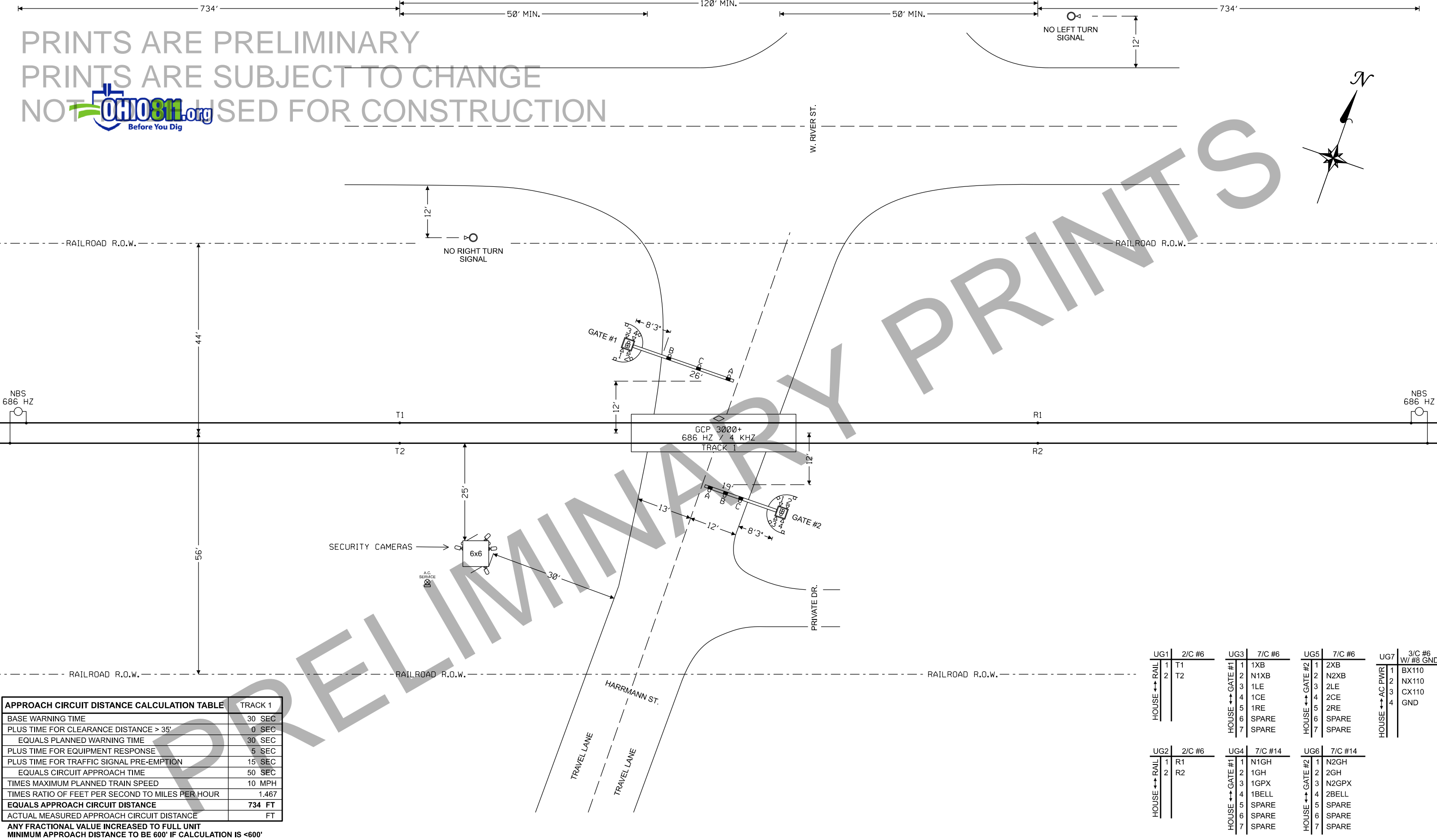
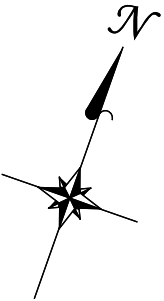
NAPOLEON, DEFIANCE & WESTERN RAILWAY

-NDW-

DOT# 477 820 S GPS: 41.1842736, -84.7271750 MILEPOST# 70.85

DRAWN: P.B.	HARRMANN ST. - GRADE CROSSING	PRELIMINARY
CHECKED: H.M.C.	ANTWERP, OH	DRAWING NO.
APPROVED:	NDW SUB-DIVISION	RCP-215
DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 1 OF 13

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APPROACH CIRCUIT DISTANCE CALCULATION TABLE	
TRACK 1	
BASE WARNING TIME	30 SEC
PLUS TIME FOR CLEARANCE DISTANCE > 35'	0 SEC
EQUALS PLANNED WARNING TIME	30 SEC
PLUS TIME FOR EQUIPMENT RESPONSE	5 SEC
PLUS TIME FOR TRAFFIC SIGNAL PRE-EMPTION	15 SEC
EQUALS CIRCUIT APPROACH TIME	50 SEC
TIMES MAXIMUM PLANNED TRAIN SPEED	10 MPH
TIMES RATIO OF FEET PER SECOND TO MILES PER HOUR	1.467
EQUALS APPROACH CIRCUIT DISTANCE	734 FT
ACTUAL MEASURED APPROACH CIRCUIT DISTANCE	FT

ANY FRACTIONAL VALUE INCREASED TO FULL UNIT
MINIMUM APPROACH DISTANCE TO BE 600' IF CALCULATION IS <600'

UG1	2/C #6	UG3	7/C #6	UG5	7/C #6	UG7	3/C #6 W/ #8 GND
RAIL	1 T1	GATE #1	1 1XB	GATE #2	1 2XB	RAIL	1 BX110
HOUSE	2 T2	2 N1XB	2 2XB	2 N2XB	2 2GH	AC PWR	2 NX110
		3 1LE	3 1GPX	3 N2GPX	3 2BELL		3 CX110
		4 1CE	4 1BELL	4 2BELL	4 SPARE		4 GND
		5 1RE	5 SPARE	5 SPARE	5 SPARE		
		6 SPARE	6 SPARE	6 SPARE	6 SPARE		
		7 SPARE	7 SPARE	7 SPARE	7 SPARE		
UG2	2/C #6	UG4	7/C #14	UG6	7/C #14		
RAIL	1 R1	GATE #1	1 N1GH	GATE #2	1 N2GH		
HOUSE	2 R2	2 1GH	2 2GH	2 2GH	2 2GH		
		3 1GPX	3 N2GPX	3 N2GPX	3 N2GPX		
		4 1BELL	4 2BELL	4 2BELL	4 2BELL		
		5 SPARE	5 SPARE	5 SPARE	5 SPARE		
		6 SPARE	6 SPARE	6 SPARE	6 SPARE		
		7 SPARE	7 SPARE	7 SPARE	7 SPARE		

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NAPOLEON, DEFIANCE & WESTERN RAILWAY

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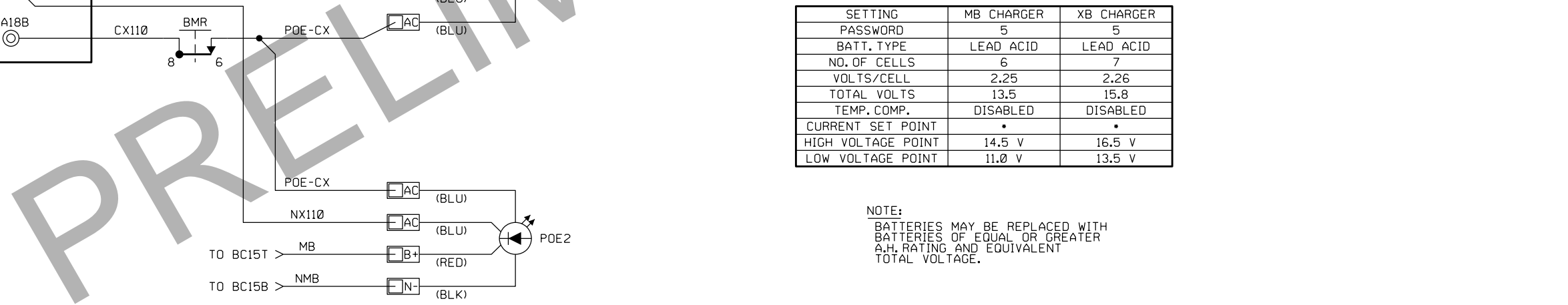
DOT# 477 820 S GPS: 41.1842736, -84.7271750 MILEPOST# 70.85

DRAWN: P.B.	HARRMANN ST. - GRADE CROSSING	PRELIMINARY
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CHARGER SETTINGS

SETTING	MB CHARGER	XB CHARGER
PASSWORD	5	5
BATT. TYPE	LEAD ACID	LEAD ACID
NO. OF CELLS	6	7
VOLTS/CELL	2.25	2.26
TOTAL VOLTS	13.5	15.8
TEMP. COMP.	DISABLED	DISABLED
CURRENT SET POINT	•	•
HIGH VOLTAGE POINT	14.5 V	16.5 V
LOW VOLTAGE POINT	11.0 V	13.5 V

NOTE:
BATTERIES MAY BE REPLACED WITH BATTERIES OF EQUAL OR GREATER A.H. RATING AND EQUIVALENT TOTAL VOLTAGE.



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GCP3000+ PROGRAM
INFORMATION

- * = FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE GCP3000+ INSTRUCTION MANUAL.
- ** = FOR FUTURE USE

LOCATION INFO

SITE NAME	HARRMANN ST.
DOT#	477820S
MILEPOST	70.85
TIME ZONE	CST (GMT-5:00)

GENERAL CONFIG.

NO. OF TRACKS	1
RIO MODULE USED?	YES
NUMBER OF DAXES	1
ADV. PRE-EMPT TIMER	15 SEC.
OOS CONTROL	OOS IPS
EXTERNAL EVENT	NO

TK1 GCP BASIC

GCP FREQUENCY	686 HZ
UNIDIRNL/BIDIRNL	BIDIRNL
GCP XMIT LEVEL	MEDIUM*
PRED/MS MODE	PRED
APPR. DISTANCE	734 FT
ISLAND USED	INTERNAL
ISLAND DISTANCE	170
ISLAND FREQUENCY	4.0 KHZ
ISLAND PICKUP DELAY	4 SEC

TK1 GCP PRIME

PRIME WARNING TIME	35 SEC
PRIME PRED. OFFSET	0 FT
PRIME PICKUP DELAY	15 SEC
UAX PICKUP DELAY	0 SEC

TK1 GCP ADVANCED

ENHANCED DETECTION	ON (HIGH)
SPEED LIMITING USED?	YES
STATION STOP TIMER	20 SEC
TRAILING SWITCH LOGIC	ON
LOW EZ DETECTION (EZ=70)	OFF
POSITIVE START EZ LEVEL	0 (NOT USED)
SUDDENT SHUNT DETECTION LEVEL	0 (NOT USED)

DAX A PRE-EMPT

DAX A TRACK ASSIGNMENT	TRACK 1
DAX A WARNING TIME	45
DAX A OFFSET DISTANCE	0 FT
DAX A PICKUP DELAY	15 SEC

TRACK 1 MS CONTROL/TRANSFER

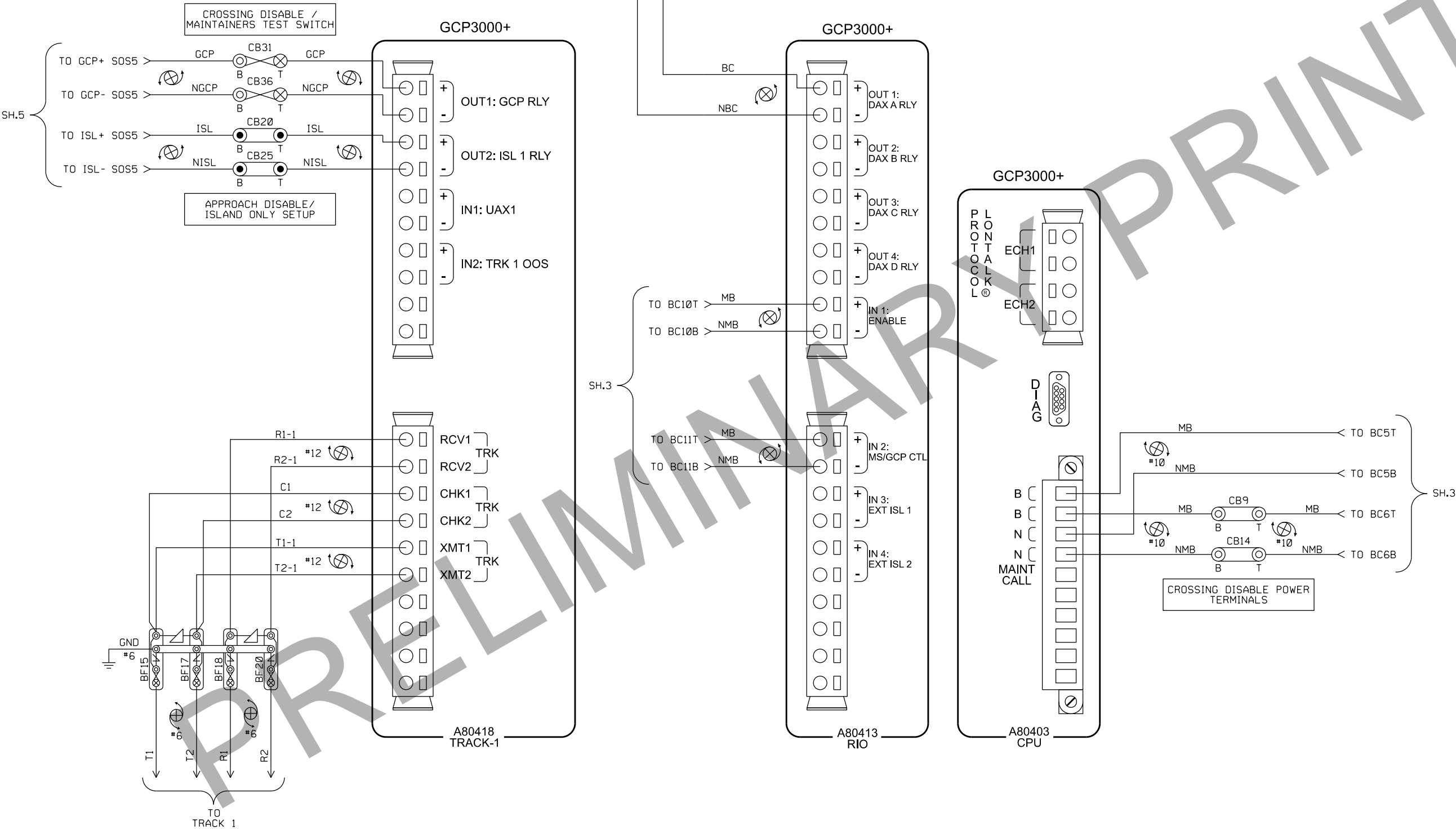
MS SENSITIVITY LEVEL	NORMAL
SWITCH TO MS EZ LEVEL	10
TRANSFER DELAY MS TO GCP	1 MIN

TRACK 1 MAINTENANCE

LOW EX ADJUSTMENT	0 *
COMPENSATION VALUE	1300 *

TRACK 1 CALIBRATION PARAMETERS

COMPUTED DISTANCE	*
LINEARIZATION STEPS	*



REVISIONS

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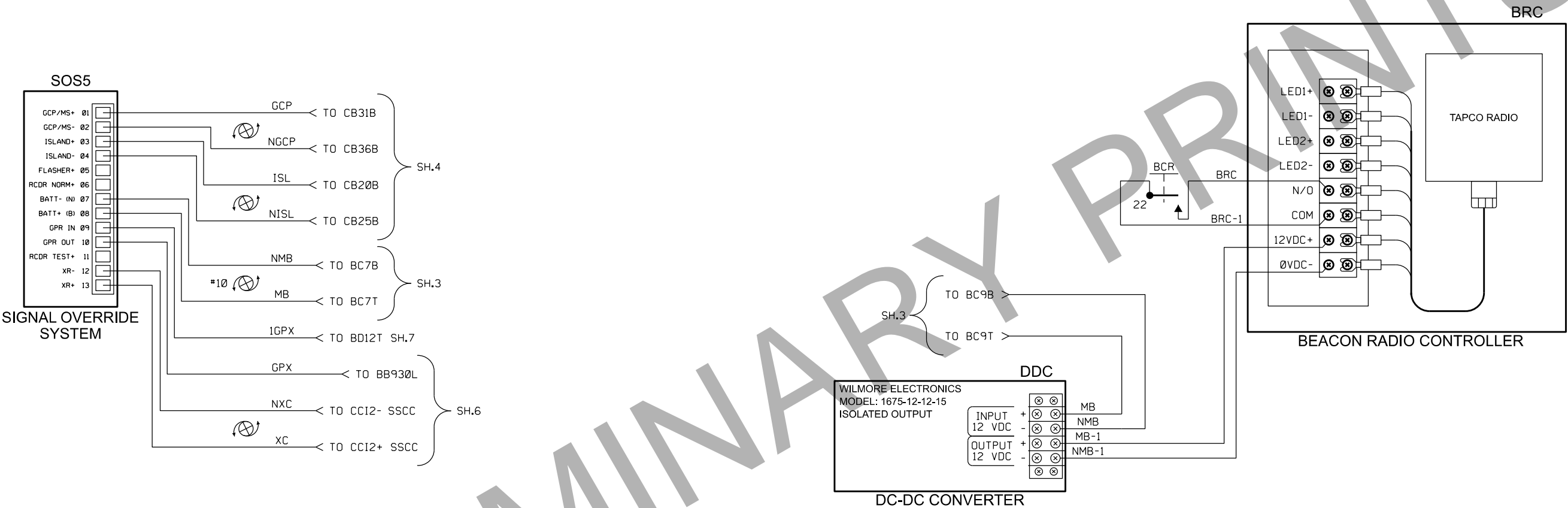
NAPOLEON, DEFIANCE & WESTERN RAILWAY

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NAPOLEON, DEFIANCE & WESTERN RAILWAY			
-NDW-			
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DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 5 OF 13	

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NOTE:
1. ALL WIRE ON THIS SHEET TO BE
#10 AWG UNLESS OTHERWISE NOTED

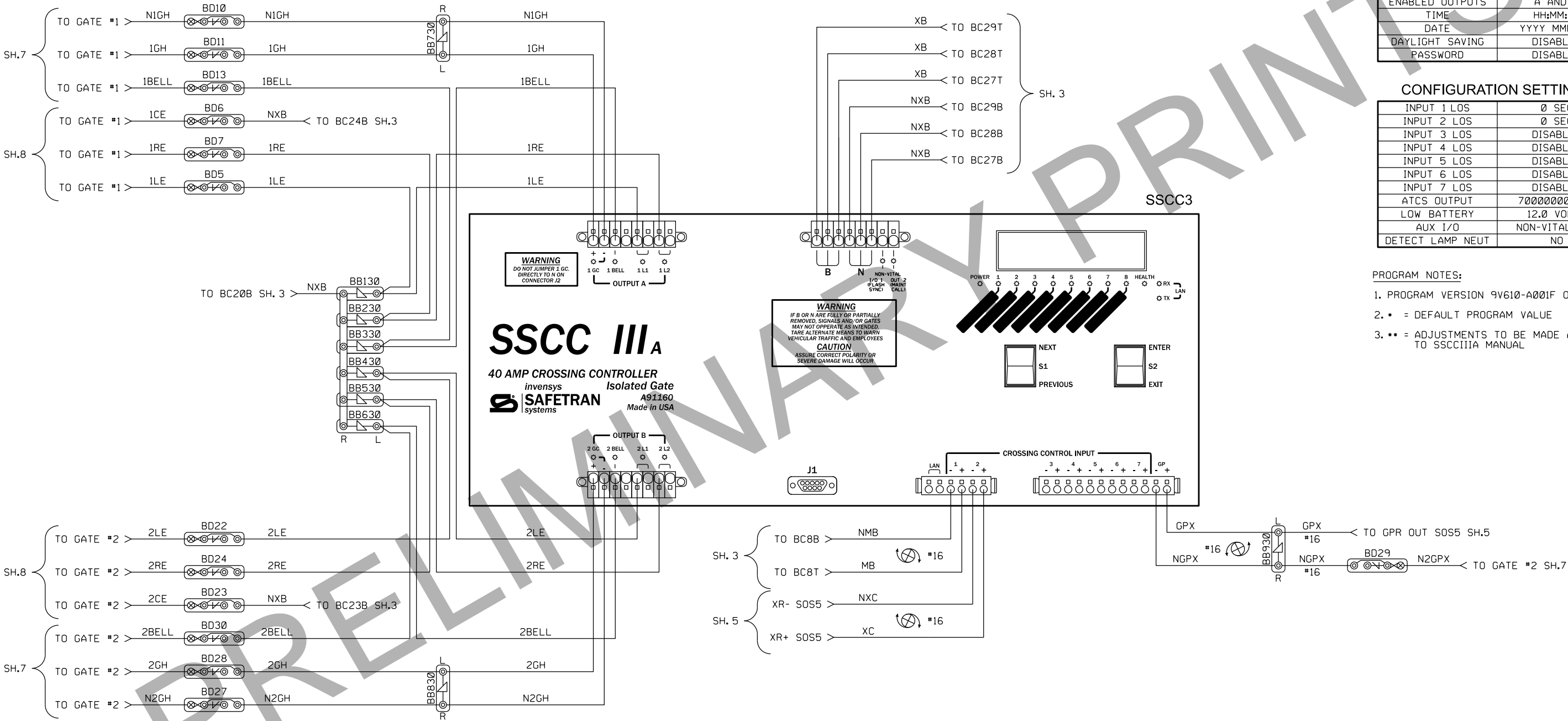
PROGRAM SETTINGS

FLASH RATE	50 FPM
1GC DELAY	6 SEC
2GC DELAY	6 SEC
GATE RISING BELL	ON
MIN ACTIVATE TIMER	0 SEC
ENABLED INPUTS	1 THRU 2
ENABLED OUTPUTS	A AND B
TIME	HH:MM:SS
DATE	YYYY MM DD
DAYLIGHT SAVING	DISABLED
PASSWORD	DISABLED

CONFIGURATION SETTINGS

INPUT 1 LOS	0 SEC
INPUT 2 LOS	0 SEC
INPUT 3 LOS	DISABLED
INPUT 4 LOS	DISABLED
INPUT 5 LOS	DISABLED
INPUT 6 LOS	DISABLED
INPUT 7 LOS	DISABLED
ATCS OUTPUT	700000000000
LOW BATTERY	12.0 VOLTS
AUX I/O	NON-VITAL OUT
DETECT LAMP NEUT	NO

PROGRAM NOTES:
1. PROGRAM VERSION 9V610-A001F OR LATER
2. * = DEFAULT PROGRAM VALUE
3. ** = ADJUSTMENTS TO BE MADE ACCORDING TO SSCCIII A MANUAL



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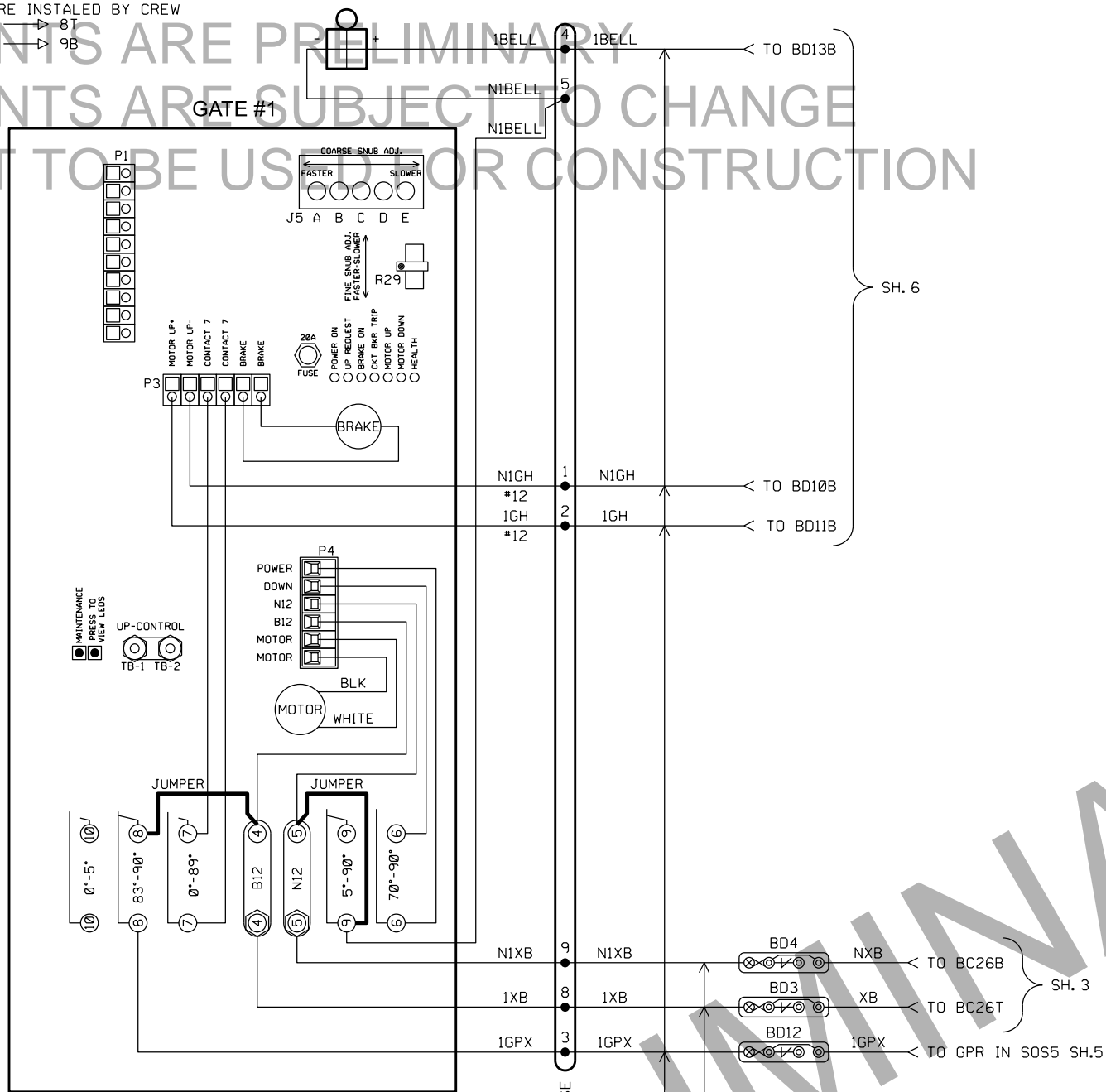
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NOTE:

WIRE INSTALED BY CREW

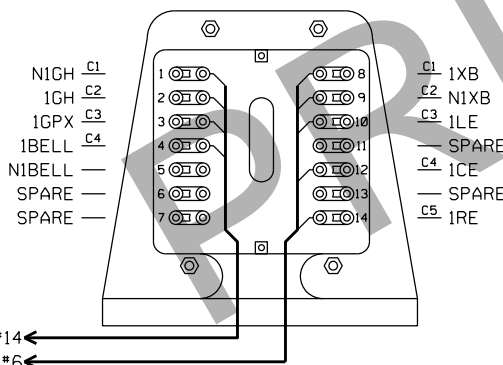
4T → 8T
5T → 9T

BELL #1



SIEMENS MODEL S-60

GATE #1
JCT BOX BASE



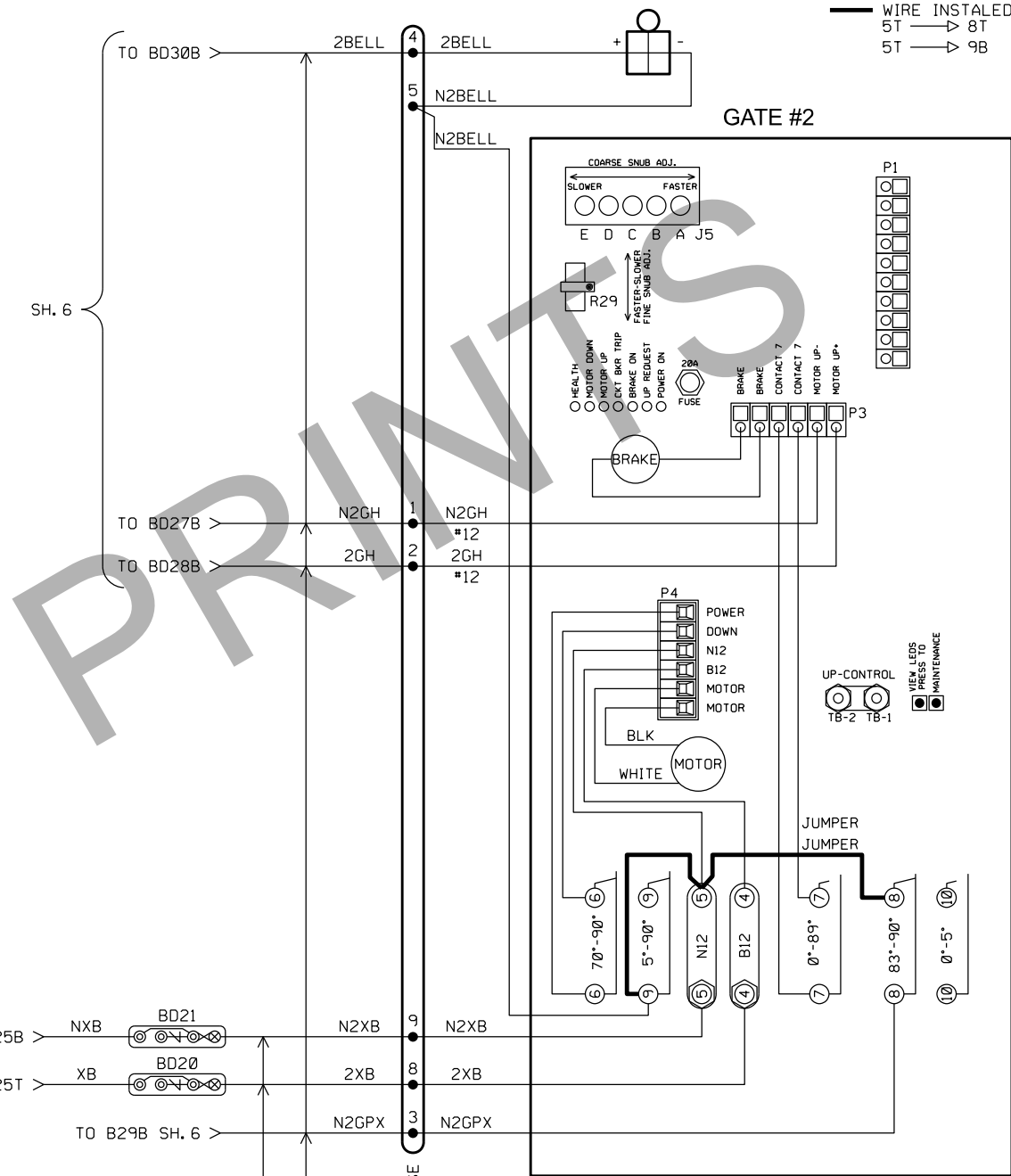
REVISIONS

NOTE:

WIRE INSTALED BY CREW

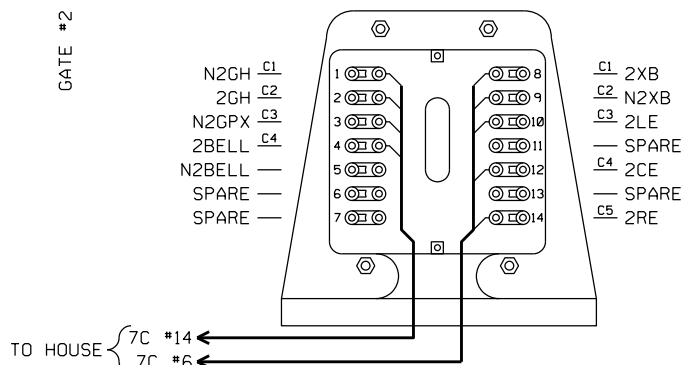
5T \longrightarrow 8T
5T \longrightarrow 9B

BELL #2



SIEMENS MODEL S-60

GATE #2
JCT BOX BASE



NOTE:

1. ALL FIELD INSTALLED WIRE ON THIS
SHEET TO BE #10 AWG UNLESS OTHERWISE NOTED

S-60 GATE CONTACT FUNCTIONS

CONTACT	CLOSED	FUNCTION
6	70°-90°	POWER DOWN
7	0°-89°	POWER UP
8	83°-90°	FLASHING LIGHT CONTROL
9	5°-90°	BELL
10	0°-5°	GATE DOWN INDICATION



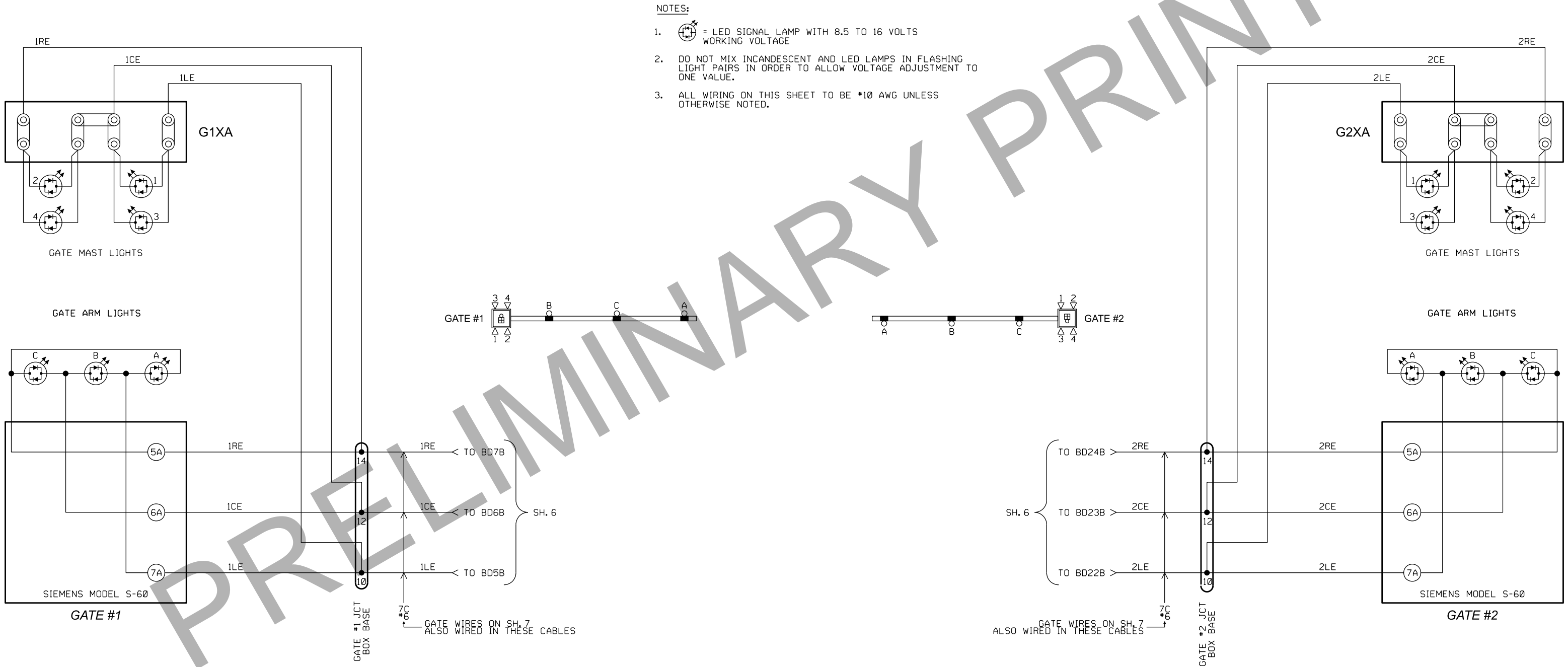
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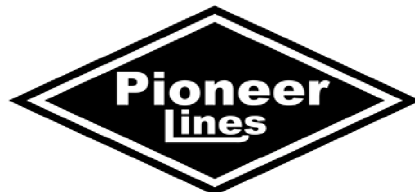
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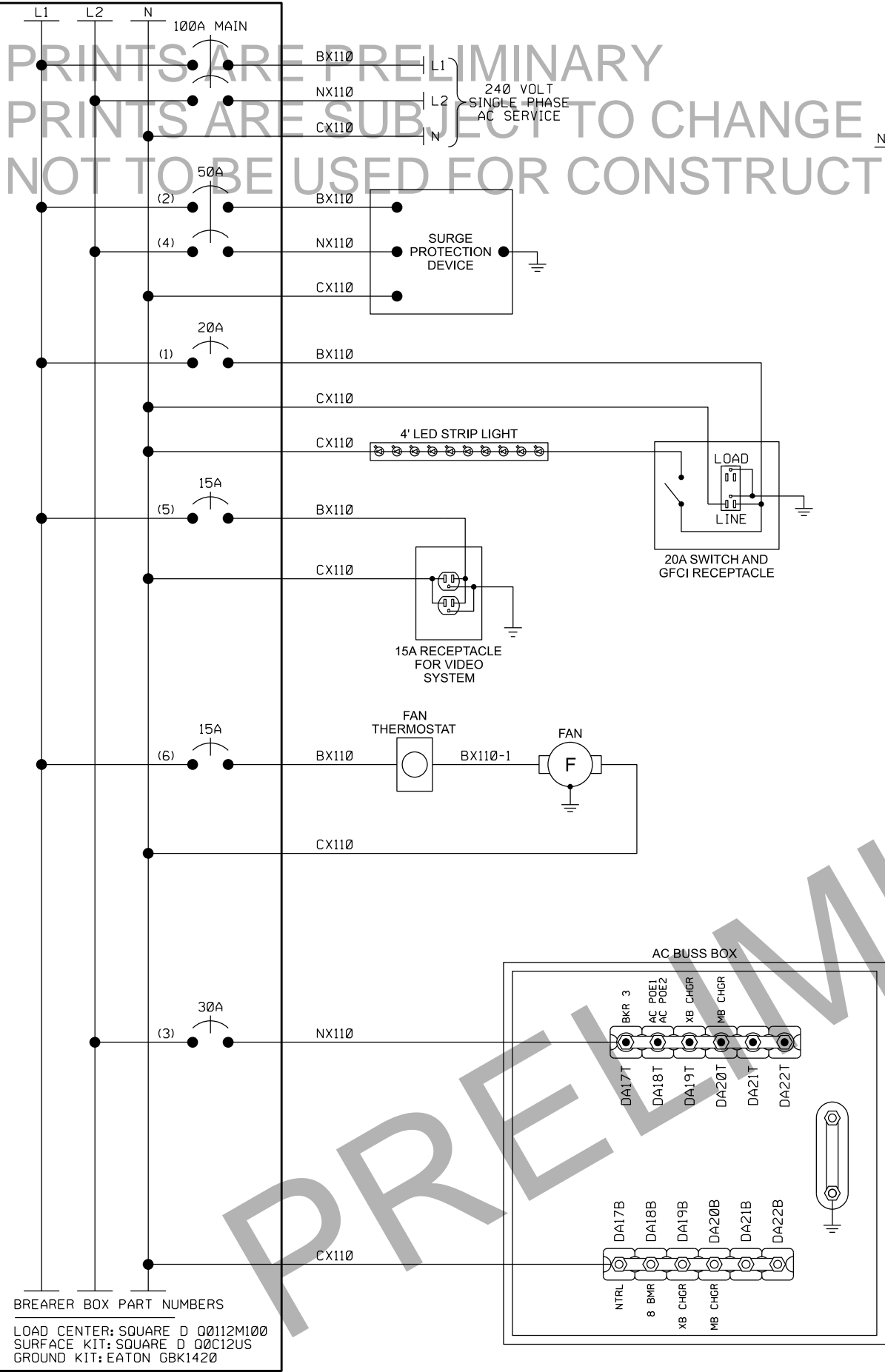
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REVISIONS			THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.		NAPOLEON, DEFIANCE & WESTERN RAILWAY		
					-NDW-		
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			DRAWN: P.B. CHECKED: H.M.C. APPROVED: DATE: 03-10-22		HARRMANN ST. - GRADE CROSSING ANTWERP, OH NDW SUB-DIVISION DRAWN BY CDL ELECTRIC INC.		PRELIMINARY DRAWING NO. RCP-215 SHEET 9 OF 13

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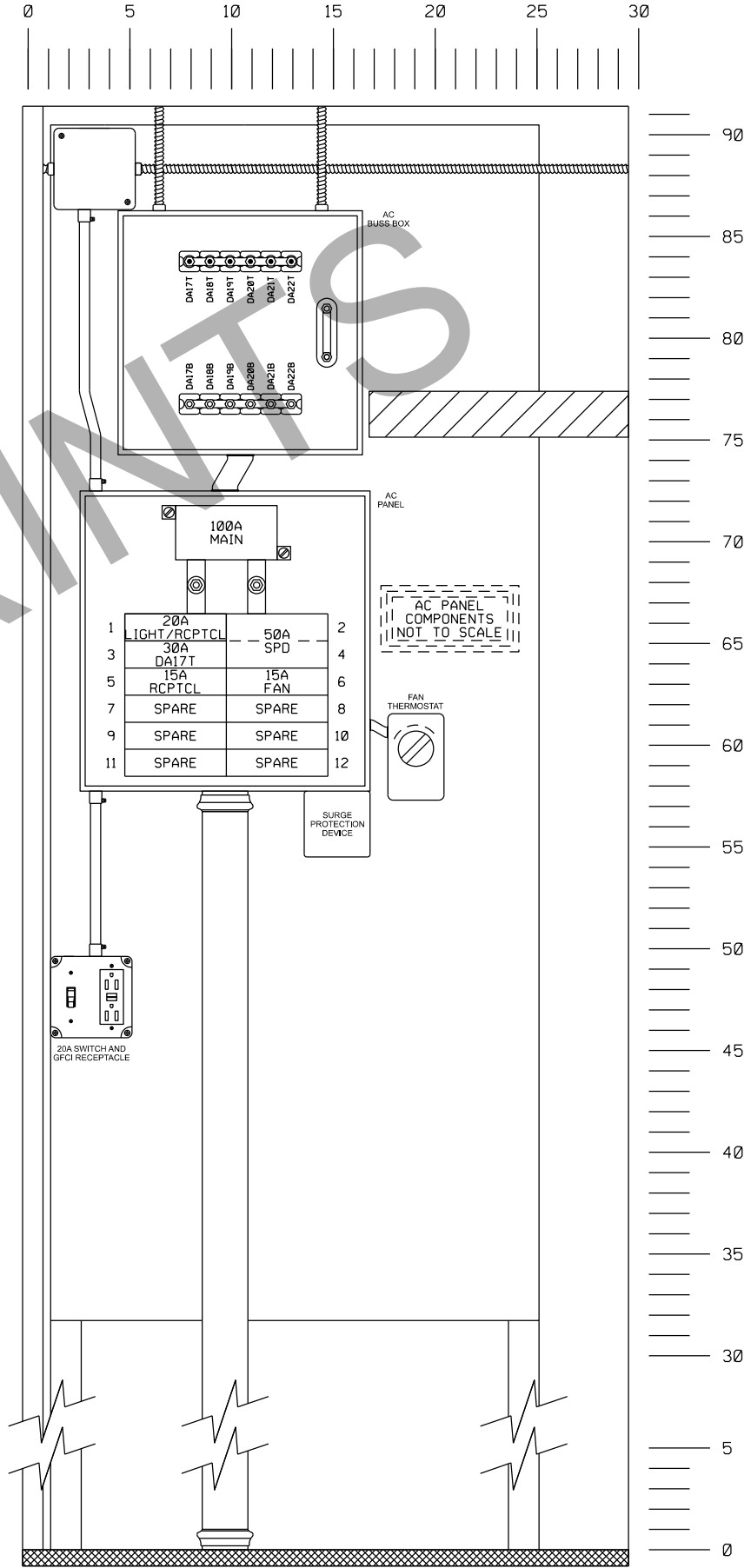


BREARER BOX PART NUMBERS
LOAD CENTER: SQUARE D Q0112M100
SURFACE KIT: SQUARE D Q0C12US
GROUND KIT: EATON GBK1420

NOTES:

- USE THE FOLLOWING COLOR CODE WHEN POSSIBLE:
GRN - GREEN - SAFETY EQUIPMENT GROUND
WHT - WHITE - CX110 (NEUTRAL)
BLK - BLACK - NX110 (L2)
RED - RED - BX110 (L1)
EXCEPTIONS TO THE ABOVE COLOR CODE ARE THE PRE-WIRED, SEALED ARRESTORS UNITS MOUNTED ON THE BREARER BOX WHICH HAVE TWO BLACK AND ONE WHITE WIRE EACH.
- MINIMUM WIRE SIZE BY BREARER RATING:
10 AMP - NO. 16 AWG THHN OR THWN
15 AMP - NO. 14 AWG THHN OR THWN
20 AMP - NO. 12 AWG THHN OR THWN
30 AMP - NO. 10 AWG THHN OR THWN
50 AMP - NO. 6 AWG THHN OR THWN *
100 AMP - NO. 4 AWG THHN OR THWN

* IF MANUFACTURER RECCOMENDATIONS DIFFER FROM ABOVE VALUES, USE MANUFACTURER VALUES.
- GROUND FAULT INTERRUPT (GFCI) MUST BE USED ON ALL CIRCUITS SERVING EQUIPMENT OUTSIDE THE BUNGALOW. RECEPTACLE MOUNTED GFCI MAY BE USED INSTEAD OF BREARER TYPE.
- ALL GROUND WIRES ON THIS SHEET RUN TO BREARER BOX GROUND BUS.



SIDE D

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.

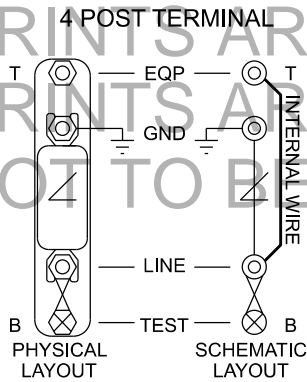


NAPOLEON, DEFIANCE & WESTERN RAILWAY

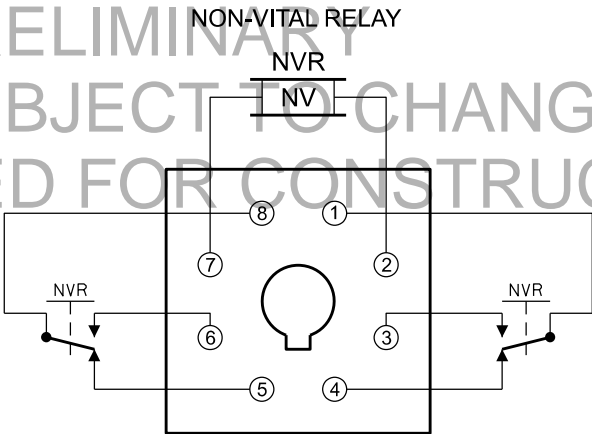
-NDW-

DOT# 477 820 S	GPS: 41.1842736, -84.7271750	MILEPOST# 70.85
DRAWN: P.B.	HARRMANN ST. - GRADE CROSSING	PRELIMINARY
CHECKED: H.M.C.	ANTWERP, OH	DRAWING NO.
APPROVED:	NDW SUB-DIVISION	RCP-215
DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 10 OF 13

PRINTS ARE PRELIMINARY
PRINTS ARE SUBJECT TO CHANGE
NOT TO BE USED FOR CONSTRUCTION



DETAIL "A"



DETAIL "B"

EQUIPMENT P/N LIST	
DESCRIPTION	PART NUMBER
SSCCIIIA	A91160
ARRESTOR	202216-001
EQUALIZERS	202217-000
XR	400004

SIDE D

6' X 6' HOUSE LAYOUT

SIDE A

AC PANEL
LOCATED
BELOW AC
BUSS BOX

AC BUSS BOX

TERMINAL BOARD

SIDE B

SIDE C

POE2

POE1

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.



NAPOLEON, DEFIANCE & WESTERN RAILWAY

-NDW-

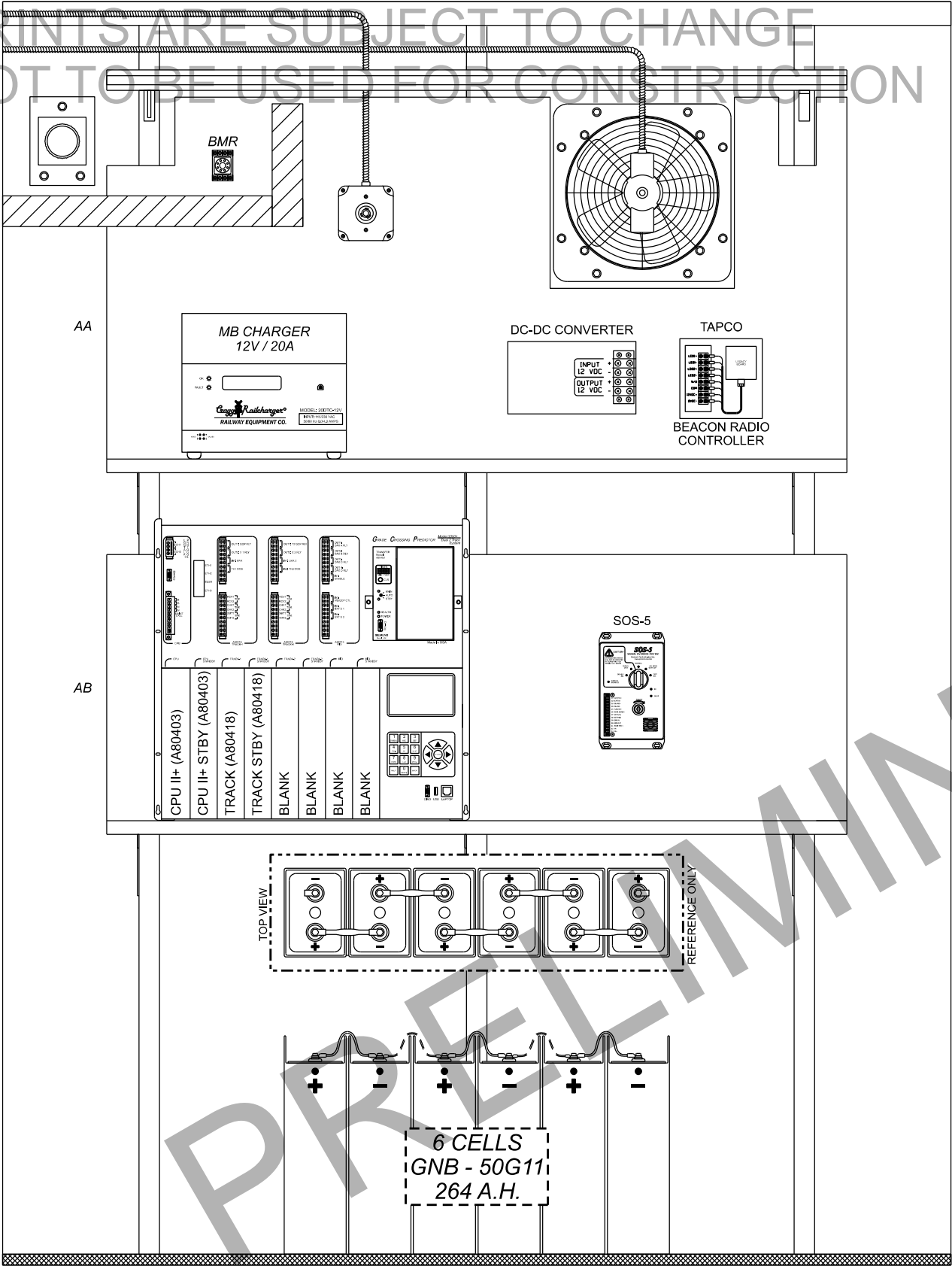
DOT# 477 820 S GPS: 41.1842736, -84.7271750 MILEPOST# 70.85

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CHECKED: H.M.C.	ANTWERP, OH	DRAWING NO.
APPROVED:	NDW SUB-DIVISION	RCP-215
DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 11 OF 13

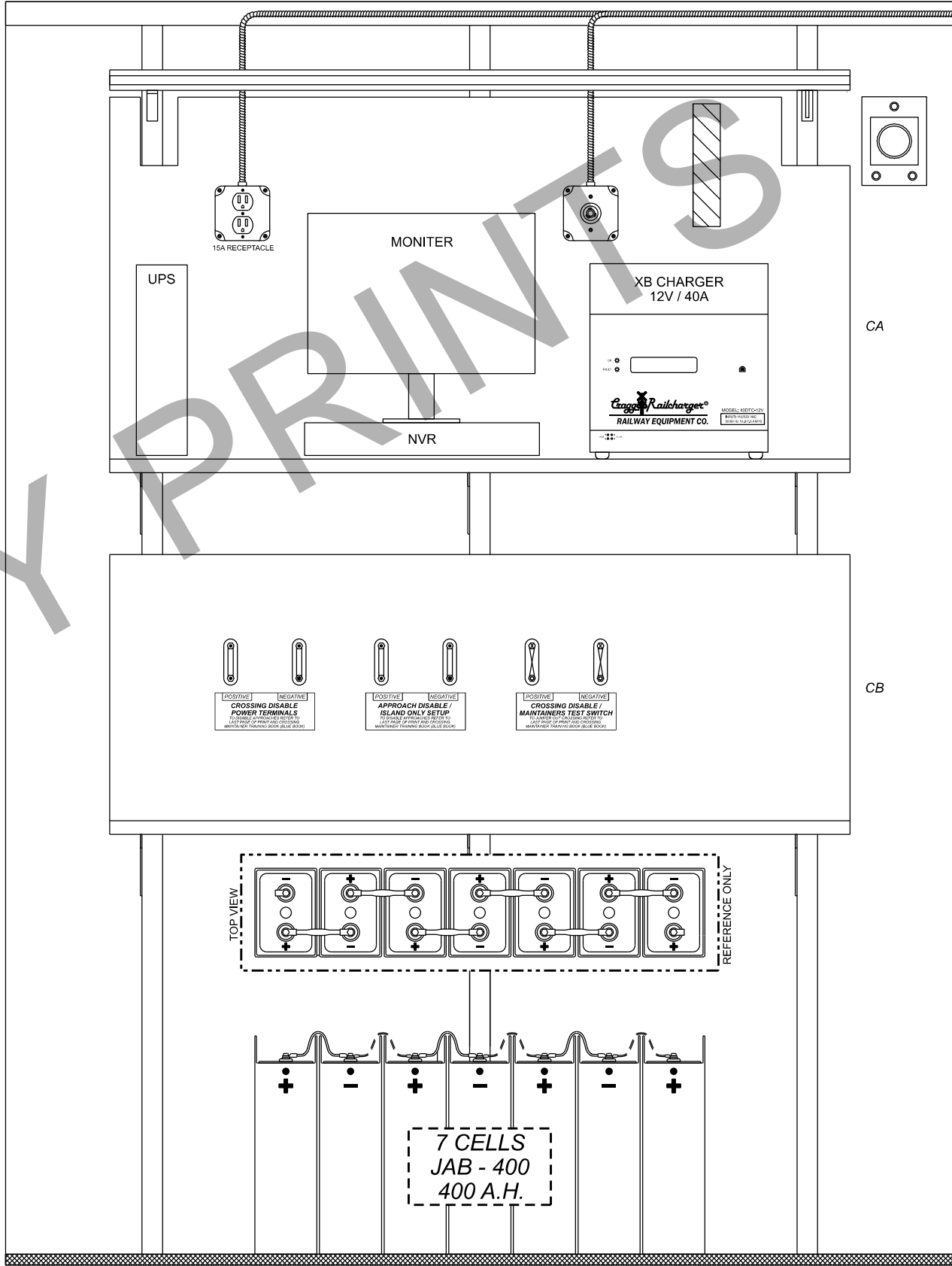
PRINTS ARE PRELIMINARY
PRINTS ARE SUBJECT TO CHANGE
NOT TO BE USED FOR CONSTRUCTION

EQUIPMENT P/N LIST	
DESCRIPTION	PART NUMBER
POE LIGHTS	TSL-POK-WCF-AB1
BMR	Ø4R7317
XTI-1S MODULE	251336-000
VIO-86S MODULE	251380-000
MB CHARGER	20DTC-12V
MB BATTERY	JAB-250
XB CHARGER	40DTC-12V
XB BATTERY	JAB-400

- NOTES:
1. BATTERIES MAY BE REPLACED WITH BATTERIES OF EQUAL OR GREATER A.H. RATING AND EQUIVALENT TOTAL VOLTAGE.
 2. CHARGERS MAY BE REPLACED WITH CHARGERS OF EQUIVALENT INPUT AND OUTPUT VOLTAGES AND AMPERAGE.



SIDE A



SIDE C

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.



NAPOLEON, DEFIANCE & WESTERN RAILWAY

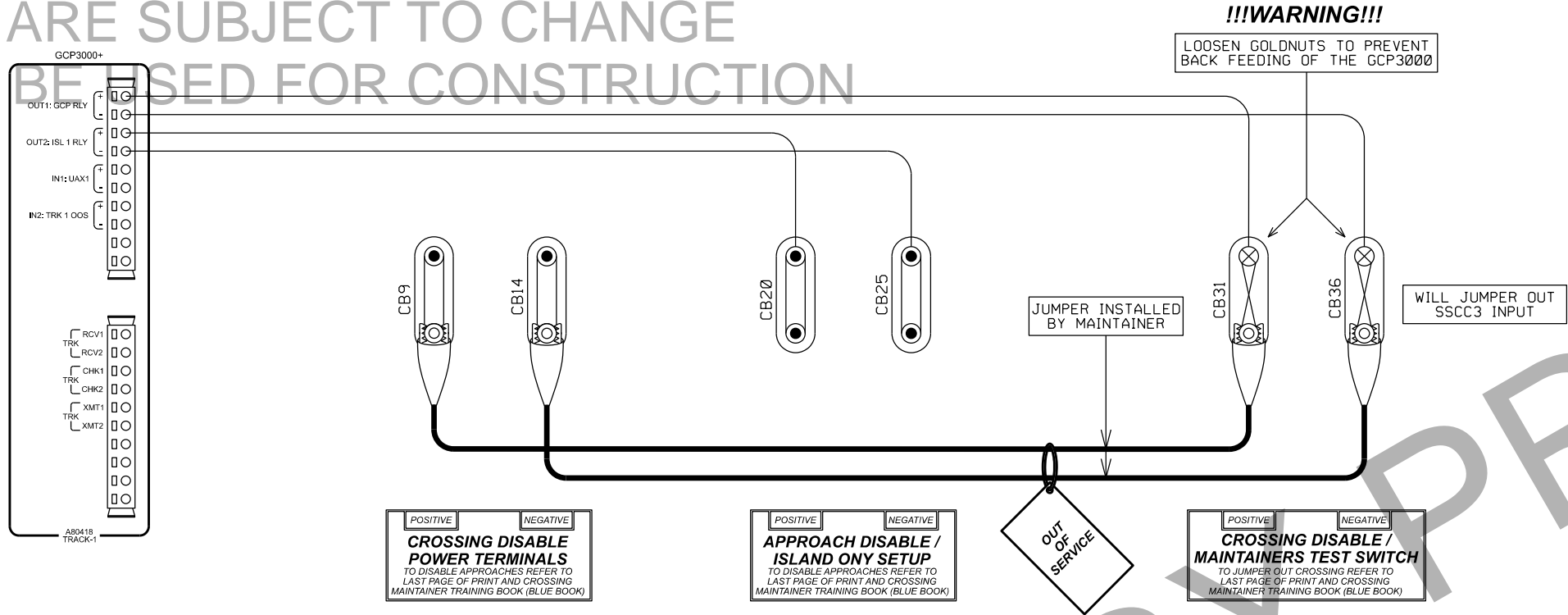
-NDW-

DOT# 477 820 S GPS: 41.1842736, -84.7271750 MILEPOST# 70.85

DRAWN: P.B.	HARRMANN ST. - GRADE CROSSING	PRELIMINARY
CHECKED: H.M.C.	ANTWERP, OH	DRAWING NO.
APPROVED:	NDW SUB-DIVISION	RCP-215
DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 12 OF 13

PRINTS ARE PRELIMINARY
PRINTS ARE SUBJECT TO CHANGE
NOT TO BE USED FOR CONSTRUCTION

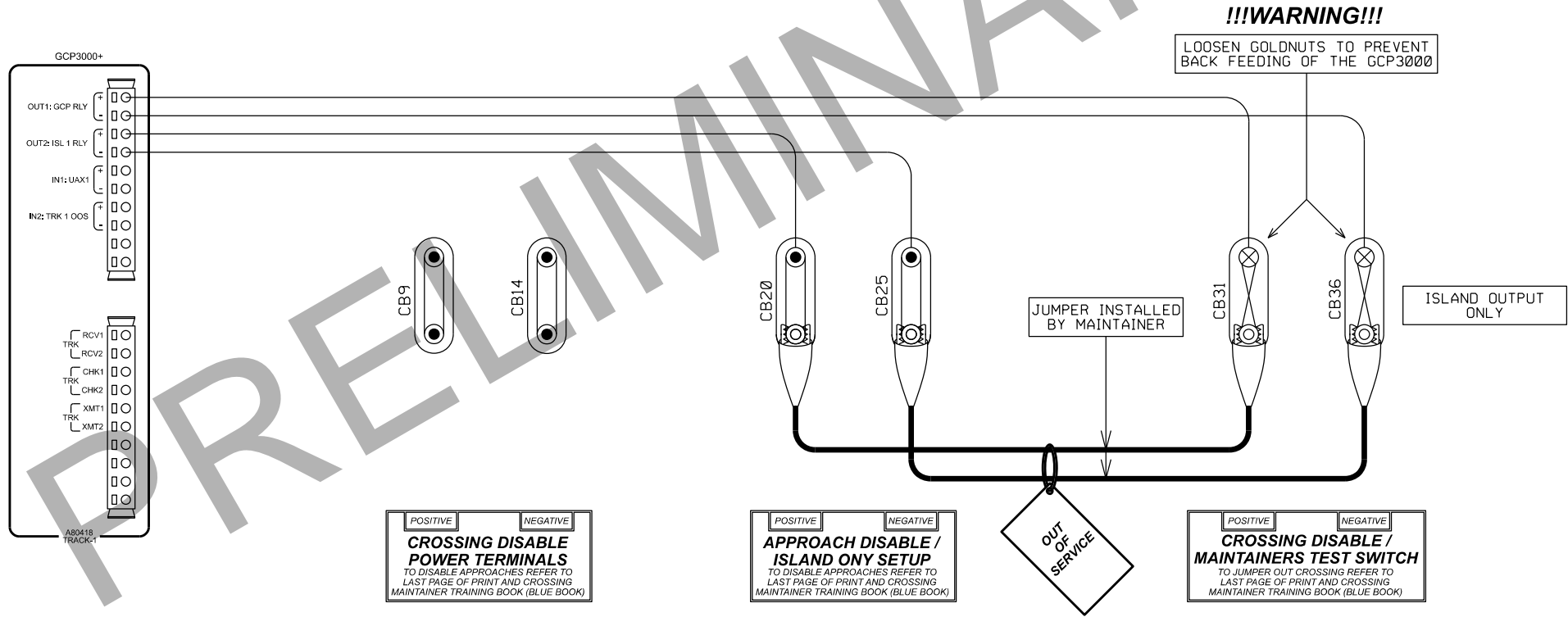
CROSSING DISABLE PROCEDURE



CROSSING DISABLE PROCEDURE

TO DISABLE CROSSING LOOSEN GOLD NUTS ON THE POSITIVE AND NEGATIVE TERMINALS ON THE CROSSING DISABLE SWITCH, THEN JUMPER FROM THE POSITIVE AND NEGATIVE OF THE DISABLING POWER TERMINALS TO THE BOTTOM TERMINALS OF THE CROSSING DISABLE SWITCH. REFER TO CROSSING MAINTAINER TRAINING BOOK (BLUE BOOK)

APPROACH DISABLE / ISLAND ONLY SETUP PROCEDURE



ISLAND ONLY PROCEDURE

TO DISABLE APPROACHES AND SET THE CROSSING TO ISLAND ONLY LOOSEN THE GOLD NUTS ON THE POSITIVE AND NEGATIVE TERMINALS OF THE CROSSING DISABLE SWITCH, THEN JUMPER FROM THE BOTTOM TERMINALS OF THE ISLAND SETUP TERMINALS TO THE BOTTOM TERMINALS OF THE CROSSING DISABLE SWITCH. REFER TO MAINTAINER TRAINING BOOK (BLUE BOOK).

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.



NAPOLEON, DEFIANCE & WESTERN RAILWAY

-NDW-

DOT# 477 820 S GPS: 41.1842736, -84.7271750 MILEPOST# 70.85

DRAWN: P.B.	HARRMANN ST. - GRADE CROSSING	PRELIMINARY
CHECKED: H.M.C.	ANTWERP, OH	DRAWING NO.
APPROVED:	NDW SUB-DIVISION	RCP-215
DATE: 03-10-22	DRAWN BY CDL ELECTRIC INC.	SHEET 13 OF 13



Proposal

Railroad Signal Division

1308 N. Walnut Street, Pittsburg, KS 66762
Ph: (620) 231-6420 www.cdl-electric.com

PROPOSAL SUBMITTED TO: Napolean, Defiance & Western Railway	PHONE: (419) 408-5434	DATE: March 23, 2022
STREET: 5619 DTC Parkway, Suite 560	JOB NAME: Harrmann Road	
CITY, STATE and ZIP CODE: Greenwood Village, CO 80111	JOB LOCATION: Antwerp, OH (477 820 S)	
CONTACT: Brice Travis, GM- btravis@pioneer-railcorp.com	JOB NUMBER: RCP-215R1	

We hereby submit specifications and estimates for:

RCP-215R1, Harrmann Rd., Antwerp, OH (477 820 S)

A new railroad/highway grade crossing warning signal system will be designed and installed specifically for the location listed above. It will include a new pre-wired grade crossing control shelter with prediction type circuitry, flashing light/gate signal assemblies, and advanced warning beacons as outlined in the Preliminary plans which have been prepared.

Warning signals will include two each automatic gate assemblies; each with 12" LED light units, signs and swing-away gate arm saving devices, and each signal assembly will include a bell. Underground signal cable, rail bonds, track connection items, foundations, and grounding components will be included as well. New conduits will be furnished under the road and track as required. Also, a new AC meter service will be installed for this automatic warning system. After the installation of the proposed signal system is complete, dress stone and grass seed will be placed, as needed, to properly finish the installation.

Commercial AC power (220V) must be readily available within 75' of the control shelter location. Any additional cost(s) associated with labor or material(s) to get 220-volt commercial power to the proposed AC meter service location is not included in this proposal and will be the responsibility of others at their expense.

Any overhead or underground utilities that may interfere with the installation or proper operation of the proposed signal system must be relocated at the expense of others. C.D.L. Electric, Incorporated will not be responsible for any cost(s) associated with labor or material(s) required to relocate utilities at this location.

If concrete, asphalt or any other type of roadway/walkway material must be removed for the proper installation and operation of the proposed signal system, then additional charges may apply. C.D.L. Electric, Incorporated will not be responsible for any cost(s) associated with labor or material(s) to replace concrete, asphalt or any other type of roadway/walkway material removed during the installation process of the proposed signal material.

We propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of \$266,063.41

Two Hundred Sixty-Six Thousand, Sixty-Three Dollars and 41/100 (\$266,063.41) includes estimated sales tax of 7.25%

The price breakdown is as follows:

Preliminary Engineering Services with Plan Preparation	\$2,000.00
Signal Material, Refer to Accompanying Material List (w/ Handling):	\$184,622.77
Labor w/ Expenses:	\$48,190.00
Equipment:	<u>\$13,265.00</u>
Total Sell Price	\$248,077.77
Sales Tax 7.25% (Est.)	<u>\$17,985.64</u>
Grand Total with estimated Sales Tax	<u>\$266,063.41</u>

Continued on next page

Please Note the following:

1. Proposed Pricing is valid for Ninety (90) days from the date of this Proposal, beyond 90 days prices are subject to change
2. Pricing is based on purchasing all items as a complete package
3. Preliminary Engineering Services may be invoiced separately
4. Terms: Net Due 30 Days from Invoice Date
5. This proposal may be withdrawn by us if not accepted within Ninety (90) days
6. Pricing is based on one crew mobilization for this project only
7. Crew labor will be paid per their standard pay wages with overtime when applicable, and include standard benefit package as outlined in their employee handbook
8. Pricing is based on crew being allowed to work unrestricted hours seven days per week
9. Any planned road and/or curb work must be completed prior to the arrival of our installation crews
10. If traffic control for the public roadway, other than typical "Crew Working" type signage is mandated by a third party, then other charges may apply
11. When applicable, existing automatic warning system will be removed and transported to nearest railroad yard

Authorized Signature:



Josh Shamhart
VP, Railroad Construction Services
Josh.Shamhart@cdl-electric.com
(620) 417-6420

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workman's Compensation Insurance.

Acceptance of Proposal — the above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance: _____

Signature: _____

Signature: _____

Continued on next page

<u>PROPOSED MATERIAL (ITEMS SUBJECT TO CHANGE AS REQUIRED)</u>	<u>QTY</u>	<u>U/M</u>	<u>UNIT SELL</u>	<u>TOTAL SELL</u>
CONTROL SHELTER, ALUM., W/ FNDS, FAN, AC ITEMS & ACCESSORIES	1	EA	Matl. Pkg	
WIRE KIT PACKAGE INCLUDES:				
SURGE PROTECTOR 120/240	1	EA	Included	Included
SSCCIII-A, 40 AMP	1	EA	Included	Included
PREDICTOR UNIT, GCP 3000+ W/ RIO	1	EA	Included	Included
WRENCH, AAR TERMINAL TYPE	1	EA	Included	Included
RELAY, 500 OHM W/ BACK PLATE	1	EA	Included	Included
GROUND STUD KIT	1	LT	Included	Included
ARRESTER	1	LT	Included	Included
EQUALIZER	1	LT	Included	Included
ARRESTER BASE, 4-POST	1	LT	Included	Included
TEST LINK, 1"	1	LT	Included	Included
TEST LINK, 2-3/8"	1	LT	Included	Included
PLUG, TWIST-LOCK TYPE FOR CHARGER	2	EA	Included	Included
RELAY, MCKR (NON-VITAL) MAINTAINER CALL/P.O. LIGHTS, w/ BASE	1	EA	Included	Included
STICKER, LOCATION/CONTACT INFORMATION	1	EA	Included	Included
POWER-OFF LIGHTS	2	EA	Included	Included
MDSA-1X, MOTION DETECTOR SURGE ARRESTOR	1	EA	Included	Included
CHARGER, BATTERY 12/20, 20 AMP	1	EA	Included	Included
CHARGER, BATTERY 12/40, 40 AMP	1	EA	Included	Included
BATTERY, JA, 250 A.H.	6	EA	Included	Included
BATTERY, JA, 400 A.H.	7	EA	Included	Included
SHOP WIRING HDW., WIRE, TERM. EYES, TAGS, ETC.	1	LT	Included	Included
VIDEO MONITOTING/RECORDING PKG., 4 CAM 4TB	1	EA	Included	Included
SERVICES, SHOP WIRING & TESTING SERVICES	1	LT	Included	Included
FLASHING LIGHT/GATE SIGNAL ASSEMBLIES			Matl. Pkg	
S-60 GATE KIT W/ 5" MAST & 12" LED FLASHERS	2	EA	Included	Included
ELECTRONIC BELL, 12V TYPE FOR 4/5" MTG	2	EA	Included	Included
GATE ARM, HI STRIPING, RED/WHITE ALTERNATING, (ADJ) W/ HDW	2	EA	Included	Included
LIGHT KIT FOR GATE ARM 4" LED TYPE	2	EA	Included	Included
GATE SAVER, SWING AWAY	2	EA	Included	Included
COUNTERWEIGHT KIT	2	EA	Included	Included
BRACKET, HIGH WIND	2	EA	Included	Included
SIGN, "RAILROAD CROSSING" W/MTG. HDW.	2	EA	Included	Included
FIELD INSTALLATION MATERIAL			Matl. Pkg	
WIRE, #10 AWG T.C. BLUE FOR WIRING SIGNALS	400	FT	Included	Included
CABLE, U.G. SIGNAL 7 COND. NO. 14 AWG SOLID	400	FT	Included	Included
CABLE, U.G. SIGNAL 7 COND. NO. 6 AWG SOLID	400	FT	Included	Included
CABLE, U.G. SIGNAL 3 COND. NO. 4 / GND FOR AC POWER	100	FT	Included	Included
TRACK WIRE, 2 COND. 6 AWG, TW. PR.	300	FT	Included	Included
SHUNT, NARROW BAND, MULTI. FREQ.	2	EA	Included	Included
GROUND ROD, COPPER, 5/8" DIAMETER, 8' LENGTH - POINTED	6	EA	Included	Included
GUARD RAIL, HALF CIRCLE, KIT	2	EA	Included	Included
BONDING MATERIAL	1	LT	Included	Included
MISC. MATERIAL FOR FIELD INSTALLATION	1	LT	Included	Included
TOTAL MATERIAL PKG. PRICE	1	LT	\$ 134,173.47	\$ 134,173.47
ADDITIONAL SOURCED MATERIAL / SERVICES				
LOCK, RAILROAD STD.	1	LT	\$ 34.00	\$ 34.00
CONDUIT	1	LT	\$ 450.00	\$ 450.00
CONCRETE	2	YD	\$ 150.00	\$ 300.00
ROCK/FILL	1	LT	\$ 5,728.00	\$ 5,728.00
AC METER SERVICE	1	EA	\$ 3,417.00	\$ 3,417.00
SIGN BEACON, SOLAR POWERED, NO L-TURN/R-TURN	2	EA	\$ 13,901.15	\$ 27,802.30
PRELIMINARY ENGINEERING SERVICES W/ PLAN PREPARATION	1	LT	\$ 2,000.00	\$ 2,000.00
ENGINEERING SERVICES / CIRCUIT PLANS / AS-IN-SERVICE PLANS	1	LT	\$ 10,618.00	\$ 10,618.00
FREIGHT SERVICES TO JOB SITE	1	LT	\$ 2,110.00	\$ 2,100.00
INSTALLATION LABOR			\$ 48,190.00	\$ 48,190.00
INSTALLATION EQUIPMENT			\$ 13,265.00	\$ 13,265.00
TOTAL less any applicable tax				\$ 248,077.77

Unit Pricing is based on purchasing all items as a complete package



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

January 18, 2022

Michigan Southern Railway
Mr. Brice Travis
Regional General Manager
Napoleon, Defiance & Western Railway
817 Fifth Street
Defiance, Ohio 43512

RE: Authorization for Detail Design, Plans and Estimates
Grade Crossing Warning Device Upgrade
CR 43, Harrmann St., Paulding County
DOT# 477820S; PID# 114017

Dear Mr. Travis:

A diagnostic review was held at the above grade crossing on 8/6/2020. The crossing has been recommended for the installation of automatic flashing lights and roadway gates. The Diagnostic Team also recommended interconnected active advanced warning signs including: 1) eastbound SR 424 active no-right-turn sign; 2) westbound SR 424 active no-left-turn sign; and 3) northbound Harrmann St. active advanced warning sign.

The preliminary design supplied by Napoleon, Defiance & Western Railroad is acceptable with one change. The “no left turn” signal needs a measurement from traveled roadway on the drawing. The Napoleon, Defiance & Western Railroad is authorized to proceed with the detailed engineering design, site layout plans and cost estimates for this project. This authorization is for the second phase of a two-phased 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 Napoleon, Defiance & Western Railway 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 ORDC is not requesting that the PUCO issue an Order at-this-time. Please submit the detailed engineering design, site layout plans, cost estimates, assessment of right-of-way and active warning system maintenance responsibilities to ORDC within 90 days of receipt of this letter.

The diagnostic review form is attached. Please note any recommendations made by the team about



requirements for this location. Any minor roadway work necessary for MUTCD compliance should be incorporated into the plans and estimates and such costs will flow through the railroad reimbursement process.

The Project Manager for this project is Michael Lynch. I can be reached at (614) 395-1824 (cell), or michael.lynch@dot.ohio.gov, if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Michael Lynch".

Michael Lynch
Project Manager

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

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



Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Scott Corbitt, Chair

February 12, 2021

Michigan Southern Railway
Mr. Brice Travis
Regional General Manager
Napoleon, Defiance & Western Railway
817 Fifth Street
Defiance, Ohio 43512

RE: Authorization for Design, Plans and Estimates
Grade Crossing Warning Device Upgrade
CR 43, Harrmann St., Paulding County
DOT# 477820S; PID# 114017

Dear Mr. Travis:

A diagnostic review was held at the above grade crossing on 8/6/2020. The crossing has been recommended for the installation of automatic flashing lights and roadway gates. The Diagnostic Team also recommended interconnected active advanced warning signs including: 1) eastbound SR 424 active no-right-turn sign; 2) westbound SR 424 active no-left-turn sign; and 3) northbound Harrmann St. active advanced warning sign.

The Napoleon, Defiance & Western Railroad is authorized to proceed with the preliminary engineering design, site layout plans and cost estimates for this project. This authorization is for the first phase of a two-phased project. In addition to the preliminary engineering, plans and estimates, this first phase shall 1) identify and provide an assessment of the railroad responsibilities for maintaining the active advanced warning devices, and 2) identify right-of-way and/or agreement issues associated with the placement of the active advanced warning devices. This information is needed to confirm there are no right-of-way or agreement issues with the local highway authority, and to complete the environmental review 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 Napoleon, Defiance & Western Railway 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 ORDC is not requesting that the PUCO issue an Order at-this-time. Please submit the preliminary engineering design, site layout plans, cost estimates, assessment of right-of-way and active warning system maintenance responsibilities to ORDC within 90 days of receipt of this letter.



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

The Project Manager for this project is Don Damron. I can be reached at (614) 917-8466 (cell), or don.damron@dot.ohio.gov, if you have any questions.

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

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



Public Utilities Commission

Mike DeWine, Governor
Sam Randazzo, Chairman

Commissioners

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

November 13, 2020

Michigan Southern Railway
Mr. Brice Travis
Regional General Manager
Napoleon, Defiance & Western Railway
817 Fifth Street
Defiance, Ohio 43512

Re: Paulding County, Harrmann
Road/CR 43, DOT#477-820S,
hereinafter referred to as the
“Project”

Dear Mr. Travis:

The Public Utilities Commission of Ohio (PUCO) has identified and the Ohio Rail Development Commission (ORDC) surveyed, on August 6, 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. 19387, dated December 8, 2015, and entered into by the State of Ohio and Michigan Southern Railway (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.

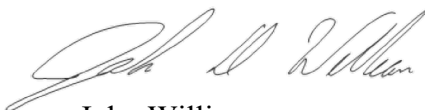
The RAILROAD shall complete plans and estimates for the Project within ninety (90) days after the RAILROAD is notified of authorization to proceed unless otherwise agreed by ORDC/PUCO and the RAILROAD.

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.

LA Harrmann Road/CR 43
Paulding County
Michigan Southern Railway

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



Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Michigan Southern Railway

By 

Title Chief Operating Officer

Date 11-18-20

Date 1/22/2021

CR 43 / Harrmann Street (DOT #477820S), Village of Antwerp, Paulding County, NDW

8/6/2020

Crossing at a glance:

ORDC Notes:

Please Sign In

Don DAMRON GRADE CROSSING SPECIALIST ORD
Name Title Organization
614 917-8466 don.damron@dot.ohio.gov Paul Damron
Phone Number Email Signature

Tim Flessner PUCO
Name Title Organization
Signature

CHAD CROSSY PROJECT MANAGER PAULDING CO. Eng.
Name Title Organization
Signature

Sara Keenan Village Admin Village of Antwerp
Name Title Organization
419-506-0205 antadmin@Frontier.com Sara Keenan
Phone Number Email Signature

Cathy [unclear] [unclear]
Name Title Organization
Signature

Josh Shamhart Sr Director, Construction CDL Electric
Name Title Organization
Signature

Brick Travis RGM Pioneer Railcorp
Name Title Organization
417 208 7862 josh.shamhart@cdl-electric.com [unclear]
Phone Number Email Signature

Todd OSMENT Director CDL ELECTRIC CO
Name Title Organization
419-966-3597 ttravis@pioneer-railcorp.com B-T
Phone Number Email Signature

Shea McLaughlin Director, Signals CDL Electric
Name Title Organization
620-704-6388 Shea.McLaughlin@cdl-electric.com [unclear]
Phone Number Email Signature

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

Date: 8/6/2020

Street or Road Name: CR 43 / Harrmann Street			
County: Paulding	Township:	US DOT No.: 477820S	
City (in or near): Antwerp	Railroad Name: NDW	RR Milepost: 70.850	
	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: 1432	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	AWS (W10-3) ON CR 424 BOTH DIRECTIONS
'Stop' Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
'Stop Ahead' Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Pavement Markings (condition?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	PM NEED RE-PAINTING
Dynamic Envelope Markings (condition?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Illumination	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NORTH SIDE OF RT 424
'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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NORTH - BOUND
RAILROAD		
Crossbucks	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Crossbucks – assembly with Stop	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Crossbucks – assembly with Yield	<input checked="" type="checkbox"/> Yes <input 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: <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Commuter <input type="checkbox"/> Tourist/Other		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	4	4 OKAY
<1 per day? Trains per week	-	
Day thru trains	2	OKAY
Night thru trains	0	
Switching	2	OKAY
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks	0	
Maximum train speed	10	10 MPH
Typical train speed	7	3-5 MPH
Amtrak	-	
Are there other track(s) crossing this same roadway within 100ft of this crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Can one train block the motorists' view of another train at the crossing? <input type="checkbox"/> Yes (explain below) <input checked="" type="checkbox"/> No		
Can one or more tracks be eliminated through the crossings? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Comments:		
Circuitry: <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other _____		

Roadway Data		
Local Highway Authority: Village of Antwerp		
Roadway Characteristics	Initial Information (from database)	Revised
Average Daily Traffic	1108 (2015)	OKAY
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): <u>23</u> ft		
Number of Highway Lanes	2	
Urban or Rural	Rural - Local	
Vehicle Speed: <u>25</u> MPH		OKAY
School Bus Operation: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount <u>32</u> MULTIPLE BUS ROUTES		
Location of nearby schools: SOUTH OF CROSSING		
Hazardous Materials Trucks: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Amount (from FRA) <u>5%</u> LHA verified/changed?		
Shoulders: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Is the Shoulder Surfaced? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, shoulder width: _____ ft.		
Is there existing guardrail along the roadway in crossing vicinity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Crossing Angle <input type="checkbox"/> 0-29° <input type="checkbox"/> 30-59° <input checked="" type="checkbox"/> 60-90° Measured in _____ Quadrant?		
Quadrant _____ Curb & Gutter:	Quadrant _____ 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, distance <u>45'</u>		
Is this intersection signalized? <input type="checkbox"/> Yes <input checked="" 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 checked="" type="checkbox"/> Yes <input 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 _____		

Regular pedestrian usage: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Volumes: <input type="checkbox"/> Occasional <input type="checkbox"/> <20 <input type="checkbox"/> 20-60 <input type="checkbox"/> >60			
Is sidewalk present in the approach? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Quadrants:			
Does crossing surface accommodate pedestrians? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Both sides of roadway? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, which side is paved?			
Pedestrian generators in close proximity (e.g. schools, sports/entertainment venues)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No SCHOOLS			
Comments:			
Regular bicycle usage: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
<input type="checkbox"/> Roadway <input type="checkbox"/> Dedicated Lane (on street) <input type="checkbox"/> Dedicated Path (off street) <input type="checkbox"/> Shared Use (pedestrian/bicycle) Path <input type="checkbox"/> Bikes must use sidewalk			
Future plans for pedestrian or bicycle routes? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Comments:			

Utility Information			
Is commercial power available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No AEP			
Utility Provider (Company Name) AT - SITE			
Nearest Available Power Source ↗			
What other utilities are present? <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/> Telephone <input type="checkbox"/> Fiber Optic Cable (add locations to sketch) <input type="checkbox"/> Petroleum <input checked="" type="checkbox"/> Water <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Other			
Comments:			

Surface review form completed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No CONCRETE PANEL SURFACE IN GOOD CONDITION.			
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Sight Preview (REFER TO TABLES)			
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Is stopping sight distance adequate? (See Table 2) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, which quadrant? _____			
When considering recommendations for bicycle treatments:			
Bicycle sight distance adequate? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, which quadrant? _____			
When considering recommendations for pedestrian treatments:			
Pedestrian sight distance adequate? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, which quadrant? _____			

Potential Red Flags / Project Challenges

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

NA / INTERSECTION W SR 424 WILL NOT HAVE A TRAFFIC SIGNAL.

Crossing Consolidation or Closure:

NA

Real Estate or ROW:

NA

Culvert / Drainage / Ballast Conditions:

NA

Roadway and/or Sidewalks:

NA

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

NA

Environmental:

NA





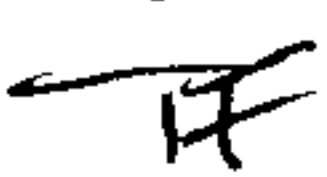
Utilities:

UNDEGROUND UTILITIES AT-SITE: GAS AND WATER.

Other:

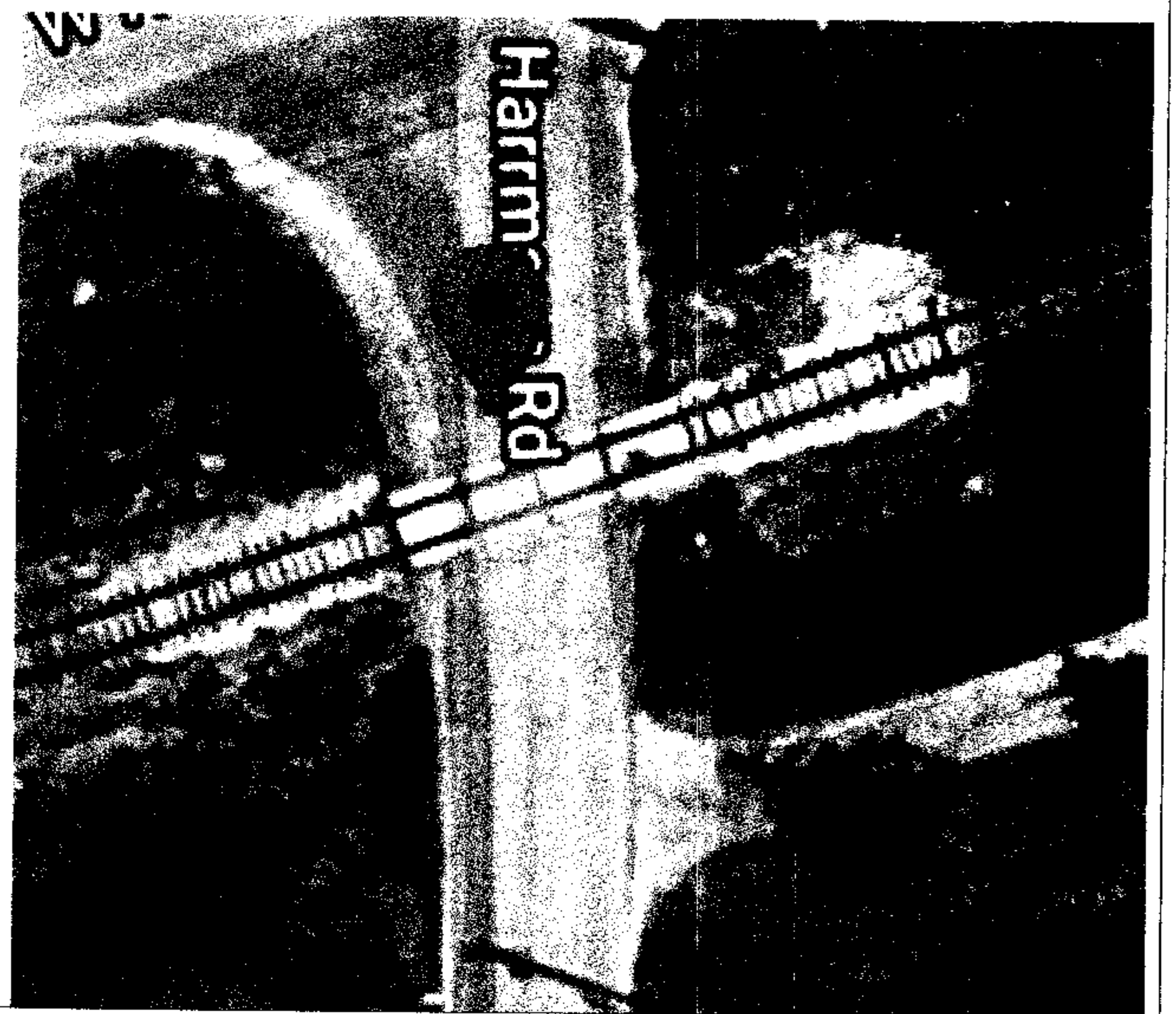
Potential Closure	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? No	
Explain reasons:	

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	
<input type="checkbox"/> AFLS / Gates / Cants	
<input checked="" type="checkbox"/> Bells / number	2 BELLS
<input type="checkbox"/> Upgrade circuitry / type	
<input type="checkbox"/> Sidelights	
<input type="checkbox"/> LED Upgrades	
<input type="checkbox"/> Guardrail Needed	
<input type="checkbox"/> Install/Replace curb	
<input type="checkbox"/> Bungalow placement & offset from rail & highway	
<input checked="" type="checkbox"/> Other (define) ACTIVE ADVANCED WARNING SIGNS: 2 AWS OPTIONS TO EXPLORE	
Comments: ① N-BOUND STORAGE IS LIMITED BTW SR 424 STOP AND TRACKS; ACTIVE AWS N-BOUND MOTION DETECTION W 5 SEC. ADVANCED ACTIVATION.	
② AWS ON SR 424 - ADVANCED NO RIGHT TURN AND ADVANCED NO LEFT HAND TURN	
<input type="checkbox"/> Install/upgrade traffic signal preemption	
Other (define): ADVANCED ACTIVE WARNING DEVICES AND OPTIONS TO BE INVESTIGATED. OPERATING AND MAINTENANCE RESPONSIBILITY WILL BE EXPLORED AND RESOLVED IN AGREEMENT BTW VILLAGE AND RAILROAD	

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):	
	
	
	
	

Field Sketch (optional)

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.



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
Commission of Ohio Docketing Information System on**

5/11/2022 6:18:36 PM

in

Case No(s). 22-0493-RR-FED

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at Michigan Southern Railway Grade Crossing, DOT# 477-820S, on Harrmann Street/CR 43 in Paulding County, Ohio. electronically filed by Mrs. Jill A. Henry on behalf of PUCO/Rail Division