Public Utilities
Commission of Ohio

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 9/8/17

Re: PUCO Case No. 17-1665-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Northern Ohio & Western Railway, CR 11 DOT#509-212P, in Seneca County, Ohio.

On May 22, 2017, the Ohio Rail Development Commission (ORDC) authorized funding for Northern Ohio & Western Railway to install active warning devices and perform surface reconstruction at CR 11 DOT#509-212P, in Seneca County, Ohio. The crossing was surveyed on April 27, 2016 and found to warrant the upgrades. The electric utility provider for this crossing is American Electric Power- AEP.

The project will be paid for with federal funds and is actual cost. The plans and estimates in the amount of $203,847.84 for the lights and gates and $62,971.00 for the surface reconstruction 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:

Northern Ohio & Western Railway
Mr. John Lane
Roadmaster
4200 E. 71st Street
Cleveland, Ohio 44105

Ohio Rail Development Commission
Cathy Stout
Safety Manager
1980 West Broad Street
Mail Stop #3140
Columbus, Ohio 43223

Seneca County Engineer
Mark Zimmerman
County Engineer
3300 South Township Road 151
Tiffin, Ohio 44883

American Electric Power- AEP

OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION

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

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

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

SUBJECT: **Seneca County, CR 11 / NOWR**
DOT# 509212P
PID# 103458

DATE: **July 5, 2017**

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 4-27-2016. The Ohio Rail Development Commission (ORDC) attended the Diagnostic Survey. The Diagnostic Review Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the Diagnostic Review Team Survey form and the railroad plan and estimate are attached.

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

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

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

Thank you for your assistance with these matters.

Attachments:
Diagnostic Review Team Survey dated 4/27/2016
Price Estimate for Proposed Railroad Signal Project dated 7/13/2016
Proposed Crossing Track Plan dated 4/28/2017

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

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

July 7, 2017

Northern Ohio & Western Railway
Mr. John Lane
Roadmaster
4200 E. 71st Street
Cleveland, Ohio 44105

Re: Grade Crossing Warning Device Improvement
Construction Authorization
Seneca County, CR 11, DOT# 509212P, PID# 103458

Dear Mr. Lane:

The plan and estimate dated 7/13/16, for the referenced project is acceptable. 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 Northern Ohio & Western Railway, L.L.C. (NOW) may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan.

This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost for the warning device improvement is limited to $203,847.84. 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 crossing upgrade includes the replacement of the existing timber/asphalt roadway surface; however, this construction authorization does include the reconstruction of the surface. The NOW should advance a request for quote (RFQ) for the replacement of the surface and submit acceptable bids to ORDC for review.

This construction authorization is contingent upon NOW accepting the following instructions:

1. The NOW's project construction foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Don Damron, ORDC, Mail Stop #3140, 1980 West Broad Street, 2nd Floor, Columbus Ohio 43223, or email don.damron@dot.ohio.gov, or by cell phone at 614-917-8466, office phone at 614-466-2509); and to the Public Utilities Commission of Ohio at jill.henry@puco.ohio.gov (phone 614-752-9107). The project construction 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. The NOW 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 Northern Ohio & Western Railway.

3. The NOW's project foremen will notify Don Damron at 614-917-8466 (cell) or don.damron@dot.state.oh.us (email) of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.

4. The proposed track plan for the crossing places the gate tips at 12' from track center. The plan should be modified so that the gate tips are placed at 15' from the track center.

5. Open cut of roadways is not permitted except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.

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

7. The NOW 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.

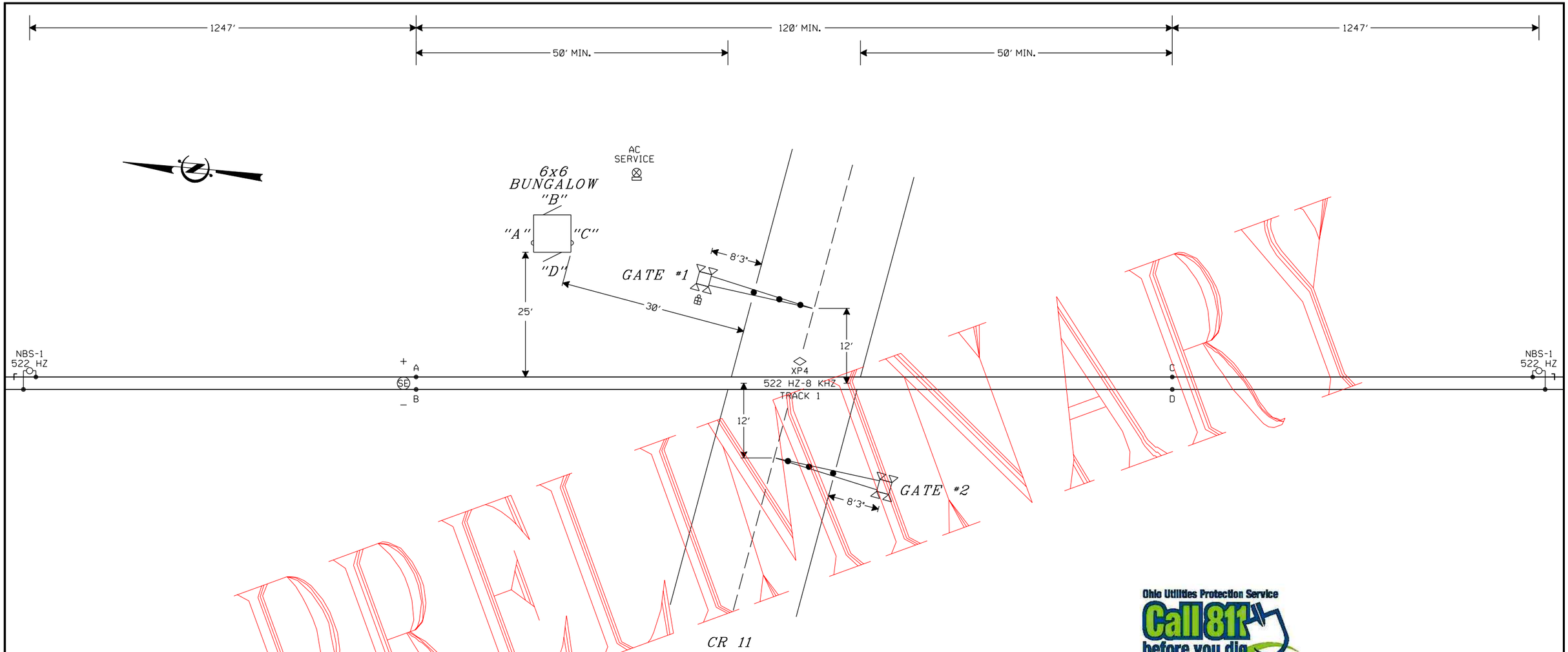
8. The installation of the new warning device system will include any ancillary work needed to make the warning devices function as designed and to satisfy MUTCD requirements.

Thank you for your assistance with these matters.

Sincerely,

Donald J. Damron
Project Manager

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



Ohio Utilities Protection Service
Call 811 before you dig

APPROACH CIRCUIT DISTANCE CALCULATION

	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	4 SEC
PLUS TIME FOR TRAFFIC PRE-EMPTION	0 SEC
EQUALS CIRCUIT APPROACH TIME	34 SEC
TIMES MAXIMUM PLANNED TRAIN SPEED	25 MPH
TIMES RATIO OF FEET PER SECOND TO MILE PER HOUR	22/15
EQUALS APPROACH CIRCUIT DISTANCE WITH ANY FRACTIONAL VALUE INCREASED TO FULL UNIT	1247 FT

CABLE TABULATION

HOUSE TO GATE #1	7C#6, 7C#14
HOUSE TO GATE #2	7C#6, 7C#14
HOUSE TO AC POWER SERVICE	3C#4
HOUSE TO A & B RAIL CONNECTIONS	2C#6 TW
HOUSE TO C & D RAIL CONNECTIONS	2C#6 TW

ALL DIMENSIONS SHOWN AS TYPICAL.
FIELD TO VERIFY ALL FOUNDATION PLACEMENTS.

NOTES:

1. ALL WIRING IN THE BUNGALOW IS #16 AWG FLEX UNLESS OTHERWISE NOTED.
2. SEE APPROACH CIRCUIT DISTANCE CALCULATION TABLE FOR PLANNED WARNING TIME AND TRAIN SPEED PER TRACK.
3. TRANSMITTER WIRE T1 AND T2 MUST BE RUN TO THE TRACK BUNGALOW SIDE OF CROSSING.
4. APPROACH DISTANCES ARE TO BE MEASURED FROM THE CIRCUIT FEED POINTS.

LEGEND:

- -TEST TERMINAL
- -EQUALIZER
- -HEAVY DUTY EQUALIZER
- -ARRESTER TO GROUND
- -TWISTED WIRE 2 TURNS PER FOOT
- -INSULATED NUT
- -RIGID CONDUIT
- (SE) -DC SHUNT ENHANCEMENT

NOT TO SCALE

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.

MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

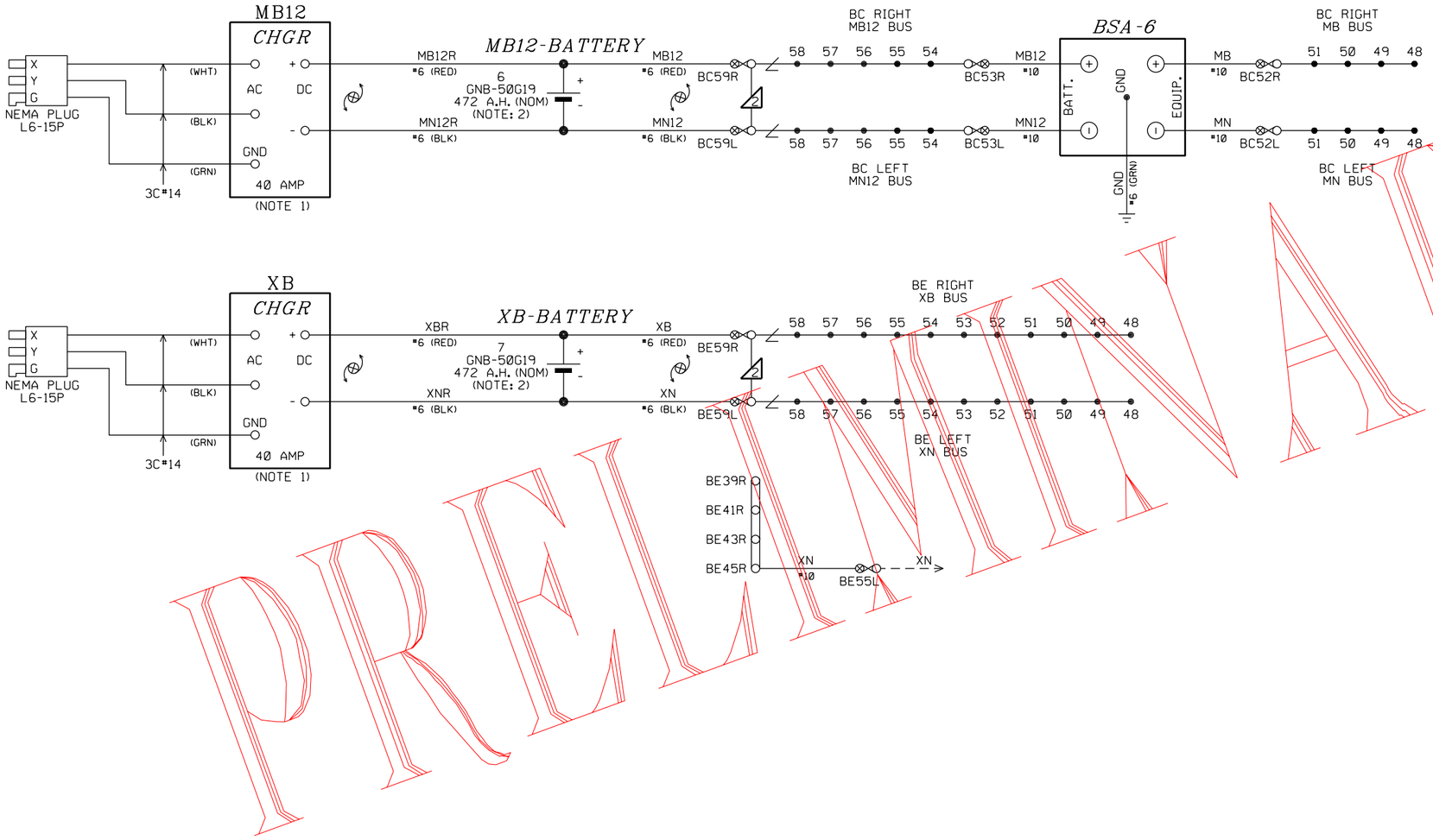
OMNITRAX

NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

CROSSING TRACK PLAN
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 1 OF 11



NOTES:

1. USE 240 VOLT SETTING.
2. USE 1/4" TERMINALS AT BATTERY CONNECTIONS.

REVISIONS

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318-665-9344

OmniTRAX NOW

DRAWN: S.F.A.
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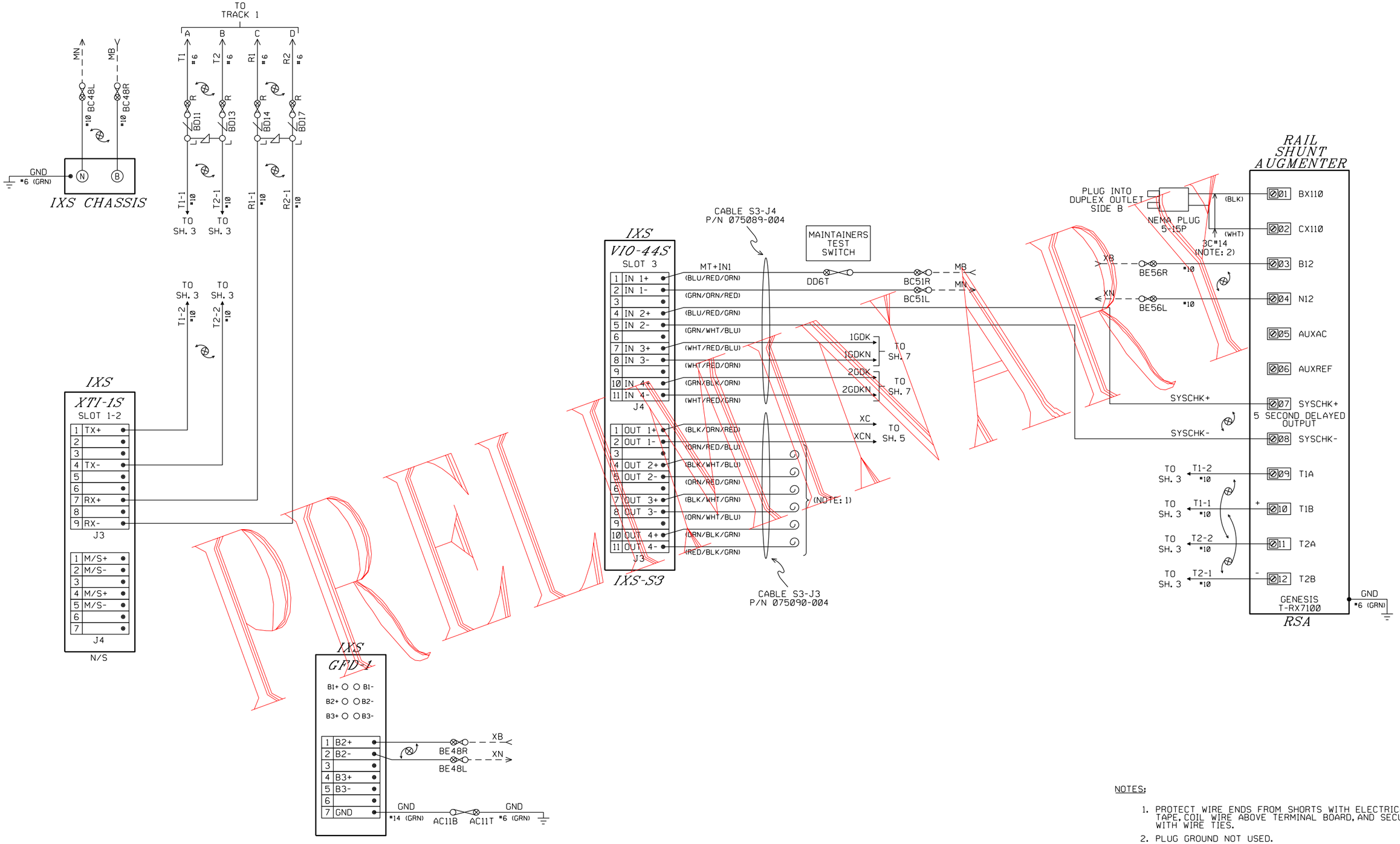
CHECKED: ...
DATE: 4-28-17

BATTERY CIRCUITS
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 2 OF 11



NOTES:

1. PROTECT WIRE ENDS FROM SHORTS WITH ELECTRICAL TAPE, COIL WIRE ABOVE TERMINAL BOARD, AND SECURE WITH WIRE TIES.
2. PLUG GROUND NOT USED.

REVISIONS							

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OMNITRAX NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

ELECTROLOGIX CIRCUITS
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 3 OF 11

XP4 PROGRAM SETUP

∗ = FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE XP4 INSTRUCTION MANUAL.

GROUND FAULT DETECTOR SETUP

	CAL VOLTS	GF THRESHOLD	GF TIME	LOW ALARM	HIGH ALARM
B1: MB12	∗ 13.5 (TYP)	10 K	5 SEC.	∗ 10.5	∗ 15.5
B2: XB	∗ 15.7 (TYP)	10 K	5 SEC.	∗ 14.0	∗ 16.5
B3: BATTERY 3	NA	NA	NA	NA	NA

VIO-44S VITAL INPUTS

MODULE SLOT	3
INPUT 1	S3_IN1_AUX1
INPUT 2	S3_IN2_AUX2
INPUT 3	S3_IN3_1GDK
INPUT 4	S3_IN4_2GDK

VIO-44S VITAL OUTPUTS

MODULE SLOT	3
OUTPUT 1	S3_OUT1_XC
OUTPUT 2	NOT USED
OUTPUT 3	NOT USED
OUTPUT 4	NOT USED

IXC-20S+ INPUTS

MODULE SLOT	4
INPUT 1	S4_IN1_GPX
INPUT 2	S4_IN2_POK
INPUT 3	S4_IN3_XC
INPUT 4	NOT USED

IXC-20S+ OUTPUTS

MODULE SLOT	4
GATE 1	S4_G1_CNTRL
GATE 2	S4_G2_CNTRL
BELL	S4_BELL_OUT
NV OUT	S4_NVO_BM

IXC SETUP

ADJUSTMENT NAME	IXC
CROSSING TEST MODE	OFF
FLASH RATE	55 FPM
INTERFACE	XIP
VOLTAGE REGULATION	ON
L1 VOLTAGE	11V
L2 VOLTAGE	11V
GATE 1 DELAY	3 SEC
GATE 2 DELAY	3 SEC

VITAL CONFIGURATION SWITCHES

NAME	STATE	FUNCTION	DEFAULT
GD_BELL_OFF	TRUE	BELL OUTPUT OFF WHEN S3_IN3_1GDK & S3_IN4_2GDK GOES TRUE (GATES DOWN).	FALSE
	FALSE	BELL OUTPUT FOLLOWING S4_IN1_GPXK OR S4_IN3_XC PER XR_BELL_ON STATE.	
XR_BELL_ON	TRUE	BELL OUTPUT ON WHEN S4_IN3_XC IS FALSE.	FALSE
	FALSE	BELL OUTPUT ON WHEN S4_IN1_GPXK OR S4_IN3_XC FALSE.	

CROSSING MAINTENANCE

ADJUSTMENT NAME	TRACK 1
ENABLE/DISABLE	ENABLE
DISABLE TIMEOUT	2 HRS
BALLAST COMP	∗ 147
PHASE COMP	∗
SHUNT TEST MODE	DISABLE ALL TRACKS

ISLAND SETUP

ADJUSTMENT NAME	TRACK 1
ENABLE/DISABLE	ENABLE
DISABLE TIMEOUT	2 HR ∗
FREQUENCY	8.0 KHZ
LOSS OF SHUNT	2 SEC
FAULT DELAY	1

BASIC TRACK SETUP

ADJUSTMENT NAME	TRACK 1
FREQUENCY	522 HZ
MASTER/SLAVE	MASTER
RX ADJUST	100
TCA/TCI	∗
DIRECTION MODE	BI
LIA	∗
ADVANCED APR. CAL	INACTIVE
NBS COMP RX	∗
TRK ISLAND ASSIGN	ISL1_ASSIGN
APPROACH LENGTH	1247 FT
AUTO RX	ENABLE

ADVANCE TRACK SETUP

ADJUSTMENT NAME		TRACK 1
MOTION DET TIMER	MDEN	ENABLE
	MDTT	10 MIN
FALSE SHUNT	FSEN	DISABLE
	FSRX	0
	FST	10M
APPROACH RELEASE	AREN	DISABLE
	ARRX	0
	ART	10M
LOS TIME		16 SEC
IJ-LOS TIME		5 SEC
NRM_SHRT_VRYSHRT		NRML ∗

MDR SETUP

		MDR 1
ADJUSTMENT NAME (LOGS)		MDR1
WARNING TIME		30 SEC
CW/MD		CW
CWE-WT		80 SEC
AUX RECOVERY DELAY		0 SEC
TRACK ASSIGNED		SLT 1 TRK 1
OFFSET DISTANCE		0 FT
MD RESTART		∗ 99
SUDDEN SHUNT ZONE		∗ 99
CLEAR JOINT LOS	CJ MODE	STANDARD
	CJRX	15
	CJT	CALC
POST JOINT DETECT	PJEN	DISABLE
	PJRX	15
	PJDT	15
POSITIVE START	PSEN	DISABLE
	PSRX	0
	PST	0 MIN

(SHOP TO VERIFY) EXECUTIVE INFORMATION

VPM3	VERSION	PART NUMBER
VPM-A PROCESSOR	8.22	083026-822
VPM-B PROCESSOR	8.22	083026-822
VPM-C PROCESSOR	8.22	083026-822

(SHOP TO VERIFY) APPLICATION SOFTWARE INFORMATION

NAME	GW_1TK_TYP
REVISION	9-22-2016
CHECKSUM	8A44
CRC	927F
CHASSIS ID	97
ID STRAPING	XIIXXXXI

REVISIONS

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OmniTRAX NOW

DRAWN: S.F.A.
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ELECTROLOGIX PROGRAMMING
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 4 OF 11

GETS-GS P/N 075046-004
XIP-20 CABLE #1

GETS-GS P/N 075047-004
XIP-20 CABLE #2

IXS
IXC-20S+
SLOT 4

TO SH. 7 GPX
TO SH. 7 GPXN
MB
POPR
POK
BC49R
1
3
MN
BC49L
TO SH. 3 XC (BLK/ORN/RED)
TO SH. 3 XCN (ORN/RED/BLU)
CABLE S3-J3
P/N 075090-004

MN
BMR
NV
BM
BC50L
7
(AA40)
2

J5

	IN1+	1	
	IN1-	2	
		3	
		4	
	IN2+	5	
	IN2-	6	
		7	
		8	
	IN3+	9	
	IN3-	10	
		11	
		12	
	IN4+	13	
	IN4-	14	
		15	
		16	
	FSI	17	
	FSO	18	
	NVO	19	

J4

1	GB	(BLK/WHT)
2	GB	(BLK/WHT)
3	GN	(RED/WHT)
4	GN	(RED/WHT)
5		
6		
7	RLY	
8	BELO	(GRN)
9	BELN	(WHT)
10	LN1	(BLU)
11	LN1	(BLK)
12	BELB	(BLK)
13	L10	(ORG)
14	L10	(WHT/RED)
15	L10	(WHT/RED)
16	L10	(WHT/RED)
17	L1B	(WHT/RED)
18	L1B	(RED)
19	L1B	(RED)
20	L1B	(RED)

J6

1	GC1+	(BLK/WHT)
2	GC1-	(RED/WHT)
3		
4		
5	GC2+	(ORG)
6	GC2-	(BLU)
7		
8		
9		
10	L2N	(BLK)
11	L2N	(BLK)
12		
13	L2O	(WHT/RED)
14	L2O	(WHT/RED)
15	L2O	(WHT/RED)
16	L2O	(WHT/RED)
17	L2B	(RED)
18	L2B	(RED)
19	L2B	(RED)
20	L2B	(RED)

XIP

J4

1	GATE B	(BLK/WHT)	
2	GATE B	(BLK/WHT)	
3	GATE N	(RED/WHT)	
4	GATE N	(RED/WHT)	
5			
6			
7	RELAY COIL	(GRN)	
8	BELL OUT+	(WHT)	
9	BELLN	(BLU)	
10	LAMP1 N	(BLK)	
11	LAMP1 N	(BLK)	
12	BELL B	(ORG)	
13	LAMP1 OUT+	(WHT/RED)	
14	LAMP1 OUT+	(WHT/RED)	
15	LAMP1 OUT+	(WHT/RED)	
16	LAMP1 OUT+	(WHT/RED)	
17	LAMP1 B	(RED)	
18	LAMP1 B	(RED)	
19	LAMP1 B	(RED)	
20	LAMP1 B	(RED)	

J6

1	GATECTRL1+	(BLK/WHT)	
2	GATECTRL1-	(RED/WHT)	
3			
4			
5	GATECTRL2+	(ORG)	
6	GATECTRL2-	(BLU)	
7			
8			
9			
10	LAMP2 N	(BLK)	
11	LAMP2 N	(BLK)	
12			
13	LAMP2 OUT+	(WHT/RED)	
14	LAMP2 OUT+	(WHT/RED)	
15	LAMP2 OUT+	(WHT/RED)	
16	LAMP2 OUT+	(WHT/RED)	
17	LAMP2 B	(RED)	
18	LAMP2 B	(RED)	
19	LAMP2 B	(RED)	
20	LAMP2 B	(RED)	

XIP-20B

BATTERY INPUTS
LAMP1+/ BELL+
LAMP2+
GATE BATT+
LAMP1-/ BELL-
LAMP2-
GATE BATT-

GATE CONTROL OUTPUTS
GC1+
GC1-
GC2+
GC2-

BELL OUTPUT+

LAMP OUTPUTS
LAMP1+ BACKUP
LAMP1+
LAMP2+

BE58R #10 XB
BE57R #10 XB
BE58L #10 XN
1CE #10 TO SH. 6
2CE #10 TO SH. 6
BE57L #10 XN
1GH #10 TO SH. 7
BE51L #10 XN
BE50L #10 XN
2GH #10 TO SH. 7
1BELL TO SH. 7
1LE #10 TO SH. 6
2LE #10 TO SH. 6
1RE #10 TO SH. 6
2RE #10 TO SH. 6

REVISIONS

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MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

OmniTRAX
NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

FLASHING CONTROL
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 5 OF 11

X-ARM JUNCTION BOX

1LE *10 1CE *10 1RE *10

4 3 2 1

GATE MAST LIGHTS

GATE ARM LIGHTS

C B A

4A 5A 6A

WCH MODEL 3597

GATE 1

NOTES:

1. = LED SIGNAL LAMP WITH 8.5 TO 16 VOLT WORKING VOLTAGE.

1RE *10 — 1RE — L BC19 R — 1RE *10 — TO SH. 5

1CE *10 — 1CE — L BC20 R — 1CE *10 — TO SH. 5

1LE *10 — 1LE — L BC18 R — 1LE *10 — TO SH. 5

GATE #1 JCT BOX BASE

BATT WIRES ON SH. 7 ALSO IN THIS CABLE → 7C*6

X-ARM JUNCTION BOX

2LE *10 2CE *10 2RE *10

4 3 2 1

GATE MAST LIGHTS

GATE ARM LIGHTS

A B C

4A 5A 6A

WCH MODEL 3597

GATE 2

TO SH. 5 — 2RE *10 — L BE19 R — 2RE — 2RE *10

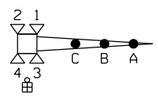
TO SH. 5 — 2CE *10 — L BE20 R — 2CE — 2CE *10

TO SH. 5 — 2LE *10 — L BE18 R — 2LE — 2LE *10

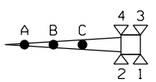
GATE #2 JCT BOX BASE

7C*6 ← BATT WIRES ON SH. 7 ALSO IN THIS CABLE

GATE #1



GATE #2



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CROSSING LAMP CIRCUITS
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO. 812953-100
SHEET 6 OF 11

GATE #1

GATE #2

1BELL *10 — 1BELLN *10 — TO SH. 5 — BC13

TO SH. 3 — 1GDK — 1GDKN — 2GDKN — 2GDK

CABLE S3-J4 P/N 075089-004

1XNA — 1XN *6 — 1GDK *10 — BC21 — BC22 — BC15 — BE53L — BE45 — BE43 — BE54L — BE21 — BE22 — BE15 — 2XNA — 2XN *6 — 2GDK *10

1GH *10 — BC17 — BE39 — BE41 — BE17 — 2GH *10

GPXN *10 — 1XB *6 — 1XBA — BC16 — BC24R — BC24L — BC23 — BE53R — BE37 — BE54R — BE24L — BE24R — BE23 — BE16 — GPXN-EQ *10 — GPX-EQ *10 — GPX *10 — 2XB *6 — 2XBA

1NX24 *10 — 1CX24 *10 — BC12 — BC11 — NX24 — CX24 — TO SH. 8 — 2NX24 — 2CX24 — BE12 — BE11

HOLD — HF — HS — H — HC6 — PICKUP — PS — PF — P — HC3 — HC4 — HC5 — TEST — SNUB — SR1 SR2 — HC — HC1 — HC2 — MCR — R — 1RF — 1RH — 1RB — 2RF — 2RH — 2RB — 3RF — 3RH — 3RB — 4RF — 4RH — 4RB — SHR2 SHR1 SHORTING RESISTOR — MA — MOTOR — MB

0°-10° — 0°-86° — 0°-2° — 0°-70° — 75°-90° — 82°-90°

EGM — CAM SW. — ORG — YEL — BLU — ANC — ANO — ACOM — RED — BLK — C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12

DOWN RUN TEST — 24V HEATER

LIGHT WIRES ON SH. 6 ALSO IN THESE CABLES — 7C *6

7C *14

GATE #1 JCT BOX BASE — GATE #2 JCT BOX BASE

W.C.H. MODEL 3597

GATE #1 JCT. BOX BASE

1GH — 1XB
SPARE — 1XBA
GPXN — 1XN
1BELL — 1XNA/1BELLN
1GDK — 1LE
— 1CE
— 1RE
1CX24 — 1NX24

7C*6 — 7C*14 — TO HOUSE

GATE #2 JCT. BOX BASE

2GH — 2XB
SPARE — 2XBA
GPX — 2XN
SPARE — 2XNA
2GDK — 2LE
— 2CE
— 2RE
2CX24 — 2NX24

7C*6 — 7C*14 — TO HOUSE

NOTES:
1. GATE MECHS SHOWN IN CLEAR POSITION.

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.

MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

OmniTRAX — NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

GATE CONTROL & MECHANISMS
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO. 812953-100
SHEET 7 OF 11

NOTES:

1. USE THE FOLLOWING COLOR CODE:
   GRN - GREEN - SAFETY EQUIPMENT GROUND
   WHT - WHITE - CX110 (NEUTRAL)
   BLK - BLACK - NX220 (L2)
   RED - RED - BX220 (L1)
   EXCEPTIONS TO THE ABOVE COLOR CODE ARE THE PRE-WIRED, SEALED ARRESTOR UNITS MOUNTED ON THE BREAKER BOX WHICH HAVE TWO BLACK AND ONE WHITE WIRE EACH.

2. MINIMUM WIRE SIZE
   15 AMP - NO.14 AWG THHN OR THWN SOLID
   20 AMP - NO.12 AWG THHN OR THWN SOLID
   30 AMP - NO.10 AWG THHN OR THWN SOLID

3. GROUND FAULT INTERRUPT (GFCI) MUST BE USED ON ALL CIRCUITS SERVING CONVENIENCE OUTLETS AND ANY EQUIPMENT OUTSIDE THE BUNGALOW. RECEPTACLE MOUNTED GFCI MAY BE USED INSTEAD OF BREAKER TYPE.

4. ALL GROUND WIRES, THIS SHEET, RUN TO BREAKER BOX GROUND BUS

L1 L2 N 100A MAIN

(2) BX220 (RED) L1
(4) NX220 (BLK) L2
INTERLOCK → CX110 (WHT) N
240 VOLT SINGLE PHASE AC SERVICE

30A (6) BX6 (RED) X
(8) NX8 (BLK) Y
CX (WHT) W
NEMA L14-30P FLANGED PLUG
MOUNTED OUTSIDE HOUSE

15A (1) BX1 (RED)
15A SW.
LBX (RED)
FLUORESCENT LIGHT
CX (WHT)

15A (3) NX3 (BLK)
FANBX (BLK)
FAN THERMOSTAT
CX (WHT)

20A (5) BX5 (RED)
CX WHT GFCI
CX (WHT)

DUPLEX RECEPTACLES
MOUNTED ON SIDE "D"
MOUNTED ON SIDE "B"

POR & POPR CONTACT CONFIGURATION POTTER & BRUMFIELD KRPA-11AN-240

GND #12 (GRN)
GATE THERMOSTAT
B R

15A (7) NX7 (BLK)
CX WHT GFCI
CX (WHT)

VPS24-7300
24V GATE HEATER TRANS.
NX24 #10 TO SH. 7
CX24 #10 TO SH. 7
GROUNDED TO AC BUS BOX

A-SP20-3
C-SP20-3

20A (9) BX9 (RED)
(11) NX11 (BLK)
POBX
PONX
POR NV
X (RED)
Y (BLK)
NEMA L6-15R RECEPTACLES SIDE A

X (RED)
Y (BLK)
NEMA L6-15R RECEPTACLES SIDE C

20A (10) BX10 (RED)
(12) NX12 (BLK)

15A (13) BX13 (RED)
EPD 120/240T
(15) NX15 (BLK)
CX (WHT)

30A (14) BX14 (RED)
WALL HEATER
(16) NX16 (BLK)

AC BUS BOX
NX220K-1
BX220K-1
POPNX
POPBX
POPR NV
POR
XN
XB
BE56L
BE56R
BMR

BX220-1PO AC (BLU)
NX220-1PO AC (BLU)
BM-1PON N- (BLK)
BM-1PO B+ (RED)
1PO VELCORP/GEMS P/N: LC2-001WB-WG4

BX220-2PO AC (BLU)
NX220-2PO AC (BLU)
BM-2PON N- (BLK)
BM-2PO B+ (RED)
2PO VELCORP/GEMS P/N: LC2-001WB-WG4

POWER OFF INDICATOR IS STEADY LIT WITH AC & DC POWER ON AND BM-OSKR ENERGIZED, FLASHES WITH DC POWER ON AND AC POWER OR POR OFF AND BM-OSKR ENERGIZED, AND IS DARK WITH DC POWER OFF OR BM-OSKR DE-ENERGIZED AND AC POWER ON OR OFF.

SQUARE D PART NUMBERS
BREAKER BOX: 00116L125G
SURFACE KIT: 00C24US
GROUND KIT: PK12GTA
INTERLOCK: 002DT1

SIDE D

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

BREAKER BOX

1 15A 2
3 15A 4
5 20A 6
7 15A 8
9 20A 10
11 12
13 15A 14
15 16
100A
30A
20A
30A

GROUND BUS

ERICO EPD 120/240TDFL

LIGHT SWITCH AND 20A DUPLEX RECEPTACLE

MAINTAINER TEST SWITCH

GATE HEATER THERMOSTAT

CAPILLARY TUBE

TO FLOOR CABLE ENTRANCE

WALL HEATER MODEL C202 CADET MFG. CO. 240/208V 60HZ 2000/1500 WATT

MOUNTED 18" ABOVE FLOOR.

DANGER 240 VOLTS

AC BUS BOX

POR
A-SP20-3
KRPA-11AN-240

POPR
C-SP20-3
KRPA-11AN-240

VPS24-7300

VENT/FAN THERMOSTAT

4"X4" JUNCTION BOX AND AUX. GEN. PLUG (MOUNTED OUTSIDE).

A
B
C
D

REVISIONS

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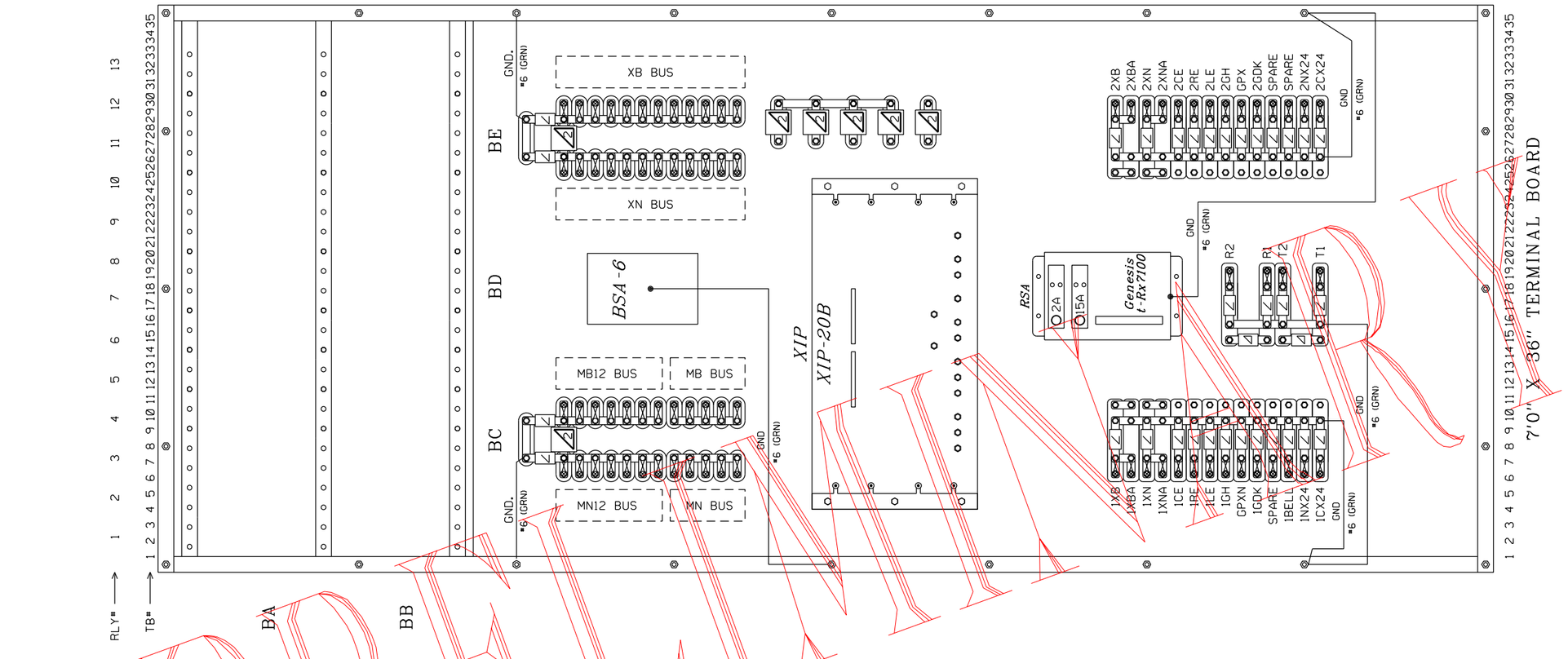
MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

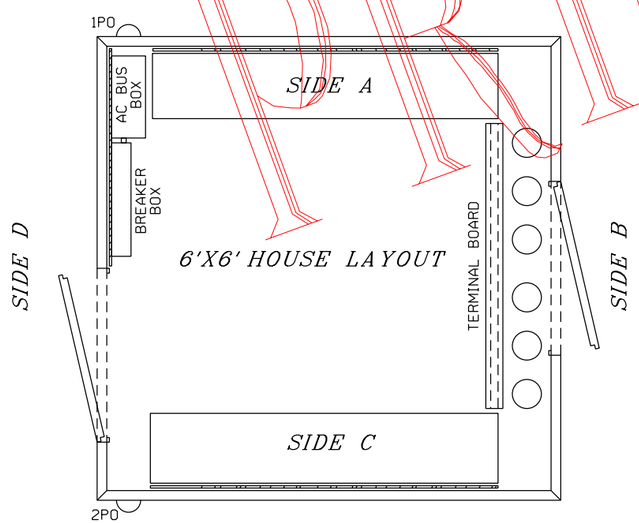
OMNITRAX NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

AC POWER DISTRIBUTION
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 8 OF 11





BC BATTERY BUS DETAILS BE

MN12 BUS (LEFT)		MB12 BUS (RIGHT)
MB12 BATT(-)	59	MB12 BATT(+)
	58	
	57	
	56	
	55	
	54	
BSA-6 BATT(-)	53	BSA-6 BATT(+)
BSA-6 EQUIP(-)	52	BSA-6 EQUIP(+)
IXS S3 J4 2	51	DD6B
BMR 7	50	
IXS S4 J5 6	49	POPR 1
IXS N	48	IXS B

MN BUS (LEFT) — MB BUS (RIGHT)

XN BUS (LEFT)		XB BUS (RIGHT)
XB BATT-	59	XB BATT+
XIP LAMP1-/BELL-	58	XIP LAMP1+/BELL+
XIP GATE BATT-	57	XIP GATE BATT+
BMR 6	56	BMR 3
BE45R	55	
BE22L	54	BE24L
BC22R	53	BC24R
	52	
XIP GC1-	51	
XIP GC2-	50	
IXS S3 J4 5	49	IXS S3 J4 4
IXS GFD 2	48	IXS GFD 1

REVISIONS

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318-665-9344

OMNITRAX NOW

DRAWN: S.F.A.
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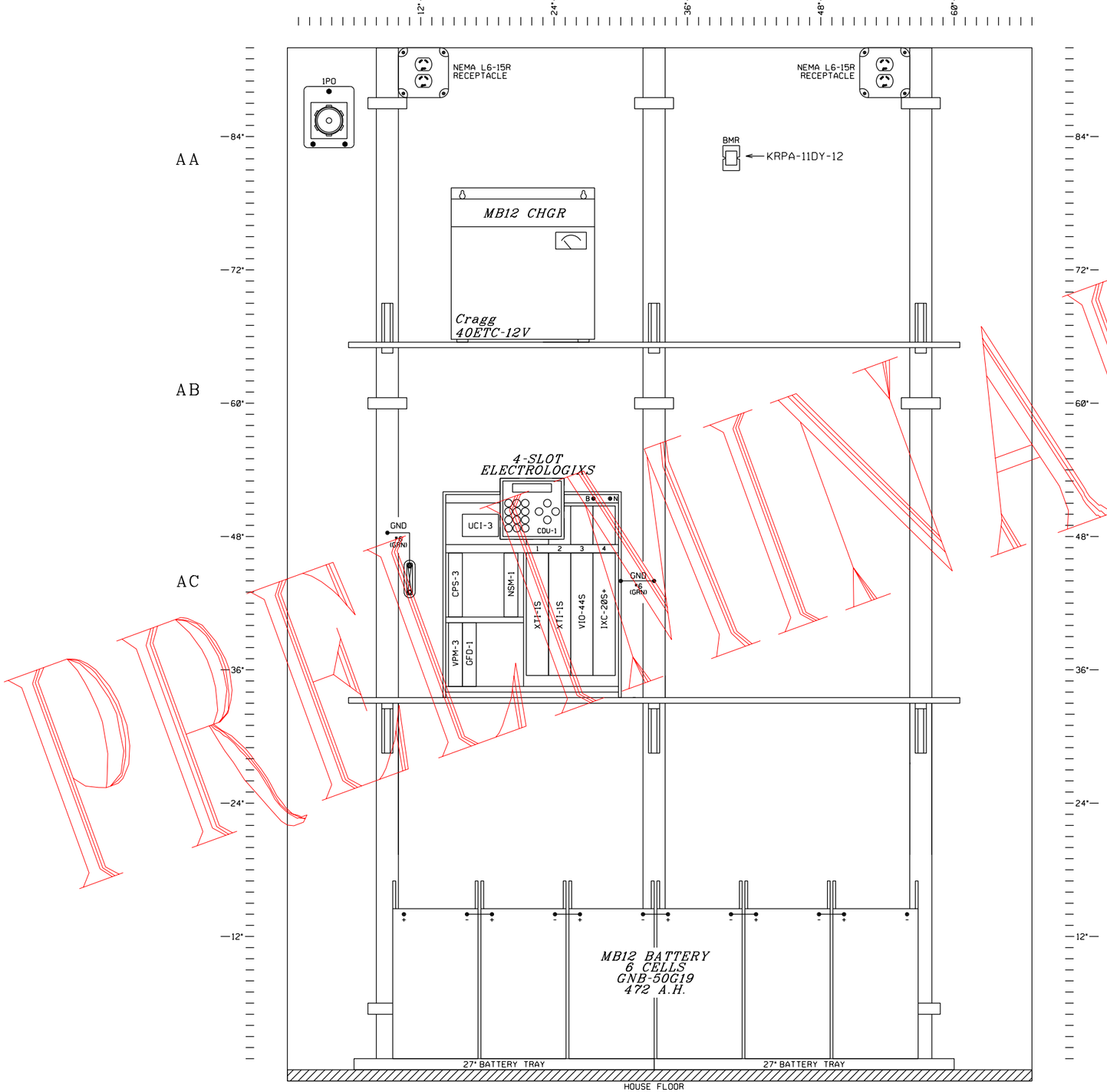
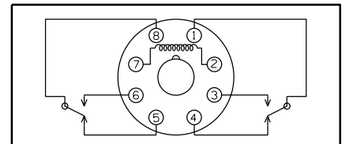
DATE: 4-28-17

TERMINAL BOARD
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 9 OF 11



SIDE A



BMR
CONTACT CONFIGURATION
POTTER & BRUMFIELD
KRPA-11DY-12

REVISIONS

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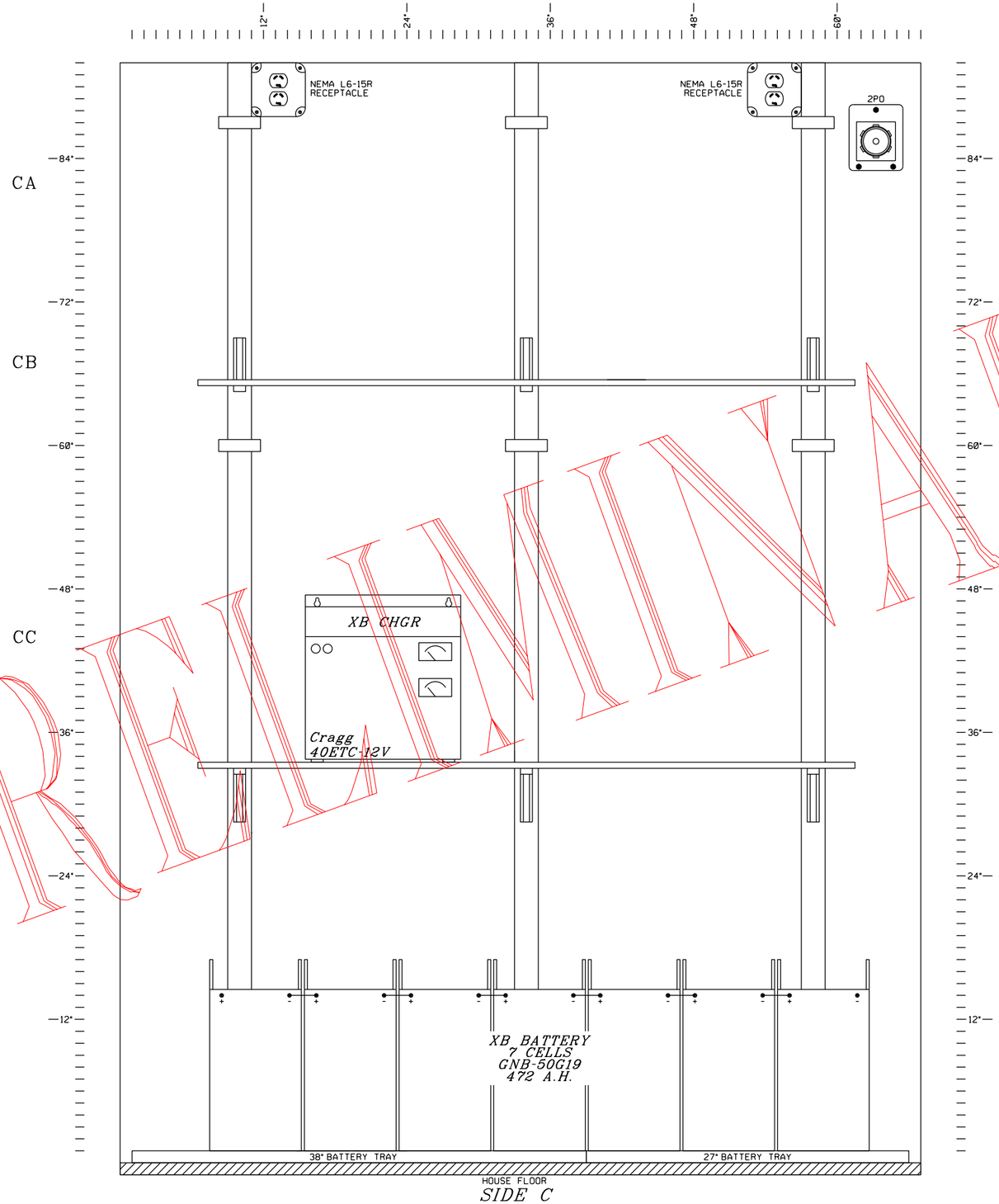
MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

OMNITRAX NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

SIDE A LAYOUT
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 10 OF 11



SIDE C

REVISIONS

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MIDSOUTH RAILROAD SERVICE
P.O. Box 356
Fairbanks, Louisiana 71240
318-665-9344

OMNITRAX

NOW

DRAWN: S.F.A.
DESIGNED: S.F.A.
CHECKED: ...
DATE: 4-28-17

SIDE C LAYOUT
CR 11
TIFFIN, OHIO
DOT# 509 212P MILEPOST# 46.15

DRAWING NO.
812953-100
SHEET 11 OF 11

July 13, 2016

Mr. Jason Scott
Vice-President Signal/Communications
OmniTRAX
252 Clayton St., 4th Floor
Denver, CO 80206
Reference Number: 244867T

Subject: Price Estimate for Proposed Railroad Signal Project located at CR-11 near Tiffin, OH

Dear Mr. Scott,

With reference to the above subject and your recent request for a price, Midsouth Railroad Service is pleased to offer the following proposal:

CR-11, Tiffin, OH – DOT # 509212P

Engineer, procure and install grade crossing protection for the above location. Grade crossing protection will consist of pre-wired control shelter and two (2) LED flashing light/gate assemblies. Train detection is to be made with solid-state constant warning equipment using an ALSTOM XP-4 unit with an integrated crossing controller for gates and lights. Please refer to the accompanying material list of items and quantities we propose to furnish and install at the stated price:

Material & installation (including taxes)	-	$ 177,147.84
Prelim Engineering/Project Management	-	$ 7,000.00
Omnitrax Admin Support	-	$ 16,200.00
Freight	-	$ 3,500.00
Grand Total	**-**	**$ 203,847.84**

FOB: Destination
Terms: Net 30 days
Delivery: Typically 120 – 160 Days upon Acceptance of Order (Weather Permitting)

The above price is firm for sixty (60) days and based on the following:

(1) Commercial AC power or meter service must be available within 75 ft. of proposed instrument shelter site.
(2) Price does not included any hookup fees from Power Provider
(3) Installation is based on no hindering obstacles, such as rock, water, or utilities that may interfere with the installation and operation of proposed material.
(4) Price is based on furnishing material as indicated on the material list which accompanies this proposal.
(5) Sales Tax is Included

We sincerely appreciate your selection of Midsouth Railroad Service to meet your signal construction needs and please know that we are dedicated to your total satisfaction. If you have any questions please do not hesitate to call me at (318) 614-7281.

Sincerely,

Mark Nelson
Vice President

PO BOX 356 • FAIRBANKS, LA • 71240
PHONE: (318) 665-9344 FAX: (318) 665-9355

Location/Description	QTY	
CR 11		
Control Shelter		
HSE 6X6 AL S/L SKR101 L/EPD/KY	1	Each
PROTECTOR SURGE 120/240V W/IND	1	Each
ASSY UCI-3 MODULE	1	Each
ASSY, 9 SLOT ELIXS CHASSIS	1	Each
ASSY VPM-3 MODULE - COMBINED CROSSING & INTERLOCKING	1	Each
ASSY MODULE IWP CPS-3	1	Each
ASSY VIO-44R	1	Each
ASSY MODULE IWP XTI-1S	2	Each
ASSY VIO-44R PERSONALITY MOD	1	Each
ASSY IWP XTI-1S PERSONALITY	1	Each
ASSY MODULE GFD-1	1	Each
ASSY MODULE TC21 IWP NSM-1	1	Each
ASSY MODULE GFD-1	1	Each
ELECTROLOGIXS XP 4 SYSTEM OPERATION AND MAINTENANCE MANUAL	1	Each
Cable, XTI-1S P3, 16 FT	1	Each
ASSY MOD IXS IXC-20S+	2	Each
ASSY IXC PERSONALITY MODULE	2	Each
ASSY IXS XIP-20B CROSSING INTERFACE PANEL B	1	Each
KIT HARDWARE WALL MT BRKT XIP- 20B	1	Each
Cable, XIP-20 #1 16 FT	1	Each
Cable, XIP-20 #2 16 FT	1	Each
ASSY BSA-6	1	Each
RAIL SHUNT AUGMENTER T-RX7100	1	Each
CHARGER 40A 12V CRAGG 40ETC12V	2	Each
RLY DPDT 240VAC 10A OCT W/LAMP	2	Each
RLY DPDT 12VDC 5A OCT	1	Each
SCKT RLY 8-PIN OCT SCREW PNLMT	3	Each
PROT AC LINE 230V SP20-1B	2	Each
ASSEMBLY, 4 POST TERMINALBLOCK	32	Each
ASSY AGA-1	36	Each
ASSY AGE-1	2	Each
ASSY AGE-2 HD	6	Each
NUT INSULATED HARMON	12	Each
TEST LINK W/PLT & INSUL	80	Each
TEST LINK 2.375" CNTR FL INSUL	2	Each
LABEL RK PNL-MAINTAINER TST SW	1	Each
WIRE 16AWG/19 TC EPR/PVC BLU	450	Foot
WIRE 10AWG/19 TC EPR/PVC BLU	400	Foot
WIRE 6AWG/19THHN BLK	120	Foot
WIRE 6AWG/19 THHN RED	120	Foot
WIRE 6AWG/19 THHN GRN	40	Foot
CABLE RAW 3/14AWG PWR 300V	9	Foot
CONN PLUG L6-15 250V 15A 2P3W	4	Each
ASSY 2WAY TERM BLK W/AAR HARD	8	Each
TRANSFORMER, 110/24V ISO VPS24-7300	1	Each
ASSY TERM STRIP DBL POST 12	8	Each
GROUND POST P5-162	4	Each
LIGHT POWER OFF LED W/WAGO CON	2	Each

KIT SM PRTS/TAGS GENERIC	1	Each
LABEL, DANGER 240 V, 1.75 X 2.	1	Each
THERMOSTAT SPDT REMOTE BULB 8A	1	Each
ASSY SINGLE ROW TERM 12 POST	1	Each
Field Material		
FOUND SIGNAL 60"DEPTH 11 11/16	2	Each
GATE SIG 3597 W/32'CWT M/SB/2L	2	Each
SLEEVE 4 ALUMINUM REC #92958	2	Each
HEATER GATE MECH 24VDC 50W WCH	2	Each
GATE KEEPER SK1000-2W DUAL DIR	2	Each
HIGH WIND BKT W/5"HDW LINCOLN	2	Each
GATEARM 16-24' UHI VERT W/LED	2	Each
LENS LED FLASHING 12" RED -H7	8	Each
SIGN XING S-F HI 5"MTG SIG/GAT	2	Each
BELL ELECTRONIC CROSSING 4/5"	1	Each
CABLE UG 3 COND #4 AWG	100	Foot
CABLE UG 7 COND #6 AWG SOLID	350	Foot
CABLE UG 7 COND #14 AWG SOLID	350	Foot
WIRE UG TRK #6 AWG DUPLEX	350	Foot
TAPE MARKER BURIED RR CABLE	1	Roll
BATT GND 50G19 1 CELL 472AH	13	Each
WIRE #6 SOFT BARE COPPER	40	Foot
ROD 3/4 X 8 NON-SECT COP GRD	4	Each
CADWELD ONESHOT 3/4" NX TYPE	4	Each
BOND JOINT 3/16" X 7-1/2" XS	275	Each
BOND STRAND 8-STR 3/16" TINNED	125	Foot
BOOTLEG BOND W/COUPLER KIT	12	Each
TAPE ELECTRICAL 3M #33+ 3/4"	3	Each
TAPE ELECTRICAL 3M #130-C	3	Each
COMPOUND INSULATING ELECTRICAL	1	Each
HOSE RUBBER 3/4"	60	Foot
STAPLE GROUND WIRE 1-1/16"X3"	12	Each
TIE CABLE .184 X 7.31" HIG TEM	20	Each
CABLE TIE 14-1/2L NAT	20	Each
LUG RNG 1/4" 12-10AWG INS BLK	65	Each
WIRE DIESEL 10AWG 2000 VOLTS	350	Foot
WIRE DIESEL 6AWG 600V	50	Foot
LUG RNG 1/4" 6AWG AMP ONLY	10	Each
STAPLE COPPERWELD 3/8 X 1-3/4	50	Each
GREASE RUST PREVENTIVE NO OXID	1	Each
SLEEVE NICO 3/16"-#6 AWG REDUC	4	Each
CLIP TRACK WIRE RETAINER	12	Each
COMPOUND DUCT SEAL 5 LB PLUG	3	Each
PADLOCK SIGNAL CASE	5	Each
SIGN, ENS	2	Each
SIGN HDW F/5"MAST RIBBED XING	2	Each
Field Cable Tag Kit	1	Each
TRAY BATTERY 12 X 27"	4	Each
WRENCH TORQUE WCH 3590-K-9	1	Each
WRENCH RLY TST E-POST	1	Each

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

May 22, 2017

Northern Ohio & Western Railway
Mr. John Lane
Roadmaster
4200 E. 71st Street
Cleveland, Ohio 44105

Regarding: Grade Crossing Warning Device Improvement and Roadway Surface Improvement
Authorization to Proceed with Engineering Design, Site Plans, and Cost Estimates
Seneca County, CR 11, DOT# 509212P, PID# 103458

Dear Mr. Lane:

A diagnostic review was held at the above grade crossing on 4/27/2016. The crossing has been recommended for the installation of lights and gates, including the reconstruction of the roadway surface.

The Northern Ohio & Western Railway (NOW) is authorized to proceed with the engineering design, site plans and cost estimates (PE) 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.

The diagnostic review form is attached. Please note any recommendations (page 5), if any, made by the team with regard to requirements for this location. This project will include the installation of a new roadway surface. Any other minor roadway or sidewalk work necessary for MUTCD compliance should be incorporated into the Site Layout Plan and such costs will flow through the railroad reimbursement process

I am the ORDC Project Manager for this project. If you have any questions, I can be reached at 614-466-2509 (office), or 614-917-8466 (cell), or don.damron@dot.ohio.gov.

Sincerely,

Donald J. Damron
Grade Crossing Specialist

Copied: Randall Schumacher, Supervisor, Rail Division, PUCO
Jill Henry, Rail Division Specialist, PUCO
Susan Arduini, ORDC
ORDC (file)

Attachment: Diagnostic Review Team Survey dated 4/27/2016
PUCO Letter Agreement dated 6/10/2017
State of Ohio Purchase Order

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

June 10, 2016

Ms. Billie Johnson
Northern Ohio & Western Railway
~~525 Wall St.~~ 252 Clayton St
~~Tiffin, Oh 44883~~ Denver CO 80206

RE: 1) Seneca County, CR 11, DOT# 509212P, hereinafter referred to as the "Project"

Dear Ms Johnson:

The Public Utilities Commission of Ohio (PUCO) has identified and surveyed the above mentioned grade crossing for a warning device upgrade. The location has been approved for flashing lights and roadway gates with surface reconstruction

The Project shall comply with Agreement No. 5-B, dated January 4, 2000, entered into by the State of Ohio and Northern Ohio & Western Railway. Furthermore, the RAILROAD shall comply with all applicable state and federal laws governing grade crossing safety programs.

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

The RAILROAD shall complete plans and estimates for the 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 PUCO's Order or ORDC's construction authorization. The RAILROAD shall provide written notification of the construction start date to PUCO and ORDC no later than five (5) business days prior to such date.

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

Sincerely,

Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 6/10/16

Northern Ohio & Western Railway, LLC

By

Title MANAGER

Date 10/3/2016

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date 6-13-16

OHIO RAIL DEVELOPMENT COMMISSION

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

Diagnostic Review Team Survey

Reason for Survey: (e.g. formula, accident, constituent, etc.) PUCO Formula Spring Pick

Date: 4/27/2016

Location Data

Street or Road Name:

Route/Road Number (i.e. Twp., Co., SR or US): CR 11

US DOT No.: 509212P

County: SEN

Township:

City: (In or Near) Near Tiffin

Railroad Name: Northern Ohio & West. Rwy

Railroad Division: Western

Branch/Line Name: Carrothers Br.

Nearest RR Timetable Station: Tiffin

RR Milepost: 46.15

On-Site Review Team

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

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6. Dan Kinebright Seneca County Engineers office kinebright.net
7.
8.
9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☑ Yes	☐ No	
'Stop' Signs	☐ Yes	☑ No	YIELD SIGNS TO BE REPLACED W/ STOP
'Stop Ahead' Signs	☐ Yes	☑ No	
Pavement Markings (condition?)	☑ Yes	☐ No	WORN - NEED REFRESHING
Crossbucks	☑ Yes	☐ No	
Number of Tracks Signs	☐ Yes	☑ No	
Inventory Tags	☑ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☑ No	
Mast-Mounted Flashing Lights	☐ Yes	☑ No	
Cantilever Flashing Lights	☐ Yes	☑ No	Number: Length:
Side Lights	☐ Yes	☑ No	
Automatic Gates	☐ Yes	☑ No	Number: Length:
Bells	☐ Yes	☑ No	Number:
Sidewalk Gate Arms	☐ Yes	☑ No	
'No Turn' Signs	☐ Yes	☑ No	
Illumination	☐ Yes	☑ No	
Is crossing flagged by train crew?	☐ Yes	☐ No	
Other	☐ Yes	☐ No	

Safety Data (Obtain crash reports, if possible, prior to review)

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	1 (10/23/13) (8/4/2000)	RR HAS WITNESSED MULTIPLE CLOSE CALLS.
Hazard Ranking	973 Date Run: 3/30/2016	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	0	
< 1 per day	(2 trains 3 days per week, GM 9/4/2014)	GOING TO ONCE/WEEK (WED OR THURS) DOWN & BACK SAME DAY
Day thru trains		
Night thru trains		
Daytime switching movements		
Nighttime switching movements		
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	25	20
Typical train speed	25	20
Amtrak		

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

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

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

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

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

If yes, Crossing DOT #(if different) _____

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

Roadway Data

Local Highway Authority: Seneca County

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	1512 (2014) ↔	1835 (2005)
Highway paved	X Yes ☐ No	☐ Yes ☐ No

Roadway Surface: ☑ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____

Roadway width: 20 ft.

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

School Bus Operation: ☐ No ☒ Yes ___ Amount 2 AT LEAST

Hazardous Materials Trucks: ☐ No X Yes 05 Amount AVG PROPANE & SEASONAL

Shoulders: ☑ No ☐ Yes

Is the shoulder surfaced? ☑ No ☐ Yes

Is there existing guardrail along roadway in crossing vicinity? ☑ No ☐ Yes

Is stopping site distance adequate? (See Table 2) ☑ Yes ☐ No If no, deficient approach(es) _____

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

Pedestrians: ☑ No ☐ Yes

Is sidewalk present? ☑ No ☐ Yes

Is there a nearby intersection that could cause queuing over the crossing? ☑ No ☐ Yes

If yes,

Distance _____

Is this intersection signalized? ☐ No ☐ Yes

Are the signals currently interconnected with the existing crossing warning devices? ☐ No ☐ Yes

Is there a 'Do not Stop on Track' sign? ☐ No ☐ Yes

Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? ☑ No ☐ Yes REGULAR MAINTENANCE

If yes,

Improvement type_____ Lead Agency _____ Timeline/completion - _____

Is it the consensus of the Diagnostic Review Team that this is a potential closure project: ☑ No ☐ Yes

Explain reasons:

Type of Development

		Location of nearby schools:
☑ Open Space	☐ Institutional	OLD FORT & NORWELL LOCATED NE & SOUTH OF CROSSING
☐ Industrial	☐ Commercial	
☑ Residential		

Utility Information

Is commercial power available? ☐ No ☑ Yes

Utility Provider (Company Name) AEP Phone Number _____

Nearest Available Power Source AT SITE

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

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

Comments: UG GAS AND UG FIBER LOCATED IN SW QUAD WHERE GATE MECH WOULD BE LOCATED.

Potential Red Flags / Project Challenges

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

NA

Crossing Consolidation or Closure:

NA

Real Estate or ROW:

NA

Culverts / Drainage / Ballast Conditions:

NA

Roadway and/or Sidewalks:

SURFACE IN CROSSING IN POOR CONDITION

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

RAIL JOINTS IN SURFACE

Environmental:

NA

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS /Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Bells / number	
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	NE, NW OR SW
☐ Other (define)	

Comments:

CONSENSUS - "UPGRADE TO LIGHTS & GATES"

ROADWAY SURFACE AND ELIMINATED RAIL JOINTS ARE NEEDED.

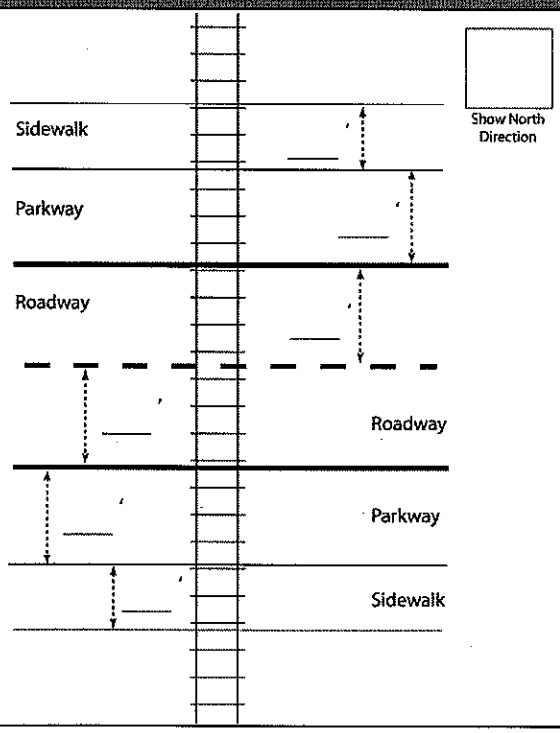
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	

☐ Other (define)

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

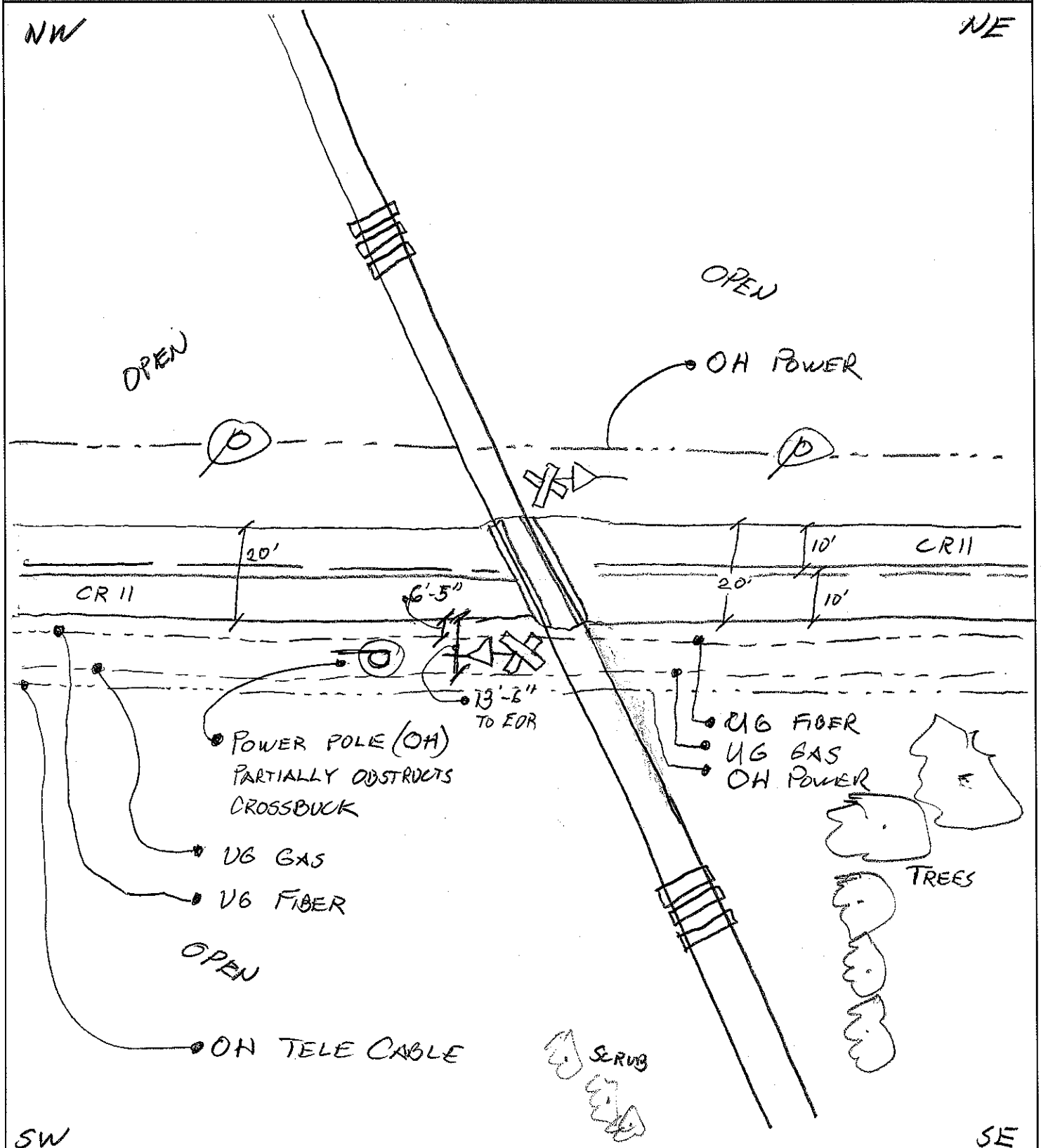
DJC JBG James D Ingram DK

Field Dimensions



NEW SURFACE IS NEEDED.

Field Sketch



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

Sketch by: DRD 4-27-16

TABLE I

Clearing Sight Distances

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

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

Notes:

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

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

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

Table 2

Stopping Sight Distances

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

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

Notes:

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

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

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

County: SEN Route: CR 11 DOT#: 509212 P

Surface type	Condition
☐ Rubber seal and asphalt ☒ Timber and asphalt ☐ Asphalt ☐ Composite ☐ Concrete panel ☐ Full-depth timber ☐ Full-depth rubber ☐ Other _____	☐ Good ☐ Fair ☒ Poor Comments: _____

Is the surface good and sufficient? Yes / (No)

Vehicle type (cars, trucks, etc.): CARS + TRUCKS

Surface conditions:

Can vehicles cross at posted speed? NEED TO SLOW SOMEWHAT.

Local observations/driver behaviors: _____

Relevant crash history: NONE

Do existing surface conditions have negative effects on the current or proposed warning devices?
Explain: YES, JOINTS ARE WITHIN SURFACE WELDED RAIL AND NEW SURFACE IS NEEDED

Comments:

NEW SURFACE WILL NEED TO BE PART OF POSSIBLE WARNING DEVICE UPGRADE.

Form completed by: DON DAMRON Date: 4-27-16

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Northern Ohio & Western Railway, CR 11 DOT#509-212P, in Seneca County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division